MITSUBISHI

MELSOFT

Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 1/3

(For GOT1000 Series)

SW2D5C-GTWK2-E
SW2D5C-GTD2-E

# ● SAFETY PRECAUTIONS ●

(Be sure to read these instructions before using the product)

Before using this product, read this manual and the relevant manuals introduced in this manual carefully and handle the product correctly with full attention to safety.
Note that these precautions apply only to this product.
In this manual, the safety instructions are ranked as "WARNING" and "CAUTION".

| | |
|---|---|
| ⚠ **WARNING** | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| ⚠ **CAUTION** | Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. |

Note that failure to observe the ⚠ CAUTION level instructions may also lead to serious results depending on the circumstances.
Be sure to observe the instructions of both levels to ensure personal safety.

Please keep this manual in accessible place and be sure to forward it to the end user.

## [TEST OPERATION PRECAUTIONS]

**⚠ WARNING**

- When testing the operation (e.g. turning bit devices ON/OFF or changing a current word device value, a current or set timer/counter value, or a current buffer memory value), thoroughly read the relevant manual to fully understand the operating procedures. When testing, never change the data of the devices that control the operation essential for the system.
  Faulty output and malfunction may result in an accident.

# CAUTIONS FOR USING THIS SOFTWARE

1. Required PC memory

   The processing may be terminated by Microsoft® Windows® on a personal computer of which main memory capacity is less than 64M bytes. Make sure to secure the capacity of 64 M bytes or more.

2. Free capacity of hard disk (virtual memory)

   At least 100M bytes of free capacity of virtual memory should be secured within hard disk to run this software. The processing may be terminated by Windows® , if 100M bytes or more of free space cannot be secured within hard disk while running GT Designer2.
   Secure enough free capacity of virtual memory within hard disk space in order to run the software.

   When enough free capacity cannot be secured, make sure to save projects frequently.

3. Error messages displayed while starting and editing

   "Operation will be terminated because of insufficient memory. Would you like to stop?"

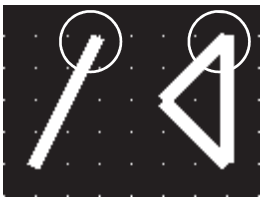
   If the above message appears, close other running application software or reboot Windows® in order to secure at least 50M bytes of free hard disk space.

4. GT Designer2 and GOT display

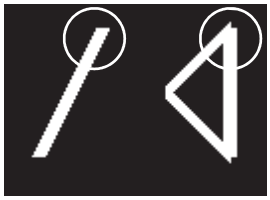
   (a) Cautions for displaying straight line other than full line (dotted line, for example) in bold.
   When straight line other than full line is drawn in bold, the line may not be displayed with its actual line width on a personal computer. However, it will be displayed correctly on GOT. This phenomenon does not mean data problem.

   (b) Display of end points of straight line/line freeform/polygon
   As shown below, the end points of straight line/line freeform/polygon are displayed differently between GT Designer2 and GOT.

   On GT Designer2

   On GOT

   (c) Start position for filling patterns
   Some filling patterns may be differently displayed. For example, the start position may be different between GT Designer2 and GOT.

   (d) Drawing of different type lines
   The length of the dots varies in different dotted lines (for example: the chain lines).

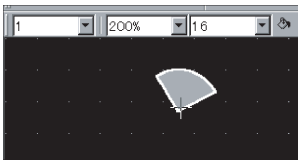
   (e) Display of object

   - The display position of the memory data display in graph function is different between GT Designer2 and GOT.
   - Even if the display-start-line of a comment has been set, the comment will be displayed from the first line on GT Designer2.

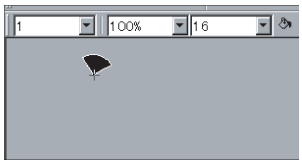
(f) Display magnification
When display magnification is changed, the connected lines or figures may be separated or the filled-paint may be out of outline of the figure.
However, if they are displayed correctly on the preview screen, they will appear correctly on GOT as well.

Example: When filled-paint is out of the outline.

Display magnification: 200%




Display magnification: 100%




Position of Paint mark may be shifted and the filled-paint may exceed the outline of the figure.

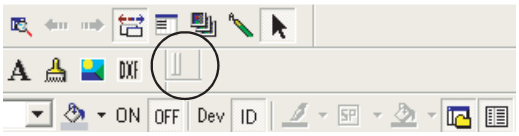
5. Restrictions when the color setting is changed to the setting of less colors in the system environment (256 colors → 2 colors)
   - The color palette for setting color will be changed according to the new settings.
   - The color on the drawing screen will be kept the same as prior to the change.
     If the color setting for a [red] rectangle-figure is changed to the 2 colors (B/W), the [red] color will remain.
   - The colors of the image data (BMP format file) will be reduced when the project is stored, the screen is closed and that image data is double-clicked.

6. Object function and device type
   The object (bit lamp or word lamp),for which bit device setting and word device setting are separated, cannot be converted between bit device and word device.

7. When device type is changed
   Confirm the device type when the set bit device is changed from bit device into word device.
   The device flag may be represented as "??", depending on the settings .
   Example: D0. b0 → D0  D0.b5 → ??

8. OS setting
   Set the font size as "Small Font" when setting OS (Windows®) screen.
   The GT designer2 dialog box cannot be displayed correctly if the font size is set as "Large font".

9. When the toolbar icon appears in smaller size after startup of GT Desinger2
   The toolbar icon may appear in smaller size right after GT Designer2 is started up.
   To correctly display the icon, initialize it as instructed below.
   (Click on [Project] → [References] from the menu, and select the toolbar tab. Click on Reset All button in that tab.)




10. When using GT Designer2 in the PC in which the OS other than applicable language version
    The text may not be displayed correctly depending on the OS versions; some version include the fonts incompatible with GT Designer2 or GOT.

REVISIONS

* The manual number is given on the left bottom of the back cover.

| Print Date | Manual Number | Revision |
|---|---|---|
| Oct., 2004 | SH(NA)-080530ENG-A | First Printing |
| Mar., 2005 | SH(NA)-080530ENG-B | Compatible with the GT Designer2 Version2.09K.<br>Partial corrections<br>How to Use This Manual, Chapter 1, Section 3.1, 3.8, 4.1.3, 5.1, 7.3.5, 8.2.2, 8.2.5, 8.3.5, 8.6.5, 8.8.5, 9.1, 9.2, 15.7.2<br>Partical additions<br>Function Quick Reference, Section 2.2, 2.3, 2.3.2, 2.4, 2.5.3, 2.8.1,2.8.2, 3.3.1, 3.6, 3.6.1, 3.7, 4.4, 4.4.1, 4.4.3, 5.1.3, 6.1.3, 6.1.4, 6.2.3, 6.2.5, 8.2.5 , 8.3.2, 8.4.7, 8.6, 8.6.6, 8.8, 8.8.4, 8.8.6, 9.1.1, 10.1.4<br>Additions<br>Section 3.10, 4.3, 9.1.2, 9.2.1, 9.2.2, Chapter 12, Section 13.2, 14.2, 14.3, 14.4, 14.5, 14.6, Appendix 4<br>Section 4.3 to 4.4 → Section 4.4 to 4.5, Section 9.1.2 to 9.1.6 → Section 9.1.3 to 9.1.7, Section 9.2.1 to 9.2.6 → Section 9.2.3 to 9.2.8, Section 11.2 → Section 12.2, Section 11.3 → Section 11.2, Chapter 12 to 14 → Chapter 13 to 15 |
| Apr., 2005 | SH(NA)-080530ENG-C | Compatible with the GT Designer2 Version2.11M.<br>Partical additions<br>Section 3.2, 12.1, 12.2.3 |
| Oct., 2005 | SH(NA)-080530ENG-D | Compatible with GT Designer2 Version2.18U<br>Partial corrections<br>SAFETY PRECAUTIONS, HOW TO USE THIS MANUAL, Chapter 1, Section 2.7.3, Section 3.1, 3.2.2, 3.4, Section 5.2, Section 6.2.6, 6.2.10, Section 8.2.2, 8.2.6, 8.7.5, Section 12.3.5, Section 13.1.3, 13.1.<br>Partial additions<br>FUNCTION QUICK REFERENCE, Section 2.1.1, 2.1.2, 2.2, 2.3, 2.3.1, 2.3.2, 2.4, 2.5, 2.5.1, 2.5.3, Section 2.6.1, Section 2.7.1, 2.7.2, Section 2.8.1, 2.8.2, Section 3.1.1 to 3.1.3, 3.3.4, 3.3.5, 3.4.3, 3.5, 3.5.2, 3.6, 3.6.1, 3.6.4, 3.7.2, 3.7.3, 3.8.2, 3.9, Section 4.1.1 to 4.1.12, 4.3, 4.3.1, 4.4.1, 4.5.5, Section 5.1.2, 5.1.3, 5.3.1, 5.3.3, 5.5, 5.6, 6.1.3, 6.1.4, 6.2.3 to 6.2.5, 6.2.9, Section 7.1.3 to 7.1.5, 7.3.1, 7.3.4, 7.3.6, 7.4.3, 7.5.3, 7.5.4, Section 8.2.5, 8.3.6, 8.8.4, Section 9.1.4, 9.1.5, 9.1.7, 9.2.5 to 9.2.7, Section 10.1.4, 10.2.4, 10.3, 10.3.4, 10.4.4, 10.5.4, 10.6.4, 10.7.4, Section 12.2.3, 12.3.4, Appendix1, Appendix5<br>Additions<br>Section 2.8, 2.11, Section 3.11, Section 7.3.5, Section 10.8, Section 11.3, Section 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, Appendix4<br>Section 2.8 to 2.9 → Section 2.9 to 2.10, Section 7.3.5 → Section 7.3.6, Section 14.1 → 14.2 → Section 15.1 to 15.2, Section 14.3 → Section 14.2, Section 14.4 → Section 14.1, Section 14.5 → Section 14.3, Section 14.6 → Section 15.3, Chapter 15 → Chapter16, Appendix4 → Appendix5 |

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|---|---|---|
| Jan., 2006 | SH(NA)-080530ENG-E | Compatible with GT Designer2 Version 2.27D<br>Partial corrections<br>HOW TO USE THIS MAMUAL, Section 2.3, 2.3.3, 2.8.4, 2.8.6, 2.9.2, 2.10, Section 3.2.1 to 3.2.3,3.4.1 to 3.4.3, 3.5.2, 3.6.2 to 3.6.4, 3.7.1, 3.8.1, 3.10.1 to 3.10.3, Section 4.1.1, 4.1.3, 4.1.8, 4.1.12, 4.4, 4.4.7, 4.5.3, 4.5.5, Section 5.8.1,Section 8.2.2, 8.3.3, 8.5.3, 8.6.4, 8.8.2, Section 12.2.4, Section 13.3.2, 13.3.5, Section 15.1.3,Section 16.2.8, 16.3.4, 16.3.6<br>Partial additions<br>FUNCTION QUICK REFERENCE, MANUALS, ABBREVIATIONS AND GENERIC TERMS, Section 1.1, Section 2.1, 2.2, 2.3.1, 2.3.2, 2.4, 2.5, 2.7.1 to 2.7.3, 2.8, 2.9.1, 2.11, Section 3.1 to 3.10, Section 4.1 to 4.3, 4.4.3 to 4.4.5, 4.5.2, Section 5.1 to 5.8, Section 6.1, 6.2, Section 7.1 to 7.5, Section 8.1.1, 8.1.2, 8.2 to 8.8, Section 9.1 9.2, Section 10.1 to 10.8, Section 11.1 to 11.3, Section 12.1 to 12.3, Section 13.2, 13.3, Section 14.1 to 14.9, Section 15.1 to 15.3, Section 16.1.1, 16.2, 16.3, Appendix 1.4<br>Additions<br>Section 2.12, Section 3.12, 3.13, Section 4.4.1, 4.4.2, 4.4.6, Section 13.1<br>Section 4.4.1 to 4.4.3 → Section 4.4.3 to 4.4.5, Section 4.4.4 → 4.4.7, Section 13.1 → 13.2 |
| Jun., 2006 | SH(NA)-080530ENG-F | Compatible with GT Designer2 Version 2.32J<br>Partial corrections<br>Section 1.1, Section 2.3.1, Section 3.1.3, Section 13.2.3, Section 16.4.3<br>Partial additions<br>Section 2.1.1, 2.1.2, 2.1.3, 2.4, 2.5, 2.5.3, 2.7.1, 2.7.2, 2.7.3,2.8.1, 2.8.3,2.8.4,2.8.5, 2.8.6, 2.8.8, 2.9.1, 2.9.2, 2.12, Section 3.1.2, 3.3.1, 3.3.4, 3.3.5, 3.6, 3.6.1, 3.6.4, 3.7.2, 3.7.3, Section 4.3, 4.3.1, 4.4.1, Section 5.1.3, 5.3.1, 5.3.2, Section 6.1.3, 6.1.4, 6.1.5, 6.2, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.7, 6.2.8, Section 7.1.3, 7.1.4, 7.2.4, 7.3.4, 7.3.5, 7.4.3, 7.5.3, 7.5.4, 7.5.5, Section 8.2.5, 8.3.5, 8.4.5, 8.4.7, 8.5.6, 8.6.4, 8.7.4, 8.8.4, Section 9.1.4, 9.1.5, 9.1.6, 9.2.5, 9.2.6, 9.2.7, Section 10.1.4, 10.2.4, 10.3.4, 10.4.4, 10.4.5, 10.5.5, 10.6.4, 10.6.5, 10.7.4, 10.7.5, 10.8.4, Section 11.3.4, Section 12.2.3, 12.3.4, Section 13.1.6, 13.3, Section 14.2, 14.5, 14.9, Section 15.1, Section 16.2.8, 16.3.8, Appendix 1, 4<br>Additions<br>Section 2.8.2, Section 6.2.9, Section 13.4, 13.5, Section 15.2, 15.3,<br>Section 2.8.2 to 2.8.9 → Section 2.8.3 to 2.8.10, Section 6.2.9 to 6.2.10 → Section 6.2.10 to 6.2.11, Section 15.3 → Section 15.5 |

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| Nov., 2006 | SH(NA)-080530ENG-G | Compatible with GT Designer2 Version 2.43V<br>Partial corrections<br>Section 2.4, 2.6.2, 3.6.3, 5.1.3, 5.5.2, 8.2.2, 8.2.3, 8.2.4, 8.2.6, 8.3.3, 8.3.4, 8.5.2, 8.6.5, 8.8.5, 11.3.2, 13.1.3, 13.2.1, 13.2.4, 15.1.2, 15.3.1<br>Partial additions<br>Section 2.1.1, 2.1.2, 2.2, 2.3, 2.3.1, 2.3.2, 2.4, 2.5, 2.5.1, 2.5.3, 2.6.1, 2.7.1, 2.7.2, 2.7.3, 2.8.2, 2.8.4, 2.8.5, 2.8.6, 2.9.1, 2.9.2, 3.1, 3.1.2, 3.2.3, 3.3.5, 3.6, 3.6.1, 3.7, 3.7.2, 3.7.3, 3.8.2, 3.10, 3.10.3, 4.1.1, 4.1.12, 4.2.3, 4.3, 4.3.2, 4.4, 4.4.1, 4.4.3, 4.4.4, 4.5.3, 4.5.4, 4.5.5, 4.5.6, 5.1.3, 5.3.3, 6.1.3, 6.1.4, 6.2, 6.2.1, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.7, 6.2.8, 6.2.9, 6.2.10, 6.2.11, 7.1.3, 7.1.4, 7.1.5, 7.2.4, 7.3.4, 7.3.5, 7.4.3, 7.5.3, 7.5.4, 8.1, 8.1.2, 8.2.1, 8.2.5, 8.3.1, 8.3.2, 8.3.5, 8.3.6, 8.4, 8.4.5, 8.4.6, 8.5.5, 8.5.6, 8.6.4, 8.6.6, 8.7.5, 8.8, 8.8.2, 8.8.4, 8.8.6, 9.1.2, 9.1.4, 9.1.5, 9.1.6, 9.2.2, 9.2.5, 9.2.6, 9.2.7, 10.1.4, 10.2.4, 10.3.4, 10.3.5, 10.4.4, 10.4.5, 10.5.4, 10.6.4, 10.8.6, 11.1.3, 11.2.2, 11.2.3, 11.3.4, 11.3.5, 12.1, 12.2, 12.2.3, 12.2.4, 12.3.1, 12.3.4, 13.2.3, 13.4.3, 15.1, 15.1.3, 15.2.1, 15.2.3, 15.2.4, 15.3.3, 16.3.2, Appendix 1, Appendix 5<br>Additions<br>Section 3.2.1, 15.1.1, 15.6, Appendix 4<br>The icon for GT10 is added.<br><br>Section 3.2.1 to 3.2.3 → Section 3.2.2 to 3.2.4, Section15.1.1 to 15.1.3 → Section 15.1.2 to 15.1.4<br>Appendix 4 → Appendix 5 |
| Feb., 2007 | SH(NA)-080530ENG-H | Compatible with GT Designer2 Version2.47Z<br>Partial corrections<br>Section 8.2.5, 8.3.2, 8.3.3, 8.4.7, 9.1.6, 9.2.5, 9.2.6, 9.2.7<br>Partial additions<br>Section 2.2, 2.3.1, 2.3.2, 2.5.1, 2.5.3, 2.7.1, 2.7.2, 2.8.2, 2.8.4, 2.8.5, 2.8.6, 2.9.1, 2.9.2, 3.3.5, 3.7.2, 3.7.3, 3.8.2, 3.12.4, 4.2.8, 4.4.3, 4.5.5, 5.1.3, 6.1.3, 6.1.4, 6.2.3, 6.2.5, 6.2.6, 6.2.10, 7.1.3, 7.1.4, 7.3.4, 7.5.3, 7.5.4, 8.2.2, 8.6.4, 8.8.4, 9.1.4, 9.1.5, 10.1.4, 10.4.4, 10.5.4, 11.1.3, 12.3.1, Appendix6<br>Additions<br>Section 16.4.4 |
| May, 2007 | SH(NA)-080530ENG-I | Compatible with GT Designer2 Version 2.58L<br>Partial additions<br>Section 2.1.1, 2.1.2, 2.3, 2.3.1, 2.5, 2.5.1, 2.5.3, 2.7.1, 2.7.3, 2.8.2, 2.8.5, 2.8.6, 2.9.1, 2.9.2, 3.6, 3.6.1, 3.7.2, 3.7.3, 3.8.2, 4.1.11, 4.3, 4.3.1, 4.4, 4.4.1, 4.4.3, 4.5.1, 4.5.3, 4.5.5, 5.1.3, 5.3.3, 6.2.1, 6.2.5, 6.2.11, 7.3.4, 10.6, 10.6.4, 10.8.4, 11.1, 11.1.3, 11.1.4, 11.2, 11.2.2, 11.2.3, 12.1, 12.3.5, 15.1.1 , 16.1.2, Appendix 2, 6<br>Partial corrections<br>Section 2.3.2, 2.3.4, 2.5.1, 2.9.2, 3.5, 4.1.10, 5.1.1, 5.8, 6.1.3, 6.1.4, 6.2.6, 8.6.4, 12.3.1, 12.3.2, 12.3.4, 15.2.1, 15.2.2<br>Additions<br>Section 2.13, 3.5.1, 13.6, 13.7, 14.10 |
| Aug.,2007 | SH(NA)-080530ENG-J | Compatible with GT Designer2 Version 2.63R<br>Partial additions<br>Section 2.5.3, 2.7.1 to 2.7.3, 2.9.2, 2.13, 3.7.2, 3.7.3, Appendix 6<br>Additions<br>Section 14.11 |

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| Dec., 2007 | SH(NA)-080530ENG-K | Compatible with GT Designer2 Version 2.73B<br>Partial corrections<br>Section 2.1.1, 2.1.2, 2.2, 2.3.1, 2.4, 2.5.3, 2.7.1, 2.7.2, 2.8.2, 2.9.1, Section 3.1.3, 3.2.3, 3.3.5, 3.6, 3.6.1, 3.6.4, 3.7.2, 3.8.2, Section 4.3.1, 4.4.1, 4.4.3, Section 5.1.3, Section 6.1.3, 6.2.3, Section 7.5.3, Section 8.1, 8.1.1, 8.8.4, Section 16.1.2, Appendix 7<br>Partial additions<br>Section 2.5.1, 2.6.1, 2.7.1, 2.7.3, 2.8.2, 2.9.2, Section 3.7.3, 3.7.4, Section 4.2.1, Section 5.1.3, 5.3.3, 5.8.1, Section 7.1.2 to 7.1.5, 7.2.3, 7.3.3, 7.3.6, 7.4.2, 7.5.2, 8.2.4, 8.3.4, 8.4.4, 8.5.4, 8.6.3, 8.7.3, 8.8.3, Section 10.1.3, 10.2.3, 10.3.3, 10.4.3, 10.5.3, 10.6.3, 10.7.3, 10.8.3, Section 16.2.3, 16.2.8, 16.3.3, 16.4.2<br>Additions<br>Section 8.9, Section 11.4, Section 13.8, Appendix 6<br><br>Appendix 6 → Appendix 7 |
| Feb.,2008 | SH(NA)-080530ENG-L | Compatible with GT Designer2 Version 2.77F<br>Partial corrections<br>Section 2.1.1, 2.1.2, 2.5, 2.5.3, 2.8.2, 2.8.4, 2.8.5, 2.9.1, 3.6.1, 3.7.2, Section 4.4.1, Section 5.1.3, Section 6.2.5, Section 7.5, 7.5.5, Section 16.2.2, 16.2.8<br>Partial additions<br>Section 2.2, 2.7.1, 2.7.2, 2.9.2, Section 6.1.3, 6.1.4, 6.2.3, Section 7.1.3, 7.1.4, Section 8.2.5, 8.8.4, Section 13.3, Section 16.2.6<br>Additions<br>Section 14.12 |
| Jun., 2008 | SH(NA)-080530ENG-M | Compatible with GT Designer2 Version 2.82L<br>Partial corrections<br>Section 2.5.3, 2.7.1, 2.7.3, 2.9.1, 2.9.2, 3.6.1, 3.7.2, 4.4.1, 6.2.5, 8.4.5, Appendix 7<br>Partial additions<br>Section 2.7.2, 3.1, 3.1.2, 3.8.1, 4.5.3, 4.5.5, 4.5.6, 5.1.2, 7.3.4<br>Additions<br>Section 13.6, 14.2<br><br>Section 13.6 to 13.8 → Section 13.7 to 13.9, Section14.2 to 14.12 → Section 14.3 to 14.13 |

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Japanese Manual Version SH-080509-AB

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# INTRODUCTION

Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).
Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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# FUNCTION QUICK REFERENCE

## Edit Operation (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Preview | Shows the preview of screen image of GOT. | Page 7-51 |
| Align | Aligns objects or images | Page 11-42 |
| Property sheet | Sets same attributes to objects or images in the same screen | Page 12-1 |
| Guidelines | Displays lines to align figures and objects when arranging a placed figure or object. | Page 11-45 |
| Replace colors<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the color(s) of the objects and figures arranged on plural screens at the same time | Page 12-12 |
| Replace shapes<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the switch/lamp figures at the same time | Page 12-12 |
| Replace devices<br>M10 M11 M12 → M100 M101 M102 | Changes the preset devices at the same time | Page 12-12 |
| Replace CH No.<br>@1M10 @1M11 @1M12 → @3M10 @3M11 @3M12 | Changes channel numbers at the same time. | Page 12-12 |
| Data View<br>Select | Overlapping images or objects | Page 12-16 |
| Device list<br>Base 2 Base 3 Base 1<br>D100 Numerical display<br>D200 ASCII display<br>D300 Panel meter display | Display the set device in list | Page 12-17 |

| Image | Function | Page |
|---|---|---|
| Text list<br>Base 2 Base 3 Base 1<br>Run Bit Switch<br>Stop Bit Switch<br>Error Word Lamp | Displays the direct input texts in a list. | Page 12-19 |
| Multiple language input<br>Man. Auto → 手动 自动<br>English Chinese | Input characters or comments in other language. | Page 12-26 |
| Import BMP/JPEG/DXF file<br>BMP file JPEG file DXF file Import | Imports BMP/JPEG/DXF files | Page 11-24 |
| IGES data read<br>IGES data Read | Reads IGES data. | Page 11-34 |
| Import Project<br>Import | Utilizes other project data | Page 12-36 |
| Change object name<br>Touch switch Line A start switch<br>Touch switch Line B start switch | Changes an object name. | Page 7-38 |

# Object Functions (GT Designer2 Version□ Screen Design Manual)

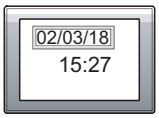
## 1 Lamp/Switch

| Image | Function | Page |
|---|---|---|
| Lamp display<br>Red RUN → Blue STOP | Displays device value via lamp color changing | Page 6-1 |
| Bit switch<br>MO:ON→OFF | Touch it to switch device ON/OFF | Page 6-32 |
| Data set switch<br>D100: 200 → 350 | Touch it to change bit device value | Page 6-61 |

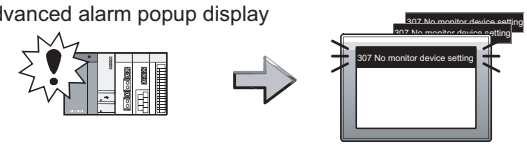
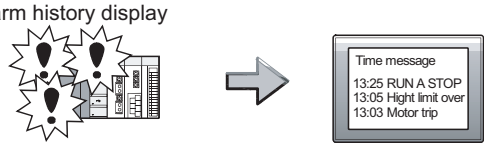
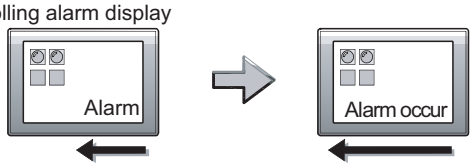
| Image | Function | Page |
|---|---|---|
| Special function switch | Touch it to switch the screen to such as the Utility screen. | Page 6-65 |
| Go to screen switch<br>Base 1 Base 2 | Touch it to switch between the base and window screen | Page 6-75 |
| Change station No. switch<br>Change monitor destination | Touch it to switch the monitored controller station No. | Page 6-87 |
| Key code switch | Used as the key for inputting numerical value/ASCII | Page 6-97 |
| Data change switch | Displays the specified key window at the specified position and displays the cursor on the corresponding object. | Page 6-93 |

## 2 Digit/font display

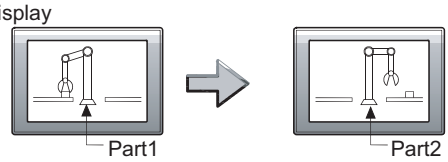
| Image | Function | Page |
|---|---|---|
| Numerical display<br>D100:334 | Displays device value in numerical value | Page 7-1 |
| Numerical input<br>D100:45 | Write value on device | Page 7-1 |
| Data list<br>D100: 55<br>D101:122<br>D102: 34 | Display multipledevice value in list | Page 7-46 |
| ASCII display<br>D10:4241H(BA)<br>D11:4443H(DC)<br>ABCD | Displays device value in text | Page 7-62 |
| ASCII input<br>D10:4241H(BA)<br>D11:4443H(DC) | Inputs text code device | Page 7-62 |

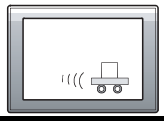
| Image | Function | Page |
|---|---|---|
| Clock display   | Displays hour/minutes, year/month/date | Page 7-86 |
| Comment display | Displays command | Page 7-96 |

## 3 Alarm

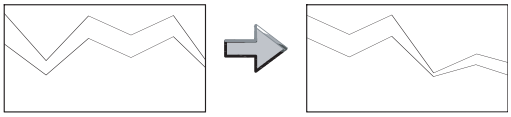
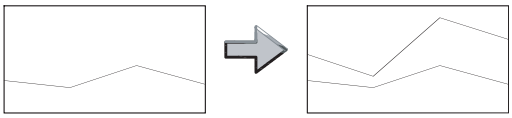
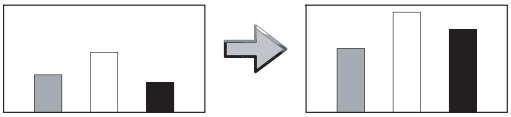
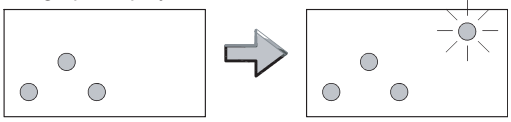
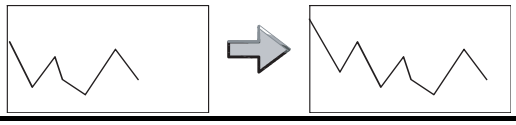
| Image | Function | Page |
|---|---|---|
| Advanced alarm display | Displays a history of GOT errors, communication errors or user-created messages at alarm occurrence.<br>Also displays alarms hierarchically. | Page 8-101 |
| Advanced alarm popup display   | Pops up a GOT error, communication error or user-created message at alarm occurrence. Also displays alarms hierarchically. | Page 8-150 |
| User alarm display | Displays a user-created message at alarm occurrence. | Page 8-186 |
| System alarm display | Displays a GOT error or communication error at alarm occurrence. | Page 8-210 |
| Alarm history display   | Displays a history of user-created messages at alarm occurrence. | Page 8-218 |
| Scrolling alarm display   | Displays alarm in floating. | Page 8-256 |

## 4 Parts

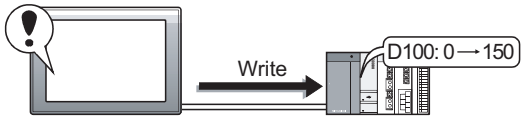
| Image | Function | Page |
|---|---|---|
| Parts display   | Display entered device | Page 9-1 |

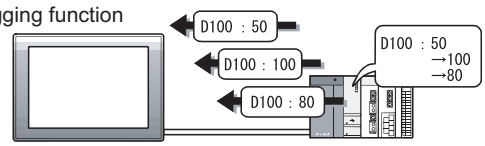
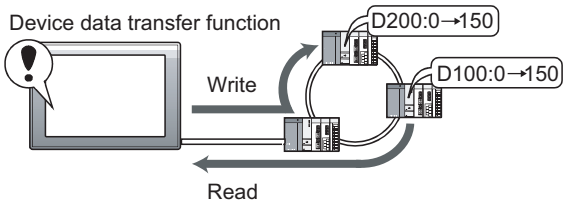
| Image | Function | Page |
|---|---|---|
| Parts movement display  | Displays moving parts | Page 9-39 |

## 5 Graph/Meter

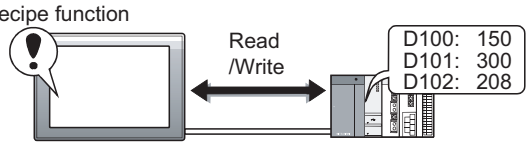
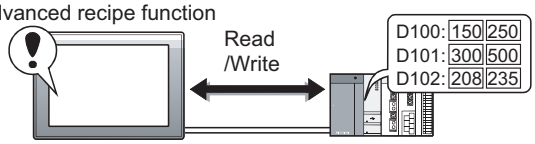
| Image | Function | Page |
|---|---|---|
| Panel meter display | Displays device data on panel meter | Page 10-1 |
| Level display | Displays device data in proportional level | Page 10-16 |
| Trend graph display  | Displays device data in trend graph | Page 10-33 |
| Line graph display  | Displays device data in line graph | Page 10-50 |
| Bar graph display  | Displays device data in bar graph | Page 10-70 |
| Statistics graph display Circle graph Bar graph | Displays device data in statistics graph | Page 10-85 |
| Scatter graph display  | Displays device data in scatter graph | Page 10-99 |
| Historical trend graph display  | Displays the past data having been collected by the logging function in trend graph, starting from the present. | Page 10-125 |

## 6 Trigger → action

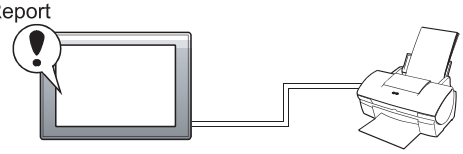
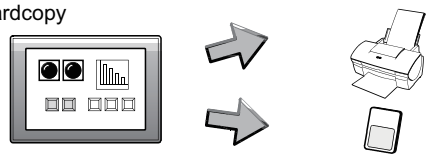
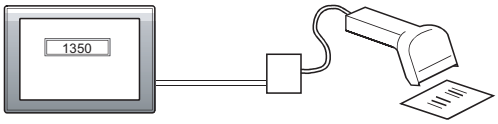
| Image | Function | Page |
|---|---|---|
| Status observation function   | Monitors status of device and write value to device or operates GOT when condition meets | Page 11-1 |

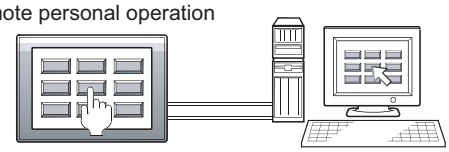
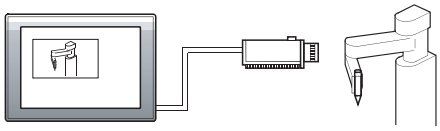
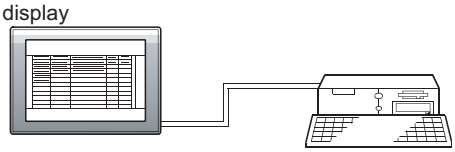
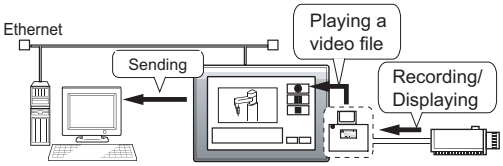
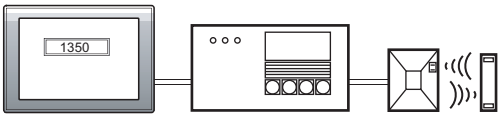
| Image | Function | Page |
|---|---|---|
| Time action function | Outputs the device writing and sound at specified time. | Page 11-11 |
| Logging function   | Collects and stores the device values. | Page 11-20 |
| Device data transfer function   | Reads the device values and writes to the other device when the trigger condition is satisfied. | Page 11-61 |

## 7 Recipe

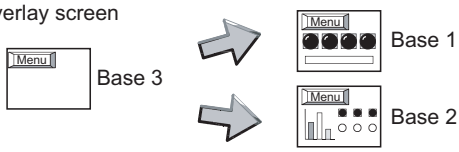
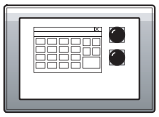
| Image | Function | Page |
|---|---|---|
| Recipe function   | Monitors status of device and read/write device data when condition meets.<br>One value can be set to a device. | Page 12-12 |
| Advanced recipe function   | Monitors status of device and read/write device data when condition meets.<br>Multiple values can be set to a device.<br>The device value can be read/written by the utility. | Page 12-25 |

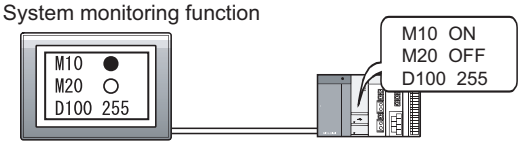
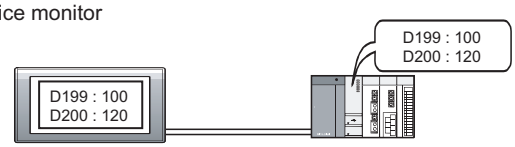
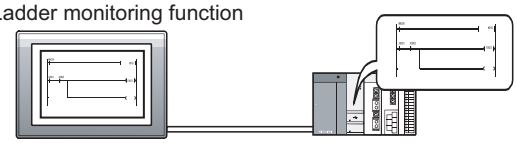
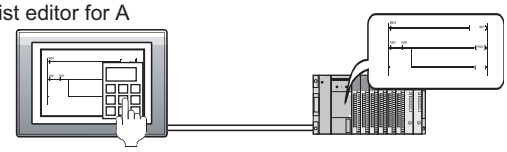
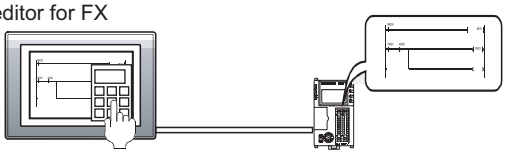
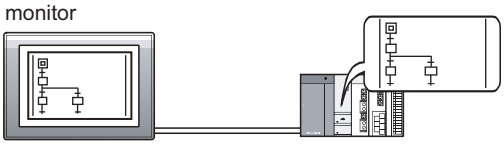
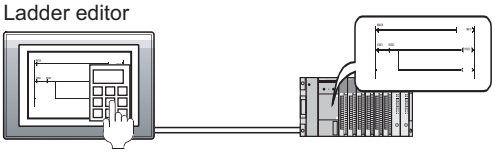
## 8 External input/output

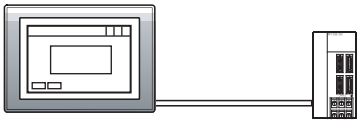
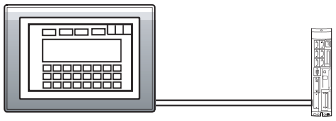
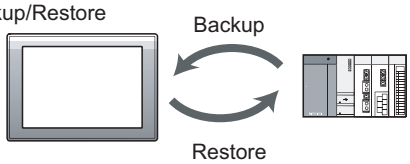
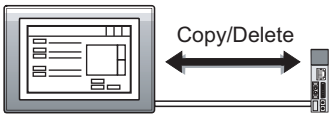
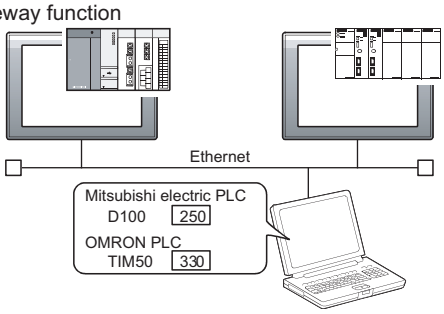
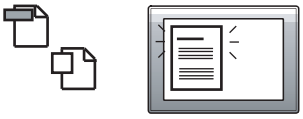
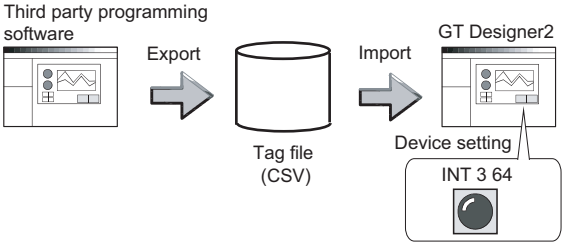
| Image | Function | Page |
|---|---|---|
| Report  | Collects data such as production management and production status and prints the collected data. | Page 13-1 |
| Hardcopy  | Outputs the GOT monitor screen to printer or memory card | Page 13-1 |
| Bar code   | Writes data read by bar code reader to device | Page 13-35 |

| Image | Function | Page |
|---|---|---|
| Remote personal operation  | Operates the mouse pointer on the personal computer by touching the personal computer screen displayed on the GOT using the RGB display. | Page 13-74 |
| Video  | Displays video | Page 13-44 |
| RGB display  | Displays PC screens | Page 13-64 |
| Multimedia function   | Displays or records a video image.<br>Plays a video file.<br>Sends a video file to a personal computer. | Page 13-118 |
| Operation panel | Writes data to a device with the operation panel. | Page 13-82 |
| Sound output | Outputs sounds | Page 13-94 |
| RFID   | Reads and writes IC tag data with RFID readers/writers. | Page 13-99 |

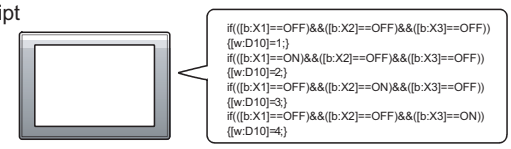
## 9 Others

| Image | Function | Page |
|---|---|---|
| Set overlay screen   | Set overlay screen from other screens | Page 15-1 |
| Test function  | Changes device values on a test window while displaying a monitor screen. | Page 15-59 |

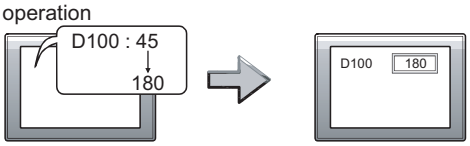
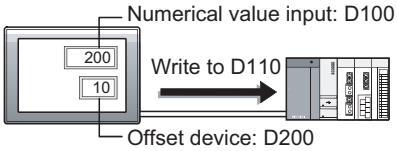
| Image | Function | Page |
|---|---|---|
| System monitoring function   | Displays the operation status of a sequence program. | Page 14-2 |
| Device monitor   | Monitors the device states of the PLC. | Page 14-3 |
| Ladder monitoring function  | Monitors the status of ACPU devices. | Page 14-4 |
| List editor for A  | Reads a sequence program from ACPU and display in list to change instructions. | Page 14-6 |
| List editor for FX  | Reads a sequence program from FXCPU and displays in list to change instructions. | Page 14-7 |
| SFC monitor  | Displays the operation status of a SFC program. | Page 14-16 |
| Ladder editor  | Monitors and edits a sequence program, or changes current device values in the controller by using the GOT without the dedicated software. | Page 14-18 |
| Intelligent module monitor | Monitors the buffer memory of the intelligent function module on the dedicated screen to change the data. | Page 14-8 |
| Network monitor | Monitors the network status of MELSECNET/H, MELSECNET/10 and MELSECNET(II). | Page 14-9 |
| Motion monitor | Performs servo monitoring and parameter setting for motion controller CPU (Q series). | Page 14-10 |

| Image | Function | Page |
|---|---|---|
| Servo amplifier monitor  | Performs various monitoring functions, parameter changes and test run for the servo amplifier where a GOT is connected. | Page 14-11 |
| CNC monitor  | Executes the position display monitor and others of the CNC that is connected to the GOT. The position display monitor and others of the CNC are equivalent to those of the MELDAS dedicated display. | Page 14-12 |
| Backup/Restore   | Backs up and restores data for controllers with the GOT. | Page 14-13 |
| CNC data I/O   | Copies or deletes machining programs, parameters, and others of the CNC that is connected to the GOT. | Page 14-15 |
| Gateway function   | Performs remote monitoring and remote maintenance of production site from the office. | Page 15-62 |
| Document display  | Displays document data on the GOT. | Page 15-39 |
| MES interface | Enables data communications between the controllers and databases in the information system (manufacturing execution system) without a communication gateway. | Page 15-63 |
| Tag import function   | Import a CSV tag file created by the third party programming software to GT Designer2, and set a tag as a device. | Page 15-64 |

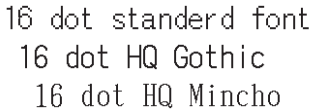
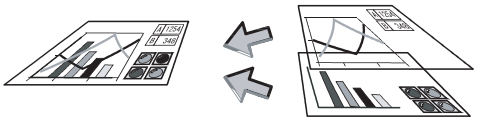
## 10 Script function

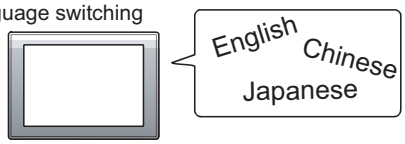
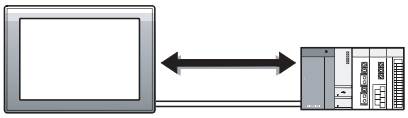
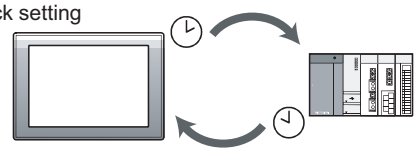
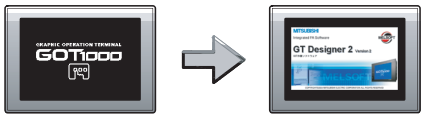
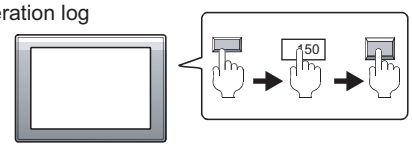
| Image | Function | Page |
|---|---|---|
| Script   | Controls GOT display by scripts | Page 16-1 |

## 11 Object setting

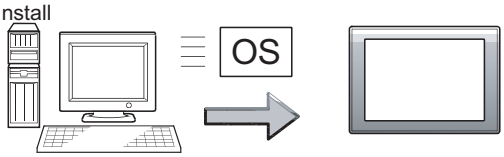
| Image | Function | Page |
|---|---|---|
| Data operation   | Operates device values by expression and enables objects using the operated value | Page 5-74 |
| Offset   | Accumulates the offset device value in monitor device address and monitor. | Page 5-80 |
| Security | Restricts the password users | Page 5-84 |

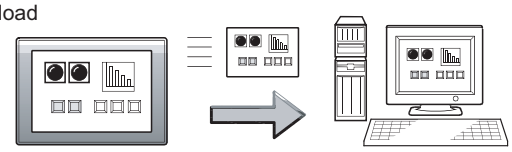
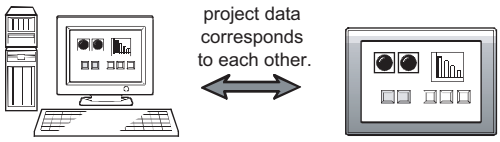
# Other Functions (GT Designer2 Version□ Screen Design Manual)

| Image | Function | Page |
|---|---|---|
| Font   | Displays a text in various fonts. | Page 2-20 |
| Superimposition  | Superimposes figures and objects. | Page 2-80 |
| Multi-channel function | Monitors multiple controllers. | Page 2-194 |

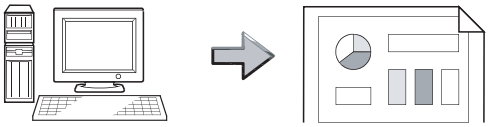
| Image | Function | Page |
|---|---|---|
| Language switching   | Switches between multiple languages. | Page 3-27 |
| Communication settings  | Makes the communication settings of the controller. | Page 3-100 |
| GOT Setup | Makes the settings relevant to GOT display and operation. | Page 3-159 |
| Clock setting  | Sets the clock used by the GOT. | Page 3-168 |
| Startup logo   | Sets the screen (BMP file) to be displayed at GOT startup. | Page 3-169 |
| Dialog window | Customizes the GOT system messages. | Page 3-175 |
| Operation log   | Saves the user's operation performed at the GOT as an operation history. | Page 15-13 |

## Data Transmission (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Install   | Transfers OS from PC to the GOT. | Page 8-73 |
| Download | Transimits monitor screen data from PC to GOT | Page 8-80 |

| Image | Function | Page |
|---|---|---|
| Upload  | Transmits monitor screen data from GOT to PC | Page 8-93 |
| Verify   | Check the project data displayed on the GT Designer2 against the project data stored in the GOT. | Page 8-87 |

## Print (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Print  | Prints the project information (screen image, title list, etc.). | Page 9-1 |

# MANUALS

The following table lists the manual relevant to this product.
You can order it as necessary.
Stored in the GT Works2/GT Designer2 in PDF format.

Related Manuals

| Manual Name | Manual Number (Type code) |
|---|---|
| GT16 User's Manual (Hardware)<br>Describes the GT16 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>(Sold separately) | SH-080928ENG<br>(1D7MD3) |
| GT16 User's Manual (Basic Utility)<br>Describes the GT16 utility-relevant contents, including the screen settings, operation method settings, program/data management, and self check function.<br>(Sold separately) | SH-080929ENG<br>(1D7MD4) |
| GT15 User's Manual<br>-Describes the GT15 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT15 functions, including the utility.<br>(Sold separately) | SH-080528ENG<br>(1D7M23) |
| GT11 User's Manual<br>-Describes the GT11 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT11 functions, including the utility.<br>(Sold separately) | JY997D17501<br>(09R815) |
| GT11 Handy GOT User's Manual<br>-Describes the Handy GOT hardware-relevant contents, including the system configurations, specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the Handy GOT functions, including the utility, and how to make cables.<br>(Sold separately) | JY997D20101<br>JY997D20102<br>(09R817) |
| GT10 User's Manual<br>-Describes the GT10 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT10 functions, including the utility.<br>(Sold separately) | JY997D24701<br>(09R819) |
| GT SoftGOT1000 Operating Manual<br>Describes the screen configuration, functions and using method of GT SoftGOT1000.<br>(Sold separately) | SH-080602ENG<br>(1D7M48) |
| GT Designer2 Version2 Basic Operation/Data Transfer Manual<br>Describes methods of the GOT1000 series installation operation, basic operation for drawing and transmitting data to GOT1000 series<br>(Sold separately) | SH-080529ENG<br>(1D7M24) |

(Continued to next page)

| Manual Name | Manual Number (Type code) |
|---|---|
| GOT1000 Series Connection Manual (1/3, 2/3, 3/3)<br>Describes system configurations of the connection method applicable to GOT1000 series and cable creation<br>(Sold separately) | SH-080532ENG<br>(1D7M26) |
| GOT1000 Series Extended / Option Functions Manual<br>Describes extended functions and option functions applicable to GOT series.<br>(Sold separately) | SH-080544ENG<br>(1D7M32) |
| GOT1000 Series Gateway Functions Manual<br>Describes specifications, system configurations and setting methods of the gateway functions.<br>(Sold separately) | SH-080545ENG<br>(1D7M33) |
| GOT1000 Series MES Interface Function Manual<br>Describes the specifications, system configurations, and setting method of GT MES interface function.<br>(Sold separately) | SH-080654ENG<br>(1D7M63) |

# ABBREVIATIONS AND GENERIC TERMS

Abbreviations and generic terms used in this manual are as follows:

## ■ GOT

| Abbreviations and generic terms | | | Description |
|---|---|---|---|
| GOT1000 Series | GT SoftGOT1000 | | Abbreviation of GT SoftGOT1000 |
| | GT1695 | GT1695M-X | Abbreviation of GT1695M-XTBA, GT1695M-XTBD |
| | GT1685 | GT1685M-S | Abbreviation of GT1685M-STBA, GT1685M-STBD |
| | GT1675 | GT1675M-S | Abbreviation of GT1675M-STBA, GT1675M-STBD |
| | | GT1675M-V | Abbreviation of GT1675M-VTBA, GT1675M-VTBD |
| | GT1665 | GT1665M-S | Abbreviation of GT1665M-STBA, GT1665M-STBD |
| | | GT1665M-V | Abbreviation of GT1665M-VTBA, GT1665M-VTBD |
| | GT16□□, GT16 | | Abbreviation of GT1695,GT1685, GT1675, GT1665 |
| | GT1595 | GT1595-X | Abbreviation of GT1595-XTBA, GT1595-XTBD |
| | GT1585 | GT1585V-S | Abbreviation of GT1585V-STBA, GT1585V-STBD |
| | | GT1585-S | Abbreviation of GT1585-STBA, GT1585-STBD |
| | GT157□ | GT1575V-S | Abbreviation of GT1575V-STBA, GT1575V-STBD |
| | | GT1575-S | Abbreviation of GT1575-STBA, GT1575-STBD |
| | | GT1575-V | Abbreviation of GT1575-VTBA, GT1575-VTBD |
| | | GT1575-VN | Abbreviation of GT1575-VNBA, GT1575-VNBD |
| | | GT1572-VN | Abbreviation of GT1572-VNBA, GT1572-VNBD |
| | GT156□ | GT1565-V | Abbreviation of GT1565-VTBA, GT1565-VTBD |
| | | GT1562-VN | Abbreviation of GT1562-VNBA, GT1562-VNBD |
| | GT155□ | GT1555-V | Abbreviation of GT1555-VTBD |
| | | GT1555-Q | Abbreviation of GT1555-QTBD, GT1555-QSBD |
| | | GT1550-Q | Abbreviation of GT1550-QLBD |
| | GT15□□, GT15 | | Abbreviation of GT1595, GT1585, GT157□, GT156□, GT155□ |
| | GT115□ | GT1155-Q | Abbreviation of GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA, GT1155-QTBD, GT1155-QSBD |
| | | GT1150-Q | Abbreviation of GT1150-QLBDQ, GT1150-QLBDA, GT1150-QLBD |
| | Handy GOT | GT1155HS-Q | Abbreviation of GT1155HS-QSBD |
| | | GT1150HS-Q | Abbreviation of GT1150HS-QLBD |
| | GT11□□, GT11 | | Abbreviation of GT1155-Q, GT1150-Q, GT11 Handy GOT |
| | GT105□ | GT1055-Q | Abbreviation of GT1055-QSBD |
| | | GT1050-Q | Abbreviation of GT1050-QBBD |
| | GT104□ | GT1045-Q | Abbreviation of GT1045-QSBD |
| | | GT1040-Q | Abbreviation of GT1040-QBBD |
| | GT1030 | | Abbreviation of GT1030-LBD, GT1030-LBD2, GT1030-LBDW, GT1030-LBDW2 |
| | GT1020 | | Abbreviation of GT1020-LBD, GT1020-LBD2, GT1020-LBL, GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW |
| | GT10□□, GT10 | | Abbreviation of GT105□, GT104□, GT1030, GT1020 |
| GOT900 Series | | | Abbreviation of GOT-A900 series, GOT-F900 series |
| GOT800 Series | | | Abbreviation of GOT-800 series |

## ■ Communication unit

| Abbreviations and generic terms | Description |
|---|---|
| Bus connection unit | GT15-QBUS, GT15-QBUS2, GT15-ABUS, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L |
| Serial communication unit | GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE |
| RS-422 conversion unit | GT15-RS2T4-9P, GT15-RS2T4-25P |
| Ethernet communication unit | GT15-J71E71-100 |
| MELSECNET/H communication unit | GT15-J71LP23-25, GT15-J71BR13 |
| MELSECNET/10 communication unit | GT15-75J71LP23-Z*1, GT15-75J71BR13-Z*2 |
| CC-Link IE controller network communication unit | GT15-J71GP23-SX |
| CC-Link communication unit | GT15-J61BT13, GT15-75J61BT13-Z*3 |
| Interface converter unit | GT15-75IF900 |
| Serial multi-drop connection unit | GT01-RS4-M |
| Connection Conversion Adapter | GT10-9PT5S |

*1 A9GT-QJ71LP23 + GT15-75IF900 set
*2 A9GT-QJ71BR13 + GT15-75IF900 set
*3 A8GT-J61BT13 + GT15-75IF900 set

## ■ Option unit

| Abbreviations and generic terms | | Description |
|---|---|---|
| Printer unit | | GT15-PRN |
| Video/RGB unit | Video input unit | GT16M-V4, GT15V-75V4 |
| | RGB input unit | GT16M-R2, GT15V-75R1 |
| | Video/RGB input unit | GT16M-V4R1, GT15V-75V4R1 |
| | RGB output unit | GT16M-ROUT, GT15V-75ROUT |
| Multimedia unit | | GT16M-MMR |
| CF card unit | | GT15-CFCD |
| CF card extension unit*1 | | GT15-CFEX-C08SET |
| External I/O unit | | GT15-DIO, GT15-DIOR |
| Sound output unit | | GT15-SOUT |
| Fingerprint unit | | GT15-80FPA |

*1 GT15-CFEX + GT15-CFEXIF + GT15-C08CF set.

## ■ Option

| Abbreviations and generic terms | | Description | | | | |
|---|---|---|---|---|---|---|
| Memory card | CF card | GT05-MEM-16MC, GT05-MEM-256MC, | GT05-MEM-32MC, GT05-MEM-512MC, | GT05-MEM-64MC, GT05-MEM-1GC, | GT05-MEM-128MC, GT05-MEM-2GC | |
| Memory card adaptor | | GT05-MEM-ADPC | | | | |
| Option function board | | GT16-MESB, GT15-QFNB32M, | GT15-FNB, GT15-QFNB48M, | GT15-QFNB, GT15-MESB48M, | GT15-QFNB16M, GT11-50FNB | |
| Battery | | GT15-BAT, | GT11-50BAT | | | |
| Protective Sheet | For GT16 | GT16-90PSCB, GT16-80PSCB, GT16-70PSCB, GT16-60PSCB, | GT16-90PSGB, GT16-80PSGB, GT16-70PSGB, GT16-60PSGB, | GT16-90PSCW, GT16-80PSCW, GT16-70PSCW, GT16-60PSCW, | GT16-90PSGW, GT16-80PSGW, GT16-70PSGW, GT16-60PSGW | |
| | For GT15 | GT15-90PSCB, GT15-80PSCB, GT15-70PSCB, GT15-60PSCB, GT15-50PSCB, | GT15-90PSGB, GT15-80PSGB, GT15-70PSGB, GT15-60PSGB, GT15-50PSGB, | GT15-90PSCW, GT15-80PSCW, GT15-70PSCW, GT15-60PSCW, GT15-50PSCW, | GT15-90PSGW, GT15-80PSGW, GT15-70PSGW, GT15-60PSGW, GT15-50PSGW | |
| | For GT11 | GT11-50PSCB, GT11H-50PSC | GT11-50PSGB, | GT11-50PSCW, | GT11-50PSGW, | |
| | For GT10 | GT10-50PSCB, GT10-40PSCB, GT10-30PSCB, GT10-20PSCB, | GT10-50PSGB, GT10-40PSGB, GT10-30PSGB, GT10-20PSGB, | GT10-50PSCW, GT10-40PSCW, GT10-30PSCW, GT10-20PSCW, | GT10-50PSGW, GT10-40PSGW, GT10-30PSGW, GT10-20PSGW | |
| Protective cover for oil | | GT05-90PCO, GT05-50PCO | GT05-80PCO, | GT05-70PCO, | GT05-60PCO, | |
| USB environmental protection cover | | GT16-UCOV, | GT15-UCOV, | GT11-50UCOV | | |
| Stand | | GT15-90STAND, GT05-50STAND | GT15-80STAND, | GT15-70STAND, | A9GT-50STAND, | |
| Attachment | | GT15-70ATT-98, GT15-60ATT-87, | GT15-70ATT-87, GT15-60ATT-77, | GT15-60ATT-97, GT15-50ATT-95W, | GT15-60ATT-96, GT15-50ATT-85 | |
| Backlight | | GT16-90XLTT, GT16-70SLTT, GT15-70SLTT, GT15-60VLTN | GT16-80SLTT, GT16-70VLTT, GT15-70VLTT, | GT15-90XLTT, GT16-60SLTT, GT15-70VLTN, | GT15-80SLTT, GT16-60VLTT, GT15-60VLTT, | |
| Multi-color display board | | GT15-XHNB, | GT15-VHNB | | | |
| Connector conversion box | | GT11H-CNB-37S | | | | |
| Emergency stop sw guard cover | | GT11H-50ESCOV | | | | |
| Memory loader | | GT10-LDR | | | | |
| Memory board | | GT10-50FMB | | | | |

## ■ Software

| Abbreviations and generic terms | Description |
|---|---|
| GT Works2 Version□ | SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV |
| GT Designer2 Version□ | SW□D5C-GTD2-E, SW□D5C-GTD2-EV |
| GT Designer2 | Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series |
| GT Converter2 | Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series |
| GT Simulator2 | Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series |
| GT SoftGOT1000 | Abbreviation of monitoring software GT SoftGOT1000 |
| GT SoftGOT2 | Abbreviation of monitoring software GT SoftGOT2 |
| GX Developer | Abbreviation of SW□D5C-GPPW-E(-EV)/SW□D5F-GPPW-E type software package |
| GX Simulator | Abbreviation of SW□D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions) |
| Document Converter | Abbreviation of document data conversion software Document Converter for GOT1000 series |
| PX Developer | Abbreviation of SW□D5C-FBDQ-E type FBD software package for process control |

## License key (for GT SoftGOT1000)

| Abbreviations and generic terms | Description |
|---|---|
| License | GT15-SGTKEY-U, GT15-SGTKEY-P |

## License key (for GT SoftGOT2)

| Abbreviations and generic terms | Description |
|---|---|
| License key | A9GTSOFT-LKEY-P (For DOS/V PC) |
| License key FD | SW5D5F-SGLKEY-J (For PC CPU module) |

## Others

| Abbreviations and generic terms | | Description |
|---|---|---|
| OMRON PLC | | Abbreviation of PLC manufactured by OMRON Corporation |
| KEYENCE PLC | | Abbreviation of PLC manufactured by KEYENCE CORPORATION |
| KOYO EI PLC | | Abbreviation of PLC manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD. |
| SHARP PLC | | Abbreviation of PLC manufactured by Sharp Manufacturing Systems Corporation |
| JTEKT PLC | | Abbreviation of PLC manufactured by JTEKT Corporation |
| TOSHIBA PLC | | Abbreviation of PLC manufactured by TOSHIBA CORPORATION |
| TOSHIBA MACHINE PLC | | Abbreviation of PLC manufactured by TOSHIBA MACHINE CO., LTD. |
| HITACHI IES PLC | | Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd. |
| HITACHI PLC | | Abbreviation of PLC manufactured by Hitachi, Ltd. |
| FUJI FA PLC | | Abbreviation of PLC manufactured by Fuji Electric FA Components & Systems Co., Ltd. |
| PANASONIC PLC | | Abbreviation of PLC manufactured by Panasonic Electric Works Co., Ltd. |
| YASKAWA PLC | | Abbreviation of PLC manufactured by YASKAWA Electric Corporation |
| YOKOGAWA PLC | | Abbreviation of PLC manufactured by Yokogawa Electric Corporation |
| ALLEN-BRADLEY PLC | | Abbreviation of Allen-Bradley PLC manufactured by Rockwell Automation, Inc. |
| GE FANUC PLC | | Abbreviation of PLC manufactured by GE Fanuc Automation Corporation |
| LS IS PLC | | Abbreviation of PLC manufactured by LS Industrial Systems Co., Ltd. |
| SCHNEIDER PLC | | Abbreviation of PLC manufactured by Schneider Electric SA |
| SIEMENS PLC | | Abbreviation of PLC manufactured by Siemens AG |
| Temperature controller | OMRON temperature controller | Abbreviation of temperature controller manufactured by OMRON Corporation |
| | SHINKO indicating controller | Abbreviation of temperature controller manufactured by Shinko Technos Co., Ltd. |
| | CHINO controller | Abbreviation of temperature controller manufactured by CHINO CORPORATION |
| | FUJI SYS temperature controller | Abbreviation of temperature controller manufactured by Fuji Electric Systems Co., Ltd. |
| | YAMATAKE temperature controller | Abbreviation of temperature controller manufactured by Yamatake Corporation |
| | YOKOGAWA temperature controller | Abbreviation of temperature controller manufactured by Yokogawa Electric Corporation |
| | RKC temperature controller | Abbreviation of temperature controller manufactured by RKC INSTRUMENT INC. |
| PC CPU module | | Abbreviation of PC CPU Unit manufactured by CONTEC CO., LTD |
| GOT (server) | | Abbreviation of GOTs that use the server function |
| GOT (client) | | Abbreviation of GOTs that use the client function |
| Windows® font | | Abbreviation of TrueType font and OpenType font available for Windows®<br>(Differs from the True Type fonts settable with GT Designer2) |
| Intelligent function module | | Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit. |
| MODBUS® /TCP | | Generic term for the protocol designed to use MODBUS® protocol messages on a TCP/IP network. |

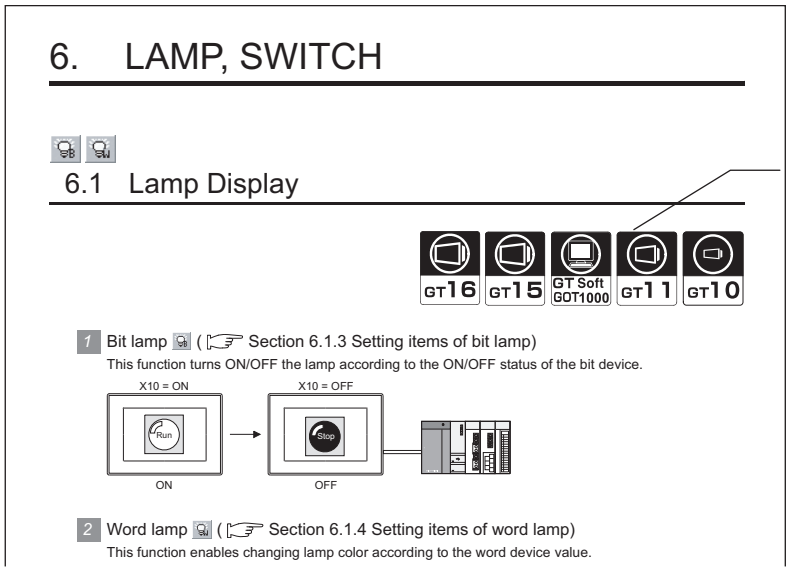
# HOW TO USE THIS MANUAL

## 1 Functions

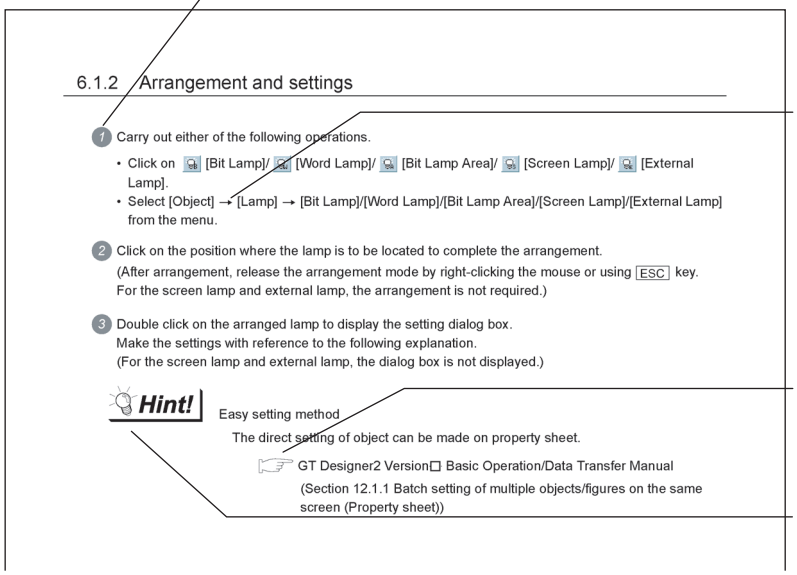
This manual describes functions available for the GT Designer2 Version2.96A.
For the added functions by the product version upgrade, refer to the list of functions added by GT Desiger2 version upgrade in Appendices.
In addition, GT Designer2 Version2.98C supports the multimedia function of recording and playing video files with sound, and GT Works3 Version1.14Q supports the multidrop connection on GT16 and GT15.

## 2 Symbols

Following symbols are used in this manual




Shows functions applicable to GT16, GT15, GT SoftGOT1000, GT11, GT10.
" ○ ", Applicable
" × ", N / A




1 → 2 → 3 · · · ·
Indicates the operation steps.

Brackets used for the menu and items differ.

[ ] :Refers to an item displayed on the computer screen or the GOT screen.
□ :Refers to a button displayed on the computer screen or the GOT screen, or a key of the computer keyboard.

Show the items including detailed explanation (manual and the chapter, section, item).

**Point** Refers to information required for operation.

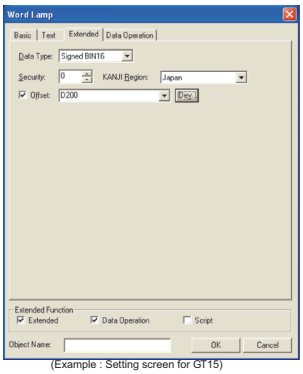
**Hint!** Refers to information useful for operation.

**Remark** Refers to supplementary explanations.

* The above is different from the actual page, as it is provided for explanation only.

3 Extended tab

Set the data type, security level and offset value of the monitor device.
Check [Extended] at the bottom of this dialog box to display this tab.




(Example : Setting screen for GT15)

Basic | Text | **Extended** | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN16 : Lamp display is executed by a signed 16-bit binary value of a word device.<br>Unsigned BIN16 : Lamp display is executed by an unsigned 16-bit binary value of a word device.<br>BCD16 : Lamp display is executed by a 16-bit BCD (Binary-Coded Decimal) value of a word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot standard • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Check this item when executing monitor by switching between multiple devices. | — — |

Shows functions applicable to each GOT.
Each icon shows each GOT model below. The colors of the icons show if the functions are enabled or disabled for each model.

Icon types
16: GT16
15: GT15
SG: GT SoftGOT1000
11: GT11
10: GT10

Icon colors
Black: Enabled
Gray: Disabled

* The above is different from the actual page, as it is provided for explanation only.

# Memo

# 1. OVERVIEW

## 1.1 Overview

This manual explains the GT Designer2 common setting, object function specifications, object setting/arrangement.
When applying the following program examples to the actual system, make sure to examine the applicability and confirm that it will not cause system control problems.

### 1 GT Designer2-relevant manuals

The following manuals are relevant to the GOT1000 series.
Refer to the corresponding manual according to needs.

(1) Installing software → Drawing → Data transfer
For operations from creating project data to transferring data to GOT, refer to the following manuals.

| Purpose | GT Designer2 Version □ Basic Operation/Data Transfer Manual*1 | GT Designer2 Version □ Screen Design Manual*1 |
|---|---|---|
| Installing product on PC | Detailed | |
| Creating projects | Detailed | |
| Creating screens | Detailed | |
| Drawing figures | Detailed | |
| Making common settings | Overview | Detailed |
| Placing/setting objects | Overview | Detailed |
| Transferring data to GOT | Detailed | |

*1 Stored in the GT Works2/GT Designer2 in PDF format.

(2) Installing a GOT → Connecting with a controller

For the operations from installing a GOT to communicating with a controller, refer to the following manuals.

Stored in the GT Works2/GT Designer2 in PDF format.

| | (Included) | | | |
|---|---|---|---|---|
| Purpose | GT16 General Description<br>GT15 General Description<br>GT11 General Description<br>GT10 General Description | GT16 User's Manual (Hardware)*1<br>GT15 User's Manual*1<br>GT11 User's Manual*1<br>GT10 User's Manual*1 | GT16 User's Manual (Basic Utility)*1<br>GT15 User's Manual*1<br>GT11 User's Manual*1<br>GT10 User's Manual*1 | GOT1000 Series Connection Manual*1 |
| Confirming part names and specifications of the GOT | Overview | Detailed | | |
| Confirming the GOT installation method | Overview | Detailed | | |
| Confirming the mounting method for communication units or option devices | | Detailed | | Overview |
| Confirming the controller connection method | | | | Detailed |
| Confirming the utility operation method | | | Detailed | |
| Confirming error codes (system alarm) displayed on the GOT | | Detailed | | |

*1 Stored in the GT Works2/GT Designer2 in PDF format.

(3) Other manuals

The following manuals are also available.

The following manuals are stored in the GT Works2/GT Designer2 in PDF format.

(a) GOT1000 Series Extended/Option Functions Manual

Describes functions for more efficient debugging as the ladder monitor function, system monitor function and MELSEC-A list editor function.

(b) GOT1000 Series Gateway Functions Manual

Describes how to use the gateway function.

(c) GT SoftGOT1000 Version □ Operating Manual

Describes how to use the GT SoftGOT1000 and various functions.

(d) GT Simulator2 Version □ Operating Manual

Describes how to simulate the created project data with the GT Simulator2.

(e) GT Converter2 Version □ Operating Manual

Describes how to use the GT Converter2.

(f) GOT1000 Series MES Interface Function Manual

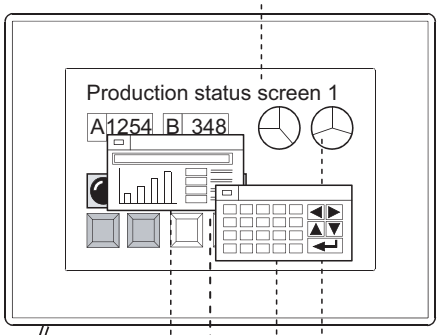
Describes how to use the MES interface function.

# Memo

# 2. SPECIFICATIONS

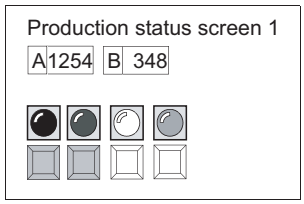
## 2.1 Type/Number of Creatable Screens

This section explains the type and number of screens that can be created for the GOT.
The screen types and the number of screens that can be created vary according to the GOT used.




### Base screen (☞ Section 2.1.1 Base screen specifications)

The basic screen for screen display on GOT.

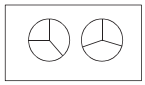



### Window screen (☞ Section 2.1.2 Window screen specifications)

A screen displayed over the base screen.
The created window screen can be displayed using either of the following methods.
For the number of screens that can be displayed using each method, refer to the following. (☞ Section 2.1.3 Whole screen specifications)

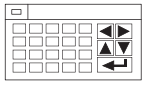
#### Overlap window

A pop-up window that appears over the base screen.
This type of window can be moved and closed manually.
The number of screens that can be displayed varies according to the GOT.



#### Superimposed window

A window composited on the base screen.
If superimposed window is switched, the corresponding part of the base screen will be changed.



#### Key window

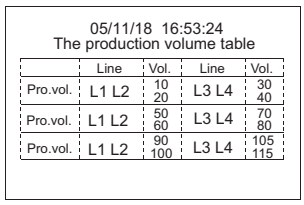
A pop-up window displayed over the base screen when inputting (e.g. Numerical input). There are two types of key window: default key window and user-created key window.

#### Dialog window

A window displayed at the top front of the screen.
It displays messages such as system errors, warning messages.
The dialog window can be displayed instead of the system messages displayed by GOT.

### Report screen (☞ Section 13.1 Report Function)

A screen for data output and format creation using report function.



05/11/18 16:53:24
The production volume table

| | Line | Vol. | Line | Vol. |
|---|---|---|---|---|
| Pro.vol. | L1 L2 | 10<br>20 | L3 L4 | 30<br>40 |
| Pro.vol. | L1 L2 | 50<br>60 | L3 L4 | 70<br>80 |
| Pro.vol. | L1 L2 | 90<br>100 | L3 L4 | 105<br>115 |

## 2.1.1 Base screen specifications

The following table describes the base screen specifications.

| GOT type | Screen size (W × H dots) | Number of screens can be set | Number of screens can be registered |
|---|---|---|---|
| GT SoftGOT1000 (Resolution Specification)(XxY)*1 | 1920 to 640 × 1200 to 480 | 4096 | 1 to 32767 |
| GT SoftGOT1000(1600 × 1200) | 1600 × 1200 | | |
| GT SoftGOT1000(1280 × 1024) | 1280 × 1024 | | |
| GT1695M-X/GT1595-X/ GT SoftGOT1000(1024 × 768) | 1024 × 768 | | |
| GT1685M-S/GT1675M-S/GT1665M-S/ GT1585V-S/GT1585-S/GT1575V-S/ GT1575-S/GT SoftGOT1000(800 × 600) | 800 × 600 | | |
| GT1675M-V/GT1665M-V/GT1575-V/ GT1575-VN/GT1572-VN/GT1565-V/ GT1562-VN/GT1555-V/ GT SoftGOT1000(640 × 480) | 640 × 480 | | |
| GT1555-Q/GT1550-Q/ | 320 × 240 | | |
| GT1155-Q/GT1150-Q | Horizontal display: 320 × 240 Vertical display: 240 × 320 | | |
| GT1055-Q/GT1050-Q/GT1045-Q/ GT1040-Q | Horizontal display: 320 × 240 Vertical display: 240 × 320 | 1024 | |
| GT1030 | Horizontal display: 288 × 96 Vertical display: 96 × 288 | | |
| GT1020 | Horizontal display: 160 × 64 Vertical display: 64 × 160 | | |

*1 X and Y are resolution values for GT SoftGOT1000 set by the user.

## 2.1.2 Window screen specifications

The following table describes the window screen specifications.

| GOT type | Screen size (W × H dots)*1*2 | | Number of screens can be set | Number of screens can be registered | Initial value (W × H dots) |
|---|---|---|---|---|---|
| | Maximum | Minimum | | | |
| GT SoftGOT1000 (Resolution Specification)(XxY)*3 | 1920 × 1200 "1918 × 1183" | 16 × 2 | 1024 | 1 to 32767 | 318 × 176 |
| GT SoftGOT1000(1600 × 1200) | 1600 × 1200 "1598 × 1183" | | | | |
| GT SoftGOT1000(1280 × 1024) | 1280 × 1024 "1278 × 1007" | | | | |
| GT1695M-X/GT1595-X/ GT SoftGOT1000(1024 × 768) | 1024 × 768 "1022 × 751" | | | | |
| GT1685M-S/GT1675M-S/GT1665M-S/ GT1585V-S/GT1585-S/GT1575V-S/ GT1575-S/GT SoftGOT1000(800 × 600) | 800 × 600 "798 × 583" | | | | |
| GT1675M-V/GT1665M-V/GT1575-V/ GT1575-VN/GT1572-VN/GT1565-V/ GT1562-VN/GT1555-V/ GT SoftGOT1000(640 × 480) | 640 × 480 "638 × 463" | | | | |
| GT1555-Q/GT1550-Q | 320 × 240 "318 × 223" | | | | 190 × 126 |
| GT1155-Q/GT1150-Q | Horizontal display: 320 × 240 "318 × 223" Vertical display: 240 × 320 "238 × 303" | | | | Horizontal display: 190 × 126 Vertical display: 126 × 190 |
| GT1055-Q/GT1050-Q/GT1045-Q/ GT1040-Q | Horizontal display: 320 × 240 "320 × 224" Vertical display: 240 × 320 "240 × 304" | 16 × 16 | 512 | 1 to 32767 | Horizontal display: 128 × 64 Vertical display: 64 × 128 |
| GT1030 | Horizontal display: 288 × 96 "288 × 80" Vertical display: 96 × 288 "96 × 272" | | | | |
| GT1020 | Horizontal display: 160 × 64 "160 × 48" Vertical display: 64 × 160 "64 × 144" | | | | |

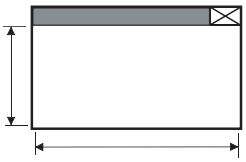
*1 The values in " " (quotation marks) in the above table indicates the screen sizes when a close key and a movement bar are displayed on the overlap window.

For details of *2, refer to the following.

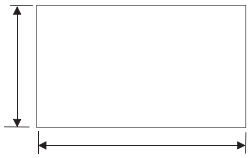
*3 X and Y are resolution values for GT SoftGOT1000 set by the user.

The screen size (height and width) is indicated by the arrows.

Close key and move bar provided



Close key and move bar not provided



*2 Size of overlap windows and user-created key windows

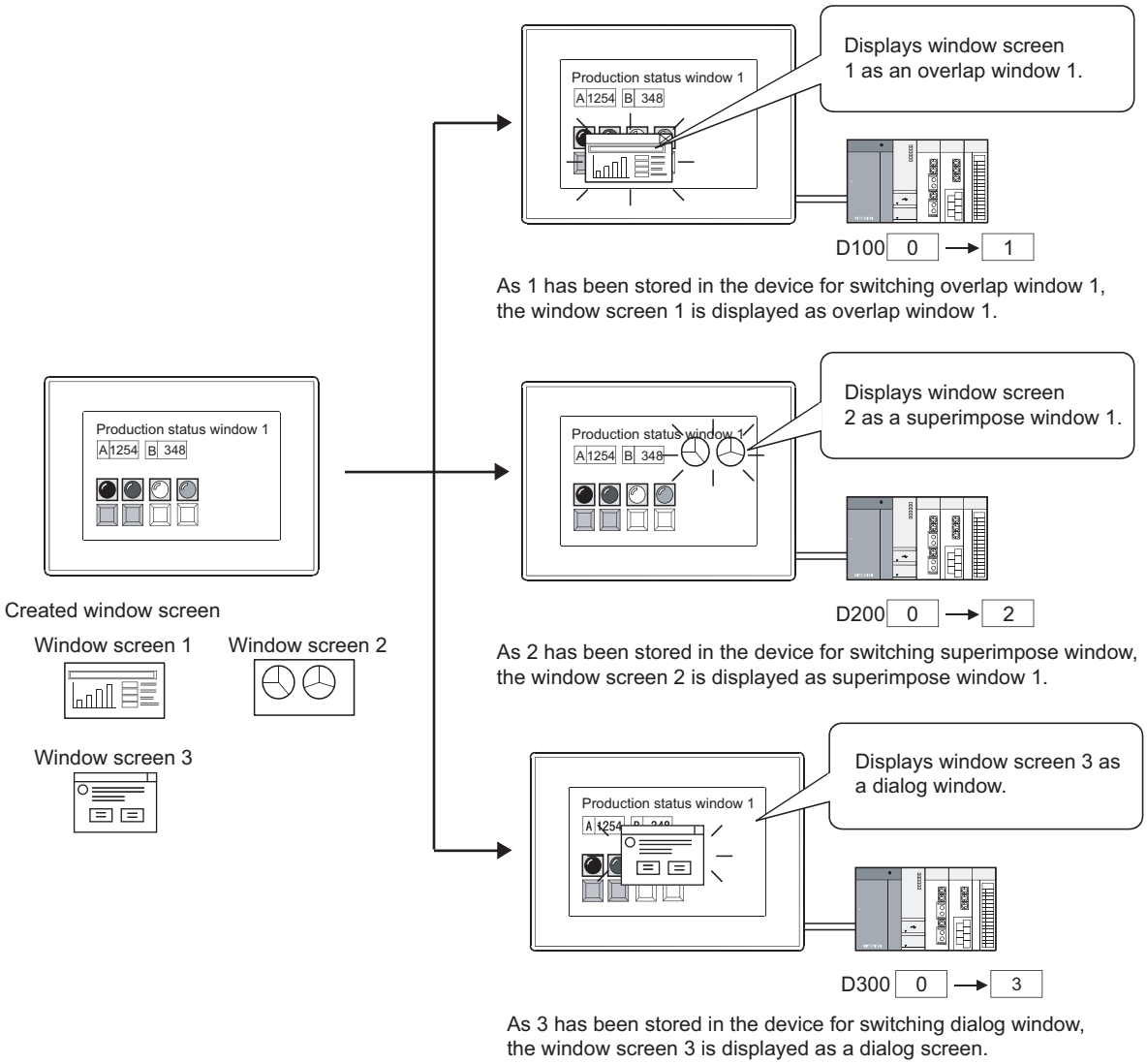
Set 24 dots or more for the width of an overlap window (with the movement key and close key) or a user-created key window.
When the width of a window is 23 dots or less, the close key cannot be used.
For settings for displaying the close key and movement key, refer to the following.

☞ Section 3.2.3 Setting items

## 1 Methods of displaying window screen

(1) Methods of displaying Overlap window, superimpose window and dialog window
The created window screens will be displayed when the corresponding window screen No. is stored in the screen switching device for the window screen (overlap window, superimposed window, dialog window).

Example: Relation between created window screen and device for switching window screen.
Screen switching device for overlap window 1 : D100
Screen switching device for superimposed window : D200
Screen switching device for dialog window : D300

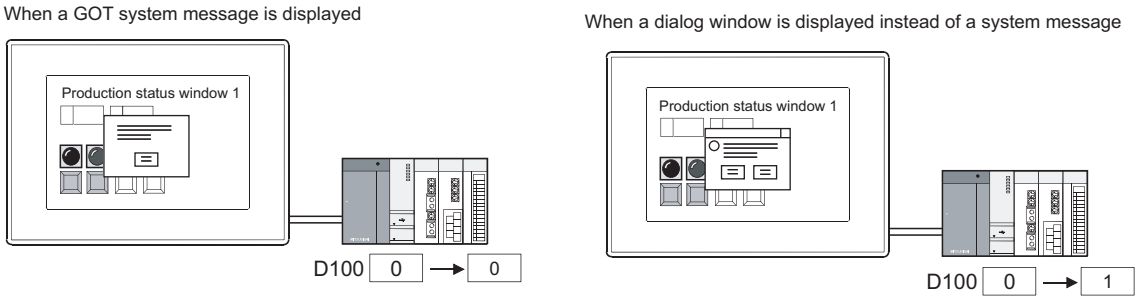



When erasing a window screen, store 0 to the device for screen switching. An overlap window or a dialog window can be erased by touching the close key, if it is displayed on the window.(0 will be stored to the device for screen switching.)

☞ Section 3.2 Switching Screen Device Setting

(a) When a GOT system message is changed to dialog window

When a dialog window is displayed instead of a GOT system message, the window screen number of the window screen that is displayed as the dialog window is stored to the screen switching device.




For the procedure for displaying a dialog window instead of a GOT system message, refer to the following.

Section 3.12 Customizing Message to be Displayed by GOT (Dialog Window)

(2) Methods of displaying key window

A key window is displayed by touching the numerical/ASCII input function objects.

Section 4.5 Key Window

## 2 Display position of window screen

Set the display position using GT Designer2.

(Display position setting is not allowed for a dialog window. (A dialog screen is displayed at the center of a screen.))

When a display position is not set, a window screen is displayed at the position indicated below.

- Overlap window and superimpose window: At the center of a base screen
- Key window : At the lower right area of a base screen

The following shows the procedure for setting the display position of a window screen.

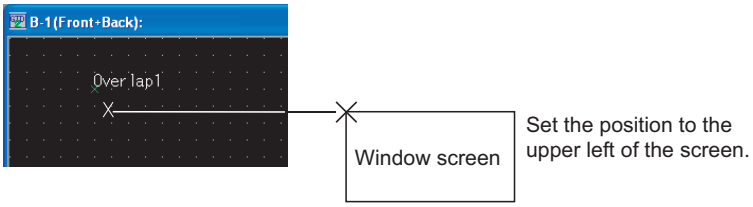
1. Select [Object] → [Window Position] → [Overlap Window 1]/[Overlap Window 2]/[Overlap Window 3]/[Overlap Window 4]/[Overlap Window 5]/[Superimpose Window1]/[Superimpose Window2]/[Key Window] from the menu.

2. Click the display position of each window.

When using a GOT with a matrix resistive display, set a multiple of 16 for X- and Y- coordinates for an overlap window.

When specifying a value that cannot be divided by 16, a remainder of 7 or less is rounded down, and a remainder of 8 or more is rounded up.

Appendix5 GOT Displays



**Hint!**

Display position of overlap window

The display position of an overlap window can be controlled using device.

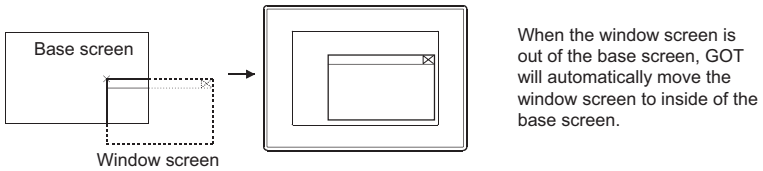
☞ Section 3.2 Switching Screen Device Setting

**Point**

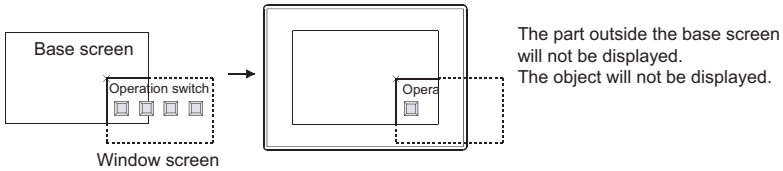
(1) Display position of a window screen
Set positions are effective only on basic screens.
When the screen where the display position has been set is called and displayed by the set overlay screen function, the display position setting is ineffective.
(☞ Section 15.1 Set Overlay Screen Function)

(2) When a window screen has been set to be out of the base screen
The window screen size will not be checked when setting its display position.Make sure to set the display position of a window screen while considering its screen size.

Overlap window

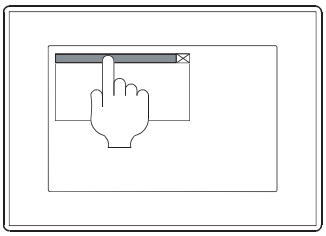



Superimpose window



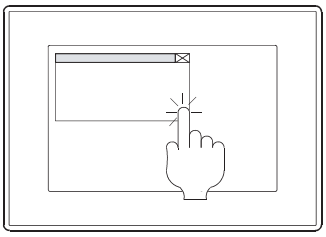
## 3 Methods of moving window screen

The window screens that can be moved are window 1, 2, 3, 4, 5 and key windows only.
Move the window screen as explained below.



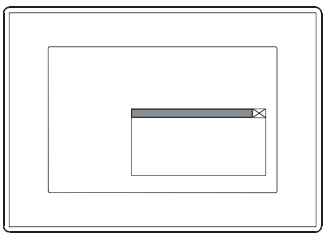
1 Touch the Move key at top of the window to replace the window.
During the Move key is highlighted, the GOT is the window move mode with beeping the buzzer.

↓



2 Touch the replaced position within three seconds.
The GOT leaves the move mode (Highlighted Move key) without touching for three or more seconds.
The touched objects is not operated within three seconds.

↓



3 The window will move to the specified position.

**Hint!**

Buzzer volume settings

Make the settings for the buzzer sound, which is produced when a window is moved, within the GOT utilities or in [Buzzer Volume] and [Window Move Buzzer] settings of GT Desginer2.

- [Operations setting] GOT utility

☞ GT16 User's Manual (Basic Utility) (Chapter 2 DISPLAY AND OPERATION SETTINGS (GOT SET UP))
GT15 User's Manual (Chapter 11 DISPLAY AND OPERATION SETTINGS (GOT SET UP))
GT11 User's Manual (Chapter 10 DISPLAY AND OPERATION SETTINGS (GOT SET UP))

- [Common] → [System Environment] → [GOT Setup] of GT Designer2

☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)

**Remark**

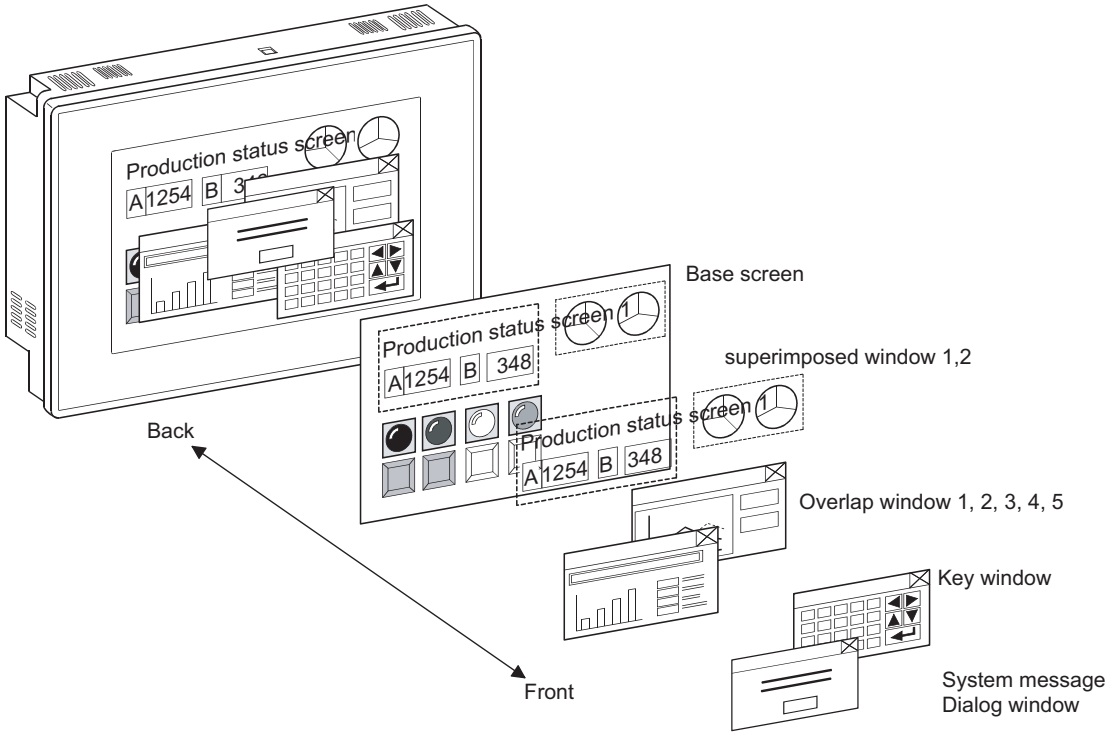
Closing the window after movement.

If a window has been moved and then closed, it will appear at the new position when opened again.

## 2.1.3 Whole screen specifications

### 1 Screen laying

The screens are layered by type and displayed as shown below.

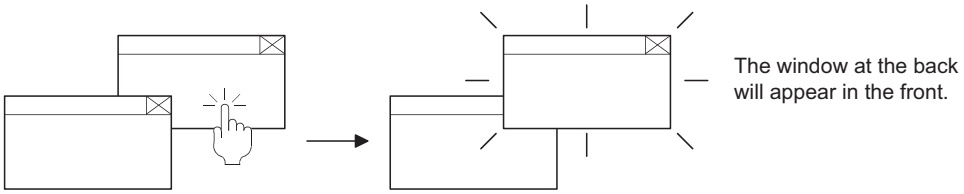



(1) Base screen
Located at the back.

(2) Superimposed window
Superimposed window overlaid in front of the base screen is displayed as a base screen.
The superimposed window including the figures and objects are arranged in the free area of the base screen.
When two superimposed windows are displayed, the window displayed later will be brought to the front.

☞ Section 2.6.3 Special superimposition of touch switch, numerical input, and ASCII input

(3) Overlap window 1, 2 , 3, 4, 5
The overlap window including the figures and objects can be displayed in front of the base screen and superimposed window. (The overlap window 3, 4, and 5 are available for GT16 and GT SoftGOT1000 only.)
When multiple overlap windows are displayed, the later appeared overlap window is displayed in the front. The objects of the base screen arranged in the rear of the overlap window are not displayed. To confirm or operate the rear objects, close or move the overlap window.
Touch the rear overlap window to display it in the front.



**Point**

When multiple overlap windows overlap, if one overlap window placed at the back is switched using the screen switching device, the window is not brought to the front. The window remains at the back.

(4) Key window
Located in the front of an overlap window.

(5) System message/dialog window
Located in the top front of displayed windows.
The dialog window is not available for GT10.

## 2 Overlap-display of figures and objects

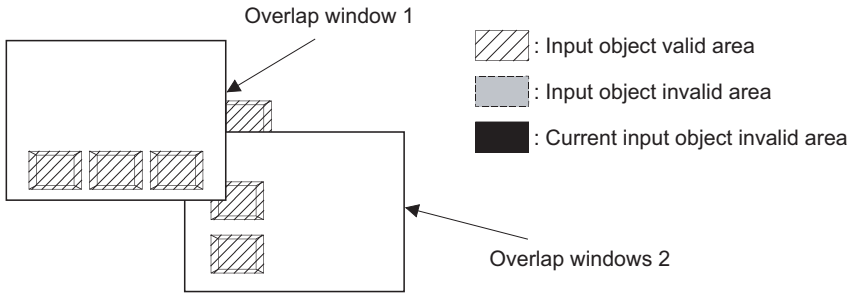
Overlapping figures and objects are displayed according to the order of layer.
On the base screen and superimposed window, the object being changed is brought to the front.

## 3 Input object operation

(1) In the case of super imposed window
The input objects at the back of the superimposed window can be used.
If the input objects of the superimposed window and base window overlap, both switches can be used. (If the touch time is not long enough, only the input objects of the superimposed window may operate.)

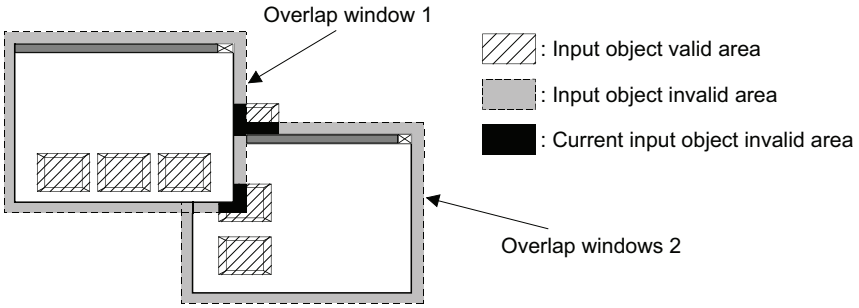
(2) In case of overlap window
The input object placed on the base screen on which an overlap window is superimposed does not operate, when the area of the object that overlaps with the overlap window is touched.
In addition, the input object invalid area comes up around the superimposed overlap window: the area depends on the overlap window size.
It is recommended to use an overlap window that is multiples of 16 dots in size and does not display the close key and movement bar, in order to eliminate the invalid area.

Section 3.2.3 Setting items



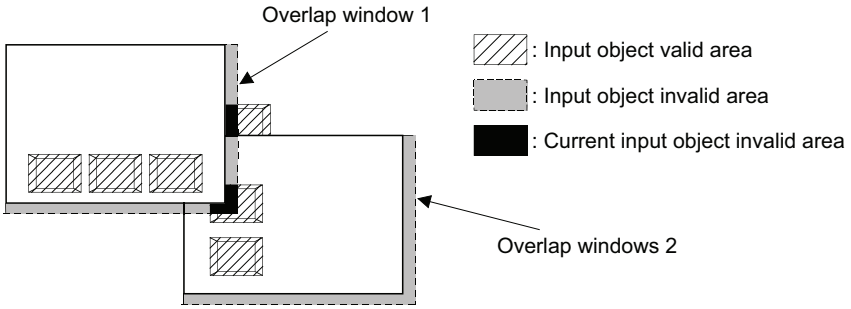

If an overlap window other than recommended above is displayed, the part of input object inside 16-dot area around the overlap window is invalid and do not operate.

(a) When close key and movement bar are displayed




* The invalid area refers to 16-dot areas including areas where the window part in the 16-dot area is smaller than 16-dot area, and the surrounding 16-dot areas.
(Example: If 10 dots are insufficient, the range of 10 dots + 16 dots is the invalid area.)

(b) When neither close key nor movement bar is displayed




* The invalid area refers to 16-dot areas including areas where the window part in the 16-dot area is smaller than 16-dot area.
(Example: If 10 dots are insufficient, the range of 10 dots is the invalid area.)

**Point**

Layer

Each screen consists of a front layer and back layer on which objects can be set.
For details of layers, refer to:

☞ Section 2.6.1 Superimposition using layers

## 4 Overlapping the quota objects

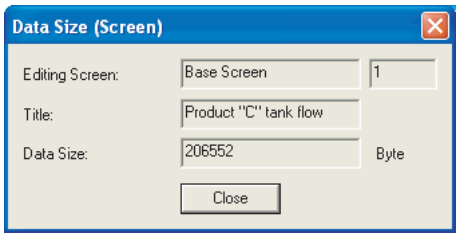
Make sure to set in order that more than two system alarms (alarm list display) in one screen by using overlap window or superimposed window.
* In one screen, only one of this type object can be set.

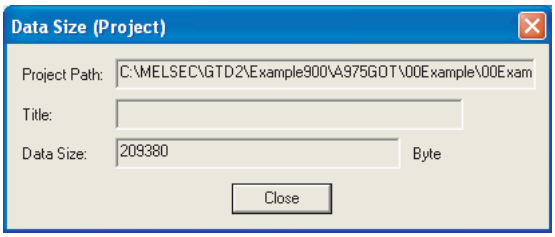
## 2.1.4 Data size of screen and project

Data size of screen and project differs by the set objects.
It is recommended to confirm the sizes before downloading a project to the GOT.
The following provides how to confirm the sizes on GT Designer2.

1. Select [Tools] → [Data Size] → [Screen] or [Project] from the menu.

2. The used data size can be confirmed on the displayed screen.




Refer to the following sections for the used memory size of each object.

☞ Section 2.2 Figures and Data Capacity

☞ Section 2.3 Specifications of Applicable Characters

☞ Section 2.4 Specifications of Available Object Functions

# 2.2 Figures and Data Capacity

The following table shows figures, text type, attributes and data capacity.

| Figure | Drawing examples | Attributes | Data capacity (byte)*1 | Model |
|---|---|---|---|---|
| Line | | Style, Width, Color Lamp | 24 | |
| Line Freeform | | | 20 × 4 number of vertexes | |
| Rectangle | | Style, Width, Color, Pattern, Pattern color, Background Type (Ordinary, Rounded, Octagonal) Radius (Setting is possible only when Rounded or Octagonal is selected) Lamp | Rectangle : 28<br>Rectangle (Rounded) : 28<br>Rectangle (Octagonal) : 56 | |
| Polygon | | Style, Width, Color, Pattern, Pattern color, Background Lamp | 20 + 4 × (number of vertexes +1) (Start point and end point counted as one vertex) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Circle | | | 28 | |
| Arc | | Style, Width, Color | 36 | |
| Sector | | Style, Width, Color, Pattern, Foreground, Background | 40 | |
| Paint | | Boundary, Pattern Foreground Background | 20 | |
| BMP figure | | - | 28 + data capacity of bit map file | |
| JPEG figure | | | 32 + data capacity of JPEG file | GT16 GT15 SoftGOT1000 GT11 GT10 |
| DXF figure | | | Varies according to the contents of an image. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| IGES figure | | | | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Figure | Drawing examples | Attributes | Data capacity (byte)*1 | Model |
|---|---|---|---|---|
| Report figure (ruled line) | | - | *2 | |
| Report figure (text) | ABC | | | |
| Text | ABC ABC ABC A B C<br>A B C ABC<br>置 置<br>"Japan" "China(GB) -Mincho" | Text Style, Effects, Background, Text color, Text Solid color, Interval, Alignment, Region, Script, Size, Direction, KANJI | Standard font<br>28 + NR × 8 + NT × 2<br>HQ font<br>Y + 128 × NT<br>TrueType font<br>Y + 24 (8 × NR) + (NT × NS × K)<br>Windows® font<br>Varies according to the font or font size used.*4<br>Stroke font<br>Y + 12<br>NR: Number of lines<br>NT: Number of characters<br>NS: Character size<br>K: Single byte character:2, Double byte character:4<br>Y: Capacity of standard font | |
| Logo text | MITSUBISHI<br>MITSUBISHI<br>MITSUBISHI<br>MITSUBISHI<br>MITSUBISHI | Text: Font, Size, Text Color, Background Color, Text Style, Alignment, Text Width, Text Interval, Antialiasing, Line Interval<br>Effect: Effect, Outline Color, Solid Color, Side Color, Neon Color, Outline Width, Solid Width, Neon Width, Outline Antialiasing, Solid Antialiasing, Neon Antialiasing, 3D Display, Illuminant Direction, Relative Coordinate, Depth, 3D Direction | 96 + character information + effect + (character width × character height)<br>• Character information<br>[2 + (2 × N)] + 24 +W<br>• Effect<br>Outline: 16<br>Solid: 20<br>3D: 16<br>Stamp: 16<br>Neon: 32<br>N: Number of characters<br>One line feed is counted as two characters.<br>(When the number of characters is an even, the number of characters is rounded up to an odd.)<br>W: Windows® font information size<br>TrueType font is 0.<br>For Windows®, the data capacity varies according to the font or font size used.*4 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Scale | | Scale points, Direction, Center line, Style, Width, Color | 28 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Piping | | Piping Width, Line Color, Fill Pattern, Piping Color, Pattern Bg Color, Lamp, Layer | 32+4<br>(the number of vertices × 3+1)<br>(Start point and end point counted as one vertex)*3 | |

(Continued to next page)

*1 When the lamp attribute is set, the size of the data increases as below.
Data size of one figure + 156

*2 Data size of report figure is included in the report setting capacity.
For the report setting capacity, refer to the following.

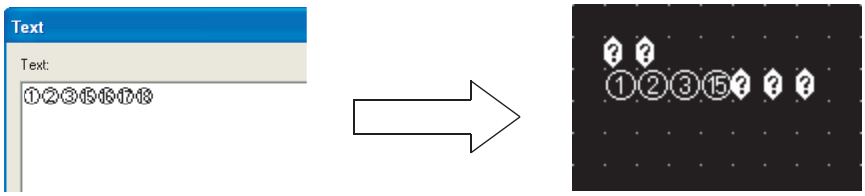
☞ Section 2.4 Specifications of Available Object Functions

*3 Data capacity when all the corners are right angles

*4 Conforming the data capacity is recommended before downloading the project to the GOT.

**Remark**

(1) GOT-compatible text
Text supported by the GT Designer2 is also supported by GOT.
However, those texts that would be changed into [?] or its size would be changed on the drawing screen after being input and defined, will not be displayed in GOT.



## 1 Selectable attributes

| Attribute | Drawing examples | Model |
|---|---|---|
| Line style*1 | Full line ———, broken line - - - - - - - - - -, dotted line ·····, one dot chain line, - - - - - - - - - - - -, two dots chain line - - - - - - - - - - - - | |
| Line width*1 | 1 Dot ———, 2 Dot ———, 3 Dot ———, 4 Dot ———, 5 Dot ———, 7 Dot ——— | |
| Line color, text color, text solid color | Maximum 256 colors (Displayed colors are reduced to the colors supported by the used GOT.)<br>The text solid color can be set to [Solid] or [Carve] text style. | |
| Screen pattern | | |
| Pattern color, pattern background color, boundary color | Maximum 256 colors (Displayed colors are reduced to the colors supported by the used GOT.) | |
| Text style | Standard, Thick, Solid, Carve<br>(☞ Section 2.3.1 3 Text style) | |
| Direction | Horizontal ABC, Vertical A B C<br>When TrueType font or Windows® font is specified, the display direction is [Horizontal] only. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Alignment | Left ABC,<br>Center ABC,<br>Right ABC,<br>Can be specified to [Horizontal] only. | |
| Font<br>Text size | Select a font.<br>• 6 x 8dot font • 12-dot standard font • 16-dot standard font<br>• 12-dot high quality Mincho • 12-dot high quality Gothic • 16-dot high quality Mincho<br>• 16-dot high quality Gothic • TrueType Mincho • TrueType Gothic<br>• Stroke • Windows® font<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| Effects | Italicizes, underlines or applies the both to characters.<br>Enabled only when selecting Windows® font for [Font]. | |
| Script | Select a character set from those available for the font specified.<br>Depending on the characters input, the OS of the PC may select the alternative font automatically to display the character or the character may not be displayed correctly ( □ or • is displayed.).<br>In such a case, the character can be displayed correctly by selecting the character set that is compatible with the input character. *2<br>The available character sets vary depending on the font.<br>Enabled only when selecting Windows® font for [Font]. | |
| Between lines | 0 to 16 dots | |

(Continued to next page).

2.2 Figures and Data Capacity 2 - 16

| Attribute | Drawing examples | Model |
|---|---|---|
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br> <br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot high quality Gothic • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Scale points | 2 to 255 points | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Center line | None , With | |
| Antialiasing | To use the logo text, set a value to reduce the aliasing of an outline for character or effect.<br>When setting a high value, the outline blurs as shown right side below.<br>When setting a low value, the outline has the aliasing as shown left side below.<br>0 100<br> | |
| Layer | For displaying a superimposed object of two objects, select a layer for each object from the front layer or back layer.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 Only "1-Dot" can be selected for Line width if Line style is other than Full line when Rectangle Type setting is Rounded or Octagonal.

*2 The Windows® 98 and Windows® Millennium Edition do not support the multiple language input function. Thus, the characters in another language other than that used for the OS in use cannot be displayed.

## 2 Figures in BMP/JPEG/DXF/IGES file format

The BMP/JPEG/DXF/IGES file described below can be displayed.
If any color non-displayable for the GOT are used for a BMP/JPEG file, the color will be subtracted when displayed.

**Point**

(1) The BMP/JPEG/DXF/IGES format files

Refer to the following manual for how to read the BMP/JPEG/DXF/IGES format files to the GT Designer2 or precautions for use.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 11.1 Drawing Figures)

(2) The image quality when using JPEG files

The image quality of JPEG files may be deteriorated than that of BMP files.
To avoid the image quality deterioration, use BMP files.

(3) Difference between data available for BMP/JPEG file parts and registered parts

The BMP/JPEG file that can be stored in the memory card (BMP/JPEG file parts) differs with the BMP/JPEG file that can be used in the GT Designer2 (registered parts).
The data used as a registered part may not be used as a BMP/JPEG file part.
For the BMP/JPEG file that can be used as BMP/JPEG file parts, refer to the following.

☞ Section 4.3.1 1 The BMP/JPEG files that can be displayed

(1) BMP file
The BMP data specified below can be used.

| Item | Description | Model |
|---|---|---|
| BMP data | 65536 colors *1, 256 colors, 16 colors or monochrome | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Resolution*2 | • 2000 × 1600 or more: Display the BMP data reduced to a resolution of 2000 × 1600 or less on GT Designer2. When the data is reduced, the resolution for vertical and horizontal is the same ratio.<br>• 2000 × 1600 or less: Display without changing the resolution. | |

*1 For GOTs that have 65536-color display capacity, refer to the following.
☞ GT16 User's Manual (Hardware) (Section 3.2 Performance Specifications)
GT15 User's Manual (Section 3.2 Performance Specifications)

*2 Errors may occur when a personal computer has insufficient memory for reading the BMP data.
When errors occur, the BMP data is not displayed on a screen for GT Designer2.

(2) JPEG file

The JPEG data specified below can be used.

| Item | Description | Model |
|---|---|---|
| File format | JFIF, EXIF | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Data format | Base line, progressive | |
| Number of colors | Full-color, gray-scale | |
| Resolution*1 | • 2000 × 1600 or more: Display the BMP data reduced to a resolution of 2000 × 1600 or less on GT Designer2. When the data is reduced, the resolution for vertical and horizontal is the same ratio.<br>• 2000 × 1600 or less: Display without changing the resolution. | |

*1 Errors may occur when a personal computer has insufficient memory for reading the JPEG files. When errors occur, the JPEG files is not displayed on a screen for GT Designer2.

(3) DXF file

The DXF data described below can be used.

| Item | Description | Model |
|---|---|---|
| DXF data | Release 12, Release 13, Release 14 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Resolution | 2048 × 1536 or less | |

(4) IGES file

The IGES data specified below can be used.

| Item | Description | Model |
|---|---|---|
| File format | IGS, IGE, and IGES data (wire frame format) created with Autodesk's Autodesk Inventor | GT16 GT15 SoftGOT1000 GT11 GT10 |

# 2.3 Specifications of Applicable Characters

The following fonts and KANJI regions can be used on the GOT.

## 1 Font

Available fonts are as shown below.
However, some fonts are inapplicable to some objects.
For the compatibility between fonts and objects, refer to the setting items of each object.

| Font specifications | | Font image | Model |
|---|---|---|---|
| Classification | Type | | |
| Standard font | 6 × 8 dots (Gothic) | 6X8dot | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | 12 dot Standard (Gothic) | 12dot Standard(Gothic) | GT16 GT15 SoftGOT1000 GT11 GT10 * |
| | 16 dot Standard (Mincho/Gothic) | 16dot Standard(Gothic) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | 16dot Standard(Mincho) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| HQ font | 12 dot HQ Mincho | 12dot HQ Mincho | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | 12 dot HQ Gothic | 12dot HQ Gothic | |
| | 16 dot HQ Mincho | 16dot HQ Mincho | |
| | 16 dot HQ Gothic | 16dot HQ Gothic | |
| TrueType font | TrueType Mincho | TrueType Mincho | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | TrueType Gothic | True Type Gothic | |
| | TrueType Numerical (Gothic/7-Segment) | 12345 | |
| | | 12345 | |
| Stroke font | Stroke | Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Windows® font | TrueType font and OpenType font displayable on the personal computer (other than vertical font) | Windows font | GT16 GT15 SoftGOT1000 GT11 GT10 |

* The type cannot be set for GT1020.

## 2 KANJI region

Some Chinese characters look different depending on the region where Chinese characters are used, for example, Japan, China (GB) or China (Big5).
The GOT displays the Chinese characters according to the selected region.
Selectable KANJI regions are shown below.

| KANJI region | Font image | Model |
|---|---|---|
| Japan | 置 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| China (GB) - Mincho | 置 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| China (Big5) -Gothic | 置 | |

## 2.3.1 Fonts

This section describes the specifications of fonts applicable to GOT and how to display them.

### 1 Font specifications

The specifications of fonts applicable to the GOT are provided below.
The following table describes the major specifications of each font.

For details of font specifications and how to display them, refer to the following 2 to 7 .

○ : Availabe — : Not available

| Font type | Character size | | | Character pitch | Character color | Text style | Effects | Storage area*3 |
|---|---|---|---|---|---|---|---|---|
| | HS | FS | DS | | | | | |
| 6 × 8 dots | ○ | — | — | Fixed | ○ | ○ | — | System area/ User area*3 |
| 12 dot Standard (Gothic) | ○ | ○ | ○ | | | ○ | — | |
| 16 dot Standard (Mincho/Gothic) | ○ | ○ | ○ | | | ○ | — | |
| 12 dot HQ Mincho | ○ | ○ | ○ | | | ○ | — | User area |
| 12 dot HQ Gothic | | | | | | ○ | — | |
| 16 dot HQ Mincho | ○ | ○ | ○ | | | ○ | — | |
| 16 dot HQ Gothic | | | | | | ○ | — | |
| TrueType Mincho*1 | ○ | ○ | ○ | Proportional*2 | | ○ | — | |
| TrueType Gothic*1 | | | | | | ○ | — | |
| TrueType Numerical*1 | ○ | — | ○ | | | — | — | System area |
| Stroke font*1 | ○ | ○ | ○ | Fixed | | ○ | — | User area |
| Windows® font*1 | ○ | ○ | ○ | Depend on the Windows® fonts selected | | ○ | ○ | |

*1 Horizontal writing only.
*2 Different depending on characters.
The number of the characters in a line varies according the arranged characters.
*3 Standard fonts (Standard) are stored in the system area while standard fonts (Option) are stored in the user area.

☞ This section 7 (1) Standard font

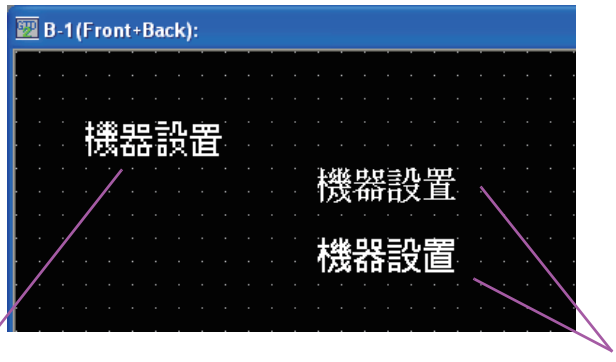
**Point** Font Selection

For font selection, refer to the following.

☞ Appendix6 Font Selection

(1) Standard font

The standard font includes the following types.




Standard font (Standard)

The standard font (Standard) is the basic font for the entire project.

When fonts can be set for objects and figures, the standard font (Standard) is displayed with specifying the standard font or HQ font.

- Required OS: Standard monitor OS (Standard font)
- Setting item: [Standard Font] in [System Settings]

Standard font (Option)

Set the standard font (Option) for displaying Chinese characters other than the Chinese character specified for the standard font (Standard).

With setting [KANJI Region] for objects and figures, Chinese characters other than the Chinese character set as the standard font (Standard) can be displayed.

- Required OS: Option OS (Standard font)
- Setting item: [KANJI Region]

(a) Standard font (Standard)

Standard font (Standard) includes the following fonts.

| Item | Description | Font image | Model |
|---|---|---|---|
| Japanese | Fonts of Unicode 2.1<br>European characters (Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic)*1 are displayed in 2-byte characters.<br>Japanese Kanji characters are displayed. | ABCĀČ置 | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Japanese (supporting Europe) | Fonts of Unicode 2.1<br>European characters (Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic)*1 are displayed in 1-byte characters.<br>Japanese Kanji characters are displayed. | ABCĀČ置 | |
| Chinese (Simplified) | Fonts of Unicode 2.1<br>European characters (Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic)*1 are displayed in 2-byte characters.<br>Simplified Chinese characters are displayed. | ABCĀČ置 | |
| Chinese (Simplified) (supporting Europe)*2 | Fonts of Unicode 2.1<br>European characters (Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic)*1 are displayed in 1-byte characters.<br>Simplified Chinese characters are displayed. | ABCĀČ置 | |
| Chinese(Traditional) (supporting Europe) | Fonts of Unicode 2.1<br>European characters (Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic)*1 are displayed in 1-byte characters.<br>Traditional Chinese characters are displayed. | ABC ĀČ 置 | |

*1 In this manual, Latin-1 Supplement, Latin Extended-A, Basic Greek and Cyrillic are collectively expressed as European characters.

*2 European characters are not included in the Chinese government approved fonts.
To use the Chinese government approved fonts including European characters, use Chinese (Simplified).

(b) Standard font (Option)
Standard font (option) includes the following fonts.

| Item | Description | Font image | Model |
|---|---|---|---|
| Chinese (Simplified) | Displays Chinese characters of Chinese (Simplified) region. | 置 | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Chinese (Traditional) | Displays Chinese characters of Chinese (Traditional) region. | 置 | |
| Japanese | Displays Chinese characters of Japanese region. | 置 | |

*1 Specification of multiple kinds is possible.

**Remark**

(1) Procedure for setting, installing and displaying standard fonts
For details, refer to the following.

☞ This section 7 To display the font on GOT

(2) Example of standard font display
For details on how to display fonts, refer to the following.

☞ Section 2.3.3 Application example

(2) HQ font
The HQ font is a standard font (12 dots or 16dots) with a HQ character (Mincho or Gothic).
Note that setting of HQ font is not allowed depending on objects.
For the fonts that can be set for the individual objects, check the setting item of each object.
The settings for displaying European characters and the kanji region are the same as those for the standard font.

(3) TrueType font
TrueType fonts can be set for the individual objects.
Note that setting of TrueType font is not allowed depending on objects.
For the fonts that can be set for the individual objects, check the setting item of each object.

(4) Stroke font

The stroke font includes the following types.

Stroke standard font (Extended)

The font can be set for each object.

- Required OS: Extended function OS (Stroke standard font)
- Setting item: Select [Stroke] in the font setting

Stroke font (Option)

Set the stroke font (Option) for displaying Chinese characters other than the Chinese character specified for the stroke standard font (Extended).

With setting [KANJI Region] for objects and figures, Chinese characters other than the Chinese character set as the stroke standard font (Extended) can be displayed.

- Required OS: Option OS (Stroke font)
- Setting items: Select [Stroke] in the font setting
  [KANJI Region]

The following describes details of the stroke font.

(a) Stroke standard font (Extended)

Depending on the object to be used, the stroke font cannot be selected.

For the stroke font applicable to each object, refer to the setting items for each object.

The stroke standard font (Extended) includes the following types.

| Item*1 | Description | Model |
|---|---|---|
| Stroke Font Support Data | When the stroke standard font is installed, the item is installed with the font. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Stroke Standard Font(JPN) | Unicode 2.1 font<br>Only the following fonts can be used on the GOT.<br>Basic Latin Latin-1 Supplement Thai*1 Basic Greek<br>Hiragana*2 Katakana*2 Unified CJK Ideographs<br>Hangul characters cannot be displayed.<br>Japanese Kanji characters are displayed. | |
| Stroke Standard Font(JPN)(supporting Hangul) | Unicode 2.1 font<br>Only the following fonts can be used on the GOT.<br>Basic Latin Latin-1 Supplement Thai*1 Basic Greek<br>Hiragana*2 Katakana*2 Unified CJK Ideographs<br>Hangul characters are displayed.<br>Japanese Kanji characters are displayed. | |
| Stroke Standard Font(China GB) | Unicode 2.1 font<br>Only the following fonts can be used on the GOT.<br>Basic Latin Latin-1 Supplement Thai*1 Basic Greek<br>Hiragana*2 Katakana*2 Unified CJK Ideographs<br>Hangul characters cannot be displayed.<br>Simplified Chinese characters are displayed. | |
| Stroke Standard Font(China GB)(supporting Hangul) | Unicode 2.1 font<br>Only the following fonts can be used on the GOT.<br>Basic Latin Latin-1 Supplement Thai*1 Basic Greek<br>Hiragana*2 Katakana*2 Unified CJK Ideographs<br>Hangul characters are displayed.<br>Simplified Chinese characters are displayed. | |

*1 Thai characters are complicated. If the character size is small, the characters can be hard to read.
For Thai, it is recommended that the character size is set to 20 dots or more.

*2 Some characters of hiragana and katakana cannot be used.
Check the applicable characters on GT Designer2.
(Characters correctly displayed on GT Designer2 are also displayed on the GOT.)

(b) Stroke font (Option)

The stroke font (Option) is for displaying the Chinese characters other than the Chinese characters set for the stroke font (Extended).
Install the option OS (Stroke font) and set the kanji region to an object for displaying multiple types of Chinese characters.

(☞ This section 7 To display the font on GOT)

The stroke font (Option) includes the following types.

| Item*1 | Description | Font image | Model |
|---|---|---|---|
| Chinese (Simplified) | Displays Chinese characters of Chinese (Simplified) region. | 置 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Chinese (Traditional) | Displays Chinese characters of Chinese (Traditional) region. | 置 | |
| Japanese | Displays Chinese characters of Japanese region. | 置 | |

*1 Multiple items can be specified.

(5) Windows® font

For Windows® fonts, TrueType font or OpenType fonts installed on the personal computer is displayed (other than vertical fonts).

Note that setting of Windows® font is not allowed depending on objects.
For the fonts that can be set for the individual objects, check the setting item of each object.

**Point**

(1) When opening a project which uses Windows® fonts on other personal computer

The Windows® fonts used in the project have to be installed in the personal computer.
If operations other than character shifting and character color change are performed when Windows® fonts are not installed, fonts will be changed to the ones installed in the personal computer.

(2) When Windows® fonts were installed during GT Designer2 was starting

Start GT Designer2 to use Windows® fonts installed during GT Designer2 was starting.

## 2 Relationship between the message displaying language selectable by the utility and the standard font

The language to be selected by the utility, used for displaying a message, varies depending on the standard font installed to the GOT.

| Message displaying language selectable by utility | Required standard font | | |
|---|---|---|---|
| | GT16, GT15 | GT11 | GT10 |
| Japanese | Install one of the following fonts.<br>• Standard font (Standard)<br>Japanese font,<br>Japanese (supporting Europe) font<br>• Standard font (Option)<br>Japanese font | Install one of the following fonts.<br>• Standard font (Standard)<br>Japanese font,<br>Japanese (supporting Europe) font | Install one of the following fonts.<br>• Standard font (Standard)<br>Japanese font,<br>Japanese (supporting Europe) font |
| English | Selectable independently of the installed standard font. | | |
| Chinese (Simplified) | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Simplified) font,<br>Chinese (Simplified) (supporting Europe) font<br>• Standard font (Option)<br>Chinese (Simplified) font | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Simplified) font,<br>Chinese (Simplified) (supporting Europe) font | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Simplified) font,<br>Chinese (Simplified) (supporting Europe) font |
| Chinese (Traditional) | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Traditional) font,<br>Chinese (Traditional) (supporting Europe) font<br>• Standard font (Option)<br>Chinese (Traditional) font | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Traditional) (supporting Europe) font | Install one of the following fonts.<br>• Standard font (Standard)<br>Chinese (Traditional) (supporting Europe) font |
| Korean | Selectable independently of the installed standard font. | Selectable independently of the installed standard font. | Not selectable |
| German | Install one of the following fonts.<br>• Standard font (Standard)<br>Japanese (supporting Europe) font<br>Chinese (Simplified) (supporting Europe) font<br>Chinese (Traditional) (supporting Europe) font | | |

## 3 Font magnification and character size

The applicable magnification varies depending on the fonts used.
The following table shows font magnification and size.

(1) Standard font, HQ font
Set character sizes by setting the ratio of horizontal size and vertical size.

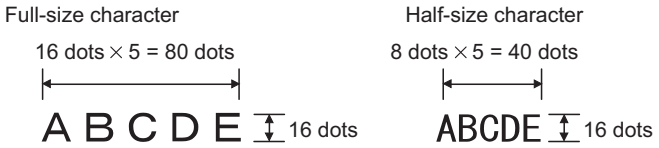
| Font | Character size magnification | |
|---|---|---|
| | Width magnification (times)*1 | Height magnification (times)*1 |
| 6 × 8 dots | 1 | 0.5 |
| 12 dot Standard (Gothic) | 1 to 8 | 1 to 8 |
| 16 dot Standard (Mincho/Gothic) | 0.5, 1 to 8 | 0.5, 1 to 8 |
| 12 dot HQ Mincho | 2, 4, 6, 8 | 2, 4, 6, 8 |
| 12 dot HQ Gothic | | |
| 16 dot HQ Mincho | | |
| 16 dot HQ Gothic | | |

*1 Horizontal size and vertical size can be set up by selecting "Other" for size.

(2) TrueType font, Stroke font, Windows® font
Set character sizes by setting font sizes (dot).

| Font | Size (dot) |
|---|---|
| TrueType Mincho | 8 to 128, in 1-dots unit. |
| TrueType Gothic | |
| TrueType Numerical (Gothic/7-Segment) | 24 to 128, in 4-dots unit. |
| Stroke font | 8 to 128, in 1-dots unit. |
| Windows® font | |

Example: Displaying five double-size characters in the 16-dot Standard (Gothic) font.




**Remark** When fonts were changed

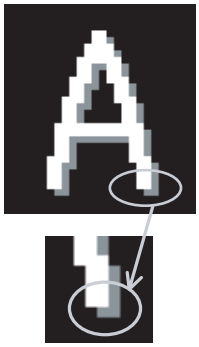
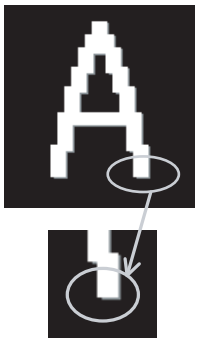
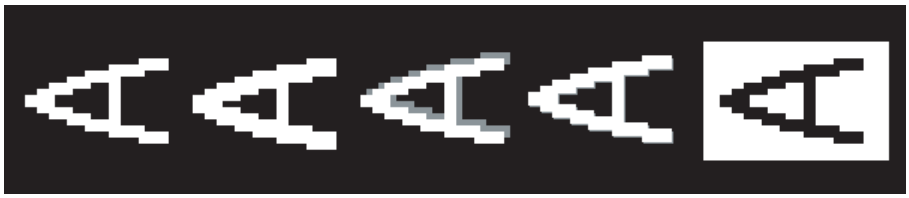
When the set fonts are changed, the display size of characters may be changed.

## 4 Text color

Only one can be specified from maximum of 256 colors. (The GOT will select the nearest color match when an incompatible color is specified.)

## 5 Text style

The following text styles are available.

| Text style | Standard | Bold | Solid | Raised |
|---|---|---|---|---|
| Image displayed | | |  |  |
| | Rotate | | | |
| |  | | | |

## 6 Effects

The following character effects can be set.

| Character effects | None | Italic | Underline | Both |
|---|---|---|---|---|
| Image displayed | A | A | A | A |

## 7 To display the font on GOT

The following explain how to use each font.
For how to install fonts, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual

**Hint!** Font data size

Font data are stored in the system area or user area within the built-in memory.
(Data size varies depending on the font.)
It is recommended to confirm the capacity (data size) needed for installation on the Communicate with GOT dialog box in advance.
Display the Communicate with GOT dialog box by referring to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Chapter 8. TRANSFERRING DATA)

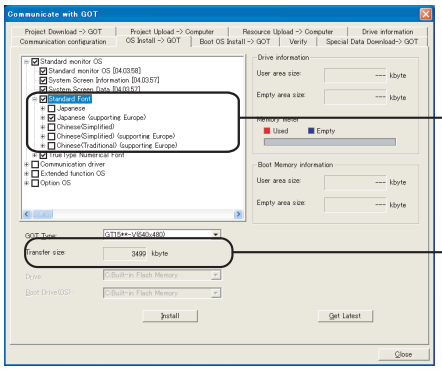
(1) Standard font

(a) Standard font (Standard)

1. Set the standard font to be used at [Standard Font] in [System Settings] of GT Designer2.

   (☞ Section 3.1.2 Setting items)

2. Install the same font data as set at GT Designer2 to the GOT.
   Use the Communicate with GOT dialog box to install the font data.

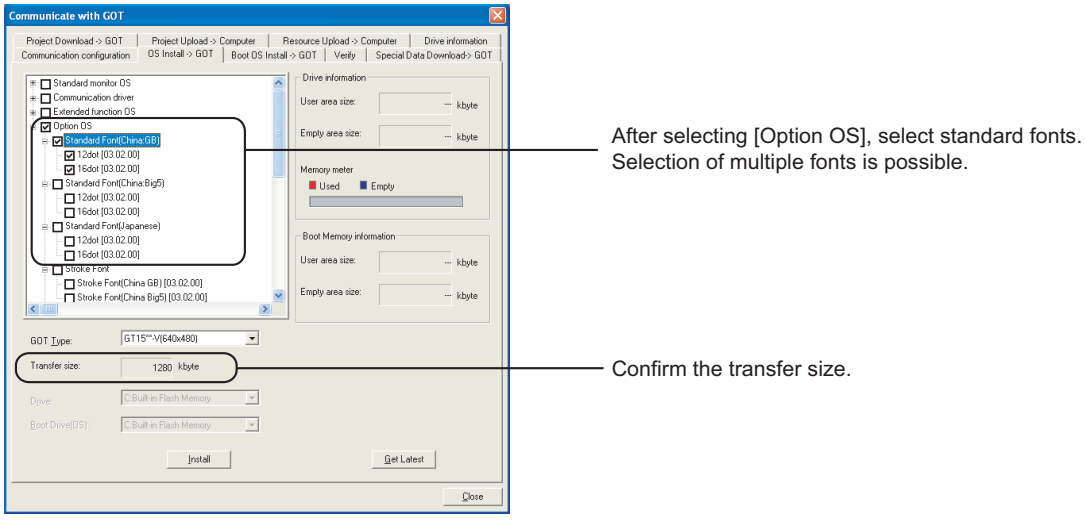



After selecting [Standard monitor OS], select one standard font.
If the selection is Japan or Japan (supporting Europe), select Gothic or Mincho for the 16-dot standard font.
The font to be selected must be the same one as set at [System Settings] of GT Designer2.

Confirm the transfer size.

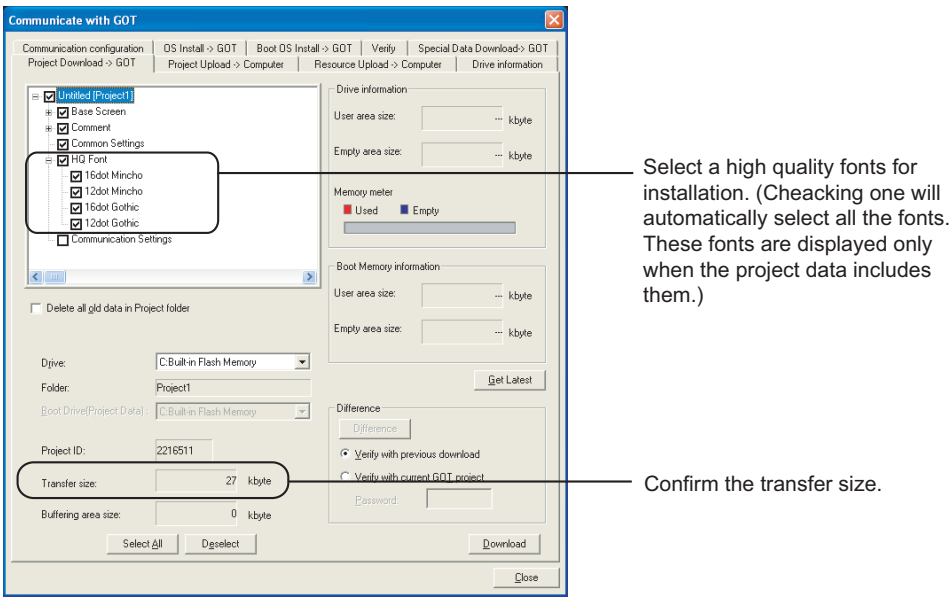
(b) Standard font (Option)

1 Install the font data to the GOT using the Communicate with GOT dialog box of GT Designer2.




(2) HQ font

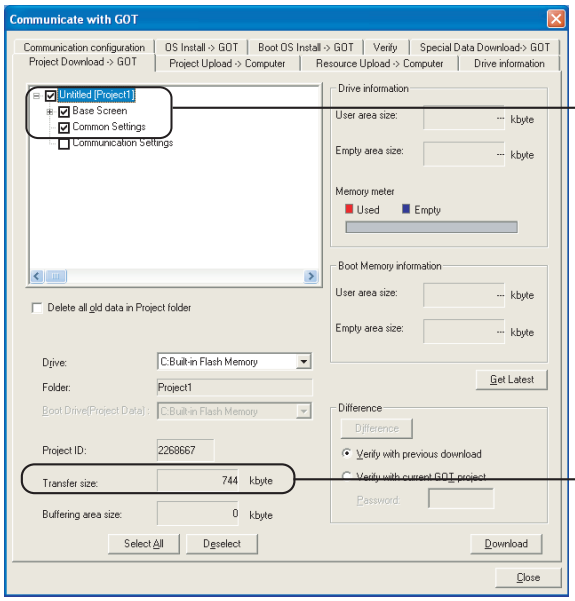
1 Install the font data to the GOT using the Communicate with GOT dialog box of GT Designer2.



(3) TrueType font

(a) TrueType Mincho, TrueType Gothic

1 Install the font data to the GOT using the Communicate with GOT dialog box of GT Designer2. (The font data are included in the screen data.)



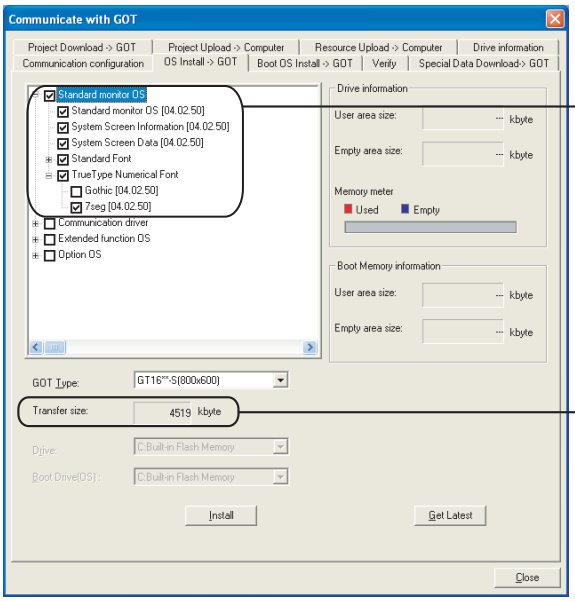

Select a screen to be downloaded to install the font.
(As the font data are included in the screen data, the screen for selecting TrueType fonts does not appear.)

Confirm the transfer size.

(b) TrueType Numerical

1. Set the TrueType numerical font to be used at [TrueType Numerical Font] in [System Settings] of GT Designer2.
   (☞ Section 3.1.2 Setting items)

2. Install the same font data as set at GT Designer2 to the GOT.
   Use the Communicate with GOT dialog box to install the font data.




Select [Standard monitor OS], and then select a font type of the TrueType numerical font from [Gothic] or [7seg]. Select the same font type as that set in [System Settings] of GT Designer2.

Confirm the transfer size.

**Point**

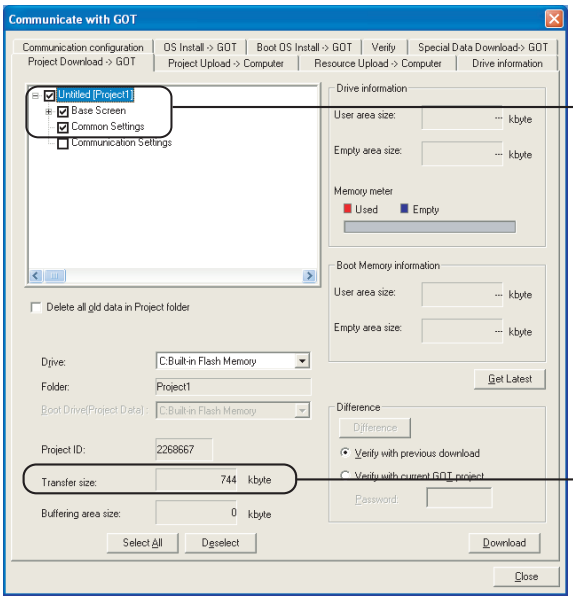
When using TrueType numerical font (7-Segment)

To use the TrueType numerical font (7-Segment), install the BootOS with the version supporting the TrueType numerical font (7-Segment) on the GOT.
For the version of the BootOS supporting the TrueType numerical font (7-Segment), refer to the following.

☞ Appendix7 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series)

(4) Windows® font

1. Install the font data to the GOT using the Communicate with GOT dialog box of GT Designer2. (The font data are included in the screen data.)



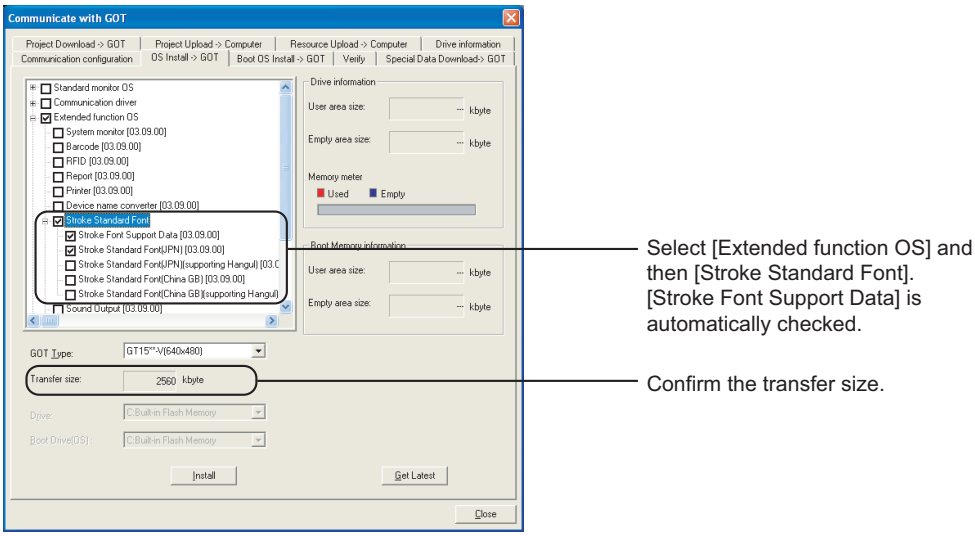

Select a screen to be downloaded to install the font. (As the font data are included in the screen data, the screen for selecting Windows® fonts does not appear.)

Confirm the transfer size.

(5) Stroke font

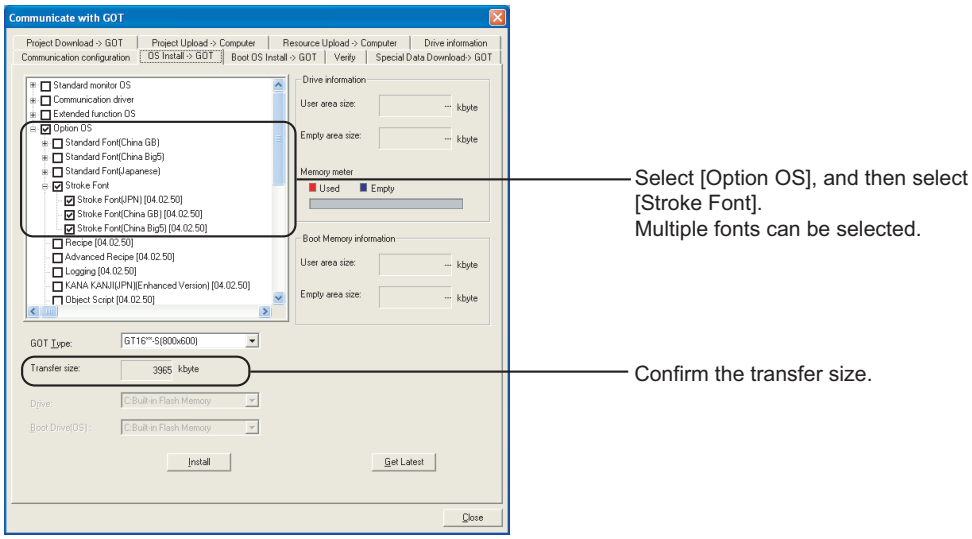
(a) Stroke standard font (Extended)

1 Install the extended function OS (Stroke Standard Font) on the Communicate with GOTdialog box of GT Designer2.




(b) Stroke font(Option)

Install the option OS(Stroke Font) to the GOT using the Communicate with GOT dialog box of GT Designer2.



## 2.3.2 KANJI regions

Set the kanji region for displaying the Chinese characters other than the Chinese characters set for the standard font (Standard) and the stroke standard font (Extended).
For fonts, refer to the following.

☞ Section 2.3.1 Fonts

**Hint!** Displaying Kanji in Windows® fonts

On the object which Windows® fonts can be specified, characters in the region corresponds to the selected Windows® fonts can be displayed.

(☞ This section 4 Windows® font)

### 1 Installing font data

For using the Chinese character specified for [KANJI Region], the standard font data (Option) and the stroke font data (Option) are installed on the GOT when the OS is installed.

(☞ Section 2.3.1 7 font)

## 2 Character strings that can be displayed

(1) Japanese characters

Chinese characters of the Shift JIS coding system are displayed.

Those other than the Shift JIS coding system are displayed in the manner shown below.

| Item | Description |
|---|---|
| Kanji characters mapped in Unicode2.1 | Kanji characters mapped in Unicode 2.1 are displayed.<br>(For Kanji characters for which the same codes are used by Japanese Kanji characters, Japanese Kanji characters are displayed.) |
| Kanji characters not mapped in Unicode 2.1 | Not displayed. |

(2) China (GB) characters

Chinese characters of GB2312 code are displayed.

Kanji characters, other than GB2312 code, are displayed as shown below.

| Item | Description |
|---|---|
| Kanji characters mapped in Unicode2.1 | Kanji characters mapped in Unicode 2.1 are displayed.<br>(For Kanji characters for which the same codes are used by Japanese Kanji characters, Japanese Kanji characters are displayed.) |
| Kanji characters not mapped in Unicode 2.1 | Not displayed. |

Characters shown below, which are not mapped in Unicode 2.1, are not displayed.

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 082 | | | | | | | | ɑ | ḿ | ń | ň | ǹ | ɡ | | | | | | | |
| 100 | | ! | " | # | ¥ | % | & | ' | ( | ) | * | + | , | - | . | / | 0 | 1 | 2 | 3 |
| 102 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? | @ | A | B | C | D | E | F | G |
| 104 | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | [ |
| 106 | \ | ] | ^ | _ | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 108 | p | q | r | s | t | u | v | w | x | y | z | { | \| | } | ¯ | | | | | |
| 110 | | ā | á | ǎ | à | ē | é | ě | è | ī | í | ǐ | ì | ō | ó | ǒ | ò | ū | ú | ǔ |
| 112 | ù | ǖ | ǘ | ǚ | ǜ | ü | ê | ɑ | ḿ | ń | ň | ǹ | ɡ | Я | ■ | ■ | ■ | ■ | ■ | |

The fonts of various countries are mixed depending on the character string.

As the font of China(GB) is Mincho, characters are displayed in Mincho even if Gothic has been selected for the font.

(3) China (Big5) characters

Chinese characters of Big5 code are displayed.

Kanji characters other than Big5 code, are displayed as shown below.

| Item | Description |
|---|---|
| Kanji characters mapped in Unicode2.1 | Kanji characters mapped in Unicode 2.1 are displayed.<br>(For Kanji characters for which the same codes are used by Japanese Kanji characters, Japanese Kanji characters are displayed.) |
| Kanji characters not mapped in Unicode 2.1 | Not displayed. |

Characters shown below, which are not mapped in Unicode 2.1, are not displayed.

| | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +A | +B | +C | +D | +E | +F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A150 | | | | | | | | | | | — | | | | | |
| A1C0 | | | | - | | — | | | | | | | | | | |
| A1F0 | | | | | | | | | | | | | | | | |
| A240 | ╲ | | | | | | | | | | | | | | | |
| A2C0 | | | | | | | | | | | | | ┼ | | ╫ | |
| F9D0 | | | | | | | 碁 | 銹 | 裏 | 墻 | 恒 | 粧 | 嫻 | ╒ | ╓ | ╕ |
| F9E0 | ╞ | ╪ | ╡ | ╘ | ╧ | ╛ | ╒ | ╓ | ╕ | ╞ | ╪ | ╡ | ╘ | ╧ | ╛ | ╒ |
| F9F0 | ╓ | ╕ | ╞ | ╪ | ╡ | ╘ | ╧ | ╛ | ‖ | ═ | ╭ | ╮ | ╰ | ╯ | ■ | |

The fonts of various countries may be mixed depending on character string.

As the font of China (Big5) is Gothic, characters are displayed in Gothic even if Mincho has been selected for the font.

## 3 TrueType font

The kanji region settings are inapplicable.

To specify a kanji region item, use a font other than TrueType.

## 4 Stroke fonts

The kanji region can be set.

For specifying the kanji region, install the option OS (Stroke font).

## 5 Windows® fonts

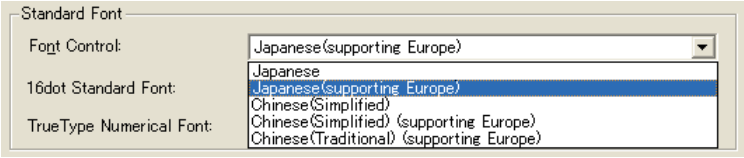
The kanji region settings are inapplicable. (setting is not necessary)

When spcifying Windows® fonts item, characters in the region corresponding to the selected fonts can be displayed.

## 2.3.3 Application example

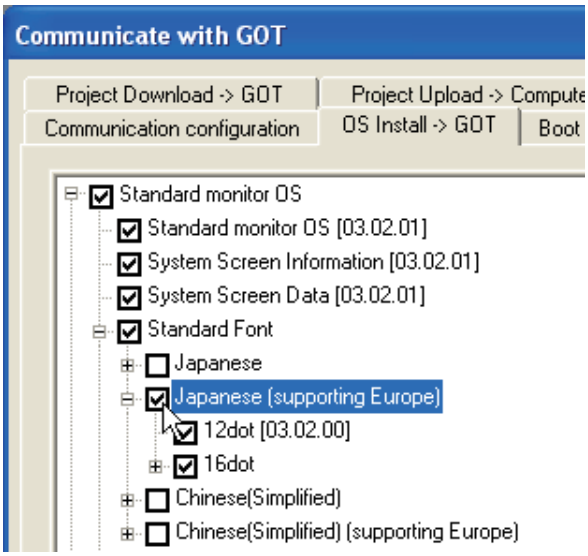
### 1 To display Japanese (supporting Europe) in the entire project while displaying Chinese (Simplified) characters for specific objects

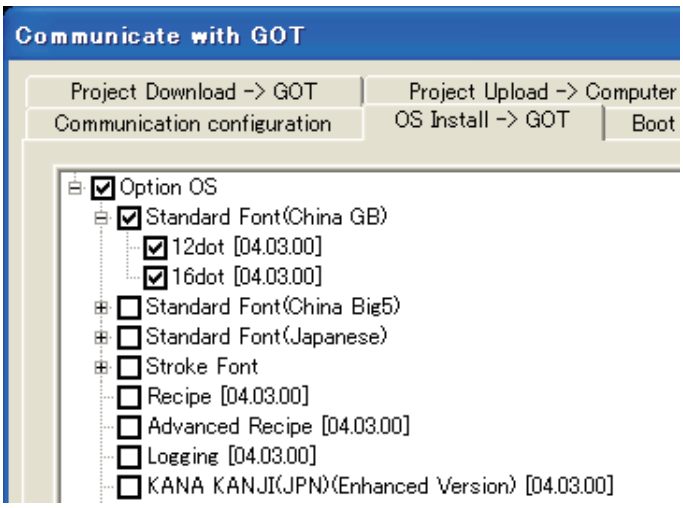
1. In [Standard Font] in [System Settings] of GT Designer2, set [Japanese (supporting Europe)] for [Font Control]. (☞ Section 3.1.2 Setting items)




2. Create a screen data.
   For objects on which Chinese (Simplified) characters should be displayed, set [China (GB)] for [KANJI Region].
   Setting of [KANJI Region] should be made on the individual object.

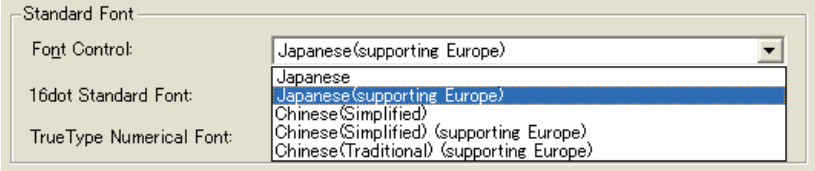
3. Install the font data. (☞ Section 2.3.1 7 To display the font on GOT)
   For standard font (Standard), install [Japanese (supporting Europe)].
   For standard font (Option), install [Standard Font (China GB)].



## 2 To display HQ fonts (1-byte European characters)

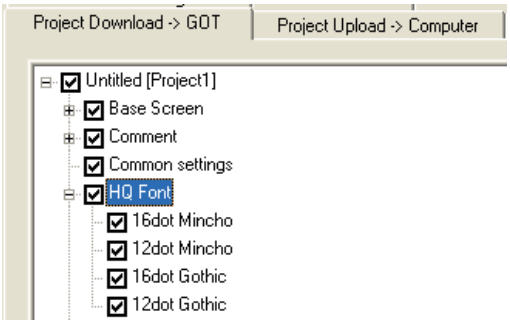
1. Set any of the following for [Font Control] in [Standard Font] of [System Settings] on GT Designer2.
   - [Japanese (supporting Europe)]
   - [Chinese (Simplified) (supporting Europe)]
   - [Chinese (Traditional) (supporting Europe)]




2. Create a screen data.
   For objects on which HQ fonts should be displayed, select an HQ font.

Select a HQ font.

3. Install the font data. (☞ Section 2.3.1 7 To display the font on GOT)




**Hint!**

Displaying HQ font European characters in 2-byte characters

To display European characters in 2-byte characters, set [Japanese] or [Chinese (Simplified)] for [Font Control] at [Standard Font] in [System Settings] of GT Designer2.

## 2.3.4 Precautions

### 1 Precautions on drawing

(1) If the standard font set for [System Environment] of GT Designer2 differs from standard font (Standard) installed to GOT
Characters are displayed in the standard font (Standard) installed to GOT.

(2) When using Chinese (Simplified) (supporting Europe) for the standard font (Standard)
European characters are not included in the Chinese government approved fonts.
To use the Chinese government approved fonts including European characters, select Chinese (Simplified) for the standard font (Standard).

(3) When using Japanese or Chinese (Simplified) for the standard font (Standard)
It is not possible to select German for the system language that displays the utility.
To select German, set any of the following for the standard font (Standard).
- [Japanese (supporting Europe)]
- [Chinese (Simplified) (supporting Europe)]
- [Chinese (Traditional) (supporting Europe)]

(4) If KANJI region is specified although option function board is not installed
The Chinese characters selected for the standard font (Standard) are displayed.

(5) When both of 2-byte and 1-byte characters exist in European characters of standard font and HQ font
Install the standard font (Standard) that has been set at [System Environment] of GT Designer2 to the GOT.
If the standard front (Standard) installed to the GOT and the standard font (Standard) set at [System Environment] of GT Designer2 differ from each other, 2-byte and 1-byte characters may exist in the European characters of standard font and HQ font.

(6) To display symbols correctly
Symbols are included in the standard font (Standard).
The standard font (Option) includes only Chinese characters.
To display region dependent symbols correctly, select the font of the corresponding regions in the standard font (Standard).

(7) Character form when using simplified or traditional Chinese
Some character forms may differ whether the stroke font is used or the other font is used.

16dot HQ Gothic:

Stroke font:

### 2 Precautions on hardware

To use the standard font (Option) and KANJI region, install the option function board to the GOT.
No option function board is required for GT16.
For GOTs with built-in option function boards, refer to the following.

☞ 2.13 Precautions for Option Function Board

# 2.4 Specifications of Available Object Functions

## 1 Object specifications

This section explains the main object specifications in table.
Refer to the explanation (reference section) of the corresponding object function for details since the specifications and cautions may differ by the used GOT.
Note that max. number of setting objects and memory capacity in the table are based on default value settings.
When the memory capacity is increased by data operation, display methods and other settings, the number of objects may be reduced.

**Point**

(1) Max number of objects can be set.
Up to 1024 objects can be set in one screen.
Up to 1024 input objects can be displayed, however, 1001th object or later will not operate.
1025th object or later is invalid. (The object will not operate.)

(2) Max number of objects in which [Trigger] has been set to [Sampling].
Up to 100 objects can be set in one screen.
101st object or later is invalid. (The object will not operate.)

(3) Object functions specific for GT15 and GT SoftGOT1000 (Not described in the table on the next page)
The following object functions can be set only for GT15 and GT soft GOT1000.

## Numeric value, character display

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Numerical display | 1000<br>48 | Figure, Frame, Plate Color, Color, Blink, Reverse, Font, Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 7.1 |
| Numerical input | 1000<br>52 | Figure, Frame, Plate Color, Color, Blink, Reverse, Font, Layer | ○ | × | ○ | × | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | | Section 7.1 |
| Data list | 1<br>Refer to (1) below | Figure, Frame, Plate Color, Color, Blink, Reverse, Ruled LIne, Font, Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 7.2 |
| ASCII display | 1000<br>44 | Figure, Frame, Plate Color, Color, Blink, Reverse, Font, Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | × | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 7.3 |
| ASCII input | 1000<br>48 | Figure, Frame, Plate Color, Color, Blink, Reverse, Font, Layer | ○ | × | ○ | × | ○ | ○ | × | × | ○ | ○ | ○ | ○ | × | ○ | - | | Section 7.3 |
| Clock display | 2<br>44 | Figure, Frame, Plate, Color, Font, Layer | ○ | × | × | × | × | × | × | × | × | × | × | ○ | × | ○ | - | | Section 7.4 |
| Comment display | 1000<br>Bit 64<br>Word 56 | Figure, Frame, Display Size, Blink, Font, Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | | Section 7.5 |
| Comment group | 32767*1<br>Refer to (2) below | Style, Text, Solid Color, Reverse, Blink, HQ Font, KANJI Region | × | × | × | × | × | × | × | × | × | × | × | × | × | × | - | | Section 4.1 |
| Basic comment | 32767*2<br>Refer to (3) below | Style, Text, Solid Color, Reverse, Blink, HQ Font | × | × | × | × | × | × | × | × | × | × | × | × | × | × | - | | Section 4.1 |

*1 Maximum of 32767 comments can be registered in each comment group.

*2 Maximum of 32767 comments can be registered in one project.

(1) Memory capacity for data list display function (Bytes)
60 + (NR + 1) × 8 + ANC × 6 + RTN × 2
NR : Number of columns
ANC : Number of all lines
RTN : Number of title characters per line

(2) Memory capacity for comment group (Bytes)
46 + (2 × NT) + (4 × NC) + (8 × NR) + {NC × NR × (6 + 2 × NS)}
NT: Number of characters NC: Number of lines NR: Number of columns
NS: Number of average characters of a comment

(3) Memory capacity for basic comment (Bytes)
24 + (14 × RC) + (2 × AT)
(The value within () will be converted into multiple of 4)
RC: Number of registered comments AT: Number of whole characters

## Alarm

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alarm list (System alarm) | 1<br>40 | Figure Frame<br>Plate Color<br>Display Size<br>Layer | ○ | × | × | × | × | × | × | × | × | × | × | ○ | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 8.7 |
| Alarm list (User alarm) | 24 *1<br>(1 object for GT10)<br>44 | Figure Frame<br>Plate Color<br>Display Size<br>Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ | × | ○ | ○ *2 | ○ | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 8.6 |
| Alarm history | 1<br>Refer to (1) below | Figure Frame<br>Plate Color Title<br>Ruled Line | × | × | × | × | × | × | × | ○ | ○ | × | × | ○ | × | × | - | | Section 8.8 |
| Advanced alarm display (System alarm) | 1<br>Refer to (2) below | Figure Frame<br>Plate Color Ruled Line<br>Font Cursor<br>Layer KANJI<br>Region<br>Text Style<br>Display Size Solid Color | ○ | × | × | × | ○ | × | × | × | × | × | × | ○ | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 8.4 |
| Advanced alarm display (User alarm) | 1<br>Refer to (2) below | Figure Frame<br>Plate Color Ruled Line<br>Font Cursor<br>Layer KANJI<br>Region<br>Text Style<br>Display Size Solid Color | ○ | × | × | × | ○ | × | × | ○ | ○ | × | ○ | ○ | × | × | - | | Section 8.4 |
| Advanced alarm popup display (System alarm) | 1<br>(1 object for each project)<br>Refer to (3) below | Display Size<br>DIsplay Background<br>Font Style | ○ | × | × | × | × | × | × | × | × | × | × | × | × | × | - | | Section 8.5 |
| Advanced alarm popup display (User alarm) | 1<br>(1 object for each project)<br>Refer to (3) below | Display Size<br>DIsplay Background<br>Font Style<br>Solid Color | ○ | × | × | × | × | × | × | ○ | ○ | × | × | × | × | × | - | | Section 8.5 |

(Continued to next page).

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger | | | | | | | Device | | | | Others | | | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ordinary | Sampling | Range | Rise/Fall | ON/OFF | Bit Trigger | ON Sampling/OFF sampling | Bit device | Word device | Offset specification | Switching Station No | Security | Data Operation | Object script | | | |
| Scrolling alarm display | 1 (1 object for each project) / Refer to (4) below | Display Size<br>DIsplay Background<br>Font Style<br>Solid Color | ○ | × | × | × | × | × | × | ○ | ○ | × | × | × | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 8.9 |

*1 Up to 16 objects with [Store Memory] setting can be set.
*2 Objects with [Store Memory] setting is unusable.

(1) Memory capacity for alarm history display (Bytes)
62 + N1 + N2 + N3 + N4

N1: (Number of the following title characters) × 2 *1
- Occurred
- Message
- Restored
- Checks
- Cum.Time
- Occur Freq

N2: (Number of the following characters) × 2 *1
Occurrence date/time Restoration date/time Check date/time

N3: "4" should be added for each of the following setting items
- Text Sprite
- Draw Ruled Line
- Restored Time
- Confirm Time
- One Touch

N4: "16" should be added for each of the following setting items
Figure frame

(2) Memory capacity of advanced alarms (system alarms/user alarms) (Bytes)
96 + (DAN × 8) + (TN × 2) + (DN × 8)
DAN: Number of display attributes
TN : Number of title characters
DN : Date / Specified number of times

(3) Memory capacity of advanced alarm popup display (system alarms/user alarms) (Bytes)
56 + (CPN × 8) + (DN × 8)
CPN: Specified number of comments
DN : Date / Specified number of times

(4) Memory capacity for scrolling alarm display (Bytes)
148 + 28 × AN + DON + O
AN : Alarm points
DON: Setting of the device that stores the number of alarm occurrences (Set: 8, Not set: 0)
O : Setting of the alarm occurrence time (display attributes) (Set: 12, Not set: 0)

*1 Notes for calculation of N1 and N2

(1) Calculated value
Round the calculated value to a multiple of "4."

Example: If the calculated value is "10," use "12" for calculation.

(2) Calculation procedure
Calculate each item.

Example: Occurrence time field: four characters Message field: five characters
[Occurrence time field] $4 \times 2 = 8$
[Message field] $5 \times 2 = 10 \rightarrow 12$ (Round to a multiple of "4.")
Therefore N1 = 8 + 12 = 20

## Animation

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parts display | 1000<br>Bit 48<br>Word 44<br>Fixed 52 | Display Mode<br>Positioning Point<br>Mark Color Blink<br>Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 9.1 |
| Part movement | 1000<br>Bit 60<br>Word 56<br>Fixed 56 | Movement Type<br>Display Mode<br>Positioning Point<br>Mark Color Blink<br>Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 9.2 |
| Lamp | 1000 *1<br>Bit 68<br>Word 56 | Figure Frame<br>Lamp<br>Back Ground<br>Pattern Blink<br>Text Style<br>Text Color Solid Color<br>Font Display Size<br>Effects Script<br>KANJI Region<br>Layer | ○ | × | × | × | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 6.1 |
| Panel meter | 1000<br>96 | Figure Frame<br>Plate Color<br>Meter Attribute<br>Meter Panel Color<br>Text Display Size<br>Text Color Font<br>Layer<br>Scale Display<br>Scale Points | ○ | × | × | × | × | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | | Section 10.1 |
| Level | 1000<br>52 | Boundary Color<br>Level Color Pattern<br>Background<br>Graph Color<br>Pattern Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 10.2 |
| Trend graph | 24 *2<br>Refer to (1) below | Figure Frame<br>Plate Color<br>Scale Display<br>Scale Points<br>Graph Color<br>Style Width<br>Font Layer | × | ○ | × | ○ | × | × | ○ | × | ○ | ○ *4 | ○ *4 | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 10.3 |
| Line graph | 32 *3<br>Refer to (2) below | Figure Frame<br>Plate color<br>Scale Display<br>Scale Points<br>Graph Color<br>Style Width<br>Font Layer | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ | ○ *5 | ○ *5 | ○ | ○ | ○ | - | | Section 10.4 |

(Continued to next page)

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bar graph | 1000<br>Refer to (3) below | Figure Frame<br>Plate color Graph color<br>Pattern Background<br>Font Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 10.5 |
| Statistics graph | 32<br>Refer to (4) below | Figure Frame<br>Plate Color<br>Division Number<br>Direction<br>Scale Display<br>Scale Points<br>Graph Color Pattern<br>BackGround<br>Font Layer | ○ | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | ○ | - | | Section 10.6 |
| Scatter graph | 24 *2<br>Refer to (5) below | Figure Frame<br>Plate Color<br>Display mode<br>Graph frame display<br>Graph display format<br>Font Layer | × | ○ | × | ○ | × | × | ○ | × | ○ | ○ *4 | ○ *4 | ○ | ○ | ○ | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 10.7 |
| Historical trend graph | 8<br>Refer to (6) below | Figure Frame<br>Plate color<br>Display mode<br>Scale display<br>Scale points<br>Layer | × | × | × | × | × | × | × | × | × | × | × | ○ | × | × | Option function board*6 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 10.8 |

*1 Figures for which the lamp attribute is set are also included.
*2 Up to 16 objects with [Store Memory] settings can be set.
*3 Only one object with [Locus mode] settings can be set to one project.
*4 Objects with [Store Memory] settings is unusable.
*5 Objects with [Locus] settings is unusable.
*6 No option function board is required for GT16 and GT SoftGOT1000.

(1) Memory capacity for trend graph (Bytes)
124 + {4 × (LN + MN)}

(2) Memory capacity for line graph (Bytes)
124 + (4 × LN) + (8 × MN)

(3) Memory capacity for bar graph (Bytes)
120 + {4 × (LN + MN)}

(4) Memory capacity for statistics graph (Bytes)
100 + {4 × (LN + MN)}

(5) Memory capacity for scatter graph (Bytes)
108 + 4 × PN × 2

(6) Memory capacity for historical trend graph (Bytes)
312 + (20 × MI) + (8 × AL) + (8 × EN) + (28 + 8 × GN) × LN + (12 + 8 × LN) × PN

MI: Number of scale axis position settings
AL: Number of graph assistance lines
EN: Number of set time devices
GN: Number of external output settings per graph
LN: Number of graphs
PN: Number of points

## Touch switch

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Touch switch | 1000 *1*2*3<br>Bit<br>132<br>Data set<br>124<br>Special function<br>80<br>Go to screen<br>124<br>Change station No.<br>124<br>Key code<br>124<br>Multi action<br>120 | Figure Frame<br>Switch Pattern<br>BackGround<br>Style Text Color<br>Solid Color Text<br>Display Size<br>Font Effects<br>Script Layer | ○ | × | ○ | × | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 6.2 |

*1 Up to 10 touch switches with its max. number of times for operation set can be set in one screen.
*2 Up to 100 touch switches with "ON/OFF delay" settings can be set.
*3 For GT10, 50 touch switches can be set.

## Trigger → Action

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Status observation | 512 (512 objects for each project) / Refer to (1) below | - | × | × | ○ | × | ○ | × | × | ○ | ○ | ○ | ○ | × | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 11.1 |
| Time action | 32 (32 objects for each project) / 1592 | - | × | × | × | × | × | × | × | ○ | ○ | × | × | × | × | × | - | | Section 11.2 |
| Logging | 32 (32 objects for each project) / Refer to (3) below | - | × | ○ | × | ○ | × | × | ○ | ○ | ○ | × | × | × | × | × | Option function board*1 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 11.3 |
| Device data transfer | 255 (255 objects for each project) / Refer to (4) below | - | × | ○ | × | ○ | × | × | × | ○ | ○ | ○ | × | × | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 11.4 |

*1 No option function board is required for GT16 and GT SoftGOT1000.

(1) Memory capacity for status observation (Bytes)
28 + WN × 8 + IN × 8 + FN × 4
WN : Number of write points
IN : Number of function points
FN : Fixed

(2) Memory capacity for time action (Bytes)
26 + {BA × 8 + {WA × 16 (+ 8 bytes, shared by time action)
BA : Bit action
WA : Word action

(3) Memory capacity for logging (Bytes)
Capacity for logging to be stored in user area (C drive + expansion memory): Displayed at [Buffering Area Size] of logging setting

☞ This section 2 (1) Basic tab

When stored on a memory card: ☞ This section 2 Data capacity available for storage on memory card.

(4) Memory capacity for device data transfer (Bytes)
Total memory capacity of all the device data transfer settings
: 32 + N1 + N2(1) + N2(2) + ... + N2(Ndt)

N1 : Wt + Ws + Wm
N2 : 36 + (2 + 2 × Ndtnm) + (6 + 2 × Ncmt) × Np + 52 × Nblk

Wt : 68 + 52 × (Ndt + 2)
Ws : 76 × Nend
Wm : 68 + 16 × Nrd (When the device point is set to 1)
: 80 + INT ((Ds × P + 3) / 4) × 4 (When the device point is set to 2 or more)

Ndt : Total number of device data transfer settings
Nend : Total number of device data transfer settings with the external notification device set
Nrd : Total number of blocks with the device point set to 1
INT( ) : Rounding down numbers of decimal places
Ds : Data type for the selected device type (16-bit device: 2, 32-bit device: 4)
P : Total number of device points
Ndtnm : Number of the characters for the device data transfer name set in one device data transfer setting
Ncmt : Total number of the characters for comments set in one device data transfer setting
Np : Total number of device points set in one device data transfer setting
Nblk : Total number of blocks set in one device data transfer setting

## Recipe

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Recipe | 256 (256 objects for each project) / Refer to (1) below | - | × | × | × | ○ | × | × | × | ○ | ○ | × | × | × | × | × | Option function board*1 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 12.2 |
| Advanced recipe | 2048 (2048 objects for each project) / Refer to (2) below | - | × | × | × | ○ | × | × | × | ○ | ○ | × | × | × | × | × | Option function board*1 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 12.3 |

*1 No option function board is required for GT16, GT SoftGOT1000, and GT10.

(1) Memory capacity for recipe function (Bytes)
Stored in built-in memory : 48 + Nrnm × 2 (Nfom × Nfam) × 2 (+ 8 bytes, shared by recipe)
Nrnm : Number of characters of [Recipe Name]
Nfom : Number of characters of folder name
Nfam : Number of characters of file name

When stored on a memory card: ☞ This section 2 Data capacity available for storage on memory card.

(2) Memory capacity for advanced recipe function (Bytes)
Advanced recipe setting capacity to be stored in the built-in flash memory
: 96 + N1 + N2 + N3 + N4 + N5

N1 : 2 x (Nrnm + Nfnm)
N2 : 12 x (Nir+Niw)
N3 : (8 + 2 x Ndcmt) x Ndev (When setting device comment.)
: 4 x Ndev (When not setting device comment.)
N4 : 28 x Nblk + 76 x Nrec
N5 : (2 x (Nbdev + Nwdev) + 4 x Ndwdev) x Nrecv

Nrnm : Number of characters of [Recipe Name]
Nfnm : Number of characters of [File Name]
Nir : Points of [Read Trigger]
Niw : Points of [Write Trigger]
Ndcmt : Number of characters of [Device Comment]
(Average number of characters of device comment set in each device)
Nrecv : Number of record (only for the record whose attribute has recipe device value)
Ndev : Points of device (Nbdev + Nwdev + Ndwdev)
Nbdev : Points of bit device
Nwdev : Points of word device (16-bit)
Ndwdev : Points of word device (32-bit)
Nblk : Number of block
Nrec : Number of record

When stored on a memory card: ☞ This section 2 Data capacity available for storage on memory card.

## Auxiliary

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set overlay screen | GT16, GT15:2047<br>GT11:5 | - | × | × | × | × | × | × | × | × | × | × | ○ | ○ | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 15.1 |
| | 8<br>(+ 8 bytes, shared by set overlay screen) | | | | | | | | | | | | | | | | | | |
| Operation log *1 | 1<br>(1 point for each project) | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | • Option function board*4<br>• Memory card | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 15.2 |
| | Refer to (1) below. | | | | | | | | | | | | | | | | | | |
| Document display | 1*2 | - | × | × | × | × | × | × | × | × | ○ | × | × | × | × | × | • Option function board*4<br>• Memory card | | Section 15.3 |
| | 72 bytes | | | | | | | | | | | | | | | | | | |
| Test | - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 15.4 |
| | - | | | | | | | | | | | | | | | | | | |
| Sysetem monitor | - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | - | | Section 14.1 |
| | - | | | | | | | | | | | | | | | | | | |
| Ladder monitor | - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 14.3 |
| | - | | | | | | | | | | | | | | | | | | |
| List editor for A | - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 14.4 |
| | - | | | | | | | | | | | | | | | | | | |
| FX list editor | - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 14.5 |
| | - | | | | | | | | | | | | | | | | | | |

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger | | | | | | | Device | | | | Others | | | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ordinary | Sampling | Range | Rise/Fall | ON/OFF | Bit Trigger | ON Sampling/OFF sampling | Bit device | Word device | Offset specification | Switching Station No | Security | Data Operation | Object script | | | |
| Intelligent module monitor | - / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 14.6 |
| Network monitor | - / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | | Section 14.7 |
| Q motion monitor | - / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | | Section 14.8 |
| Servo amplifier monitor | - / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | | Section 14.9 |
| CNC monitor | - / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | | Section 14.10 |
| Gateway | Server, client function: one point (1 point for each project) Mail send function: one point (1 point for each project) / - | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board*4 | | Section 15.5 |
| MES interface | one point*3 (1 point for each project) / Refer to (2) below | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Option function board with MES interface function | | Section 15.6 |
| Script | 256 (256 objects for each project) / Refer to (3) below | - | ○ | ○ | × | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ | × | × | × | - | GT16 GT15 SoftGOT1000 GT11 GT10 | Chapter 16 |
| Object script function | Refer to (4) below | - | Depends on objects. | | | | | | | | | | | | | | Option function board*4 | GT16 GT15 SoftGOT1000 GT11 GT10 | Chapter 16 |

*1 Valid/invalid of display/operation conditions, etc. differs depending on the operation log target objects.
*2 Only one object can be displayed on one screen.
*3 One point for each project is regarded as a group of tab, job, and server service settings.
*4 No option function board is required for GT16, GT SoftGOT1000, and GT10.

(1) Required memory size for the operation log function (Bytes)
36 + 2 x OPlgfn
OPlgfn: Number of characters for an operation log file name (full path)

(2) Memory capacity for MES interface function (Bytes)
2500 + 43000 × COMACT + 8000 × CALACT + 2000 × JOBN + 1000 × HDSKN
+ 150 × TAGN + 150 × TAGEN + 350 × DTBOJN
COMACT : Number of communication actions
CALACT : Number of operation actions
JOBN : Number of jobs
HDSKN : Number of handshakes
TAGN : Number of tags
TAGEN : Number of tag components
DTBOJN : Number of database objects

(3) Memory capacity for script function (Bytes) (The memory capacity for script function set in each window will be 0 if the window screen is not displayed.)
48 × (Number of RPN expressions*1 × 8) + (WDN × 8) + 28 + FPN + SCN + FDS
WDN : Number of write devices
FPN : Number of file path characters
SCN : Number of script comment characters
FDS : File data size
*1 The method to express an operator (+, -, *, /, etc.) after an operand (numeric or variable) (in usual expression: 1 + 2, in RPN expression: 1 2 +)

(4) Memory capacity for object script function (Bytes)
448 x (Number of RPN expressions*1 x 8) + (WDN × 8) + STS
WDN : Number of write devices
STS : Script text size
*1 The method to express an operator (+, -, *, /, etc.) after an operand (numeric or variable) (in usual expression: 1 + 2, in RPN expression: 1 2 +)

## External input and output

| Function | Max. No. of setting objects in one screen / Memory capacity applicable for one object (byte) | Display attribute | Trigger: Ordinary | Trigger: Sampling | Trigger: Range | Trigger: Rise/Fall | Trigger: ON/OFF | Trigger: Bit Trigger | Trigger: ON Sampling/OFF sampling | Device: Bit device | Device: Word device | Device: Offset specification | Device: Switching Station No | Others: Security | Others: Data Operation | Others: Object script | Necessary equipment and hardware limitations | Model | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Report | 8 | Print Format, Print Digits, Decimal Point | × | ○ | × | ○ | × | × | × | × | ○ | × | ○ | × | ○ | × | Printer unit Memory card | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 13.1 |
| | Refer to (1) below | Print Digits | × | ○ | × | ○ | × | × | × | ○ | ○ | × | ○ | × | ○ | × | | | |
| Hard copy | 1 (1 object for each project) | - | × | × | × | × | × | × | × | ○ | × | × | × | × | × | × | Memory card | | Section 13.2 |
| | Refer to (2) below | | | | | | | | | | | | | | | | | | |
| Bar code | 1 (1 object for each peoject) | - | × | × | × | × | × | × | × | × | ○ | × | ○ | × | × | × | Bar code reader | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 13.3 |
| | - | | | | | | | | | | | | | | | | | | |
| Video display | 1 (1 object for each peoject) | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | • Video input unit • Video/RGB input unit | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 13.4 |
| | 12 bytes | | | | | | | | | | | | | | | | | | |
| RGB display | 1 (1 object for each peoject) | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | • RGB input unit • Video/RGB input unit | | Section 13.5 |
| | 12 bytes | | | | | | | | | | | | | | | | | | |
| Multimedia | 1 (1 object for each peoject) | - | × | × | × | × | × | × | × | × | × | × | × | × | × | × | Multimedia unit | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 13.10 |
| | Refer to (3) below | | | | | | | | | | | | | | | | | | |
| RFID | 1 (1 object for each project) | - | × | × | × | × | × | × | × | × | ○ | × | ○ | × | × | × | RFID controller | GT16 GT15 SoftGOT1000 GT11 GT10 | Section 13.9 |
| | - | | | | | | | | | | | | | | | | | | |

(1) Memory capacity for report function (Bytes)
136 + 4 × Nin + (2 × Nfnv) + 20 × Nobv + (4 + Nchv × 2) × Nclv + (36 + 8 × Nrv) × Nprv + (44 + 8 × Nrv) × Npcv

For the calculation above, convert the values below to a multiple of 4.
(Example: If the value is "10", assume "12" to calculate.)
Nlin : Number of lines set in the print format of the report setting
Nfnv : Number of characters of file name
Nobv : Total number of objects arranged on the report screen
Nchv : Number of characters
Nclv : Number of lines and characters set
Nrv : Number of data items in the expression
Nprv : Number of numerical prints set
Npcv : Number of comment prints set

(2) Memory capacity for hard copy function (Bytes)
26 + (Nfom + Nfam) × 2
Nfom : Number of characters of folder name
Nfam : Number of characters of file name

(3) Memory capacity for multimedia function (Bytes)
36+2 × FN
FN: Number of characters of file name in the recording setting

## 2 Data capacity available for storage on memory card

(1) Data capacity available for storage on memory card

With some kinds of objects, a function to store the data into a memory card is provided.
The data capacity available for a memory card is shown as follows.

| Object name | Data capacity |
|---|---|
| Report function (byte) | (8 × RN) + 48 + (8 × RN + 8) × CN<br>RN : Number of numerical print and comment print objects set on the report screen<br>CN : Number of data collection times |
| Advanced alarm function (byte) | G1A file size<br>• Advanced user alarm<br>History mode : 64 + 2 × Nm + 2 × Ng + 20 × Nh<br>Cumulative mode : 64 + 2 × Nm + 34 × Ng<br>No alarm collection : 64 + 2 × Nm + 18 × Ng<br>• Advanced system alarm<br>History mode : 64 + 2 × Nm + 2 × Ng + 24 × Nh<br>No alarm collection : 64 + 2 × Nm + 2 × Ng + 20 × Nh<br>CSV file size *1<br>• Advanced user alarm<br>History mode : 228 + (Nat × 2) + (91 + (Ncv × 2)) × Nac<br>Cumulative mode : 258 + (Nat × 2) + (121 + (Ncv × 2)) × Nac<br>• Advanced system alarm<br>History mode : 197 + (71 + (Ncv × 2)) × Nac<br>Unicode text file size<br>• Advanced user alarm<br>History mode : 456 + (Nat × 2) + (182 + (Ncv × 2)) × Nac<br>Cumulative mode : 516 + (Nat × 2) + (242 + (Ncv × 2)) × Nac<br>• Advanced system alarm<br>History mode : 394 + (142 + (Ncv × 2)) × Nac<br>Ng : Number of general alarms set<br>Nm : Number of middle alarms set<br>Nh : Max. number of histories *2<br>Ncv : Average number of comment characters<br>Nac : Number of alarms<br>Nat : Number of alarm name characters *3 |
| Alarm history function K bytes | When saving 3072 alarm historical data<br>Cumulative mode (when saved in CSV format) : Approx. 97 (Approx. 400)<br>History mode (when saved in CSV format) : Approx. 72 (Approx. 360) |

(Continued to next page)

<table>
<tr><th>Object name</th><th>Data capacity</th></tr>
<tr><td>Hard copy function<br>K bytes</td><td>Data capacity per screen (The following are reference values.) × Number of screens to be stored
<table>
<tr><th rowspan="2">Model</th><th colspan="2">Data capacity per screen</th></tr>
<tr><th>BMP format</th><th>JPEG format</th></tr>
<tr><td>GT1695M-X, GT1595-X</td><td>65536 color : 2359<br>256 color : 787</td><td rowspan="7">Depending on the screen</td></tr>
<tr><td>GT1685M-S, GT1675M-S, GT1665M-S, GT1585V-S, GT1585-S, GT1575V-S, GT1575-S</td><td>65536 color : 1440<br>256 color : 481</td></tr>
<tr><td>GT1675M-V, GT1665M-V, GT1575-V, GT1565-V</td><td>65536 color : 921<br>256 color : 308</td></tr>
<tr><td>GT1575-VN</td><td>256 color : 308</td></tr>
<tr><td>GT1572-VN, GT1562-VN</td><td>16 color : 308</td></tr>
<tr><td>GT1555-Q</td><td>65536 colors : 230<br>256 colors : 77</td></tr>
<tr><td>GT1550-Q</td><td>Monochrome : 77</td></tr>
</table></td></tr>
<tr><td>Multimedia function*4<br>K bytes</td><td>Video file size when recording on the video image screen<br>• Recording size: [640 × 480], frame rate: [15 fps] or [12.5 fps] : 125 × RT<br>• Recording size: [320 × 240], frame rate: [15 fps] or [12.5 fps] : 48 × RT<br>• Recording size: [320 × 240], frame rate: [30 fps] or [25 fps] : 96 × RT<br>RT : Recording time (Second)<br>Video file size when recording before and after the event<br>• Recording size: [640 × 480], frame rate: [15 fps] or [12.5 fps] : 125 × RT<br>• Recording size: [320 × 240], frame rate: [15 fps] or [12.5 fps] : 48 × RT<br>• Recording size: [320 × 240], frame rate: [30 fps] or [25 fps] : 96 × RT<br>RT : Recording time (before event) + Recording time (after event) (Second)<br>Video file size for long time recording: Number of video files × 20</td></tr>
<tr><td>Recipe function<br>(byte)</td><td>(149 × F) + (9 × 16) + (14 × 2)<br>RF : Number of recipe files<br>R16: Total number of 16-bit devices in each recipe file<br>R32: R16: Total number of 32-bit devices in each recipe file</td></tr>
</table>

(Continued to next page)

| Object name | Data capacity |
|---|---|
| Advanced recipe function (byte) | G1P file size: 128 + N1 + N2 + N3<br>N1 : (8 + 2 × Ndcmt) × Ndev (When setting device comment.)<br>: 4 × Ndev (When not setting device comment.)<br>N2 : Nblk × 12<br>N3 : (80 + Ndwsize × 2) × Nrec<br>Ndcmt : Number of characters of [Device Comment]<br>Ndev : Points of device (Nbdev + Nwdev + Ndwdev)<br>Nbdev : Points of bit device<br>Nwdev : Points of word device (16-bit)<br>Ndwdev : Points of word device (32-bit)<br>Nblk : Number of block<br>Nrec : Number of recordCSV file size : 164 + N1 + N2 + N3<br>Ndwsize : Number of word device points (Nbdev + Nwdev + Ndwdev × 2)<br>CSV file size: 164 + N1 + N2 + N3<br>N1 :Nrnm<br>N2 :(Nbit + Nwrd + Ndwrd) × (18 + Ndcmt)<br>N3 :Nrec × (25 × Nbit × 2 + Nwrd × 7 + Ndwrd × 12)<br>Unicode text file size: above CSV file size ×2<br><br>Nrnm :Number of characters*5 of [Recipe Name]<br>Ndcmt :Number of characters*5 of [Device Comment]<br>Ndev :Device Points<br>Nblk :Block Number<br>Nrec :Record Number<br>Nbit :Number of bit device points<br>Nwrd :Number of 16-bit device points<br>Ndwrd :Number of 32-bit device points |
| Logging function (byte) | Memory capacity for G1L file: 100+N1+N2+N3<br>N1 Nd (8+Navedc 2)<br>N2 Nb 16<br>N3 (6+Ndb 2+Ndw 2+Ndd 4) (17/16) Nalgf<br>Memory capacity for CSV file: 99 + N1 + N2 × N3<br>N1 (Navbedc + 11) × Nd<br>N2 (20 + (Ndspl + 1) × Nd)<br>N3 Nalgf<br>Memory capacity for Unicode text file: 198 + N1 + N2 × N3<br>N1 (Navbedc + 11) × Nd × 2*5<br>N2 (20 + (Ndspl + 1) × Nd)<br>N3 Nalgf × 2<br><br>Navedc : Average number of device comment characters<br>Ndb : Number of bit devices<br>Ndw : Number of 16-bit (word) devices<br>Ndd : Number of 32-bit (double-word) devices<br>Nb : Number of device blocks<br>Ndspl : Number of display digits (When setting the real for the display type: Number of display digits + 5)<br>Nalgf : Number of stored events in a log file<br>Nd : Number of logging devices (Total number of devices set to a device block) |

(Continued to next page)

| Object name | Data capacity |
|---|---|
| Operation log function (byte) | G10 file size: 40 + (N1+N2 + •••Nm)<br>N1 to Nm: Size of each log (see below)<br>• GOT start-up (12) • Application switching (16) • Time change (Max. 28)<br>• System language switching (Max. 28) • Security setting (Max. 28) • Screen switching (Max. 88)<br>• Station number switching (16) • Language switching (16)<br>• Touch switches<br>Bit switch, data set switch (Max. 120) Special function switch (Max. 108)<br>Screen switching switch (Max. 112) Station number switching switch (Max. 112)<br>• Numerical input (Max. 124)<br>When writing to write device / write check device (Max. 120)<br>• ASCII input (Max. 320)<br>• Alarm history<br>Delete, delete all (Max. 108) Reset (Max. 120)<br>• Advanced alarm display (user alarm)<br>Display, delete, delete all (Max. 108) Reset (Max. 120)<br>• Advanced alarm display (system alarm) (Max. 108) • Object script (Max. 120)<br>CSV file size: 162 + (N1+N2 + •••Nm)<br>N1 to Nm: Size of each log (see below)<br>• GOT start-up (Max. 63) • Application switching (Max. 98) • Time change (Max. 113)<br>• System language switching (Max. 86) • Security setting (Max. 94) • Screen switching (Max. 212)<br>• Station number switching (Max. 87) • Language switching (Max. 67)<br>• Touch switches<br>Bit switch, data set switch (Max. 285) Special function switch (Max. 226)<br>Screen switching switch (Max. 235) Station number switching switch (Max. 233)<br>• Numerical input (Max. 272)<br>When writing to write device / write check device (Max. 282)<br>• ASCII input (Max. 449)<br>• Alarm history<br>Delete, delete all (Max. 210) Reset (Max. 274)<br>• Advanced alarm display (user alarm)<br>Display, delete, delete all (Max. 226) Reset (Max. 280)<br>• Advanced alarm display (system alarm) (Max. 230) •Object script (Max. 262)<br>Unicode text file size: 324 + (N1+N2 + oooNm)<br>N1 to Nm: Size of each log (see below)<br>• GOT start-up (Max. 116) • Application switching (Max. 152) • Time change (Max. 218)<br>• System language switching (Max. 156) •Security setting (Max. 164) • Screen switching (Max. 332)<br>• Station number switching (Max. 142) •Language switching (Max. 124)<br>• Touch switches<br>Bit switch, data set switch (Max. 476) Special function switch (Max. 366)<br>Screen switching switch (Max. 384) Station number switching switch (Max. 380)<br>• Numerical input (Max. 476)<br>When writing to write device / write check device (Max. 474)<br>• ASCII input (Max. 824)<br>• Alarm history<br>Delete, delete all (Max. 350) Reset (Max. 466)<br>• Advanced alarm display (user alarm)<br>Display, delete, delete all (Max. 366) Reset (Max. 472)<br>• Advanced alarm display (system alarm) (Max. 368) • Object script (Max. 442) |
| Document display function | Differs depending on the screen contents. |
| MES interface function (byte) | MES interface execute log file : Up to 524288 (512KB) per file<br>Job execute log file : Up to 1048576 (1MB) per file |

*1 In the calculation of the number of characters, count a 1-byte character as 0.5 characters and a 2-byte character as 1 character.

*2 The value set for [Stored Number] of Advanced Alarm Observation.

*3 The number of characters set for [Observation Alarm Name] of Advanced User Alarm Observation.

*4 A recorded video file is stored in the CF card installed in the multimedia unit.

*5 Single/double byte characters are not distinguished.

# 2.5 Clock Function

## 1 Clock Function

The clock function is a function that manages the clock data of the GOT.
The objects below use the clock data of the GOT.

- Date display function
- Time display function
- Advanced alarm observation (Advanced user alarm)
- Advanced alarm observation (Advanced system alarm)
- Advanced alarm display (Advanced user alarm)
- Advanced alarm display (Advanced system alarm)
- Advanced alarm display (Advanced alarm popup display)
- Alarm history display function
- Alarm list display function (User alarm)
- Alarm list display function (System alarm)
- Scrolling alarm display function
- Time action function
- Logging function
- Multimedia function
- Backup/restore function

The clock data to be used varies depending on the GOT type.

| Items | Description |
|---|---|
| GT16, GT15, GT11 | The clock data of the GOT or PLC CPU is used. |
| GT SoftGOT1000 | The clock data of the personal computer is used. |
| GT10 | • GT105□, GT104□, GT1030:<br>The clock data of the GOT or PLC CPU is used.<br>• GT1020:<br>The clock data of the PLC CPU is used. |

**Point**

About the clock function

When the connected PLC CPU has no clock for GT16, GT15, GT11, GT105□, GT104□, and GT1030, the clock of the GOT is used.
In this case, set the clock of the GOT with the utility.

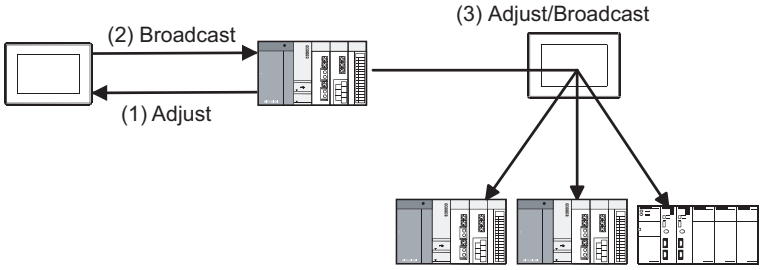
When the connected PLC CPU has a clock, It is necessary to match the GOT clock and the PLC CPU clock.
To match the clock data between the GOT and the PLC CPU, follow the procedure explained below.

The procedure for using the clock data of individual GOT types is explained in 2 to 4 below.

## 2 Determining base clock between GOT and PLC CPU

GT16 GT15 Soft GOT 1000 GT11 GT10

The clock used as a base must be determined so that the time is matched between the GOT and the PLC CPU connected.
The method for adjusting time between the GOT and PLC CPU is different depending on the base clock. (Only adjusting times can be used for GT1020.)




(1) Setting the clock time of the GOT by the PLC CPU clock time data (Adjust)
  (a) The time of the GOT clock data is adjusted to that of the PLC CPU clock data when the GOT is turned on.
  (b) No battery is required because the time is adjusted to that of the PLC CPU's clock data when the GOT is powered up.
  (c) To set the clock data of the PLC CPU, refer to the manual of the PLC CPU being used.

(2) Setting the clock data of the PLC CPU by the GOT clock data (Broadcast)
  (a) The time of the PLC CPU clock data is adjusted to that of the GOT at the timing of triggering.
  (b) Because the GOT's clock data are used as base clock time data, a battery must be installed so that the clock is usable even if the GOT is powered down.
  (c) To set the time of the GOT's clock data, use the GOT's utility.
  (d) It is possible to make the clock data of multiple PLC CPUs matched with the clock data of GOT by using the multi-channel function. (GT16, GT15 only)
  For details of the multi-channel function, refer to the following.

☞ Section 2.8 Multi-channel Function

(3) Setting the clock data of the GOT and other PLC CPUs to the clock data of the PLC CPU taken as the reference (Adjust/Broadcast)
  (a) Using both adjust and broadcast functions.
  (b) It is possible to make the clock data of the GOT and PLC CPUs matched with the clock data of one PLC CPU by using the multi-channel function.
  (c) By setting different triggers for adjusting and broadcasting, it is possible to activate the adjust and broadcast function independently meeting the situations.

For the procedure to match the clock data between the GOT and PLC CPU, refer to the following.

☞ Section 2.5.1 Synchronizing clock data between GOT and PLC CPU

**Point**

The battery installed to a GOT

A battery can be installed to a GOT to backup the clock data while the GOT is powered OFF.
With a battery installed, a GOT continues the clock operation even under the power-OFF status.
After purchasing the GOT, install a battery and set the clock time by the utility.
To operate the utility, install the OS.

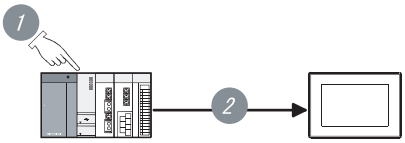
## 3 Changing clock data

GT16 GT15 Soft GOT1000 GT11 GT10

Change the clock data of the PLC CPU or GOT by the methods given below.
(Only adjusting times can be used for GT1020.)

(1) Making the clock data of the GOT matched with that of the PLC CPU (Adjust)

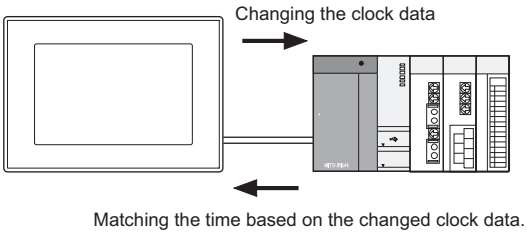
1. Correct the clock data of the PLC CPU used as the reference of time.
   For the procedure for correcting the clock data, refer to the manual of the PLC CPU being used.
2. Make the clock data of the GOT matched with the clock data of the PLC CPU using the adjust function.




**Point**

Changing the clock data at the GOT

When using the adjust function, the clock data of the PLC CPU can be changed with the utility (clock setting) of the GOT.
In this operation, change the clock data of the controller connected at the channel number, which is set for [Clock data GOT is matched to clock data External (Adjust)] under [System Environment] (Clock Setting) of GT Designer2.

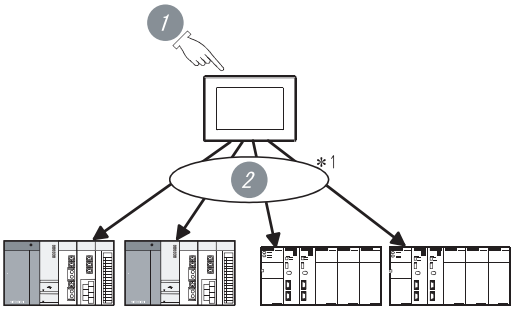


(2) Making the clock data of the PLC CPU matched with the clock data of the GOT (Broadcast)

1. Correct the clock data of the GOT.
   The clock data of the GOT can be corrected using the clock setting of utility or GOT special register (GS).
   For details of correction, refer to the following.

   Section 2.5.2 Changing clock data by GOT special register (GS)
   GT16 User's Manual (Basic Utility) (Section 2.1 GOT Main Unit Function Settings)
   GT15 User's Manual (Section 12 The Clock Setting and Status Display of Battery)
   GT11 User's Manual (Section 11 The Clock Setting and Status Display of Battery)

2. Make the clock data of the PLC CPU matched with the clock data of the GOT by using the broadcast function.



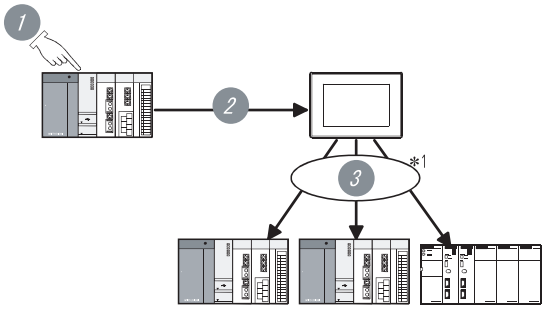

*1 Broadcasting of clock data to multiple PLC CPUs is available only when the multi-channel function is used at GT16 or GT15.

(3) Making the clock data of the GOT and other PLC CPUs matched with the clock data of the PLC CPU taken as the reference (Adjust/Broadcast) (Only when the multi-channel function is used at GT16 or GT15)

1. Correct the clock data of the PLC CPU used as the reference of time.
   For the procedure for correcting the clock data, refer to the manual of the PLC CPU being used.

2. Using the adjust function, make the clock data of the GOT matched with the clock data of the PLC CPU.

3. Using the broadcast function, make the clock data of the PLC CPUs other than the PLC CPU described in 1 matched with the clock data of the GOT.




*1 Only when the multi-channel function is used at GT16 or GT15.

## 4 Changing the clock data when GT SoftGOT1000 is used

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

Since the GT SoftGOT1000 uses the clock data of a personal computer, time adjustment/broadcasting is not possible. To adjust the clock data between the GT SoftGOT1000 and PLC CPU, the user must adjust the time.
The clock data of GT SoftGOT1000 is always written to a GOT special register (GS). Therefore, the time of the PLC CPU can be adjusted to that of the GT SoftGOT1000 by writing the clock data stored in a GOT special register (GS) to the PLC CPU.
An example of time adjustment operation is explained below using the method to display the clock data of GT SoftGOT1000 and PLC CPU on the same screen.

Example) When connecting the GT SoftGOT1000 to a QCPU (Q mode)

(1) Screen image
9h 27' 50", November 1, 2005 Tuesday

(a) Touching this switch sets the devices (GS650 to GS653) of GOT to devices (SD210 to SD213) of PLC CPU.

(b) Touching this switch causes the set clock data written to the PLC CPU clock.

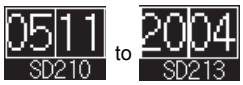
(c) Touching this switch causes the current clock data of the PLC CPU displayed.

(d) Display sections of GOT and PLC CPU clock data.
The clock data are displayed as below in 2-digit units from the left to right:
Year (lower two digits), Month, Day, Hour, Minute, Seconds, Year (upper two digits) (with GOT, "00" is always displayed), Day of week

(2) Operation

1. Touch the Read switch to display the clock data of the PLC CPU.
2. Touch the Date/Time set switch to display the clock data of the GOT at the clock data display section of PLC CPU.
3. Touch the Write switch to update the clock data of the PLC CPU.

(3) Setting details

| Item | Description |
|---|---|
| | Multi-action switch<br><Basic tab><br>Operation (word) 1 [Device]: SD210, [Data Type]: BCD, [Indirect] of [Type]: GS650<br>Operation (word) 2 [Device]: SD211, [Data Type]: BCD, [Indirect] of [Type]: GS651<br>Operation (word) 3 [Device]: SD212, [Data Type]: BCD, [Indirect] of [Type]: GS652<br>Operation (word) 4 [Device]: SD213, [Data Type]: BCD, [Fixed] of [Type]: 2000, [Indirect] of [Type]: GS653 |
| | Bit switch<br><Basic tab><br>[Device] : SM213<br>[Action] : Alternate<br><Text/Lamp tab><br>[Bit] of [Lamp] : SM213 |
| | Bit switch<br><Basic tab><br>[Device] : SM210<br>[Action] : Alternate<br><Text/Lamp tab><br>[Bit] of [Lamp] : SM210 |
| | Numerical input<br><Basic tab><br>[Device] : GS650 to GS653<br>[Format] : Unsigned decimal number<br>[Digits] : 4<br>[Size] : 2 × 2<br><Extended tab><br>[Data type] : BCD |
|  | Numerical input<br><Basic tab><br>[Device] : SD210 to SD213<br>[Format] : Unsigned decimal number<br>[Digits] : 4<br>[Size] : 2 × 2<br><Extended tab><br>[Data type] : BCD |

## 2.5.1 Synchronizing clock data between GOT and PLC CPU

GT16 GT15 Soft GOT1000 GT11 GT10

### 1 Method for clock time synchronization

The following two methods are usable for synchronizing the clock time data of the GOT and PLC CPU.

(1) Adjust (PLC CPU's clock data to GOT's clock data)
Read out the clock data of the connected PLC CPU, and adjust the GOT's clock data to it.
The timing for the reading can be selected from the GOT's power-up or reset, cycle, and rise/fall of the bit device.

(2) Broadcast (GOT's clock data to PLC CPU's clock data)
The clock data of GOT are written to the clock of the connected PLC CPU for time adjustment.
The timing for the writing can be selected from the cycle and rise/fall of the bit device.

**Remark** GT1020

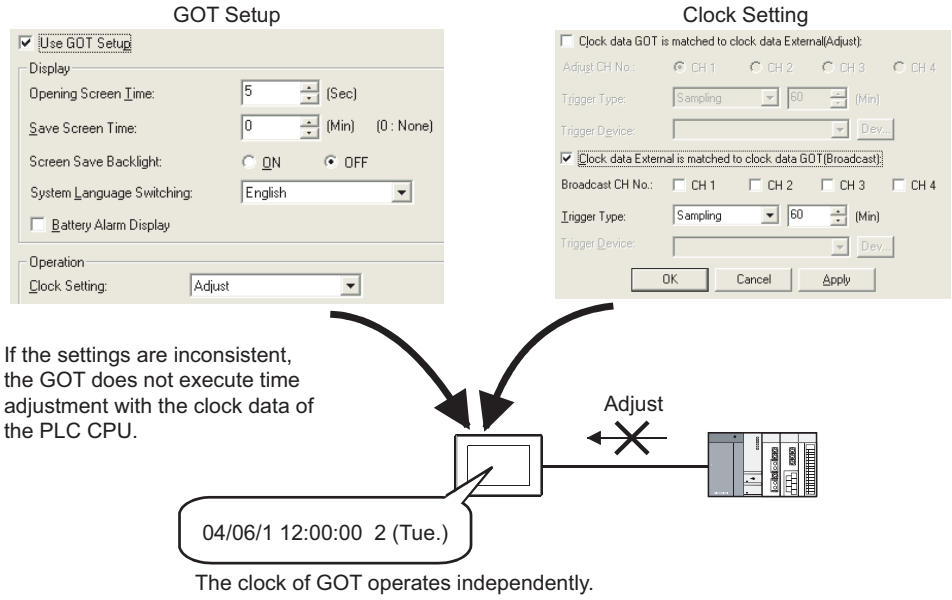
Because the GT1020 does not have clock data, the broadcast cannot be used.
(☞ Section 2.5 Clock Function)

For the PLC CPU supporting the adjust/broadcast features and connection methods, refer to following:

☞ Section 2.5.3 PLC CPU equipped with clock

### 2 Setup

After selecting either of the adjust or broadcast options in GOT setup of system environment, specify the trigger of the selected method in clock setting of system environment.
If no trigger is specified for the method selected on GOT setup of clock setting, or if the method for the trigger specified in clock setting is not selected on the GOT setup screen, the method is not executed.
In such cases, the clock of the GOT operates separately from the PLC CPU's clock.



(1) Select a clock setting method

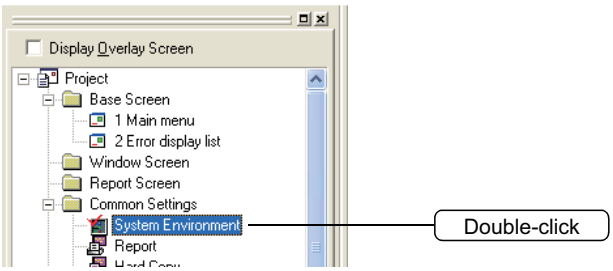
(a) Select [Common] - [System Environment].

(b) The system environment setup dialog box is displayed. Double-click [GOT Setup].

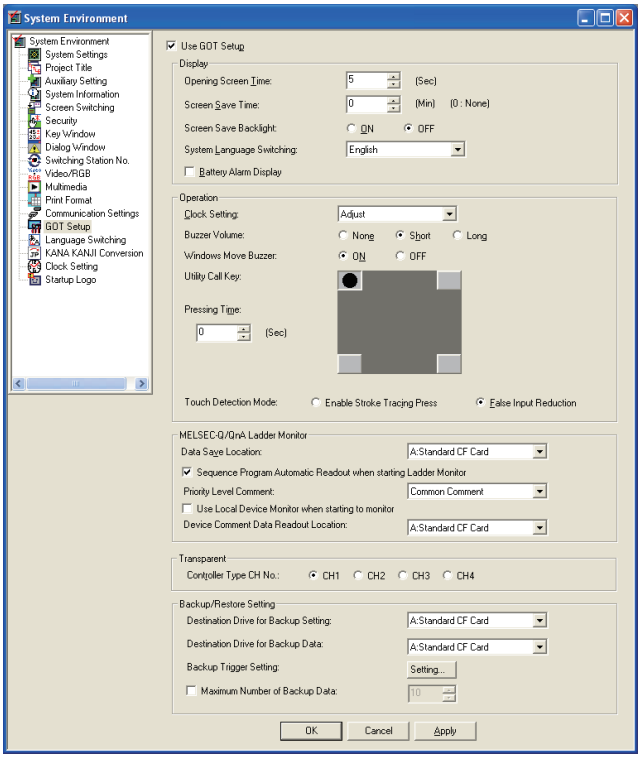
(c) The dialog box for GOT Setup is displayed.

**Remark** Setup in Project Workspace

Double-clicking [System Environment] displays the system environment setup dialog box.
Double-click [GOT Setup].




(d) Set the clock setting method for the GOT.




| Item | Description | Model |
|---|---|---|
| Use GOT Setup | Check this when using opening screen time, save screen time, screen save backlight, clock setting, buzzer volume, window move buzzer and utility call key.<br>For details, refer to the following:<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Clock Setting | Specify the method to match the clock data between the GOT and the PLC CPU from among [None], [Adjust], [Broadcast] and [Adjust/Broadcast].<br>When [Adjust/Broadcast] is specified, both adjust and broadcast are executed.<br>For GT1020, [Broadcast] and [Adjust/Broadcast] cannot be set. | |

(2) Specify the trigger for adjust or broadcast

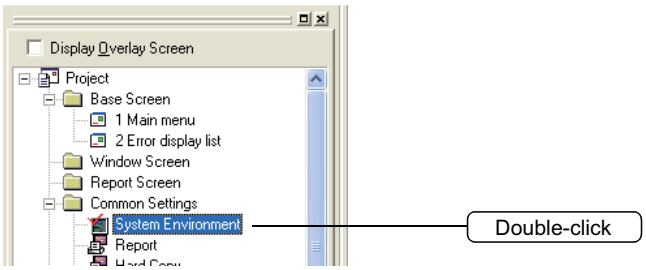
(a) Select [Common] → [System Environment].

(b) The system environment setup dialog box is displayed. Double-click [Clock Setting].

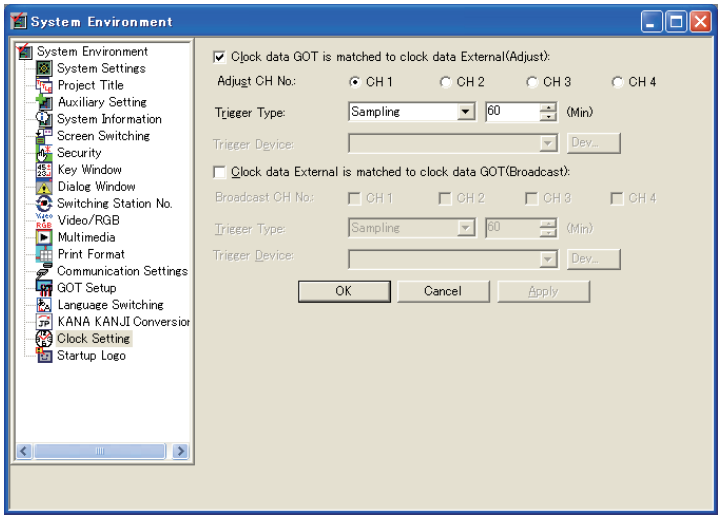
(c) The setup dialog box for clock setting is displayed.

**Remark** Setup in project workspace

Double-clicking [System Environment] displays the system environment setup dialog box.
Double-click [Clock Setting].




(d) Specify the trigger for adjust or broadcast in the clock setting.
If [Adjust/Broadcast] is specified, specify the trigger for both Adjust and Broadcast.



| Item | Description | Model |
|---|---|---|
| Clock data GOT is matched to clock data External (Adjust) | Check when adjust is selected. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Adjust CH No. | Select the channel No. to which the PLC CPU taken as the reference for clock data matching is connected. (Setting of only one channel No. is allowed.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger type | Rise, Fall or Sampling (1-1440 Min.) can be specified. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | When rise or fall is specified, a bit device can be specified as a trigger device. | |
| Clock data External is matched to clock data GOT (Broadcast) | Check when broadcast is selected.<br>(These object functions cannot be set for GT1020.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Broadcast CH No. | Select the channel Nos. to which the PLC CPUs, the target of broadcasting, are connected. (Setting of multiple channel Nos. is possible.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger type | Rise, Fall or Sampling (1-1440 Min.) can be specified. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | When rise or fall is specified, a bit device can be specified as a trigger device. | |

### 3 Priority in setting when using utility

The method for time synchronization between the GOT's clock and the PLC CPU's clock can be set up by the utility as well.

- When downloading the system environment setting to the GOT after setting it by the utility, the system environment setting becomes effective.
- When downloading the system environment setting to the GOT and then changing it by the utility, the utility function becomes effective.
- When screen data are uploaded from GOT, data changed by the utility are uploaded.

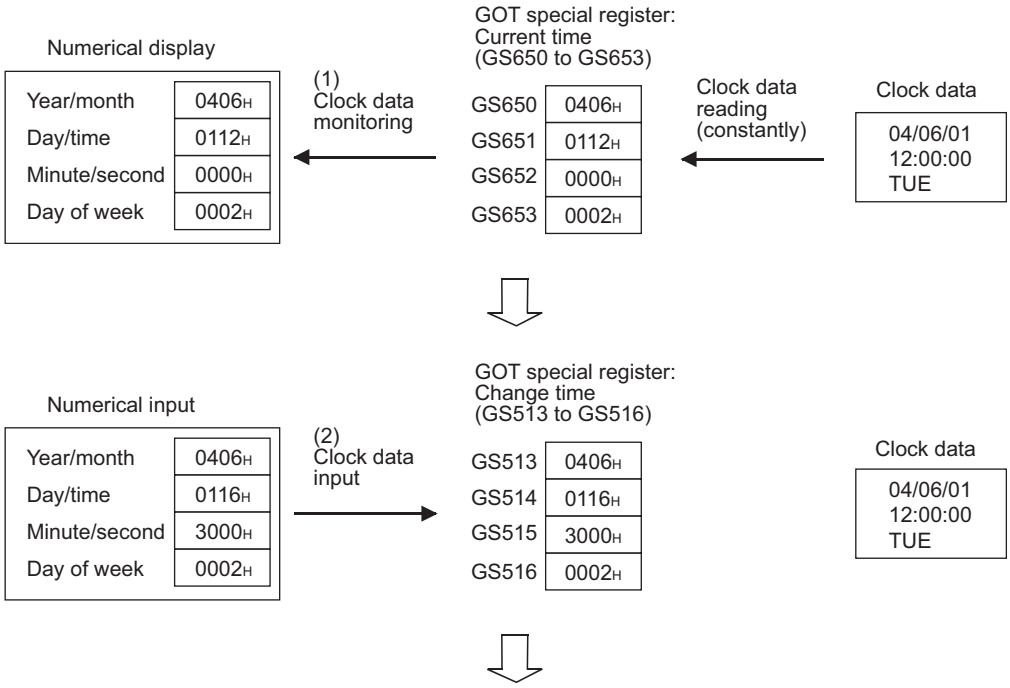
## 2.5.2 Changing clock data by GOT special register (GS)

GT16 GT15 Soft GOT1000 GT11 GT10

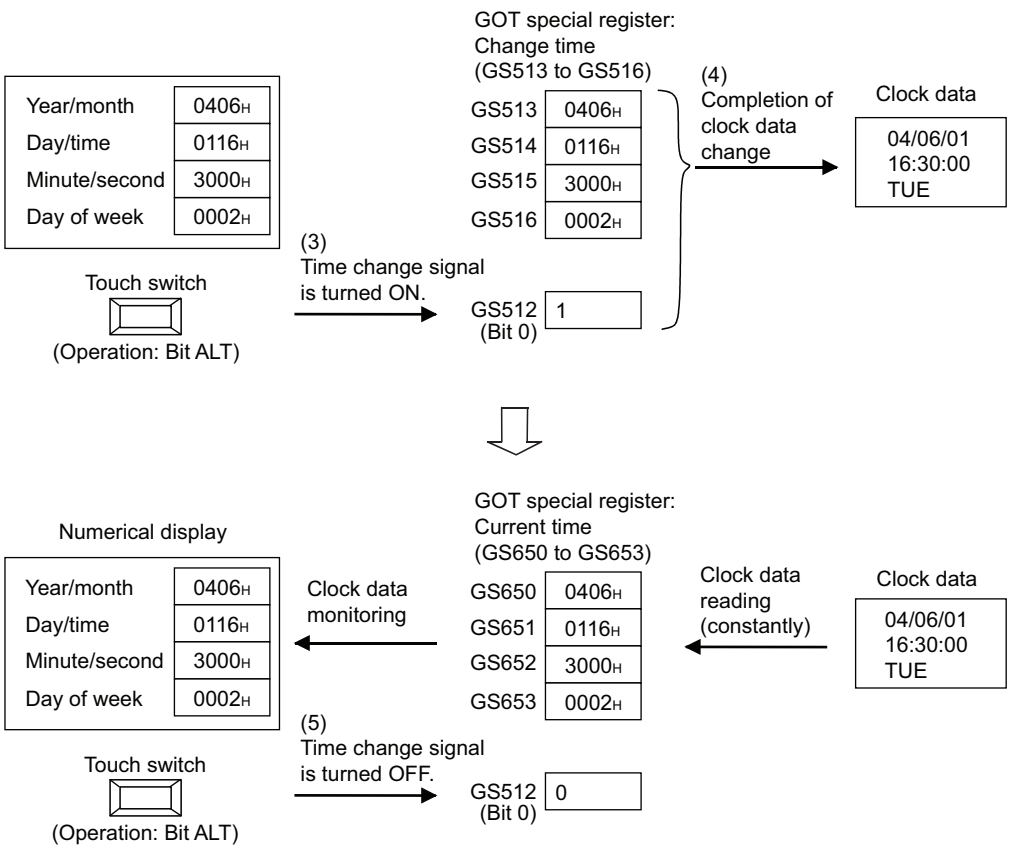
The GOT constantly writes clock data into the GOT special register (GS).
The clock data of the GOT can be changed from an object such as Numerical Input by the Clock data stored in the GOT special register (GS513 to 516) and the rise of the time change signal (GS512.b0).

The following are example steps for changing clock data using numerical display and numerical input.

- Display the present time stored in the GOT special register (GS650 to GS653) by numerical display.
- Enter a changed time into the GOT special register (GS513 to GS516) by numerical input.
- Turn on the time change signal of the GOT special register (GS512.b0) a touch switch.
- The change of the clock time data is completed.
- Confirm the completion of the time change, and then turn off the GOT special register (GS512.b0).




(Continued to next page)




## 1 GOT special register (GS)

### (1) Write device

| Device | Description |
|---|---|
| GS512 (bit 0) | Time change signal (writing data to the clock at the rise of this signal) |
| GS513 | Change time (upper 8 bits: lower 2 digits of the year, lower 8 bits: month), data format: BCD |
| GS514 | Change time (upper 8 bits: day, lower 8 bits: hour), data format: BCD |
| GS515 | Change time (upper 8 bits: minute, lower 8 bits: second), data format: BCD |
| GS516 | Change time (upper 8 bits: not used, lower 8 bits: day of week), data format: BCD<br>Day of week (0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday) |

### (2) Read device

| Device | Description |
|---|---|
| GS650 | Current time (upper 8 bits: lower 2 digits of the year, lower 8 bits: month), data format: BCD |
| GS651 | Current time (upper 8 bits: day, lower 8 bits: hour), data format: BCD |
| GS652 | Current time (upper 8 bits: minute, lower 8 bits: second), data format: BCD |
| GS653 | Current time (upper 8 bits: note used, lower 8 bits: day of week), data format: BCD |

## 2.5.3 PLC CPU equipped with clock

GT16 GT15 Soft GOT 1000 GT11 GT10

The following lists PLC CPUs equipped with clocks and their connection methods.

### 1 PLC CPU equipped with clock

(1) Mitsubishi PLCs

| Item | | | Model | | | |
|---|---|---|---|---|---|---|
| QCPU | QCPU (Q mode) | | Q00JCPU, Q02HCPU, Q02PHCPU, Q12PRHCPU, Q01UCPU, Q06UDHCPU, Q26UDHCPU, Q10UDEHCPU, | Q00CPU, Q06HCPU, Q06PHCPU, Q25PRHCPU, Q02UCPU, Q10UDHCPU, Q03UDECPU, Q13UDEHCPU, | Q01CPU, Q12HCPU, Q12PHCPU, Q00UJCPU, Q03UDCPU, Q13UDHCPU, Q04UDEHCPU, Q20UDEHCPU, | Q02CPU, Q25HCPU, Q25PHCPU, Q00UCPU, Q04UDHCPU, Q20UDHCPU, Q06UDEHCPU, Q26UDEHCPU |
| | QCPU (A mode) | | Q02CPU-A, | Q02HCPU-A, | Q06HCPU-A | |
| QSCPU *2 | | | QS001CPU | | | |
| QnACPU | QnACPU type | | Q2ACPU, Q4ARCPU | Q2ACPU-S1, | Q3ACPU, | Q4ACPU, |
| | QnASCPU type | | Q2ASCPU, | Q2ASCPU-S1, | Q2ASHCPU, | Q2ASHCPU-S1 |
| ACPU | AnCPU type | AnUCPU | A2UCPU, | A2UCPU-S1, | A3UCPU, | A4UCPU |
| | | AnACPU | A2ACPU, A2ACPUP21-S1, A3ACPUR21 | A2ACPUP21, A2ACPUR21-S1, | A2ACPUR21, A3ACPU, | A2ACPU-S1 A3ACPUP21, |
| | | AnNCPU | A1NCPU, A2NCPUP21, A2NCPUR21-S1, | A1NCPUP21, A2NCPUR21, A3NCPU, | A1NCPUR21, A2NCPU-S1, A3NCPUP21, | A2NCPU, A2NCPUP21-S1, A3NCPUR21 |
| | AnSCPU type | AnUS(H)CPU | A2USCPU, | A2USCPU-S1, | A2USHCPU-S1 | |
| | | AnS(H)CPU | A1SCPU, A1SHCPU, | A1SCPUC24-R2, A2SHCPU, | A2SCPU, A2SHCPU-S1 | A2SCPU-S1, |
| | | A1SJ(H)CPU | A1SJCPU, | A1SJCPU-S3, | A1SJHCPU | |
| | A1FXCPU | | A1FXCPU | | | |
| | | | A2CCPU, A2CCPUC24-PRF, | A2CCPUP21, A2CJCPU-S3 | A2CCPU-R21, | A2CCPUC24, |
| FXCPU | | | FX1N series, FX2 series *1, FX3G series | FX1NC series, FX2C series *1, FX3UC series, | FX1S series, FX2N series, FX3U series | FX2NC series *1, |
| Motion Controller CPU | Motion Controller CPU (Q series) | | Q172CPU, Q172HCPU, Q170MCPU, | Q173CPU, Q173HCPU, MR-MQ100 | Q172CPUN, Q172DCPU, | Q173CPUN, Q173DCPU, |
| | Motion Controller CPU (A series) | | A373UCPU, A273UHCPU-S3, A171SHCPU, A173UHCPU, | A373UCPU-S3, A171SCPU, A171SHCPUN, A173UHCPU-S1 | A273UCPU, A171SCPU-S3, A172SHCPU, | A273UHCPU, A171SCPU-S3N, A172SHCPUN, |

*1 A clock function is usable when the real time clock function board or $E^2$PROM memory with real time clock function is mounted.

*2 The GOT can only read the clock data. In the clock setting, though the adjust is available, the broadcast is not available.

(2) Other manufacturers' PLCs

| Item | | Model |
|---|---|---|
| OMRON PLC | | |
| | SYSMAC CPM | CPM2A, CPM2C[*9] |
| | SYSMAC CQM1H | CQM1H[*3*10] |
| | SYSMAC CJ1 | CJ1H, CJ1G, CJ1M |
| | SYSMAC CP1 | CP1H, CP1L |
| | SYSMAC α | C200HX, C200HG, C200HE[*2] |
| | SYSMAC CS1 | CS1H, CS1G, CS1D |
| | SYSMAC CVM1/CV | CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11, CVM1-CPU21 |
| | | CQM1[*3], C200HS, C200H[*1] |
| KEYENCE PLC | | KV-700, KV-1000 KV-3000, KV-5000 |
| KOYO EI PLC[*11] | KOSTAC SU series | SU-6B, SU-5M, SU-6M |
| | DirectLOGIC 205 series | D2-240, D2-250-1, D2-260 |
| | DirectLOGIC 06 series | D0-06DD1, D0-06DD2, D0-06DR, D0-06DA, D0-06AR, D0-06AA, D0-06DD1-D, D0-06DD2-D, D0-06DR-D |
| SHARP PLC | | JW-22CU, JW-32CUH, JW-33CUH, JW-70CUH[*6], JW-100CUH[*6] JW-100CU Z-512J |
| JTEKT PLC | | PC3JG, PC3J, PC2J |
| TOSHIBA PLC[*5] | PROSEC T series | T2(PU224), T2E, T2N, T3, T3H |
| | PROSEC V series | model3000(S3) model2000(S2) model2000(S2T) |
| TOSHIBA MACHINE PLC | TCmini series | TC3-01, TC3-02, TC6-00, TC8-00 |
| HITACHI IES PLC (HIDIC H series) | Large-size H series | H-302(CPU2-03H), H-702(CPU2-07H), H-1002(CPU2-10H), H-2002(CPU2-20H), H-4010(CPU3-40H), |
| | H-200 to 252 series | H-200(CPU-02H, CPE-02H), H-250(CPU21-02H), H-252(CPU22-02H), H-252B(CPU22-02HB), H-252C(CPU22-02HC, CPE22-02HC) |
| | H series board type | H-20DR, H-28DR, H-40DR, H-64DR, H-20DT, H-28DT, H-40DT, H-64DT, HL-40DR, HL-64DR, |
| | EH-150 series | EH-CPU208, EH-CPU308, EH-CPU316 |
| HITACHI PLC | S10V | LQP510, LQP520 |
| | S10mini | LQP800, LQP000, LQP010, LQP011, LQP120 |
| PANASONIC PLC | | FP1-C24C, FP1-C40C, FP2[*7], FP2SH, FP3[*8], FP5, FP10(S), FP10SH, FP-M(C20TC), FP-M(C32TC) FP-Σ, FP-X |
| YASKAWA PLC[*4] | | GL120, GL130 |
| YOKOGAWA PLC[*5] | FA500 | FA500 |
| | FA-M3 | F3SP05, F3SP08, F3SP10, F3SP20, F3SP30, F3SP36 F3SP21, F3SP25, F3SP35, F3SP28, F3SP38, F3SP53 F3SP58, F3SP59, F3SP66, F3SP67 |
| ALLEN-BRADLEY PLC | SLC500 series[*5] | SLC5/03, SLC5/04, SLC5/05 |

| Item | | Model | | | |
|---|---|---|---|---|---|
| LS IS PLC | MASTER-K series | K300S | | | |
| | | K200S | | | |
| | | K120S | | | |
| | | K80S | | | |
| SIEMENS PLC | SIMATIC S7-300 series | CPU 312IFM,<br>CPU 315, | CPU 313,<br>CPU 315-2DP, | CPU 314,<br>CPU 316 | CPU 314IFM, |
| | SIMATIC S7-400 series | CPU 412-1,<br>CPU 414-2DP, | CPU 413-1,<br>CPU 416-1, | CPU 413-2DP,<br>CPU 416-2DP | CPU 414-1, |

*1 To use the C200H-CPU21/CPU22/CPU23, the memory cassette equipped with a clock is required.
The C200H-CPU01/CPU02/CPU03 does not support the clock function.
*2 The clock function is not usable for C200HE-CPU11.
*3 The memory cassette equipped with a clock is required.
*4 Use default values (409988 to 409995) for the clock data devices.
*5 Day-of-the-week data is not available.
*6 The clock function is not usable when the link unit (ZW-10CM) is used with the JW-70CUH/100CUH.
*7 Any of the extension memory unit FP2-EM1, FP2-EM2, or FP2-EM3 is required.
*8 The clock function is available for the AFP3210C-F, APF3211C-F or APF3220C-F only.
*9 Some models do not support the clock function.
*10 The EM device of the CQM-CPU61 cannot be monitored.
*11 The GOT can only read the clock data. In the clock setting, though the adjust is available, the broadcast is not available.

### (3) CNC

| Item | | Description |
|---|---|---|
| CNC | CNC C70 | Q173NCCPU |

### (4) Robot controller

| Item | Description |
|---|---|
| Robot controller | CRnQ-700 |

## 2 Connection methods

| Connection method | | Target of clock data read/write |
|---|---|---|
| Mitsubishi PLC *3 | Bus connection | Connected PLC CPU*1 |
| | Direct CPU connection | |
| | Computer link connection | |
| | MELSECNET/H connection (PLC to PLC network) | PLC CPU of the control station |
| | MELSECNET/10 connection (PLC to PLC network) | |
| | CC-Link IE controller network connection | |
| | CC-link connection (intelligent device station) | PLC CPU of the master station |
| | CC-link connection (via G4) | |
| | Ethernet connection | PLC CPU which is set as host station by GT Designer2 |
| | GOT multidrop connection | Connected PLC CPU |
| Microcomputer connection *2 | | Connected microcomputer |
| Connection to other manufacturer's PLC | Serial connection | Connected PLC CPU (PLC CPU set as the host station for the multidrop communication) |
| | Ethernet connection | PLC CPU which is set as host station by GT Designer2. |
| Servo amplifier connection, inverter connection, temperature controller connection, CNC connection, MODBUS® /RTU connection, MODBUS® /TCP connection | | - |

*1: When GOT is connected to the remote I/O station, the master station has to be set to the MELSECNET/H network system and power has to be on.

*2: In the microcomputer connection, the GOT makes its clock time synchronized with the microcomputer board in the virtual devices for microcomputer connection (D4 to D10) using the clock data read command (TR) and the clock data setting command (TS).
For the respective commands and virtual devices, refer to the following.
☞ GOT1000 Series Connection Manual (Chapter 28 MICROCOMPUTER CONNECTION)

*3:For notifying the clock time in the multiple CPU system, the target of reading/writing clock data differs depending on the connection type.
The following shows the target of writing clock data for each connection type.

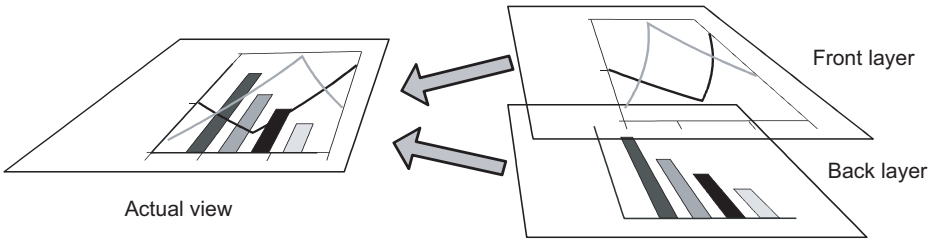
| Connection target | Connection type | Target of writing clock data |
|---|---|---|
| Universal model QCPU,<br>Q17nDCPU,<br>CNC C70,<br>CRnQ-700 | Bus connection,<br>Direct CPU connection,<br>Computer link connection,<br>MELSECNET/H connection (PLC to PLC network),<br>MELSECNET/10 connection (PLC to PLC network),<br>CC-Link IE controller network connection,<br>CC-Link connection (Intelligent device station),<br>CC-Link connection (via G4),<br>Ethernet connection,<br>GOT multidrop connection | CPU No.1 of multiple CPU system |
| Other than the above | Bus connection | PLC CPU that controls the GOT |
| | Direct CPU connection,<br>GOT multidrop connection | Connected PLC CPU |
| | Direct CPU connection,<br>MELSECNET/H connection (PLC to PLC network),<br>MELSECNET/10 connection (PLC to PLC network),<br>CC-Link IE controller network connection,<br>CC-Link connection (Intelligent device station),<br>CC-Link connection (via G4),<br>Ethernet connection | PLC CPU that controls the intelligent function module |

# 2.6 Superimposition Settings

Objects or shapes can be superimposed in the following methods

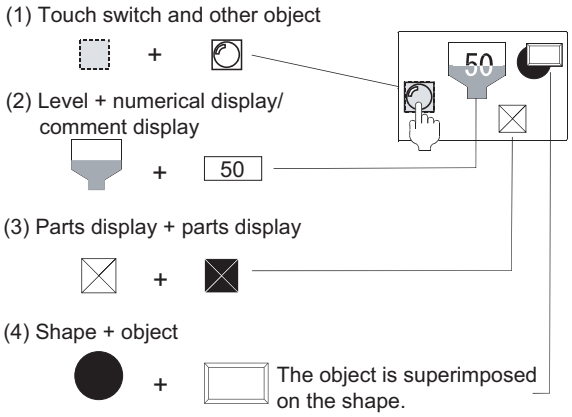
## 1 Superimposition using layers (☞ Section 2.6.1 Superimposition using layers)

By setting on two layers (front layer and back layer), up to two objects can be superimposed.



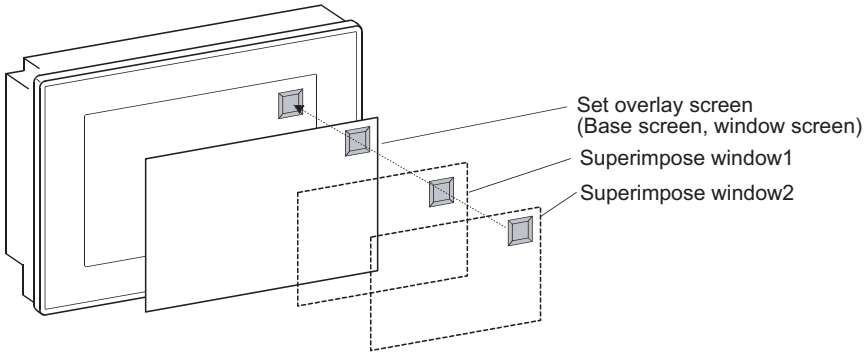

## 2 Superimposition using no layers (☞ Section 2.6.2 Superimposition using no layer)

Some types of objects can be superimposed.
For the combination of an object and a shape, the object is superimposed on the shape.




## 3 Special superimposition of touch switch, numerical input, and ASCII input (☞ Section 2.6.3 Special superimposition of touch switch, numerical input, and ASCII input)

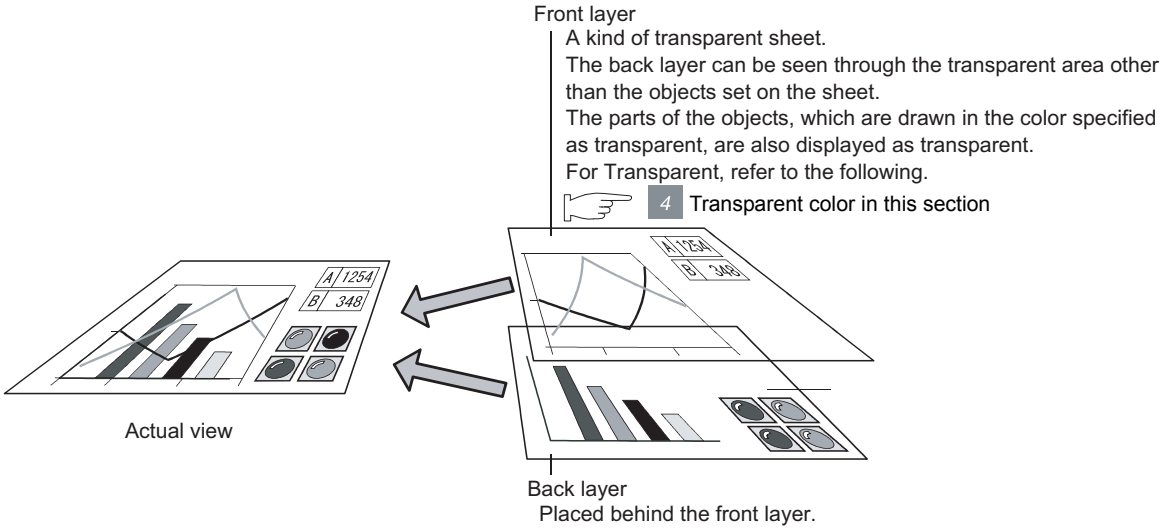
It is possible to superimpose up to eight objects (touch switch, numerical input and ASII input): overlay the base screens and superimpose windows on which objects are set by using the set overlay screen function.



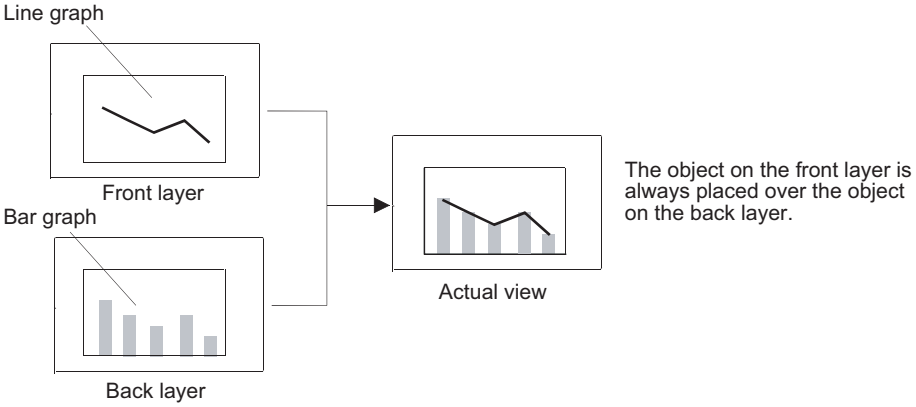
## 2.6.1 Superimposition using layers

### 1 Layer

A single screen can consist of two types of sheets (layers).
Set each of objects on either of the two layers (front layer or back layer).
Then, overlay the two layers to superimpose the set objects.

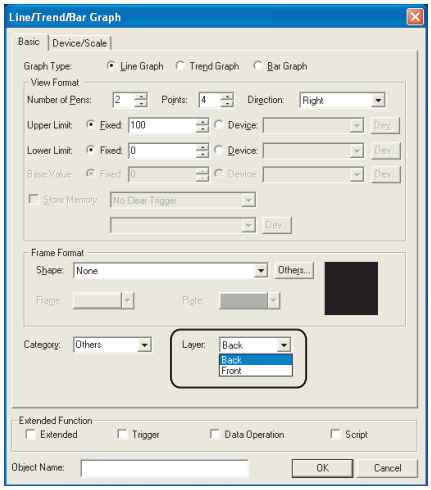



Example: Superimposing a line graph on a bar graph



Setting Example: Line graph settings (Basic tab)

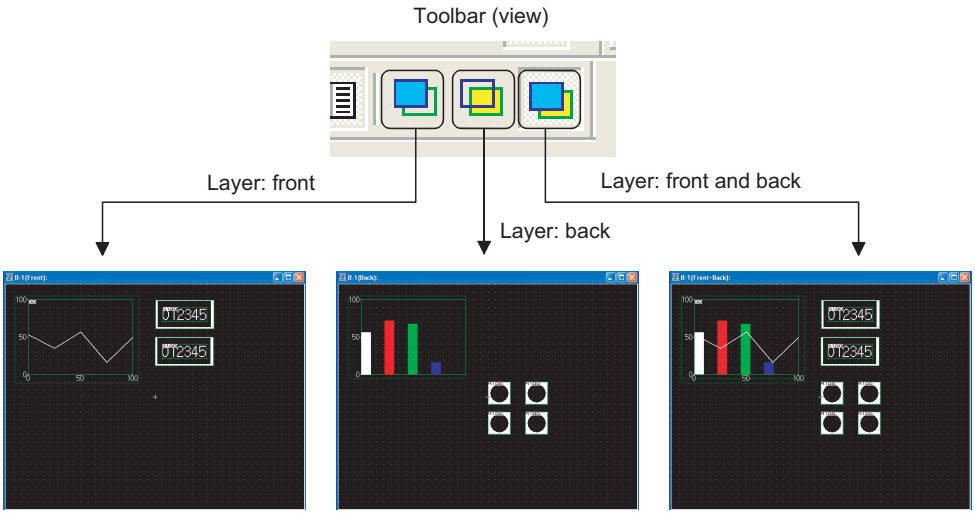
Set the layer (front or back layer) for each object.




**Hint!** Confirming the layer image when creating a screen

On GT Designer2, the screen view can be switched between the following patterns, front layer only, back layer only, and front layer + back layer.

Screen view is switched by the toolbar (view).




View of front layer only　　View of back layer only　　View of front layer + back layer

**Remark** Superimposition using no layers

In this method, superimpose two objects such as level and numerical display by setting them on the same layer.

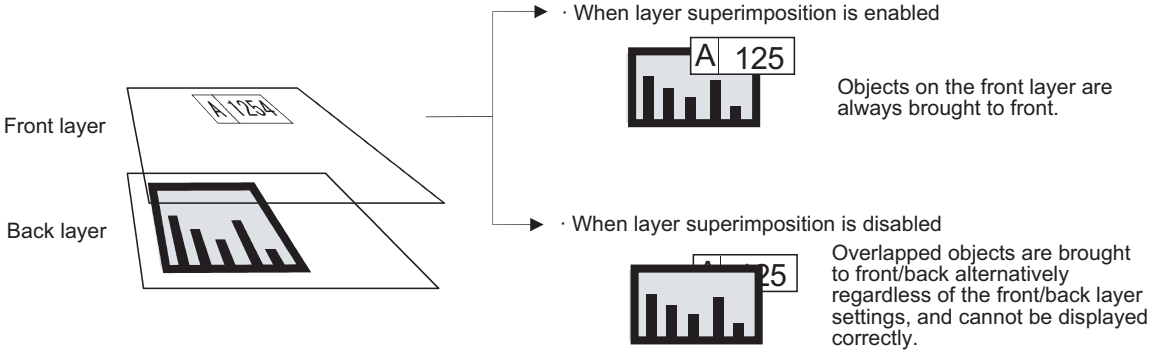
☞ Section 2.6.2 Superimposition using no layer

## 2 Objects and figures that can set on front/back layer

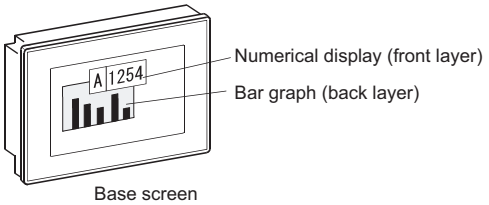
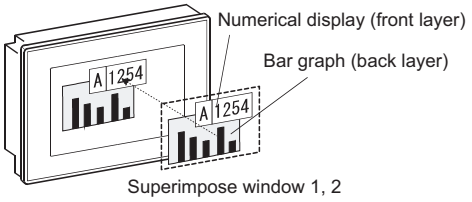
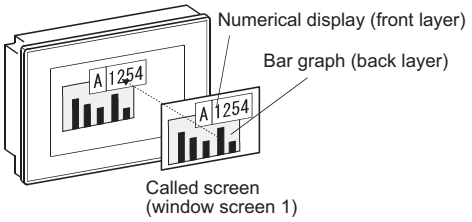
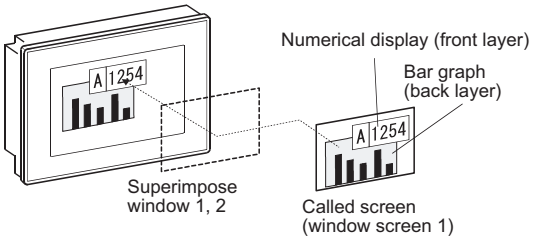
- Object : Can be set on either front layer or back layer.
- Shape (including text) : Set on back layer automatically.
  Cannot be set on front layer.
  Only piping figures with [Use Lamp Attribute] checked can be set on the front layer and the back layer.

## 3 Screen that cannot consist of layers

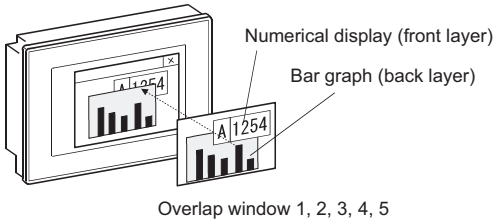
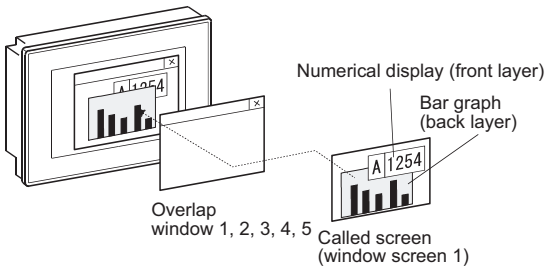
In some cases, superimposition of layers may be disabled depending on the screen type.
If disabled, the screen appears as shown below.




For details, refer to the following table.

| Composite display | Screen type | | |
|---|---|---|---|
| Enabled | Base screen | |   |
| | Superimpose window 1, 2 | |   |
| | Called screen | Called screens of base screen (base screen, window screen) |   |
| | | Called screens of superimpose window 1, 2 (base screen, window screen) |   |

(Continued to the next page)

| Composite display | Screen type | | |
|---|---|---|---|
| Disabled*1 | Overlap window 1, 2, 3, 4, 5 | |  |
| | Called screen | Called screens of overlap window 1, 2, 3, 4, 5 (base screen, window screen) |  |

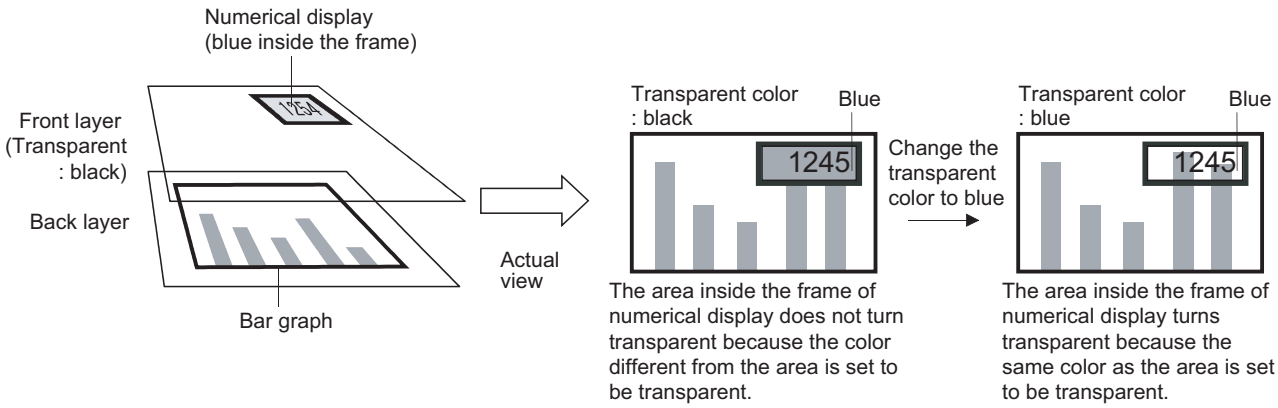
*1 When [Adjust object display order in GOT to the one in GT Designer2] for the auxiliary setting is checked, the superimposition of layers in the overlap windows is enabled.
For the auxiliary setting, refer to the following.

☞ Section 4.4 Auxiliary Settings

## 4 Transparent color

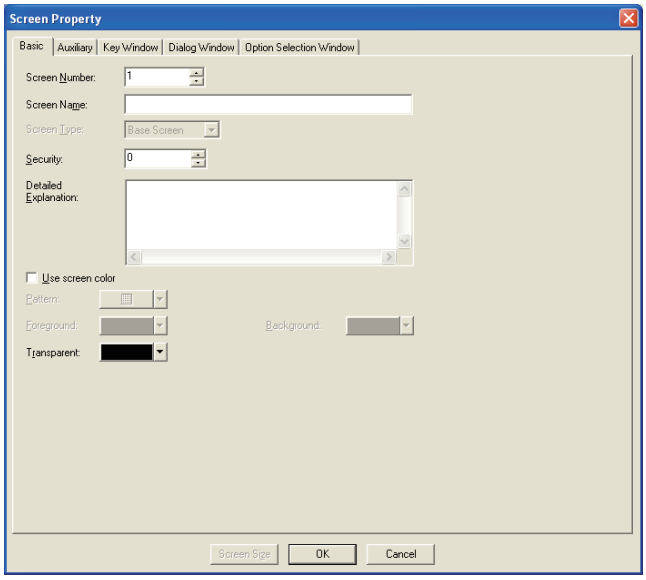
The transparent color settings are specific to the front layer.
The parts of objects, which are drawn in the color specified as transparent, are displayed as transparent.
To display some parts of objects as transparent, change the color specified as transparent according to the target parts.
(Transparent color is set to black by default.)

Example: Displaying the bar graph on the back layer through the numerical display.




Setting Example: Screen property settings (Basic tab)

Set the transparent color on the property screen of the base screen.

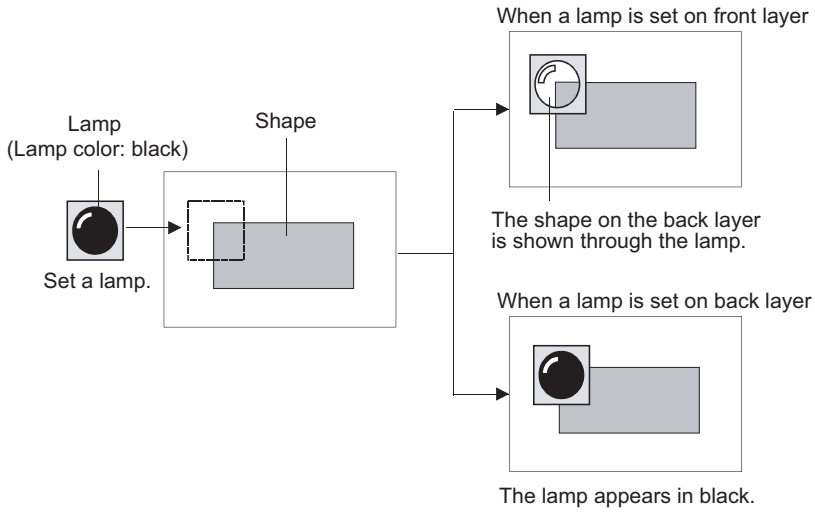


(1) Default transparent color

Transparent color is set to black by default.

In the default settings, the parts of objects drawn in black will be transparent. To make the parts visible, change the parts color or the transparent color.

Example: When a lamp is set.




**Point**

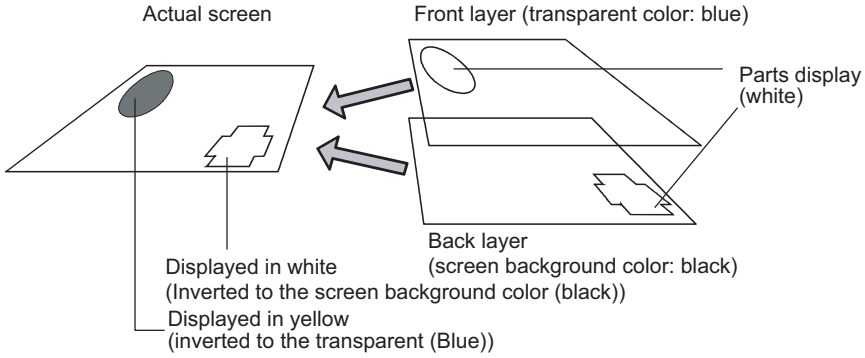
Caution when inverting an object (display mode: XOR)

When inverting parts display, touch switch, numerical display, and comment display, set the display mode to XOR, paying full attention to the following.

(1) When setting an object on the front layer

If there is no objects or shapes below the target object, the object will be inverted to the transparent color of the front layer.

Example: Inverting parts display (display mode: XOR).




(2) When inverting an object to a shape

Set the object on the back layer.

## 5 Superimposition using superimpose window, set overlay screen function and layers

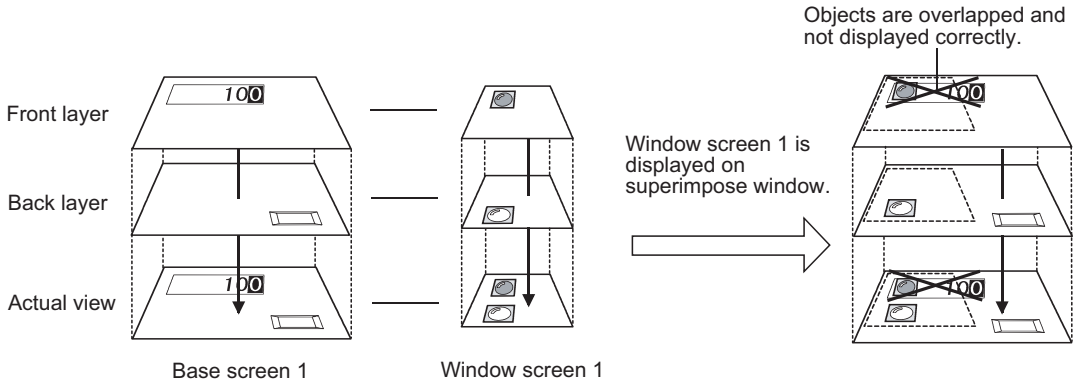
When superimposing multiple screens using the superimpose windows and set overlay screen function, design the screen while paying full attention to the following.

(1) Layer settings

Front layers and back layers of screens will be integrated into a single front layer and back layer, respectively, when the screens are overlaid.

Arrange and place objects on each layer so that they will not be overlapped between the integrated front layers or between the integrated back layers.

Overlapped objects may not be displayed or operate correctly.




**Remark** The object that can be superimposed with another on the same layer

Some of the composite objects set on a single layer can be displayed and operate correctly.

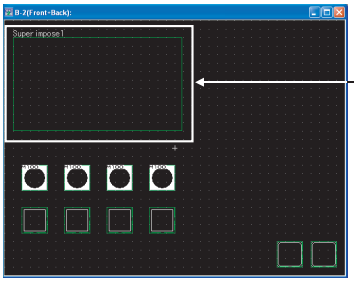
For the object that can be superimposed with another on a single layer, refer to the following.

☞ Section 2.6.2 Superimposition using no layer

**Hint!** Making the settings so that the objects on the base screen and those on the superimpose window will not be overlapped

(1) Check whether the objects are overlapped or not.
Check whether the objects on the base screen and those on the superimpose window are not overlapped each other by previewing the superimpose window.
Preview screen can be displayed by selecting the [View] → [Window Preview] → [Custom] menus.

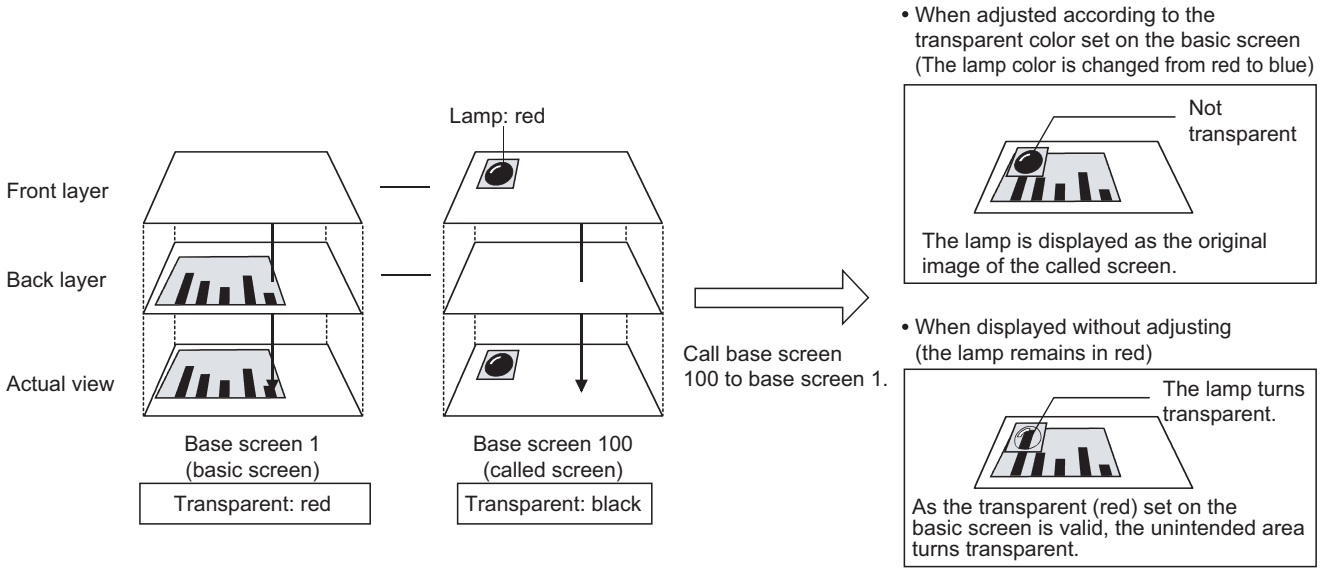
(2) Rearrange the superimpose window
If objects are overlapped, rearrange the superimpose window by selecting the [Object] → [Window Position] → [Superimpose 1]/[Superimpose 2] menus.




Check whether objects on the base screen and those on the superimpose window are overlapped each other or not.

Base Screen

(2) Transparent color settings
The transparent color of called screen is invalid, but that of the basic screen is valid.
The transparent color is based on the corresponding settings of a base screen, as window screen (superimpose window) does not include the settings.
Therefore, set the object colors on the front layer of the called screen considering the transparent color set on the basic screen.



## 2.6.2 Superimposition using no layer

The combinations of objects that can be superimposed are as follows:

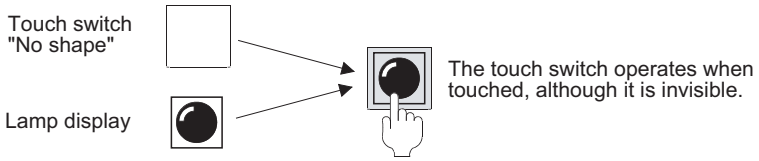
- Touch switch and other objects (except for numerical input and ASCII input)
- Level and numerical display
- Level and comment display
- Parts display and parts display

Objects other than above can be superimposed by using layers.

☞ Section 2.6.1 Superimposition using layers

### 1 Superimposition with touch switch

The touch switch with no shape and text set can be superimposed with other objects.




(1) Objects that can be superimposed with touch switch

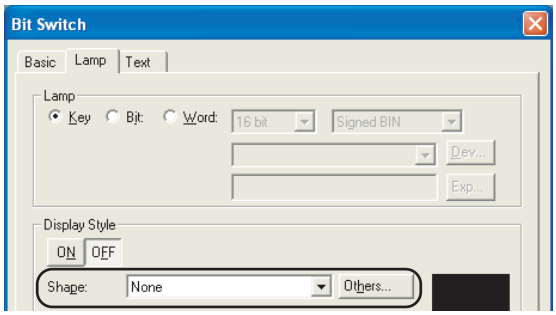
- Numerical display
- Data list
- ASCII display
- Clock display
- Comment display
- Alarm list*1
- Alarm history*1
- Scatter graph
- Parts display
- Parts transfer
- Lamp display
- Panel meter
- Level
- Trend graph
- Line graph
- Bar graph
- Statistics graph
- Historical trend graph

*1 Cannot be superimposed with a touch switch If one touch is enabled for alarm list (user alarm) or alarm history.

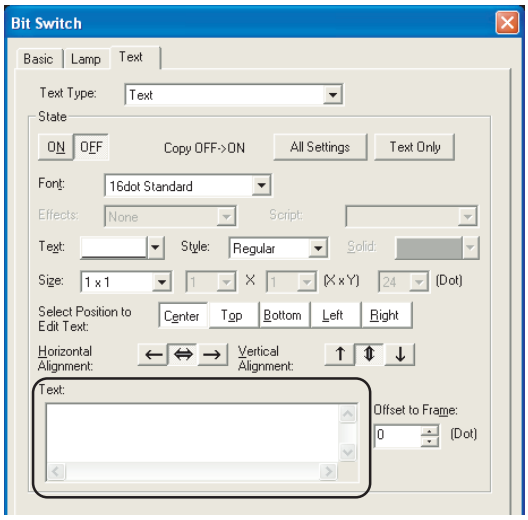
Touch switch and numerical input/ASCII input cannot be superimposed on each other.
To superimpose them, use layers.

(2) Settings needed for superimposing the touch switch

(a) Touch switch settings (Lamp tab)
Set [Shape] to [None]
Do not check [Reverse Switch Area].




(b) Touch switch settings (Text tab)
Select [Text] for [Text Type] and do not set any text.
(Not to display any text on the touch switch)

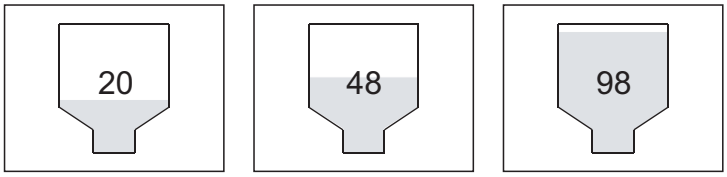


## 2 Superimposition with level

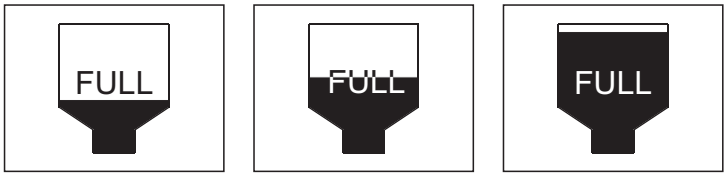
(1) Objects that can be superimposed with level
- Numerical display
- Comment display

(2) Condition for superimposing with level
One numerical display or comment display can be superimposed with a single level.

(3) Setting example
Example 1:When display mode is set to "Transparent"
The numeric value or text will be displayed in the original color.
Suitable for the color-display GOT.




Example 2:When display mode is set to "XOR"
Differently from the case of "Transparent," the area overlapped with the filled color of level will be inverted.
Suitable for the monochrome-display GOT.

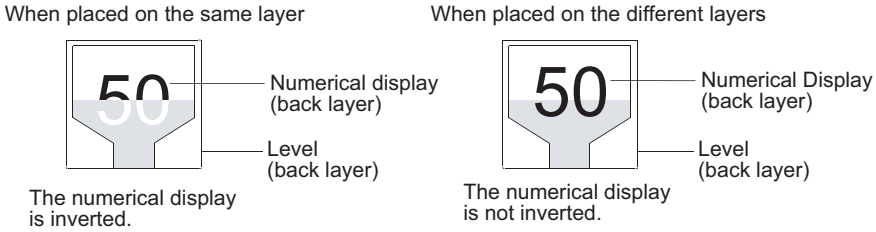



When superimposing the level and numerical display/comment display, make sure to read the cautions on level before making the settings.

☞ Section 10.2 Level

**Remark** Inverting the superimposed objects (display mode: XOR)

Place and overlay the objects on the same layer, and then, make the inverse settings for them.
Example: Inverting the composite of a numerical display and level

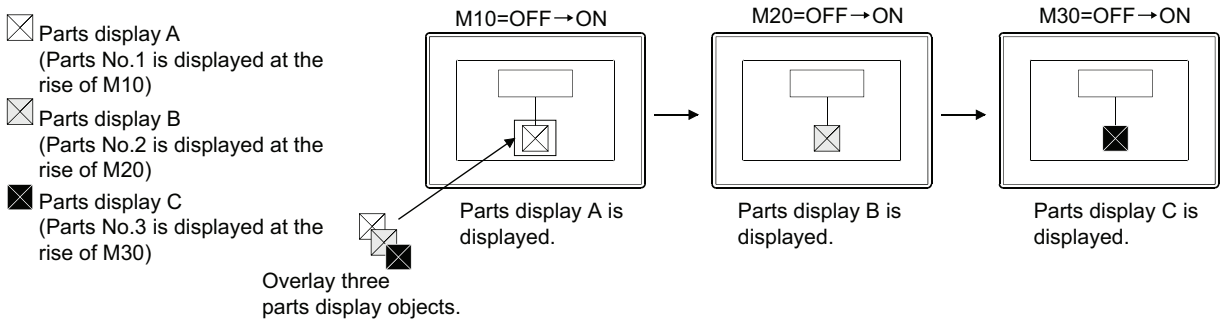


## 3 Superimposition with parts display

(1) Objects that can be superimposed with parts display

- The parts display (fixed) can be superimposed with parts display (fixed).

Example: Displaying the composite of three parts display objects (display mode: over write)



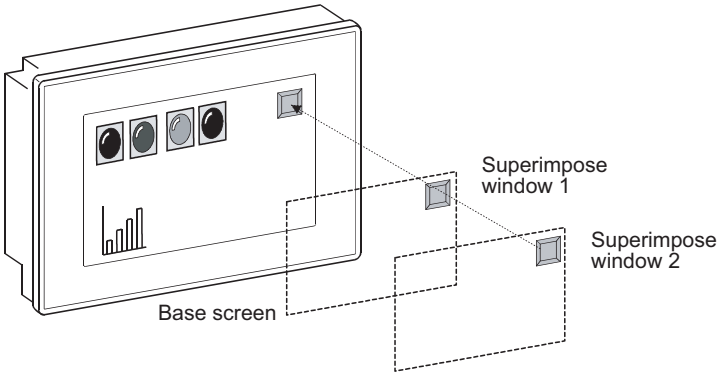
## 2.6.3 Special superimposition of touch switch, numerical input, and ASCII input

When multiple objects such as touch switch, ASCII input, and numerical input are overlapped by superimpose windows or set overlay screen function, up to 8 of them can operate.

### 1 Method of special superimposition of touch switch, numerical input, and ASCII input

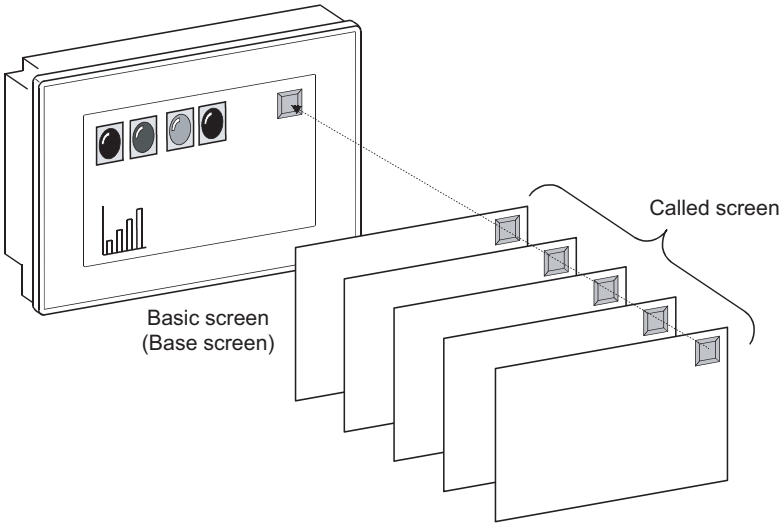
(1) Superimposition by Superimpose Windows
The superimpose windows are placed in the front of the base screen as a single screen.
For the details of Superimpose Window, refer to the following.

☞ Section 2.1 Type/Number of Creatable Screens




(2) Superimposition by set overlay screen
The set overlay screen function brings other base screens and window screens onto a basic screen (base screen or superimpose window), and superimpose and displays them as a single (composite) screen.
For the details of set overlay screen function, refer to the following.

☞ Section 15.1 Set Overlay Screen Function

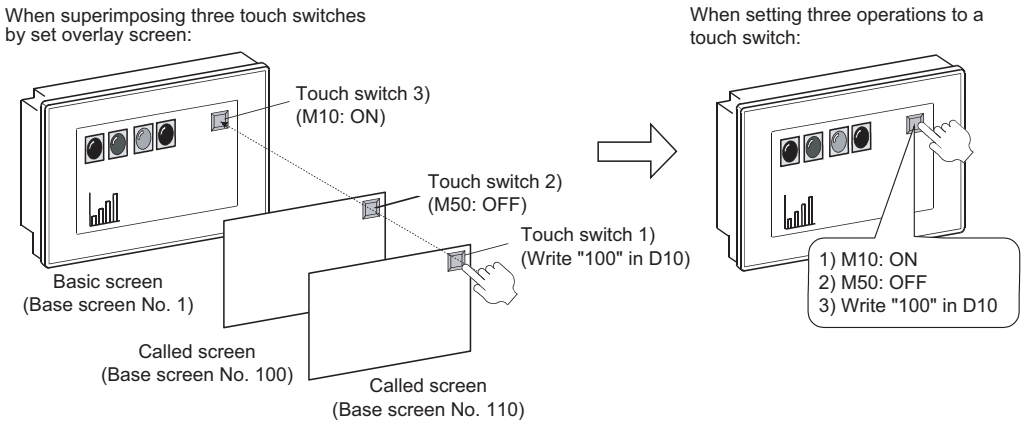


**Point**

(1) Setting multiple operations to a single Touch Switch
The settings can be easily made, so that a single touch switch will operate as several touch switches that are superimposed using superimpose windows or set overlay screen function
For the details of touch switch, refer to the following.

☞ Section 6.2 Touch Switch

Example: Execute three operations by touching once

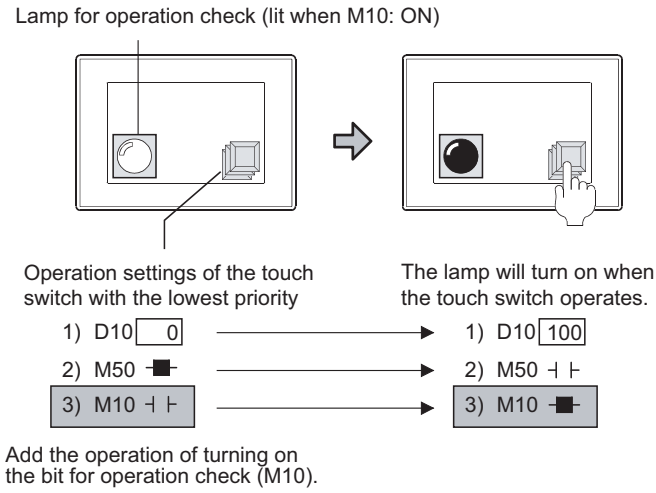



(2) Caution when multiple touch switches are superimposed

(a) The superimposed touch switches operate in priority order (from high to low). Therefore, the touch switch may not operate if touched too short.
To confirm the operations of the touch switches, set a lamp, which will turn on when the touch switch with the lowest priority operates.
For the operation priority order, refer to the following.

☞ This section 2 Operations of superimposed touch switch, numerical input, and ASCII input

Example:




(b) If the simultaneous pressing prohibition key is overlapped with other key, the key does not operate even when touched.

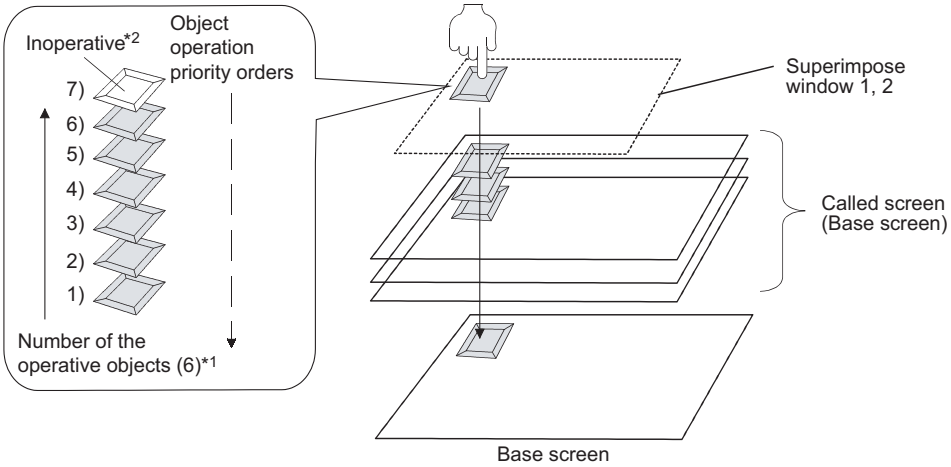
(c) The display for superimposed touch switches differs whether [Adjust object display order in GOT to the one in GT Designer2] for the auxiliary setting is checked or not.

| Auxiliary setting | Display details |
|---|---|
| Without checking [Adjust object display order in GOT to the one in GT Designer2] | On GOT, the touch switch that operated or changed the status last is always brought to the front. (Different from the drawn image.) |
| With checking [Adjust object display order in GOT to the one in GT Designer2] | The GOT displays the touch switch in the order of superimposition for objects on GT Designer2. (Same as the drawn image) |

## 2 Operations of superimposed touch switch, numerical input, and ASCII input

(1) Number of operative objects

Up to 6 of the objects (the touch switch, numerical input, and ASCII input are superimposed) superimposed by the set overlay screen function can operate. When superimpose windows1, 2 are additionally used, up to 8 objects can operate.



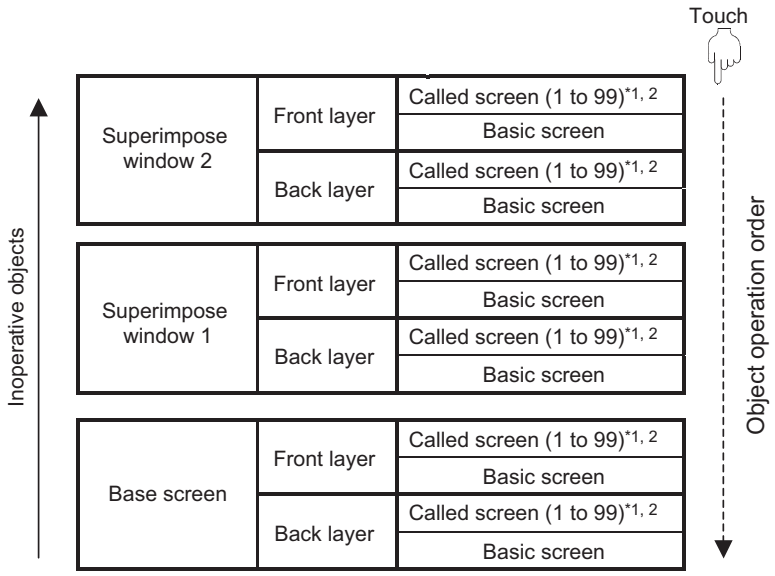

*1 Up to 8 objects can operate according to the combination of the composite screens. For details, refer to the following.

☞ This section 2 (3) Application example

*2 When "When touch input is detected, open key window at the same time" is checked in auxiliary settings, if multiple objects of numerical input or ASCII input are overlapped, the first one to be touched and valid will call the key window, and other objects will turn inoperative.

(2) Priority order based on the combination of composite screens

The following shows the priority order in which the touch switch, numerical input and ASCII input can operate, based on the combination of composite screens.




*1 The touch switches can operate in the order in which the screens are displayed by the set overlay screen function.

For the order in which screens are called by the set overlay screen function, refer to the following.

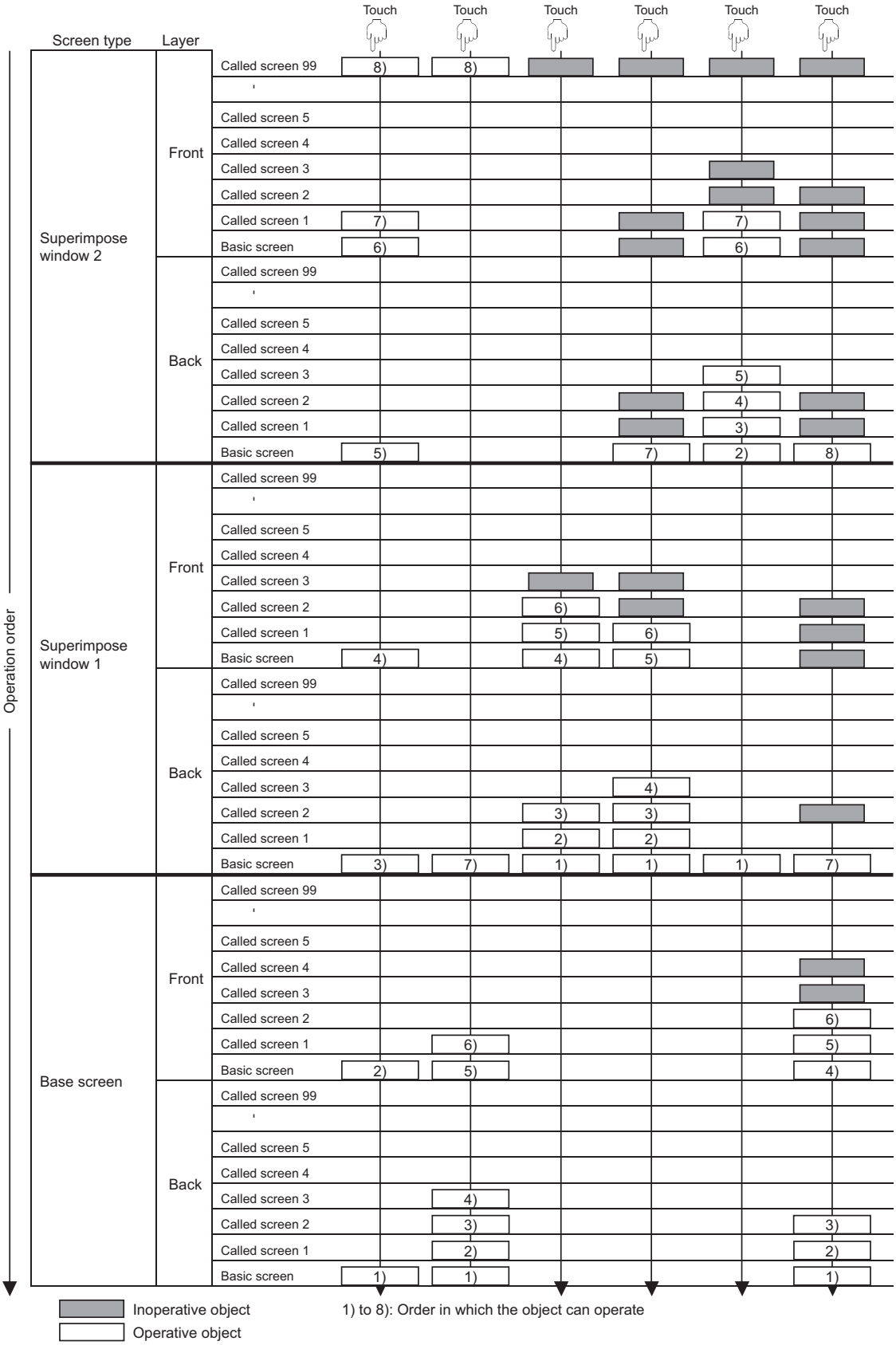
(☞ Section 15.1 Set Overlay Screen Function)

*2 The superimposed touch switch, numerical input, and ASCII input operate on up to 99 called screens.

If 100 or more screens are called, the touch switch, numerical input, and ASCII input objects set on the called screen of No.100 or higher do not operate.

(3) Application example

The following shows the operation range of the touch switch, numerical input, and ASCII input objects set on multiple screens.




*1 The No. 1 to 99 shown in the figure above indicate the order of calling the screens to the base/window screen (in the calling order set on GT Designer2).

# 2.7 Controller that can be Monitored and the Accessible Range

## 2.7.1 Controller that allows monitoring

### 1 Controller list

The controllers that can be monitored by the GOT are indicated below.

(1) MELSEC PLC

| Item | | | Type | | | | |
|---|---|---|---|---|---|---|---|
| QCPU*5 | QCPU (Q mode) | | Q00JCPU, Q02HCPU, Q02PHCPU, Q12PRHCPU, Q01UCPU, Q06UDHCPU, Q26UDHCPU, Q10UDEHCPU, | Q00CPU*1, Q06HCPU, Q06PHCPU, Q25PRHCPU, Q02UCPU, Q10UDHCPU, Q03UDECPU, Q13UDEHCPU, | Q01CPU*1, Q12HCPU, Q12PHCPU, Q00UJCPU, Q03UDCPU, Q13UDHCPU, Q04UDEHCPU, Q20UDEHCPU, | Q02CPU, Q25HCPU, Q25PHCPU, Q00UCPU, Q04UDHCPU, Q20UDHCPU, Q06UDEHCPU, Q26UDEHCPU | |
| | QCPU (A mode) | | Q02CPU-A, | Q02HCPU-A, | Q06HCPU-A | | |
| | Remote I/O station | | Network module for MELSECNET/H network system remote I/O station QJ72LP25-25, | QJ72LP25G, | QJ72BR15 | | |
| QSCPU | | | QS001CPU | | | | |
| QnACPU*5 | QnACPU Type | | Q2ACPU, | Q2ACPU-S1, | Q3ACPU, | Q4ACPU, | Q4ARCPU |
| | QnASCPU Type | | Q2ASCPU, | Q2ASCPU-S1, | Q2ASHCPU, | Q2ASHCPU-S1 | |
| ACPU | AnCPU Type | AnUCPU | A2UCPU, | A2UCPU-S1, | A3UCPU, | A4UCPU | |
| | | AnACPU | A2ACPU, A2ACPUR21-S1, | A2ACPUP21, A3ACPU, | A2ACPUR21, A3ACPUP21, | A2ACPU-S1, A3ACPUR21 | A2ACPUP21-S1, |
| | | AnNCPU | A1NCPU, A2NCPUR21, A3NCPUP21, | A1NCPUP21, A2NCPU-S1, A3NCPUR21 | A1NCPUR21, A2NCPUP21-S1, | A2NCPU, A2NCPUR21-S1, | A2NCPUP21, A3NCPU, |
| | AnSCPU Type | AnUS(H)CPU | A2USCPU, | A2USCPU-S1, | A2USHCPU-S1 | | |
| | | AnS(H)CPU | A1SCPU, A2SHCPU-S1, | A1SHCPU, A1SCPUC24-R2 | A2SCPU, | A2SCPU-S1, | A2SHCPU, |
| | | A1SJ(H)CPU | A1SJCPU, | A1SJCPU-S3, | A1SJHCPU | | |
| | A1FXCPU | | A1FXCPU | | | | |
| | | | A0J2HCPU, A2CCPUC24, A2CJCPU-S3 | A0J2HCPU-DC24V, A2CCPUC24-PRF, | A0J2HCPUP21, A2CCPUP21, | A0J2HCPUR21, A2CCPUR21, | A2CCPU, A2CJCPU, |
| FXCPU | | | $FX_0$ Series, $FX_1$ Series, $FX_2$ Series, $FX_{3G}$ Series, | $FX_{0S}$ Series, $FX_{1S}$ Series, $FX_{2C}$ Series, $FX_{3UC}$ Series, | $FX_{0N}$ Series, $FX_{1N}$ Series, $FX_{2N}$ Series, $FX_{3U}$ Series | $FX_{1NC}$ Series, $FX_{2NC}$ Series, | |
| Motion controller CPU*4 | Q Series*2*3 | | Q172CPU, Q173HCPU, | Q173CPU, Q172DCPU, | Q172CPUN, Q173DCPU, | Q173CPUN, Q170MCPU, | Q172HCPU, MR-MQ100 |
| | A Series | | A373UCPU, A171SCPU, A172SHCPU, | A373UCPU-S3, A171SCPU-S3, A172SHCPUN, | A273UCPU A171SCPU-S3N, A173UHCPU, | A273UHCPU, A171SHCPU, A173UHCPU-S1 | A273UHCPU-S3, A171SHCPUN, |

*1 As recommended for use in direct connection of the Q series basic model, the GOT does not support the serial communication function.

*2 When Q172CPU and Q173 CPU are used, use a motion controller CPU having a production No. indicated below.
- For bus connection and CPU direct connection
  Q172CPU: production No. K *******or later
  Q173CPU: production No. J *******or later
- For connections other than bus connection and CPU direct connection
  Q172CPU: production No. N *******or later
  Q173CPU: production No. M *******or later

*3 When using SV13/SV22/V43 with Q172CPU, Q173CPU, Q172CPUN or Q173CPUN, use a motion controller CPU on which the following OS version is installed.

SW6RN-SV13Q□ : 00H or later (00E or later when connected with Q172CPU and Q173CPU using bus connection and direct CPU connection)

SW6RN-SV22Q□ : 00H or later (00E or later when connected with Q172CPU and Q173CPU using bus connection and direct CPU connection)

SW6RN-SV43Q□ : 00B or later

*4 The following motion controller CPUs are not applicable to GT SoftGOT1000.

| Item | | Type |
|---|---|---|
| Motion controller CPU | Q Series | Q172CPU, Q173CPU, Q172CPUN, Q173CPUN, Q172HCPU, Q173HCPU Q172DCPU, Q173DCPU, MR-MQ100 |
| | A Series | A373UCPU, A373UCPU-S3, A273UCPU, A171SCPU, A171SCPU-S3, A171SCPU-S3N, A171SHCPUN, A172SHCPUN |

*5 The following QCPU (Q mode) and QnACPU cannot be used with GT10.

| Item | | Type |
|---|---|---|
| QCPU | QCPU (Q mode) | Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU |
| | Remote I/O station | Network module for MELSECNET/H network system remote I/O station<br>QJ72LP25-25, QJ72LP25G, QJ72BR15 |
| QnACPU | QnACPU Type | Q4ARCPU |

(2) Other PLC

| Item | | Type |
|---|---|---|
| OMRON PLC*3 | SYSMAC CPM | CPM1, CPM1A, CPM2A, CPM2C |
| | SYSMAC CQM1H | CQM1H |
| | SYSMAC CJ1 | CJ1H, CJ1G, CJ1M |
| | SYSMAC CP1 | CP1H, CP1L |
| | SYSMAC α | C200HX, C200HG, C200HE |
| | SYSMAC CS1 | CS1H, CS1G, CS1D |
| | SYSMAC CVM1/CV | CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11, CVM1-CPU21 |
| | | CQM1, C200HS, C200H, C1000H, C2000H |
| KEYENCE PLC | | KV-700, KV-1000, KV-3000, KV-5000 |
| KOYO EI PLC | KOSTAC SU series | SU-5E, SU-6B, SU-5M, SU-6M |
| | PZ series | PZ3 |
| | DirectLOGIC 205 series | D2-240, D2-250-1, D2-260 |
| | DirectLOGIC 05 series | D0-05AA, D0-05AD, D0-05AR, D0-05DA, D0-05DD, D0-05DD-D, D0-05DR, D0-05DR-D |
| | DirectLOGIC 06 series | D0-06DD1, D0-06DD2, D0-06DR, D0-06DA, D0-06AR, D0-06AA, D0-06DD1-D, D0-06DD2-D, D0-06DR-D |
| SHARP PLC | | JW-21CU, JW-22CU, JW-31CUH, JW-32CUH, JW-33CUH, JW-50CUH, JW-70CUH, JW-100CUH, JW-100CU, Z-512J |
| JTEKT PLC | | PC3JG, PC3J, PC2J |
| TOSHIBA PLC | PROSEC T series | T2(PU224), T2E, T2N, T3, T3H |
| | PROSEC V series | model3000(S3), model2000(S2), model2000(S2T) |
| TOSHIBA MACHINE PLC | TCmini series | TC3-01, TC3-02, TC6-00, TC8-00 |
| HITACHI IES PLC (HIDIC H series) | Large-size H series | H-302(CPU2-03H), H-702(CPU2-07H), H-1002(CPU2-10H), H-2002(CPU2-20H), H-4010(CPU3-40H), H-300(CPU-03Ha), H-700(CPU-07Ha), H-2000(CPU-20Ha) |
| | H-200 to 252 series | H-200(CPU-02H, CPE-02H), H-250(CPU21-02H), H-252(CPU22-02H), H-252B(CPU22-02HB), H-252C(CPU22-02HC, CPE22-02HC) |
| | H series board type | H-20DR, H-28DR, H-40DR, H-64DR, H-20DT, H-28DT, H-40DT, H-64DT, HL-40DR, HL-64DR |
| | EH-150 series | EH-CPU104, EH-CPU208, EH-CPU308, EH-CPU316 |
| HITACHI PLC | S10V | LQP510, LQP520 |
| | S10mini | LQP800, LQP000, LQP010, LQP011, LQP120 |
| FUJI FA PLC | MICREX-F | F55, F70, F120S, F140S, S15□S |
| PANASONIC PLC | | FP0-C16CT, FP0-C32CT, FP1-C24C, FP1-C40C, FP2, FP2SH, FP3, FP5, FP10(S), FP10SH, FP-M(C20TC), FP-M(C32TC), FP-Σ, FP-X |
| YASKAWA PLC*3*4*5 | | GL60S, GL60H, GL70H, GL120, GL130, CP-9200SH, CP-312, CP-9300MS, MP-920, MP-930, MP-940, CP-9200(H), PROGIC-8, MP2200, MP2300 |
| YOKOGAWA PLC*3 | FA500 | FA500 |
| | FA-M3 | F3SP05, F3SP08, F3SP10, F3SP20, F3SP30, F3FP36 F3SP21, F3SP25, F3SP35, F3SP28, F3SP38, F3SP53 F3SP58, F3SP59, F3SP66, F3SP67, |
| | STARDOM | NFCP100, NFJT100 |

| Item | | Type |
|---|---|---|
| ALLEN-BRADLEY PLC | SLC500 Series *1*5 | SLC500-20, SLC5/01, SLC500-30, SLC5/02, SLC500-40, SLC5/03, SLC5/04, SLC5/05 |
| | MicroLogix1000 Series*1 | 1761-L10BWA, 1761-L16AWA, 1761-L32AWA, 1761-L20AWA-5A*2, 1761-L10BWB, 1761-L16BWA, 1761-L32BWA, 1761-L16BWB, 1761-L32BWB, 1761-L20BWA-5A*2, 1761-L16BBB, 1761-L32BBB, 1761-L32AAA, 1761-L20BWB-5A*2 |
| | MicroLogix1200 Series*1 | 1762-L24BWA |
| | MicroLogix1500 Series*1 | 1764-LSP |
| | ControlLogix series | 1756-L, 1756-L62, 1756-L55M22, 1756-L1M1, 1756-L63, 1756-L55M23, 1756-L1M2, 1756-L55M12, 1756-L55M24 1756-L1M3, 1756-L55M13, 1756-L61, 1756-L55M14, 1756-L55M16, |
| | CompactLogix series | 1769-L31, 1769-L32E, 1769-L32C, 1769-L35E, 1769-L35CR |
| GE FANUC PLC | Series 90-30 | IC693CPU311, IC693CPU366, IC693CPU313, IC693CPU367, IC693CPU323, IC693CPU374 IC693CPU350, IC693CPU360, IC693CPU363, |
| | Series 90-70 | IC697CPU731, IC697CGR772, IC697CPX772, IC697CGR935, IC697CPX782, IC697CPU788, IC697CPX928, IC697CPU789, IC697CPX935, IC697CPM790 IC697CPU780, |
| | VersaMax Micro | IC200UAA003, IC200UDR003, IC200UDD110, IC200UDD064, IC200UAR014, IC200UAL004, IC200UDD120, IC200UDD164, IC200UDD104, IC200UAL005, IC200UDD212, IC200UDR164, IC200UDD112, IC200UAL006, IC200UDR005, IC200UDR064 IC200UDR001, IC200UAA007, IC200UDR006, IC200UDR002, IC200UAR028, IC200UDR010, |
| LS IS PLC | MASTER-K series | K300S |
| | | K200S |
| | | K120S |
| | | K80S |
| SCHNEIDER PLC | Modicon Premium Series | TSX P57 203M, TSX P57 353M, TSX P57 253M, TSX P57 453M TSX P57 303M, |
| | Modicon Quantum Series | 140 CPU 311 10, 140 CPU 651 50, 140 CPU 113 02, 140 CPU 534 14 A 140 CPU 434 12 U, 140 CPU 651 60, 140 CPU 113 03, 140 CPU 534 14 U, 140 CPU 671 60, 140 CPU 434 12 A, |
| SIEMENS PLC | SIMATIC S7-200 series | CPU S7-212, CPU 224, CPU 214, CPU 226 CPU 215, PU 216, CPU S7-221, CPU 222, |
| | SIMATIC S7-300 series | CPU 312IFM, CPU 316 CPU 313, CPU 314, CPU 314IFM, CPU 315, CPU 315-2DP, |
| | SIMATIC S7-400series | CPU 412-1, CPU 416-2DP CPU 413-1, CPU 413-2DP, CPU 414-1, CPU 414-2DP, CPU 416-1, |

*1 The item can be connected to the DH485 network via an adapter (1770-KF3). (Not connectable for GT10)

*2 DH485 connection is applicable for C series or later CPUs.
One-on-one connection is applicable for D series or later CPUs.

*3 GT SoftGOT1000 cannot monitor the following OMRON PLCs, YASKAWA PLCs, and YOKOGAWA PLCs.

| Item | | Type |
|---|---|---|
| OMRON PLC | SYSMAC CPM | CPM1, CPM1A, CPM2C |
| | SYSMAC CP1 | CP1H, CP1L |
| | SYSMAC α | C200HE |
| | | C200HS, C200H, C1000H, C2000H |
| YASKAWA PLC | | CP-9200SH, CP-312 |
| YOKOGAWA PLC | FA500 | FA500 |
| | FA-M3 | F3SP10, F3SP20, F3SP30 |
| | STARDOM | NFCP100, NFJT100 |

*4 The following YASKAWA PLC cannot be used with GT11.

| Item | Type |
|---|---|
| YASKAWA PLC | CP-312 |

*5 The following ALLEN-BRADLEY PLC and YASKAWA PLC cannot be used with GT10.

| Item | | Type |
|---|---|---|
| ALLEN-BRADLEY PLC | SLC500 series | SLC500-20, SLC500-30, SLC500-40, SLC5/01, SLC5/02 |
| YASKAWA PLC | | GL60S, GL60H, GL70H, GL120, GL130, CP-312, CP-9300MS, CP-9200(H), PROGIC-8 |

### (3) Temperature controller

| Item | | Type |
|---|---|---|
| OMRON temperature controllers | Thermac NEO electronic temperature controllers | E5AN, E5EN, E5CN, E5GN |
| | In-panel NEO electronic temperature controllers | E5ZN |
| SHINKO indicating controller*1 | ACS-13A series | ACS-13A□/□, □, C5 |
| | DCL-33A series | DCL-33A-□/M, □, C5 |
| | JC series | JCS-33A-□/□□, C5, JCR-33A-□/□□, C5, JCD-33A-□/□□, C5 |
| | JCM-33A series | JCM-33A-□/□, □C5 |
| | FCR-100 series | FCR-13A-□/M, C, FCR-13A-□/M, C5, FCR-15A-□/M, C, FCR-15A-□/M, C5 |
| | FCD-100 series | FCD-13A-□/M, C, FCD-13A-□/M, C5, FCD-15A-□/M, C, FCD-15A-□/M, C5 |
| | FCR-23A series | FCR-23A-□/M, C, FCR-23A-□/M, C5 |
| | PC900 series | PC935-□/M, C, PC935-□/M, C5, PC955-□/M, C, PC955-□/M, C5 |
| | PCD-300 series | PCD-33A-□/M, C5 |
| | FIR series | FIR-201-M, C, FIR-201-M, C5 |
| | JIR-301-M series | JIR-301-M□, C5 |
| CHINO controller | LT230 series | LT230 |
| | LT300 series | LT350, LT370 |
| | LT400 series | LT450, LT470 |
| | LT830 series | LT830 |
| | DZ1000 series | DZ1000 |
| | DZ2000 series | DZ2000 |
| | GT120 series | GT120 |
| FUJI SYS temperature controllers | | PXR3, RXR4, PXR5, PXR9, PXG4, PXG5, PXG9, PXH9 |
| YAMATAKE temperature controllers | | DMC10, SDC15, SDC20/21, SDC25/26, SDC30/31, SDC35/36, SDC40A/40B/40G |
| YOKOGAWA temperature controller | GREEN series | UT320, UT321, UT350, UT351, UT420, UT450, UT520, UT550, UT551, UT750, UP350, UP351, UP550, UP750, UM330, UM331, UM350, UM351, US1000 |
| | UT-100 series | UT130, UT150, UT152, UT155, UP150 |
| | UT2000 series | UT2400, UT2800 |
| RKC temperature controllers | SR Mini HG | H-PCP-J, H-PCP-A, H-PCP-B |
| | SRZ | Z-TIO |
| | CB series | CB100, CB400, CB500, CB700, CB900 |

*1 To use the following SHINKO indicating controllers, applicable indicating controllers have restrictions on the serial numbers.
For how to check the serial number, refer to the manual for the indicating controller to be used.

| Item | | Serial number of applicable indicating controller |
|---|---|---|
| ACS-13A series | ACS-13A□/□, □, C5 | October 2007 production or later<br>Indicating controllers with the serial numbers 07Axxxxxx, 07Kxxxxxx, and 07Xxxxxxx or later<br>(The first two digits of the serial numbers show the last two digits of the year.) |
| DCL-33A series | DCL-33A-□/M, □, C5 | |
| JC series | JCS-33A-□/□□, C5,<br>JCR-33A-□/□□, C5,<br>JCD-33A-□/□□, C5 | |
| JCM-33A series | JCM-33A-□/□, □C5 | |
| PC900 series | PC935-□/M, C5,<br>PC955-□/M, C5 | |
| PCD-300 series | PCD-33A-□/M, C5 | |
| JIR-301-M series | JIR-301-M□, C5 | |

### (4) Inverter

| Item | Type | |
|---|---|---|
| FREQROL | FREQROL-V500/V500L series,<br>FREQROL-E500 series,<br>FREQROL-A500/A500L series,<br>FREQROL-F500/F500L series,<br>FREQROL-F700 series, | FREQROL-S500/S500E series,<br>FREQROL-E700 series,<br>FREQROL-A700 series,<br>FREQROL-F500J series,<br>FREQROL-D700 series |

### (5) Servo amplifier

| Item | Type | | |
|---|---|---|---|
| MELSERVO-J2-Super series | MR-J2S-□A, | MR-J2S-□CP, | MR-J2S-□CL |
| MELSERVO-J2M series | MR-J2M-P8A, | MR-J2M-□DU | |
| MELSERVO-J3 series | MR-J3-□A | MR-J3-□T | |

### (6) CNC

| Item | Type | |
|---|---|---|
| CNC C70 | Q173NCCPU | |
| MELDAS C6/C64 | FCA C6, | FCA C64 |

### (7) Robot controller

| Item | Type |
|---|---|
| Robot controller | CRnQ-700, CRnD-700 |

## 2 Monitorable controllers

The controller that can be monitored from GOT varies according to the system (connection method) up to the controller.
The controllers that can be monitored by the GOT are indicated below per connection form.
With GT16/GT15/GT SoftGOT1000, it is possible to monitor other stations through the network such as MELSECNET/H, which is executed by the connected controller.
For the accessible range via the network, rafe to the following.

☞ Section 2.7.2 Access range for monitoring

(1) GT16

(a) In connection to PLC, motion controller CPU, CNC, or robot controller

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | | Bus connection *14 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*28 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSEC NET/H *15 | MELSEC NET/10 *16 | | ID*29 | G4*30 | |
| QCPU (Q mode) | Other than redundant system | ○*2 | △*2*24 | ○*2 | ○*25 | × | × | ○*3 | ○*3 | ○ | ○ | ○ | △*2*24 |
| | Redundant system (Main base unit) | × | ○ | × | ○ | × | × | ○*3*20 | ○*3 | ○ | ○ | ○ | ○ |
| | Redundant system (Extension base unit) | × | × | ○ | ○ | × | × | × | × | × | ○ | ○ | × |
| QCPU (A mode) | | × | ○ | ○ | ○ | × | × | × | ○ | × | ○ | × | ○ |
| QSCPU | | × | × | × | ○ | × | × | ○ | ○ | ○ | × | × | × |
| QnACPU | | ○*4 | ○ | △*5 | △*5 | × | × | × | ○ | × | ○ | × | ○ |
| ACPU | Other than A1FXCPU | △*6 | ○*7 | △*8*9 | ○ | × | × | × | △*12 | × | △*10 | × | ○*7 |
| | A1FXCPU | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| FXCPU | | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| Motion controller CPU (Q series)*32 | | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| Motion controller CPU (A series)*1 | | ○*11 | ○ | △*9 | ○ | × | × | × | △*13 | × | ○ | × | × |
| Remote I/O station | MELSEC-NET/H | × | ○ | ○ | ○ | × | × | × | × | × | × | × | × |
| | MELSEC-NET/10 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSEC-NET/B, Ⅱ | × | × | × | × | × | × | × | × | × | × | × | × |
| OMRON PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KEYENCE PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KOYO EI PLC | | × | ○ | △*26 | × | × | × | × | × | × | × | × | × |
| SHARP PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| JTEKT PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| TOSHIBA PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |

(Continued to next page)

| Controller monitored | | Bus connection *14 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*28 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *15 | MELSECNET/10 *16 | | ID*29 | G4*30 | |
| TOSHIBA MACHINE PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| HITACHI IES PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| HITACHI PLC | | × | △*21 | ○ | × | × | × | × | × | × | × | × | × |
| FUJI FA PLC | | × | × | ○ | × | × | × | × | × | × | × | × | × |
| PANASONIC PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| YASKAWA PLC | | × | ○ | ○ | ○ | × | × | × | × | × | × | × | × |
| YOKOGAWA PLC | | × | △*19 | △*18*19 | ○ | × | ○*23 | × | × | × | × | × | × |
| ALLEN-BRADLEY PLC | | × | ○ | × | △*22 | × | × | × | × | × | × | × | × |
| GE FANUC PLC | | × | △*27 | ○ | × | × | × | × | × | × | × | × | × |
| LS IS PLC | | × | ○*31 | ○ | × | × | × | × | × | × | × | × | × |
| SCHNEIDER PLC | | × | × | × | × | ○ | ○ | × | × | × | × | × | × |
| SIEMENS PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| CNC | CNC C70 | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| | MELDAS C6/C64 | × | ○*17 | × | ○*17 | × | × | × | ○*17 | × | ○*17 | × | × |
| Robot controller | CRnQ-700 | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| | CRnD-700 | × | × | × | ○ | × | × | × | × | × | × | × | × |

(b) In the connection to microcomputer, temperature controller, inverter, or servo amplifier

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | Direct connection |
|---|---|
| Microcomputer | ○ |
| OMRON temperature controller | ○ |
| SHINKO indicating controller | ○ |
| CHINO controller | ○ |
| FUJI SYS temperature controller | ○ |
| YAMATAKE temperature controller | ○ |
| YOKOGAWA temperature controller | ○ |
| RKC temperature controller | ○ |
| Inverter | ○ |
| Servo amplifier | ○ |

*1 The motion controller (A series) cannot be connected to the remote I/O station, regardless of the connection method.

*2 Do not set the device to be monitored to N/W No.: 0 and PLC station No.: 0 (station that does not exist actually).
If the setting is as described above, the GOT will monitor the master station.
The device ranges that can be monitored are the ranges for monitoring the ACPU (A3ACPU equivalent).

*3 To monitor the QCPU when connected with MELSECNET/10, use PLC CPU whose function version is version B or later and MELSECNET/H network unit.

*4 In case of the Q4ARCPU redundant system, connect to redundant expansion base unit A68RB (version B or later) at the last stage via the bus type connection.

*5 If the A series computer link module/Ethernet module is applied to the QnACPU, the GT15 can monitor the devices as the same as the case of AnACPU.
However, the following devices are not monitored.
• Devices added to QnACPU
• Latch relays (L) and step relays (S)
(In case of QnACPU, the latch relay (L) and step relay (S) are different from the internal relay. However, whichever is specified, an access is made to the internal relay.)
• File register (R)

*6 The A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CCPUP21, and A2CCPUR21do not allow bus connection
If an expansion base unit is connected in A1SJCPU/A1SJHCPU, bus types connection may not be applicable.

*7 When monitoring AnNCPU (S1), A2SCPU, A0J2HCPU or A2CCPU, the following or later software version is used to write to the CPU. The earlier software version is unusable.
• AnNCPU(S1): Version L or later for the one with link, version H or later for the one without link
• A2SCPU: Version H or later
• A0J2HCPU: Version E or later
• A2CCPU: Version H or later

*8 The A2CCPU, A2CCPUP21, A2CCPUR21 , A2CJCPU, and A2CJCPU-S3 do not allow computer link connection.

*9 For computer link connection of the A2SCPU, A2SHCPU, A1SHCPU, A0J2HCPU, A171SHCPU and A172SHCPU, use the computer link module whose software version is version U or later.
In addition, the A0J2-C214-S1 (A0J2HCPU-dedicated computer link module) cannot be used.

*10 The A2CCPU, A2CCPUP21, A2CCPUR21, A2CJCPU, A2CJCPU-S3 do not allow CC-Link connection (intelligent device station).

*11 When connecting an expansion base unit to A171SHCPUN, A172SHCPUN or A173CPUHCPU (S1), use the A168B expansion base unit.

*12 Can monitor the A2UCPU, A2UCPU-S1, A3UCPU, A4UCPU, A2USCPU, A2USCPU-S1, A2USHCPU-S1.

*13 Can monitor the A273UCPU, A273UHCPU, A273UHCPU-S3, A373UCPU, A373UCPU-S3, A173UHCPU, A173UHCPU-S1.

*14 When multiple GOTs are connected via the bus type connection, the GOT1000 series cannot be used together with GOT-A900 series, GOT800 series or A77GOT.

*15 This is a connection type where the network type is MELSECNET/H mode or MELSECNET/H extend mode (PLC to PLC network).

*16 This is a connection type where the network type is MELSECNET/10 (PLC to PLC network).
(Includes the connection where MELSECNET/H is used in the MELSECNET/10 mode (PLC to PLC network).
Can not be connected to the remote I/O network).

*17 For MELDAS C6/C64, use the NC system software version D0 or later.

*18 Computer link connection is not is not allowed for the NFCP100 and NFJT100.

*19 Connection is not supported for the NFCP100 or NFJT100 in a redundant configuration.
Also, note that PLC errors of system alarm cannot be displayed.

*20 In the QCPU redundant system, the MELSECNET/H extend mode cannot be used.

*21 The direct CPU connection can be used with the LQP510 only.

*22 The GOT cannot connect to the 1769-L31, 1769-L32C, 1769-L35CR, 1794-L33 and 1794-L34 via the Ethernet conncetion.

*23 The NFCP100 and the NFJT100 can be applicable to the MODBUS®/TCP connection only.

*24 Because the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU have no serial interface, the direct CPU connection using the serial connection is not available.

*25 For the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU, connect the GOT to the interface of each CPU.
As with connecting the GOT to the Ethernet module, the Ethernet settings, including the IP address setting, are required.

*26 For the PZ3, the computer link connection is not available.

*27 For Series 90-70, the direct CPU connection is not available.

*28 Indicates the CC-Link IE controller network connection.

*29 Indicates CC-Link connection (Intelligent device station).

*30 Indicates CC-Link connection (via G4).

*31 The direct CPU connection is available for the K120S and K80S only.

*32 For the MR-MQ100, only the Ethernet connection is available.

(2) GT15

(a) In connection to PLC, motion controller CPU, CNC, or robot controller

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | | Bus connection *14 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*28 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *15 | MELSECNET/10 *16 | | ID*29 | G4*30 | |
| QCPU (Q mode) | Other than redundant system | ○*2 | △*2*24 | ○*2 | ○*25 | × | × | ○*3 | ○*3 | ○ | ○ | ○ | △*2*24 |
| | Redundant system (Main base unit) | × | ○ | × | ○ | × | × | ○*3*20 | ○*3 | ○ | ○ | ○ | ○ |
| | Redundant system (Extension base unit) | × | × | ○ | ○ | × | × | × | × | × | ○ | ○ | × |
| QCPU (A mode) | | × | ○ | ○ | ○ | × | × | × | ○ | × | ○ | × | ○ |
| QSCPU | | × | × | × | ○ | × | × | ○ | ○ | ○ | × | × | × |
| QnACPU | | ○*4 | ○ | △*5 | △*5 | × | × | × | ○ | × | ○ | × | ○ |
| ACPU | Other than A1FXCPU | △*6 | ○*7 | △*8*9 | ○ | × | × | × | △*12 | × | △*10 | × | ○*7 |
| | A1FXCPU | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| FXCPU | | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| Motion controller CPU (Q series)*32 | | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| Motion controller CPU (A series)*1 | | ○*11 | ○ | △*9 | ○ | × | × | × | △*13 | × | ○ | × | × |
| Remote I/O station | MELSECNET/H | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| | MELSECNET/10 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSECNET/B, II | × | × | × | × | × | × | × | × | × | × | × | × |
| OMRON PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KEYENCE PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KOYO EI PLC | | × | ○ | △*26 | × | × | × | × | × | × | × | × | × |
| SHARP PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| JTEKT PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| TOSHIBA PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA MACHINE PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| HITACHI IES PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| HITACHI PLC | | × | △*21 | ○ | × | × | × | × | × | × | × | × | × |
| FUJI FA PLC | | × | × | ○ | × | × | × | × | × | × | × | × | × |
| PANASONIC PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| YASKAWA PLC | | × | ○ | ○ | ○ | × | × | × | × | × | × | × | × |
| YOKOGAWA PLC | | × | △*19 | △*18*19 | ○ | × | ○*23 | × | × | × | × | × | × |
| ALLEN-BRADLEY PLC | | × | ○ | × | ○ | × | × | × | × | × | × | × | × |

(Continued to next page)

| Controller monitored | | Bus connection *14 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*28 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *15 | MELSECNET/10 *16 | | ID*29 | G4*30 | |
| GE FANUC PLC | | × | △*27 | ○ | × | × | × | × | × | × | × | × | × |
| LS IS PLC | | × | ○*31 | ○ | × | × | × | × | × | × | × | × | × |
| SCHNEIDER PLC | | × | × | × | × | ○ | ○ | × | × | × | × | × | × |
| SIEMENS PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| CNC | CNC C70 | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| | MELDAS C6/C64 | × | ○*17 | × | ○*17 | × | × | × | ○*17 | × | ○*17 | × | × |
| Robot controller | CRnQ-700 | ○ | ○ | ○ | ○ | × | × | ○ | ○ | ○ | ○ | ○ | × |
| | CRnD-700 | × | × | × | ○ | × | × | × | × | × | × | × | × |

(b) In the connection to microcomputer, temperature controller, inverter, or servo amplifier

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | Direct connection |
|---|---|
| Microcomputer | ○ |
| OMRON temperature controller | ○ |
| SHINKO indicating controller | ○ |
| CHINO controller | ○ |
| FUJI SYS temperature controller | ○ |
| YAMATAKE temperature controller | ○ |
| YOKOGAWA temperature controller | ○ |
| RKC temperature controller | ○ |
| Inverter | ○ |
| Servo amplifier | ○ |

*1 The motion controller (A series) cannot be connected to the remote I/O station, regardless of the connection method.

*2 Do not set the device to be monitored to N/W No.: 0 and PLC station No.: 0 (station that does not exist actually). If the setting is as described above, the GOT will monitor the master station.
The device ranges that can be monitored are the ranges for monitoring the ACPU (A3ACPU equivalent).

*3 To monitor the QCPU when connected with MELSECNET/10, use PLC CPU whose function version is version B or later and MELSECNET/H network unit.

*4 In case of the Q4ARCPU redundant system, connect to redundant expansion base unit A68RB (version B or later) at the last stage via the bus type connection.

*5 If the A series computer link module/Ethernet module is applied to the QnACPU, the GT15 can monitor the devices as the same as the case of AnACPU.
However, the following devices are not monitored.
- Devices added to QnACPU
- Latch relays (L) and step relays (S)

(In case of QnACPU, the latch relay (L) and step relay (S) are different from the internal relay. However, whichever is specified, an access is made to the internal relay.)
- File register (R)

*6 The A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CCPUP21, and A2CCPUR21do not allow bus connection
If an expansion base unit is connected in A1SJCPU/A1SJHCPU, bus types connection may not be applicable.

*7 When monitoring AnNCPU (S1), A2SCPU, A0J2HCPU or A2CCPU, the following or later software version is used to write to the CPU. The earlier software version is unusable.
- AnNCPU(S1): Version L or later for the one with link, version H or later for the one without link
- A2SCPU: Version H or later
- A0J2HCPU: Version E or later
- A2CCPU: Version H or later

*8 The A2CCPU, A2CCPUP21, A2CCPUR21 , A2CJCPU, and A2CJCPU-S3 do not allow computer link connection.

*9 For computer link connection of the A2SCPU, A2SHCPU, A1SHCPU, A0J2HCPU, A171SHCPU and A172SHCPU, use the computer link module whose software version is version U or later.
In addition, the A0J2-C214-S1 (A0J2HCPU-dedicated computer link module) cannot be used.

*10 The A2CCPU, A2CCPUP21, A2CCPUR21, A2CJCPU, A2CJCPU-S3 do not allow CC-Link connection (intelligent device station).

*11 When connecting an expansion base unit to A171SHCPUN, A172SHCPUN or A173CPUHCPU (S1), use the A168B expansion base unit.

*12 Can monitor the A2UCPU, A2UCPU-S1, A3UCPU, A4UCPU, A2USCPU, A2USCPU-S1, A2USHCPU-S1.

*13 Can monitor the A273UCPU, A273UHCPU, A273UHCPU-S3, A373UCPU, A373UCPU-S3, A173UHCPU, A173UHCPU-S1.

*14 When multiple GOTs are connected via the bus type connection, the GOT1000 series cannot be used together with GOT-A900 series, GOT800 series or A77GOT.

*15 This is a connection type where the network type is MELSECNET/H mode or MELSECNET/H extend mode (PLC to PLC network).

*16 This is a connection type where the network type is MELSECNET/10 (PLC to PLC network).
(Includes the connection where MELSECNET/H is used in the MELSECNET/10 mode (PLC to PLC network).
Can not be connected to the remote I/O network).

*17 For MELDAS C6/C64, use the NC system software version D0 or later.

*18 Computer link connection is not is not allowed for the NFCP100 and NFJT100.

*19 Connection is not supported for the NFCP100 or NFJT100 in a redundant configuration.
Also, note that PLC errors of system alarm cannot be displayed.

*20 In the QCPU redundant system, the MELSECNET/H extend mode cannot be used.

*21 The direct CPU connection can be used with the LQP510 only.

*22 The GOT cannot connect to the 1769-L31, 1769-L32C, 1769-L35CR, 1794-L33 and 1794-L34 via the Ethernet conncetion.

*23 The NFCP100 and the NFJT100 can be applicable to the MODBUS® /TCP connection only.

*24 Because the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU have no serial interface, the direct CPU connection using the serial connection is not available.

*25 For the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU, connect the GOT to the interface of each CPU.
As with connecting the GOT to the Ethernet module, the Ethernet settings, including the IP address setting, are required.

*26 For the PZ3, the computer link connection is not available.

*27 For Series 90-70, the direct CPU connection is not available.

*28 Indicates the CC-Link IE controller network connection.

*29 Indicates CC-Link connection (Intelligent device station).

*30 Indicates CC-Link connection (via G4).

*31 The direct CPU connection is available for the K120S and K80S only.

*32 For the MR-MQ100, only the Ethernet connection is available.

(3) GT SoftGOT1000

(a) In connection to PLC, motion controller CPU, CNC, or robot controller

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | | Bus connection | CPU direct connection *17 | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*22 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSEC NET/H *11 | MELSEC NET/10 *12 | | ID*23 | G4*24 | |
| QCPU (Q mode) | Other than redundant system*14 | △*18 | △*19 | ○ | ○*20 | × | × | ○*3 | ○*3 | ○ | × | × | × |
| | Redundant system (Main base unit) | × | ○ | × | ○ | × | × | ○*2*3*16 | ○*2*3 | ○ | × | × | × |
| | Redundant system (Extension base unit) | × | × | ○ | ○ | × | × | × | × | × | × | × | × |
| QCPU (A mode) | | × | ○ | ○ | ○ | × | × | × | ○ | × | × | × | × |
| QSCPU | | × | △*21 | × | ○ | × | × | ○ | ○ | ○ | × | × | × |
| QnACPU | | × | ○ | △*4 | △*4 | × | × | × | ○ | × | × | × | × |
| ACPU | Other than A1FXCPU | × | ○*9 | △*5*15 | △*6 | × | × | × | △*6 | × | × | × | × |
| | A1FXCPU | × | ○ | × | × | × | × | × | × | × | × | × | × |
| FXCPU | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| Motion controller CPU (Q series)*25 | | × | △ | △ | △ | × | × | △ | △ | △ | × | × | × |
| Motion controller CPU (A series)*1 | | × | △*7*8 | △*8*15 | △*8 | × | × | × | △*8 | × | × | × | × |
| Remote I/O station | MELSEC-NET/H | × | ○ | × | × | × | × | × | × | × | × | × | × |
| | MELSEC-NET/10 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSEC-NET/B, Ⅱ | × | × | × | × | × | × | × | × | × | × | × | × |
| OMRON PLC | | × | △*10 | × | × | × | × | × | × | × | × | × | × |
| KEYENCE PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| KOYO EI PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| SHARP PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| JTEKT PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA MACHINE PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| HITACHI IES PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| HITACHI PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| FUJI FA PLC | | × | × | × | × | × | × | × | × | × | × | × | × |

(Continued to next page)

| Controller monitored | | Bus connection | CPU direct connection *17 | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*22 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *11 | MELSECNET/10 *12 | | ID*23 | G4*24 | |
| PANASONIC PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| YASKAWA PLC | | × | ○ | ○ | ○ | × | × | × | × | × | × | × | × |
| YOKOGAWA PLC | | × | × | × | ○ | × | × | × | × | × | × | × | × |
| ALLEN-BRADLEY PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| GE FANUC PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| LS IS PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| SCHNEIDER PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| SIEMENS PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| CNC | CNC C70 | × | ○ | ○ | ○ | × | × | ○ | ○ | ○ | × | × | × |
| | MELDAS C6/C64 | × | ○*13 | × | ○*13 | × | × | × | × | × | × | × | × |
| Robot controller | CRnQ-700 | × | ○ | ○ | ○ | × | × | ○ | ○ | ○ | × | × | × |
| | CRnD-700 | × | × | × | ○ | × | × | × | × | × | × | × | × |

(b) In the connection to microcomputer, temperature controller, inverter, or servo amplifier

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | Direct connection |
|---|---|
| Microcomputer | × |
| OMRON temperature controller | × |
| SHINKO indicating controller | × |
| CHINO controller | × |
| FUJI SYS temperature controller | × |
| YAMATAKE temperature controller | × |
| YOKOGAWA temperature controller | × |
| RKC temperature controller | × |
| Inverter | × |
| Servo amplifier | × |

*1 The motion controller (A series) cannot be connected to the remote I/O station, regardless of the connection method.

*2 Use a MELSECNET/H interface board driver (SW0DNC-MNETH-B) with the version K or later.

*3 Use a PLC CPU or MELSECNET/H network module of function version B or later.

*4 If an A series computer link module/Ethernet module is used for QnACPU, monitoring is not possible with the GT SoftGOT.

*5 The A0J2-C214-S3, A2CCPU and A2CJCPU do not allow computer link connection.

*6 The A2CCPUC24(-PRF), A2CCPU(P21)(R21), A2CJCPU-S3 and A1FXCPU do not allow Ethernet connection and MELSECNET/10 connection.

*7 When connected to GT SoftGT1000, simultaneous connection with other MELSOFT products (such as GX Developer) is not allowed.

*8 Applicable only to the A171SHCPU(N), A172SHCPU(N), A173UHCPU, A173UHCPU-S1, A273UHCPU and A273UHCPU-S3

*9 When monitoring AnNCPU(S1), A2SCPU, A0J2HCPU, A2CCPU, the following or later software version is used to write to the CPU. The earlier software version is unusable.

- AnNCPU(S1): Version L or later for the one with link, version H or later for the one without link
- A2SCPU: Version H or later
- A0J2HCPU: Version E or later
- A0J2HCPU-DC24: Version B or later
- A2CCPU: Version H or later

*10 OMRON PLC allows only RS-232 communication.

*11 This is a connection type where the network type is MELSECNET/H mode or MELSECNET/H extend mode (PLC to PLC network).

*12 This is a connection type where the network type is MELSECNET/10 (PLC to PLC network).
(Includes the connection where MELSECNET/H is used in the MELSECNET/10 mode (PLC to PLC network).
Connection to the remote I/O network is not allowed.

*13 When connecting MELDAS C6/C64, use the system software version indicated below.

- NC system software version D0 or later

*14 When configuring a multiple CPU system using Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, or Q25HCPU, use a CPU of function version B or later.

*15 In the computer link connection using A2SCPU, A2SHCPU, A1SHCPU, A1SJHCPU, A0J2HCPU, or A171SHCPU, use the software version U or later of the computer link module.

*16 In the QCPU redundant system, the MELSECNET/H extend mode cannot be used.

*17 For only the Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU, Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU, the connection with a USB cable is available.

*18 Applicable only with the PC CPU module

*19 Because the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU have no serial interface, the direct CPU connection using the serial connection is not available.

*20 For the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU, connect the GOT to the interface of each CPU.
As with connecting the GOT to the Ethernet module, the Ethernet settings, including the IP address setting, are required.

*21 Only the connection with a USB cable is available.

*22 Indicates the CC-Link IE controller network connection.

*23 Indicates CC-Link connection (Intelligent device station).

*24 Indicates CC-Link connection (via G4).

*25 Only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

(4) GT11

(a) In connection to PLC, motion controller CPU, CNC, or robot controller

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored*20 | | Bus connection *19 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*24 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *9 | MELSECNET/10 *10 | | ID*25 | G4*26 | |
| QCPU (Q mode) | Other than redundant system | ○*15 | △*3*23 | △*3 | × | × | × | × | × | × | × | ○ | △*3*23 |
| | Redundant system (Main base unit) | × | △*3 | × | × | × | × | × | × | × | × | ○ | △*3 |
| | Redundant system (Extension base unit) | × | × | ○ | × | × | × | × | × | × | × | ○ | × |
| QCPU (A mode) | | × | ○ | ○ | × | × | × | × | × | × | × | × | ○ |
| QSCPU | | × | × | × | × | × | × | × | × | × | × | × | × |
| QnACPU | | ○*16 | ○ | △*4 | × | × | × | × | × | × | × | × | ○ |
| ACPU | Other than A1FXCPU | △*17 | ○*5 | △*6*7 | × | × | × | × | × | × | × | × | ○*5 |
| | A1FXCPU | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| FXCPU | | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| Motion controller CPU (Q series)*28 | | ○ | ○ | ○ | × | × | × | × | × | × | × | ○ | × |
| Motion controller CPU (A series) | | ○*18 | ○ | △*7 | × | × | × | × | × | × | × | × | × |
| Remote I/O station | MELSEC-NET/H | × | △*8 | △*8 | × | × | × | × | × | × | × | × | × |
| | MELSEC-NET/10 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSEC-NET/B, II | × | × | × | × | × | × | × | × | × | × | × | × |
| OMRON PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KEYENCE PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KOYO EI PLC | | × | ○ | △*21 | × | × | × | × | × | × | × | × | × |
| SHARP PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| JTEKT PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| TOSHIBA PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA MACHINE PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| HITACHI IES PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| HITACHI PLC | | × | △*14 | ○ | × | × | × | × | × | × | × | × | × |
| FUJI FA PLC | | × | × | ○ | × | × | × | × | × | × | × | × | × |

(Continued to next page)

| Controller monitored*20 | | Bus connection *19 | CPU direct connection | Computer link connection | Ethernet connection | MODBUS® / connection | | MELSECNET connection | | CC-Link IE*24 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSEC -NET/H *9 | MELSEC -NET/10 *10 | | ID*25 | G4*26 | |
| PANASONIC PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| YASKAWA PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| YOKOGAWA PLC | | × | △*13 | △*12*13 | × | × | × | × | × | × | × | × | × |
| ALLEN-BRADLEY PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| GE FANUC PLC | | × | △*22 | ○ | × | × | × | × | × | × | × | × | × |
| LS IS PLC | | × | ○*27 | ○ | × | × | × | × | × | × | × | × | × |
| SCHNEIDER PLC | | × | × | × | × | ○ | × | × | × | × | × | × | × |
| SIEMENS PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| CNC | CNC C70 | ○ | ○ | ○ | × | × | × | × | × | × | × | ○ | × |
| | MELDAS C6/ C64 | × | ○*11 | × | × | × | × | × | × | × | × | × | × |
| Robot controller | CRnQ-700 | ○ | ○ | ○ | × | × | × | × | × | × | × | ○ | × |
| | CRnD-700 | × | × | × | × | × | × | × | × | × | × | × | × |

(b) In the connection to microcomputer, temperature controller, inverter, or servo amplifier

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | Direct connection |
|---|---|
| Microcomputer | ○ |
| OMRON temperature controller | ○ |
| SHINKO indicating controller | ○ |
| CHINO controller | ○ |
| FUJI SYS temperature controller | ○ |
| YAMATAKE temperature controller | ○ |
| YOKOGAWA temperature controller | ○ |
| RKC temperature controller | ○ |
| Inverter | ○ |
| Servo amplifier | ○ |

*1 Only the motion controller CPU in which peripheral software package SV13/SV22 is installed can be connected.

*2 The motion controller (A series) cannot be connected to the remote I/O station, regardless of the connection method.

*3 The GOT can monitor only the station connected.

*4 If the A series computer link module is applied to the QnACPU, the GT11 can monitor the devices as the same as the case of AnACPU.
However, the following devices are not monitored.
• Devices added to QnACPU
• Latch relays (L) and step relays (S)
(In case of QnACPU, the latch relay (L) and step relay (S) are different from the internal relay. However, whichever is specified, an access is made to the internal relay.)
• File register (R)

*5 When monitoring the AnNCPU(S1), A2SCPU, A0J2HCPU or A2CCPU, data cannot be written to the CPU earlier than the following software version.
• AnNCPU(S1): Version L or later for the one with link, version H or later for the one without link
• A2SCPU: Version H or later
• A0J2HCPU: Version E or later
• A2CCPU: Version H or later

*6 The A2CCPU, A2CCPUP21, A2CCPUR21, A2CJCPU and A2CJCPU-S3 do not allow computer link connection.

*7 For computer link connection of the A2SCPU, A2SHCPU, A1SHCPU, A0J2HCPU, A171SHCPU and A172SHCPU, use the computer link module whose software version is version U or later.
In addition, the A0J2-C214-S1 (A0J2HCPU-dedicated computer link module) cannot be used.

*8 Can not access the master station.
Can access the host station (remote I/O station) only.

*9 This is a connection type where the network type is MELSECNET/H mode or MELSECNET/H extend mode (PLC to PLC network).

*10 This is a connection type where the network type is MELSECNET/10 (PLC to PLC network).
(Includes the connection where MELSECNET/H is used in the MELSECNET/10 mode (PLC to PLC network).
Connection to the remote I/O network is not allowed.

*11 Concerning MELDAS C6/C64, use the system software version indicated below.
NC system software version D0 or later

*12 Computer link connection is not allowed for the NFCP100 and NFJT100.

*13 Connection is not supported for the NFCP100 or NFJT100 in a redundant configuration.
Also, note that PLC errors of system alarm cannot be displayed.

*14 The direct CPU connection can be used with the LQP510 only.

*15 Do not set the device to be monitored to N/W No.: 0 and PLC station No.: 0 (station that does not exist actually).
If the setting is as described above, the GOT will monitor the master station.

*16 With the Q4ARCPU redundant system, connect the GOT to the redundant extension base unit A68RB (version B or later) at the last stage via the bus connection.

*17 The bus connection cannot be used with the A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CCPUP21, or A2CCPUR21.
When an extension base unit is connected to the A1SJCPU or A1SJHCPU, the bus connection cannot be used.

*18 When an extension base unit is connected to the A171SHCPUN, A172SHCPUN, or A173CPUHCPU(S1), use the A168B extension base unit.

*19 When multiple GOTs are connected via the bus connection, the GOT1000 series cannot be connected with the GOT-A900 series, GOT800 series, or A77GOT.

*20 The GOT to be used differs depending on connection types.
• Bus connection: GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA
GT1155-QSBDA, GT1150-QLBDQ, GT1150-QLBDA
• Connection types except the above connection type:
GT1155-QTBD, GT1155-QSBD, GT1150-QLBD,
Handy GOT

*21 For the PZ3, the computer link connection is not available.

*22 For Series 90-70, the direct CPU connection is not available.

*23 Because the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU have no serial interface, the direct CPU connection using the serial connection is not available.

*24 Indicates the CC-Link IE controller network connection.

*25 Indicates CC-Link connection (Intelligent device station).

*26 Indicates CC-Link connection (via G4).

*27 The direct CPU connection is available for the K120S and K80S only.

*28 The MR-MQ100 cannot be connected to the GOT.

(5) GT 10

(a) In connection to PLC, motion controller CPU, CNC, or robot controller

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored*7 | | Bus connection | CPU direct connection | Computer link connection *2 | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*9 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *3 | MELSECNET/10 *4 | | ID*10 | G4*11 | |
| QCPU (Q mode) | Other than redundant system | × | △*1*8 | △*1 | × | × | × | × | × | × | × | ○ | △*1*8 |
| | Redundant system (Main base unit) | × | × | × | × | × | × | × | × | × | × | × | × |
| | Redundant system (Extension base unit) | × | × | × | × | × | × | × | × | × | × | × | × |
| QCPU (A mode) | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| QSCPU | | × | × | × | × | × | × | × | × | × | × | × | × |
| QnACPU | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| ACPU | Other than A1FXCPU | × | ○ | △*5*6 | × | × | × | × | × | × | × | × | ○ |
| | A1FXCPU | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| FXCPU | | × | ○ | × | × | × | × | × | × | × | × | × | ○ |
| Motion controller CPU (Q series) | | × | × | × | × | × | × | × | × | × | × | × | × |
| Motion controller CPU (A series)*1 | | × | × | × | × | × | × | × | × | × | × | × | × |
| Remote I/O station | MELSECNET/H | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSECNET/10 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELSECNET/B, II | × | × | × | × | × | × | × | × | × | × | × | × |
| OMRON PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KEYENCE PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| KOYO EI PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| SHARP PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| JTEKT PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| TOSHIBA MACHINE PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| HITACHI IES PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| HITACHI PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| FUJI FA PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| PANASONIC PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |

(Continued to next page)

| Controller monitored*7 | | Bus connection | CPU direct connection | Computer link connection *2 | Ethernet connection | MODBUS® connection | | MELSECNET connection | | CC-Link IE*9 | CC-Link connection | | GOT multidrop connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RTU | TCP | MELSECNET/H *3 | MELSECNET/10 *4 | | ID*10 | G4*11 | |
| YASKAWA PLC | | × | ○ | ○ | × | × | × | × | × | × | × | × | × |
| YOKOGAWA PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| ALLEN-BRADLEY PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| GE FANUC PLC | | × | × | × | × | × | × | × | × | × | × | × | × |
| LS IS PLC | | × | ○*12 | ○ | × | × | × | × | × | × | × | × | × |
| SCHNEIDER PLC | | × | × | × | × | ○ | × | × | × | × | × | × | × |
| SIEMENS PLC | | × | ○ | × | × | × | × | × | × | × | × | × | × |
| CNC | CNC C70 | × | × | × | × | × | × | × | × | × | × | × | × |
| | MELDAS C6/C64 | × | × | × | × | × | × | × | × | × | × | × | × |
| Robot controller | CRnQ-700 | × | × | × | × | × | × | × | × | × | × | × | × |
| | CRnD-700 | × | × | × | × | × | × | × | × | × | × | × | × |

(b) In the connection to microcomputer, temperature controller, inverter, or servo amplifier

○: Applicable △: Partly restricted ×: Inapplicable

| Controller monitored | Direct connection |
|---|---|
| Microcomputer | ○ |
| OMRON temperature controller | × |
| SHINKO indicating controller | × |
| CHINO controller | × |
| FUJI SYS temperature controller | × |
| YAMATAKE temperature controller | × |
| YOKOGAWA temperature controller | × |
| RKC temperature controller | × |
| Inverter | ○ |
| Servo amplifier | ○ |

*1 The GOT can monitor only the station connected.

*2 With the A1SJ71C24-R4 or A1SJ71C24-R2, the device range for monitoring is the same as that for monitoring the AnACPU.

*3 This is a connection type where the network type is MELSECNET/H mode or MELSECNET/H extend mode (PLC to PLC network).

*4 This is a connection type where the network type is MELSECNET/10 mode (PLC to PLC network).
(Includes the connection where MELSECNET/H is used in the MELSECNET/10 mode (PLC to PLC network).)
Connection to the remote I/O network is not allowed.

*5 The A2CCPU, A2CCPUP21, A2CCPUR21, A2CJCPU and A2CJCPU-S3 do not allow computer link connection.

*6 For computer link connection of the A2SCPU, A2SHCPU, A1SHCPU, A0J2HCPU, A171SHCPU and A172SHCPU, use the computer link module whose software version is version U or later.
In addition, the A0J2-C214-S1 (A0J2HCPU-dedicated computer link module) cannot be used.

*7 Applicable connection types differ depending on the specifications of the GOT power.
For applicable connection types, refer to the following manual.

☞ GOT1000 Series Connection Manual

*8 For the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU,Q13UDEHCPU, Q20UDEHCPU, and Q26UDEHCPU, the direct CPU connection is not available.

*9 Indicates the CC-Link IE controller network connection.

*10 Indicates CC-Link connection (Intelligent device station).

*11 Indicates CC-Link connection (via G4).

*12 The direct CPU connection is available for the K120S and K80S only.

## 2.7.2 Access range for monitoring

**Point**

Monitoring the remote I/O station of MELSECNET/H,/10,/B,(II)

Note that the GOT can not monitor the remote I/O station on the MELSECNET/10 network system or MELSECNET/B, (II) data link system by connecting to it. Connect the GOT to the remote I/O station on the MELSECNET/H network system to monitor.

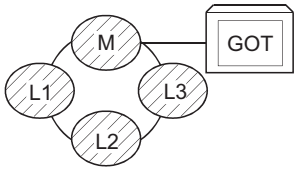
### 1 Data link system (MELSECNET/B, (II)) access range for monitoring

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

(1) Bus connection/CPU direct connection/Computer link connection

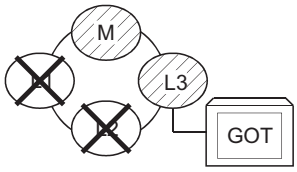
(a) If connected to master station

- Local stations can be monitored. If the PLC CPU of the local station is QnACPU, devices other than B and W that are allocated by the link parameter cannot be monitored.



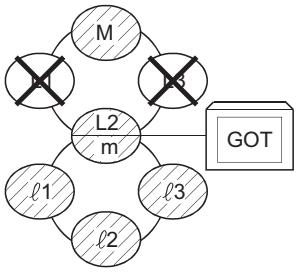

(b) If connected to local station

- The master station can be monitored. If the PLC CPU of the local station is QnACPU, devices other than B and W that are allocated by the link parameter cannot be monitored.
- Other local stations cannot be monitored.




(c) If connected to the master station on the third layer

- The master station on the second layer and local stations on the third layer can be monitored. If the PLC CPU of the local station is QnACPU, devices other than B and W that are allocated by the link parameter cannot be monitored.
- Local stations on the second layer cannot be monitored.




(d) When using GT SoftGOT1000

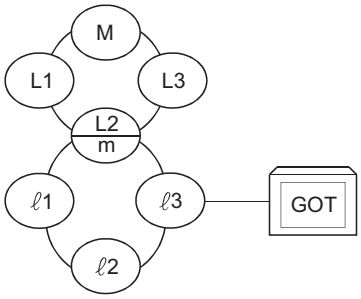
- If the GT SoftGOT1000 is connected to ACPU or QnACPU, monitoring of other stations is possible only for the same PLC CPU type as the connected station.

(2) Monitoring devices of other stations

If other devices on the data link system are monitored, display speed will be significantly reduced. Therefore monitor link relay (B) and link register (W) that are allocated by the link parameter.

(3) Setting method of monitor device

Describes the network No. for setting monitor devices and method of setting station numbers with an example shown below.




(a) When monitoring the station connected (host station) and B and W allocated by the link parameter, specify the host station.

(b) When monitoring devices of other stations :
Network No. : 0, Station number : Refer to the following table.

Station number setting

| Station to be accessed / Station connected to GOT | M | L1 | L2 m | L3 | ℓ1 | ℓ2 | ℓ3 |
|---|---|---|---|---|---|---|---|
| M | Host | Other 1 | Other 2 | Other 3 | - | - | - |
| L1 | Other 0 | Host | - | - | - | - | - |
| L2 m | Other 0 | - | Host | - | Other 1 | Other 2 | Other 3 |
| L3 | Other 0 | - | - | Host | - | - | - |
| ℓ1 | - | - | Other 0 | - | Host | - | - |
| ℓ2 | - | - | Other 0 | - | - | Host | - |
| ℓ3 | - | - | Other 0 | - | - | - | Host |

**Point**

Monitoring link device B or W

For monitoring devices B and W that are allocated by the link parameter, make sure to use the host device number if designating devices allocated to other station. If not, display speed will be reduced.

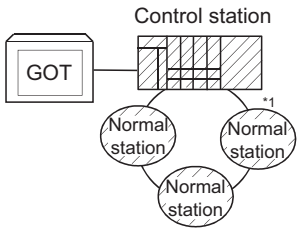
## 2 Access range for monitoring stations on network systems (CC-Link IE controller network, MELSECNET/H, MELSECNET/10)

GT16 GT15 Soft GOT 1000 GT11 GT10

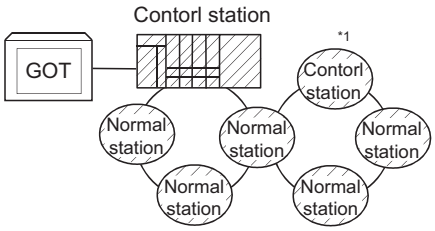
(1) Bus connection

(a) When connecting to multiple CPU system

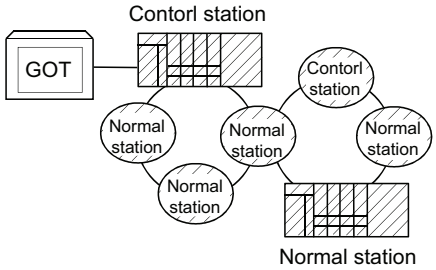
- The GOT can monitor the control station and all the normal stations on the network.




- The GOT can monitor the control station and all the normal stations on the other networks. (For monitoring stations on the other networks, be sure to set the routing parameter.)
  When the Universal model QCPU is used as a relay station, the GOT can monitor stations with the station No.65 or later in the CC-Link IE controller network.




- When connecting to the multiple CPU system, the GOT can monitor CPU No.1 to No.4.



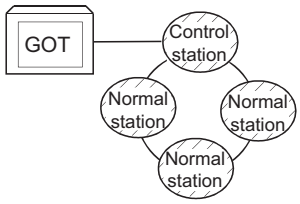

- Devices of other stations (other than devices B and W that are allocated by the network parameter) may not allow monitoring depending on their PLC CPU.

  ☞ Examples 1 to 4.in this section (7)

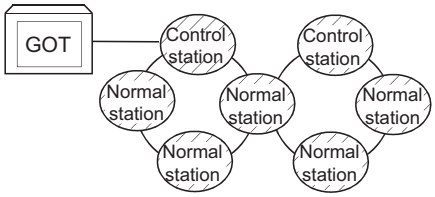
*1 The control station and normal station correspond to the master station and local station in the CC-Link IE field network respectively.

(b) When connecting to QCPU (Q mode)/QnACPU/AnUCPU

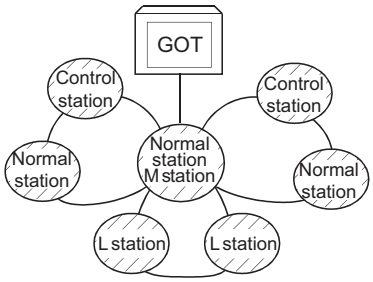
- The GOT can monitor the control station and all the normal stations on the network.




- The GOT can monitor the control station and all the normal stations on the other networks. (For monitoring stations on the other networks, be sure to set the routing parameter.)
  When the Universal model QCPU is used as a relay station, the GOT can monitor stations with the station No.65 or later in the CC-Link IE controller network.




- If connected to a relay station and the data link system is included, the master station and local stations can be monitored.
- If connected to a relay station, it is not necessary to designate the data link parameter "Effective unit number for accessing other stations" for the PLC CPU of the connected station. (If designated, the parameter will be ignored.)

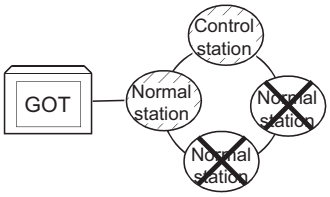



- Devices of other stations (other than devices B and W that are allocated by the network parameter) may not allow monitoring depending on their PLC CPU.

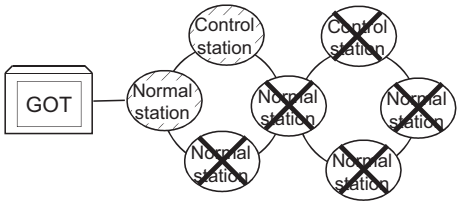
  ☞ Examples 1 to 4.in this section (7)

(c) When connecting to AnACPU/AnNCPU

- The GOT can monitor the control station on the network.
  When the PLC CPU on the control station is the QCPU (Q mode) or QnACPU, the GOT cannot monitor devices other than B and W assigned for the network parameter.
- The GOT cannot monitor normal stations on the network.

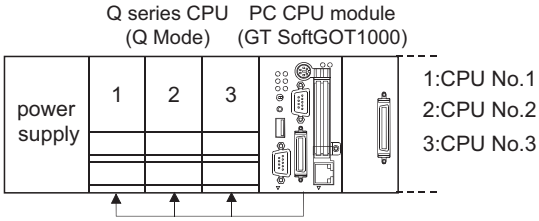



- The GOT cannot monitor any stations on the other networks.



(d) When using GT SoftGOT1000

When the multiple CPU system is created, the PC CPU module can access the other CPUs on the same main base unit.
The PC CPU module cannot access CPUs on the other main base units.



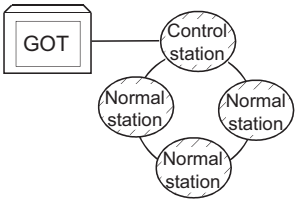

(2) Direct CPU conncetion/computer link connection

(a) When connecting to multiple CPU system
- Access range is as described in (1) (a).

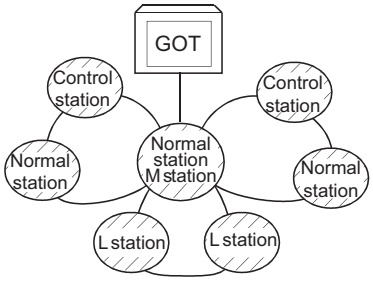
(b) When connecting to QCPU (Q mode)/QnACPU
- Access range is as described in (1) (b).

(c) When connecting to QCPU (A mode)/AnUCPU

- The GOT can monitor the control station and all the normal stations on the network.
  For monitoring devices (other than B and W assigned for the network parameter) of the other stations, the GOT cannot monitor the devices of the PLC CPU that is the QCPU (Q mode) or QnACPU.




- If connected to a relay station, use data link parameter "Effective unit number to access other stations" to designate the unit number that is connected to the network to be monitored.




(d) When connecting to AnACPU/AnNCPU
- Access range is as described in (1) (c).

(e) When connecting to motion controller CPU (Q series), CNC (CNC C70), or robot controller (CRnQ-700) via direct CPU connection
Monitor the motion controller CPU (Q series), CNC (CNC C70), or robot controller (CRnQ-700) via the following QCPUs in the multiple CPU system.

| Controller | | Relay CPU |
|---|---|---|
| Motion controller CPU (Q series) | Q172HCPU, Q173HCPU | QCPU (Q mode) |
| | Q172DCPU, Q173DCPU | QnUCPU |
| CNC (CNC C70) | Q173NCCPU | |
| Robot controller (CRnQ-700) | CRnQ-700 | |

(f) When using GT SoftGOT1000
- When GT SoftGOT1000 is connected to the ACPU or QnACPU, GT SoftGOT1000 can monitor the other stations that are the same types of PLC CPUs as the connected station only.

(3) CC-Link connection (intelligent device station)/CC-Link connection (via G4)

- Only the station conncted to the GOT can be monitored.

  ☞ This section (7) Example 6: When using CC-Link connection (intelligent device station) / CC-Link connection (via G4)

- When the station connected to the GOT is in the multiple CPU system, the GOT can monitor CPU No.1 to No.4.
- The GOT cannot monitor the other stations.

(4) MELSECNET/H connection / MELSECNET/10 connection / CC-Link IE controller network connection

**Point**

Precautions for cyclic transmission

When transmitting cyclic transmission with a GOT, even if link device X and/or Y are assigned to a GOT when setting the network parameter for the control station, the GOT cannot access the host station.
When transmitting cyclic transmission, use link device B and/or W.

(a) GT16, GT15

- The GOT is regarded as a normal station and monitors the control station and all normal stations on the network.
  When the monitoring target is a PLC CPU within a multiple CPU system, the GOT can monitor CPU No. 1 to CPU No. 4 by specifying CPU No.
- When monitoring other networks, a CPU on the MELSECNET/H, MELSECNET/10, CC-Link IE controller network, or Ethernet network is accessible through the PLC CPU.
  The GOT cannot monitor the CNC C70 on the other networks.
  On the Ethernet network, only QCPU (Q mode) and QnACPU can be accessed.
- When monitoring other networks in MELSECNET/10 connection, install the MELSECNET/H communication unit on the GOT.
- To monitor other networks,setting of routing parameters is required.
  For routing parameter setting, refer to the following manuals.

  Routing parameter setting for the GOT

  ☞ GOT1000 Series Connection Manual

  Routing parameter setting for the PLC CPU (MELSECNET/H network system, MELSECNET/10 network system)

  ☞ Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

  Routing parameter setting for the PLC CPU (CC-Link IE controller network)

  ☞ CC-Link IE Controller Network Reference Manual

- If devices of other stations (other than devices B and W that are allocated by the network parameter) are monitored, monitoring may not be available depending on the PLC CPU of the network system to be monitored.

  ☞ This section (7) Example 5: When using MELSECNET/10 connection.

(b) GT SoftGOT1000

- The GOT is regarded as a normal station and monitors the control station and all normal stations on the network.
  If the monitoring target is a PLC CPU within a multiple CPU system, CPU No. 1 to CPU No. 4 can be monitored.
- When monitoring other networks, a CPU on the MELSECNET/H, MELSECNET/10, CC-Link IE controller network, or Ethernet network is accessible through the PLC CPU.
  The GOT cannot monitor the CNC C70 on the other networks.
  On the Ethernet network, only QCPU (Q mode) and QnACPU can be accessed.
- To monitor other networks, setting of routing parameters is required.
  For the setting of the routing parameters, refer to the following manual.

  Routing parameter setting for GT SoftGOT1000

  ☞ MELSECNET/H Interface Board User's Manual

  Routing parameter setting for the PLC CPU (MELSECNET/H network system, MELSECNET/10 network system)

  ☞ Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

  Routing parameter setting for the PLC CPU (CC-Link IE controller network)

  ☞ CC-Link IE Controller Network Reference Manua
- When monitoring devices of other stations, monitoring of all devices is possible in the PLC CPU to be accessed.

**Point**

Precautions for using the QCPU redundant system

When monitoring other networks, do not set the QCPU redundant system as a relay station.
If the QCPU redundant system is set as a relay station, the GOT cannot switch the monitoring target automatically when the system is switched.
(A timeout error occurs due to failed monitering.)

**Remark**

Routing parameters for GT SoftGOT1000

For GT SoftGOT1000, routing parameter settings differ depending on the connection type.

- MELSECNET/H connection, MELSECNET/10 connection:
  Set routing parameters with the utility for the MELSECNET/H interface board.
- CC-Link IE controller network connection:
  Set routing parameters with the utility for CC-Link IE controller network interface board
- Ethernet connection:
  Set routing parameters with GT Designer2.

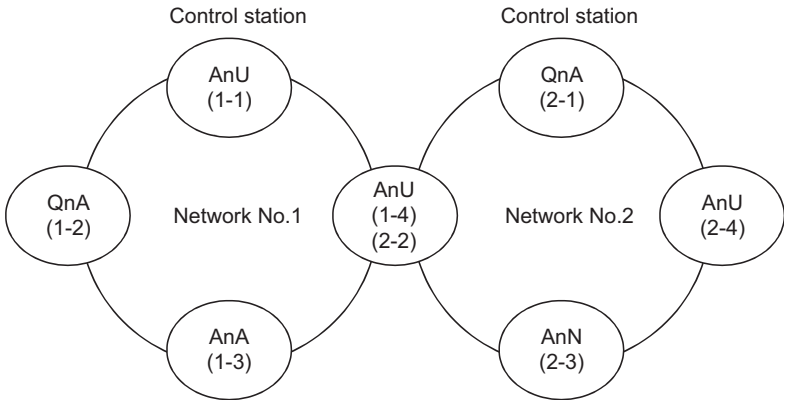
(5) Monitoring devices of other stations on network
If devices of other stations on the network system are monitored, display speed will be significantly reduced. Therefore monitor link relay (B) and link register (W) that are allocated by the network parameter.

(6) Monitoring devices of the other network (Bus connection, CPU direct connection, computer link connection)

- Be sure to designate the routing parameter to the PLC CPU of the connected station.
- If the other network is monitored, display speed of object etc. will be significantly reduced.

(7) Monitor access range of other stations and setting method of monitor devices

Example 1: When using bus connection




- Monitoring/Accessible range of devices (other than B or W) of other stations or other networks
  Specify the accessing network No. or station as shown in the table below.

(a) To monitor B or W of the connected station (host station) assigned with a network parameter, specify the host station.

(b) To monitor another station (other than B or W) or another network, specify the station (network No. and station No.).

| Station to be accessed / station connected to GOT | Network No.1 | | | | Network No.2 | | | |
|---|---|---|---|---|---|---|---|---|
| | AnU (1-1) | QnA (1-2) | AnA (1-3) | AnU (1-4) | QnA (2-1) | AnU (2-2) | AnN (2-3) | AnU (2-4) |
| AnU (1-1) | ○ | × | ○ | ○ | × | ○ | × | ○ |
| | Host | - | Other (1-3) | Other (1-4) | - | Other (2-2) | - | Other (2-4) |
| QnA (1-2) | ○ | ○ | × | ○ | ○ | ○ | × | ○ |
| | Other (1-1) | Host | - | Other (1-4) | Other (2-1) | Other (2-2) | - | Other (2-4) |
| AnA (1-3) | ○ | × | ○ | × | × | × | × | × |
| | Other (0-0) | - | Host | - | - | - | - | - |
| AnU (1-4) (2-2) | ○ | × | × | ○ | × | ○ | × | ○ |
| | Other (1-1) | - | - | Host | - | Host | - | Other (2-4) |
| QnA (2-1) | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ |
| | Other (1-1) | Other (1-2) | - | Other (1-4) | Host | Other (2-2) | Other (2-3) | Other (2-4) |
| AnN (2-3) | × | × | × | × | × | × | ○ | × |
| | - | - | - | - | - | - | Host | - |
| AnU (2-4) | ○ | × | × | ○ | × | ○ | × | ○ |
| | Other (1-1) | - | - | Other (1-4) | - | Other (2-2) | - | Host |

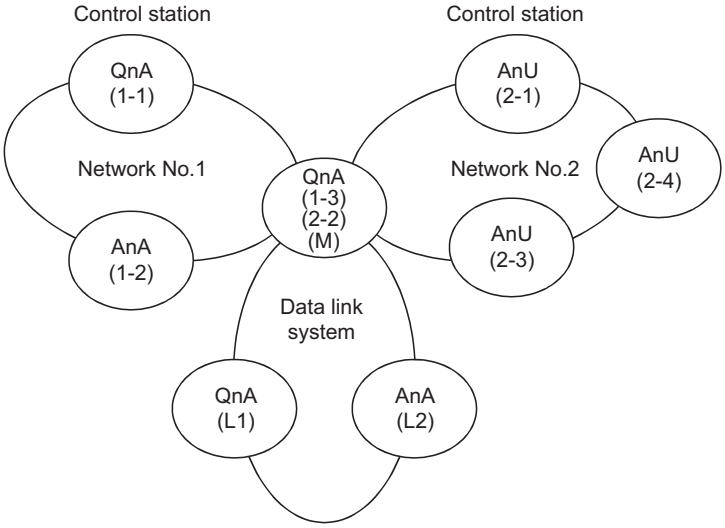
How to read the table
Upper line : Accessibility
○ : Accessible
× : Not accessible
Lower line : Network settings
Host
Other (Network No. - Station number)

**Point**

Monitoring link device B or W

For monitoring devices B and W that are allocated by the link parameter, make sure to use the host device number if designating devices allocated to other station. If not, display speed will be reduced.

Example 2: When using bus connection




- Monitoring/Accessible range of devices (other than B or W) of other stations or other networks
  Specify the accessing network No. or station as shown in the table below.

(a) To monitor B or W of the connected station (host station) assigned with a network parameter, specify the host station.

(b) To monitor another station (other than B or W) or another network, specify the station (network No. and station No.).

| Station to be accessed / station connected to GOT | Network No.1 | | | | Network No.2 | | | Data link system | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | QnA (1-1) | AnA (1-2) | QnA (1-3) | AnU (2-1) | QnA (2-2) | AnU (2-3) | AnU (2-4) | QnA (M) | QnA (L1) | AnA (L2) |
| QnA (1-1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | × |
| | Host | Other (1-2) | Other (1-3) | Other (2-1) | Other (2-2) | Other (2-3) | Other (2-4) | Other (1-3) or Other (2-2) | - | - |
| AnA (1-2) | × | ○ | × | × | × | × | × | × | × | × |
| | - | Host | - | - | - | - | - | - | - | - |
| QnA (1-3) (2-2) (M) | ○ | × | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ |
| | Other (1-1) | - | Host | Other (2-1) | Host | Other (2-3) | Other (2-4) | Host | - | Other (0-2)*1 |
| AnU (2-1) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Host | - | Other(2-3) | Other (2-4) | - | - | - |
| AnU (2-3) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Other (2-1) | - | Host | Other (2-4) | - | - | - |
| AnU (2-4) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Other (2-1) | - | Other (2-3) | Host | - | - | - |
| QnA (L1) | × | × | × | × | × | × | × | × | ○ | × |
| | - | - | - | - | - | - | - | - | Host | - |
| AnA (L2) | × | × | × | × | × | × | × | × | × | ○ |
| | - | - | - | - | - | - | - | - | - | Host |

*1 When monitoring the data link system, designate the network No. as 0.

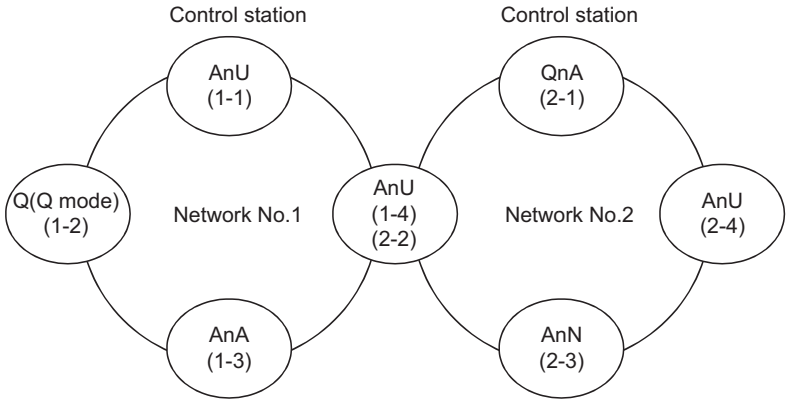
How to read the table
Upper line : Accessibility
○ : Accessible
× : Not accessible
Lower line : Network settings
Host
Other (Network No. - Station number)

**Point**

Monitoring link device B or W

For monitoring devices B and W that are allocated by the link parameter, make sure to use the local device number if designating devices allocated to other station. If not, display speed will be reduced.

Example 3: When using CPU direct connection or computer link connection




- Monitoring/Accessible range of devices (other than B or W) of other stations or other networks
  Specify the accessing network No. or station as shown in the table below.

(a) To monitor B or W of the connected station (host station) assigned with a network parameter, specify the host station.

(b) To monitor another station (other than B or W) or another network, specify the station (network No. and station No.).

| Station to be accessed / station connected to GOT | Network No.1 | | | | Network No.2 | | | |
|---|---|---|---|---|---|---|---|---|
| | AnU (1-1) | Q(Q mode) (1-2) | AnA (1-3) | AnU (1-4) | QnA (2-1) | AnU (2-2) | AnN (2-3) | AnU (2-4) |
| AnU (1-1) | ○ | × | ○ | ○ | × | ○ | × | × |
| | Host | - | Other (1-3) | Other (1-4) | - | Other (2-2) | - | - |
| Q(Q mode) (1-2) | ○ | ○ | × | ○ | ○ | ○ | × | ○ |
| | Other (1-1) | Host | - | Other (1-4) | Other (2-1) | Other (2-2) | - | Other (2-4) |
| AnA (1-3) | ○ | × | ○ | × | × | × | × | × |
| | Other (0-0) | - | Host | - | - | - | - | - |
| AnU (1-4) (2-2) | ○ | × | × | ○ | × | ○ | × | × |
| | Other (1-1) | - | - | Host | - | Host | - | - |
| QnA (2-1) | ○ | ○ | × | ○ | ○ | ○ | ○ | ○ |
| | Other (1-1) | Other (1-2) | - | Other (1-4) | Host | Other (2-2) | Other (2-3) | Other (2-4) |
| AnN (2-3) | × | × | × | × | × | × | ○ | × |
| | - | - | - | - | - | - | Host | - |
| AnU (2-4) | × | × | × | × | × | ○ | × | ○ |
| | - | - | - | - | - | Other(2-2) | - | Host |

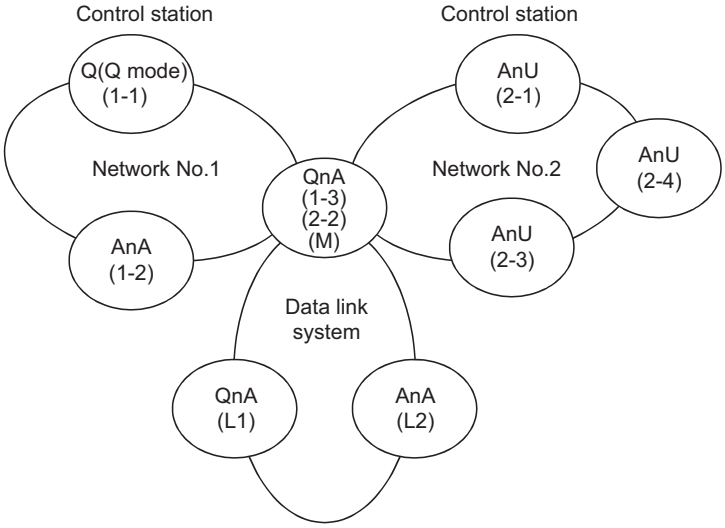
How to read the table
Upper line : Accessibility
○ : Accessible
× : Not accessible
Lower line : Network settings
Host
Other (Network No. - Station number)

**Point**

Monitoring link device B or W

For monitoring devices B and W that are allocated by the link parameter, make sure to use the local device number if designating devices allocated to other station. If not, display speed will be reduced.

Example 4: When using CPU direct connection or computer link connection




- Monitoring/Accessible range of devices (other than B or W) of other stations or other networks
  Specify the accessing network No. or station as shown in the table below.

(a) To monitor B or W of the connected station (host station) assigned with a network parameter, specify the host station.

(b) To monitor another station (other than B or W) or another network, specify the station (network No. and station No.).

| Station to be accessed / station connected to GOT | Network No.1 | | | Network No.2 | | | | Data link system | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q(Q mode) (1-1) | AnA (1-2) | QnA (1-3) | AnU (2-1) | QnA (2-2) | AnU (2-3) | AnU (2-4) | QnA (M) | QnA (L1) | AnA (L2) |
| Q(Q mode) (1-1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | × |
| | Host | Other (1-2) | Other (1-3) | Other (2-1) | Other (2-2) | Other (2-3) | Other (2-4) | Other (1-3) or Other (2-2) | - | - |
| AnA (1-2) | × | ○ | × | × | × | × | × | × | × | × |
| | - | Host | - | - | - | - | - | - | - | - |
| QnA (1-3) (2-2) (M) | ○ | × | ○ | ○ | ○ | ○ | ○ | ○ | × | ○ |
| | Other(1-1) | - | Host | Other (2-1) | Host | Other (2-3) | Other (2-4) | Host | - | Other (0-2)*1 |
| AnU (2-1) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Host | - | Other (2-3) | Other (2-4) | - | - | - |
| AnU (2-3) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Other (2-1) | - | Host | Other (2-4) | - | - | - |
| AnU (2-4) | × | × | × | ○ | × | ○ | ○ | × | × | × |
| | - | - | - | Other (2-1) | - | Other (2-3) | Host | - | - | - |
| QnA (L1) | × | × | × | × | × | × | × | × | ○ | × |
| | - | - | - | - | - | - | - | - | Host | - |
| AnA (L2) | × | × | × | × | × | × | × | × | × | ○ |
| | - | - | - | - | - | - | - | - | - | Host |

*1 When monitoring the data link system, designate the network No. as 0.

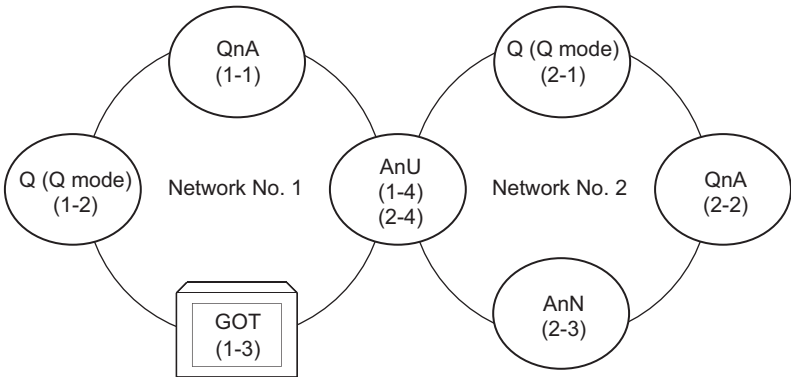
How to read the table
Upper line : Accessibility
○ : Accessible
× : Not accessible
Lower line : Network settings
Host
Other (Network No. - Station number)

**Point**

Monitoring link device B or W

For monitoring devices B and W that are allocated by the link parameter, make sure to use the local device number if designating devices allocated to other station. If not, display speed will be reduced.

Example 5: When using MELSECNET/10 connection




• Monitor access range for other station devices (other than B and W)

| Station to be accessed / Station connected to GOT | Network NO.1 | | | | Network NO.2 | | | |
|---|---|---|---|---|---|---|---|---|
| | QnA (1-1) | Q(Q Mode) (1-2) | GOT (1-3) | AnU (1-4) | Q(Q Mode) (2-1) | QnA (2-2) | AnN (2-3) | AnU (2-4) |
| GOT(1-3) | ○ | ○ | - | ○ | ○ | ○ | × | ○ |

○ : Accessible ×: Not accessible

• Designating network No. and station number for setting monitor device

1) Monitoring devices B and W that are allocated by network parameter
NW No.: 1, Station number: Host

**Point**

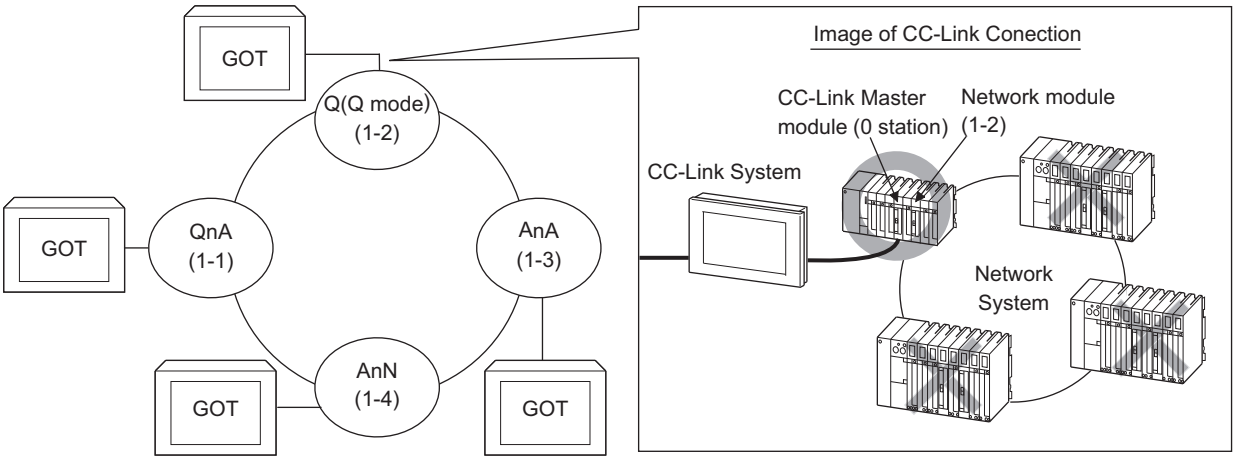
For monitoring devices B and W that are allocated by the link parameter, make sure to use the local device number if designating devices allocated to other station. If not, display speed will be reduced.

2) Monitoring other stations (other than B and W)

| Station to be accessed / Station connected to GOT | QnA (1-1) | Q(Q Mode) (1-2) | GOT (1-3) | AnU (1-4) |
|---|---|---|---|---|
| GOT (1-3) | 1, Other (1) | 1, Other (2) | - | 1, Other (4) |

How to read the table 1, Other (2)
NW No.Station number

Example 6: When using CC-Link connection (intelligent device station)
/CC-Link connection (via G4)




| Station connected to GOT \ Station to be accessed | QnA (1-1) | Q(Q Mode) (1-2) | AnA (1-3) | AnN (1-4) |
|---|---|---|---|---|
| QnA (1-1) | × | × | × | × |
| AnU (1-2) | × | ○ | × | × |
| AnA (1-3) | × | × | ○ | × |
| AnN (1-4) | × | × | × | ○ |

○: Accessible
× : Not accessible

## 3 CC-Link system access range for monitoring

(1) When using Bus connection/CPU direct connection/computer link connection
Only connected stations can be monitored.

(2) When using CC-Link connection (intelligent device station)

GT16 GT15 Soft GOT1000 GT11 GT10

(a) Access range
The master station and local station can be monitored.

○: Can be monitored, × : Cannot be monitord

| Monitor target | Monitoring by cyclic transmission | Monitoring by transient transmission |
|---|---|---|
| Master station (Remote network Ver.2 mode) | ○ | ○ |
| Local station Station No.1 (Ver.1 compatible) | ○ | ○ |
| Local station Station No.6 (Ver.2 compatible) | ○*1 | ○ |

*1 Monitoring is possible only when the CC-Link communication module is the GT15-J61BT13.

By setting CC-Link parameter, all devices RX, RY, RWw and RWr that are allocated to the master station can be monitored.
When the monitor target is the multi-PLC system, CPU No. 1 to No. 4 can be monitored.
The device range of RX, RY, RWw, RWr to be allocated to the GOT differs according to the setting of the number of CC-Link communication units (one station/four station) loaded.
Refer to the following manual for details of the number of CC-Link stations occupying.

☞ User's manual of CC-Link master unit to be connected

(b) Setting NW No. and station number

1) When monitoring devices RX, RY, RWw and RWr that are allocated to the master station by setting CC-Link parameter
NW No.: 0, PLC station number: Local

2) When monitoring PLC CPU devices of other station
NW No. 0, PLC station number: Other (Station number: n)
(n: Station number of other station you want to monitor (0: Master station, 1-64: Local station))

**Point**

For monitoring devices RX, RY, RWw and RWr that are allocated by setting CC-Link parameter, make sure to use the local device number if designating devices allocated to other station.
If not, display speed will be reduced.

(c) Setting device name and device number

1) Monitoring devices RX, RY, RWw and RWr that are allocated by setting CC-Link parameter
Use the following device names.
For devices RX, RY, RWw and RWr, designate the addresses allocated by station number setting.

- In the case of CC-Link Ver.2

| Device to be monitored | | Device name set by GT Designer2 | Device setting range |
|---|---|---|---|
| Remote input | RX | X | X0 to X1FFF |
| Remote output | RY | Y | Y0 to Y1FFF |
| Remote register (write area) | RWw | Ww | Ww0 to Ww7FF |
| Remote register (read area) | RWr | Wr | Wr0 to Wr7FF |

- In the case of CC-Link Ver.1

| Device to be monitored | | Device name to be set by GT Designer2 | Device setting range |
|---|---|---|---|
| Remote input | RX | X | X0 to X7FF |
| Remote output | RY | Y | Y0 to Y7FF |
| Remote register (writing area) | RWw | Ww | Ww0 to WwFF |
| Remote register (reading area) | RWr | Wr | Wr0 to WrFF |

2) Monitoring PLC CPU devices of other stations
Set the device name and device No.
☞ Section 2.9 Supported Devices

(3) When using CC-Link connection (via G4) (Q series only)

(a) Access range

GT16, GT15 and GT SoftGOT1000 can monitor the master station and local stations.
GT10 and GT11 can monitor the master station only.

(b) Setting NW No. and station number

1) When monitoring master station
NW No.: 0, PLC station number: Host/other (station number: 0)

2) Monitoring local station
NW No.: 0, PLC station number: Other (station number: 1 to 64)

(c) Setting device name and device number

Set the device name and device No.

☞ Section 2.9 Supported Devices

(4) Monitoring overview

There are following two monitoring methods by the GOT with CC-Link communication unit.

| Monitoring method | Monitoring by transient transmission*2 | Monitoring by cyclic transmission*2 |
|---|---|---|
| Contents | Devices of the PLC CPU on the CC-Link system master and local station are specified and monitored. | Remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting are specified and monitored. |
| Advantage | CC-Link parameter setting sequence program is required but GOT communication sequence program is not needed. (For more information, refer to Chapter 5.)*1 | Data communication processing speed is high. |
| Disadvantage | Data communication processing speed is lower than that of cyclic transmission. | • Write from the GOT (read command from the master station) can be performed to only the remote outputs and remote registers of the master station assigned to the GOT and to the GOT's internal registers.<br>• GOT communication sequence program is necessary.*1 |

*1 This program is not needed if the CC-Link parameter setting sequence program and GOT communication sequence program satisfy the following conditions.
- As the PLC CPU of the master station, use the QCPU (Q mode) or QnACPU whose number given in the DATE field of the rating plate is "9707B" or later.
- Use GX Developer or SW2 -GPPW and make CC-Link parameter setting and batch refresh device setting in the CC-Link setting on the package.
  Refer to the following manual for details of connection method.

☞ User's manual of CC-Link master unit to be connected

*2 Refer to the following for whether data can be sent/received to/from the CC-Link Ver. 2 compatible station by transient transmission and cyclic transmission.

☞ This section 3 (2) When using CC-Link connection (intelligent device station)

**Point**

In transient transmission, connection of several (five or more as a guideline) intelligent device stations (GOTs and intelligent device units) reduces data communication speed.
To raise data communication speed, increase the CC-Link system, for example, and do not connect five or more intelligent device stations to a single CC-Link system.

## 4 Access range for monitoring when using Ethernet connection

GT16 GT15 Soft GOT 1000 GT11 GT10

(1) Access range

(a) MITSUBISHI PLC

The PLC can be monitored via the Ethernet module set in the Ethernet setting on GT Designer2.
The GOT can access CPUs on the other CC-Link IE controller network, MELSECNET/H, and MELSECNET/10 networks via the QCPU or QnACPU.
The GOT cannot monitor the CNC C70 on the other networks.
(The GOT cannot monitor the AnNCPU on the CC-Link IE controller network, MELSECNET/H, and MELSECNET/10 networks.)
For monitoring CPUs on the CC-Link IE controller network, MELSECNET/H, and MELSECNET/10 networks, set the routing parameter.
For routing parameter setting, refer to the following manuals.

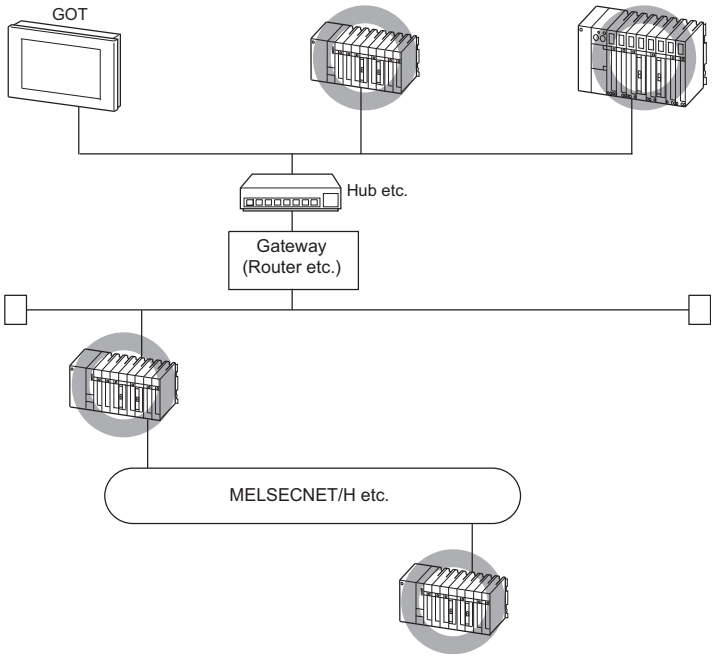
- Routing parameter setting for the PLC CPU (MELSECNET/H network system, MELSECNET/10 network system)

  ☞ Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

- Routing parameter setting for the PLC CPU (CC-Link IE controller network)

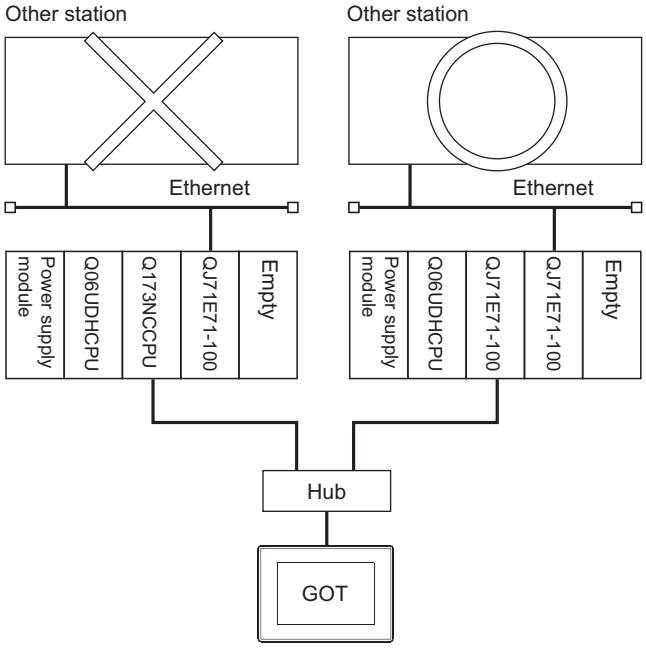
  ☞ CC-Link IE Controller Network Reference Manual

Monitoring via the MELSECNET (II) or MELSECNET/B network cannot be performed.



(b) CNC(CNC C70)

With the Display I/F connection (Ethernet connection with the Display I/F of the CNC C70), the GOT can monitor Universal model QCPU, Q17nDCPU, and CNC C70 on the same base unit. The GOT cannot monitor the other stations on the same network via the CNC C70.



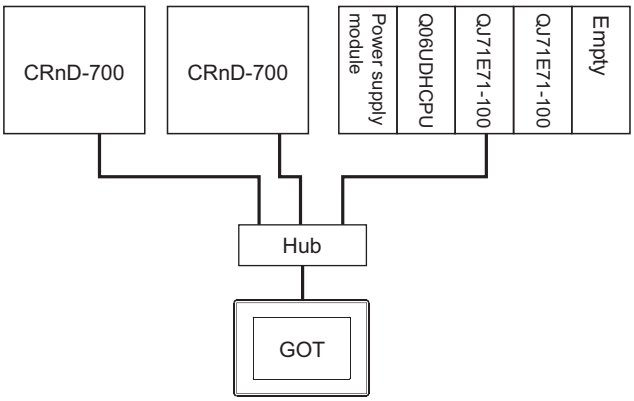

The GOT also cannot monitor stations on the other networks.

GX Developer accesses the PLC CPU which configures the multiple CPU.

(c) CRnD-700

The GOT can monitor the CRnD-700s on the same networks.

The GOT cannot monitor the other network controllers via the CRnD-700.




(d) Third party PLC

The PLC can be monitored via the Ethernet module set in the Ethernet setting on GT Designer2.

**Point**

(1) Host in the Ethernet connection
While the GOT is handled as a host in MELSECNET/10 or CC-Link connection, the station (Ethernet module) set as a host in the Ethernet setting of GT Designer2 is handled as a host in Ethernet connection.

(2) Precautions for using the QCPU redundant system
When monitoring other networks, do not set the QCPU redundant system as a relay station.
If the QCPU redundant system is set as a relay station, the GOT cannot switch the monitoring target automatically when the system is switched.
(A timeout error occurs due to failed monitoring.)

**Remark**

Routing parameters for GT SoftGOT1000

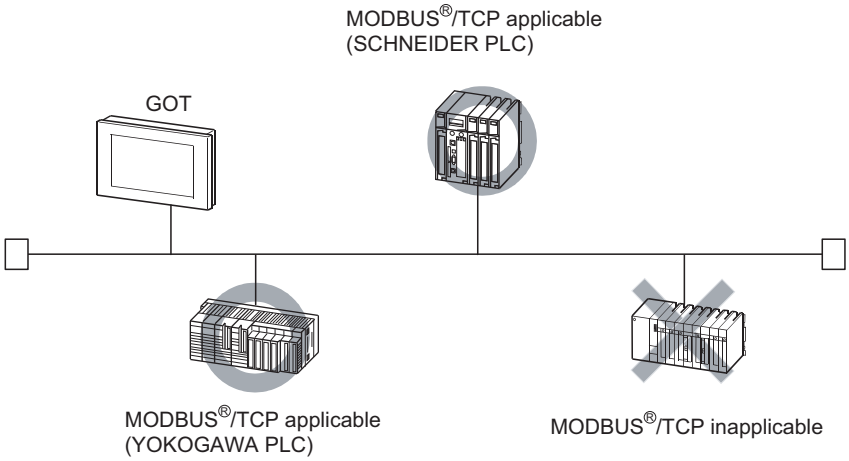
For GT SoftGOT1000, routing parameter settings differ depending on the connection type.

- MELSECNET/H connection, MELSECNET/10 connecction:
  Set routing parameters with MELSECNET/H board utility.
- Ethernet connection:
  Set routing parameters with GT Designer2.

(2) Various settings
Refer to the following manual for Ethernet setting by GT Designer2.
☞ GOT 1000 Series Connection Manual

## 5 Access range for monitoring when using MODBUS®/TCP connection

The PLC can be monitored via the Ethernet module set in the Ethernet setting on GT Designer2.




Ethernet controllers can be set on the Ethernet network with the MODBUS® /TCP system.
In this case, MODBUS® /TCP controllers cannot communicate with Ethernet controllers.
For controllers that can be monitored by the MODBUS® /TCP connection, refer to the following.

☞ Section 2.7.1 Controller that allows monitoring

## 6 Access range for monitoring when connecting FXCPU, third party PLC connection via serial connection, and microcomputer

GT16 GT15 Soft GOT 1000 GT11 GT10

Only the connected CPU can be monitored. Other stations cannot be monitored.
The access range that can be monitored for the multidrop communication is the target and other stations.

## 7 Access range for monitoring when using GOT multidrop connection

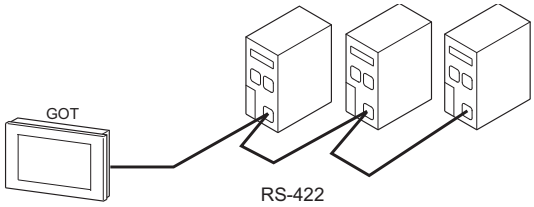
GT16 GT15 Soft GOT 1000 GT11 GT10

Only the connected CPU can be monitored. Other stations cannot be monitored.
(Handy GOT does not support the multidrop connection.)

## 8 Access range for monitoring when a temperature controller, inverter, or servo amplifier is connected and when using MODBUS® /RTU connection

GT16 GT15 Soft GOT 1000 GT11 GT10

The access range that can be monitored is target and other stations.
(GT10 does not support the temperature controller connection.)




(Example: When a servo amplifier is connected)

## 9 Access range for monitoring when a CNC is connected

GT16 GT15 Soft GOT 1000 GT11 GT10

The access range that can be monitored is the same as the access range when QnACPU is connected.
Refer to the information related to QnA in the items below.

☞ This section 2 Access range for monitoring stations on network systems (CC-Link IE controller network, MELSECNET/H, MELSECNET/10)

This section 3 CC-Link system access range for monitoring

This section 4 Access range for monitoring when using Ethernet connection

**Point**

Precautions for monitoring stations on other networks

When the GOT monitors stations on the other networks via the MELSECNET/H, MELSECNET/10, or Ethernet connection, do not set the CNC (C70, C6/C64) as a relay station.
When the CNC (C70, C6/C64) is set as a relay station, the GOT cannot monitor stations on the other networks.

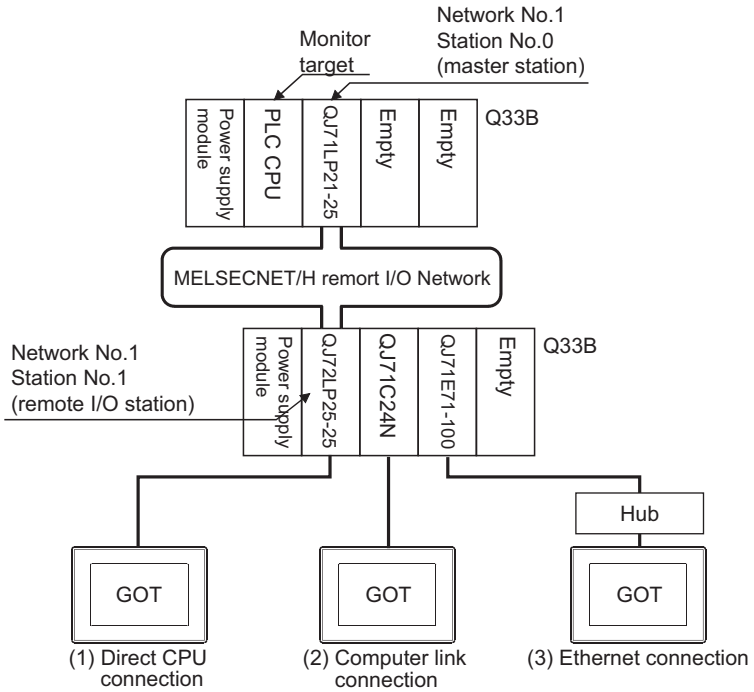
## 10 Connection to remote I/O station of MELSECNET/H network system

GT16 GT15 Soft GOT 1000 GT11 GT10

When connected to the remote I/O station of the MELSECNET/H network system, the GOT can monitor the PLC CPU of the master station.
When connecting the GOT to the remote I/O station, use the following connection methods.

**Point**

(1) Connection to remote I/O station of MELSECNET/B, (II) or /10
The GOT can not be connected to the remote I/O station on the MELSECNET/B, (II) data link system and MELSECNET/10 network system. Connect the GOT to the remote I/O station on the MELSECNET/H network system.




(2) Connection to GT11 and remote I/O station on MELSECNET/H
GT11 can not access the master station on MELSECNET/H network system.
GT11 can access only the connected host station (remote I/O station).

(1) CPU direct connection

(a) The network units (QJ72LP25-25, QJ72LP25G, QP72BR15) of the remote I/O station are handled as PLC CPU.
Connect the GOT to the RS-232 interface of the network unit.
Refer to the following manual for the cable necessary for the connection with the network module and other details.

☞ GOT1000 Series Connection Manual

(b) Set the monitoring target on GT Designer2 as follows.
Specify [MELSEC-QnA/Q/QS, MELDAS C6*] for the controller type.
Specify [NW No.] (Network No. of the remote I/O network) to 1, and specify [Station No.] (Master station) to 0 in the network setting of the device setting.
(GT16, GT15 only)
The GOT monitors stations on the MELSECNET/H network with the transient transmission. Therefore, a longer time-lag occurs for displaying objects compared with directly monitoring the PLC CPU.
For displaying objects with a shorter time-lag, execute the cyclic transmission so that the GOT can monitor link devices B and W of the host station set in the MELSECNET/H network.
For settings required for the PLC CPU, refer to the following manual.

☞ GOT1000 Series Connection Manual

(2) Computer link connection

(a) Connect the GOT to the serial communication module (QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, QJ71C24N-R4) or modem interface module (QJ71CMO) mounted on the remote I/O station.
Refer to the following manual for the cable necessary for the connection with the serial communication module or modem interface module and other details.

☞ GOT1000 Series Connection Manual

(b) Set the monitoring target on GT Designer2 as follows.
Specify [MELSEC-QnA/Q/QS, MELDAS C6*] for the controller type.
Specify [NW No.] (Network No. of the remote I/O network) to 1, and specify [Station No.] (Master station) to 0 in the network setting of the device setting.
(GT16, GT15 only)
The GOT monitors stations on the MELSECNET/H network with the transient transmission. Therefore, a longer time-lag occurs for displaying objects compared with directly monitoring the PLC CPU.
For displaying objects with a shorter time-lag, execute the cyclic transmission so that the GOT can monitor link devices B and W of the host station set in the MELSECNET/H network.
For settings required for the PLC CPU, refer to the following manual.

☞ GOT1000 Series Connection Manual

(3) Ethernet connection

(a) Connect the GOT to the Ethernet module (QJ71E71-100, QJ71E71-B5, QJ71E71-B2, QJ71E71) mounted on the remote I/O station.
For details of cables and others required for connecting the GOT to the Ethernet module, refer to the following manual.

☞ GOT1000 Series Connection Manual

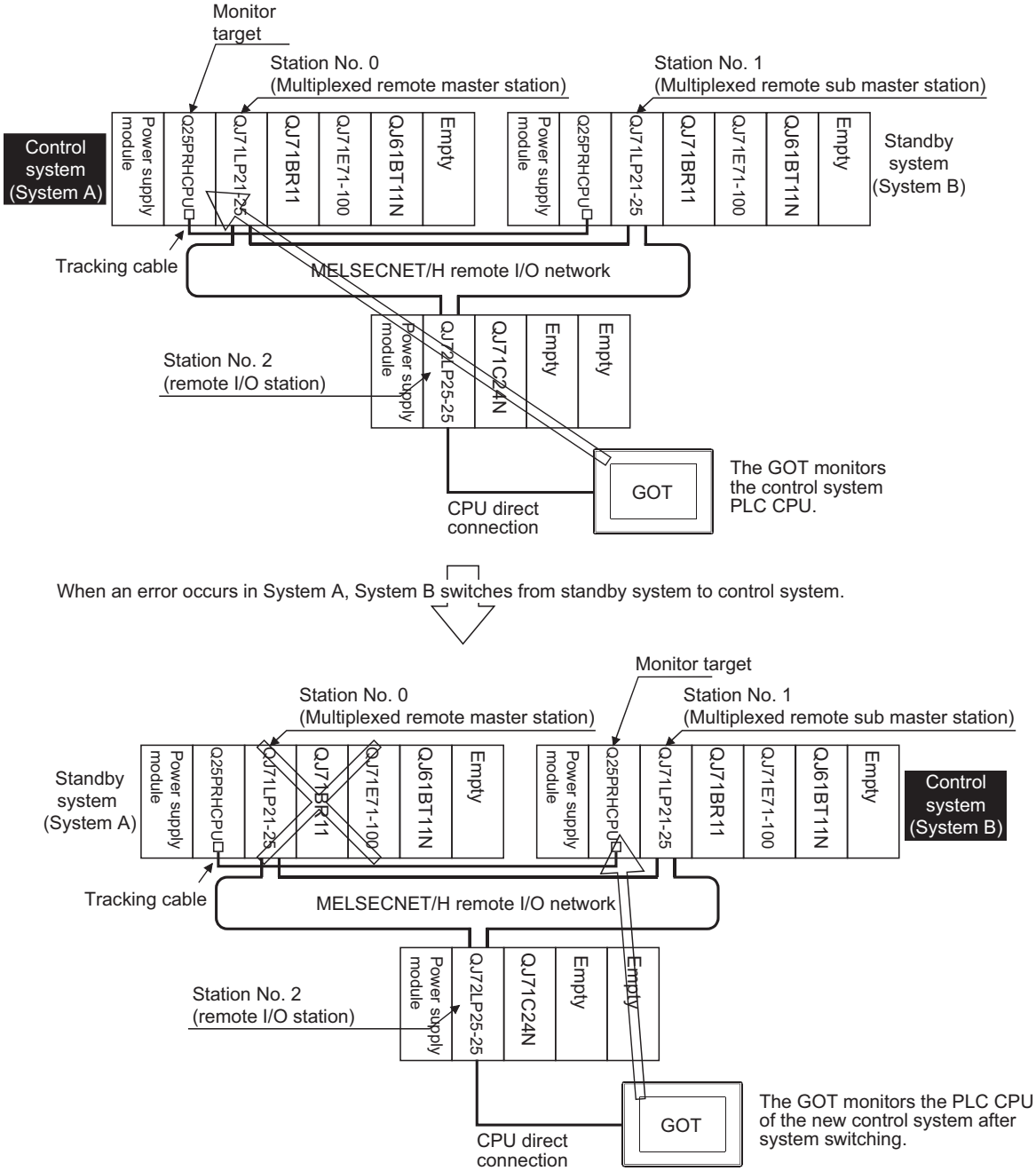
(b) Set the monitoring target on GT Designer2 as follows.
Specify [MELSEC-QnA/Q/QS, MELDAS C6*] for the controller type.
Specify [NW No.] (Network No. of the remote I/O network) to 1, and specify [Station No.] (Master station) to 0 in the network setting of the device setting.
(GT16, GT15 only)
The GOT monitors stations on the MELSECNET/H network with the transient transmission. Therefore, a longer time-lag occurs for displaying objects compared with directly monitoring the PLC CPU.
For displaying objects with a shorter time-lag, execute the cyclic transmission so that the GOT can monitor link devices B and W of the remote I/O station.
For settings required for the PLC CPU, refer to the following manual.

☞ GOT1000 Series Connection Manual

(4) Restrictions on connection to remote I/O station
The GOT does not allow the clock of the master station to be set in the clock setting of the utility function. The master station clock will not change even if clock setting is made.
Use GX Developer or similar software to set the PLC CPU clock of the master station.

## 2.7.3 How to monitor QCPU redundant system

This section explains the connection methods, restrictions on the connection methods, and other information applicable when the QCPU redundant system is monitored by the GOT.




In a redundant system, monitoring can be performed with the monitoring target specified as the control system or the standby system. By specifying the monitoring target PLC CPU as the control system of the redundant system, when system switching occurs, the monitoring target is automatically changed to the PLC CPU in the control system.
To enable this automatic changing of the monitoring target at the GOT, settings are required in the GT Designer2.

(☞ This section 14 Q redundant setting)

There are the following different connection methods to the QCPU redundant system.

(1) CPU direct connection (remote I/O station of MELSECNET/H network system) (☞ This section 1 Direct CPU connection (remote I/O station of MELSECNET/H network system))

(2) Computer link connection (serial communication module mounted on remote I/O station of MELSECNET/H network system) (☞ This section 2 Computer link connection (serial communication module mounted on remote I/O station of MELSECNET/H network system))

(3) Ethernet connection (Etnernet module mounted on the remote I/O station of the MELSECNET/H network system) (☞ This section 3 Ethernet connection (Ethernet module mounted on remote I/O station of MELSECNET/H network system)

(4) CPU direct connection (☞ This section 3 Direct CPU connection)

(5) CC-Link connection (intelligent device station) (☞ This section 4 CC-Link connection (intelligent device station))

(6) CC-Link connection (via G4) (☞ This section 5 CC-Link connection (via G4))

(7) MELSECNET/H connection, MELSECNET/10 connection (network system) (☞ This section 6 MELSECNET/H and MELSECNET/10 connections (network systems))

(8) CC-Link IE controller network connection (network system) (☞ This section 8 CC-Link IE controller network connection (network system))

(9) Ethernet connection (☞ This section 9 Ethernet connection)

(10) Computer link connection (Serial communication module mounted on the redundant type extension base unit) (☞ This section 10 Computer link connection (Serial communication module mounted on redundant type extension base unit))

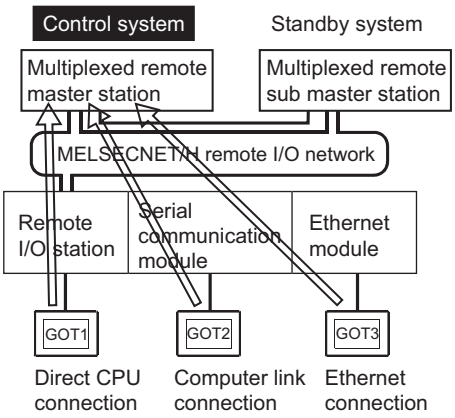
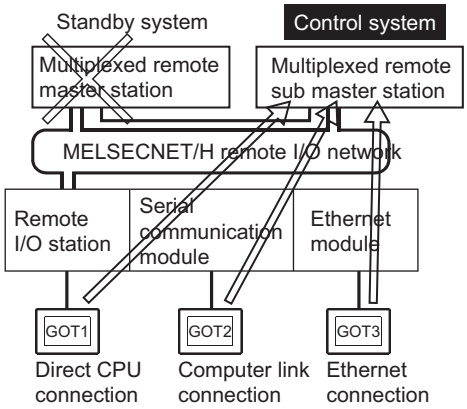
(11) Ethernet connection (Ethernet module mounted on the redundant type extension base unit) (☞ This section 11 Ethernet connection (Ethernet module mounted on redundant type extension base unit

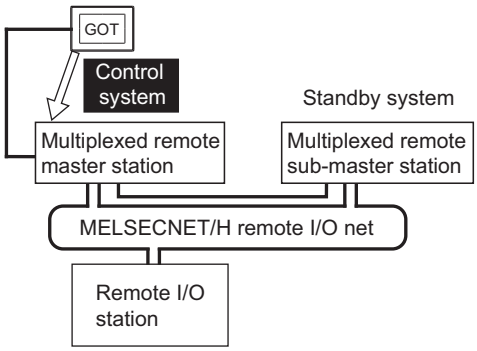
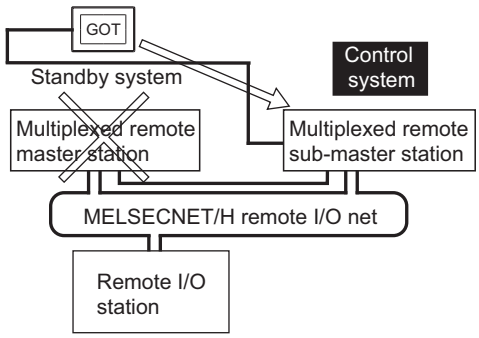
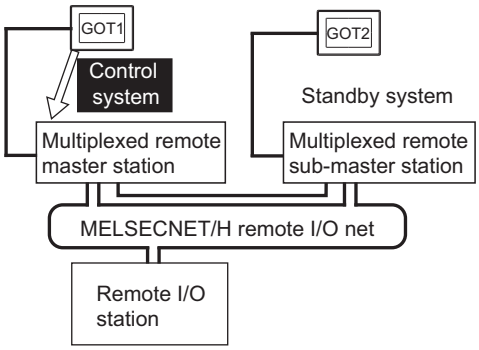
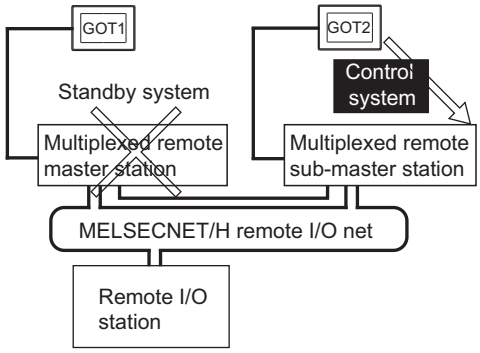
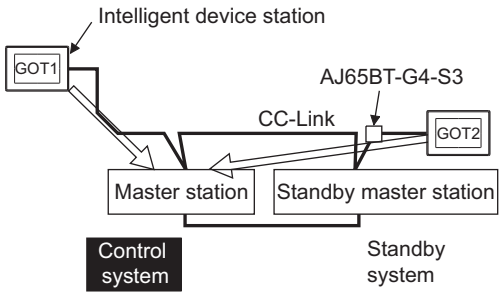
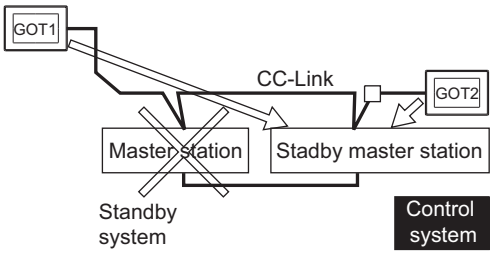
(12) CC-Link connection (intelligent device station) (CC-Link module mounted on the redundant type extension base unit) (☞ This section 12 CC-Link connection (Intelligent device station) (CC-Link module mounted on redundant type extension base unit))

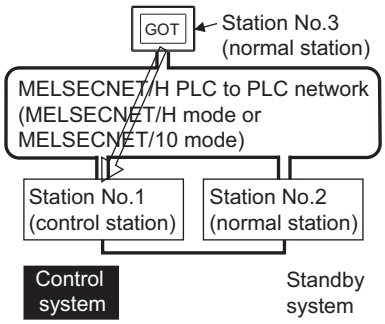
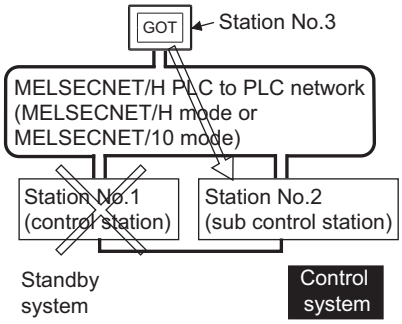
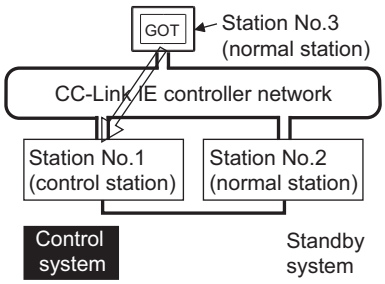
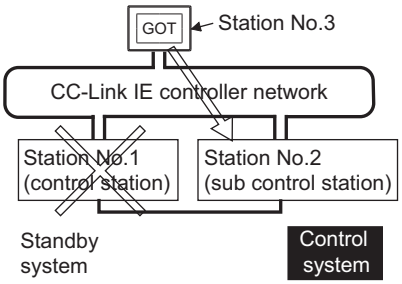
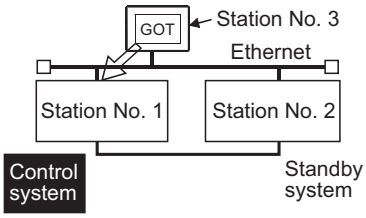
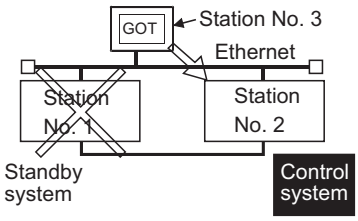
(13) CC-Link connection (via G4) (CC-Link module mounted on the redundant type extension base unit) (☞ This section 13 CC-Link connection (via G4) (CC-Link module mounted on redundant type extension base unit))

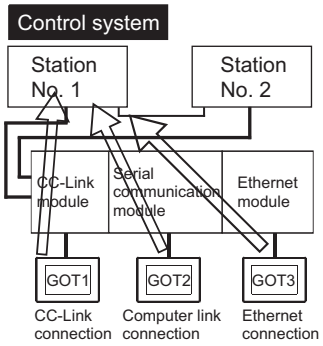
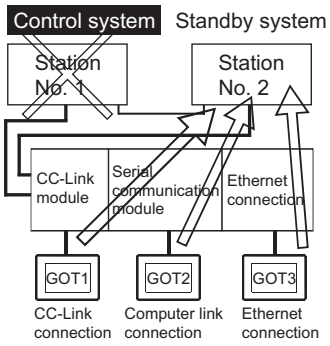
Refer to the following for details of PLC CPUs that can be monitored in each connection method of GOT.
(☞ Section 2.7.1 2 Monitorable controllers)

The following table indicates the features of each connection method.

| Connection method | Before system switching | After system switching |
|---|---|---|
| (1) Direct CPU connection (remote I/O station of MELSECNET/H network system)<br>(2) Computer link connection (serial communication unit mounted on the remote I/O station on MELSECNET/H network system)<br>(3) Ethernet connection (Ethernet module mounted on the remote I/O station of the MELSECNET/H network system) |  |  <br>The monitoring target is automatically changed to the control system PLC CPU. |

| Connection method | Before system switching | After system switching |
|---|---|---|
| (4) Direct CPU connection |  |  <br>By the Q redundant setting, the GOT automatically changes the monitoring target to the PLC CPU in the control system.*1 |
| |  <br>Monitor the PLC CPU of the control system by GOT1. |  <br>Monitor the PLC CPU of the control system by GOT2. |
| (5) CC-Link connection (intelligent device station)<br>(6) CC-Link connection (via G4) |  |  <br>The monitoring target is automatically changed to the control system PLC CPU. |

| Connection method | Before system switching | After system switching |
|---|---|---|
| (7) MELSECNET/H connection, MELSECNET/10 connection (network system) |  |  <br>By the Q redundant setting, the GOT automatically changes the monitoring target to the PLC CPU in the control system.*2 |
| (8) CC-Link IE controller network connection (network system) |  |  <br>By the Q redundant setting, the GOT automatically changes the monitoring target to the PLC CPU in the control system.*2 |
| (9) Ethernet connection |  |  <br>By the Q redundant setting, the GOT automatically changes the monitoring target to the PLC CPU in the control system.*2 |

| Connection method | Before system switching | After system switching |
|---|---|---|
| (10) Computer link connection (Serial communication module mounted on the redundant type extension base unit)<br>(11) Ethernet connection (Ethernet module mounted on the redundant type extension base unit)<br>(12) CC-Link connection (intelligent device station) (CC-Link module mounted on the redundant type extension base unit)<br>(13) CC-Link connection (via G4) (CC-Link module mounted on the redundant type extension base unit) |  |  |

*1 To monitor the control system after system switching occurs without the Q redundant setting, change the cable connection from the PLC CPU in the previous control system to that in the control system after system switching.

*2 To monitor the control system after system switching occurs without the Q redundancy setting, refer to the following.

•When using the GT15

☞ This section 15 Creating a monitor screen that switches the monitor target to the control system by GT16 or GT15 using the script function

•When using the GT SoftGT1000

☞ This section 16 Creating of a monitor screen that changes monitoring target to the control system by GT SoftGOT 1000 using the script function

**Point**

Precautions for monitoring the QCPU redundant system

(1) A system alarm may be detected when the system is switched in a redundant system.
When Q redundant setting is made: "450 Path has changed or timeout occured in redundant system." (detected at the monitoring target station)
When Q redundant setting is not made: "402 Communication timeout. Confirm communication pathway or modules."
However, even if the error occurs, the GOT automatically resumes monitoring and there are no problems in monitoring operation.

(2) The system alarm is displayed when the system is switched due to cable disconnection etc. (when the path is changed).
The system alarm is not displayed when the system is switched by the user.

(3) When connected to the remote I/O station, the GOT can monitor only the following GOT functions.

| Monitoring function | System monitoring function |
|---|---|

(4) When connected to the remote I/O station, the GOT does not allow the PLC CPU clock of the master station to be set in the clock setting of the utility.
The master station clock will not change even if clock setting is made.
Use GX Developer or similar software to set the PLC CPU clock on the master station.

(5) When the Q redundant setting is not made, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system. When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data are written to a device in the standby system normally, system alarm "315 Device writing error. Correct device." is not detected.

(6) When monitoring a QCPU redundant system using the MELSECNET/H connection, [MNET/H EXT mode] cannot be set for network type.

(7) A message "Unable to communicate with CPU." is displayed if system switching occurs while an option function such as the ladder monitor is used.

(8) In the MELSECNET/H connection or MELSECNET/10 connection, if the control station of the MELSECNET/H network or the MELSECNET/10 network fails and is taken over by a station outside the QCPU redundant system, time-out is detected as the system alarm.
If this occurs, monitor display speed may slow down.

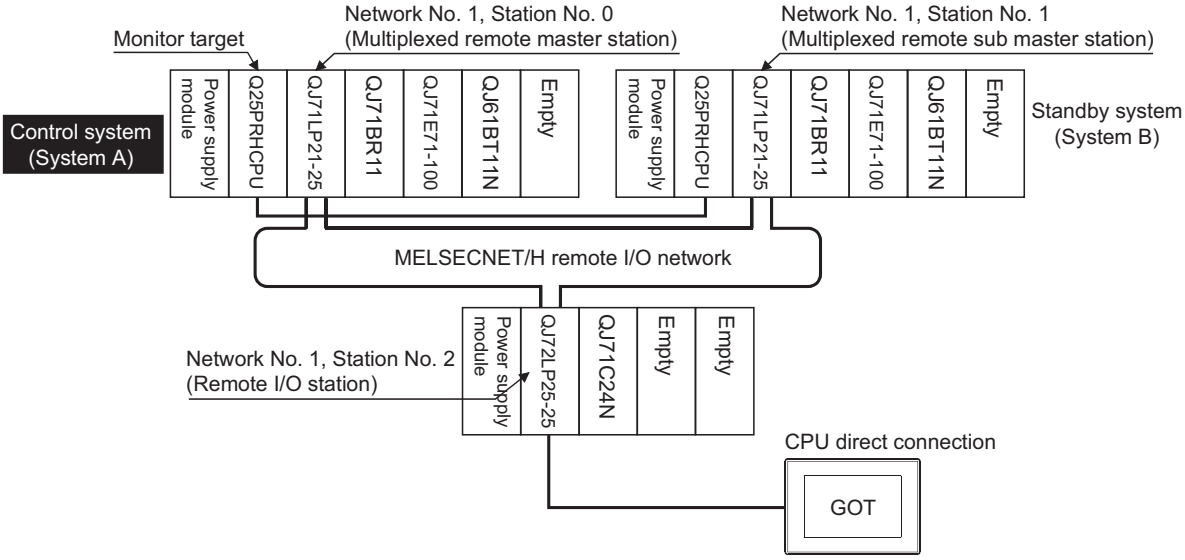
(9) In the CPU direct connection, the GOT fails to automatically change the monitoring target even when system switching occurs in the following cases.
- When the power supply to the CPU where the GOT is connected is OFF
- When the cable connecting the GOT with the CPU is broken
- When tracking is disabled

(10) If the Q redundant setting is made for a system that is not a QCPU redundant system, no error occurs at the start up of the GOT and the GOT operates normally.
In this case, if an abnormality (such as powering OFF, communication time-out error) occurs at the PLC CPU for which the Q redundant setting has been made, the PLC CPU may operate in a manner different from the monitoring target change mode that was set in the Q redundant setting.

## 1 Direct CPU connection (remote I/O station of MELSECNET/H network system)

GT16 GT15 Soft GOT 1000 GT11 GT10

This section explains the direct CPU connection that connects the GOT to the remote I/O station of the MELSECNET/H network system.
The following provides an example of connecting the GOT to the remote I/O station of the MELSECNET/H network system.




(1) Connection method
Connect the GOT to the RS-232 interface of the network module (QJ72LP25-25, QJ72LP25G, QJ72BR15) on the remote I/O station of the MELSECNET/H network system.
Refer to the following manual.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Host station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Remote master station | Other (NW No. 1 (network No. of remote I/O network), Station No. 0 (master station)) | |
| Q Redundant Setting | | Do not set the item. | |

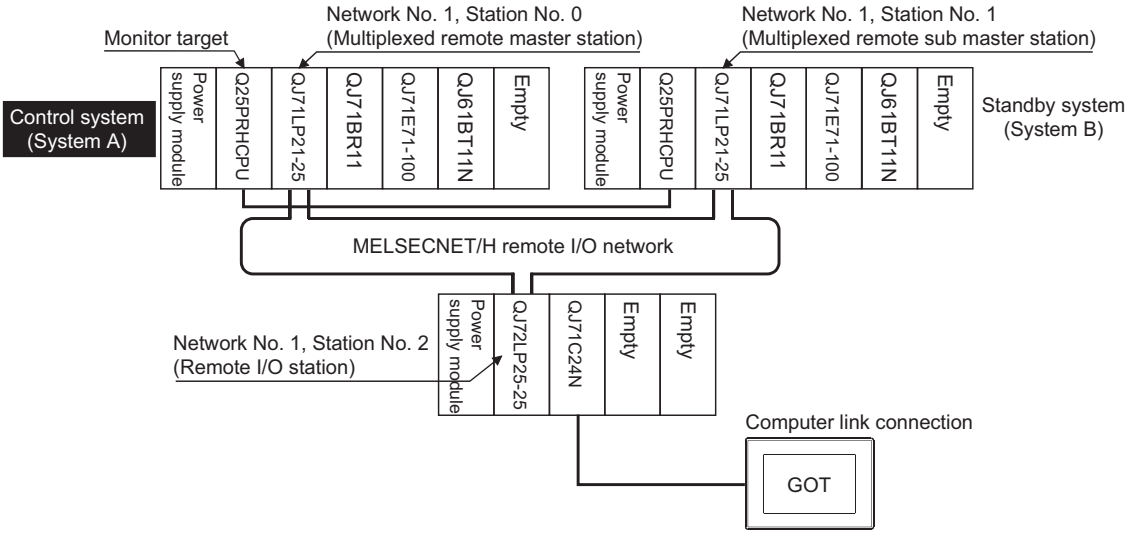
In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.
To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.
With the GT SoftGOT1000, only the multiplexed remote master station is monitored when a remote master station is set in the device setting.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the multiplexed remote sub master station switched to the control system takes over the master operation of MELSECNET/H.
Since the GOT monitors the master station, it automatically changes the monitoring target to the PLC CPU that is operating as the master.
With the GT SoftGOT1000, changing of the monitoring target automatically to the PLC CPU operating as the master is disabled.

## 2 Computer link connection (serial communication module mounted on remote I/O station of MELSECNET/H network system)

GT16 GT15 Soft GOT 1000 GT11 GT10

This section explains the computer link connection that connects the GOT to the serial communication module mounted on the remote I/O station of the MELSECNET/H network system.
The following provides an example of connecting the GOT to the serial communication module mounted on the remote I/O station of the MELSECNET/H network system.




(1) Connection method
Connect the GOT to the serial communication module (QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, QJ71C24N-R4) or modem interface module (QJ71CM0) mounted on the remote I/O station of the MELSECNET/H network system.
☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting

Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Host station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Remote master station | Other (NW No. 1 (network No. of remote I/O network), Station No. 0 (master station)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Q Redundant Setting | | Do not set the item. | |

In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.

To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.

Refer to the following manual for details.

☞ Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/Q network)

(3) Monitoring target change when system switching occurs in redundant system

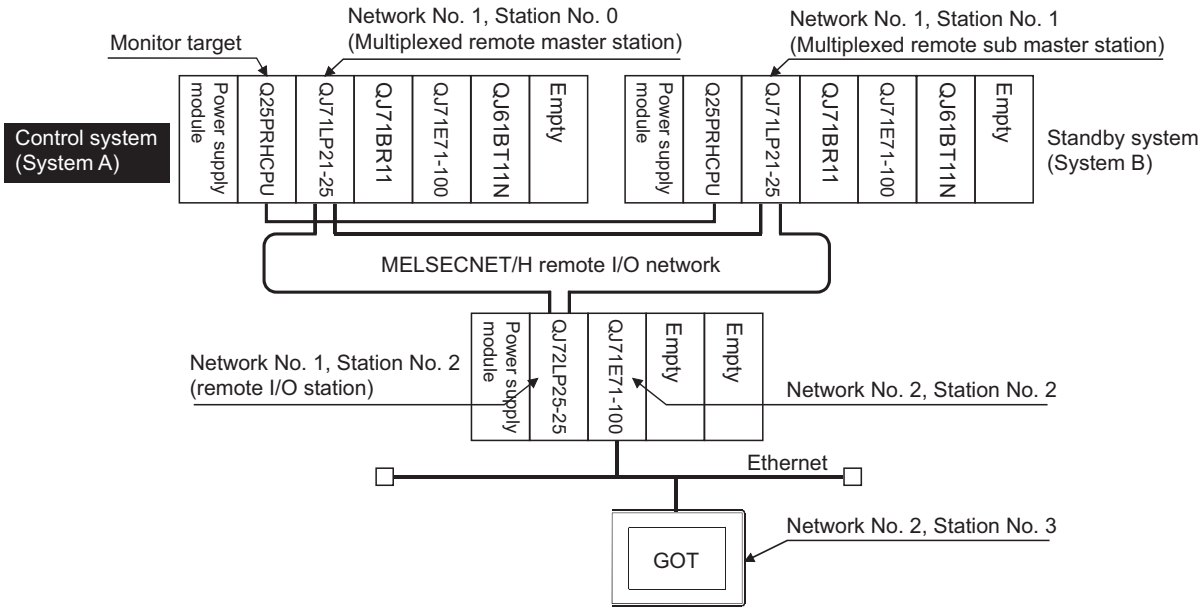
When system switching occurs, the multiplexed remote sub master station switched to the control system takes over the master operation of MELSECNET/H.

Since the GOT monitors the master station, it automatically changes the monitoring target to the PLC CPU that is operating as the master.

## 3 Ethernet connection (Ethernet module mounted on remote I/O station of MELSECNET/H network system)

GT16 GT15 Soft GOT 1000 GT11 GT10

This section explains the Ethernet connection for connecting the GOT to the Ethernet module mounted on the remote I/O station of the MELSECNET/H network system.
The following shows an example of connecting the GOT to the Ethernet module mounted on the I/O station of the MELESCNET/H network system.




(1) Connection method
Connect the GOT to the Ethernet module (QJ71E71-100, QJ71E71-B5, QJ71E71-B2, QJ71E71) mounted on the remote I/O station of the MELSECNET/H network system.
For the details, refer to the following manual.
☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set the following on GT Designer2.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device setting (Network) | Other station | Other (NW No.1 (network No. of remote I/O network), station No. 0(master station)) | |
| Q Redundant Setting | | Do not set the item. | |
| Routing Information Setting | | ☞ GOT1000 Series Connection Manual | |

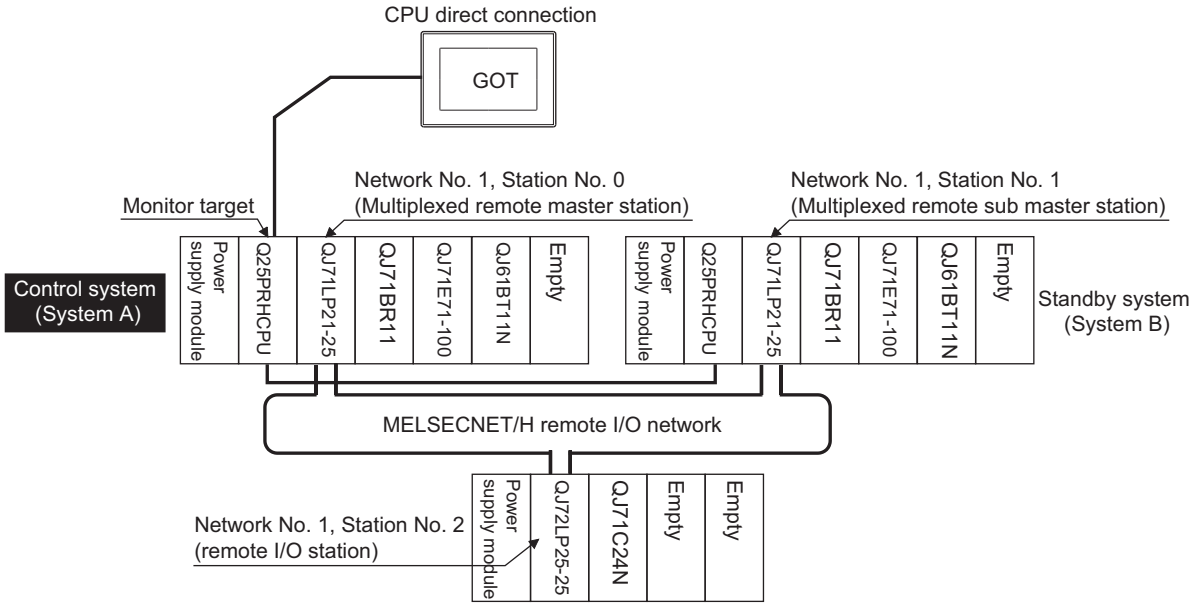
(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the multiplexed remote sub master station switched to the control system takes over the master operation of MELSECNET/H.
Since the GOT monitors the master station, it automatically changes the monitoring target to the PLC CPU that is operating as the master.

## 4 Direct CPU connection

GT16 GT15 SoftGOT1000 GT11 GT10

This section describes the direct CPU connection by which a GOT is connected to a CPU module in the redundant system.
There are two methods for the CPU direct connection, using one GOT or two GOTs.
The examples for these two methods are shown below.

(1) When using one GOT




(a) Connection method
Connect the GOT to the RS-232 interface of the control system CPU module (Q12PRHCPU, Q25PRHCPU) of the redundant system.
Refer to the following manual for details

☞ GOT1000 Series Connection Manual

(b) GT Designer2 setting
Set the GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Host station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Q Redundant Setting | | ☞ This section 14 Q redundant setting | |

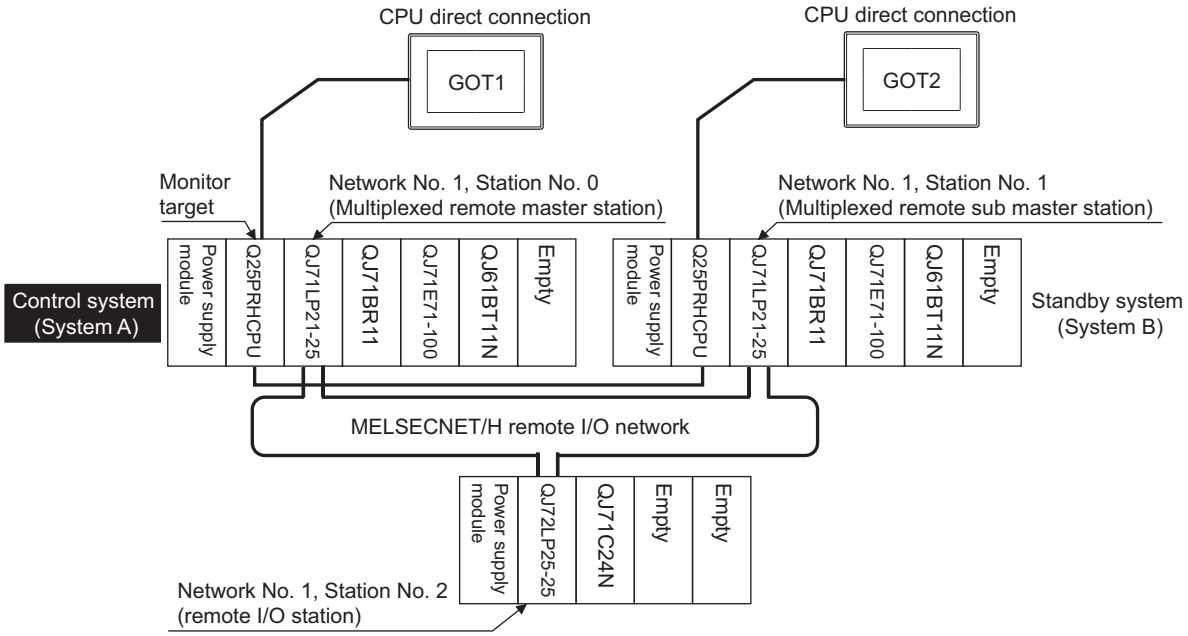
(c) Monitoring target change when system switching occurs in the redundant system
When system switching occurs, the PLC CPU (other station) of the control system after system switching takes over the host station operation.
Since the GOT monitors the control system, it changes the monitoring target to other station automatically.

**Point**

To monitor the control system without Q redundant setting

If system switching occurs when the Q redundant setting has not been made, the GOT cannot change the monitoring target at the occurrence of system switching since it monitors the connected PLC CPU (host station).
To monitor the PLC CPU in the control system after the occurrence of system switching, change cable connection to the PLC CPU in the control system in response to system switching.

(2) When using two GOTs (Connect a GOT to each PLC CPU to respond to system switching.)




(a) Connection method

Connect two GOTs to the RS-232 interfaces of the control system and standby system CPU modules (Q12PRHCPU, Q25PRHCPU) of the redundant system.

Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

(b) GT Designer2 setting

Set the GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Host station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Q Redundant Setting | | Do not set the item. | |

(c) Monitoring target change when system switching occurs in the redundant system

When system switching occurs, the GOT cannot change the monitor target automatically in response to the system switching.

The GOT that is connected to the control system CPU module after system switching continues the monitoring.

Different from the case using one GOT, a cable reconnection is not required.

**Point**

To automatically change the monitoring target after system switching using one GOT, Q redundant setting is necessary.

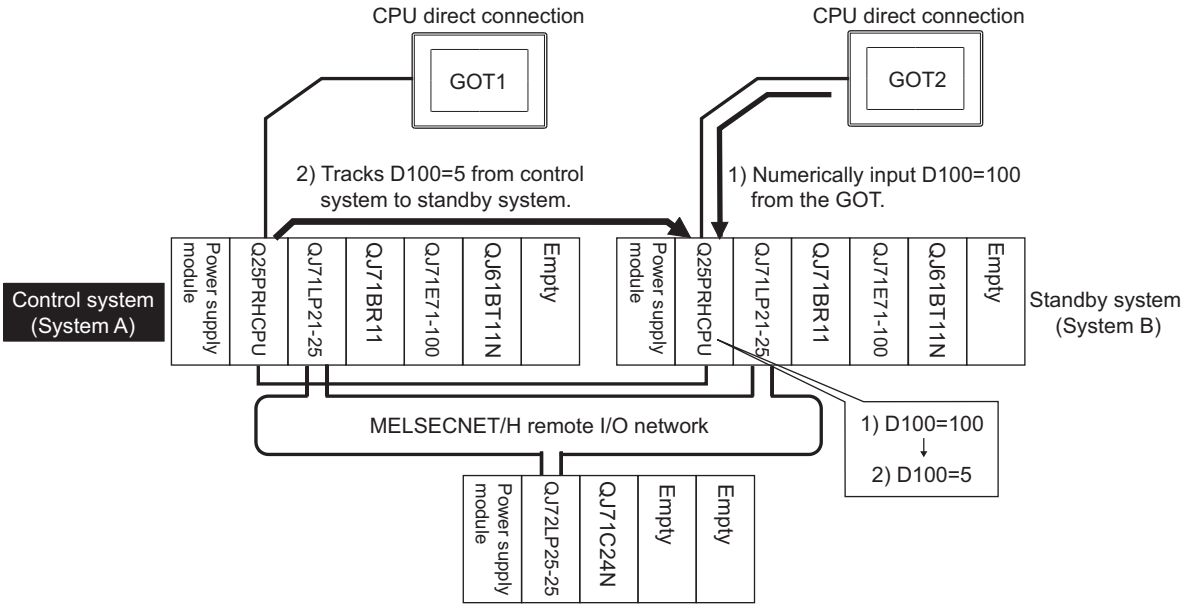
☞ This section 14 Q redundant setting

(3) Precautions when connecting a GOT directly to a PLC CPU in the redundant system without making Q redundant setting

(a) As the GOT monitors a PLC CPU exclusively that is directly connected to the GOT, the GOT cannot change the monitor target in response to the system switching of the redundant system.
To change the target monitor in response to system switching, re-connect the connection cable of the GOT to the other PLC CPU on a system switching or configure the system using two GOTs connected to each PLC CPU.

(b) When a GOT is connected to a PLC CPU in the redundant system, the monitored device is only the PLC CPU that is directly connected to the GOT.

(c) When connected to the standby system PLC CPU, writing of the GOT to a device in the connected PLC CPU is not reflected. Design the monitor screen that disables writing to the standby system.
In the redundant system, the tracking function transfers device data from control system to standby system. When the tracking function is enabled, the device value of the standby system PLC CPU will be overwritten by the device value transferred from control system to standby system even if the GOT writes to the standby system PLC CPU (Numerical input, Ascii input, Script, Recipe, or others).

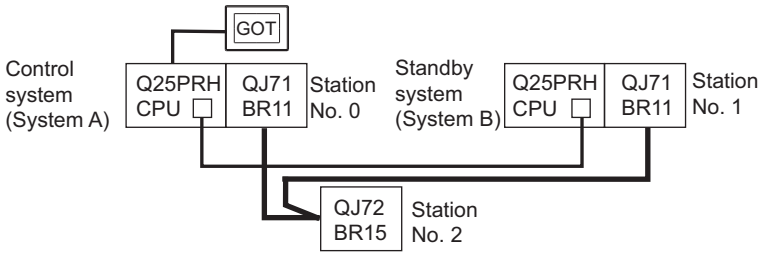



For the countermeasures to the above, perform the following.

- Display a monitor screen which indicates that "the connected PLC CPU is standby system" on a GOT when connecting the GOT to the standby system PLC CPU.
- To display the monitor screen above when connecting a GOT to the standby system PLC CPU, use the special relay SM1515 (Control status identification flag) of the PLC CPU. (When the SM1515 is OFF, the connected PLC CPU is standby system.)
- Each object should be controlled by the SM1515 which is set for the operation trigger.
- For the screen switching device, use a GOT internal device.
  If a device of the PLC CPU is used, the Status Observation operation of the GOT may be disabled since the device data of the PLC CPU will be overwritten by the transferred device value with the redundant system tracking function.

An example of screen setting using SM1515 is shown on the next page.

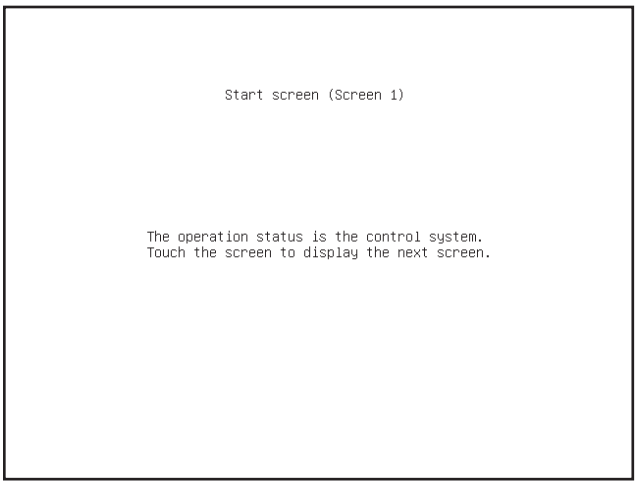
<System configuration example: when using one GOT>



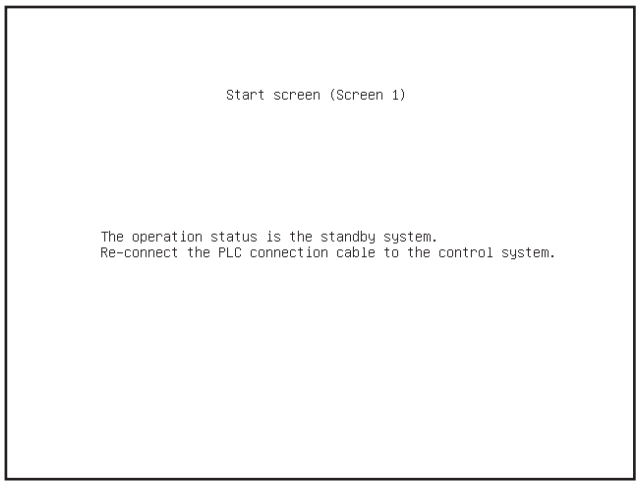

Create a monitor screen on the Base Screen1 that performs the following operation each for when connecting a GOT to control system and standby system.

1) When connected to control system, the monitor screen displays a message calling a touch switch operation, by which the screen switches to the next screen.
2) When connected to standby system, the monitor screen displays a message that calls reconnecting the connection cable.

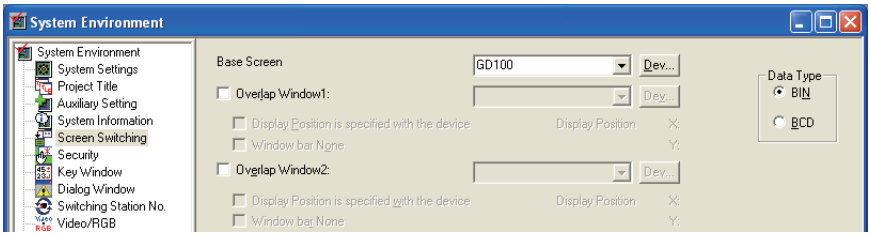
1) When connected to control system




2) When connected to standby system



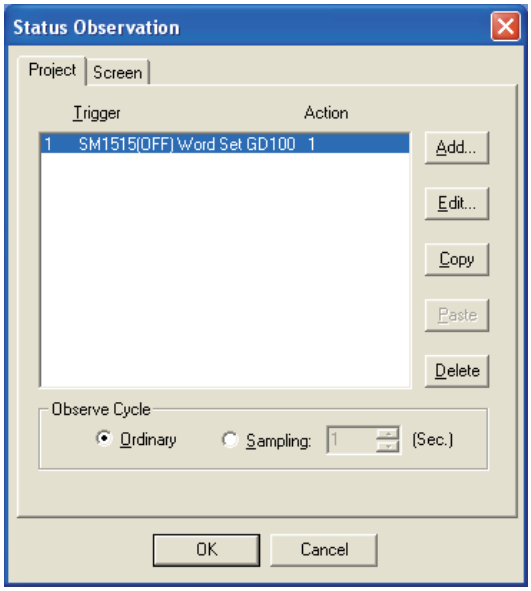
❶ Set the screen switching device of the base screen.
Choose [Common] → [System Environment] → [Screen Switching], and set the internal device GD100 as the base screen switching device.
(If a device of the PLC CPU is used for the screen switching device, the Status Observation operation of the GOT may be disabled since the device data of the PLC CPU will be overwritten by the transferred device value with the redundant system tracking function.




❷ Set the Status Observation.
Make setting so that the base screen 1 will be displayed when the connected PLC CPU is standby system (SM1515 is OFF.) in the project specified by choosing [Common] → [Status Observation].

| | | |
|---|---|---|
| Condition 1 | :SM1515 (while OFF) | ← When the SM1515 is OFF, the connected PLC CPU is standby system. |
| Operation | :GD100=1 | ← The screen switches to the base screen 1. |

Create the status observation in the project on the Project tab.



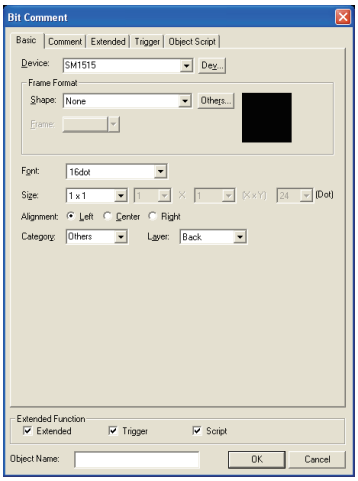
❸ Set the Comment Display on the base screen 1.

Set a comment to be displayed on the base screen 1 depending on the system status (ON/OFF of the SM1515) of the connected PLC CPU.

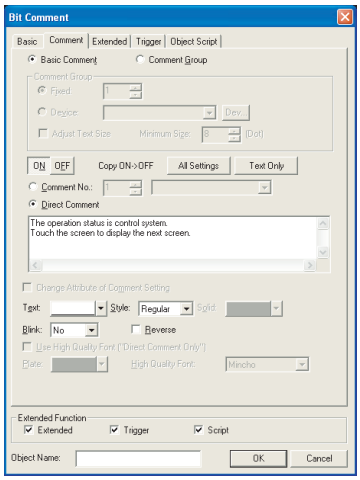
Choose [Object] → [Comment Display] → [Bit Comment] and set Comment Display (Bit).

| | |
|---|---|
| Basic tab | |
| Device | : SM1515 |
| Shape | : None |
| Comment tab | : Basic Comment |
| Direct Comment (ON) | : The operation status is control system.<br>Touch the screen to display the next screen. |
| Direct Comment (OFF) | : The operation status is standby system.<br>Re-connect the PLC connection cable to the control system CPU. |

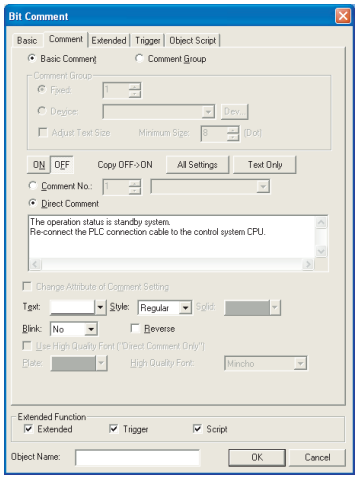
1) Basic tab screen




2) Comment tab screen (ON status)




3) Comment tab screen (OFF status)



④ Set the touch switches on the base screen 1.

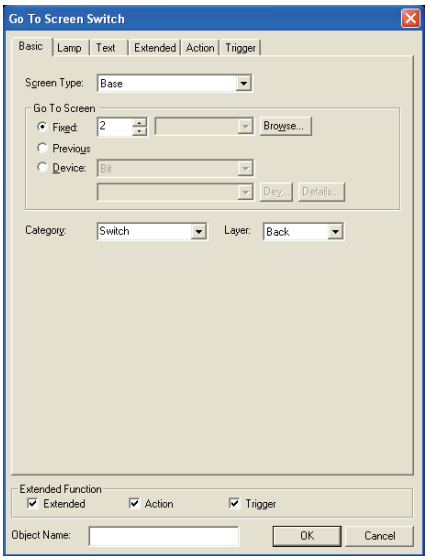
By using the Go To Screen Switch function, set a touch switch for shifting the screen to the next screen with a screen touch when the connected PLC CPU is control system (SM1515 is ON).

Choose [Object] → [Switch] → [Go To Screen Switch] and set the screen switching function.

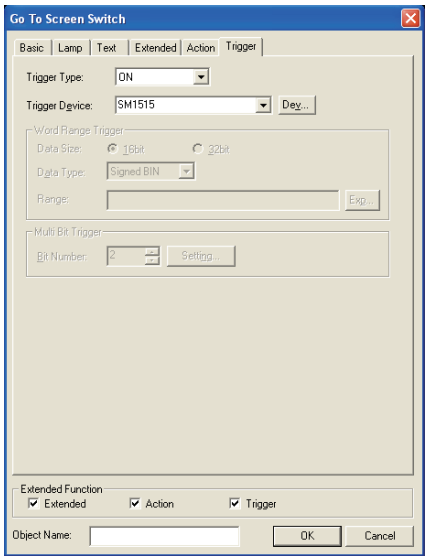
Set the same size for the touch switch as the base screen size so that touching any place of the screen enables the switch operation.

| | |
|---|---|
| Basic tab | |
| Screen Type | : Base |
| Go To Screen | : Fixed 2 |
| Display Style | : None (Shape) |
| Trigger tab | |
| Trigger Type | : ON |
| Trigger Device | : SM1515 |

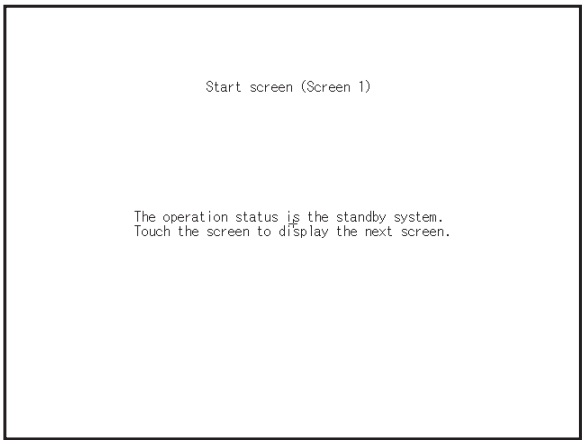
1) Basic tab screen




2) Trigger tab screen



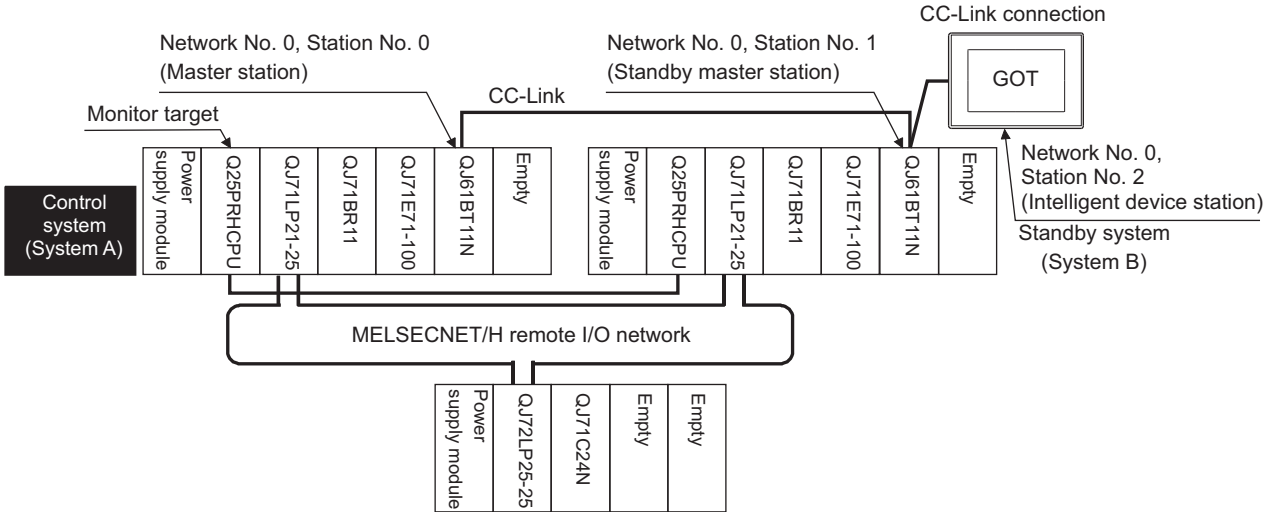

The created base screen 1 is shown below.



## 5 CC-Link connection (intelligent device station)

GT16 GT15 Soft GOT 1000 GT11 GT10

This section explains the CC-Link connection (intelligent device station) that connects the GOT set as the intelligent device station to the CC-Link network.
The following provides an example of connecting the GOT set as the intelligent device station to the CC-Link network.




(1) Connection method
Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Master station | Other (NW No. 0, Station No. 0 (master station)) | |
| Q Redundant Setting | | Do not set the item. | |

As the monitoring method, "monitoring by transient transmission" and "monitoring by cyclic transmission" are available. Each monitor method has advantages and disadvantages.
Refer to the following manual for details.

☞ Section 2.7.2 3 (4) Monitoring overview

(3) Monitoring target change when system switching occurs in redundant system

(a) System switching due to an alarm occurred in the control system
When system switching occurs, the CC-Link changes station No. between No. 0 of the master station and No. 1 of the standby master station on the network.
The CC-Link module of the new control system after system switching takes over the control as the master station.
Since the GOT monitors the master station, it changes the monitoring target to the new control system after system switching.

(b) System switching due to a network communication error occurred in other than the CC-Link of the control system or due to switching by the user

The CC-Link does not change station No. between No. 0 of the master station and No. 1 of the standby master station on the network even when system switching occurs.

The CC-Link module of the new control system after system switching takes over the control as the standby master station.

Since the GOT monitors the master station, it does not change the monitoring target to the new control system after system switching.

To automatically change the monitoring target of the GOT to the new control system after system switching, switch the data link control from the standby master station to the master station by the sequence program of the new control system.

For details of the sequence program, refer to the following manual.

☞ QnPRHCPU User's Manual (Redundant System)
(Sample Programs when Using CC-Link)

**Point**

CC-Link network setting

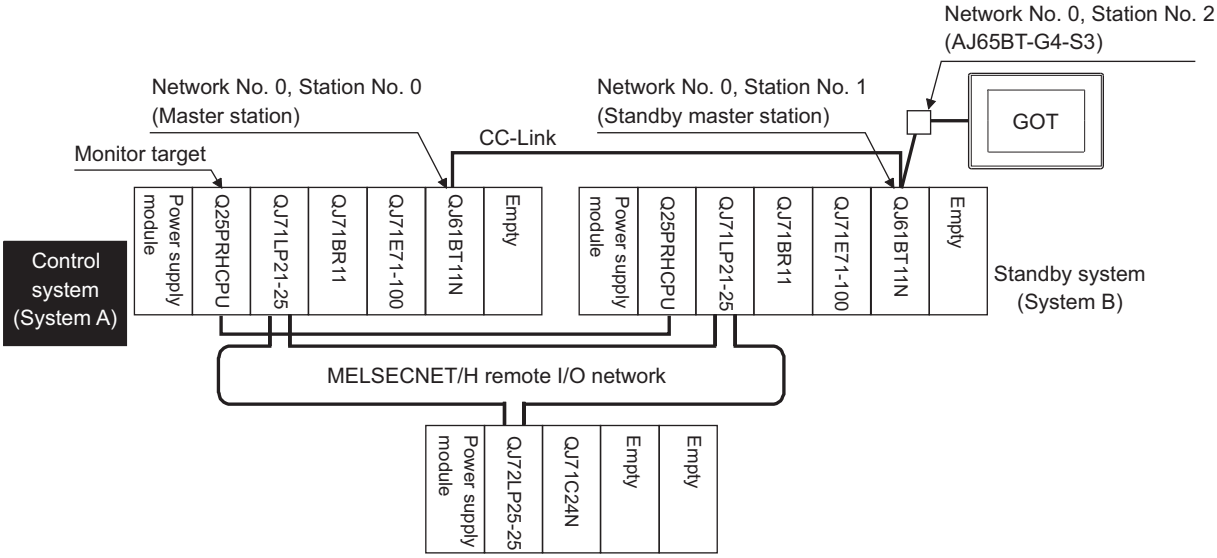
To automatically change the monitoring target in the QCPU redundant system, when using the CC-Link connection, set the CC-Link master station as System A and the standby master station as System B.

For details of using the CC-Link network in the redundant system, refer to the following manual.

☞ • CC-Link System Master/Local Module User's Manual
• QnPRHCPU User's Manual (Redundant System)

## 6 CC-Link connection (via G4)

This section explains the CC-Link connection (via G4) that connects the GOT to the AJ65BT-G4-S3 of the CC-Link network.
The following provides an example of connecting the GOT to the AJ65BT-G4-S3 of the CC-Link network.




(1) Connection method
Connect the AJ65BT-G4-S3 of the CC-Link network and GOT.
Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Master station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Local station | Other (Local station in other than redundant system) | |
| Q Redundant Setting | | Do not set the item. | |

(3) Monitoring target change when system switching occurs in redundant system

(a) System switching due to an alarm occurred in the control system
When system switching occurs, CC-Link changes station No. between No. 0 of the master station and No. 1 of the standby master station on the network.
The CC-Link module of the new control system after system switching takes over the control as the master station.
Since the GOT monitors the master station, it changes the monitoring target to the new control system after system switching.

(b) System switching due to a network communication error occurred in other than the CC-Link of the control system or due to switching by the user
The CC-Link does not change station No. between No. 0 of the master station and No. 1 of the standby master station on the network even when system switching occurs.
The CC-Link module of the new control system after system switching takes over the control as the standby master station.
Since the GOT monitors the master station, it does not change the monitoring target to the new control system after system switching.
To automatically change the monitoring target of the GOT to the new control system after system switching, switch the data link control from the standby master station to the master station by the sequence program of the new control system.
For details of the sequence program, refer to the following manual.

☞ QnPRHCPU User's Manual (Redundant System)
(Sample Programs when Using CC-Link)

**Point**

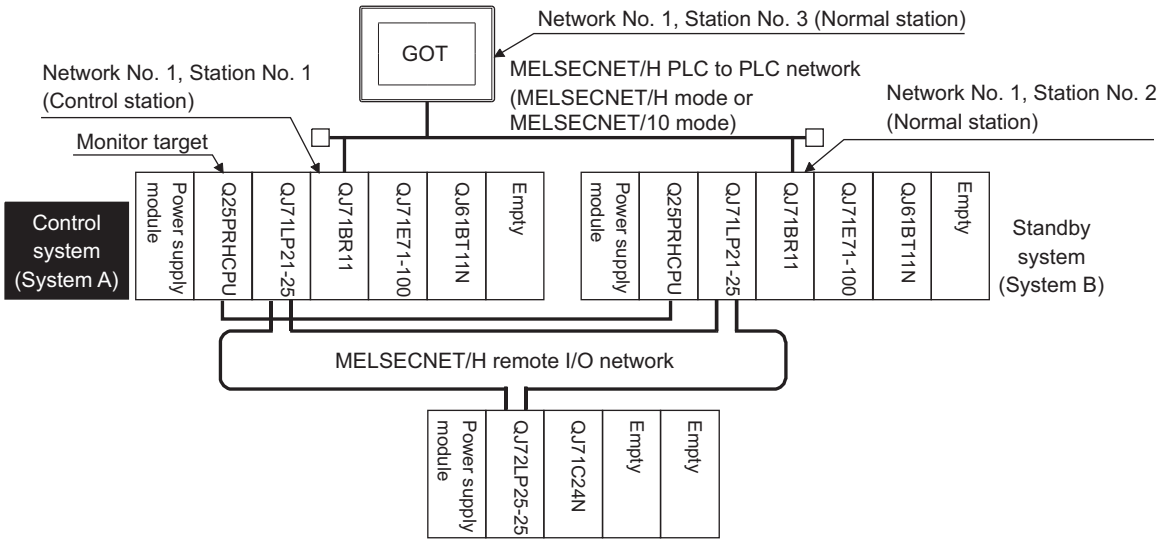
CC-Link network setting

To automatically change the monitoring target in the QCPU redundant system, when using the CC-Link connection, set the CC-Link master station as System A and the standby master station as System B.
For details of using the CC-Link network in the redundant system, refer to the following manual.

☞ • CC-Link System Master/Local Module User's Manual
• QnPRHCPU User's Manual (Redundant System)

## 7 MELSECNET/H and MELSECNET/10 connections (network systems)

This section explains the MELSECNET/H and MELSECNET/10 connections (network systems) that connect the GOT to the MELSECNET/H and MELSECNET/10 network system.
The following provides an example of connecting the GOT set as a normal station to the MELSECNET/H network system.




(1) Connection method
Connect the MELSECNET/H network system and GOT.
Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Other station | Other (NW No. 1 (network No. of PLC to PLC network), Station No. ** (** indicates the station number of the control system. Station No. 1 in the above example)) | |
| Q Redundant Setting | | ☞ This section 14 Q redundant setting | |

(3) Monitoring target change when system switching occurs in a redundant system
When system switching occurs, the network module station No. 2 changes from the normal station to the sub control station and takes over the control of the MELSECNET/H network system.
Since the GOT monitors the control system, it automatically changes the monitoring target to network module station No. 2.

**Point**

To monitor the control system without Q redundant setting

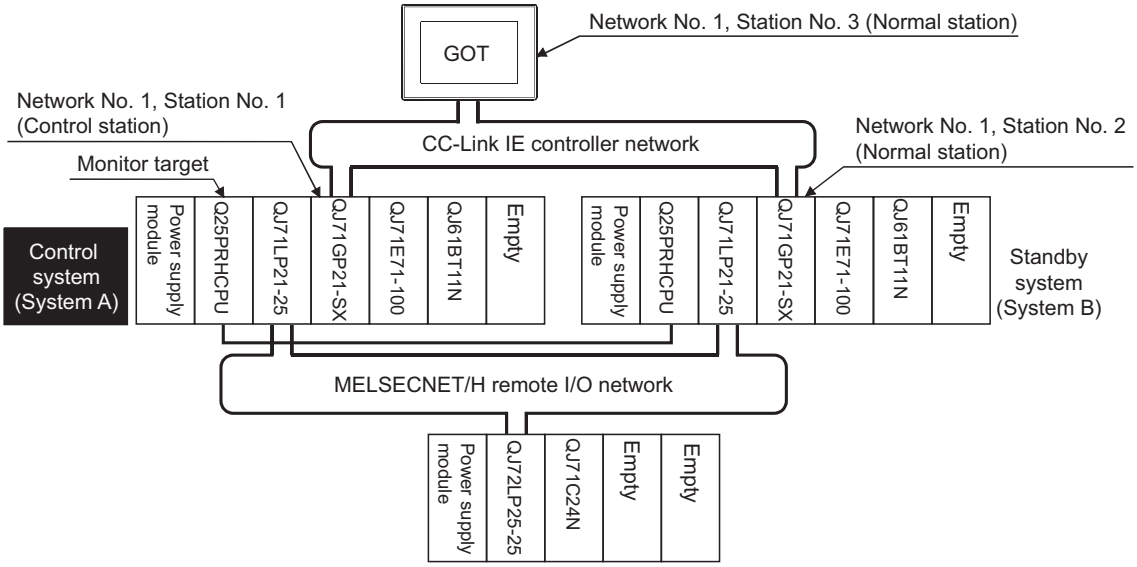
When system switching occurs, the network module station No. 2 changes from the normal station to the sub control station and takes over the control of the MELSECNET/H network system.
Since the GOT monitors the station of the specified station number, it cannot change the monitoring target to station No. 2 in response to the system switching.
As a measure, create a screen to monitor the PLC CPU of the control system by switching the station numbers between System A and System B using the script function.

☞ This section 15 Creating a monitor screen that switches the monitor target to the control system by GT16 or GT15 using the script function

☞ This section 16 Creating of a monitor screen that changes monitoring target to the control system by GT SoftGOT 1000 using the script function

## 8 CC-Link IE controller network connection (network system)

This section explains the CC-Link IE controller network connection (network system) that connects the GOT to the CC-Link IE controller network.
The following shows an example of connecting the GOT set as a normal station to the CC-Link IE controller network.




(1) Connection method
Connect the GOT to the CC-Link IE controller network.
Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

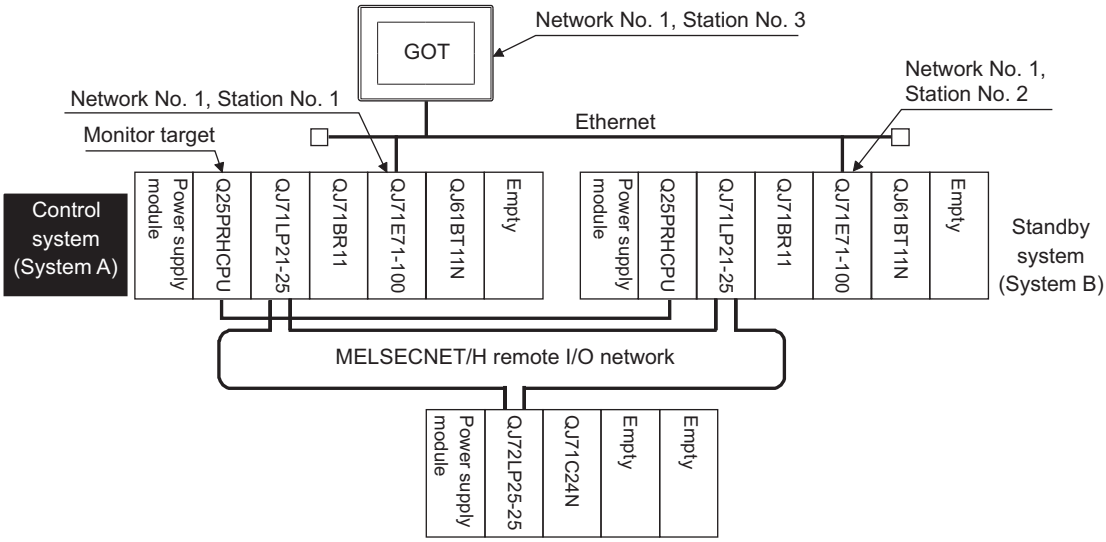
(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Other station | Other (NW No.1 (Network No. of CC-Link IE controller network), Station No. 1 in the above example)) | |
| Q Redundant Setting | | ☞ This section 14 Q redundant setting | |

(3) Monitoring target change when system switching occurs in a redundant system
When system switching occurs, the network module station No.2 changes from a normal station to the sub control station, and the system with the module takes over the control of the CC-Link IE controller network as the control system.
Since the GOT monitors the control system, it automatically changes the monitoring target to network module station No. 2.

## 9 Ethernet connection

This section explains the Ethernet connection that connects the GOT to the Ethernet network system. The following provides an example of connecting the GOT to the Ethernet network.




(1) Connection method
Connect the Ethernet network system and GOT.
Refer to the following manual for details.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set GT Designer2 as described below.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Other station | Other (NW No. 1 (network No. of Ethernet), Station No. ** (** indicates the station number of the control system. Station No. 1 in the above example)) | |
| Q Redundant Setting | | ☞ This section 14 Q redundant setting | |

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, Ethernet module station No. 2 takes over the control of the Ethernet network system as the control system.
Since the GOT monitors the control system, it automatically changes the monitoring target to Ethernet module station No. 2.

**Point**

When monitoring control system without Q redundant setting (Only GT16 and GT15)

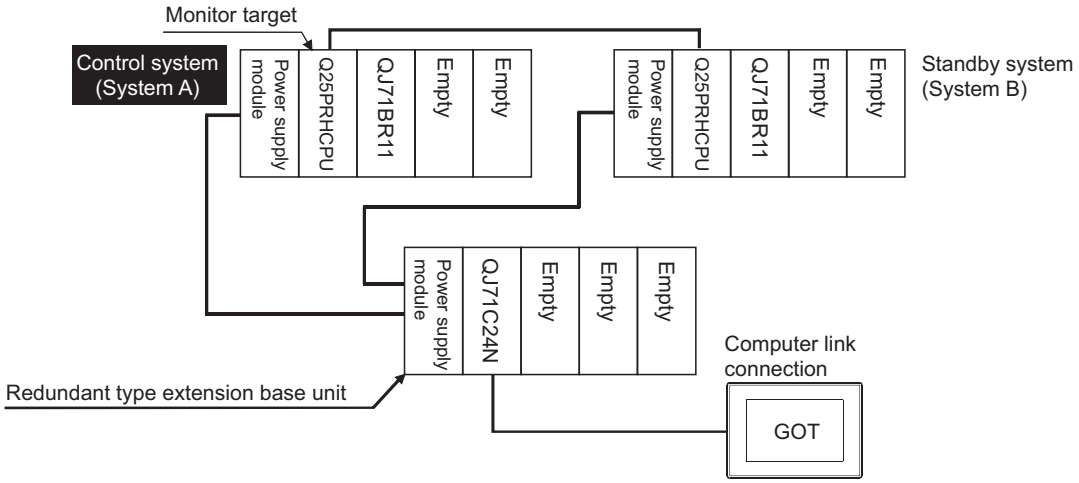
When system switching occurs, Ethernet module station No. 2 takes over the control of the Ethernet network system as the control system.
Since the GOT monitors the station of the specified station number, it cannot change the monitoring target to station No. 2 in response to the system switching.
As a measure, create a screen to monitor the PLC CPU of the control system by changing the station numbers between System A and System B using the script function.

☞ This section 15 Creating a monitor screen that switches the monitor target to the control system by GT16 or GT15 using the script function

## 10 Computer link connection (Serial communication module mounted on redundant type extension base unit)

GT16 GT15 SoftGOT1000 GT11 GT10

This section explains the computer link connection for connecting the GOT to the serial communication module mounted on the redundant type extension base unit.
The following shows an example of connecting the GOT to the serial communication module mounted on the redundant type extension base unit.




(1) Connection method
Connect the GOT to the serial communication module (QJ71C24N) mounted on the redundant type extension base unit.
For the details, refer to the following manual.

☞ GOT1000 Series Connection Manual

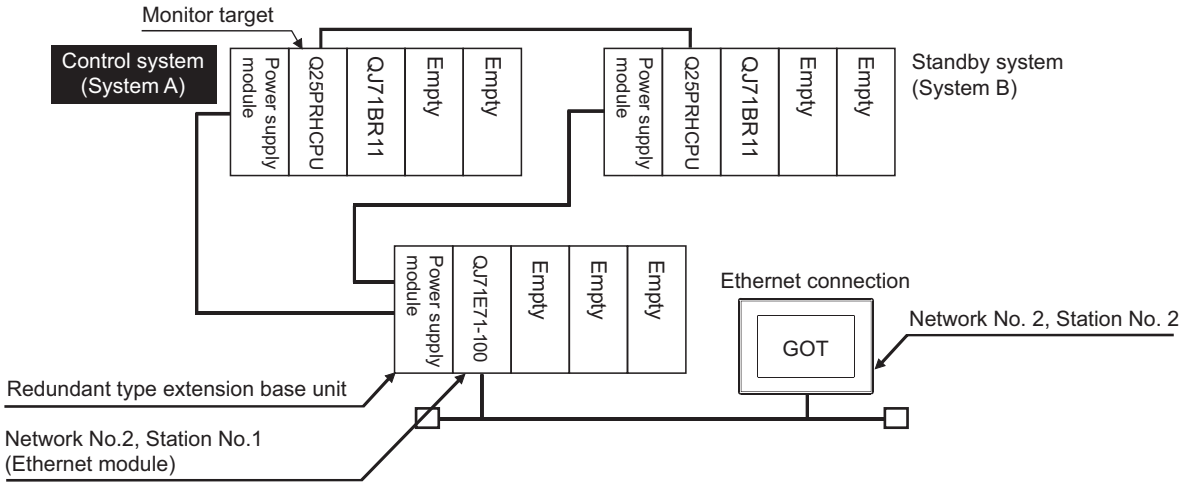
(2) GT Designer2 setting
Set the following on GT Designer2.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Host station | Host | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Q Redundant Setting | | Do not set the item. | |

(3) Monitoring target change when system switching occurs in redundant system
When the system switching occurs, the GOT automatically changes the monitoring target to the PLC CPU switched to the control system.

## 11 Ethernet connection (Ethernet module mounted on redundant type extension base unit

This section explains the Ethernet connection for connecting the GOT to the Ethernet module mounted on the redundant type extension base unit.
The following shows an example of connecting the GOT to the Ethernet module mounted on the redundant type extension base unit.




(1) Connection method
Connect the GOT to the Ethernet module (QJ71E71-100, QJ71E71-B5, QJ71E71-B2) mounted on the redundant type extension base unit.
For the details, refer to the following manual.

☞ GOT1000 Series Connection Manual

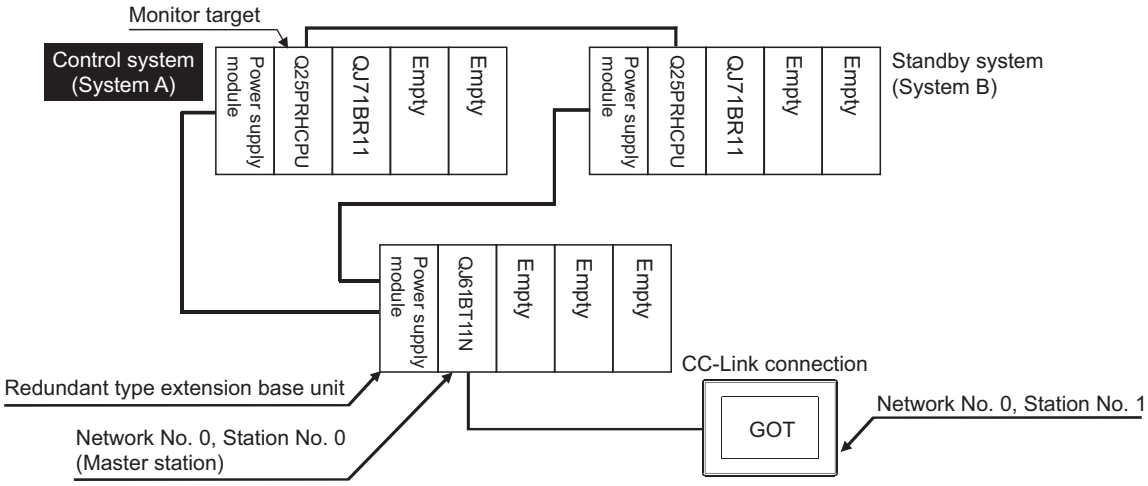
(2) GT Designer2 setting
Set the following on GT Designer2.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Other station | Other (NW No.2 (Network No. of Ethernet), Station No.** (** indicates the station No. of the Ethernet module. Station No.1 in the above example)) | |
| Q Redundant Setting | | Do not set the item. | |

(3) Monitoring target change when system switching occurs in redundant system
When the system switching occurs, the GOT automatically changes the monitoring target to the PLC CPU switched to the control system.

## 12 CC-Link connection (Intelligent device station) (CC-Link module mounted on redundant type extension base unit)

This section explains the CC-Link connection for connecting the GOT to the CC-Link module mounted on the redundant type extension base unit.
The following shows an example of connecting the GOT to the CC-Link module mounted on the redundant type extension base unit.




(1) Connection method
Connect the GOT to the CC-Link module (QJ61BT11N) mounted on the redundant type extension base unit.
For the details, refer to the following manual.

☞ GOT1000 Series Connection Manual

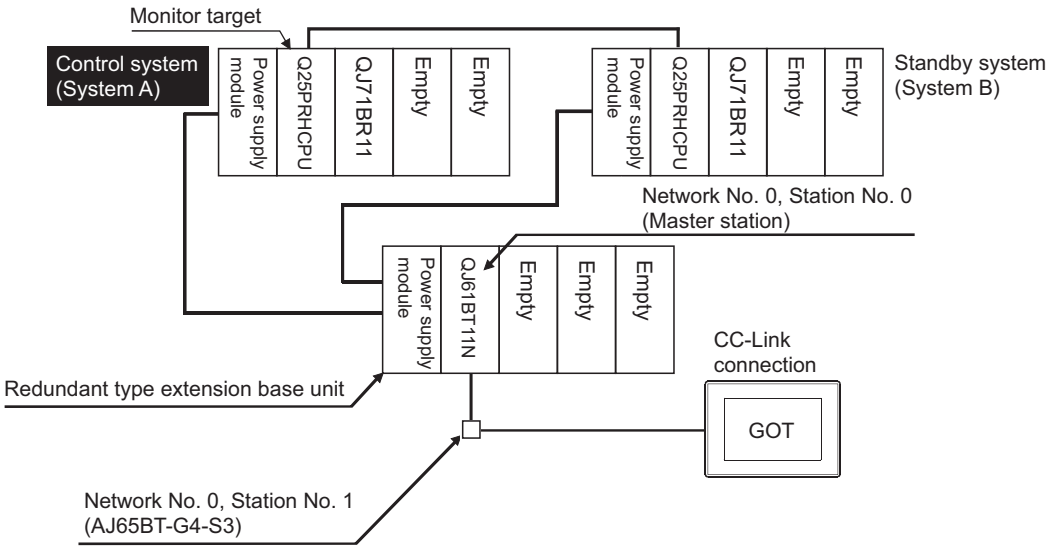
(2) GT Designer2 setting
Set the following on GT Designer2.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Master station | Other (NW No.0, Station No.0 (master station)) | |
| Q Redundant Setting | | Do not set the item. | |

(3) Monitoring target change when system switching occurs in redundant system
When the system switching occurs, the GOT automatically changes the monitoring target to the PLC CPU switched to the control system.

## 13 CC-Link connection (via G4) (CC-Link module mounted on redundant type extension base unit)

This section explains the CC-Link connection (via G4) for connecting the GOT to the CC-Link module mounted on the redundant type extension base unit via the AJ65BT-G4-S3.
The following shows an example of connecting the GOT to the AJ65BT-G4-S3 in the CC-Link network system.




(1) Connection method
Connect the GOT to the AJ65BT-G4-S3 in the CC-Link network system.
For the details, refer to the following manual.

☞ GOT1000 Series Connection Manual

(2) GT Designer2 setting
Set the following on GT Designer2.

| Setting item | | Settings | Model |
|---|---|---|---|
| Controller Type | | MELSEC-QnA/Q/QS, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | MELSEC-QnA/Q, MELDAS C6* | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device setting (Network) | Master station | Other (NW No.0, Station No.0 or FF (master station)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Q Redundant Setting | | Do not set the item. | |

(3) Monitoring target change when system switching occurs in redundant system
When the system switching occurs, the GOT automatically changes the monitoring target to the PLC CPU switched to the control system.

## 14 Q redundant setting

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

The following explains the setting for automatically changing the monitoring target of the GOT when monitoring a QCPU redundant system.

**Point**

Before making the Q redundant setting

In the Q redundant setting, do not set a station other than redundant CPUs.

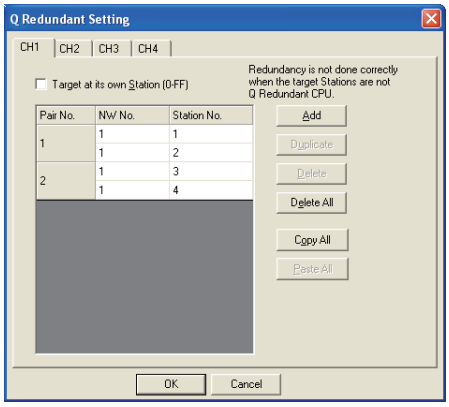
1. Select [Common] → [Q Redundant Setting].
2. As the setting dialog box appears, make the settings with reference to the following explanation.

**Remark**

When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on Q Redundant Setting in the project work space.

3. Make settings for the Q redundant setting.
   In the Q Redundant Setting dialog box, settings can be made for each channel of a controller.




(Example: Ethernet connection (Station No. 5), redundant CPU pair No. 1 and No. 2, redundant CPU station Nos. 1 to 4)

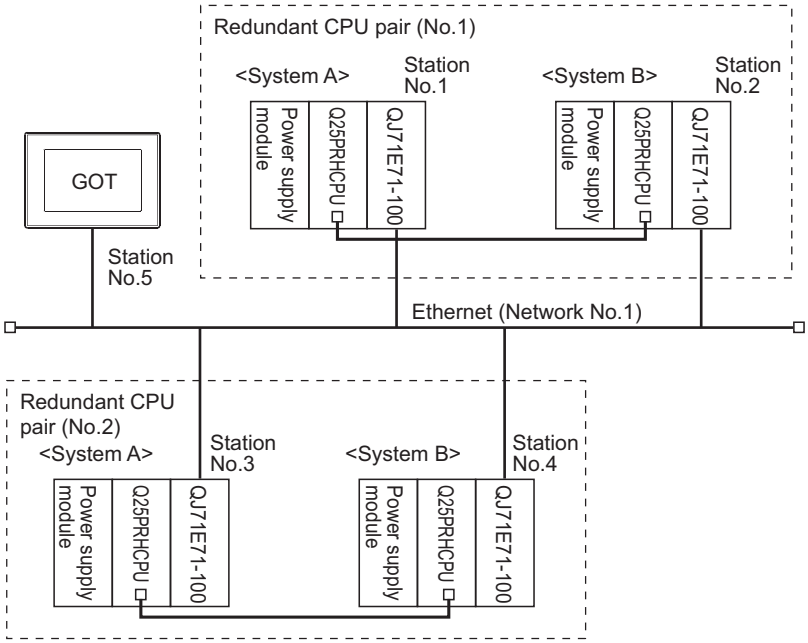
| Item | | Description | Model |
|---|---|---|---|
| CH1 to CH4 | | Select a tab of the CH No. for the Q redundant setting. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Target at its own Station (0-FF) | | Check this item to monitor the control system as a host station.<br>(In Ethernet connection, check is invalid.) | |
| Pair No.*1 | NW No. | Set the network No. (1 to 225) for each of pair numbers (1 to 64).<br>Upper row: Setting for the first redundant CPU.<br>Lower row: Setting for the second redundant CPU.<br>(The same value as the value set for the first redundant CPU is displayed.) | |
| | Station No. | Set the station No. (1 to 63) of the redundant CPU for each of pair numbers (1 to 64).<br>Upper row: Setting for the first redundant CPU.<br>Lower row: Setting for the second redundant CPU.<br>(The value of "Setting for the first redundant CPU" + 1 is displayed.) | |
| Add | | Adds one pair number. | |
| Duplicate | | Copies one setting of the selected pair number to append it at the last line. | |
| Delete | | Deletes one setting of the selected pair.<br>After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number. | |
| Delete All | | Deletes the setting of all pair numbers. | |
| Copy All | | Copies the Q redundant setting on the selected CH No. tab. | |
| Paste All | | Pastes the copied Q redundant setting in the selected CH No. tab. | |

For details of *1, refer to the explanation below.

*1 About pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.
Pair number is the number assigned to each redundant CPU pair.

Example: Ethernet connection (Pair No. 1 and Pair No. 2)




**Point**

Precautions for making Q redundant setting

Pay attention to the items below when making the Q redundant setting

- In the setting, station Nos. of the System A CPU and System B CPU must be adjacent numbers to be set as a pair.
  As long as the adjacent numbers are used, allocation of them to the System A CPU and System B CPU may be determined as desired.
- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Make sure that the QCPU in the station for which Q redundant setting is made is a redundant CPU.
  If any of the QCPUs to which the Q redundant setting is made is not a redundant CPU, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- When making the Q redundant setting for MELSECNET/H, MELSECNET/10, or Ethernet systems, check the station Nos. of network modules before the setting.
  If the settings of the Q redundant setting and the actual network module station Nos. are matched, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- For monitoring the redundant QCPU system with GT SoftGOT1000, do not check [Comm. Error Dialog] by selecting [Online] → [Communication Setup] from the menu on GT SoftGOT1000.
  When [Comm. Error Dialog] is checked, errors may occur in the communication pathway. When errors occur, a communication error dialog box is displayed, and GT SoftGOT1000 stops monitoring the system.
  (☞ GT SoftGOT1000 Version2 Operating Manual (Chapter 5 OPERATING METHOD))

## 15 Creating a monitor screen that switches the monitor target to the control system by GT16 or GT15 using the script function

GT16 GT15 Soft GOT 1000 GT11 GT10

The following explains how to create a script screen, to be used for the MELSECNET/H or MELSECNET/10 connection (network system), or Ethernet connection, that automatically changes the monitoring target (Station No.) at the occurrence of system switching even if the Q redundant setting is not made.
The script executes the station number switching function or screen switching function.
The following describes the advantages and disadvantages of the station number switching function or screen switching function.

| Function | Advantage | Disadvantage |
|---|---|---|
| Station number changing function | The monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen. | Some objects do not allow the station number to be changed. |
| Screen changing function | All objects can be used to create a monitor screen for each station number. | Monitor screens must be created separately for Station No. 1 (control system) and Station No. 2 (standby system). |

The following explains how to use each function.

(1) Method using the station number changing function

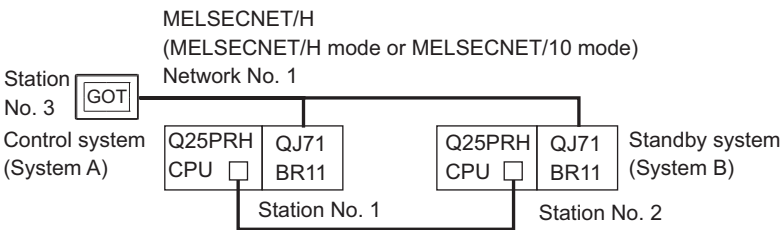
(a) This function features that a monitor screen for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.
If system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the same monitor screen.

(b) To achieve this, the script of the GOT watches the special relay SM1515 (Control system judgment flag) of the PLC CPU and stores the station number of the latest control system into the station number changing device.

(c) Restrictions
Some objects do not allow the station number to be changed.

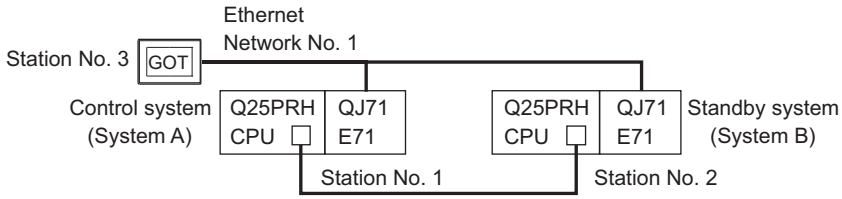
☞ Section 3.3 Switching Station No. Device Setting

(d) The setting method will be explained based on examples.
<System configuration example 1: MELSECNET/H connection, MELSECNET/10 connection>



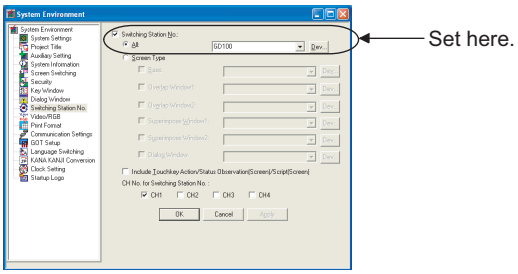

| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GOT connected to MELSECNET/H network or MELSECNET/10 network | | 3 |

<System configuration example 2: Ethernet connection>




| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GOT connected to the Ethernet network | | 3 |

1 Set the station number changing device.
Choose [Common] → [System Environment] → [Switching Station No.] - "All", and set the internal device GD100 as the station number changing device.
Do not use a device of PLC CPU as screen switching device. Since device information will be transferred by the tracking transfer tunction of the redundant system, status observation may not function effectively.



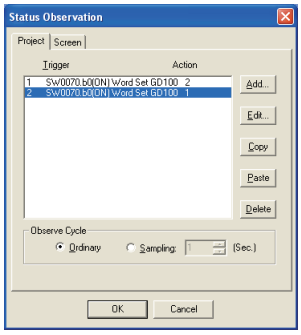

2 Set the status observation.

- For MELSECNET/H connection or MELSECNET/10 connection:
  Make setting so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] → [Status Observation].

| | |
|---|---|
| Condition 1: SW70.b0 (while ON) | ← When b0 is ON, Station No. 1 is abnormal. |
| Operation : GD100=2 | ← Station No. is changed to 2. |

| | |
|---|---|
| Condition 1: SW70.b1 (while ON) | ← When b1 is ON, Station No. 2 is abnormal. |
| Operation : GD100=1 | ← Station No. is changed to 1. |

Create the status observation in the project on the Project tab.

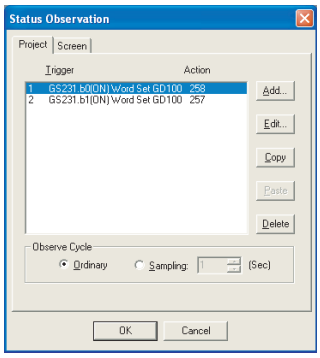


- For Ethernet connection:
  Make setting so that the station number will be changed when the abnormal station information (GS231) based on the station watch specified by choosing [Common] → [Status Observation] turns ON.
  (For Network No. 1, Station No. 2, set "258"(0102H).)

| | |
|---|---|
| Condition 1: GS231.b0 (while ON) | ← When b0 is ON, Station No. 1 is abnormal. |
| Operation : GD100=258(0102H) | ← Station No. is changed to 2. |

| | |
|---|---|
| Condition 1: GS231.b1 (while ON) | ← When b1 is ON, Station No. 2 is abnormal. |
| Operation : GD100=257(0101H) | ← Station No. is changed to 1. |

Create the status observation in the project on the Project tab.




**Point**

Setting for the status observation function

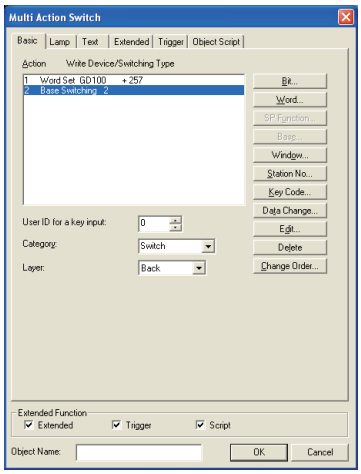
For the status observation function, hexadecimals cannot be used.
To use the status observation function, set the N/W No. and the station No. of the PLC CPU in [Unsigned BIN].
(For the status observation function, set [Unsigned BIN] for [Storing Device].)

Example:
When N/W No.: 1 and Station No.: 1 (0101H)
Set "257".
When N/W No.: 10 and Station No.: 10 (0A0AH)
Set "2570".

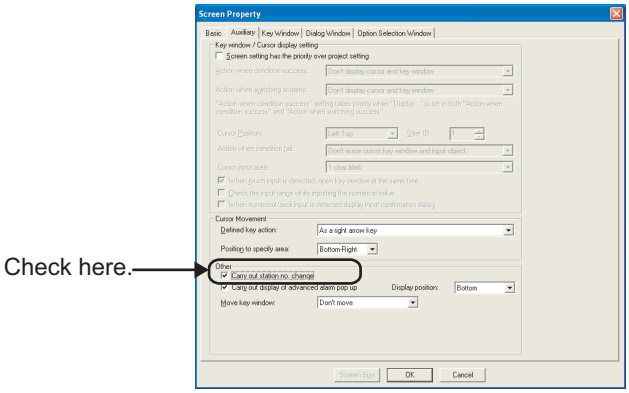
3 Create a monitor screen.
For MELSECNET/H connection or MELSECNET/10 connection, for Ethernet connection: (Common)
In the device setting (network setting) of each object, set Network No. 1 and Station No. 1 of the control system.

4 On Screen 1, set the switch for writing Station No. 1 to the station number changing device. (For Ethernet connection only)
After the GOT has started up, the station number changing device value of the GOT is "0".
For Ethernet connection, the monitor becomes abnormal when the station number changing device value is "0".
Hence, set the switch for writing the station number to the station number changing device and the switch for shifting to the monitor screen on Screen 1.
To make this setting, choose [Object] → [Switch] → [Multi Action Switch].

The following shows an example of setting GD100=257 (0101H: Network No. 1, Station No. 1) and Base screen=2 to one switch. (Base screen 2 is the actually monitoring screen.)




5 Validate the station number changing function.
On the sub setting screen specified by choosing [Screen] → [Properties], check "Carry out station no. change" to validate the station number changing function.
Make this setting for each monitor screen.
For Ethernet connection, however, do not make this setting on Screen 1 created in above Step 4.

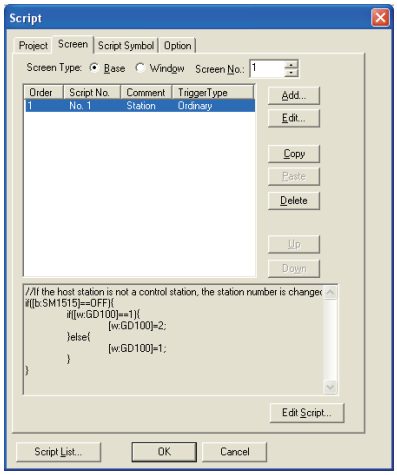


6 Change the station number changing device value in the script.
By choosing [Common] → [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the station number changing device value.
Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

• Screen script for MELSECNET/H connection or MELSECNET/10 connection:

```
// If the host station is not a control station, the station number is changed
   to that of  the other station.
if([b:SM1515]==OFF){
                if([w:GD100]==1){
                                [w:GD100]=2;
                }else{
                                [w:GD100]=1;
                }
}
```

Set the created script on the Screen tab for each screen.

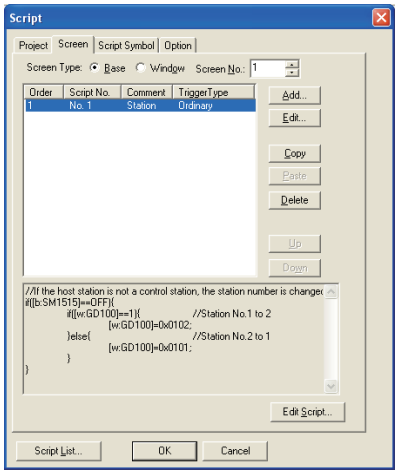


- Screen script for Ethernet connection:

```
// If the host station is not a control station, the station number is changed to that of the
   other station.
if([b:SM1515]==OFF){
        if([w:GD100]==0×0101){          // Station No. 1 to 2
                [w:GD100]=0x0102;
        }else{                          // Station No. 2 to 1
                [w:GD100]=0x0101;
        }
}
```

For Ethernet connection, create a script so that the network No. and station number are set to the station changing device.
For Network No. 1, Station No. 2, create "[w:GD100]=0x0102".

Set the created script on the Screen tab for each screen.




**Remark**

When the GOT in MELSECNET/H connection or MELSECNET/10 connection executes monitor with only the redundant system connected to the MELSECNET/H network, SW56 (current control station) can be set as the station number changing device. In this case, even if system switching occurs, the GOT always monitors the station number that is currently the control station.

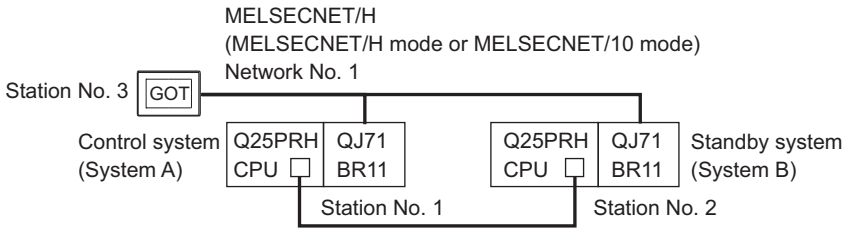
(2) Method using the screen changing function

(a) This function features that a monitor screen is created for each station number.
When system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the other monitor screen.

(b) To achieve this, the script of the GOT watches the special relay SM1515 (Control system judgment flag) of the PLC CPU and stores the screen number corresponding to the station number of the latest control system into the screen changing devices.

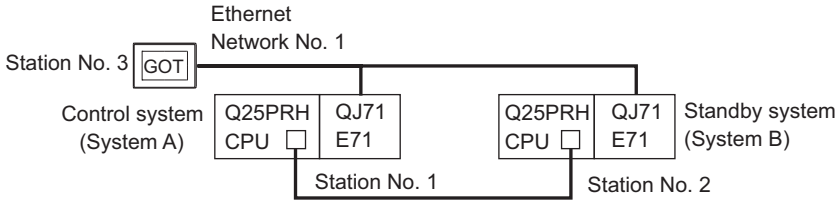
(c) Precautions
There are the following 8 different screen changing devices. Set the screen changing devices for all screens used.
- Base screen changing device
- Overlap window 1 changing device
- Overlap window 2 changing device
- Overlap window 3 changing device
- Overlap window 4 changing device
- Overlap window 5 changing device
- Superimpose window 1 changing device
- Superimpose window 2 changing device

(d) The setting method will be explained based on examples.
<System configuration example 1: MELSECNET/H connection or MELSECNET/10 connection>




| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GOT connected to MELSECNET/H network or MELSECNET/10 network | | 3 |

<System configuration example 2: Ethernet connection>




| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GOT connected to the Ethernet network | | 3 |

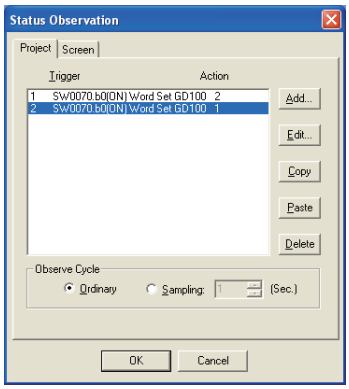
1 Set the screen changing device of the base screen.
Choose [Common] → [System Environment] → [Screen Switching], and set the internal device GD100 as the base screen changing device.

2 Set the status observation.

- For MELSECNET/H connection or MELSECNET/10 connection:
  Set the status observation so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] → [Status Observation].

| | |
|---|---|
| Condition 1: SW70.b0 (while ON) | ← When b0 is ON, Station No. 1 is abnormal. |
| Operation : GD100=2 | ← Screen No. is changed to 2. |

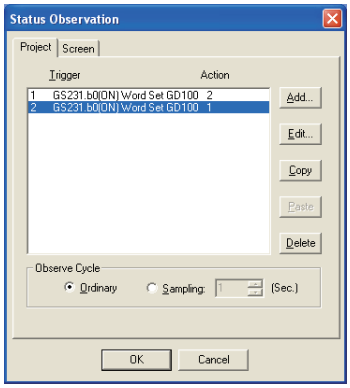
| | |
|---|---|
| Condition 1: SW70.b1 (while ON) | ← When b1 is ON, Station No. 2 is abnormal. |
| Operation : GD100=1 | ← Screen No. is changed to 1. |




- For Ethernet connection:
  Set the status observation so that the station number will be changed when the abnormal station information (GS231) based on the station watch specified by choosing [Common] → [Status Observation] turns ON.

| | |
|---|---|
| Condition 1: GS231.b0 (while ON) | ← When b0 is ON, Station No. 1 is abnormal. |
| Operation : GD100=2 | ← Screen No. is changed to 2. |

| | |
|---|---|
| Condition 1: GS231.b1 (while ON) | ← When b1 is ON, Station No. 2 is abnormal. |
| Operation : GD100=1 | ← Screen No. is changed to 1. |



3 Create monitor screens.

For MELSECNET/H connection or MELSECNET/10 connection, for Ethernet connection: (Common)

- Create a monitor screen with each object whose network setting is Station No. 1 on Screen No. 1 (1-1).
- Create a monitor screen with each object whose network setting is Station No. 2 on Screen No. 2 (1-2).

4 Change the switching screen device value in the script.

By choosing [Common] → [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the station number changing device value.

Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

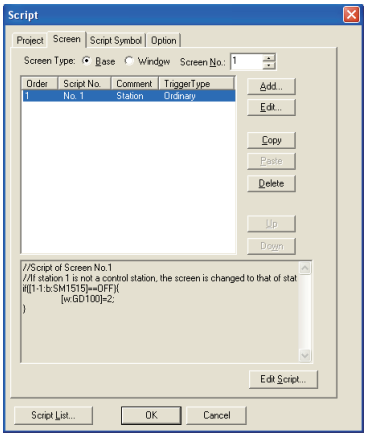
Screen scripts for MELSECNET/H connection, MELSECNET/10 connection and Ethernet connection:

The same script can be used for MELSECNET/H connection, MELSECNET/10 connection and Ethernet connection.

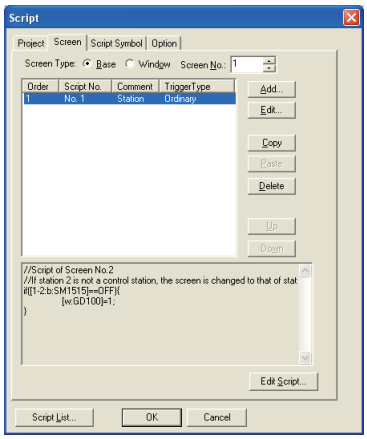
```
// Script of Screen No. 1
// If Station 1 is not a control station, the screen is changed to that of Station 2.
if([1-1:b:SM1515]==OFF){
        [w:GD100]==2;
}
```

```
// Script of Screen No. 2
// If Station 2 is not a control station, the screen is changed to that of Station 1.
if([1-2:b:SM1515]==OFF){
        [w:GD100]==1;
}
```

Script screen of Screen No. 1




Script screen of Screen No. 2




**Remark**

When the GOT in MELSECNET/H connection or MELSECNET/10 connection executes monitor with only the redundant system connected to the MELSECNET/H network, SW56 (current control station) can be set as the station number changing device. In this case, if system switching occurs, the GOT always monitors the station number that is currently the control station.

## 16 Creating of a monitor screen that changes monitoring target to the control system by GT SoftGOT 1000 using the script function

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

The following explains how to create a script screen, to be used for the MELSECNET/H connection (network system), that automatically changes the monitoring target (Station No.) at the occurrence of system switching even if the Q redundant setting is not made.
The script executes the station number switching function or screen switching function.
The following describes the advantages and disadvantages of the station number switching function or screen switching function.

| Function | Advantage | Disadvantage |
|---|---|---|
| Station No. changing function | The monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen. | Some objects do not allow the Station No. to be changed. |
| Screen changing function | All objects can be used to create a monitor screen for each Station No. | Monitor screens must be created separately for Station No. 1 (control system) and Station No. 2 (standby system). |

The following explains how to use each function.

(1) Method using the station number changing function

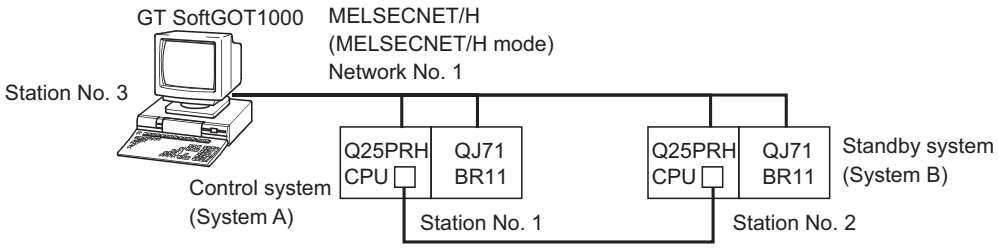
(a) This function features that a monitor screen for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.
When system switching occurs, the GT SoftGOT2 can change the monitoring target to the control system PLC CPU on the same monitor screen.

(b) To achieve this, the script of the GT SoftGOT2 watches the special relay SM1515 (operating status) of the PLC CPU and stores the Station No. of the latest control system into the Station No. changing device.

(c) Restrictions
Some objects do not allow the Station No. to be changed.

☞ Section 3.3 Switching Station No. Device Setting

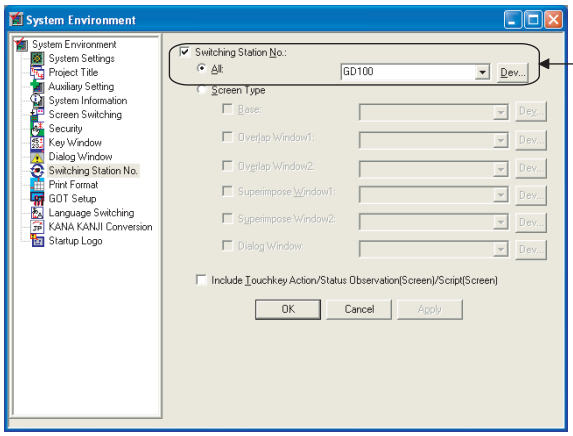
(d) The setting method will be explained based on examples.
<System configuration example>




| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GT SoftGOT1000 connected to the MELSECNET/H network | | 3 |

1 Set the station number changing device.

Choose [Common] - [System Environment] - [Switching Station No.] - "All", and set the internal device GD100 as the station number changing device.




Set here.

2 Set the status observation.

Make setting so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] - [Status Observation].

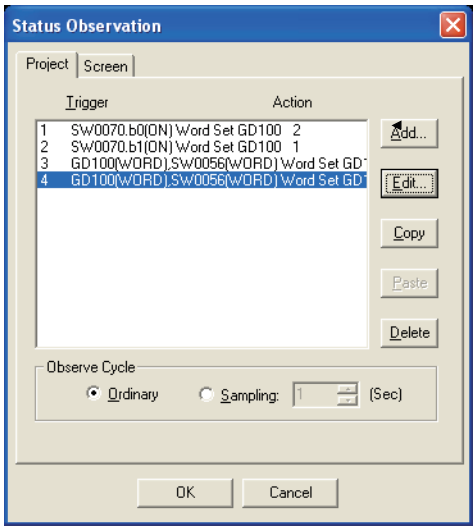
| | |
|---|---|
| Condition 1: SW70.b0 (while ON) | ← When b0 is ON, Station No. 1 is abnormal. |
| Operation : GD100=2 | ← Station No. is changed to 2. |

| | |
|---|---|
| Condition 1: SW70.b1 (while ON) | ← When b1 is ON, Station No. 2 is abnormal. |
| Operation: GD100=1 | ← Station No. is changed to 1. |

| | |
|---|---|
| Condition 1: GD100==0 | ← The value of the Station No. changing device is 0. |
| Condition 2: SW56<=2 | ← The current control station is a redundant CPU. |
| Operation: GD100=SW56 | ← Station No. is changed to a current control station. |

| | |
|---|---|
| Condition 1: GD100==0 | ← The value of the Station No.changing device is 0. |
| Condition 2: SW56>2 | ← The current control station is not a redundant CPU. |
| Operation: GD100=1 | ← Station No. is changed to a current control station in normal condition. |

Create the status observation in the project on the Project tab.



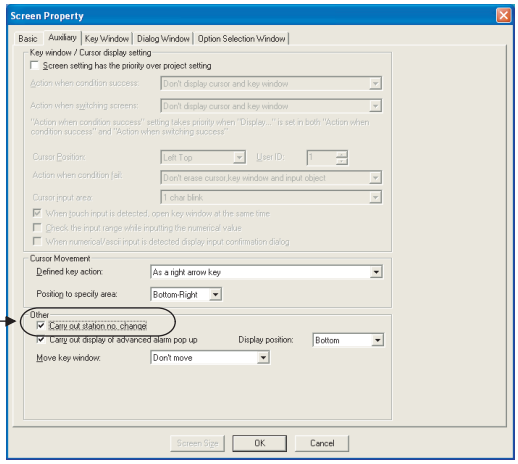
3 Create a monitor screen.

In the device setting (network setting) of each object, set Network No. 1 and Station No. 1 of the control system.

4 Validate the station number changing function.

On the sub setting screen specified by choosing [Screen] - [Properties], check "Carry out station no. change" to validate the station number changing function.

Make this setting for each monitor screen.




5 Change the station number changing device value in the script.

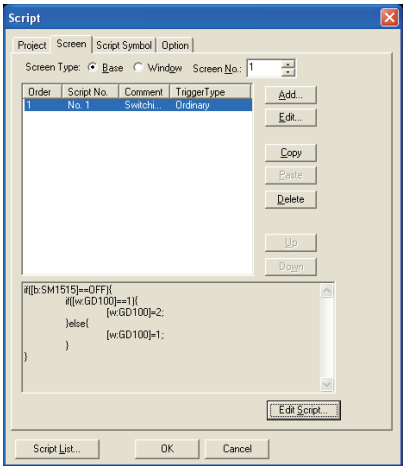
By choosing [Common] - [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the station number changing device value.

Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

- Screen script:

```
// If the monitoring target is a standby station, the Station No. is changed.
if([b:SM1515]==OFF){                    //Is the monitoring target standby?
        if([w:GD100]==1){               //The Station No. is 1 to 2.
            [w:GD100]=2;
        }else{                          //The Station No. is 2 to 1.
            [w:GD100]=1;
        }
}
```

Set the created script to each screen using the screen tab.



**Remark**

When the GT SoftGOT1000 in MELSECNET/H connection executes monitor with only the redundant system connected to the MELSECNET/H network, SW56 (current control station) can be set as the Station No. changing device.
In this case, even if system switching occurs, the GT SoftGOT1000 always monitors the Station No. that is currently the control station.

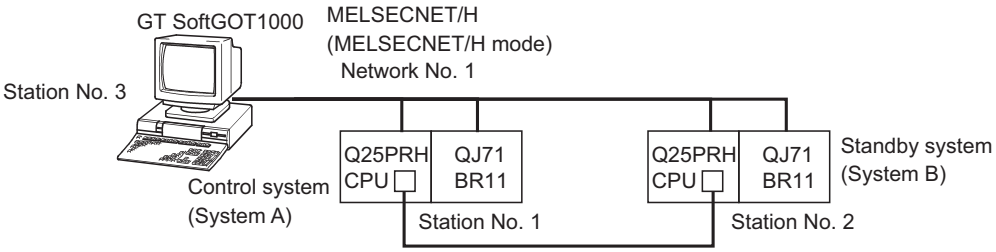
(2) Method using the screen changing function

(a) This function features that a monitor screen is created for each station number.
When system switching occurs, the GT SoftGOT1000 can change the monitoring target to the control system PLC CPU on the other monitor screen.

(b) To achieve this, the script of the GT SoftGOT1000 watches the special relay SM1515 (operating status) of the PLC CPU and stores the Screen No. corresponding to the Station No. of the latest control system into the screen changing devices.

(c) Precautions
There are the following 5 different screen changing devices.
Set the screen changing devices for all screens used.
- Base screen changing device
- Overlap window 1 changing device
- Overlap window 2 changing device
- Superimpose window 1 changing device
- Superimpose window 2 changing device

(d) The setting method will be explained based on examples.
<System configuration example>




| Connected module | Network No. | Station No. |
|---|---|---|
| MELSECNET/H network module of control system | 1 | 1 |
| MELSECNET/H network module of standby system | | 2 |
| GT SoftGOT1000 connected to the MELSECNET/H network | | 3 |

1 Set the screen changing device of the base screen.
Choose [Common] - [System Environment] - [Screen Switching], and set the internal device GD100 as the base screen changing device.

2 Set the status observation.
Set the status observation so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] - [Status Observation].

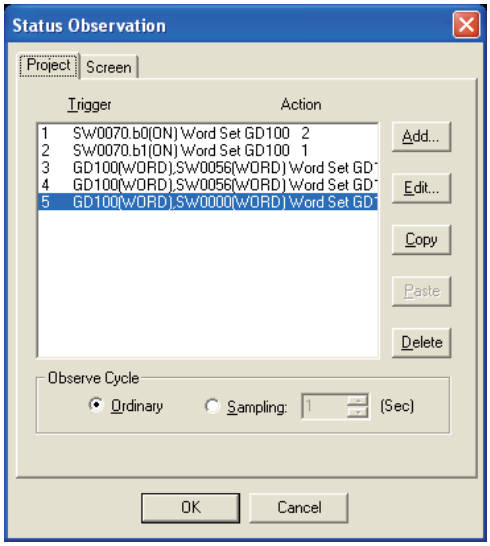
| | |
|---|---|
| Condition 1: SW70.b0 (while ON) | ← Station No. 1 is abnormal. |
| Condition 2: GD100<100 | |
| Operation : GD100= GD100+100 | ← Station No. is changed to 2. |

| | |
|---|---|
| Condition 1: SW70.b1 (while ON) | ← Station No. 2 is abnormal. |
| Condition 2: GD100>100 | |
| Operation : GD100= GD100-100 | ← Station No. is changed to 1. |

| | |
|---|---|
| Condition 1: GD100==0 | ← The value of the screen changing device is 0. |
| Condition 2: SW56==1 | ← The current control station is Station No. 1. |
| Operation : GD100=2 | ← Screen No. is changed to 2 (for Station No. 1). |

| | |
|---|---|
| Condition 1: GD100==0 | ← The value of the screen changing device is 0. |
| Condition 2: SW56==2 | ← The current control station is Station No. 2. |
| Operation : GD100=102 | ← Screen No. is changed to 102 (for Station No. 2). |

| | |
|---|---|
| Condition 1: GD100==0 | ← The value of the screen changing device is 0. |
| Condition 2: SW56>2 | ← The current control station is not a redundant CPU. |
| Operation : GD100=2 | ← Screen No. is changed to 2 (for Station No. 1). |



❸ Create monitor screens.

- Create monitor screens whose network setting of each object is Station No. 1 as Screens No. 2 to 3.
- Create monitor screens whose network setting of each object is Station No. 2 as Screens No. 102 to 103.

❹ Change the screen changing device value in the script.

By choosing [Common] - [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the screen changing device value.

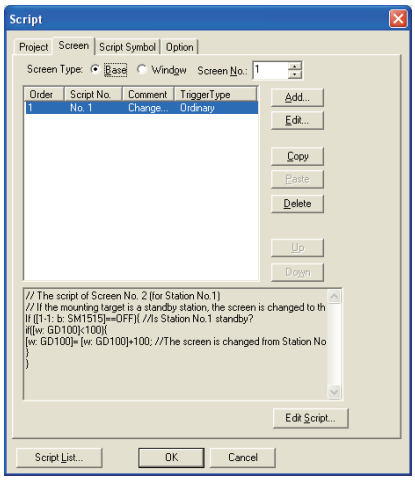
Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

- Screen script:

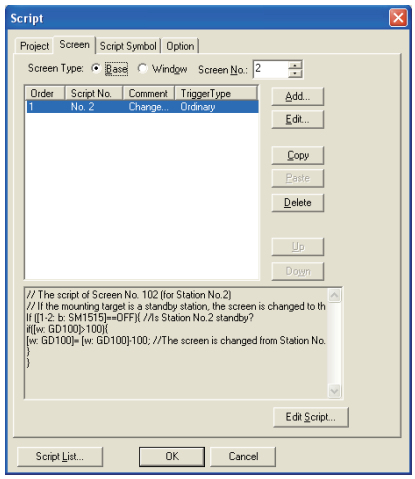
```
// The script of Screen No. 2 to 3 (for Station No.1)
// If the monitoring target is a standby station, the screen is changed to the other
one.
If ([1-1: b: SM1515]==OFF){
//Is Station No.1 standby?
if([w: GD100]<100){
  [w: GD100]= [w: GD100]+100;
//The screen is changed from Station No.1 to 2.
}
    }
```

```
// The script of Screen No. 102 to 103 (for Station No.2)
// If the monitoring target is a standby station, the screen is changed to the other one.
If ([1-2: b: SM1515]==OFF){
//Is Station No.2 standby?
if([w: GD100]>100){
  [w: GD100]= [w: GD100]-100;
//The screen is changed from Station No.2 to 1.
}
    }
```

Script setting screen of Screen No. 2 (for Station No.1)



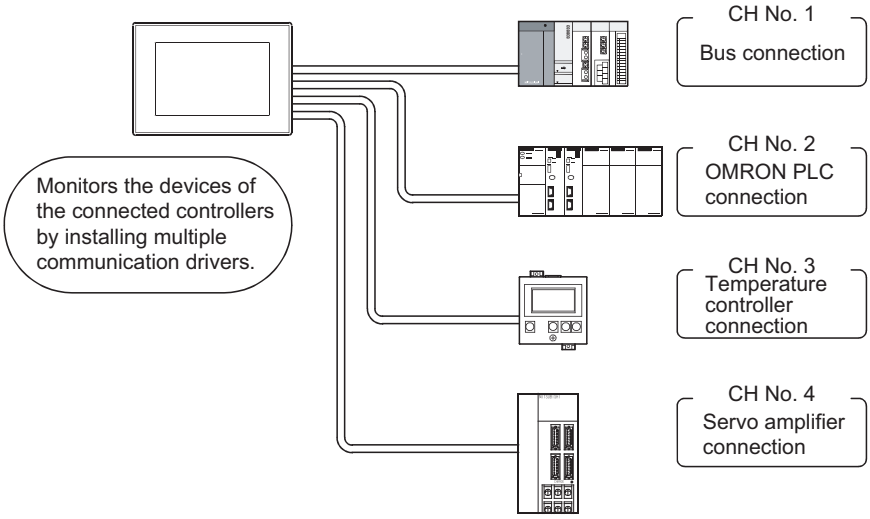

Script setting screen of Screen No. 102 (for Station No.2)



# 2.8 Multi-channel Function

## 2.8.1 About multi-channel function

The multi-channel function is used to monitor multiple controllers (PLC CPU, temperature controller, inverter, etc.) by installing multiple communication drivers to a GOT. Monitoring of up to 4 controllers (4 channels) is possible.




* With the GT155□, monitoring is possible for up to 2 controllers (2 channels).

**Point**

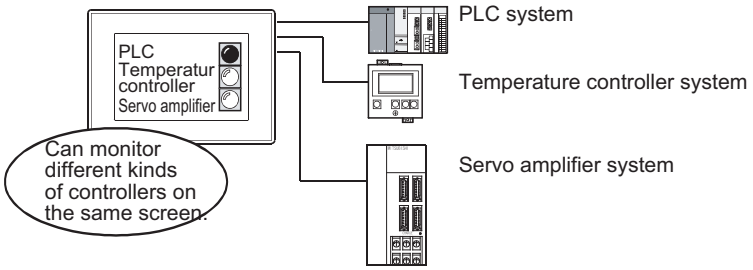
Required knowledge for using the multi-channel function

This manual explains the procedure used for selecting the system up to the step to start drawing.
For the procedure after drawing, i.e., the procedure from installation of OS to start-up of GOT, refer to the following manual.

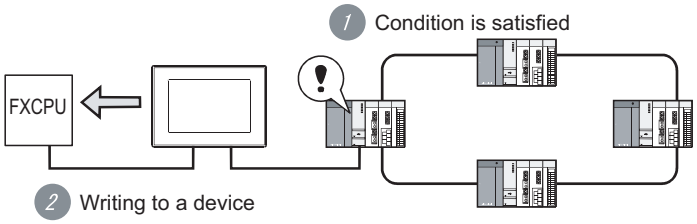
☞ GOT1000 Series Connection Manual (Section 52 Multi-channel Function)

## 1 Features of the multi-channel function

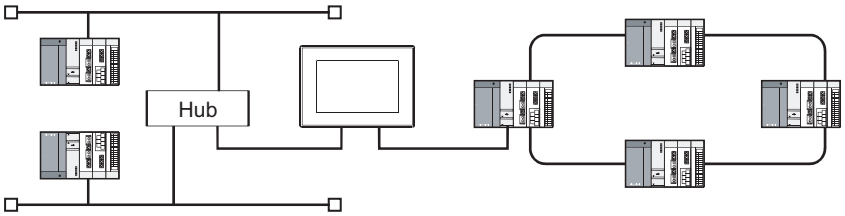
(1) With a single unit of GOT, the system consisting of PLC CPU, temperature controller, servo amplifier and other controllers can be configured.
The system including different kinds of controllers can be easily configured since one unit of GOT can monitor PLC CPU, temperature controller, servo amplifier, and other controllers.
In addition, centralized management of the information is possible because each system can be monitored at the GOT screen.




(2) Controlling FXCPU / third party PLC, etc. through the network (MELSECNET/H, etc.)
It is possible to control FXCPU / third party PLC, etc. through the network (MELSECNET/H, etc.).
For example, it is possible to execute read/write of a device such as FXCPU when the condition is satisfied, using the device of the PLC CPU on the network (MELSECNET/H, etc.) as the trigger for action.




(3) With one GOT, the Ethernet connection and the bus or network connection are available in combination. (GT16 only)
Since the Ethernet connection and the bus or network connection are available in combination, a system with multiple networks can be configured.
Also, the GOT can monitor multiple controllers on an Ethernet network.
(Multi-channel Ethernet connection)



## 2.8.2 Basics of interface selection

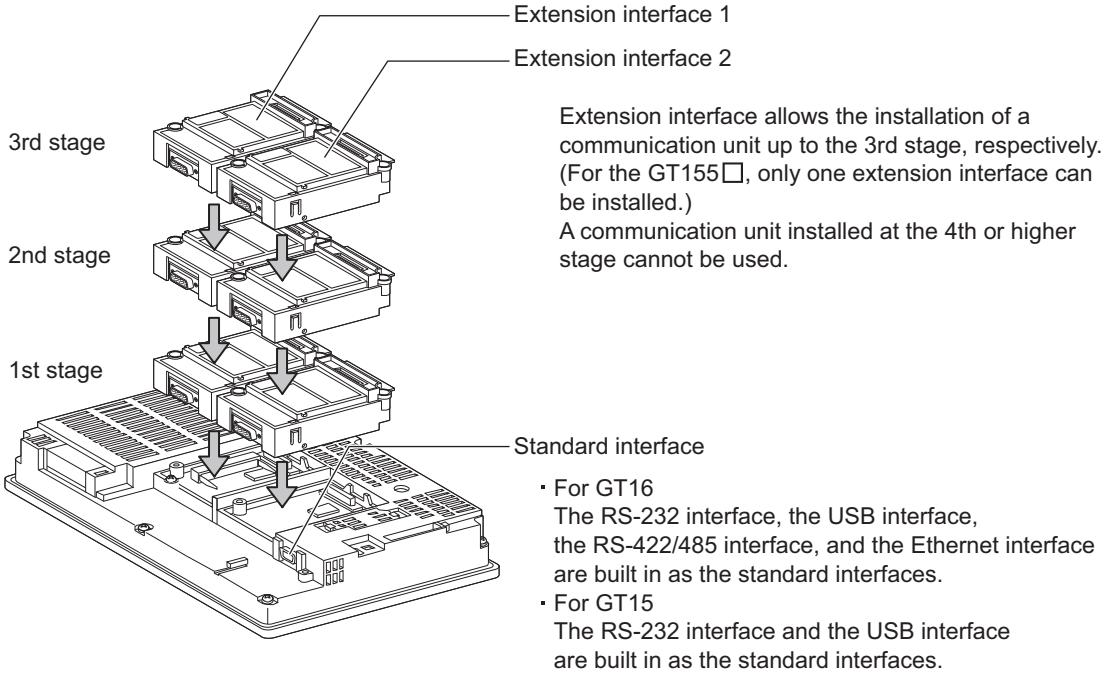
This section explains basic knowledge of the multi-channel function.

A general flow of operation from system selection for the multi-channel function to drawing is explained in Section 2.8.3 to Section 2.8.8.
It is recommended to refer to Section 2.8.3 to Section 2.8.8 when making necessary settings using the multi-channel function for the first time.

### 1 Multi-channel function specifications

How the units are installed and the multi-channel function specifications are described below.

(1) Image drawing of unit installation




(Example: In the case of the GT1575)

## (2) Specifications

| Item | Specifications | | | Description |
|---|---|---|---|---|
| | GT1695<br>GT1685<br>GT1675<br>GT1665 | GT1595<br>GT1585<br>GT157□<br>GT156□ | GT155□ | |
| Max. number of channels | 4 channels | | 2 channels | GT16<br>• In bus connection and network connection (*1), only 1 channel can be set for one GOT.<br>• For the Ethernet connection (*2), up to 4 channels can be set.<br>• When the Ethernet interface built in the GOT is used for connection other than communication with a controller (*3), the connection is not included in the count of the number of channels.<br>• The interface used for connecting to an external device (*4) is not included in the count of the number of channels.<br><br>GT15<br>• For the bus connection, network connection (*1), and Ethernet connection (*2), only 1 channel can be set for one GOT.<br>• When an Ethernet communication unit is used in other than communications with a controller (*3), it is not included in the count of the number of channels.<br>• The interface used for connecting to an external device (*4) is not included in the count of the number of channels. |
| Max. installable number of modules | 5 | | 3 | • Multiple identical units can be installed only for serial communication units.<br>• It is necessary to calculate the consumed current.<br>(☞ This section 2 Calculating consumed current)<br>• An RS-422 conversion unit is not included in the count of the number of units.(For GT155□, the RS-422 conversion unit is not applicable.) |
| Allowable number of stages | Max. 3 stages<br>(2 slots) | | Max. 3 stages<br>(1 slot) | • A module that occupies 2 slots (*5, *6, *7) must be installed at the first stage.<br>• For the video/RGB display, RGB output, and multimedia function, install the unit indicated in *6 at the first stage and the other units at the second or later stage.<br>• When a unit indicated in *7 is used, other extension units cannot be installed.<br>• The CF card unit must be installed on the last stage, if used. |

*1 MELSECNET/H connection, MELSECNET/10 connection, CC-Link IE controller network connection, CC-Link connection(intelligent device station)

*2 Ethernet connection, MODBUS® /TCP connection

*3 Gateway function, MES interface function, Ethernet download

*4 Fingerprint unit, barcode reader, RFID controller, or personal computer (remote personal computer operation function, FA transparent function, OS install, project data download)

*5 GT15-QBUS2, GT15-ABUS2, GT15-J71GP23-SX, GT15-J71LP23-25, GT15-J71BR13, GT15-J61BT13

*6 GT16M-V4, GT15V-75V4, GT16M-R2, GT15V-75R1, GT16M-V4R1, GT15V-75V4R1, GT16M-ROUT, GT15V-75ROUT, GT16M-MMR

*7 GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L, GT15-75J71LP23-Z, GT15-75J71BR13-Z, GT15-75J61BT13-Z
Usable units differ depending on the GOT.
For units usable with each GOT, refer to the following manuals.

☞ GT16 User's Manual (Hardware)
GT15 User's Manual
GOT1000 Series Connection Manual

## 2 Calculating consumed current

For using multiple extension units, a bar code reader, or a RFID controller, the total current for the extension units, bar code reader, or RFID controller must be within the current that the GOT can supply. For the current that the GOT can supply and the current for the extension units, bar code reader, or RFID controller, refer to the below tables. Make sure that the total of consumed current is within the capacity of the GOT.

(1) Current supply capacity of the GOT

| GOT type | Capacity (A) |
|---|---|
| GT1695M-X | 2.4 |
| GT1685M-S | 2.4 |
| GT1675M-S | 2.4 |
| GT1675M-V | 2.4 |
| GT1665M-S | 2.4 |
| GT1665M-V | 2.4 |
| GT1595-X | 2.13 |
| GT1585V-S | 1.74 |
| GT1585-S | 1.74 |
| GT1575V-S | 2.2 |
| GT1575-S | 2.2 |
| GT1575-V, GT1572-VN | 2.2 |
| GT1565-V, GT1562-VN | 2.2 |
| GT1555-V | 1.3 |
| GT1555-Q, GT1550-Q | 1.3 |

(2) Current consumed by an extension unit / barcode reader / RFID controller

| Module type | Consumed current (A) |
|---|---|
| GT15-QBUS, GT15-QBUS2, GT15-75QBUSL, GT15-75QBUS2L | 0.275*1 |
| GT15-ABUS, GT15-ABUS2, GT15-75ABUSL, GT15-75ABUS2L | 0.12 |
| GT15-RS2-9P | 0.29 |
| GT15-RS4-9S | 0.33 |
| GT15-RS4-TE | 0.3 |
| GT15-RS2T4-9P | 0.098 |
| GT15-J71E71-100 | 0.224 |
| GT15-J71GP23-SX | 1.07 |
| GT15-J71LP23-25 | 0.56 |
| GT15-J71BR13 | 0.77 |
| GT15-J61BT13 | 0.56 |
| Bar code reader | *2 |
| GT15-PRN | 0.09 |
| GT16M-V4 | 0.12*1 |
| GT15V-75V4 | 0.2*1 |
| GT16M-R2 | 0*1 |
| GT15V-75R1 | 0.2*1 |
| GT16M-V4R1 | 0.12*1 |
| GT15V-75V4R1 | 0.2*1 |
| GT16M-ROUT | 0.11*1 |
| GT15V-75ROUT | 0.11 |

(Continued to next page)

| Module type | Consumed current (A) |
|---|---|
| GT16M-MMR | 0.27*1 |
| GT15-CFCD | 0.07 |
| GT15-CFEX-C08SET | 0.15 |
| GT15-SOUT | 0.08 |
| GT15-DIO | 0.1 |
| GT15-DIOR | 0.1 |
| RFID controller | *2 |
| GT15-80FPA | 0.22 |

*1 Value used for calculating the current consumption of the multi-channel function.
For the specifications of the unit, refer to the manual included with the unit.

*2 When the GOT supplies power to a barcode reader or a RFID controller from the standard interface, add their consumed current. (Maximum value is less than 0.3 A.)

(3) Calculation example

(a) When connecting the GT15-J71BR13, GT15-RS4-9S (3 units), GT15-J71E71-100 (for the gateway function) and a bar code reader (0.12 A) to the GT1575-V

| Current supply capacity of GOT (A) | Total consumed current (A) |
|---|---|
| 2.2 | 0.77+0.33+0.33+0.33+0.224+0.12=2.104 |

Since the calculated value is within the capacity of the GOT, they can be connected to the GOT.

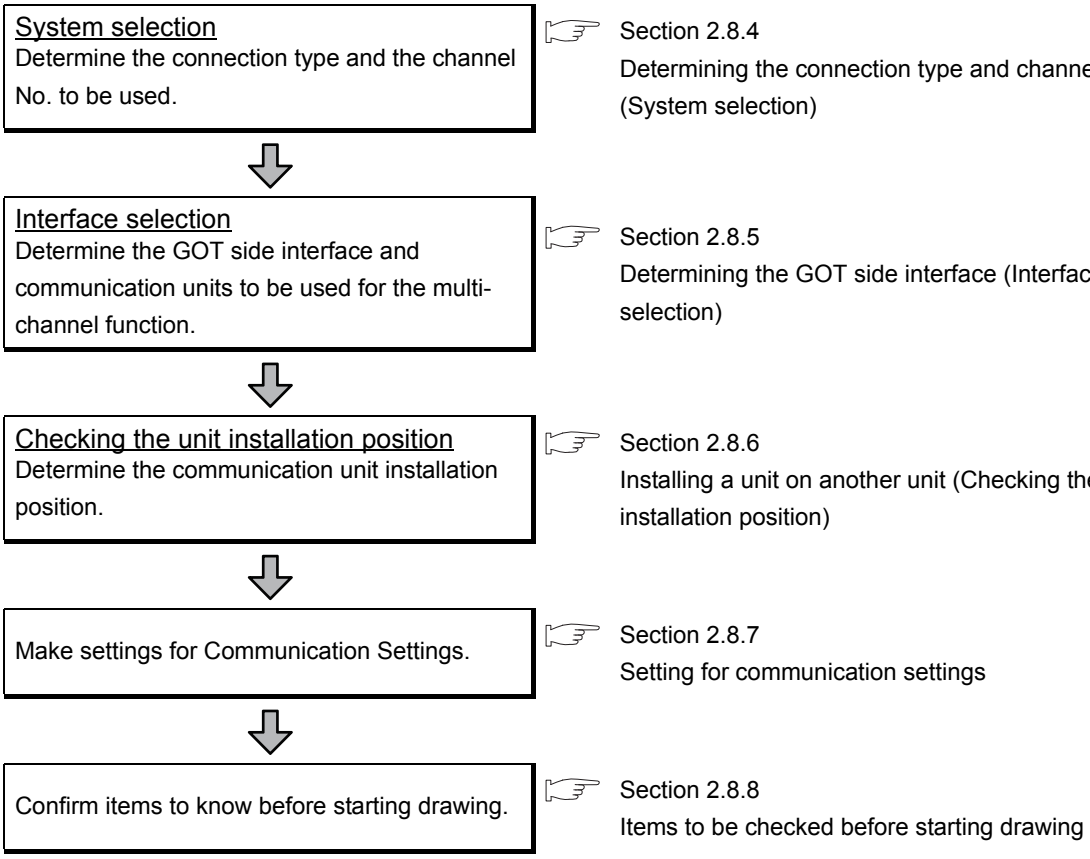
(b) When connecting the GT15-J71BR13, GT15-RS4-9S (2 units), GT15-J71E71-100 (for the gateway function) and a bar code reader (0.12 A) to the GT1585-S

| Current supply capacity of GOT (A) | Total consumed current (A) |
|---|---|
| 1.74 | 0.77+0.33+0.33+0.224+0.12=1.774 |

Since the calculated value exceeds the capacity of the GOT, such configuration is not allowed.

## 2.8.3 General flow from system selection to drawing

System selection for using the multi-channel function is explained below.
Make selection and setting for the multi-channel function by following the order shown below.



## 2.8.4 Determining the connection type and channel No. (System selection)

### 1 Determining the connection type

(1) GT16

For GT16, the combinations of the bus or network connection, the Ethernet connection, and the serial connection are available as shown in the following table.

| Bus / network connection | Ethernet connection | Serial connection |
|---|---|---|
| • Bus connection<br>• MELSECNET/H connection (PLC to PLC network)<br>• MELSECNET/10 connection (PLC to PLC network)<br>• CC-Link IE controller network connection<br>• CC-Link connection (intelligent device station)<br>• CNC connection (MELSECNET/10 connection (PLC to PLC network), CC-Link connection (intelligent device station)) | • Ethernet connection<br>• Third party PLC connection (Ethernet connection)<br>• MODBUS® /TCP connection<br>• Robot controller connection<br>• CNC connection (Ethernet connection) | • Direct CPU connection<br>• Computer link connection<br>• CC-Link connection (via G4)<br>• Third party PLC connection (serial connection)<br>• Microcomputer connection<br>• GOT multidrop connection<br>• MODBUS® /RTU connection,<br>• Temperature controller connection<br>• Inverter connection<br>• Servo amplifier connection<br>• CNC connection (serial connection) |

The following shows the applicable combinations of connection types, the number of channels, and restricted functions.

○: Allowed △: Restricted

| Item | Allowable combination of connection types | GOT to be used | Functions that are restricted by the connection type*1 | |
|---|---|---|---|---|
| | | GT1695<br>GT1685<br>GT1675<br>GT1665 | FA transparent function | |
| | | | RS-232 | USB |
| (a) | • Bus / network connection: 1 channel<br>• Serial connection: 1 to 3 channels | Max. 4 channels | △*2 | ○ |
| (b) | • Bus / network connection: 1 channel<br>• Ethernet connection: 1 to 3 channels | Max. 4 channels | △*2 | ○ |
| (c) | • Ethernet connection: 1 to 3 channels<br>• Serial connection: 1 to 3 channels | Max. 4 channels | △*2 | ○ |
| (d) | • Bus / network connection: 1 channel<br>• Ethernet connection: 1 to 2 channels<br>• Serial connection: 1 to 2 channels | Max. 4 channels | △*2 | ○ |
| (e) | • Serial connection: 4 channels | Max. 4 channels | △*2 | ○ |
| (f) | • Ethernet connection: 4 channels | Max. 4 channels | △*2 | ○ |

*1 When the functions below are used, the connectable number of channels may be restricted depending on the combination of the functions to be used.

- Fingerprint authentication
- Barcode function
- RFID function
- Remote personal computer operation function
- Report function
- Hard copy(For printer output)
- Video/RGB display
- RGB output
- External I/O / Operation panel
- Sound output
- Multimedia function
- Functions with the CF card unit or CF card extension unit

The video/RGB display, the RGB output, and the multimedia function cannot be used together.
The CF card unit and the CF card extension unit cannot be used at the same time.
For details, refer to the following.

☞ Section 2.8.5 Determining the GOT side interface (Interface selection)

*2 For the FA transparent function via the RS-232 connection, the RS-232 interface built in the GOT is available only.
When the RS-232 interface built in the GOT is already used, the FA transparent function is not available.

(2) GT15

For GT15, the combinations of the bus, network, or Ethernet connection and the serial connection are available as shown in the following table.

| Bus / network / Ethernet connection | Serial connection | |
|---|---|---|
| • Bus connection | • Direct CPU connection | • Computer link connection |
| • MELSECNET/H connection (PLC to PLC network) | • CC-Link connection (via G4) | • Third party PLC connection (serial connection) |
| • MELSECNET/10 connection (PLC to PLC network) | • GOT multidrop connection | • MODBUS® /RTU connection |
| • CC-Link IE controller network connection | • Microcomputer connection | • Temperature controller connection |
| • CC-Link connection (intelligent device station) | • Inverter connection | • Servo amplifier connection |
| • Ethernet connection | • CNC connection (serial connection) | |
| • Third party PLC connection (Ethernet connection) | | |
| • MODBUS® /TCP connection | | |
| • Robot controller connection | | |
| • CNC connection (MELSECNET/10 connection (PLC to PLC network), CC-Link connection (intelligent device station), Ethernet connection) | | |

The number of channels and the functions that can be used differ depending on the GOT to be used. The table below shows the allowable combinations of connection types, the number of channels and restricted functions.

○: Allowed △: Restricted

| Item | Allowable combination of connection types | GOT to be used | | Functions that are restricted by the connection type*1*2 | |
|---|---|---|---|---|---|
| | | GT1595 GT1585 GT157□ GT156□ | GT155□ | FA transparent function | |
| | | | | RS-232 | USB |
| (a) | • Bus / network / Ethernet connection: 1 channel<br>• Serial connection: 1 to 3 channels | Max. 4 channels | Max. 2 channels | △*3 | ○ |
| (b) | • Serial connection: 4 channels | Max. 4 channels | Max. 2 channels | △*3 | ○ |

*1 When the functions below are used, the connectable number of channels may be restricted depending on the combination of the functions to be used.
• Fingerprint authentication • Barcode function • RFID function
• Remote personal computer operation function • Report function • Hard copy(For printer output)
• Video/RGB display • RGB output • External I/O / Operation panel
• Sound output • Functions with the CF card unit or CF card extension unit
Video/RGB display and RGB output cannot be used at the same time.
The CF card unit and the CF card extension unit cannot be used at the same time.
For details, refer to the following.
☞ Section 2.8.5 Determining the GOT side interface (Interface selection)

*2 When any of the connection methods below is used, Ethernet connection cannot be used although Ethernet download, gateway function and MES interface function can be used.
• Bus connection • MELSECTNET/H connection • MELSECNET/10 connection
• CC-Link IE controller network connection • CC-Link connection
• MODBUS® /TCP connection

*3 For the FA transparent function via the RS-232 connection, the RS-232 interface built in the GOT is available only.
When the RS-232 interface built in the GOT is already used, the FA transparent function is not available.

## 2 Determining the channel No.

(1) Channel No. of PLC, motion controller, temperature controller, inverter, servo amplifier, CNC, robot controller

After determining the connection type to be used in 1, determine the channel Nos. (CH No. 1 to CH No. 4) to be used for the respective connection types.
There are no special cautions to be attended to for determining channel Nos.
Set the channel No. by selecting [Common] → [System Environment] → [System Settings] from the menu.

☞ Section 3.1 GOT/Controller Type Setting

(2) Channel No. of external devices (fingerprint unit, barcode reader, RFID controller, and personal computer)
When connecting a fingerprint unit, barcode reader, RFID controller, or personal computer, select the channel No. (No.5 to No.8) for each external device.

(a) Number of external devices that can be connected to the GOT
One fingerprint unit, barcode reader, RFID controller, or personal computer (remote personal computer operation function) can be connected to one GOT.
One driver must be set for one channel No. (No.5 to No.8) in the communication settings.

(b) Operator authentication (external authentication or fingerprint authentication)
When using the operator authentication (external authentication or fingerprint authentication), the RFID controller is available for the channel No.8 only.

(c) External devices that requires the power supply from the GOT
When using the barcode reader or RFID controller that requires the power supply from the GOT, set the channel No.8.
When the channel No.5 to No.7 is set, the GOT cannot supply the power.

---

Write Check Sheet

☞ Section 2.8.10 Multi-channel function check sheet

Enter the selections having been made in the steps above to the check sheet.

1 Selection of connection type

Enter the name of connection type to be used.

1 Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, motion controller CPU, temperature controller, inverter, servo amplifier, CNC, robot controller (No.1 to No.4)

| CH No. | 1 Selection of connection type (☞ Section 2.8.4) | 2 Selection of interface (communication unit) (☞ Section 8.2.5) |
|---|---|---|
| 1 | Connection name Bus (Q) | |
| 2 | Connection name OMRON PLC | |
| 3 | Connection name OMRON temp. | |
| 4 | Connection name Servo amplifier | |

(2) Channel No. of fingerprint unit, barcode reader, RFID controller, personal computer (No.5 to No.8)

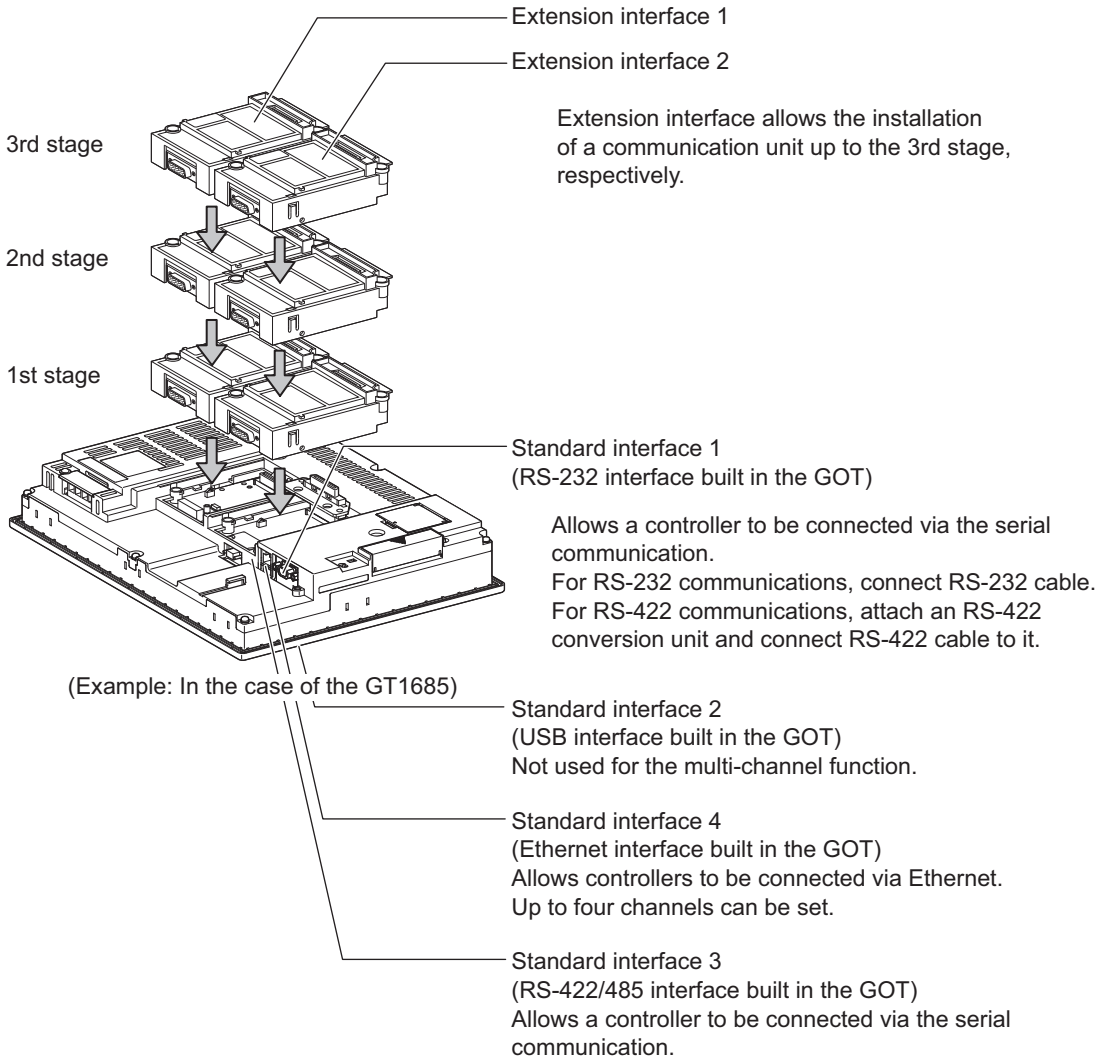
| CH No. | 1 Selection of connection type (☞ Section 2.8.4) | 2 Selection of interface (communication unit) (☞ Section 8.2.5) |
|---|---|---|
| 5 | Connection name Bar code reader | |
| 6 | Connection name | |
| 7 | Connection name | |
| 8 | Connection name Fingerprint unit. | RS-232 interface built in a GOT |

## 2.8.5 Determining the GOT side interface (Interface selection)

To use the multi-channel function, add interfaces to the GOT with the following methods if required.

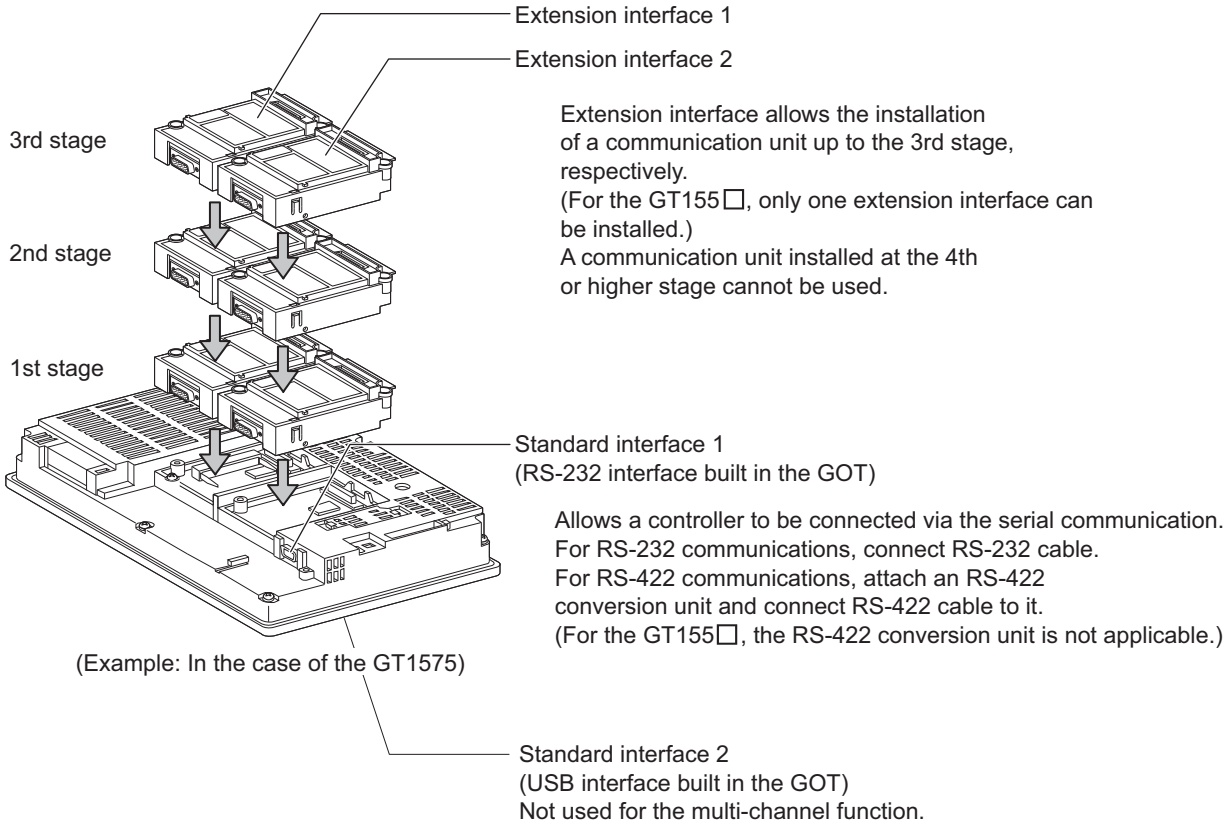
(1) GT16

- Install communication units on the extension interfaces.
- Use communication units installed on the extension interfaces with the RS-232 interface, the RS422/485 interface, and/or the Ethernet interface built in the GOT.



(2) GT15

- Install communication units on the extension interfaces.
- Use communication units installed on the extension interfaces with the RS-232 interface built in the GOT.



For the connection via the connection type selected in Section 2.8.4, select interfaces and communication units to be used.
Select the interfaces and communication units according to the connection type by referring to the following.

| Selected connection type | Reference for required interface and communication unit |
|---|---|
| • Bus connection | ☞ This section 1 GOT interface used for bus connection |
| • MELSECNET/H connection (PLC to PLC network) | ☞ This section 2 GOT interface used for network connection |
| • MELSECNET/10 connection (PLC to PLC network) | |
| • CC-Link IE controller network connection | |
| • CC-Link connection (intelligent device station) | |
| • CNC connection (MELSECNET/10 connection (PLC to PLC network), CC-Link connection (intelligent device station)) | |
| • Ethernet connection | ☞ This section 3 GOT interface used for Ethernet connection |
| • Third party PLC connection (Ethernet connection) | |
| • MODBUS® /TCP connection | |
| • Robot controller connection | |
| • CNC connection (Ethernet connection) | |
| • Direct CPU connection | ☞ This section 4 GOT interface used for serial connection |
| • Computer link connection | |
| • CC-Link connection (via G4) | |
| • Third party PLC connection (serial connection) | |
| • Microcomputer connection | |
| • GOT multidrop connection | |
| • MODBUS® /RTU connection | |
| • Temperature controller connection | |
| • Inverter connection | |
| • Servo amplifier connection | |
| • CNC connection (serial connection) | |
| • Other functions | ☞ This section 5 Interfaces and option units used for other functions |

**Point**

Number of units that can be installed to a GOT

The number of units that can be installed to extension interfaces differs depending on the GOT type.

- GT1695, GT1685, GT1675, GT1665, GT1595, GT1585, GT157□, GT156□
  Up to 5 units can be installed (up to 4 communication units)
- GT155□
  Up to 3 units can be installed (up to 2 communication units)

## 1 GOT interface used for bus connection

For the bus connection, use the following communication units.

| Interface | Model*1 | | |
|---|---|---|---|
| Bus connection unit | GT15-75QBUS(2)L,<br>GT15-ABUS(2) | GT15-75ABUS(2)L, | GT15-QBUS(2), |

*1 To mount multiple units, the GT15-QBUS(2) or GT15-ABUS(2) is required.

**Point**

(1) About bus connection units to be used
GT15-QBUS(2) and GT15-ABUS(2) can be used independent of the number of serial connection channels.
When using the multi-channel function for the first time, it is recommended to use GT15-QBUS(2) or GT15-ABUS(2).

(2) Restrictions by bus connection unit installation
For the following functions, use the GT15-QBUS(2) or GT15-ABUS(2), regardless of the number of channels used for the serial connection.
With the GT15-75QBUS(2)L or GT15-75ABUS(2)L, the following functions are not available.

| Function | | |
|---|---|---|
| Remote personal computer operation function, | | Report function, |
| Hard copy(For printer output), | Video/RGB display, | RGB output, |
| External I/O, | Operation panel, | Sound output, |
| Multimedia function, | Functions with the CF card unit or CF card extension unit, | |
| Ethernet download*1, | Gateway function*1, | MES interface function*1 |

*1 Since the GT16 has the Ethernet interface, the function is available regardless of the bus connection unit to be used.

## 2 GOT interface used for network connection

For the network connection, use the following communication units.

| Interface | Model | |
|---|---|---|
| MELSECNET/H communication unit | GT15-J71LP23-25, | GT15-J71BR13 |
| CC-Link IE controller network communication unit | GT15-J71GP23-SX | |
| CC-Link communication unit | GT15-J61BT13 | |

**Point**

When using GT15-75J71LP23-Z, GT15-75J71BR13-Z, or GT15-75J61BT13-Z

(1) GT16
The GT15-75J71LP23-Z, GT15-75J71BR13-Z, and GT15-75J61BT13-Z are not applicable.

(2) GT15
No unit can be mounted on the GT15-75J71LP23-Z, GT15-75J71BR13-Z, or GT15-75J61BT13-Z. (For the GT155□, the GT15-75J71LP23-Z, GT15-75J71BR13-Z, and GT15-75J61BT13-Z are not applicable.)
Therefore, the RS-232 interface built in the GOT is used for the serial connection.Because of this, the functions using the RS-232 interface, including the barcode function, are not available.
The gateway function, the printer output, and others are also not available since no unit can be mounted on the above models.

## 3 GOT interface used for Ethernet connection

For the Ethernet connection, use the following interface built in the GOT and communication unit.

(1) GT16

| Interface | Name |
|---|---|
| Interface built in GOT | Ethernet interface*1 |

*1 Up to four channels can be used.

(2) GT15

| Interface | Model |
|---|---|
| Ethernet communication unit | GT15-J71F71-100 |

**Point**

When using Ethernet download, gateway function, or MES interface function

(1) GT16
The Ethernet download, the gateway function, and the MES interface function are available using the Ethernet interface built in the GOT (one channel).

(2) GT15
For using Ethernet download, the gateway function and MES interface function, only one Ethernet communication unit is required.

## 4 GOT interface used for serial connection

For the serial connection, provide interfaces equivalent to the number of channels by using the following interfaces built in the GOT and communication units in combinations.

(1) GT16

| Interface | Name/model | | |
|---|---|---|---|
| Interface built in GOT | RS-232 interface*1*2, | RS-422/485 interface | |
| Serial communication unit | GT15-RS2-9P, | GT15-RS4-9S, | GT15-RS4-TE |

*1 The operator authentication (external authentication or fingerprint authentication) or the FA transparent function (RS-232 communication) uses the RS-232 interface built in the GOT.

*2 For the RS-422 communication using the RS-232 interface built in the GOT, the RS-422 conversion unit is required.

(2) GT15

| Interface | Name/model | | |
|---|---|---|---|
| Interface built in GOT | RS-232 interface*1*2 | | |
| Serial communication unit | GT15-RS2-9P, | GT15-RS4-9S, | GT15-RS4-TE |

*1 The operator authentication (external authentication or fingerprint authentication) or the FA transparent function (RS-232 communication) uses the RS-232 interface built in the GOT.

*2 For the RS-422 communication using the RS-232 interface built in the GOT, the RS-422 conversion unit is required.(For the GT155□, the RS-422 conversion unit is not applicable.)

## 5 Interfaces and option units used for other functions

When the following functions are used in combinations, the number of available channels may vary according to the combinations of units

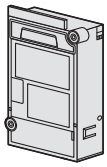
| Function | | | |
|---|---|---|---|
| Remote personal computer operation function, | | Report function, | Hard copy(For printer output), |
| Video/RGB display, | RGB output, | External I/O, | Operation panel function, |
| Sound output, | Multimedia function, | Functions with the CF card unit or CF card extension unit, | |
| Ethernet download*1, | Gateway function*1, | MES interface function*1 | |

*1 For GT16, the function is available regardless of the combinations of units because the GOT has the Ethernet interface.
For GT15, the function is not available when the Ethernet communication unit cannot be mounted because of the combination of units.

Refer to the explanation below to check if the number of channels for the multi-channel function to be used is restricted or not. If it is restricted, review the system configuration.

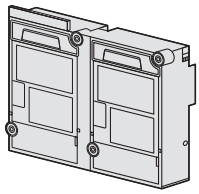
(1) Number of stages taken up by the individual functions (number of slots)

(a) Report function, Hard copy(For printer output), sound output, external I/O and Operation panel functions



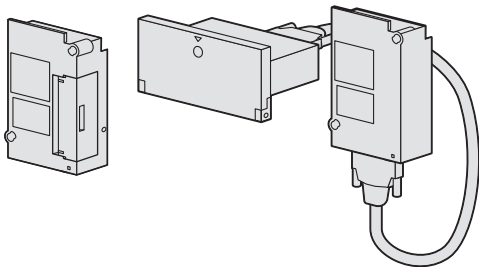
The printer unit, sound output unit, or external I/O unit is required depending on the function to be used.
Each unit uses one stage (one slot) of an extension interface.

(b) Video/RGB display and RGB output functions



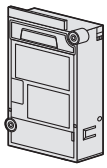
A video input unit, an RGB input unit, a video/RGB input unit or an RGB output unit is required corresponding to the function to be used.
Each type of unit uses 1 stage (2 slots) of extension interface.
Only one piece of each type of unit can be installed on a GOT

(c) Functions with CF card unit or CF card extension unit



The CF card unit or CF card extension unit is required.
The CF card unit or CF card extension unit uses one stage (one slot) of an extension interface.

(d) Ethernet download, gateway and MES interface functions



- GT16
  Use the interface built in the GOT.
  The Ethernet communication unit is not applicable.
- GT15
  An Ethernet communication unit is required.
  An Ethernet communication unit uses 1 stage (1 slot) of extension interface.
  If the GOT is already connected in the Ethernet connection, the Ethernet communication unit installed in the GOT is used.

(2) Combinations of units that affect the number of available channels

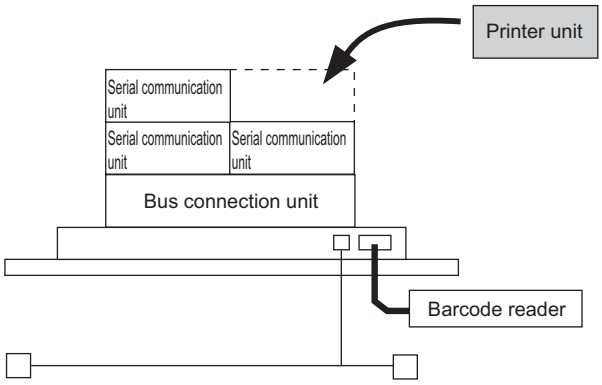
The following are examples of unit combinations that affect the number of available channels.
For details of unit installing position, refer to the following.

☞ Section 2.8.6 Installing a unit on another unit (Checking the unit installation position)

Example 1) To use the printer output and the Ethernet download in the system using the bus connection (1 channel), serial connection (3 channels), and the barcode function

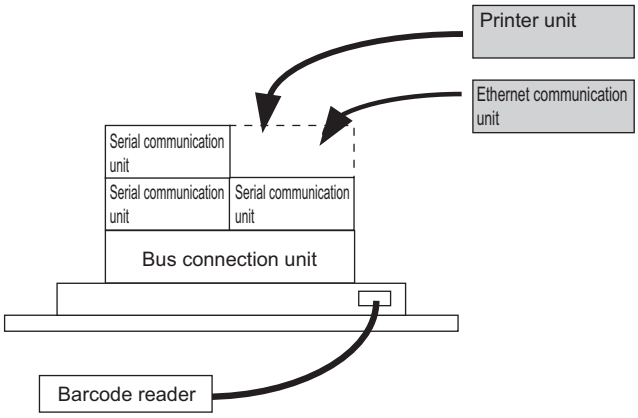
(a) For GT16

Mount the printer unit at the third stage, and use the Ethernet interface built in the GOT. This enables both the printer output of the report function and the Ethernet download.

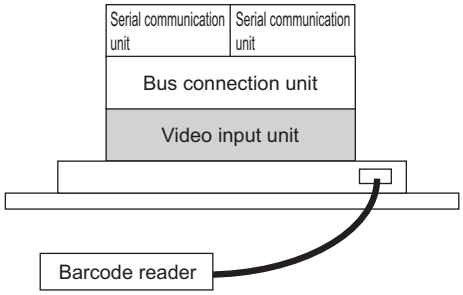



(b) For GT15

Because units can be mounted up to the third stage for GT15, the printer output of the report function and the Ethernet download cannot be used together.



Example 2) To add the serial connection (1 channel) to the system using the bus connection (unit occupying 2 slots: 1 channel), the serial connection (2 channels), the video display, and the barcode function




Since there are no available areas left for installing a unit, serial connection can be used for up to 2 channels.

Write Check Sheet

Section 2.8.10 Multi-channel function check sheet

Enter the selections having been made in the steps above to the check sheet.

② Selection of interface (communication unit)

Enter the name of interface and the model name of communication unit to be used for each of the connection type.

1 Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, motion controller CPU, temperature controller, inverter, servo amplifier, CNC, robot controller (No.1 to No.4)

| CH No. | ① Selection of connection type (Section 2.8.4) | ② Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 1 | Connection name Bus (Q) | GT15 - QBUS2 |
| 2 | Connection name OMRON PLC | GT15 - RS4-9S |
| 3 | Connection name OMRON temp. | GT15 - RS2 - 9P |
| 4 | Connection name Servo amplifier | GT15 - RS2 - 9P |

(2) Channel No. of fingerprint unit, barcode reader, RFID controller, personal computer (No.5 to No.8)

| CH No. | ① Selection of connection type (Section 2.8.4) | ② Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 5 | Connection name Bar code reader | GT15 - RS2 - 9P |
| 6 | Connection name | |
| 7 | Connection name | |
| 8 | Connection name Fingerprint unit. | RS-232 interface built in a GOT |

* For the entry of the communication unit model name, refer to Units to be used.

## 2.8.6 Installing a unit on another unit (Checking the unit installation position)

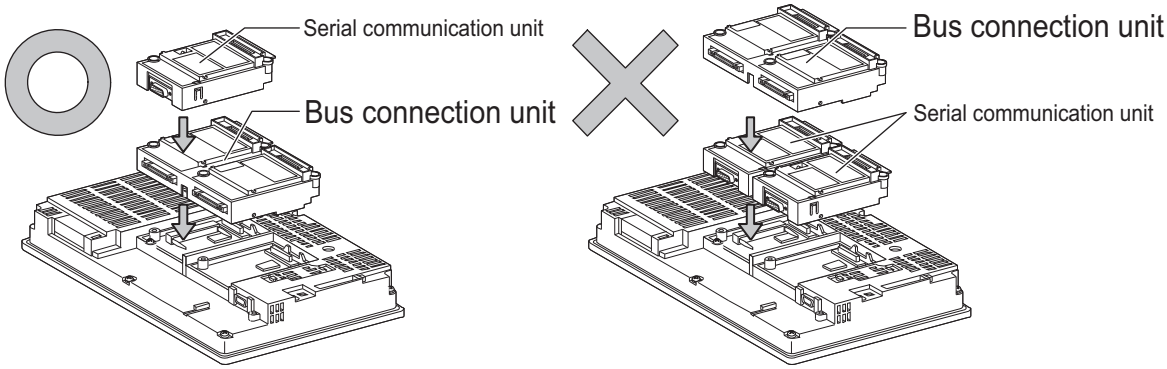
Precautions for installing units on another unit are described below.
For the installation method of a unit, refer to the manual below.

☞ GT16 User's Manual (Hardware)
GT15 User's Manual

### 1 When using a bus connection unit

Bus unit connection installation position varies depending on the model to be used.

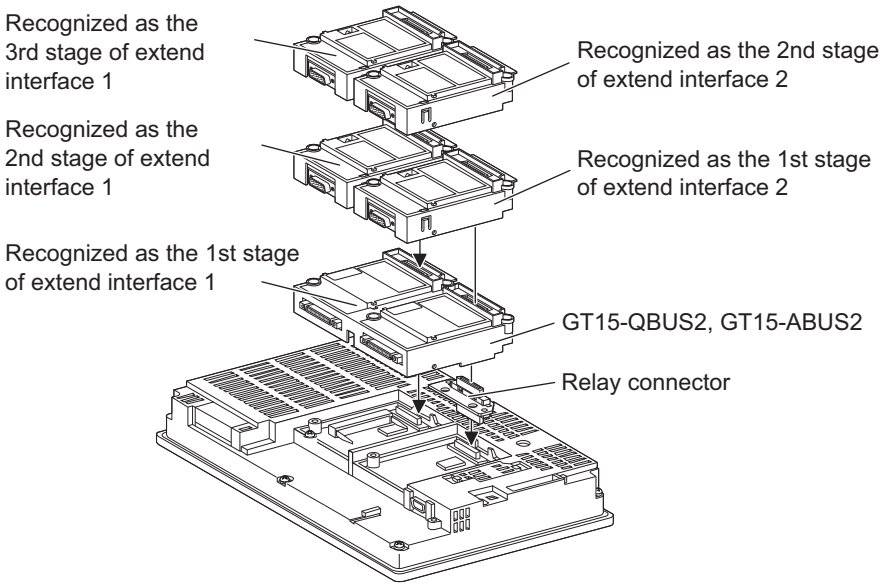
(1) Wide bus unit (GT15-75QBUS(2)L, GT15-75ABUS(2)L, GT15-QBUS2, GT15-ABUS2)
Install a bus connection unit in the 1st stage of the extend interface.
If a bus connection unit is installed in the 2nd stage or above, the unit cannot be used.
Example: Installing a bus connection unit and serial communication units



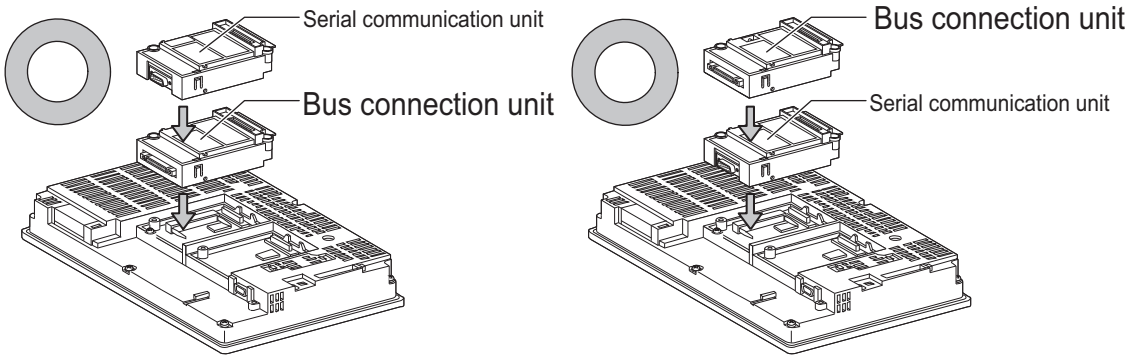

**Point**

Cautions for using GT15-QBUS2 and GT15-ABUS2

The installed stage number of communications units installed on GT15-QBUS2 or GT15-ABUS2 recognized by the GOT varies depending on the extend interface position.
For communication units installed at the extend interface 2 side, physical position and the position recognized by the GOT differ from each other. Even if a communication unit is physically installed in the 2nd stage position, the GOT recognizes the position as the 1st stage.



(2) Standard size bus connection unit (GT15-QBUS and GT15-ABUS)
A bus connection unit can be installed in any position (1st to 3rd stage) of the extend interface.
Example: Installing a bus connection unit and serial communication units

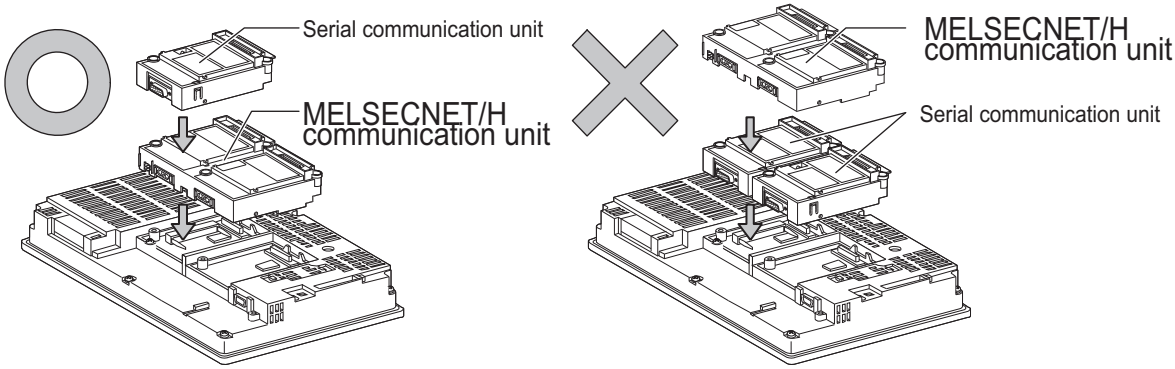


## 2 When using a MELSECNET/H communication unit, CC-Link IE controller network communication unit, or CC-Link communication unit (GT15-J61BT13)

Install a MELSECNET/H communication unit, CC-Link IE controller network communication unit, or CC-Link communication unit at the 1st stage of an extension interface.

These communication units cannot be used if installed in the 2nd or higher stage.

Example: When installing a MELSECNET/H communication unit and a serial communication unit

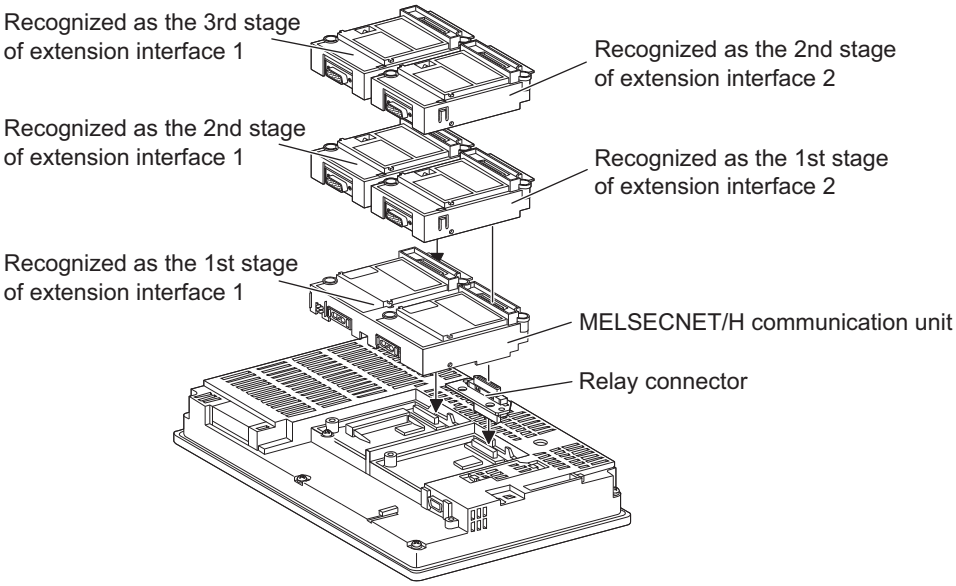



**Point**

Precautions for using a MELSECNET/H communication unit, CC-Link IE controller network communication unit, CC-Link communication unit GT15-J61BT13

The installed stage number of communication units installed on a MELSECNET/H communication unit, CC-Link IE controller network communication unit, or CC-Link communication unit recognized by the GOT varies depending on the extension interface.

As for communication units installed at the extension interface 2 side, even if the communication unit is physically installed in the 2nd stage position, the GOT recognizes the position as the 1st stage.



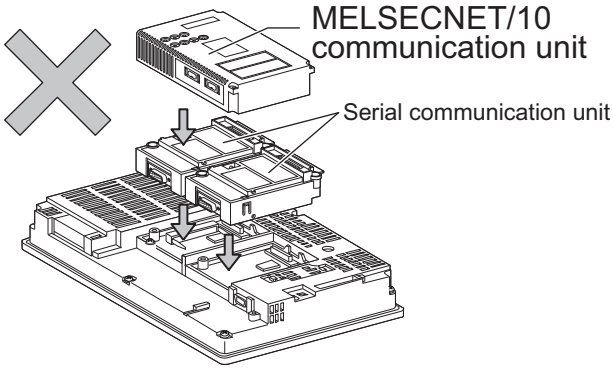
## 3 When using a MELSECNET/10 communication unit (GT15-75J71LP23-Z, GT15-75J71BR13-Z) or CC-Link communication unit (GT15-75J61BT13-Z)

Install a MELSECNET/10 communication unit (GT15-75J71LP23-Z, GT15-75J71BR13-Z) or CC-Link communication unit (GT15-75J61BT13-Z) at the 1st stage of the extend interface.

When the above unit is installed at the 2nd or 3rd stage, the unit does not operate.

For GT16 and the GT155□, the MELSECNET/10 communication unit (GT15-75J71LP23-Z, GT15-75J71BR13-Z) and the CC-Link communication unit (GT15-75J61BT13-Z) are not applicable.

Example: Installing a MELSECNET/10 communication unit and serial communication units



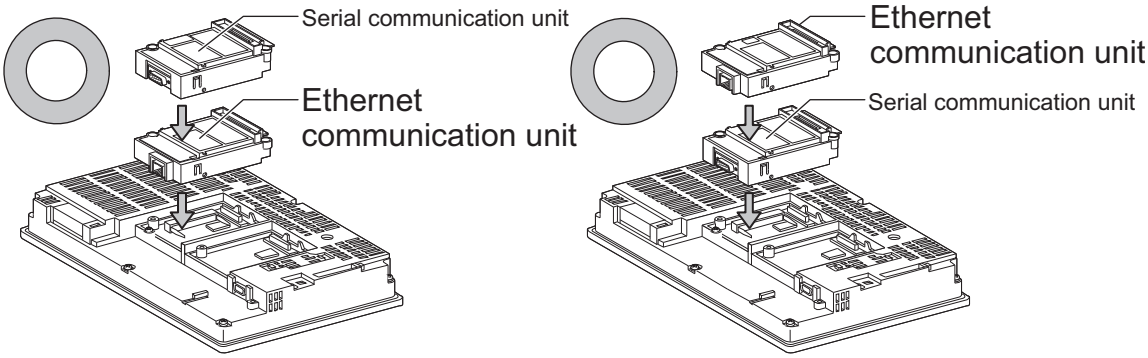

## 4 When using an Ethernet communication unit

An Ethernet communication unit can be installed in any position (1st to 3rd stage) of the extension interface.

For GT16, the Ethernet communication unit is not applicable.

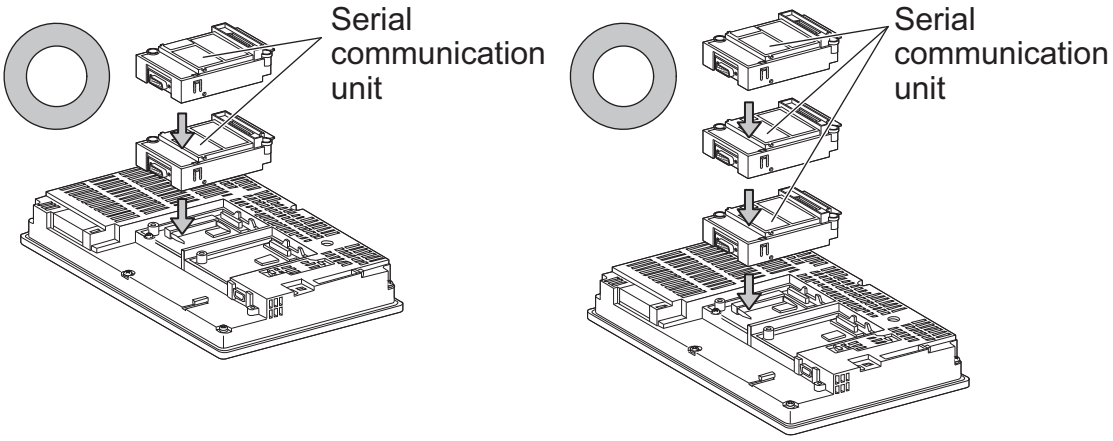
Use the Ethernet interface built in the GOT.

Example: Installing an Ethernet communication unit and serial communication units



## 5 When using a serial communication unit

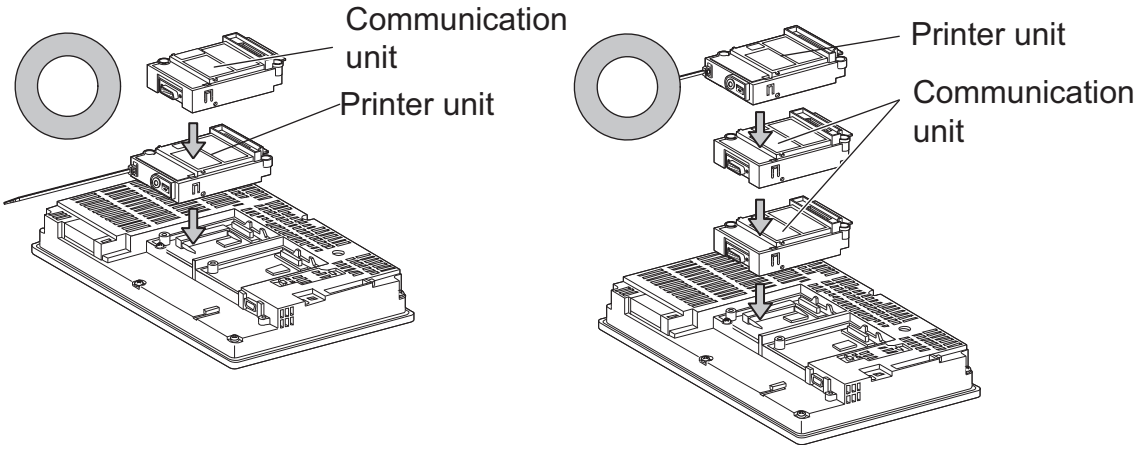
A serial communication unit can be installed in any position (1st to 3rd stage) of the extension interface.




## 6 When using printer unit, sound output unit, or external I/O unit

The printer unit, sound output unit, or external I/O unit can be installed in any position (1st to 3rd stage) of the extension interface.

Example: When installing printer unit

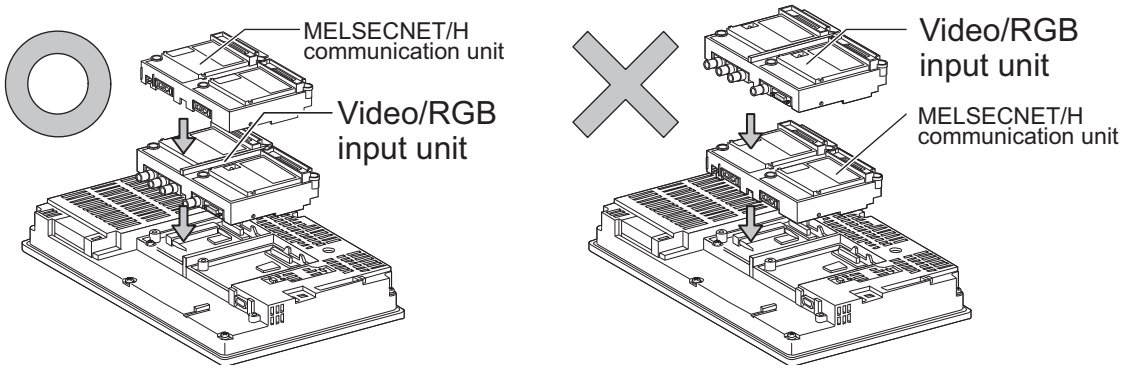


## 7 When using video input unit, RGB input unit, video/RGB input unit, RGB output unit, or multimedia unit

Install the video input unit, RGB input unit, video/RGB input unit, RGB output unit, or multimedia unit at the 1st stage of the extension interface. When any of these units is installed at the 2nd or 3rd stage, the unit does not operate.
When any of these units is used, a communication unit indicated below must be installed in the 2nd stage of the extension interface.

| Communication unit | Model | |
|---|---|---|
| Bus connection unit | GT15-QBUS2, | GT15-ABUS2 |
| MELSECNET/H communication unit | GT15-J71LP23-25, | GT15-J71BR13 |
| CC-Link IE controller network communication unit | GT15-J71GP23-SX | |
| CC-Link communication unit | GT15-J61BT13 | |

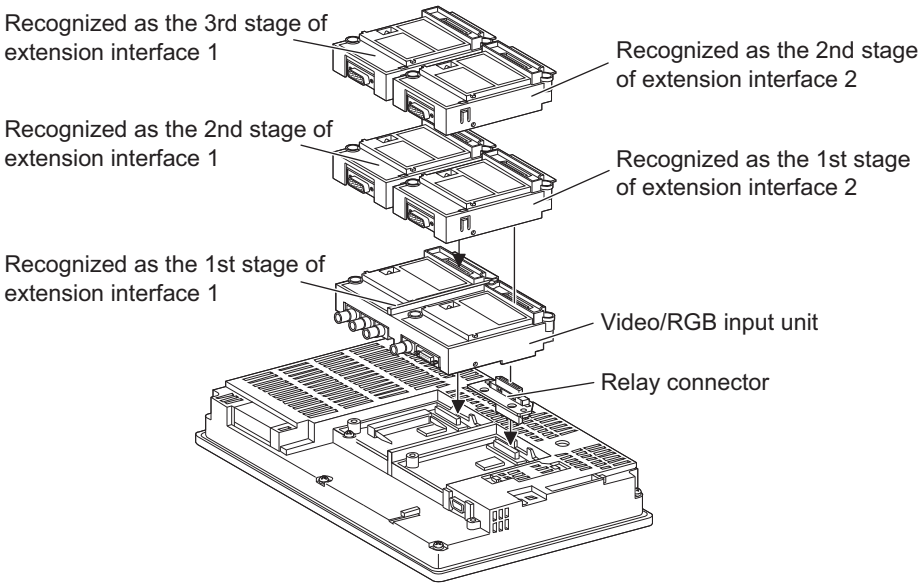
Example: When installing a video input unit and a MELSECNET/H communication unit




**Point**

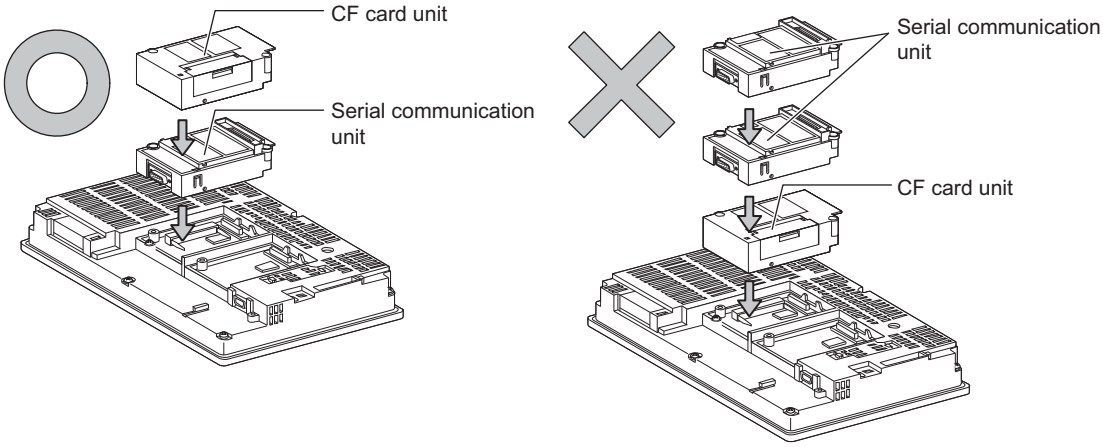
Precautions for video input unit, RGB input unit, video/RGB input unit, RGB output unit, and multimedia unit

When a communication unit is installed on any of the above units, the stage number of the communication unit recognized by the GOT varies according to the extension interface.
As for communication units installed at the extension interface 2 side, even if the communication unit is physically installed in the 2nd stage position, the GOT recognizes the position as the 1st stage.



**8** When using CF card unit or CF card extension unit

Install the CF card unit or CF card extension unit on the extension interface at the last.
The following figures show how to install the CF card unit.



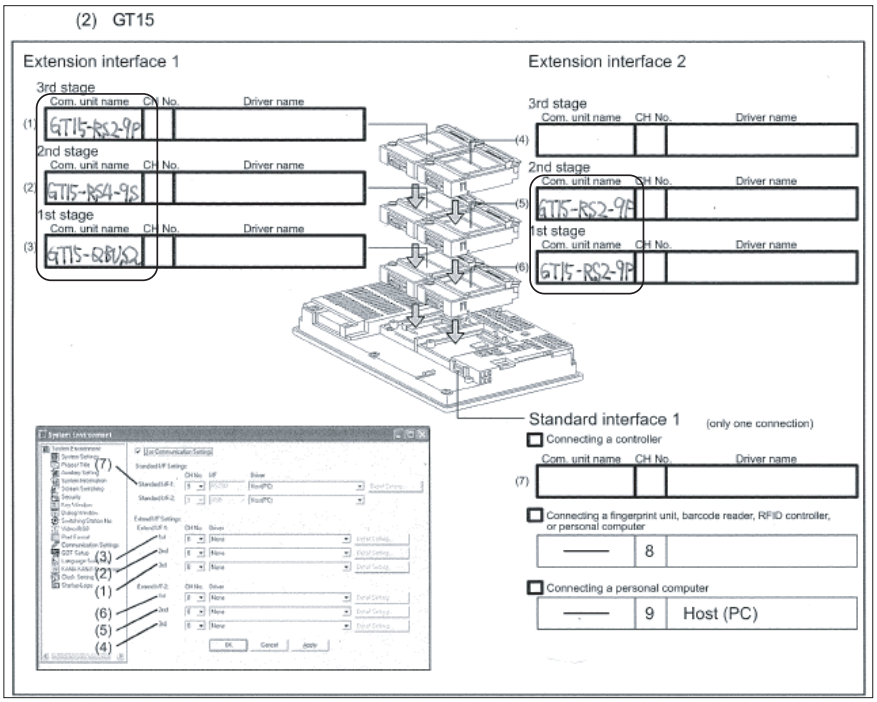

Write Check Sheet

Section 2.8.10 Multi-channel function check sheet

Enter the selections having been made in the steps above to the check sheet.

**3** Installing a communication unit

**1** Enter the name of communication unit to be used for each of the connection type.




* When GT15-QBUS2/ABUS2 is used, although GT15-RS2-9P is installed physically at the 2nd stage of extend interface 2, the GOT recognizes the position as the 1st stage. Therefore, in the check sheet, the position should be entered as 1st stage.

(Continued to next page)

(From previous page)

2 After entering the names of communication units, enter CH No. to be assigned to respective units based on the entry in 1 Check Sheet No. 1 (selection of connection type and interface).

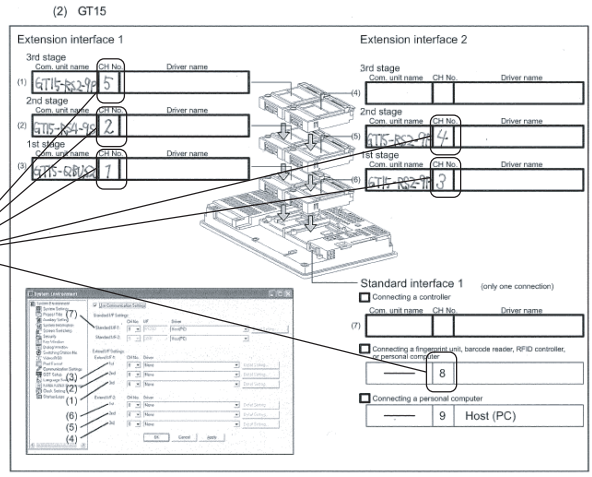
1 Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, motion controller CPU, temperature controller, inverter, servo amplifier, CNC, robot controller (No.1 to No.4)

| CH No. | Selection of connection type (Section 2.8.4) | Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 1 | Connection name Bus (Q) | GT15 - QBUS2 |
| 2 | Connection name OMRON PLC | GT15 - RS4-9S |
| 3 | Connection name OMRON temp. | GT15 - RS2 - 9P |
| 4 | Connection name Servo amplifier | GT15 - RS2 - 9P |

(2) Channel No. of fingerprint unit, barcode reader, RFID controller, personal computer (No.5 to No.8)

| CH No. | Selection of connection type (Section 2.8.4) | Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 5 | Connection name Bar code reader | GT15 - RS2 - 9P |
| 6 | Connection name | |
| 7 | Connection name | |
| 8 | Connection name Fingerprint unit. | RS-232 interface built in a GOT |

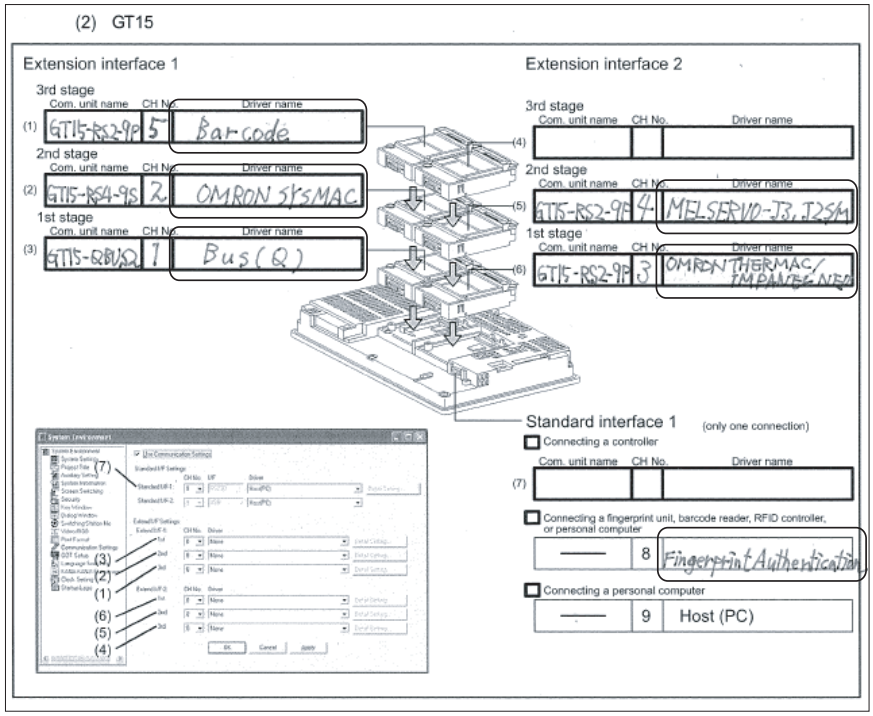



(Continued to next page)

(From previous page)

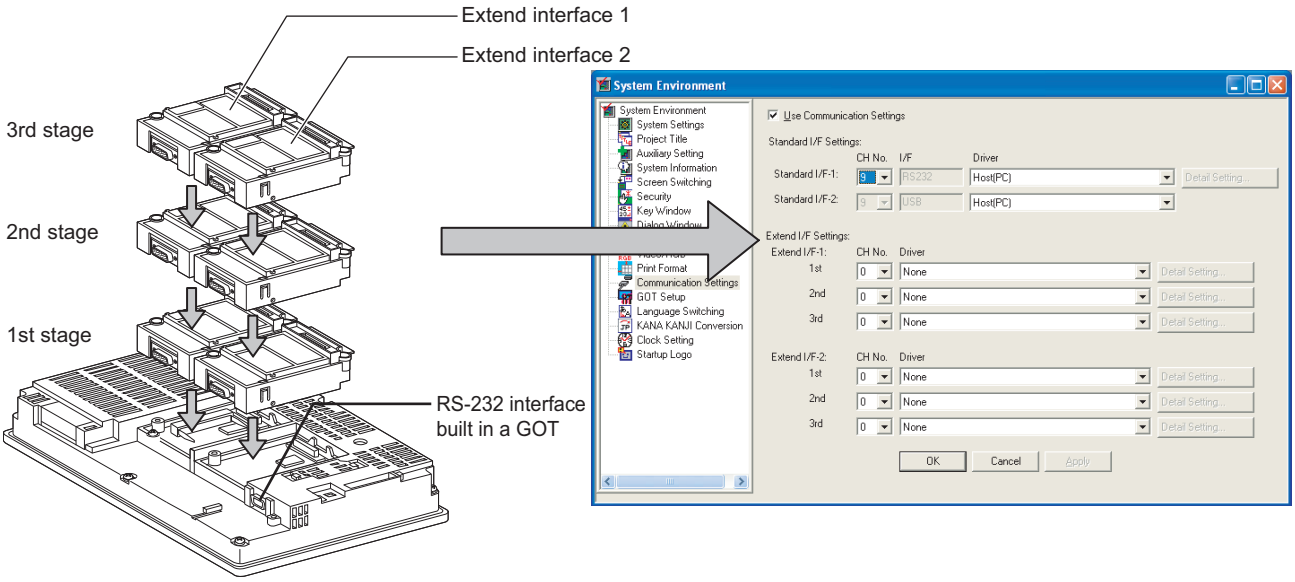
3 After entering CH No., enter the communication driver name for each connection type. Concerning the communication drivers used for the respective connection types, refer to the manual below.

☞ GOT1000 Series Connection Manual



## 2.8.7 Setting for communication settings

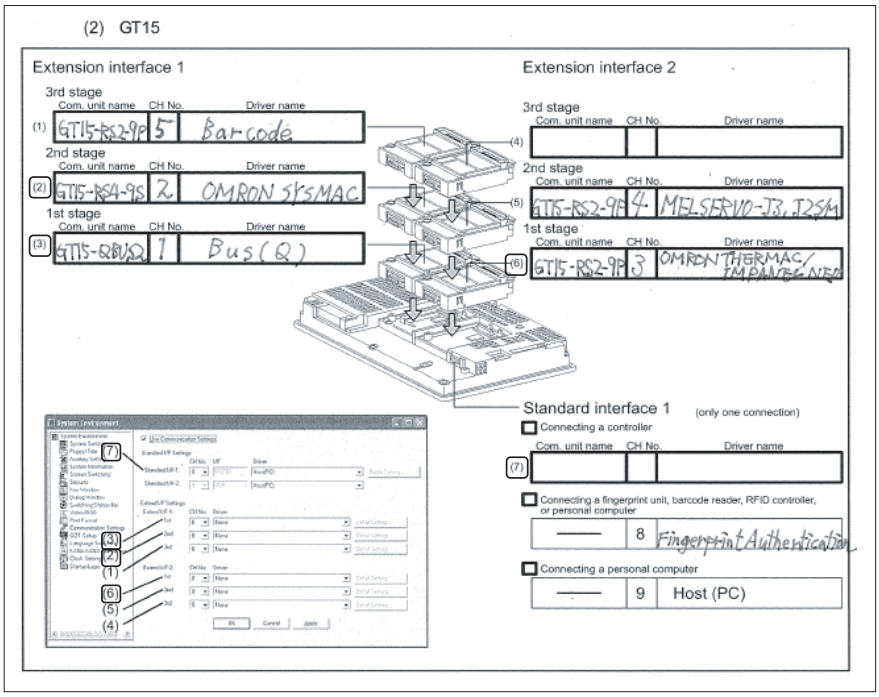
Make communication settings based on the interface and the installation position of the respective communication units.




Check

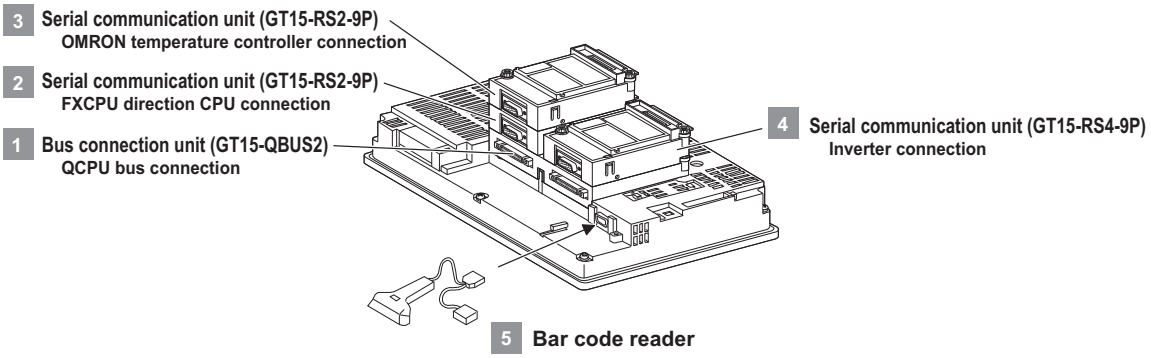
Section 2.8.10 Multi-channel function check sheet

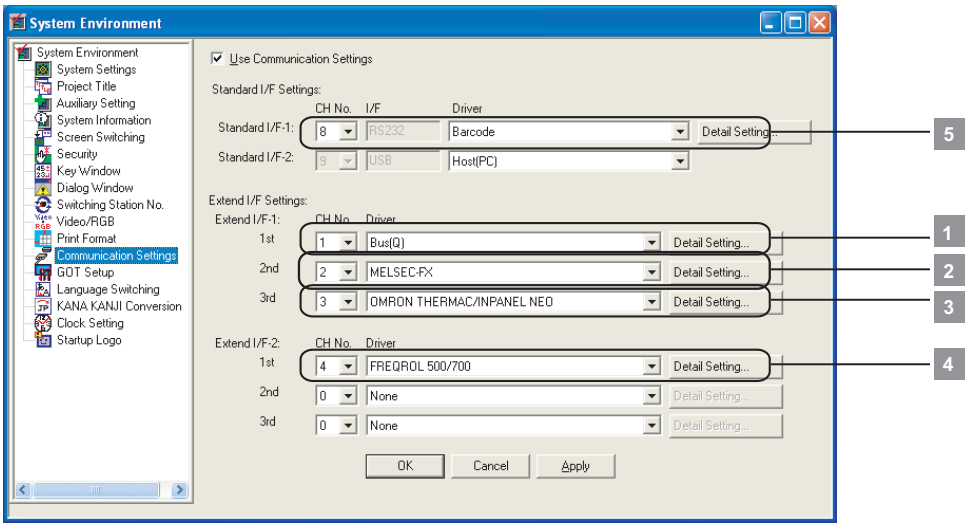
Make settings for Communication Settings by GT Designer2 referring to the check sheet where the necessary information has been entered.
The positions that the settings should be made on the communication settings screen are specified on the check sheet by numbers (GT16: (1) to (9), GT15: (1) to (7)).



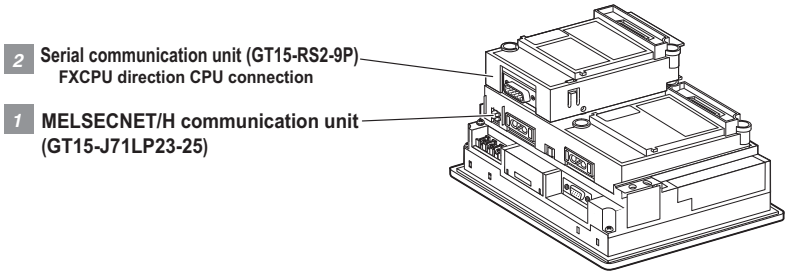

This completes the setting for Communication Settings. Create a screen with GT Designer2.

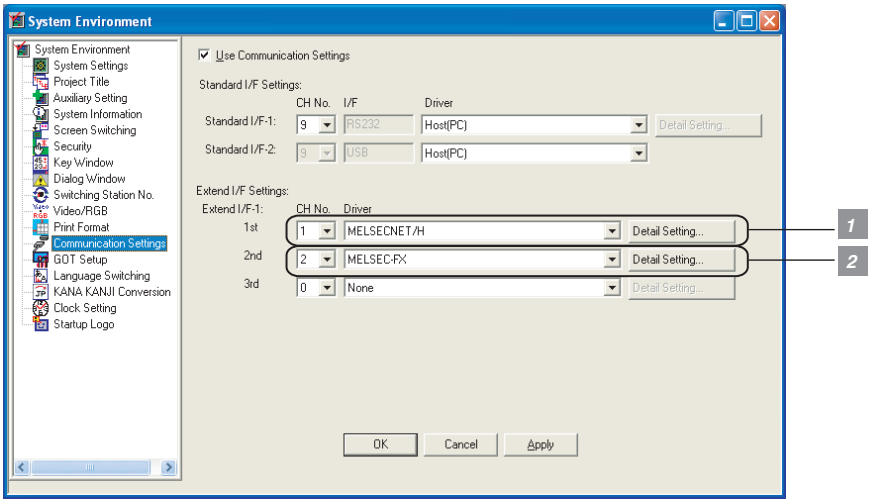
Example: Setting example for "Bus connection (1 channel) + Serial connection (3 channels) + Bar code reader" (In the case of the GT157□)



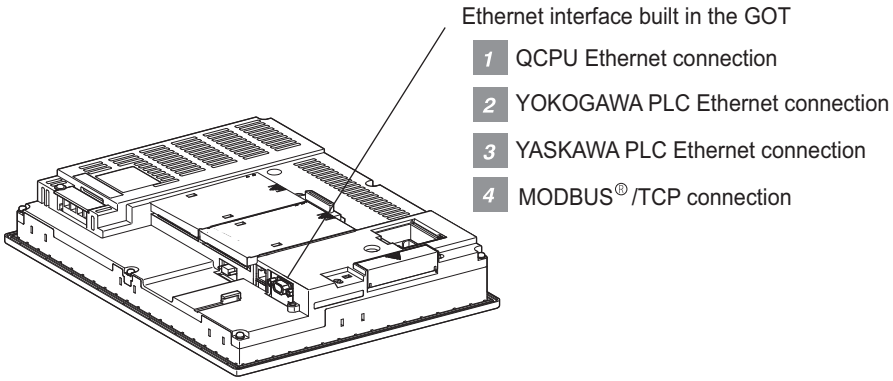



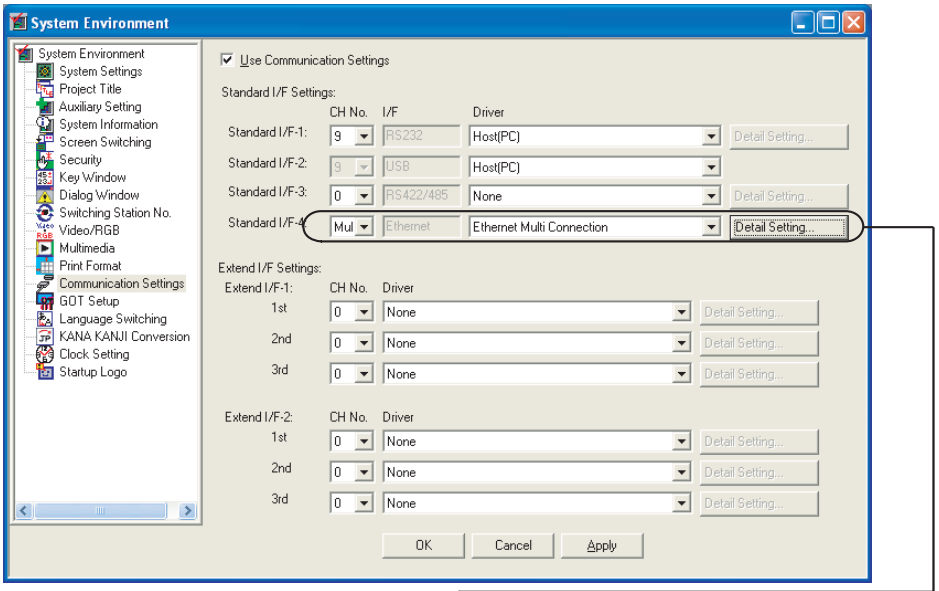

Example: Setting example for "MELSECNET/H connection (1 channel) + Serial connection (1 channel)" (In the case of the GT155□)

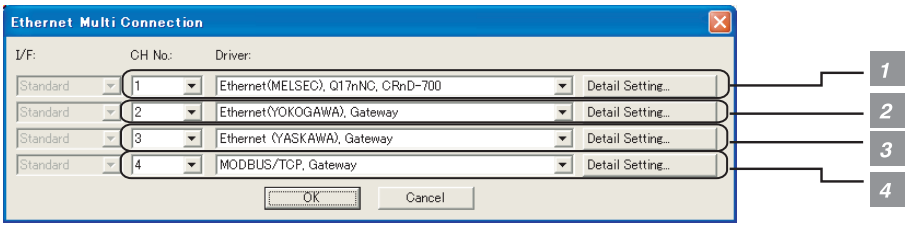


Example: Setting example for Ethernet connection (4 channels) (In the case of the GT1685)



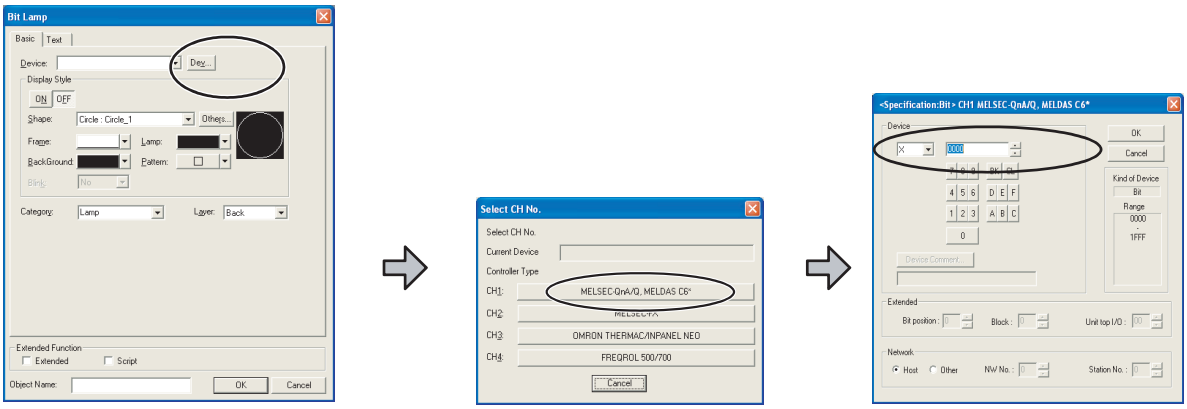
## 2.8.8 Items to be checked before starting drawing

The following describes that should be understood before starting drawing and the functions that should be set beforehand when using the multi-channel function.

### 1 Device setting

It is necessary to set the device to be used together with the CH No.

☞ Section 5.1.1 Device setting




1 Click the device setting button. 2 Click the controller to be set. 3 Set the device.

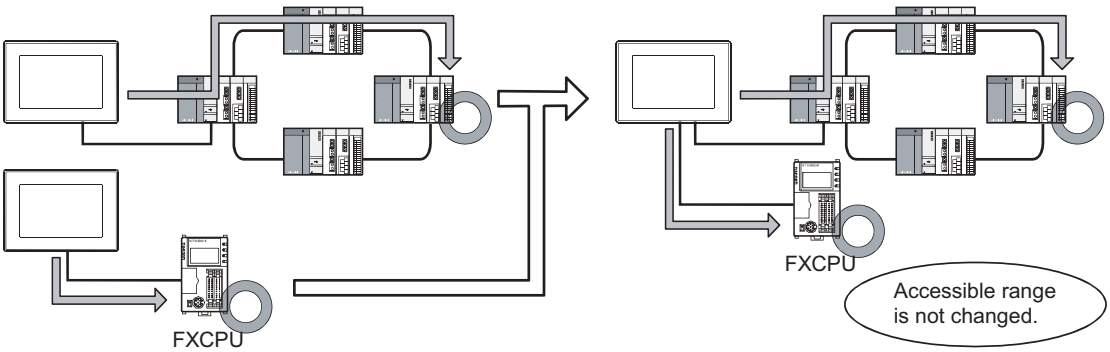
**Remark** Using the existing project data

If the project data created by GT Designer2, which is not compatible with the multi-channel function, the settings having been made are all allocated to CH No. 1 automatically.
When using the existing data at CH No. 1, it is not necessary to set the channel number.

### 2 Accessible range for monitoring

The accessible range for monitoring is not changed even when the multi-channel function is used.

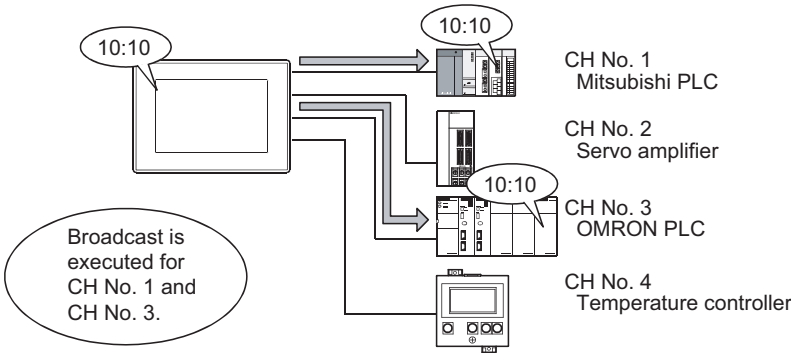
☞ Section 2.7 Controller that can be Monitored and the Accessible Range



## 3 Clock function

Set the controller for which adjust/broadcast should be executed by the CH No.

☞ Section 2.5 Clock Function



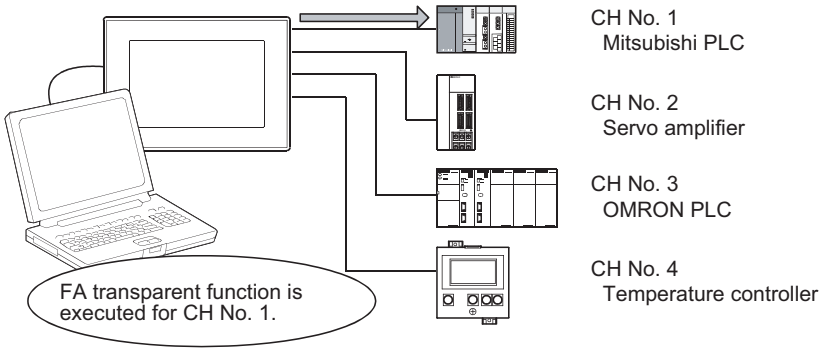

## 4 FA transparent function

Set the controller for which the FA transparent function should be executed by the CH No.

☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)

The set CH No. can be changed by the Utility.

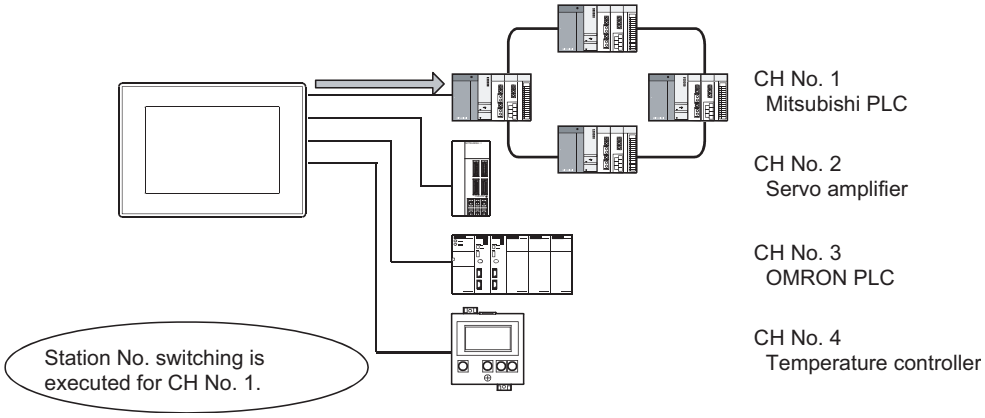
To execute the FA transparent function for other CH No., change the CH No. using the Utility.




## 5 Station No. switching function

Set the controller for which the station No. switching function should be executed by the CH No.

☞ Section 3.3 Switching Station No. Device Setting



## 2.8.9 Precautions

### 1 Precautions for hardware

To use the multi-channel function, an option function board is required according to the GOT.
The following shows required option function boards according to the GOT.

| GOT | Option function board |
|---|---|
| GT16 | Not necessary |
| GT15 | GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M |

### 2 Precautions for use

(1) Occurrence of the same system alarm at different channels
When the advanced system alarm is used, if the system alarms with the same error code occur in different channels the GOT treats the alarms as the same system alarm.
Therefore, if the system alarms with the same error code occur one by one, the time of later system alarm occurrence is not reflected to the GOT.

(2) Confirmation of the channel No. at which a system alarm occurred
When a system alarm occurred, confirm the channel No. where the alarm occurred, using the procedure indicated below.

(a) Check by [System alarm display] of the utility.

☞ GT16 User's Manual (Basic Utility) (Section 5.1 Diagnostic Functions)
GT15 User's Manual (Section 14.9 System Alarm Display)

(b) Monitor the internal devices of the GOT.

☞ Section 2.9.1 GOT internal devices

## 2.8.10 Multi-channel function check sheet

This section provides the check sheet to be used for Communication Settings when the multi-channel function is used.

In Sections 2.8.4 to 2.8.7, the items to be attended to in the respective sections are indicated in the manner as below.
Enter the appropriate data in the check sheet shown in the next page following the explanation given in the previous sections, and the setting for Communication Settings can be completed for the multi-channel function by simply referring to the data in the check sheet.

Write Check Sheet

Section 2.8.10 Multi-channel function check sheet

Enter the selections having been made in the steps above to the check sheet.

1 Selection of connection type

Enter the name of connection type to be used.

Shows items and contents to be written on the check sheet. Also describes an example of the check sheet.

1 Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, motion controller CPU, temperature controller, inverter, servo amplifier, CNC, robot controller (No.1 to No.4)

| CH No. | 1 Selection of connection type (Section 2.8.4) | 2 Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 1 | Connection name Bus (Q) | |
| 2 | Connection name OMRON PLC | |
| 3 | Connection name OMRON temp. | |
| 4 | Connection name Servo amplifier | |

(2) Channel No. of fingerprint unit, barcode reader, RFID controller, personal computer (No.5 to No.8)

| CH No. | 1 Selection of connection type (Section 2.8.4) | 2 Selection of interface (communication unit) (Section 8.2.5) |
|---|---|---|
| 5 | Connection name Bar code reader | |
| 6 | Connection name | |
| 7 | Connection name | |
| 8 | Connection name Fingerprint unit. | RS-232 interface built in a GOT |

The following symbols are used for each purpose.

Write Check Sheet

Indicates parts where items and details are to be written.
Confirm the details and write them to the check sheet.

Check

Indicates parts where written details are to be checked.
Confirm the details and perform the Communication Settings.

## 1 Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, motion controller CPU, temperature controller, inverter, servo amplifier, CNC, robot controller (No.1 to No.4)

| CH No. | 1 Selection of connection type (Section 2.8.4) | 2 Selection of interface (communication unit) (Section 2.8.5) |
|---|---|---|
| 1 | Connection name | |
| 2 | Connection name | |
| 3 | Connection name | |
| 4 | Connection name | |

(2) Channel No. of fingerprint unit, barcode reader, RFID controller, personal computer (No.5 to No.8)

| CH No. | 1 Selection of connection type (Section 2.8.4) | 2 Selection of interface (communication unit) (Section 2.8.5) |
|---|---|---|
| 5 | Connection name | |
| 6 | Connection name | |
| 7 | Connection name | |
| 8 | Connection name | RS-232 interface built in a GOT |

## 2 Check sheet No. 2 (selection of GOT side interface)

### ③ Installing a communication unit

(☞ Section 2.8.6)

(1) GT16

Extension interface 1

3rd stage

| | Com. unit name | CH No. | Driver name |
|---|---|---|---|
| (1) | | | |

2rd stage

| | Com. unit name | CH No. | Driver name |
|---|---|---|---|
| (2) | | | |

1rd stage

| | Com. unit name | CH No. | Driver name |
|---|---|---|---|
| (3) | | | |

Extension interface 2

3rd stage

| | Com. unit name | CH No. | Driver name |
|---|---|---|---|
| (4) | | | |

2rd stage

| | Com. unit name | CHNo | Driver name |
|---|---|---|---|
| (5) | | | |

1rd stage

| | Com. unit name | CHNo | Driver name |
|---|---|---|---|
| (6) | | | |

Standard interface 3 (only one connection)

☐ Connecting a controller

| | Com. unit name | CHNo | Driver name |
|---|---|---|---|
| (8) | | | |

Standard interface 1 (only one connection)

☐ Connecting a controller

| | Com. unit name | CHNo | Driver name |
|---|---|---|---|
| (7) | | | |

☐ Connecting a fingerprint unit, barcode reader, RFID controller, or personal computer

| | | |
|---|---|---|
| ——— | 8 | |

☐ Connecting a personal computer

| | | |
|---|---|---|
| ——— | 9 | Host (PC) |

Standard interface 4 (only one connection)

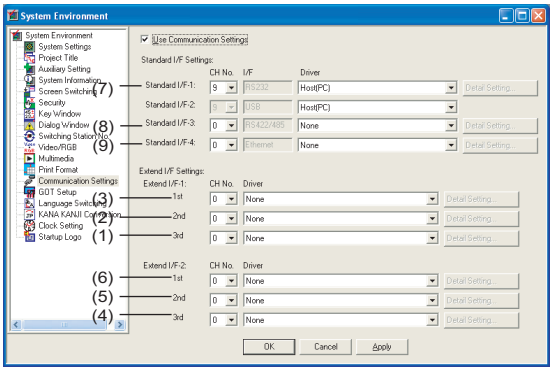
☐ Connecting a controller (Without multi-channel Ethernet connection)

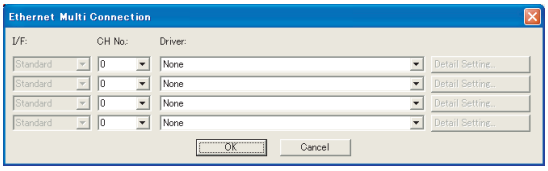
| | Com. unit name | CHNo | Driver name |
|---|---|---|---|
| (9) | ——— | | |

☐ Connecting a controller (With multi-channel Ethernet connection)

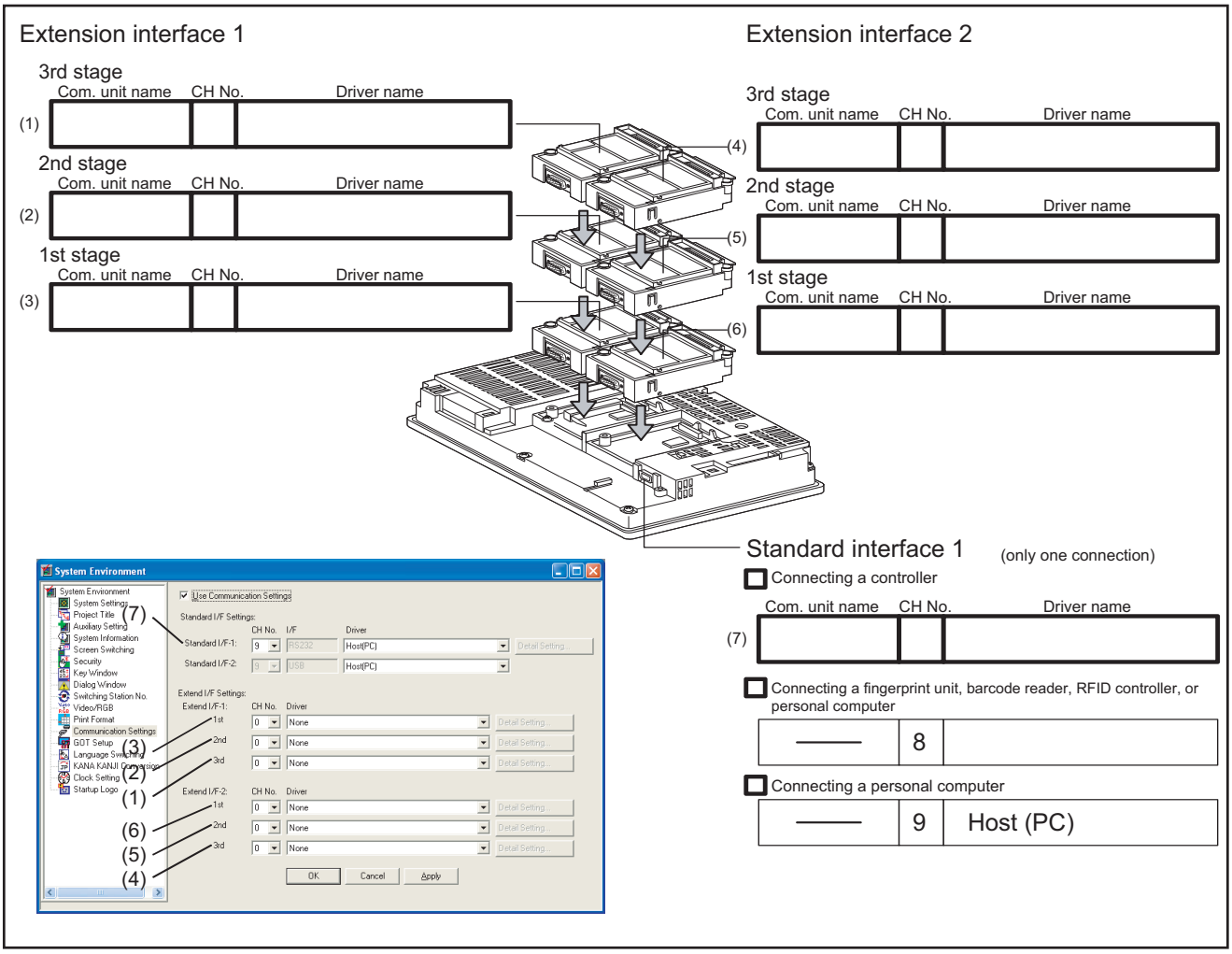
| Com. unit name | CHNo | Driver name |
|---|---|---|
| ——— | Multi | Multi-channel Ethernet connection |

| Com. unit name | CHNo | Driver name |
|---|---|---|
| ——— | | |
| ——— | | |
| ——— | | |
| ——— | | |



(2) GT15




* For the GT155□, setting is made only for Extension interface 1.

# 2.9 Supported Devices

## 2.9.1 GOT internal devices

They are devices kept in the internal of GOT.
The internal devices of GOT are classified into the following types.

- GOT bit register (GB) :Bit register located inside the GOT and used as bit devices.
- GOT data register (GD) :Data register located inside the GOT and used as word devices.
- GOT special register (GS) :Special register located inside the GOT, which stores internal information, communication statuses, error information, etc.
  By monitoring GS with the object function, various information of the GOT can be checked.

The usage of GB, GD, and GS has no relation with GOT connection types. (However, they cannot be controlled in sequence programs of the controller.)
The following shows setting ranges for the devices.

| Device name | | Setting range | | | Notation for device number |
|---|---|---|---|---|---|
| | | GT16, GT SoftGOT1000 | GT15, GT11 | GT10 | |
| Bit device | GOT bit register (GB) | GB0 to GB65535 | | GB0 to GB255 | Decimal |
| Word device | GOT data register (GD) | GD0 to GD65535 | | GD0 to GD127 | Decimal |
| | GOT special register (GS) | GS0 to GS2047 | GS0 to GS1023 | | |

**Point**

Before using GOT internal devices

(1) Applicable GOT internal devices
For using GB and GS, do not set reserved devices.
For reserved devices, refer to the following.

☞ This section 1 GOT bit register (GB)

☞ This section 3 GOT special register (GS)

(2) Value in GOT internal device
When the GOT is powered off or reset, "0" is stored in the GOT internal device.
When project data is downloaded, the value is held.

**Hint!**

Application of GB and GD

GB and GD are useful for processing in the areas where the devices do not have to be used in the controller.

- Device for screen switching
- Work area for the script function
- Storage area for bar code read values

etc

## 1 GOT bit register (GB)

GB devices are listed as follows.

| Device | Function | Model |
|---|---|---|
| GB0 to GB9 | Reserved | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB10 to GB25 | Y0 to YF turn on when the GB devices turn on. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB26 to GB29 | Reserved | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB30 to GB37 | ON when X0 to X7 turn on | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB38 | ON without the power supply | |
| GB39 | The clock data is stored during GB39 turns on. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB40 | Always ON | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB41 | Always OFF | |
| GB42 | ON when screen switching occurs | |
| GB43 to GB49 | Reserved | |
| GB50 to GB57 | ON when X8 to XF turn on | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB58 to GB63 | Reserved | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GB64 to GB65535 (GB64 to GB255 for GT10) | User area | |

(a) External output for Y0 to YF (GB10 to GB25)

With the external I/O function, signals are output to an external I/O device when the GB devices turn on.

The following shows signal names for each GB device.

| GB device | Signal name | GB device | Signal name | GB device | Signal name | GB device | Signal name |
|---|---|---|---|---|---|---|---|
| GB10 | Y0 output | GB14 | Y4 output | GB18 | Y8 output | GB22 | YC output |
| GB11 | Y1 output | GB15 | Y5 output | GB19 | Y9 output | GB23 | YD output |
| GB12 | Y2 output | GB16 | Y6 output | GB20 | YA output | GB24 | YE output |
| GB13 | Y3 output | GB17 | Y7 output | GB21 | YB output | GB25 | YF output |

(b) External input for X0 to X7 and X8 to XF (GB30 to GB37, GB50 to GB57)

With the external I/O function, the GB devices turn on when signals are input with an external I/O device.

The following shows signal names for each GB device.

| GB device | Signal name | GB device | Signal name | GB device | Signal name | GB device | Signal name |
|---|---|---|---|---|---|---|---|
| GB30 | X0 input | GB34 | X4 input | GB50 | X8 input | GB54 | XC input |
| GB31 | X1 input | GB35 | X5 input | GB51 | X9 input | GB55 | XD input |
| GB32 | X2 input | GB36 | X6 input | GB52 | XA input | GB56 | XE input |
| GB33 | X3 input | GB37 | X7 input | GB53 | XB input | GB57 | XF input |

(c) Without power supply (GB38)
With the external I/O function, the GB device turns on without the power supply of an external I/O device.

(d) Clock data storage during ON (GB39)
With GT10, GD0 to GD6 store the clock data when the GB device turns on.
The device does not store the clock data when the GB device turns off.

(e) Always ON (GB40)
Always ON.

(f) Always OFF (GB41)
Always OFF.

(g) On when screen switching occurs (GB42)
Turns on when switching of the following screens occurs.
- Base screen
- Overlap window 1, 2, 3, 4, 5
- Superimpose window 1, 2
- When an overlap window is closed by opening a test window, etc. during the overlap window is displayed.

Turn off this signal at user side.

**Remark** Actions of always ON (GB40) and always OFF (GB41)

Always ON (GB40) and always OFF (GB41) in common information 1 (GS0) are always ON (GB40) and always OFF (GB41), respectively.

## 2 GOT data register (GD)

GD devices are listed as follows.

| Device | Function |
|---|---|
| GD0 to GD65535<br>(GD0 to GD127 for GT10) | User area |

(1) Store the clock data in GD device (Only with GT10)
With GT10, GD0 to GD6 store the clock data when GB39 turns on.
For the clock function, refer to the following.

☞ Section 2.5 Clock Function

For details of the each GD device, refer to followings.

| GD device | Description |
|---|---|
| GD0 | second (0 to 59) |
| GD1 | minute (0 to 59) |
| GD2 | hour (0 to 23) |
| GD3 | day (1 to 31) |
| GD4 | month (1 to 12) |
| GD5 | year (1980 to 2079) |
| GD6 | day of a week (0 to 6) |

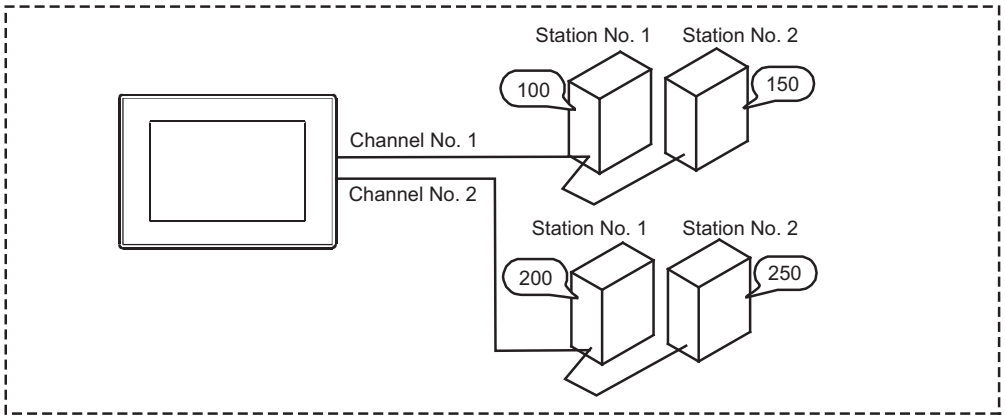
GD0 to GD6 cannot be used as an user area during GB39 turns on.
Set GB39 to off when using GD0 to GD6 as the user area.

(1) Designation of station No. using GD (only in the case of temperature controller connection, inverter connection and servo amplifier connection)
If 100 to 115 is set for station No. in the setting of device, a station No. can be designated by the value of GD10 to GD25.
The monitor target station No. can be changed by simply changing a device value.
For the device setting, refer to the following.

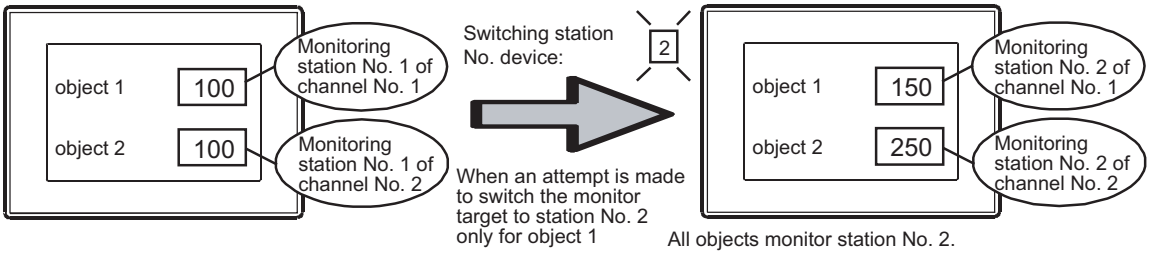
☞ Section 5.1.3 Setting items

(a) When GD is used together with a switching station No. device (GT15 only)
The switching station No. device has priority.

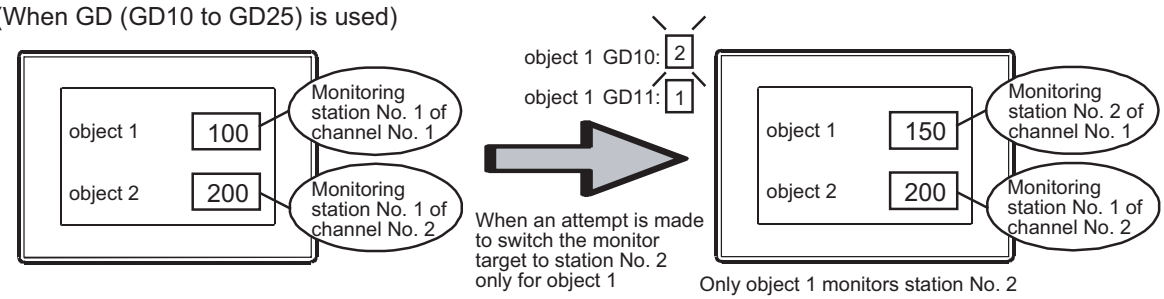
(b) When objects that monitor different channel Nos. are arranged on the same screen
To monitor different station Nos. by individual objects, use GD10 to GD25. If switching station No. devices are used, the monitor target station No. can change for an unintended object. (Especially when multiple switching target channel Nos. are set.)
Example: When monitor target channel Nos. of switching station No. device are 1 and 2.




(When switching station No. device is used)




(When GD (GD10 to GD25) is used)




**Point**

The timing at which station No. changes

The station No. of monitor target changes when a value of GD10 to GD25 is changed.

## 3 GOT special register (GS)

The following list objects relevant to GOT special registers.

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Common information1 (GS0) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | CH No. 1 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Screen switching complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Screen initial scan complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Initial screen displaying signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Always ON signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Always OFF signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | CH No. 2 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | CH No. 3 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | CH No. 4 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Base screen information (GS1) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Base screen CH No. 1 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Base screen switching complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Base screen initial scan complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Base screen CH No. 2 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Base screen CH No. 3 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Base screen CH No. 4 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No. (CH1) | GS6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH1) | GS6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 second binary counter (GS7) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Scan time of monitor (GS8) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Scan counter of monitor (GS10) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Common information1 (GS0) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | CH No. 1 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Screen switching complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Screen initial scan complete signal | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Initial screen displaying signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Always ON signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Always OFF signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | CH No. 2 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | CH No. 3 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | CH No. 4 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Base screen information (GS1) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Base screen CH No. 1 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Base screen switching complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Base screen initial scan complete signal | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Base screen CH No. 2 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Base screen CH No. 3 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Base screen CH No. 4 communication cycle signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No. (CH1) | GS6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH1) | GS6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 1 second binary counter (GS7) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Scan time of monitor (GS8) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Scan counter of monitor (GS10) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Script common information (GS14) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Script error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Script BCD error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Script zero division error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Script communication error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script error pointer (GS15) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script error data (GS16 to 47) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script execute pointer (GS48) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script execute No. (GS49 to 79) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script common information (GS80) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Object script error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Object script BCD error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Object script zero division error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Object script communication error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script error pointer (GS81) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script error data (GS82 to GS113) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script error execute pointer (GS114) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script error execute ID (GS115 to GS145) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| File operation function information (GS154) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | File operation function execution notification | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | File operation function error occurrence | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Script common information (GS14) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b0 | Script error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b7 | Script BCD error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b8 | Script zero division error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b12 | Script communication error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Script error pointer (GS15) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Script error data (GS16 to 47) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Script execute pointer (GS48) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Script execute No. (GS49 to 79) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script common information (GS80) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b0 | Object script error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b7 | Object script BCD error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b8 | Object script zero division error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b12 | Object script communication error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script error pointer (GS81) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script error data (GS82 to GS113) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script error execute pointer (GS114) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script error execute ID (GS115 to GS145) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| File operation function information (GS154) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b0 | File operation function execution notification | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b15 | File operation function error occurrence | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Gateway common information (GS200) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Mail send function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | FTP server function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | FTP server function log-in signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Server function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Client function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Mail send function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Server function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Client function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mail send function error counter (GS201) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mail send function error code (GS202) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mail send function error occurrence date and time (GS203 to 205) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mail send function send source (GS206) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Server function error counter (GS210) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Server function error code (GS211) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Server function error occurrence date and time (GS212 to 214) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Server function error client (GS215 to 216) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Server function error counter (GS220) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Client function error code (GS221) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Client function error occurrence date and time (GS222 to 224) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Client function error server (GS225 to 226) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | Script function | Station No. switching | Key windows |
| Gateway common information (GS200) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b0 | Mail send function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b1 | FTP server function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b2 | FTP server function log-in signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b3 | Server function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b4 | Client function ready signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b11 | Mail send function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b14 | Server function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b15 | Client function error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Mail send function error counter (GS201) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Mail send function error code (GS202) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Mail send function error occurrence date and time (GS203 to 205) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Mail send function send source (GS206) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Server function error counter (GS210) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Server function error code (GS211) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Server function error occurrence date and time (GS212 to 214) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Server function error client (GS215 to 216) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Server function error counter (GS220) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Client function error code (GS221) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Client function error occurrence date and time (GS222 to 224) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Client function error server (GS225 to 226) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| No. of faulty stations (GS230) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Faulty station information (GS231 to 238) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External authentication status notification (GS240) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | External authentication success signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | External authentication failure signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | External authentication reception signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | External authentication ID input reception signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Insufficient security level notification (GS241) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Insufficient screen security level notification signal (Overlap window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Insufficient screen security level notification signal (Overlap window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Insufficient screen security level notification signal (Superimpose window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Insufficient screen security level notification signal (Superimpose window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Insufficient called screen security level notification signal (Base screen) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Insufficient called screen security level notification signal (Overlap window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Insufficient called screen security level notification signal (Overlap window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| No. of faulty stations (GS230) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Faulty station information (GS231 to 238) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External authentication status notification (GS240) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | External authentication success signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | External authentication failure signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | External authentication reception signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | External authentication ID input reception signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Insufficient security level notification (GS241) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Insufficient screen security level notification signal (Overlap window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Insufficient screen security level notification signal (Overlap window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Insufficient screen security level notification signal (Superimpose window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Insufficient screen security level notification signal (Superimpose window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Insufficient called screen security level notification signal (Base screen) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Insufficient called screen security level notification signal (Overlap window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Insufficient called screen security level notification signal (Overlap window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| b11 | Insufficient called screen security level notification signal (Superimpose window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Insufficient called screen security level notification signal (Superimpose window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Error detection common information (GS252) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — |
| FA transparent status (GS256) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Printer status information (GS258) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Printer connection notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Warning error occurrence notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Fatal error occurrence notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Print enable/disable status notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Integer ↔ Real number conversion status (GS260) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Integer ↔ Real number conversion error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Integer ↔ Real number conversion complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Integer ↔ Real number conversion error code (GS261) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| System alarm GOT error channel No. (GS262) | | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | ○ | — | — | — | — | — | — | — | — | — | — |
| System alarm CPU error channel No. (GS263) | | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | ○ | — | — | — | — | — | — | — | — | — | — |
| System alarm network error channel No. (GS264) | | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | ○ | — | — | — | — | — | — | — | — | — | — |
| SNTP time synchronization setting status (GS265) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SNTP time query result (GS266 to 272) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b11 | Insufficient called screen security level notification signal (Superimpose window 1) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Insufficient called screen security level notification signal (Superimpose window 2) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Error detection common information (GS252) | | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| FA transparent status (GS256) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Printer status information (GS258) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Printer connection notification signal | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Warning error occurrence notification signal | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Fatal error occurrence notification signal | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Print enable/disable status notification signal | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Integer ↔ Real number conversion status (GS260) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Integer ↔ Real number conversion error occurrence signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Integer ↔ Real number conversion complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Integer ↔ Real number conversion error code (GS261) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| System alarm GOT error channel No. (GS262) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| System alarm CPU error channel No. (GS263) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| System alarm network error channel No. (GS264) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SNTP time synchronization setting status (GS265) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| SNTP time query result (GS266 to 272) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Monitoring interval timeout count (GS275) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Document display status notification (GS276) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH1) (GS281 to 288) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH2) (GS301 to 308) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH3) (GS321 to 328) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH4) (GS341 to 348) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH1) | GS 360 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH1) | GS 360 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH2) | GS 361 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH2) | GS 361 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH3) | GS 362 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH3) | GS 362 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH4) | GS 363 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH4) | GS 363 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script common control (GS384) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Script error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Script retry signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script monitoring time (GS385) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Screen script initial operation (GS386) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script common control (GS387) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script monitoring time (GS388) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Object script initial operation (GS389) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| File operation function data storage order (GS390) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Monitoring interval timeout count (GS275) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Document display status notification (GS276) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH1) (GS281 to 288) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH2) (GS301 to 308) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH3) (GS321 to 328) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier faulty station information (CH4) (GS341 to 348) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH1) | GS 360 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH1) | GS 360 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH2) | GS 361 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH2) | GS 361 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH3) | GS 362 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH3) | GS 362 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| CC-Link G4 station No.(CH4) | GS 363 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT multidrop slave station No. (CH4) | GS 363 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Script common control (GS384) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b0 | Script error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b1 | Script retry signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Script monitoring time (GS385) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Screen script initial operation (GS386) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script common control (GS387) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script monitoring time (GS388) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Object script initial operation (GS389) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| File operation function data storage order (GS390) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Gateway common control (GS400) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Forced FTP server function logout signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | FTP server function binary resource file visualize signalnal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Mail send function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Server function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Client function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Monitor common control (Write device) (GS450) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Base screen initial scan complete signal | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Numeric input range check setting signal | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Ascii input system information output setting | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Cursor deleted system information clear setting | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Kana-kanji conversion authorization certification | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Memory card image file display setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — |
| b12 | Touch switch operation timing (Screen/station no. switch) setting signal | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | Screen switch memory card save function setting signal | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Touch switch upper hierarchy operation mode setting signal | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Auto screen save time (GS451) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Error detection common control (GS452) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | Script function | Station No. switching | Key windows |
| Gateway common control (GS400) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b2 | Forced FTP server function logout signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b8 | FTP server function binary resource file visualize signalnal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b11 | Mail send function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b14 | Server function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| b15 | Client function error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — |
| Monitor common control (Write device) (GS450) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Base screen initial scan complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b1 | Numeric input range check setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b2 | Ascii input system information output setting | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Cursor deleted system information clear setting | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Kana-kanji conversion authorization certification | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Memory card image file display setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Touch switch operation timing (Screen/station no. switch) setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | Screen switch memory card save function setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Touch switch upper hierarchy operation mode setting signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Auto screen save time (GS451) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Error detection common control (GS452) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Pass-through transparent stop control (GS457) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Conversion start indication (GS460) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 to b7 | Integer ↔ Real number conversion method | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Integer ↔ Real number conversion start signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Conversion devices (GS461) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Conversion source head device No. (GS462) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Conversion destination head device No. (GS463) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Store error value (GS464) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GT SoftGOT1000 common control (GS500) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | GT SoftGOT1000 exit confirmation signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | GT SoftGOT1000 full screen mode switching signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Application start signal (GS501, GS502) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GT SoftGOT1000 full screen size (Width) (GS503) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GT SoftGOT1000 full screen size (Height) (GS504) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer information (GS510) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Device data transfer error clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Device data transfer processing time clear signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status communication control (GS511) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Touch status communication control signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Time change information (GS512) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Pass-through transparent stop control(GS457) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Conversion start indication (GS460) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 to b7 | Integer ↔ Real number conversion method | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| b15 | Integer ↔ Real number conversion start signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Conversion devices (GS461) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Conversion source head device No. (GS462) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Conversion destination head device No. (GS463) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| Store error value (GS464) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — |
| GT SoftGOT1000 common control (GS500) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | GT SoftGOT1000 exit confirmation signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | GT SoftGOT1000 full screen mode switching signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Application start signal (GS501, GS502) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GT SoftGOT1000 full screen size (Width) (GS503) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GT SoftGOT1000 full screen size (Height) (GS504) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer information (GS510) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Device data transfer error clear signal | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Device data transfer processing time clear signal | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status communication control (GS511) | | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Touch status communication control signal | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Time change information (GS512) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Changed time (GS513 to 516) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function notification/ control function (GS517) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound output cancel control (GS518) | | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b0 | Sound output cancel signal during play | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b1 | All sound output cancel signal | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Buffering and file access control (GS520) | | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger backup data send delay (GS521) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH1) (GS530 to 537) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH2) (GS540 to 547) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH3) (GS550 to 557) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH4) (GS560 to 567) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| MODBUS communication control function (GS570 to 576) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Maintenance time notification cancel control (GS638) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| b0, b4 | Backlight maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| b1, b5 | Display section maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| b2, b6 | Touch key mainte-nance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| b3, b7 | Build-in flash memory maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| GOT reset control (GS639) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Error device data transfer ID (GS642) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | Script function | Station No. switching | Key windows |
| Changed time (GS513 to 516) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — |
| External I/O function notification/ control function (GS517) | | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound output cancel control (GS518) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 | Sound output cancel signal during play | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | All sound output cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Buffering and file access control (GS520) | | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger backup data send delay (GS521) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH1) (GS530 to 537) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH2) (GS540 to 547) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH3) (GS550 to 557) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Temperature controller/servo amplifier monitor station disconnection (CH4) (GS560 to 567) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| MODBUS communication control function (GS570 to 576) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Maintenance time notification cancel control (GS638) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0, b4 | Backlight maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1, b5 | Display section maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2, b6 | Touch key mainte-nance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3, b7 | Build-in flash memory maintenance time notification cancel signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| GOT reset control (GS639) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Error device data transfer ID (GS642) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| Device data transfer error count (GS643) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer processing time (GS644) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer ID (GS645) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer min. processing time (GS646) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer ID (min. processing time) (GS647) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer max. processing time (GS648) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Device data transfer ID (max. processing time) (GS649) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Present time (GS650 to 653) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — |
| Touch status external notification (X-coordinate) (GS654) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status external notification (Y-coordinate) (GS655) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status external notification (touch status)(GS656) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger backup processing setting No. notification(GS657) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Extended external input status notification signal (GS658 to GS665) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound status information (GS668) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Jack disconnection notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound file number during play (GS669) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| No. of trigger buffer data (GS670) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger buffer overflow count (GS671) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger buffer overflow flag per job (GS672 to GS675) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Maintenance time notification information (GS680) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0, 4 | Backlight maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1, 5 | Display section maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Device data transfer error count (GS643) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer processing time (GS644) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer ID (GS645) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer min. processing time (GS646) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer ID (min. processing time) (GS647) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer max. processing time (GS648) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Device data transfer ID (max. processing time) (GS649) | | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Present time (GS650 to 653) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status external notification (X-coordinate) (GS654) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status external notification (Y-coordinate) (GS655) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch status external notification (touch status)(GS656) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger backup processing setting No. notification(GS657) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Extended external input status notification signal (GS658 to GS665) | | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound status information (GS668) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Jack disconnection notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sound file number during play (GS669) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| No. of trigger buffer data (GS670) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger buffer overflow count (GS671) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Trigger buffer overflow flag per job (GS672 to GS675) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Maintenance time notification information (GS680) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0, b4 | Backlight maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1, b5 | Display section maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List display | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph | Scatter graph | Historical trend graph |
| b2, 6 | Touch key maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3, 7 | Built-in flash memory maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Backlight power ON addition time (GS681, 682) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Display section power ON addition time (GS683, 684) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Built-in flash memory writing times (GS685, 686) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch key pushing addition times No.0 (GS700, 701) to No.139 (GS978, 979) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| USB drive common information (GS1024) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal input status notification (GS1025) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal resolution (horizontal) (GS1026) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal resolution (vertical) (GS1027) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal refresh rate (GS1028) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Insufficient security level notification (GS1241) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| USB drive common control (GS1824) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Items | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b2, b6 | Touch key maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3, b7 | Built-in flash memory maintenance time notification signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Backlight power ON addition time (GS681, 682) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Display section power ON addition time (GS683, 684) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Built-in flash memory writing times (GS685, 686) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Touch key pushing addition times No.0 (GS700, 701) to No.139 (GS978, 979) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| USB drive common information (GS1024) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal input status notification (GS1025) | | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal resolution (horizontal) (GS1026) | | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal resolution (vertical) (GS1027) | | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RGB signal refresh rate (GS1028) | | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Insufficient security level notification (GS1241) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| USB drive common control (GS1824) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

The GS list and device functions are as follows.

(1) Read device

| Device | Function | Reference | Model |
|---|---|---|---|
| GS0 | Common information 1 | See (a) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS1 | Base screen information | See (b) below | |
| GS2 to 5 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS6 | CC-Link G4 station No.(CH1) | See (c) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | GOT multidrop slave station No. (CH1) | See (d) below | |
| GS7 | 1 second binary counter | See (e) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS8 | Scan time of monitor | See (f) below | |
| GS9 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS10 | Scan counter of monitor | See (g) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS11 to 13 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS14 | Script common information | Section 16.4.3 Errors and corrective actions for script execution on GOT | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS15 | Script error pointer | | |
| GS16 | Script No. | | |
| GS17 | Error code | | |
| •<br>•<br>• | •<br>•<br>• | | |
| GS46 | Script No. | | |
| GS47 | Error code | | |
| GS48 | Script execute pointer | | |
| GS49 to 79 | Script execute No. | | |
| GS80 | Object script common information | Section 16.4.3 Errors and corrective actions for script execution on GOT | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS81 | Object script error point | | |
| GS82 | Object script user ID | | |
| GS83 | Error code | | |
| :<br>: | :<br>: | | |
| GS112 | Object script user ID | | |
| GS113 | Error code | | |
| GS114 | Object script error execute pointer | | |
| GS115 to 145 | Object script error execute ID | | |
| GS146 to 153 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS154 | File operation function information | Section 16.4.3 Errors and corrective actions for script execution on GOT | |
| GS155 to 199 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Device | Function | Reference | Model |
|---|---|---|---|
| GS200 to 229 | Gateway common information | GOT100 Series Gateway Functions Manual | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS230 | No. of faulty stations | See (h) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS231 to 238 | Faulty station information | See (i) below | |
| GS239 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS240 | External authentication status notification | See (j) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS241 | Insufficient security level notification | See (k) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS242 to 250 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS251 | Drive accessibility notification | See (l) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS252 | Error detection common information | See (m) below | |
| GS253 to 255 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS256 | FA transparent status | See (n) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS257 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS258 | Printer status information | See (o) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS259 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS260 | Integer ↔ Real number conversion status | Section 16.2.3 8 Integer Real number conversion function | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS261 | Integer ↔ Real number conversion error code | | |
| GS262 | System alarm GOT error channel No. | See (p) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS263 | System alarm CPU error channel No. | See (q) below | |
| GS264 | System alarm network error channel No. | See (r) below | |
| GS265 | SNTP time synchronization setting status | GOT1000 Series MES Interface Function Manual | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS266 to 272 | SNTP time query result | | |
| GS273 to 274 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS275 | Monitoring interval timeout count | GOT1000 Series MES Interface Function Manual | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Device | Function | Reference | Model |
|---|---|---|---|
| GS276 | Document display status notification | See (s) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS277 to 280 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS281 to 288 | Temperature controller/servo amplifier faulty station information (CH1) | See (t) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS289 to 300 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS301 to 308 | Temperature controller/servo amplifier faulty station information (CH2) | See (t) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS309 to 320 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS321 to 328 | Temperature controller/servo amplifier faulty station information (CH3) | See (t) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS329 to 340 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS341 to 348 | Temperature controller/servo amplifier faulty station information (CH4) | See (t) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS349 to 359 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS360 | CC-Link G4 station No.(CH1) | See (c) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | GOT multidrop slave station No. (CH1) | See (d) below | |
| GS361 | CC-Link G4 station No.(CH2) | See (c) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | GOT multidrop slave station No. (CH2) | See (d) below | |
| GS362 | CC-Link G4 station No.(CH3) | See (c) below | |
| | GOT multidrop slave station No. (CH3) | See (d) below | |
| GS363 | CC-Link G4 station No.(CH4) | See (c) below | |
| | GOT multidrop slave station No. (CH4) | See (d) below | |
| GS364 to 383 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS384 to 639 | Write device | ☞ This section (2) Write device | |
| GS640 to 641 | Must not be used | - | |
| GS642 | Error device data transfer ID | See (u) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS643 | Device data transfer error count | See (v) below | |
| GS644 | Device data transfer processing time | See (w) below | |
| GS645 | Device data transfer ID | See (x) below | |
| GS646 | Device data transfer min. processing time | See (y) below | |
| GS647 | Device data transfer ID (min. processing time) | See (z) below | |
| GS648 | Device data transfer max. processing time | See (aa) below | |

(Continued to next page)

| Device | Function | Reference | Model |
|---|---|---|---|
| GS649 | Device data transfer ID (max. processing time) | See (ab) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS650 to 653 | Present time | Section 2.5 Clock Function | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS654 | Touch status external notification (X-coordinate) | See (ac) below | |
| GS655 | Touch status external notification (Y-coordinate) | See (ad) below | |
| GS656 | Touch status external notification (touch status) | See (ae) below | |
| GS657 | Trigger backup processing setting No. notification | See (af) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS658 to 665 | Extended external input status notification signal | See (ag) below | |
| GS666 to 667 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS668 | Sound status information | See (ah) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS669 | Sound file number during play | See (ai) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS670 | No. of trigger buffer data (GS670) | GOT1000 Series MES Interface Manual | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS671 | Trigger buffer overflow count (GS671) | | |
| GS672 to GS675 | Trigger buffer overflow flag per job (GS672 to GS675) | | |
| GS676 to GS679 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS680 *1 | Maintenance time notification information | See (aj) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS681 to 682 *1 | Backlight power ON addition time | See (ak) below | |
| GS683 to 684 *1 | Display section power ON addition time | See (al) below | |
| GS685 to 686 *1 | Built-in flash memory writing times | See (am) below | |
| GS687 to 699 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS700 to 701 *1 | Touch key pushing addition times No. 0 | See (an) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| • • • | • • • | | |
| GS978 to 979 *1 | Touch key pushing addition times No. 139 | | |
| GS980 to 1023 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS1024 to 1791 | Write device | This section (2) Write device | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS1792 to 1823 | Must not be used | - | |
| GS1824 | USB drive common control | See (ao) below | |
| GS1825 to 2042 | Must not be used | - | |

*1 For using the function, the GOT requires a battery.

(a) Common information1 (GS0(16bit))

| b15 to 11 | b10 | b9 | b8 | b7 to b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|

b0 :Repeats turning ON and OFF for every communication cycle*1. (For channel No. 1)

b1 :Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen setting processing is complete.(This applies to station No. switching, security level change or language switching.)
It is used to check (debug) the screen switch settings.

b2 :Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen object processing of the status observation is complete.(This applies to station No. switching, security level change or language switching.)
It is used to activate the status observation for once when switching the screen.

b3 :Turns ON while the initial screen is displayed at power-on.
It turns off when the base screen is switched over.

b4 :Always ON.

b5 :Always OFF.

b6 to b7 :Must not be used

b8 :Repeats turning ON and OFF for every communication cycle*1. (For channel No. 2)

b9 :Repeats turning ON and OFF for every communication cycle*1. (For channel No. 3)

b10 :Repeats turning ON and OFF for every communication cycle*1. (For channel No. 4)

b11 to b15 :Must not be used

*1 A cycle is the elapsed time for GOT to read the objects on the current screen display and the data set in the common settings.

**Remark** Actions of b4 and b5 in common information 1 (GS0)

b4 and b5 in common information 1 (GS0) are always ON (GB40) and always OFF (GB41), respectively.

(b) Base screen information (GS1(16bit))

| b15 to b11 | b10 | b9 | b8 | b7 to b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|

b0 :Repeats turning ON and OFF for every communication cycle[*1] while the base screen is displayed. (For channel No. 1)

b1 :Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen setting processing is complete. (This applies to station No. switching, security level change or language switching.)
It is used to check (debug) the screen switch settings

b2 :Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen object processing of the status observation is complete. (It functions in the same way for the station No. switching and security level switching.)
It is used to activate the status observation for once when the screen is switched over.

b3 to b7 :Must not be used.

b8 :Repeats turning ON and OFF for every communication cycle[*1] while the base screen is displayed. (For channel No. 2)

b9 :Repeats turning ON and OFF for every communication cycle[*1] while the base screen is displayed. (For channel No. 3)

b10 :Repeats turning ON and OFF for every communication cycle[*1] while the base screen is displayed. (For channel No. 4)

b11 to b15 :Must not be used

(c) CC-Link G4 station No.(CH1) (GS6 (16 bits))
For the CC-Link connection (via G4), the station No. of the connected AJ65BT-G4-S3 or AJ65BT-R2N is stored when the GOT is powered ON.
When the multi-channel function is used, the station No. of channel No. 1 is stored. Station Nos. of channel Nos. 2 to 4 are stored to GS361 to GS363.

(d) GOT multidrop slave station No. (CH1) (GS6 (16 bits))
For the multidrop connection, the station No. of the connected GOT is stored when the GOT is powered ON.
When the multi-channel function is used, the station No. of channel No. 1 is stored. Station Nos. of channel Nos. 2 to 4 are stored to GS361 to GS363.

(e) 1 second binary counter (GS7(16bit))
Starts counting every second immediately after the power is switched on.
Any given value can be written to this counter to start the count from the written value.
The obtained data are stored as binary data.
This is used to check how long the time has elapsed from specific timing (operation, etc.).

(f) Scan time of monitor (GS8(16bit))
Stores the time (ms) of a complete processing cycle set on the display screen as binary data.
Data will be updated when all of the processing set on the display screen is complete.
An error of 10 ms may be produced depending on the processing settings. Also, this does not apply to the objects that have not been processed by the security function.
It is useful for load checking (debugging) of the monitor processing.

(g) Scan time counter of monitor (GS10(16bit))
Counts up the number of cycles every time the processing cycle set on the display screen is complete.
Used to check (debug) the number of scan of monitor.

(h) No. of faulty stations detection (GS230 (16 bit))

The number of stations where CPU error was detected is stored.

The station where error occurs can be checked with GS231 to GS238.(☞ (h) Faulty station information below)

When the redundant setting is configured, these GS devices do not operate.

| b15 to b8 | b7 to b0 |
|---|---|

b0 to b7 : Stores the number of faulty stations.

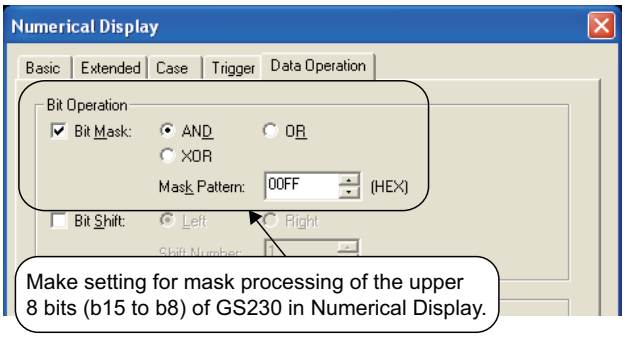
b8 to b15 : Must not be used

**Point**

Monitoring GS230 by numerical display

When monitoring GS230 by numerical display, etc., perform mask processing using data operation function as below.(☞ Section 5.6 Data Operation Function)

<Setting example of numerical display (data operation tab)>



(i) Ethernet faulty station information (GS231 to GS238 (16 bits))

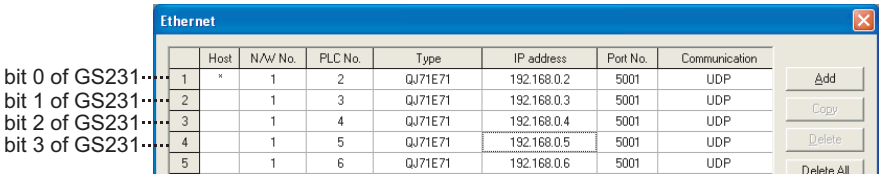
The bit for the Ethernet module with an error turns on.

0 : No error

1 : Error

When an alarm occurred has restored, the bit turns off.

When the redundant setting is configured, these GS devices do not operate.




| Device | Ethernet Setting No | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
| GS231 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| GS232 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
| GS233 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | .33 |
| GS234 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 |
| GS235 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 |
| GS236 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 |
| GS237 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 |
| GS238 | 128 | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 |

(j) External authentication status notification (GS240 (16bits))

| b15 | b14 | b13 to b2 | b1 | b0 |
|---|---|---|---|---|

b0 :Turns on when the external authentication or the fingerprint authentication succeeds.

b1 :Turns on when the external authentication or the fingerprint authentication fails.

b2 to b13 :Reserved

b14 :Turns on when the screen for the login is displayed for the external authentication or the fingerprint authentication.

b15 :Turns on when the external authentication ID input key window is displayed.

(k) Insufficient security level notification (GS241 (16 bits))

The bit turns on when the screen cannot be displayed because of the insufficient security level.

| b15 to b13 | b12 | b11 | b10 | b9 | b8 | b7 to b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|

b0 :Reserved

b1 :Turns on when the overlap window 1 cannot be displayed.

b2 :Turns on when the overlap window 2 cannot be displayed.

b3 :Turns on when the superimpose window 1 cannot be displayed.

b4 :Turns on when the superimpose window 2 cannot be displayed.

b5 to b7 :Reserved

b8 :Turns on when a called screen on the base screen cannot be displayed.

b9 :Turns on when a called screen on the overlap window 1 cannot be displayed.

b10 :Turns on when a called screen on the overlap window 2 cannot be displayed.

b11 :Turns on when a called screen on the superimpose window 1 cannot be displayed.

b12 :Turns on when a called screen on the superimpose window 2 cannot be displayed.

b13 to b15 :Reserved

b1 to b4 turn off when a screen is displayed.
b1 to b4 turn off when "0" is stored in a screen switching device.
b8 to b12 turn off when a called screen is displayed.

(l) Accessible drive notification (GS251 (16 bits))

| b15 to b2 | b1 | b0 |
|---|---|---|

This device notifies whether the A drive or the B drive is accessible.
- b0: Turns on when data can be read/written from/to the A drive.
- b1: Turns on when data can be read/written from/to the B drive.

(m) Error detection common information (GS252(16bit))

| b15 | b14 to b1 | b0 |
|---|---|---|

b0 :Turns ON if an error is detected in the alarm information file to be stored when executing memory card storage function by alarm history display.
The alarm information file is not stored into a memory card while this bit is ON.
Turns OFF when the error detection common control (GS452.b0) is turned ON.
Useful for error detection during file storage.

b1 to b13 :Must not be used.

b14 :Turns on when the RGB signal for CH2 is not input.
The bit automatically turns OFF when the RGB signal for CH2 is input.
The bit turns OFF when b14 of the device specified for [Video/RGB Common] is turned OFF (to hide the RGB screen for CH2).
For details, refer to the following.
☞ 13.5.3 Setting items

b15 :Turns on when the RGB signal for CH1 is not input.
The bit automatically turns OFF when the RGB signal for CH1 is input.
The bit turns OFF when b15 of the device specified for [Video/RGB Common] is turned OFF (to hide the RGB screen for CH1).
☞ 13.5.3 Setting items

(n) FA transparent status (GS256 (16 bits))
Notifies the status of the FA transparent function.
The relationship between the stored value and the FA transparent status is as indicated below.
0: Ordinary monitoring
1: In the transparent mode
2: In the pass-through mode

(o) Printer status information (GS258 (16 bits))

| b15 to b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|

b0 :Turns ON when the connection between the printer unit of GOT and the printer is established.
Turns OFF when the connection with the printer is shut off.

b1 :Turns ON when a warning level alarm occurs while a printer is connected.
Turns OFF after the restoration from the alarm.

b2 :Turns ON when a fatal level alarm occurs while a printer is connected.
Turns OFF after the restoration from the alarm.

b3 :Turns ON when the printer gets ready for printing.
Stays OFF when the printer is in the preparation status (during warm up, etc.) or during printing.
If printing is not possible although this bit is ON, check whether the printing function (hard copy function, etc.) processing has been completed.
Whether or not the processing has been completed can be confirmed by checking the hard copy output signal (System Signal 2-1.b7), etc.

b4 to b15 :Reserved

**Hint!**

If printing is not possible

Whether the cause is cable connection error or a problem at the printer can be found by checking this signal (GS258).

| Signal status | Cause of Error |
|---|---|
| GS258.B0 : OFF<br>GS258.B3 : OFF | Cable connection error |
| GS258.B0 : ON<br>GS258.B3 : OFF | Although cable is connected correctly, the printer has a problem.<br>(Printer in preparation stage (warming up), during printing, printer error) |

**Remark**

Corrective action at the occurrence of an error

Refer to the following manuals for the corrective action to be taken after the occurrence of an error.

☞ GT16 User's Manual (Hardware) (Section 10 TROUBLESHOOTING)
GT15 User's Manual (Section 20 TROUBLESHOOTING)
GT11 User's Manual (Section 18 ERROR MESSAGE AND SYSTEM ALARM)

(p) System alarm GOT error channel No. (GS262 (16 bits))
If a system alarm (GOT error) occurs, the corresponding channel No. is stored.
"0" is stored when the system alarm is cleared.
With some system alarms, channel numbers are not stored.
Refer to the following manual for details.

☞ GT16 User's Manual (Hardware) (Section 10.3 ERROR MESSAGE AND SYSTEM ALARM)
GT15 User's Manual (Section 20.3 ERROR MESSAGE AND SYSTEM ALARM)

(q) System alarm CPU error channel No. (GS263 (16 bits))
If a system alarm (CPU error) occurs, the corresponding channel No. is stored.
"0" is stored when the system alarm is cleared.

(r) System alarm network error channel No. (GS264 (16 bits))
If a system alarm (network error) occurs, the corresponding channel No. is stored.
"0" is stored when the system alarm is cleared.

(s) Document display status notification (GS276 (16 bits))

| b15 to b1 | b0 |
|---|---|

b0 :Turns on in the following cases.
- •There is no display target file.
- •Memory card is not installed.
- •The CF card access switch on the GOT is off.
- •The specified file is not an image file or it is damaged.

The bit automatically turns off when the problem above is cleared.

b1 to b15 :Must not be used.

(t) Temperature controller/servo amplifier faulty station information (CH1 to CH4) (GS281 to 288, GS301 to 308, GS321 to 328, GS341 to 348 (16 bits))
With the temperature controller or servo amplifier connection, the bit corresponding to the station with a communication error turns on.
(For the multi-channel connection, the bit of the device corresponding to each channel No. (CH1 to CH4) turns on.)
0: No error
1: Error
When the error is recovered, the bit turns off.
The following shows station numbers for each device.

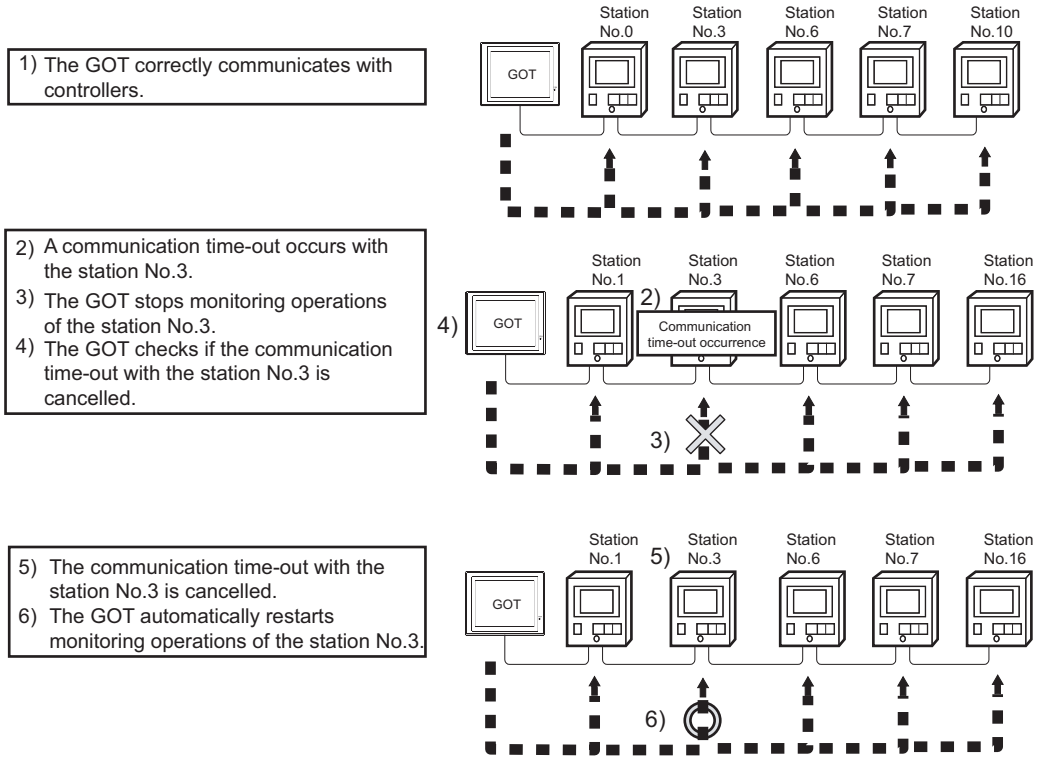
| Device | | | | Station No. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1CH | 2CH | 3CH | 4CH | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
| GS281 | GS301 | GS321 | GS341 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| GS282 | GS302 | GS322 | GS342 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 |
| GS283 | GS303 | GS323 | GS343 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | .33 | .32 |
| GS284 | GS304 | GS324 | GS344 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | 48 |
| GS285 | GS305 | GS325 | GS345 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 |
| GS286 | GS306 | GS326 | GS346 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | 80 |
| GS287 | GS307 | GS327 | GS347 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 |
| GS288 | GS308 | GS328 | GS348 | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | 112 |

**Point**

(1) Restrictions
- (a) Errors cannot be detected with the station numbers of 128 or later.
- (b) When an error occurs with the station No. specified on GT Designer2, the own station No. of the error temperature controller or servo amplifier is detected.
  (For example, when the station No. specified on GT Designer2 is "110" and the own station No. of the temperature controller or servo amplifier is "10", the bit for the station No.10 turns on.)
  For spcifying station numbers, refer to the following manual.
  ☞ GOT1000 Series Connection Manual

**Remark** Dealing with faulty stations

(1) The GOT automatically stops monitoring operations of controllers with errors.
The GOT automatically stops monitoring operations of the faulty station with a communication time-out amang controllers so as not to slow monitoring the other stations. (No settings are required.)
The following explains GOT's operations when a communication error occurs with the station No.3.




(2) Disconnecting the temperature controller or servo amplifier from the system
With the temperature controller/servo amplifier monitor station disconnection (GS531 to GS568), the specified temperature controller or servo amplifier can be disconnected from the GOT.
Therefore, no communication time-out occurs even if the temperature controller or servo amplifier is removed for changing units. (No system alarm is displayed on the GOT.)
Depending on the connection type used, the GOT may not monitor temperature controllers or servo amplifiers that follow the disconnected temperature controller or servo amplifier.

(u) Error device data transfer ID (GS642 (16 bits))
The device stores the device data transfer ID with the executed device data if an error occurs during device data transfer.

(v) Device data transfer error count (GS643 (16 bits))
The device stores the number of error times with the executed device data during the device data transfer. (Maximum 65535 times)
When errors occur 65535 times or more, the value remains 65535.
The device data transfer ID with the executed device data is stored in the error device data transfer ID.

(w) Device data transfer processing time (GS644 (16 bits))
The device stores the device data transfer processing time for one time. (0 to 60000ms)
The device stores 60000ms when the device data transfer processing time is 60 seconds or more.

(x) Device data transfer ID (GS645 (16 bits))
The device stores the device data transfer ID with the executed device data transfer.

(y) Device data transfer min. processing time (GS646 (16 bits))
The device stores minimum processing time among all of stored device data transfer processing times (GS644). (0 to 60000ms)

(z) Device data transfer ID (min. processing time) (GS647 (16 bits))
The device stores the device data transfer ID with the executed device data transfer when GS646 stores a minimum processing time.

(aa) Device data transfer max. processing time (GS648 (16 bits))
The device stores a maximum processing time among all of stored device data transfer processing times (GS644). (0 to 60000ms)

(ab) Device data transfer ID (max. processing time) (GS649 (16 bits))
The device stores the device data transfer ID with the executed device data when GS648 stores a maximum processing time.

(ac) Touch status external notification (X-coordinate) (GS654 (16 bits))
The device stores the x-coordinate of touched position when the GOT screen is touched on.

(ad) Touch status external notification (Y-coordinate) (GS655 (16 bits))
The device stores the y-coordinate of touched position when the GOT screen is touched on.

(ae) Touch status external notification (touch status) (GS656 (16 bits))
The following values are stored in the device depending on the touched screen types when the GOT screen is touched on.

| | |
|---|---|
| 0 | : Without touching |
| 1 | : Touching on the base screen |
| 2 | : Touching touchable objects on the base screen |
| 11 | : Touching on the overlap window 1 |
| 12 | : Touching touchable objects on the overlap window 1 |
| 21 | : Touching on the overlap window 2 |
| 22 | : Touching on touchable objects on the overlap window 2 |
| 61 | : Touching on the video window |
| 71 | : Touching on the key window |
| 81 | : Touching on the comment window |
| 91 | : Touching on the popup window |

(af) Trigger backup processing setting No. notification (GS657 (16 bits))
The GOT notifies users the trigger backup processing status.
The device stores the trigger ID with the executing backup trigger setting during the trigger backup processing.
The device stores 0 when the trigger backup processing is not executed.

(ag) Extended external input status notification signal (GS658 to GS665 (16 bits))

When the 128-point input can be executed with the external I/O function, the bit for an input scan signal turns on.

When the 128-point input cannot be executed, the GB devices are always off.

To enable the 128-point input, turns on GS517.b0 (external I/O function notification, external I/O control function).

0: Signal OFF

1: Signal ON

The following shows the devices for each bit.

| Scan signal | Extended external input status notification signal | External input signal | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X0 | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | XA | XB | XC | XD | XE | XF |
| XSCN0 | GS658 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN1 | GS659 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN2 | GS660 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN3 | GS661 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN4 | GS662 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN5 | GS663 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN6 | GS664 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |
| XSCN7 | GS665 | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | b8 | b9 | b10 | b11 | b12 | b13 | b14 | b15 |

**Remark**

Controlling signal with controllers

The above signal can be controlled with controllers when the status observation function and the script function are used.

(ah) Sound status information (GS668 (16 bits))

| b15 | b14 to 0 |
|---|---|

b0 to b14 :Reserved
b15 :Turns on with a jack disconnection when the sound output function is used.
Turns off without a jack disconnection.

(ai) Sound file number during play (GS669 (16 bits))
A sound file number during play is stored in the device.
When no sound file exists during play, 0 is stored in the device.

(aj) Maintenance time notification information (GS680 (16 bits))

| b15 to b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|

b0 :Turns on as a first-stage notification if the backlight power on addition time (GS681 (32 bits)) reaches 80% or above of the maintenance notification time setting specified with a utility function.
b1 :Turns on as a first-stage notification if display power on addition time (GS683 (32 bits)) reaches 80% or above of the display section maintenance notification time setting specified with a utility.
b2 :Turns on as a first-stage notification if any of the touch key pushing addition times (GS700 to 979) reaches 80% or above of the touch key maintenance notification count setting specified with a utility.
b3 :Turns on as a first stage notification if the build in flash memory writing times (GS685 (32b bits)) reaches 80% or above of the built-in flash memory maintenance notification count setting specified with a utility.
b4 :Turns on as a second-stage notification if the backlight power on addition time (GS681 (32 bits)) reaches 100% or above of the backlight maintenance notification time setting specified with a utility function.
b5 :Turns on as a second-stage notification if display power on addition time (GS683 (32 bits)) reaches 100% or above of the display section maintenance notification time setting specified with a utility.
b6 :Turns on as a second-stage notification if any of the touch key pushing addition times (GS700 to 979) reaches 100% or above of the touch key maintenance notification count setting specified with a utility.
b7 :Turns on as a second-stage notification if the built-in flash memory writing times (GS685 (32 bits)) reaches the built-in flash memory maintenance notification count setting specified with a utility.
b8 tob15 :Must not be used.

(ak) Backlight power on addition time (GS681 (32 bits))
The cumulative power-on time of the backlight is stored in binary data.
Unit: hours

(al) Display power on addition time (GS683 (32 bits))
The cumulative power-on time of the display section is stored in binary data.
Unit: hours

(am)Build in flash memory writing times (GS685 (32 bits))

The cumulative writing times of the built-in flash memory is stored in binary data.

(an) Touch key pushing addition times No. 0 (GS700 (32 bits)).

Touch key pushing addition times No. 1 (GS702 (32 bits)) to No. 139 (GS978 (32 bits))

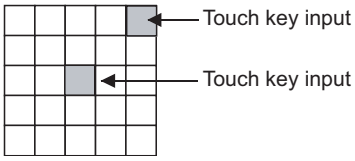
The cumulative pushing times of the touch key is stored in binary data.

The count is taken in each of areas, divided into the size shown below.

| Model name | Area | The number of touch keys included in an area |
|---|---|---|
| GT1695M-X, GT1595-X | 96 x 96 dots | 36 pieces |
| GT1685M-S, GT1675M-S, GT1675M-V, GT1665M-S, GT1665M-V, GT1585V-S, GT1585-S, GT1575V-S, GT1575-S, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V, GT1562-VN, GT1555-V, GT1555-Q, GT1550-Q | 80 x 80 dots | 25 pieces |

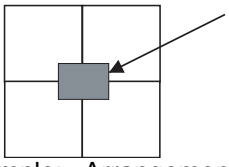
The number of times a touch key is pushed is counted in the manner explained below.

- Touching in an area



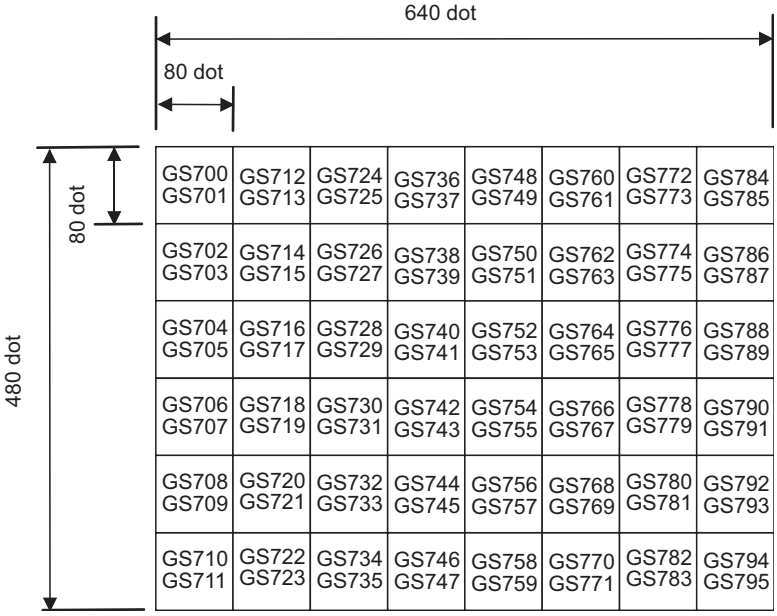

If multiple touch keys are pushed simultaneously in an area, only one count is added.

- Touching four areas



If four areas are touched, the pushing frequency is counted at each area.

Example: Arrangement of the special registers of GOT of the 640 x 480 dot screen size

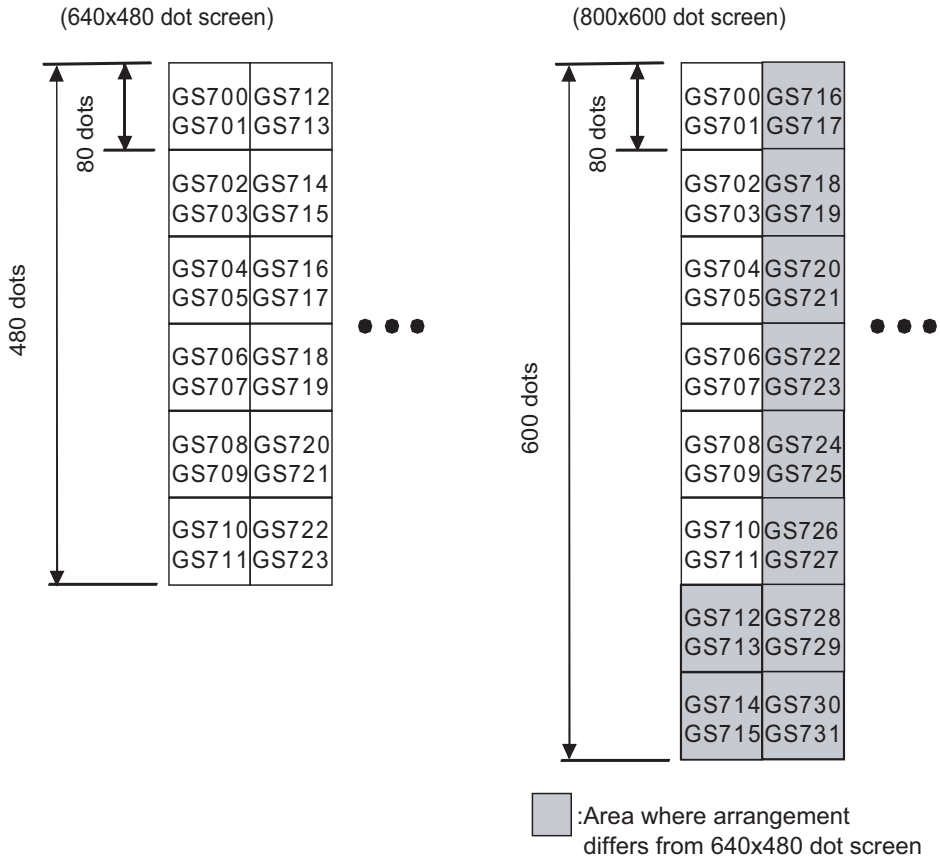


**Point**

When the GOT type is changed by GT Designer2

When the GOT type is changed to the one having different resolution, the arrangement of special registers of GOT changes. After changing the GOT type, check the GOT special registers.

Example: Differences in GOT special register arrangement between 640x480 dot screen and 800x600 dot screen




(ao) USB drive common control(GS1824(16 bits))

| b15 to b1 | b0 |
|---|---|

- b0: Turns ON to turn the error detection common information (GS252.b0) OFF.
- b1 to b15: Use prohibited

(2) Write device

| Device | Function | Reference | Model |
|---|---|---|---|
| GS384 | Script common control | Section 16.4.3 Errors and corrective actions for script execution on GOT | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS385 | Script monitoring time | | |
| GS386 | Screen script initial operation | | |
| GS387 | Object script common control | Section 16.4.3 Errors and corrective actions for script execution on GOT | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS388 | Object script monitoring time | | |
| GS389 | Object script initial operation | | |
| GS390 | File operation function data storage order | Section 16.4.3 Errors and corrective actions for script execution on GOT | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS391 to 399 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS400 | Gateway common control | GOT1000 Series Gateway Functions Manual | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS401 to 449 | Must not be used | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS450 | Monitor common control | See (a) below | |
| GS451 | Auto screen save time | See (b) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS452 | Error detection common control | See (c) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS453 to 456 | Must not be used | - | |
| GS457 | Pass-through transparent stop control | See (d) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS458 to 459 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS460 | Conversion start indication | Section 16.2.3 8 Integer Real number conversion function | |
| GS461 | Conversion devices | | |
| GS462 | Conversion source head device No. | | |
| GS463 | Conversion destination head device No. | | |
| GS464 | Store error value | | |
| GS465 to 499 | Must not be used | - | |
| GS500 | GT SoftGOT1000 common control | See (e) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS501 to 502 | Application start signal | See (f) below | |
| GS503 | GT SoftGOT1000 full screen size (Width) (GS503) | See (g) below | |
| GS504 | GT SoftGOT1000 full screen size (Height) (GS504) | See (h) below | |
| GS505 to 509 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Device | Function | Reference | Model |
|---|---|---|---|
| GS510 | Device data transfer information | See (j) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS511 | Touch status communication control | See (i) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS512 | Time change information | Section 2.5 Clock Function | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS513 to 516 | Changed time | | |
| GS517 | External I/O function notification/control function | See (k) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS518 | Sound output cancel control | See (l) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS519 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS520 | Buffering and file access control | See (m) below | |
| GS521 | Trigger backup data send delay | See (n) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS522 to 530 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS531 to 538 | Temperature controller/servo amplifier monitor station disconnection (CH1) | See (o) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS539 to 540 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS541 to 548 | Temperature controller/servo amplifier monitor station disconnection (CH2) | See (o) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS549 to 550 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS551 to 558 | Temperature controller/servo amplifier monitor station disconnection (CH3) | See (o) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS559 to 560 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS561 to 568 | Temperature controller/servo amplifier monitor station disconnection (CH4) | See (o) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS569 | Reserved | - | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS570 to GS576 | MODBUS communication control function | See (p) below | |
| GS577 to GS637 | Reserved | - | |
| GS638 | Maintenance time notification control | See (q) below | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Device | Function | Reference | Model |
|---|---|---|---|
| GS639 | GOT reset control | See (r) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS1024 | USB drive common information | See (s) below | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GS1025 | RGB signal input status notification | See (t) below | |
| GS1026 | RGB signal resolution (horizontal) | See (u) below | |
| GS1027 | RGB signal resolution (vertical) | See (v) below | |
| GS1028 | RGB signal refresh rate | See (w) below | |
| GS1029 to 1240 | Reserved | - | |
| GS1241 | Insufficient security level notification | See (x) below | |
| GS1242 to 1791 | Reserved | - | |

(a) Monitor common control (GS450(16bit))

| b15 | b14 | b13 | b12 | b11 to b9 | b8 | b7 to b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|

b0 :When it is on, displays a confirm message after numerical/ASCII data are input.

b1 :Controls the displaying methods of the message displayed when an numerical value exceeding the valid range is input.
Turning on displays a message during input of the numerical value.
Turning off displays a message after the numerical value is entered.

b2 :Turns on to activate "Numeric Value Input Number", "Cursor Position's Numeric Value Input" and "Numeric Value Input Signal" of the system information function during ASCII input as well.

b3 :Turns on to store "0" in the following devices set by system information function, "Cursor Position's Numeric Value Input", "Current Cursor Position" and "Previous Cursor Position" when a cursor is erased.

b4 :Activates the Kana-kanji conversion function for ASCII input when turned on.

b5 to b7 :Must not be used.

b8 :When it is on, BMP/JPEG file in the memory card can be used as parts by Parts Display/Parts Movement.
Turning off displays parts registered by GTDesigner2.
For the project data whose [The image file in a memory card is used for the Parts Image of Parts Display/Movement] for Auxiliary Setting is checked-marked, a BMP/JPEG file in the memory card is used as a part even if this signal is turned on/off.

(☞ Section 9.1.2 Parts displaying method)

b9 to b11 :Must not be used.

b12 :Controls the timing when the screen/station No. changes by touch switch operation.
This applies when multiple actions including either of the bit Set/Reset/Alternate and either of screen switching/station No. switching have been set for a touch switch.
For details, refer to the following.

☞ Section 6.2.11 Precautions

b13 :Storing historical information of the previous touch switch to memory card is enabled when it is turned on.

b14 :Set the action of the previous touch switch as history mode when it is turned on.

b15 :Disabled

(b) Auto screen save time (GS451(16bit))
Store the time before close (OFF) the monitor screen in screen save function.
Store the value by 1 to 60 (Min).
(To store value higher than 60, store it as 60)
The changed value is validated after canceling screen save when changing value in screen save.

**Point**

Relationship between GS451 and GOT utility (screen save time)

If value other than 0 is stored in GS451, the screen save time set in GOT utility will be invalidated.
To validate the screen save time of utility, store 0 in GS451.

(c) Error detection common control (GS452(16bit))

| b15 to b1 | b0 |
|---|---|

b0 :Turns ON to turn the error detection common information (GS252.b0) OFF.
b1 to b15 :Must not be used.

(d) Pass-through transparent stop control (GS457 (16 bits))
When "1" is set at this area, pass-through transparent stop request is performed.
By using this area, the user can expedite recovery from the pass-through transparent recovery waiting status.
This area is effective only when "2" (pass-through mode in operation) is set for FA transparent status (GS256).
0 :No stop request
1 :Stop request

(e) GT SoftGOT1000 common control (GS500 (16 bits))

| b15 to b2 | b1 | b0 |
|---|---|---|

b0 :The dialog box for exiting the GT SoftGOT1000 is displayed when the bit turns ON.
The signal turns OFF if exiting is canceled in the displayed dialog box.
b1 :When the bit turns on, GT SoftGOT1000 is displayed in the full screen mode.
When the bit turns off, the full screen mode of GT SoftGOT1000 is canceled.
b2 to b15 :Reserved

(f) Application start signal (GS501 to GS502 (16 bits))

| b15 to b0 |
|---|

b0 to b15 :When a bit turns ON, the application assigned to each bit by the GT SoftGOT1000 runs.

(g) GT SoftGOT1000 full screen size (Width) (GS503 (16 bits))
With the full screen mode function of GT SoftGOT1000, set the width of GT SoftGOT1000 monitor screen (320 to 1600 dots).
When the set value is 320 or less, the value is processed as 320. When the set value is 1600 or more, the value is processed as 1600.

(h) GT SoftGOT1000 full screen size (Height) (GS504 (16 bits))
With the full screen mode function of GT SoftGOT1000, set the height of GT SoftGOT1000 monitor screen (240 to 1200 dots).
When the set value is 240 or less, the value is processed as 240. When the set value is 1200 or more, the value is processed as 1200.

(i) Device data transfer information (GS510 (16 bits))

| b15 to b2 | b1 | b0 |
|---|---|---|

b0 :When the bit turns on, the device stores 0 in the error device data transfer ID (GS642) and the device data transfer error count (GS643).

b1 :When the bit turns on, the device stores 0 in the device data transfer processing time (GS644), the device data transfer min. processing time (GS646), and the device data transfer max. processing time (GS648).

b2 to b15 :Reserved

(j) Touch status communication control (GS511 (16 bits))

| b15 to b1 | b0 |
|---|---|

b0 : When the bit turns on, the touch status is output to the personal computer.
When the bit turns off, the touch status is not output to the personal computer.

b1 to 15 : Reserved

**Point** For using touch status communication control

For using the touch status communication control, the extended function OS for the remote personal computer operation function is required.
For details of the remote personal computer operation function, refer to the following.

☞ 13.6 Remote Personal Computer Operation Function

(k) External I/O function notification/control function (GS517 (16 bits))

| b15 to b1 | b0 |
|---|---|

b0 : When b0 turns on, the 128-point input can be executed with the external I/O function.
When b0 turns off, the 16-point input can be executed.

b1 to 15 : Reserved

**Remark** 128-point input

Without the 128-point input (when the above device turns off), a GOT internal device turns on when the 16-point input is executed with an input terminal.
With the 128-point input (when the above device turns on), a 16-point input with an input terminal is used with a 8-point scan signal.
For connection diagrams of each signal with the external I/O function, refer to the following manual.

☞ GOT1000 Series Connection Manual

(l) Sound output cancel control (GS518 (16 bits))

| b15 to b2 | b1 | b0 |
|---|---|---|

b0 : When the bit turns on, a sound output during play is cancelled.

b1 : When the bit turns on, a sound output during play is cancelled and all sound output requests are cancelled.

b2 to 15 : Reserved

(m) Buffering and file access control (GS520 (16 bits))

| b15 to b1 | b0 |
|---|---|

b0 :Turns on to store the whole data in the buffering area in the destination drive at the timing of the rising edge.

b1 to b15 :Must not be used

(n) Trigger backup data send delay (GS521 (16 bits))

The backup/restore function can set the delay time for backup communication intervals.
Setting of the delay time can reduce the load of other processes (such as monitoring objects) with the backup process.
The actually time set by the set value is listed as follows.

| Set value | Delay time |
|---|---|
| 0 | None |
| 1 to100 | Set value × 5(ms) |
| 101 or more | 500(ms) |

**Point**

Setting of trigger backup data send delay

Backup communication times are longer than a default when the trigger backup data send delay is set.
Set the suitable delay time to match the processing condition of backup function and others (such as monitoring objects).

(o) Temperature controller/servo amplifier monitor station disconnection (CH1 to CH4) (GS531 to 538, GS541 to 548, GS551 to 558, GS561 to 568 (16 bits))
When the bit corresponding to the station No. of the temperature controller or servo amplifier tuns on, the specified station is disconnected from the GOT.
(For the multi-channel connection, the bit of the device corresponding to each channel No. (CH1 to CH4) turns on.)
1:Disconnected
0:Connected
The following shows the station numbers for each device.

| Device | | | | Station No. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1CH | 2CH | 3CH | 4CH | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
| GS531 | GS541 | GS551 | GS561 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| GS532 | GS542 | GS552 | GS562 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 |
| GS533 | GS543 | GS553 | GS563 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | .33 | .32 |
| GS534 | GS544 | GS554 | GS564 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | 48 |
| GS535 | GS545 | GS555 | GS565 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 |
| GS536 | GS546 | GS556 | GS566 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | 80 |
| GS537 | GS547 | GS557 | GS567 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 |
| GS538 | GS548 | GS558 | GS568 | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | 112 |

**Point**

(1) Error station
When an error station is disconnected from the GOT, the temperature controller/servo amplifier faulty station information (☞ This section (1) Read device(t)) corresponding to the disconnected station turns off.

(2) Restrictions
(a) The stations with the station numbers of 128 or later cannot be disconnected from the GOT.
(b) The stations with the station numbers specified on GT Designer2 cannot be disconnected using the device of the temperature controller/servo amplifier monitor station disconnection.
For specifying station numbers, refer to the following manual.
☞GOT1000 Series Connection Manual

(p) MODBUS communication control function (GS570 to GS576(16bits))

When some controllers do not comply with the specifications, this function enables the GOT to reduce the communication delay in the MODBUS® network.

Even if the GOT communicates with the controllers, settings can be changed.

When the multi-channel function uses the MODBUS®/RTU connection with multiple channels, the channels share settings.

| Device | | Function |
|---|---|---|
| GS570 | b0 | When the bit turns on, the function code 0FH (Write multiple coils) is not available. |
| | b1 | When the bit turns on, the function code 10H (Write multiple registers) is not available. |
| | b2 to b15 | Reserved |
| GS571 | | Set the maximum number of device points (1 to 2000) for a message with the function code 01H (Read coils). When the maximum number of device points is set to other than 1 to 2000, the number is set to 2000. |
| GS572 | | Set the maximum number of device points (1 to 2000) for a message with the function code 02H (Read discrete inputs). When the maximum number of device points is set to other than 1 to 2000, the number is set to 2000. |
| GS573 | | Set the maximum number of device points (1 to 125) for a message with the function code 03H (Read holding registers). When the maximum number of device points is set to other than 1 to 125, the maximum number is set to 125. |
| GS574 | | Set the maximum number of device points (1 to 125) for a message with the function code 04H (Read input registers). When the maximum number of device points is set to other than 1 to 125, the maximum number is set to 125. |
| GS575 | | Set the maximum number of device points (1 to 1968) for a message with the function code 0FH (Write multiple coils). When the maximum number of device points is set to 0, the maximum number is set to 800. When the maximum number of device points is set to other than 1 to 1968, the maximum number is set to 1968. |
| GS576 | | Set the maximum number of device points (0 to 123) for a message with the function code 10H (Write multiple registers). When the maximum number of device points is set to 0, the maximum number is set to 100. When the maximum number of device points is set to other than 0 to 123, the maximum number is set to 123. |

**Point**

Function codes supported by the GOT

For function codes supported by the GOT, refer to the following manual.

☞ GOT1000 Series Connection Manual
(Chapter 29 MODBUS(R)/RTU connection)

(q) Maintenance time notification cancel control (GS638 (16 bits))

| b15 to b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|

b0 :Turns on to turn off the first-stage backlight maintenance time notification signal (BS680.b0).
While this bit is on, the first-stage backlight maintenance time notification signal (GS680.b0) remains off even if the backlight power on addition time (GS681 (32 bits)) exceeds the backlight maintenance notification time setting specified with a utility.

b1 :Turns on to turn off the first-stage display section maintenance time notification signal (GS680.b1).
While this bit is on, the first-stage display section maintenance time notification signal (GS680.b1) remains off even if the display section power ON addition time (GS683 (32 bits)) exceeds the display section maintenance notification time setting specified with a utility.

b2 :Turns on to turn off the first-stage touch key maintenance time notification signal (GS680.b2).
While this bit is on, the first-stage touch key maintenance time notification signal (GS680.b2) remains off even if any of the touch key pushing addition times (GS700 to 979) exceeds the touch key maintenance notification count setting specified with a utility.

b3 :Turns on to turn off the first-stage built-in flash memory maintenance time notification signal (GS680.b3).
While this bit is on, the first-stage built-in flash memory maintenance timing notification signal (GS680.b3) remains off even if the build in flash memory writing times (GS685 (32 bits)) exceeds the built-in flash memory maintenance notification count setting specified with a utilities.

b4 :Turns on to turn off the second-stage backlight maintenance time notification signal (GS680.b4).
While this bit is on, the second-stage backlight maintenance time notification signal (GS680.b4) remains off even if backlight power ON addition time (GS681 (32 bits)) exceeds the backlight maintenance notification time setting specified with a utility.

b5 :Turns on to turn off the second-stage display section maintenance time notification signal (GS680.b5).
While this bit is on, the second-stage display section maintenance time notification signal (GS680.b5) remains off even if the backlight power ON addition time (GS683 (32 bits)) exceeds the display section maintenance notification time setting specified with a utility.

b6 :Turns on to turn off the second-stage touch key maintenance time notification signal (GS680.b6).
While this bit is on, the second-stage touch key maintenance time notification signal (GS680.b6) remains off even if any of the touch key pushing addition times (GS700 to 979) exceeds the touch key maintenance notification count setting specified with a utility.

b7 :Turns on to turn off the second-stage built-in flash memory maintenance time notification signal (GS680.b7).
While this bit is on, the second-stage built-in flash memory maintenance time notification signal (GS680.b7) remains off even if the built-in flash memory writing times (GS685 (32 bits)) exceeds the built-in flash memory maintenance time notification count setting specified with a utility.

b8 to b15 :Must not be used

**Point**

Action of maintenance time notification cancel signal upon power-off of GOT

The maintenance time notification cancel signal is reset when the GOT is powered off.
Therefore the maintenance time notification signal deactivated during operation of the maintenance timing notification cancel signal is turned on again when the GOT is powered on.
To keep the maintenance time notification signal off even when the GOT is powered off and then on again, use the state monitoring function or the like to turn on the maintenance time notification cancel signal again.

(r) GOT reset control (GS639 (16 bits))

| b15 | b14 | b13 to b0 |
|---|---|---|

b0 to b13 :Must not be used
b14 :Turns on to exit all the GOT functions. (The GOT power can be turnd off safely.)
b15 :Turn on to software-rest the GOT at the rising edge timing.

(s) USB drive common information (GS1024 (16 bits))

| b15 to b9 | b8 | b7 to b1 | b0 |
|---|---|---|---|

- b0: Turns on when the USB memory connected to the USB interface on the GOT is ready for removal after the USB drive common information (GS1824.b0) turns on.
- b1 to b7: Use prohibited
- b8: Turns on when the USB memory connected to the USB interface on the GOT is ready for use.
- b9 to b15: Use prohibited

(t) RGB signal input status notification (GS1025(16 bits))
The device notifies the following:
the RGB signal input, supporting the resolution and the refresh rate of the RGB signal or not, and the RGB input unit status.
When the GT16M-R2 is used, the device notifies the input status of the channel set for the input source of the RGB screen.

| b15 to b3 | b2 | b1 | b0 |
|---|---|---|---|

b0 : Turns on when the RGB signal is input.
b1 : Turns on when the GOT supports the input resolution and refresh rate.
b2 : Turn on when the RGB unit operates normally.
b3 to b15 : Reserved

(u) RGB signal resolution (horizontal) (GS1026(16 bits))
When GS1025.b0 turns on, the device stores the horizontal resolution (dots) of the RGB signal.
When the RGB signal does not exist or the resolution of the signal is unclear, the device stores 0.

(v) RGB signal resolution (vertical) (GS1027(16 bits))
When GS1025.b0 turns on, the device stores the vertical resolution (dots) of the RGB signal.
When the RGB signal does not exist or the resolution of the signal is unclear, the device stores 0.

(w) RGB signal refresh rate(GS1028(16 bits))
When GS1025.b0 turns on, the device stores the refresh rate (Hz) of the RGB signal.
When the RGB signal does not exist or the refresh rate of the signal is unclear, the device stores 0.

(x) Insufficient security level notification (GS1241 (16 bits))
The bit turns on when the screen cannot be displayed because of the insufficient security level.

| b15 to b11 | b10 | b9 | b8 | b7 to b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|

b0 :Turns on when the overlap window 3 cannot be displayed.
b1 :Turns on when the overlap window 4 cannot be displayed.
b2 :Turns on when the overlap window 5 cannot be displayed.
b3 to b7 :Must not be used
b8 :Turns on when a called screen on the overlap window 3 cannot be displayed.
b9 :Turns on when a called screen on the overlap window 4 cannot be displayed.
b10 :Turns on when a called screen on the overlap window 5 cannot be displayed.
b11 to b15 :Must not be used

## 2.9.2 Device range available for GOT1000 series

The device ranges of controller that can be used for GOT are as follows.
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer2.
Since the device specifications may be different depending on the models even though they belongs to the same series of the controller.
Please make setting according to the specifications of the controller actually used.
When a non-existent device or device No. outside the range is specified, other objects may not be monitored.

1 Mitsubishi Electric PLC, CNC (Including motion controllers)

2 OMRON PLC (OMRON SYSMAC)

3 KEYENCE PLC (KEYENCE KV-700/1000/3000/5000)

4 KOYO EI PLC (KOYO KOSTAC/DL)

5 SHARP PLC (SHARP JW)

6 JTEKT PLC (JTEKT TOYOPUC-PLC)

7 TOSHIBA PLC (TOSHIBA PROSEC T/V)

8 TOSHIBA MACHINE PLC (TOSHIBA MACHINE TCmini)

9 HITACHI IES PLC (HITACHI HIDIC H series)

10 HITACHI PLC (HITACHI S10mini/S10V)

11 FUJI FA PLC (FUJI MICREX-F)

12 PANASONIC PLC (Panasonic MEWNET-FP)*1

13 YASKAWA PLC

14 YOKOGAWA PLC

15 ALLEN-BRADLEY PLC

16 GE FANUC PLC (GE Fanuc Automation Series 90)

17 LS IS PLC (LS Industrial Systems MASTER-K)

18 SIEMENS PLC

19 Microcomputer connection

20 MODBUS(R)

21 OMRON temperature controller (OMRON THERMAC/INPANEL NEO)

22 SHINKO indicating controller (Shinko Technos Controller)

23 CHINO controller (CHINO Controllers)

24 FUJI SYS temperature controllers (FUJI PXR/PXG/PXH)

25 YAMATAKE temperature controller (YAMATAKE SDC/DMC series)

26 YOKOGAWA temperature controller (YOKOGAWA GREEN/UT100/UT2000)

27 RKC temperature controller (RKC SR Mini HG)

28 Inverter (FREQROL 500/700 series)

29 Servo amplifier

For the device setting methods, see the following section.

Section 5.1 Device Setting

## 1 Mitsubishi Electric PLC, CNC (Including motion controllers)

### (1) MELSEC-QnU,Q17nD/M/NC/DR,CRnD-700 *11

| | Device name*8 | | Setting range | Device No. representation |
|---|---|---|---|---|
| Bit device | Input (X) | | X0 to X1FFF | Hexadecimal |
| | Output (Y) | | Y0 to Y1FFF | |
| | Internal relay (M) *4*6 | | M0 to M32767 | Decimal |
| | Latch relay (L) | | L0 to L32767 | |
| | Annunciator (F) | | F0 to F32767 | |
| | Link relay (B) *4 | | B0 to B7FFF | Hexadecimal |
| | Timer *6 | Contact (TT) | TT0 to TT32767 | Decimal |
| | | Coil (TC) | TC0 to TC32767 | |
| | Counter *6 | Contact (CT) | CT0 to CT32767 | |
| | | Coil (CC) | CC0 to CC32767 | |
| | Special relay (SM) | | SM0 to SM2255 | |
| | Retentive timer *6 | Contact (SS) | SS0 to SS32767 | |
| | | Coil (SC) | SC0 to SC32767 | |
| | Step relay (S) | | S0 to S32767 | |
| | Link special relay (SB) | | SB0 to SB7FFF | Hexadecimal |
| | Word device bit *10 | | Specified bit of the following word devices (Except Index register and Buffer memory) | - |
| Word device | Data register (D) *4*6 | | D0 to D4212223 | Decimal |
| | Special data register (SD) | | SD0 to SD2255 | |
| | Link register (W) *4 | | W0 to W4045FF | Hexadecimal |
| | Timer (current value) (TN) *6 | | TN0 to TN32767 | Decimal |
| | Counter (current value) (CN) *6 | | CN0 to CN32767 | |
| | Retentive timer (current value) (SN) *6 | | SN0 to SN32767 | |
| | Link special register (SW) | | SW0 to SW7FFF | Hexadecimal |
| | File register (R) *1 *2 | | R0 to R32767 | Decimal |
| | Extension file register (ER) *1 | Block | 0 to 255 | |
| | | Device | ER0 to ER32767 | |
| | Extension file register (ZR) *1 *3 *4 *9 | | ZR0 to ZR4184063 | |
| | Index register (Z) | | Z0 to Z19 | |
| | Buffer memory (Intelligent function module) (BM) *5 | | BM0 to BM32767 | |
| | Ww *4 | | Ww0 to Ww7FF | Hexadecimal |
| | Wr *4 | | Wr0 to Wr7FF | |
| | Multiple CPU high speed transmission memory (U3E0) | | U3E010000to U3E024335 | |
| | Multiple CPU high speed transmission memory (U3E1) | | U3E110000to U3E124335 | |
| | Multiple CPU high speed transmission memory (U3E2) | | U3E210000to U3E224335 | |
| | Multiple CPU high speed transmission memory (U3E3) | | U3E310000to U3E324335 | |
| | Motion device (#) *7 | | #0 to #12287 | Decimal |
| | Bit device word | | Converting the above bit devices into words | - |

*1 Do not set a file register by GT Designer2 when executing multiple programs with the file of the file register set at "Use the same file name as the program" by the PLC parameter of GX Developer.
Otherwise, read/write at GOT will be erroneous.

*2 Available for file register of block No. switched with the RSET instruction.
*3 Available for file register of block No. of file name switched with the QDRSET instruction.
*4 GOT treats them in units of 32k (32767 points).
*5 Only the intelligent function module on the station connected to GOT can be specified.
Set within the address range of the buffer memory existing in the intelligent function module.
*6 Do not use the local device set in a MELSEC-Q system.
Otherwise normal monitoring is not performed.
*7 GT SoftGOT1000 cannot monitor the device.
*8 Even though Universal model QCPU processes 64-bit data, the GOT cannot monitor the 64-bit data.
*9 ZR1042432 to ZR4184063 cannot be used for GT SoftGOT1000.
*10 This is not supported by GT10.
*11 For GT11 and GT10, the controller type is as shown below.
GT11: MELSEC-QnU,Q17nD/M/NC/DR
GT10: MELSEC-QnU

## (2) MELSEC-QnA/Q/QS,MELDAS C6/C64*12

| Device name*7*8*11 | | | Setting range | | | Device No. Representation |
|---|---|---|---|---|---|---|
| Bit device | Input (X) | | X0 | to | X1FFF | Hexadecimal |
| | Output (Y) | | Y0 | to | Y1FFF | |
| | Internal relay (M)*9 | | M0 | to | M32767 | Decimal |
| | Latch relay (L) | | L0 | to | L32767 | |
| | Annunciator (F) | | F0 | to | F32767 | |
| | Link relay (B) | | B0 | to | B7FFF | Hexadecimal |
| | Timer*9 | Contact (TT) | TT0 | to | TT32767 | Decimal |
| | | Coil (TC) | TC0 | to | TC32767 | |
| | Counter*9 | Contact (CT) | CT0 | to | CT32767 | |
| | | Coil (CC) | CC0 | to | CC32767 | |
| | Special relay (SM) | | SM0 | to | SM2047 | |
| | Retentive timer*9 | Contact (SS) | SS0 | to | SS32767 | |
| | | Coil (SC) | SC0 | to | SC32767 | |
| | Step relay (S) | | S0 | to | S32767 | |
| | Link special relay (SB) | | SB0 | to | SB7FF | Hexadecimal |
| | Word device bit*10 | | Specified bit of the following word devices (Except Index register and Buffer memory) | | | - |
| Word device | Data register (D)*9 | | D0 | to | D32767 | Decimal |
| | Special data register (SD) | | SD0 | to | SD2047 | |
| | Link register (W) | | W0 | to | W7FFF | Hexadecimal |
| | Timer (current value) (TN)*9 | | TN0 | to | TN32767 | Decimal |
| | Counter (current value) (CN)*9 | | CN0 | to | CN32767 | |
| | Retentive timer (current value) (SN)*9 | | SN0 | to | SN32767 | |
| | Link special register (SW) | | SW0 | to | SW7FF | Hexadecimal |
| | File register (R)*1*2 | | R0 | to | R32767 | Decimal |
| | Extension fill register (ER)*1*10 | Block | 0 | to | 255 | |
| | | Device | R0 | to | R32767 | |
| | Extension file register (ZR)*1*3*4*10 | | ZR0 | to | ZR1042431 | |
| | Index register (Z) | | Z0 | to | Z15 | |
| | Buffer memory (Intelligent function module) (BM)*5*10 | | BM0 | to | BM32767 | |
| | Ww*10 | | Ww0 | to | Ww7FF | Hexadecimal |
| | Wr*10 | | Wr0 | to | Wr7FF | |
| | Bit device word*6*10 | | Converting the above bit devices to words | | | - |

*1 Do not set a file register by GT Designer2 when executing multiple programs with the file of the file register set at "Use the same file name as the program" by the PLC parameter of GX Developer. (With exceptions of MELSEC-QnA)
Otherwise, read/write at GOT will be erroneous.

*2 Available for file register of block No. switched with the RSET instruction.

*3 Available for file register of block No. of file name switched with the QDRSET instruction.

*4 GOT treats them in units of 32k (32767 points).

*5 Only the intelligent function module on the station connected to GOT can be specified.
Set within the address range of the buffer memory existing in the intelligent function module.

*6 The device No. must be set in multiples of 16.

*7 When monitoring MELDAS C6/64, if a word device outside the range is set, the value will be indefinite. If a bit device outside the range is set, the object may not be displayed or the set function may fail to operate.
Check the set device using the device list of GT Designer2.

*8 Devices used by the MELDAS C6/64 system cannot be used.

*9 Do not use the local device set in a MELSEC-Q system.
Otherwise normal monitoring is not performed.

*10 This is not supported by GT10.

*11 The GOT can only read data from the device for the QS001CPU.

*12 For GT11 and GT10, the controller type is as shown below.
GT11: MELSEC-QnA/Q, MELDAS C6*
GT10: MELSEC-QnA/Q

## (3) MELSEC-Q (Multi)/Q Motion*13

| Device name | | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|---|
| Bit device | Input (X) | | X0 | to | X1FFF | Hexadecimal |
| | Output (Y) | | Y0 | to | Y1FFF | |
| | Internal relay (M)*12 | | M0 | to | M32767 | Decimal |
| | Latch relay (L) | | L0 | to | L32767 | |
| | Annunciator (F) | | F0 | to | F32767 | |
| | Link relay (B) | | B0 | to | B7FFF | Hexadecimal |
| | Timer*12 | Contact (TT) | TT0 | to | TT32767 | Decimal |
| | | Coil (TC) | TC0 | to | TC32767 | |
| | Counter*12 | Contact (CT) | CT0 | to | CT32767 | |
| | | Coil (CC) | CC0 | to | CC32767 | |
| | Special relay (SM)*8 | | SM0 | to | SM2047 | |
| | Retentive timer*12 | Contact (SS) | SS0 | to | SS32767 | |
| | | Coil (SC) | SC0 | to | SC32767 | |
| | Step relay (S) | | S0 | to | S32767 | |
| | Link special relay (SB) | | SB0 | to | SB7FF | Hexadecimal |
| | Word device bit*7 | | Specified bit of the following word devices (Except Index register and Buffer memory) | | | - |
| Word device | Data register (D)*9*10*12 | | D0 | to | D32767 | Decimal |
| | Special data register (SD) | | SD0 | to | SD2047 | |
| | Link register (W) | | W0 | to | W7FFF | Hexadecimal |
| | Timer (current value) (TN)*12 | | TN0 | to | TN32767 | Decimal |
| | Counter (current value) (CN)*12 | | CN0 | to | CN32767 | |
| | Retentive timer (current value) (SN)*12 | | SN0 | to | SN32767 | |
| | Link special register (SW) | | SW0 | to | SW7FF | Hexadecimal |
| | File register (R)*1*2 | | R0 | to | R32767 | Decimal |
| | Extension file register (ER)*1*7 | Block | 0 | to | 255 | |
| | | Device | R0 | to | R32767 | |
| | Extension file register (ZR)*1*3*4*7 | | ZR0 | to | ZR1042431 | |
| | Index register (Z) | | Z0 | to | Z15 | |
| | Buffer memory (Intelligent function module) (BM)*5*7 | | BM0 | to | BM32767 | |
| | Ww*7 | | Ww0 | to | Ww7FF | Hexadecimal |
| | Wr*7 | | Wr0 | to | Wr7FF | |
| | Motion device (#)*11 | | #0 | to | #8191 | Decimal |
| | Bit device word*6*7 | | Converting the above bit devices into words | | | - |

(When the QCPU is used)

*1 to *6(2) MELSEC-QnA/Q/QS, MELDAS C6*

*7 This is not supported by GT10.

(When the Q Motion is used)

*8 When setting special internal relay M9000 to M9255, use SM for the device name and set the value subtracted 9000 for the device number (0 to 255).

*9 The setting range is D9000 to D9255 when setting the special data register.

*10 D8192 to D8999 and D9256 to D9999 are out of the valid setting range.

*11 Monitoring is not available with GT SoftGOT1000.

(When the QCPU / Q Motion is used)

*12 Do not use the local device set in a MELSEC-Q (Multi)/Q Motion system.
Otherwise normal monitoring is not performed.

*13 For GT10, the controller type is [MELSEC-Q(Multi)].

(4) MELSEC-A

(a) GT15, GT SoftGOT1000, GT11

| Device name | | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|---|
| Bit device | Input (X) | | X0 | to | X1FFF | Hexadecimal |
| | Output (Y) | | Y0 | to | Y1FFF | |
| | Internal relay/Special internal relay (M) | | M0 | to | M32767 | Decimal |
| | Latch relay (L) | | L0 | to | L32767 | |
| | Annunciator (F) | | F0 | to | F32767 | |
| | Link relay (B) | | B0 | to | B7FFF | Hexadecimal |
| | Timer | Contact (TT) | TT0 | to | TT32767 | Decimal |
| | | Coil (TC) | TC0 | to | TC32767 | |
| | Counter | Contact (CT) | CT0 | to | CT32767 | |
| | | Coil (CC) | CC0 | to | CC32767 | |
| | Link special relay (SB) | | SB0 | to | SB7FF | Hexadecimal |
| | Word device bit | | Specified bit of the following word devices (Except Index register and Buffer memory) | | | - |
| Word device | Data register/Special data register (D) | | D0 | to | D32767 | Decimal |
| | Link register (W) | | W0 | to | W7FFF | Hexadecimal |
| | Timer (current value) (TN) | | TN0 | to | TN32767 | Decimal |
| | Counter (current value) (CN) | | CN0 | to | CN32767 | |
| | Link special register (SW) | | SW0 | to | SW7FF | Hexadecimal |
| | File register (R) | | R0 | to | R32767 | Decimal |
| | Extension file register (ER)*1 | Block | 1 | to | 255 | |
| | | Device | ER0 | to | ER32767 | |
| | Index register *2 | (Z) | Z0 | to | Z15 | |
| | | (V) | V0 | to | V6 | |
| | Announciator (A) | | A0 | to | A1 | |
| | Buffer memory (Intelligent function module) (BM))*3 | | BM0 | to | BM32767 | Decimal |
| | Ww | | Ww0 | to | Ww7FF | Hexadecimal |
| | Wr | | Wr0 | to | Wr7FF | |
| | Bit device word *4*5 | | Converting the above bit devices to words (Except Timer and Counter) | | | - |

*1 In the computer link connection, the bit specification writing of the word device to the ER29-0 (block 29 of the extension file register) or later of A3ACPU, A3UCPU, A4UCPU is not available.
When the bit specification writing of the word device is required, use the range of block No. 0 to 28.

*2 In the computer link connection, writing to the index register (e.g., the touch switch function, numerical input function) is not available.

*3 Only the intelligent function module on the station connected to GOT can be specified.
Set within the address range of the buffer memory existing in the intelligent function module.

*4 The device No. must be set in multiples of 16.

*5 If the special internal relay (M) is converted to the word device, treat 9000 of the device No. as 0 and set in multiples of 16.
Example: M9000, M9016, M9240

(b) GT10

| Device name | | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|---|
| Bit device | Input (X) | | X0 | to | X1FFF | Decimal |
| | Output (Y) | | Y0 | to | Y1FFF | |
| | Internal relay/Special internal relay (M) | | M0 | to | M9255 | |
| | Latch relay (L) | | L0 | to | L8191 | |
| | Annunciator (F) | | F0 | to | F2047 | |
| | Link relay (B) | | B0 | to | B1FFF | Hexadecimal |
| | Timer | Contact (TT) | TT0 | to | TT2047 | Decimal |
| | | Coil (TC) | TC0 | to | TC2047 | |
| | Counter | Contact (CT) | CT0 | to | CT1023 | |
| | | Coil (CC) | CC0 | to | CC1023 | |
| Word device | Data register/Special data register (D) | | D0 | to | D9255 | Decimal |
| | Link register (W) | | W0 | to | W1FFF | Hexadecimal |
| | Timer (current value) (TN) | | TN0 | to | TN2047 | Decimal |
| | Counter (current value) (CN) | | CN0 | to | CN1023 | |
| | File register (R) | | R0 | to | R8191 | |
| | Index register *1 | (Z) | Z0 | to | Z6 | |
| | | (V) | V0 | to | V6 | |
| | Accumulator (A)*2 | | A0 | to | A1 | |

*1 When the computer link connection is used,writing to index registers (such as touch switch function, numerical input function) is disabled.

*2 With the computer link connection, the GOT cannot read/write data from/to the accumulator.

## (5) MELSEC-FX

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input (X) | X0 | to | X377 | Octal |
| | Output (Y) | Y0 | to | Y377 | |
| | Auxiliary relay (M) | M0 | to | M7679 | Decimal |
| | Special auxiliary relay (M) | M8000 | to | M8511 | |
| | State (S) | S0 | to | S4095 | |
| | Timer contact (T) | T0 | to | T511 | |
| | Counter contact (C) | C0 | to | C255 | |
| | Word device bit *1*6 | Specified bit of the following word devices (Except Timer (set value) and Counter (set value)) | | | - |
| Word device | Data register (D) | D0 | to | D0999 | Decimal |
| | RAM file register (D) | D1000 | to | D7999 | |
| | Special data register (D) | D8000 | to | D8511 | |
| | Timer (set value) (T) | T0 | to | T511 | |
| | Counter (set value) (C) | C0 | to | C255 | |
| | Timer (set value) (TS) *3 *5 | TS0 | to | TS511 | |
| | Counter (set value) (CS) *4 *5 | CS0 | to | CS255 | |
| | Extension register (R) | R0 | to | R32767 | |
| | Index register (V) | V0 | to | V7 | |
| | Index register (Z) | Z0 | to | Z7 | |
| | Bit device word *2*6 | Converting the above bit devices to words (Except Timer contact and Counter contact) | | | |

*1 When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

*2 The device No. must be set in multiples of 16.

*3 Only 16-bit (1-word) designation is allowed.

*4 For CS0 to CS199, only 16-bit (1-word) designation is allowed.
For CS200 to CS255, only 32-bit (2-word) designation is allowed.

*5 Monitoring or writing is not possible in the continuous device designation mode.

*6 This is not supported by GT10.

**Point**

(1) How to select a keyword protection level

For equipment that is allowed to operate the FX PLC on line, 3 levels of protection level can be set.

When performing monitoring or changing settings with any on-line equipment is required, set password with referring to the following.

(a) When setting keyword only

Select a protection level by the initial letter of keyword.

All operation protect: Set a keyword with initial letter of "A", "D" to "F", or "0" to "9".

Read/Incorrect write protection : Set a keyword with initial letter of "B".

Incorrect write protect: Set a keyword with initial letter of "C".

(b) When setting keyword and 2nd keyword

Select a protection level by [Registration condition].

(2) Monitoring availability at each keyword protection level

Device monitoring availability at each keyword protection level is shown in the following.

| Item | | When registering keyword only | | | When registering keyword and 2nd keyword | | | Keyword not registered or protection cancelled |
|---|---|---|---|---|---|---|---|---|
| | | All operation protect | Read/ Incorrect write protection | Incorrect write protect | All on-line operation protect | Read/ write protect | Write protect | |
| Monitoring devices | | ○ | ○ | ○ | × | ○ | ○ | ○ |
| Changing devices | T, C set value and file register (D1000 and the following) | × | × | × | × | ○ | ○ | ○ |
| | Other than the above | ○ | ○ | ○ | × | ○ | ○ | ○ |

(3) Difference between all online operations prohibition and all operations prohibition

When specifying all online operations prohibited, displaying devices and inputting data with a programming tool or GOT are all prohibited.

When all operations are prohibited, displaying devices and inputting data with the GOT are enabled while all operations using a programming tool are prohibited.

## 2 OMRON PLC (OMRON SYSMAC)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | I/O relay/internal auxiliary relay | ..000000 | to | ..614315 | Decimal + hexadecimal |
| | Data link relay (LR) | LR00000 | to | LR19915 | |
| | Auxiliary memory relay (AR) | AR00000 | to | AR95915 | |
| | Holding relay (HR) | HR00000 | to | HR51115 | |
| | Internal holding relay (WR) | WR00000 | to | WR51115 | |
| | Timer contact (TIM)*1 | TIM0000 | to | TIM4095 | Decimal |
| | Counter contact (CNT)*1 | CNT0000 | to | CNT4095 | |
| | Word device bit*2 | Specified bit of the following word devices (except data link relay, auxiliary memory relay, holding relay and internal holding relay.) | | | - |
| Word device | I/O relay / internal auxiliary relay*7 | ..0000 | to | ..6143 | Decimal |
| | Data link relay (LR) | LR000 | to | LR199 | |
| | Auxiliary memory relay (AR) | AR000 | to | AR959 | |
| | Holding relay (HR) | HR000 | to | HR511 | |
| | Internal holding relay (WR) | WR000 | to | WR511 | |
| | Data memory (DM)*7 | DM00000 | to | DM32767 | |
| | Timer (current value) (TIM)*5 | TIM0000 | to | TIM4095 | |
| | Counter (current value) (CNT)*5 | CNT0000 | to | CNT4095 | |
| | Extension data memory (EM current bank)*3*7 | EM00000 | to | EM32767 | |
| | Extension data memory (E0 to EC: 13 banks)*3*4 | E000000<br>:<br>EC00000 | to<br><br>to | E032767<br><br>EC32767 | |

*1 Writing is not allowed when using CV1000, CJ1, and CP1.
*2 When executing the touch switch function that has been set during the bit specification of the word device, do not write to word device through the sequence program.
*3 Writing or reading the extension data memory using multiple banks is not allowed.
*4 The range from E0 to 2 is available when CJ1 is used.
*5 Timer (current value) and counter (current value) are valid within the rage of 0 to 999.
(This applies to the 16 bit/32 bit device data.)
*6 COM1H-CPU61 cannot read from or write to this device.
*7 Depending on the OMRON PLC to be used, the device name may differ.
..(GT Designer2)→CIO (OMURON PLC)
EM(GT Designer2)→E (OMURON PLC)
DM(GT Designer2)→D (OMURON PLC)

## 3 KEYENCE PLC (KEYENCE KV-700/1000/3000/5000)

| | Device name | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Relay (...) | ..00000 | to | ..99915 | Decimal |
| | Internal auxiliary relay (MR) | MR00000 | to | MR99915 | |
| | Latch relay (LR) | LR00000 | to | LR99915 | |
| | Control relay (CR) | CR0000 | to | CR3915 | |
| | Link relay (B) *2 | B0000 | to | B3FFF | Hexadecimal |
| | Work relay (VB) *2 | VB0000 | to | VB3FFF | |
| | Timer (contact) (T) *1 *2 | T0000 | to | T3999 | Decimal |
| | Counter (contact) (C) *1 *2 | C0000 | to | C3999 | |
| | High-speed counter comparator (contact) (CTC) *2 *3 *6 | CTC0 | to | CTC3 | |
| | Word device bit *7 | Specified bit of the following word devices (except timer (current value), timer (set value), counter (current value), counter (set value), high-speed counter (current value), high-speed counter comparator (set value), control memory, temporary data memory, index register and digital trimmer) | | | - |
| Word device | Timer (current value) (TC) *2 *4 | TC0000 | to | TC3999 | Decimal |
| | Timer (set value) (TS) *2 *4 | TS0000 | to | TS3999 | |
| | Counter (current value) (CC) *2 *4 | CC0000 | to | CC3999 | |
| | Counter (set value) (CS) *2 *4 | CS0000 | to | CS3999 | |
| | High-speed counter (current value) (CTH) *2 *4 | CTH0 | to | CTH1 | |
| | High-speed counter comparator (set value) (CTC) *2 *4 | CTC0 | to | CTC3 | |
| | Data memory (DM) | DM00000 | to | DM65534 | |
| | Extension data memory (EM) | EM00000 | to | EM65534 | |
| | Extension data memory 2 (FM) | FM00000 | to | FM32766 | |
| | File register (ZF) | ZF000000<br>ZF032768<br>ZF065536<br>ZF098304 | to<br>to<br>to<br>to | ZF032767<br>ZF065535<br>ZF098303<br>ZF131071 | |
| | Link register (W) | W0000 | to | W3FFF | Hexadecimal |
| | Control memory (CM) | CM00000 | to | CM11998 | Decimal |
| | Temporary data memory (TM) | TM000 | to | TM511 | |
| | Work memory (VM) | VM00000 | to | VM59999 | |
| | Index register (Z) | Z1 | to | Z12 | |
| | Index register (DZ) | DZ01 | to | DZ12 | |
| | Digital trimmer (TRM) *4 *5 | TRM0 | to | TRM7 | |
| | Bit device word *7 | Converting the above bit devices to words (except timer (contact), counter (contact) and high-speed counter comparator (contact)) | | | - |

*1 Monitoring or writing is not possible in the continuous device designation mode.
*2 Monitoring by GOT is possible only when a device is used in the sequence program.
*3 In writing, only resetting of a contact is possible.
*4 Only 32-bit (2-word) designation is possible.
*5 Only reading is possible.
*6 Reading/writing from/to continuous devices is not possible.
*7 This is not supported by GT10.
*8 With KV-3000 and KV-5000, Z devices cannot be specified as 32-bit (2 words) data.
Use DZ devices.

## 4 KOYO EI PLC (KOYO KOSTAC/DL)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input (I)*5 | I0 | to | I1777 | Octal |
| | Output (Q)*5 | Q0 | to | Q1777 | |
| | Link relay (GI) | GI0 | to | GI3777 | |
| | Link output (GQ) | GQ0 | to | GQ3777 | |
| | Internal relay (M) | M0 | to | M3777 | |
| | Stage (S) | S0 | to | S1777 | |
| | Timer (T) | T0 | to | T377 | |
| | Counter (C) | C0 | to | C377 | |
| | Special relay (SP)*1 | SP0 | to | SP777 | |
| Word device | Timer (current value) (R) | R0 | to | R377 | Octal |
| | Preparatory register (R)*5 | R400 | to | R677 | |
| | Special register 1 (R)*1*5 | R700 | to | R777 | |
| | Timer (current value) (R)*3 | R1000 | to | R1377 | |
| | Data register 1 (R)*2*5 | R1400 | to | R7377 | |
| | Special register 2 (R)*1*4*5 | R7400 | to | R7777 | |
| | Data register 2 (R)*5 | R10000 | to | R36777 | |
| | Special register 3 (R)*1*5 | R37000 | to | R37777 | |
| | Link relay (R) | R40000 | to | R40177 | |
| | Link output (R) | R40200 | to | R40377 | |
| | Input (R) | R40400 | to | R40477 | |
| | Output (R) | R40500 | to | R40577 | |
| | Internal relay (R) | R40600 | to | R40777 | |
| | Stage (R) | R41000 | to | R41077 | |
| | Timer (R) | R41100 | to | R41117 | |
| | Counter (R) | R41140 | to | R41157 | |
| | Special relay (R) | R41200 | to | R41237 | |

*1 Read-only device for KOSTAC SU series
*2 The GOT cannot write data to R7377 for the SU-5M and SU-6M.
*3 For Direct Logic 05 series and Direct Logic 06 series, devices from R1200 to R1377 are used as V-memory 2.
*4 The GOT cannot write data to devices from R7766 to R7774 (calendar area).
*5 The device names differ according to the series.
The following shows the device nemes for each series.

| KOSTAC SU series, PZ series | Direct Logic 05 series, Direct Logic 06 series | Direct Logic 205 series |
|---|---|---|
| Input | Input relay | Input |
| Output | Output relay | Output |
| Preparatory register | V-memory 1 | Data register 1 |
| Special register 1 | System parameter 1 | System parameter 1 |
| Data register 1 | V-memory 2 | Data register 2 |
| Special register 2 | System parameter 2 | System parameter 2 |
| Data register 2 | V-memory 3 | Data register 3 |
| Special register 3 | System parameter 4 | System parameter 4 |

## 5 SHARP PLC (SHARP JW)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | I/O relay | ..00000<br>..20000 | to<br>to | ..15777<br>..75777 | Octal |
| | Timer (Contact) (T) | T0000 | to | T1777 | |
| | Counter (Contact) (C) | C0000 | to | C1777 | |
| | Word device bit | Specified bit of the following word devices. | | | - |
| Word device | Timer (Current value) (T) | T0000 | to | T1777 | Octal |
| | Counter (Current value) (C) | C0000 | to | C1777 | |
| | Register (09 to E7) | 09000 | to | 09776 | |
| | | 19000 | to | 19776 | |
| | | 29000 | to | 29776 | |
| | | 39000 | to | 39776 | |
| | | 49000 | to | 49776 | |
| | | 59000 | to | 59776 | |
| | | 69000 | to | 69776 | |
| | | 79000 | to | 79776 | |
| | | 89000 | to | 89776 | |
| | | 99000 | to | 99776 | |
| | | E0000 | to | E0776 | |
| | | E1000 | to | E1776 | |
| | | E2000 | to | E2776 | |
| | | E3000 | to | E3776 | |
| | | E4000 | to | E4776 | |
| | | E5000 | to | E5776 | |
| | | E6000 | to | E6776 | |
| | | E7000 | to | E7776 | |
| | File register (1 to 7) | 1000000<br>2000000<br>3000000<br>4000000<br>5000000<br>6000000<br>7000000 | to<br>to<br>to<br>to<br>to<br>to<br>to | 1177776<br>2177776<br>3177776<br>4177776<br>5177776<br>6177776<br>7177776 | |

## 6 JTEKT PLC (JTEKT TOYOPUC-PLC)

| | Device name | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input (X) *1 | X000 | to | X7FF | Hexadecimal |
| | Output (Y)*1 | Y000 | to | Y7FF | |
| | Link relay (L) | L000 | to | L7FF | |
| | Internal relay (M) | M000 | to | M7FF | |
| | Keep relay (K) | K000 | to | K2FF | |
| | Edge detection (P) | P000 | to | P1FF | |
| | Timer (T)*1 | T000 | to | T1FF | |
| | Counter (C)*1 | C000 | to | C1FF | |
| | Special relay (V) | V000 | to | V0FF | |
| | Extended input (EX)*1 | EX000 | to | EX7FF | |
| | Extended output (EY)*1 | EY000 | to | EY7FF | |
| | Extended internal relay (EM) | EM0000 | to | EM1FFF | |
| | Extended keep-relay (EK) | EK000 | to | EKFFF | |
| | Extended special relay (EV) | EV000 | to | EVFFF | |
| | Extended timer (ET)*1 | ET000 | to | ET7FF | |
| | Extended counter (EC)*1 | EC000 | to | EC7FF | |
| | Extended link relay (EL) | EL0000 | to | EL1FFF | |
| | Extended edge detection (EP) | EP000 | to | EPFFF | |
| | Extended input 2 (GX)*1*3 | GX0000 | to | GXFFFF | |
| | Extended output 2 (GY)*1*3 | GY0000 | to | GYFFFF | |
| | Extended internal relay (GM)*3 | GM0000 | to | GMFFFF | |
| | Word device bit | Specified bits of the following word devices (Excluding EB and TCS) | | | |
| Word device | Data register (D) | D0000 | to | D2FFF | Hexadecimal |
| | Link register (R) | R0000 | to | R07FF | |
| | Current value register (N) | N0000 | to | N01FF | |
| | Special register (S) | S0000 | to | S03FF | |
| | File register (B) | B0000 | to | B1FFF | |
| | Extended present value register (EN) | EN0000 | to | EN07FF | |
| | Extended setup value register (H) | H0000 | to | H07FF | |
| | Extended special register (ES) | ES0000 | to | ES07FF | |
| | Extended data register (U) | U0000 | to | U7FFF | |
| | Extended buffer register (EB)*3 | EB00000<br>EB08000<br>EB10000<br>EB18000 | to<br>to<br>to<br>to | EB07FFF<br>EB0FFFF<br>EB17FFF<br>EB1FFFF | |
| | Setup value register (TCS)*2 | TCS0000 | to | TCS01FF | |
| | Word of bit devices above | Converting bit devices into word | | | |

*1 Overlapped device designation of an input (X, EX, GX) and an output (Y, EY, GY), or a timer (T, ET) and a counter (C, EC) is not allowed. (Example: X0000 and Y0000, EX0000 and EY0000)

*2 To store a setting value of T (timer) or C (counter), use TCS.
Setting value of a timer and a counter is stored in TCS. (TCS cannot be used if a timer or a counter is not in a program.)

*3 GX, GY, GM and EB can be used only in the PC3JG separate mode.
Access to GX, GY, GM and EB through a link module is not possible.

## 7 TOSHIBA PLC (TOSHIBA PROSEC T/V)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | External input (X) | X0000 | to | X511F | Hexadecimal |
| | External output (Y) | Y0000 | to | Y511F | |
| | Internal relay (R)*1 | R0000 | to | R4095F | |
| | Special relay (S)*6 | S0000 | to | S511F | |
| | Link register relay (Z) | Z0000 | to | Z999F | |
| | Link relay (L) | L0000 | to | L255F | |
| | Timer (Contact) (T)*1 | T0 | to | T999 | Decimal |
| | Counter (Contact) (C)*1 | C0 | to | C511 | |
| | Word device bit*2*6 | Specified bit of the following word devices (except external input, external output, internal relay, special relay, link relay, timer and counter) | | | - |
| Word device | External input (XW) | XW0 | to | XW511 | Decimal |
| | External output (YW) | YW0 | to | YW511 | |
| | Internal relay (RW)*5*7 | RW0 | to | RW4095 | |
| | Special relay (SW)*7 | SW0 | to | SW511 | |
| | Link relay (LW) | LW0 | to | LW255 | |
| | Timer (Current value) (T)*1 | T0 | to | T999 | |
| | Counter (Current value) (C)*1 | C0 | to | C511 | |
| | Data register (D)*3*5*7 | D0 | to | D8191 | |
| | Link register (W)* | W0 | to | W2047 | |
| | File register (F)*6 | F0 | to | F32767 | |

PROSEC T series

*1 Write of the timer (contact)/(current value), counter (contact)/(current value) is executed after having been read by GOT. Therefore, do not edit it in the sequence program during this period.

*2 As bit specification of a word device is performed after the GOT reads the value, do not change the value in the sequence program during this period.

*3 When the mode switch on the CPU module has been set to "P-RUN", writing to D0000 through D4095 is disabled.

*4 Extension file register is not supported.

PROSEC V series

*2 As bit specification of a word device is performed after the GOT reads the value, do not change the value in the sequence program during this period.

*5 RW0000 and D0000 indicate the same data register in the same region although they are shown in different notations.

*6 For bit data, the conversion from the address notation for the TOSHIBA PLC to that for the GOT is shown as follows.

Address notation for TOSHIBA PLC ÷ 16=Word address (Quotient)…Bit address (Remainder)

| Address notation for TOSHIBA PLC | Address notation for GOT | Conversion |
|---|---|---|
| S8191 | S511F<br>(Decimal) (Hexadecimal) | 8191 ÷ 16 = 511...15 |
| R65535 | R4095F<br>(Decimal) (Hexadecimal) | 65535 ÷ 16 = 4095...15 |

*8 For word data, the conversion from the address notation for the TOSHIBA PLC to that for the GOT is shown as follows.

| Data format | | Address notation for TOSHIBA PLC | Address notation for GOT |
|---|---|---|---|
| 16 bit data | | DW10 | D10 |
| 32 bit data | (Integer) | DD10<br>(Calculate the device No. in 32-bit unit) | D20 |
| | (Real number) | DF10<br>(Calculate the device No. in 32-bit unit) | D20 |

## 8 TOSHIBA MACHINE PLC (TOSHIBA MACHINE TCmini)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input relay 1 (X) | X000 | to | XF7F | Hexadecimal + Octal + Hexadecimal |
| | Input relay 2 (I) | I000 | to | IF7F | |
| | Output relay 1 (Y) | Y000 | to | YF7F | |
| | Output relay 2 (O) | O000 | to | OF7F | |
| | Internal relay (R) | R000 | to | R77F | |
| | Extended internal relay 1 (GR) | GR000 | to | GRF7F | |
| | Extended internal relay 2 (H) | H000 | to | HF7F | |
| | Extended internal relay 3 (J) | J000 | to | JF7F | |
| | Extended internal relay 4 (K) | K000 | to | KF7F | |
| | Timer contact (T) | T000 | to | T77F | |
| | Counter contact (C) | C000 | to | C77F | |
| | Shift relay (S) | S000 | to | S07F | |
| | Latch relay (L) | L000 | to | L07F | |
| | Edge relay (E) | E000 | to | E77F | |
| | Special aux relay (A) | A000 | to | A16F | |
| Word device | Input register 1 (XW) | XW00 | to | XWF7 | Hexadecimal + Octal |
| | Input register 2 (IW) | IW00 | to | IWF7 | |
| | Output register 1 (YW) | YW00 | to | YWF7 | |
| | Output register 2 (OW) | OW00 | to | OWF7 | |
| | Internal register (RW) | RW00 | to | RW77 | |
| | Extended internal register 1 (GW) | GW00 | to | GWF7 | |
| | Extended internal register 2 (HW) | HW00 | to | HWF7 | |
| | Extended internal register 3 (JW) | JW00 | to | JWF7 | |
| | Extended internal register 4 (KW) | KW00 | to | KWF7 | |
| | Timer contact register (TW) | TW00 | to | TW77 | |
| | Counter contact register (CW) | CW00 | to | CW77 | |
| | Shift register (SW) | SW00 | to | SW07 | |
| | Latch register (LW) | LW00 | to | LW07 | |
| | Edge register (EW) | EW00 | to | EW77 | |
| | Special aux register (AW) | AW00 | to | AW16 | Hexadecimal + Octal + Hexadecimal |
| | Generic register 1 (D) | D000 | to | DF7F | |
| | Generic register 2 (B) | B000 | to | BF7F | |
| | Generic register 3 (U) | U000 | to | UF7F | |
| | Generic register 4 (M) | M000 | to | MF7F | |
| | Generic register 5 (Q) | Q000 | to | QF7F | |
| | Timer/Counter current value (P) | P000 | to | P77F | |
| | Timer/Counter set value (V) | V000 | to | V77F | |

## 9 HITACHI IES PLC (HITACHI HIDIC H series)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | External input (X) | X00000 | to | X05A95 | Hexadecimal + Decimal |
| | External output (Y) | Y00000 | to | Y05A95 | |
| | Remote external input (X) | X10000 | to | X49995 | Decimal |
| | Remote external output (Y) | Y10000 | to | Y49995 | |
| | 1st CPU link (L) | L0000 | to | L3FFF | Hexadecimal |
| | 2nd CPU link (L1) | L10000 | to | L13FFF | |
| | Data area (M) | M0000 | to | M3FFF | |
| | On-delay timer (TD)*1 | TD0 | to | TD255 | Decimal |
| | Single-shot timer (SS)*1 | SS0 | to | SS255 | |
| | Watchdog timer (WDT)*1 | WDT0 | to | WDT255 | |
| | Monostable timer (MS)*1 | MS0 | to | MS255 | |
| | Retentive timer (TMR)*1 | TMR0 | to | TMR255 | |
| | Up counter (CU)*1 | CU0 | to | CU511 | |
| | Ring counter (RCU)*1 | RCU0 | to | RCU511 | |
| | Up/Down counter (CT)*1 | CT0 | to | CT511 | |
| | Bit internal output (R) | R0 | to | R7BF | Hexadecimal |
| | Rising edge detection (DIF)*1 | DIF0 | to | DIF511 | Decimal |
| | Falling edge detection (DIF)*1 | DFN0 | to | DFN511 | |
| | Word device bit | Specified bit of the following word devices (except external input, external output, remote external input, remote external output, first CPU link, second CPU link and data area) | | | - |
| Word device | External input (WX) | WX0000 | to | WX05A7 | Hexadecimal + Decimal |
| | External output (WY) | WY0000 | to | WY05A7 | |
| | Remote external input (WX) | WX1000 | to | WX4997 | Decimal |
| | Remote external output (WY) | WY1000 | to | WY4997 | |
| | First CPU link (WL) | WL000 | to | WL3FF | Hexadecimal |
| | Second CPU link (WL1) | WL1000 | to | WL13FF | |
| | Data area (WM) | WM000 | to | WM3FF | |
| | Timer/Counter (Elapsed value) (TC)*1 | TC0 | to | TC511 | Decimal |
| | Word internal output (WR) | WR000 | to | WR3FF | Hexadecimal |

*1 The same number cannot be used repeatedly.

*2 Do not set device outside the range.
If the set device is outside the range, the object set by the device within the range cannot be displayed.

## 10 HITACHI PLC (HITACHI S10mini/S10V)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | External input (X) | X000 | to | XFFF | Hexadecimal |
| | External output (Y) | Y000 | to | YFFF | |
| | Internal register (R) | R000 | to | RFFF | |
| | Keep relay (K) | K000 | to | KFFF | |
| | Extended internal register (M) | M000 | to | MFFF | |
| | Extended internal register (A) | A000 | to | AFFF | |
| | On-delay timer (T) | T000 | to | T1FF | |
| | On-shot timer (U) | U000 | to | U0FF | |
| | Up-down counter (C) | C00 | to | CFF | |
| | Global link register (GL)*6 | GL000 | to | GLFFF | |
| | Event register (E) | E000 | to | EFFF | |
| | System register (S)*1 | S000 | to | SBFF | |
| | Transfer register (J) | J000 | to | JFFF | |
| | Receive register (Q) | Q000 | to | QFFF | |
| | Word device bit | Specified bit of the following word devices (Except for external input, external output, internal register, extended internal register, keep relay, on-delay timer, one-shot timer, up-down counter, global link register, event register, system register, transfer register, receive register, long-word work register, floating-point work register, and backup single-precision floating-point work register) | | | - |

(Continued to next page)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Word device | External input (XW) | XW000 | to | XWFF0 | Hexadecimal |
| | External output (YW) | YW000 | to | YWFF0 | |
| | Internal register (RW) | RW000 | to | RWFF0 | |
| | Extended internal register (MW) | MW000 | to | MWFF0 | |
| | Extended internal register (AW) | AW000 | to | AWFF0 | |
| | Keep relay (KW) | KW000 | to | KWFF0 | |
| | On-delay timer (TW) | TW000 | to | TW1F0 | |
| | On-shot timer (UW) | UW000 | to | UW0F0 | |
| | Up-down counter (CW) | CW00 | to | CWF0 | |
| | Global link register (GW) | GW000 | to | GWFF0 | |
| | Event register (EW) | EW000 | to | EWFF0 | |
| | System register (SW)*1 | SW000 | to | SWBF0 | |
| | Transfer register (JW) | JW000 | to | JWFF0 | |
| | Receive register (QW) | QW000 | to | QWFF0 | |
| | On-delay timer (current value) (TC)*2 | TC000 | to | TC1FF | |
| | On-delay timer (set value) (TS)*2 | TS000 | to | TS1FF | |
| | One-shot timer (current value) (UC)*2 | UC000 | to | UC0FF | |
| | One-shot timer (set value) (US)*2 | US000 | to | US0FF | |
| | Up-down counter (current value) (CC)*2 | CC00 | to | CCFF | |
| | Up-down counter (set value) (CS)*2 | CS00 | to | CSFF | |
| | Function data register (DW)*4*5 | DW000 | to | DWFFF | |
| | Function work register (FW)*4*5 | FW000 | to | FWBFF | |
| | Extended function work register (LWW)*4*5 | LWW0000 | to | LWWFFFF | |
| | Backup work register (LXW)*5 | LXW0000 | to | LXW3FFF | |
| | Long-word work register (LLL)*3 | LLL0000 | to | LLL1FFF | |
| | Backup Long-word work register (LML)*3*4 | LML0000 | to | LML1FFF | |
| | Floating-point work register (LF)*3 | LF0000 | to | LF1FFF | |
| | Backup single-precision floating-point work register (LG)*3 | LG0000 | to | LG1FFF | |

*1 Only reading is possible.

*2 Only 16-bit (1-word) specification is possible.

*3 Only 32-bit (2-word) specification is possible.

*4 When it is used with bit specification (bit specification of word device), the offset function cannot be used.

*5 When bit specification (bit specification of word device) is performed, the uppermost bit is b0 and the lowermost bit is b15.

| Higher | | | | Lower |
|---|---|---|---|---|
| b0 | b1 | ····· | b14 | b15 |

*6 Device “GL” corresponds to dovice “G” of the PLU CPU.

## 11 FUJI FA PLC (FUJI MICREX-F)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | I/0 relay (B) | B0000 | to | B511F | Decimal + Hexadecimal |
| | Auxiliary relay (M) | M0000 | to | M511F | |
| | Keep relay (K) | K0000 | to | K063F | |
| | Special relay (F)*1 | F0000 | to | F125F | |
| | Annunciator relay (A) | A0000 | to | A045F | |
| | Differential relay (D) | D0000 | to | D063F | |
| | Link memory (L) | L0000 | to | L511F | |
| | Timer output (0.01s) (T) | T000 | to | T511 | Decimal |
| | Timer output (0.1s) (T) | T512 | to | T999 | |
| | Counter output (C) | C000 | to | C511 | |
| | Word device bit*5 | Specified bit of the following word devices (Except for I/0 relay, auxiliary relay, keep relay, special relay, annunciator relay, differential relay, link memory, data memory, timer, and counter) | | | - |
| Word device | I/0 relay (WB) | WB000 | to | WB511 | Decimal |
| | Auxiliary relay (WM) | WM000 | to | WM511 | |
| | Keep relay (WK) | WK000 | to | WK063 | |
| | Special relay (WF)*1 | WF000 | to | WF125 | |
| | Annunciator relay (WA) | WA000 | to | WA045 | |
| | Differential relay (WD) | WD000 | to | WD063 | |
| | Link memory (WL) | WL000 | to | WL511 | |
| | Direct access (W24)*6*7 | W24:0000 | to | W24:0255 | |
| | User file (W30)*4*6*7<br>User file (W31)*4*6*7<br>:<br>User file (W108)*4*6*7<br>User file (W109)*4*6*7 | W30:0000<br>W31:0000<br><br>W108:0000<br>W109:0000 | to<br>to<br>:<br>to<br>to | W30:4095<br>W31:4095<br><br>W108:4095<br>W109:4095 | |
| | Data memory (BD)*2 | BD0 | to | BD4095 | |
| | Timer set value (0.01s) (TS)*2*3 | TS0 | to | TS511 | |
| | Timer current value (0.01s) (TR)*2*3 | TR0 | to | TR511 | |
| | Timer current value (0.1s) (W9)*2*3 | W9:0000 | to | W9:0487 | |
| | Counter set value (CS)*2*3 | CS0 | to | CS511 | |
| | Counter current value (CR)*2*3 | CR0 | to | CR511 | |

*1 Only reading is possible.
*2 Only 32-bit (2-word) specification is possible.
*3 Decimal points are not displayed.
*4 When reading/writing data from/to a user file,set SI data for the data format of the PLC CPU and16 bits for data length on GT Designer2.
With any setting other than the above, the PLC does not operate normally

| Data format of the PLC CPU | Setting on GT Designer2 |
|---|---|
| SI (Binary 16-bit length) | Data length of devices: 16 bits |
| DI (Binary 32-bit length) | None |
| BD (8-digit BCD) | None |

*5 As bit specification of a word device is performed after the GOT reads the value, do not change the value in the sequence program during this period.
*6 When it is used with bit specification (bit specification of word device), the offset function cannot be used.
*7 When bit specification (bit specification of word device) is performed, the uppermost bit is b0 and the lowermost bit is b15.

Upper Lower

| | | | | |
|---|---|---|---|---|
| b0 | b1 | ····· | b14 | b15 |

## 12 PANASONIC PLC (Panasonic MEWNET-FP)*1

| | Device name | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Input relay (X)*2,*3 | X0000 to X511F | Hexadecimal + Decimal |
| | Output relay (Y)*3 | Y0000 to Y511F | |
| | Internal relay (R) | R0000 to R886F | |
| | Special relay (R)*2 | R9000 to R911F | |
| | Link relay (L)*5 | L0000 to L639F | |
| | Timer contact (T)*2,*4 | T0 to T3071 | Decimal |
| | Counter contact (C)*2,*4 | C0 to C3071 | |
| | Word device bit *7 | Specified bit of the following word devices (except input relay, output relay, internal relay, special relay and link relay) | - |
| Word device | Input relay (WX)*2 | WX000 to WX511 | Decimal |
| | Output relay (WY) | WY000 to WY511 | |
| | Internal replay (WR) | WR000 to WR886 | |
| | Special relay (WR) | WR900 to WR911 | |
| | Link relay (WL) | WL000 to WL639 | |
| | Timer/Counter (Elapsed value) (EV)*4 | EV0 to EV3071 | |
| | Timer/Counter (Set value) (SV)*4 | SV0 to SV3071 | |
| | Data register (DT) | DT0 to DT10233 | |
| | Special data register (DT) | DT0 to DT32764<br>DT90000 to DT90511 | |
| | Link register (LD)*5 | LD0 to LD8447 | |
| | File register (FL)*5*6 | FL0 to FL32764 | |
| | Bit device word*7 | Converting the above bit devices to words (Except Timer contact and Counter contact) | - |

*1 The above device range is for the case where FP10SH is used.
For Fp0, FP1, FP2, FP3, FP5, FP-10(S), or FP-M, device ranges are different in individual CPUs.

*2 Writing to device is not allowed.

*3 Only those devices that have been assigned to I/O contacts by peripheral software can be used.

*4 The device points of the timer and counter differs depending on the head numbers of the counter set by the value of the system register (No. 5).

*5 This device does not exist in FP0, FP1, and FP-M.

*6 When FP2SH is used, one bank of "32765 × 3 banks" can be monitored.

*7 This is not supported by GT10.

## 13 YASKAWA PLC

### (1) YASKAWA GL/PROG1C8

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Coil (0)*1 | O1 | to | O63424 | Decimal |
| | Input relay (I)*6*7 | I1 | to | I63424 | |
| | Link coil (D) | D1 | to | D2048 | |
| | | D10001<br>D20001 | to<br>to | D12048<br>D22048 | |
| | Word device bit | Specified bit of the following word devices | | | - |
| Word device | Input register (Z)*1*7 | Z1 | to | Z31840 | Decimal |
| | Holding register (W)*2*4 | W1 | to | W28291 | |
| | | SW1 | to | SW28291 | |
| | Link register (R, SR)*4 | R1 | to | R2048 | |
| | | R10001<br>R20001 | to<br>to | R12048<br>R22048 | |
| | | SR1 | to | SR2048 | |
| | | SR10001<br>SR20001 | to<br>to | SR12048<br>SR22048 | |
| | Constant register (K)*3 | K1 | to | K4096 | |
| | Bit device word | Converting the above bit devices to word devices (Except Coil and Input relay) | | | - |

*1 Change the input register "30001 to 30512" to "Z1 to Z512" for setting. (When set in default)
*2 Change the holding register "40001 to 49999" to "W1 to W9999" for setting. (When set in default)
*3 Change the constant register "31001 to 35096" to "K1 to K4096" for setting. (When set in default)
*4 SR and SW indicate registers (virtual register) compatible to the data format where internal data of PLC is displayed using R or W.
The following shows the difference between the display values of SR, SW and those of R, W corresponding to the values of PLC internal data.

| PLC internal data (16 bit) | SR, SW | R,W |
|---|---|---|
| 9999 | 9999 | 9999 |
| 1001 | 1001 | 1001 |
| 1000 | 1000 | 1000 |
| 999 | 999 | 999 |
| 0 | 0 | 0 |
| -1 | -1 | 32769 |
| -999 | -999 | 33767 |
| -1000 | -1000 | 33768 |
| -1001 | -1001 | 33769 |
| -9999 | -9999 | 42767 |

*5 The internal coil N1 to N1536 can be set as O513 to O2048.
However, setting must not exceed O1 to O512 and O513 to O2048.
*6 Change the input relay "10001 to 14096" to "I1 to I4096" for setting. (When set in default)
*7 Only reading is possible.

## (2) YASKAWA CP-9200SH/MP-900

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Coil (MB)*1 | MB000000 | to | MB32767F | Decimal + hexadecimal |
| | Input relay (IB) | IB0000 | to | IBFFFF | Hexadecimal |
| | Bit of word device*2 | Specified bit of the following bit device (except coil and input relay) | | | - |
| Word device | Input register (IW) | IW0000 | to | IW7FFF | Hexadecimal |
| | Holding register (MW) | MW0 | to | MW32767 | Decimal |
| | Coid (MB)*2 | MB0 | to | MB32767 | Decimal |
| | Input relay (IB)*2 | IB000 | to | IBFFF | Hexadecimal |

*1 MB40960 to MB32767F is available for MP-940 only.

*2 This is not supported by GT10.

## (3) YASKAWA CP-9200 (H)

| Device name | | Available setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Coil (OB)*3 | OB000 | to | OB7FF | Hexadecimal |
| | Input relay (IB)*3 | IB000 | to | IB7FF | |
| | Word device bit | Specified bit of the following word devices | | | - |
| Word device | Input register (IW) | IW00 | to | IW7F | Hexadecimal |
| | Output register (OW) | OW00 | to | OW7F | |
| | Data register (DW, ZD)*1 | DW0 | to | DW2047 | Decimal |
| | | ZD0 | to | ZD2047 | |
| | Common register (MW)*2 | MW0 | to | MW7694 | |
| | Bit device word | Converting the above bit devices to word devices | | | - |

*1 Setting is available only when CP-9200 is used.

*2 To use data registers of CPU #1 during operation of CP-9200, copy them to MW0 to 7694.

*3 During operation of CP-9200H, specify the reference No. and quantities so that they do not cover both OB*** and IB***.

## (4) YASKAWA CP-9300MS (MC compatible)

| Device name | | Available setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Coil (OB) | OB0 | to | OB1023 | Hexadecimal |
| | Input relay (IB) | IB0 | to | IB1023 | |
| | Word device bit | Specified bit of the following word devices | | | - |
| Word device | Input register (I) | I0 | to | I63 | Decimal |
| | Data register (OM) | M0 | to | M2047 | |
| | Output register (o) | o0 | to | o63 | |
| | Bit device word | Converting the above bit devices to word devices | | | - |

## (5) YASKAWA MP2000/MP900

| Device name | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Coil(MB) | MB000000 to MB65534F | Decimal + Hexadecimal |
| | Input relay(IB)*1 | IB00000 to IB7FFFF | Hexadecimal |
| | Word device bit*2 | Specified bit of the following word devices | - |
| Word device | Input register(IW)*1 | IW0000 to IW7FFF | Hexadecimal |
| | Holding register(MW) | MW0 to MW65534 | Decimal |
| | Bit device word*2 | Converting the above bit devices to words devices | - |

*1 Only reading is possible.

*2 This is not supported by GT10.

## 14 YOKOGAWA PLC

**Point**

(1) When using YOKOGAWA PLC FA-M3
When YOKOGAWA PLC FA-M3 is used, the usable device range differs depending on the PLC model selected by the GT Designer2.
Since [YOKOGAWA STARDOM/FA-M3] has larger number of devices that can be set than [YOKOGAWA FA500/FA-M3], select [YOKOGAWA STARDOM/FA-M3] if a large number of devices should be set.

(2) Devices to be set for an object
If a device outside the setting range is set for an object, the value display at the object is indefinite (no error is displayed for system alarm).
A device to be set for an object must be in the device range of YOKOGAWA PLC.
For the device range of YOKOGAWA PLC, refer to the manual below.

☞ Manual of YOKOGAWA PLC

(1) YOKOGAWA FA500/FA-M3

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input relay (X)*1 | X00201 | to | X71664 | Decimal |
| | Output relay (Y) | Y00201 | to | Y71664 | |
| | Internal relay (I) | I1 | to | I65536 | |
| | Link relay (L) | L1 | to | L71024 | |
| | Common relay (E) | E1 | to | E4096 | |
| | Special relay (M)*3 | M1 | to | M9984 | |
| | Timer (TU)*2 | TU1 | to | TU3072 | |
| | Counter (CU)*2 | CU1 | to | CU3072 | |
| | Word device bit | Specified bit of the following word device (Except Timers (TP, TS), Counter (CP, CS)) | | | |
| Word device | Timer (TP) | TP1 | to | TP3072 | Decimal |
| | Timer (TS)*1 | TS1 | to | TS3072 | |
| | Counter (CP) | CP1 | to | CP3072 | |
| | Counter (CS)*1 | CS1 | to | CS3072 | |
| | File register (B) | B1 | to | B262144 | |
| | Data register (D) | D1 | to | D8192 | |
| | Common register (R) | R1 | to | R4096 | |
| | Index register (V) | V1 | to | V256 | |
| | Link register (W) | W1 | to | W71024 | |
| | Special register (Z)*3 | Z1 | to | Z512 | |
| | Bit device word | Converting the above bit devices to words (Except Timers (TU), Counter (CU)) | | | |

*1 Writing is not possible.
*2 Writing to continuous devices is not possible.
*3 Reading/writing from/to continuous devices is not possible.

## (2) YOKOGAWA STARDOM/FA-M3

| | Device name | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input relay (X)*1 | X00201 | to | X71664 | Decimal |
| | Output relay (Y) | Y00201 | to | Y71664 | |
| | Internal relay (I)*4 | I1 | to | I65535 | |
| | Link relay (L) | L00001<br>L10001<br>L20001<br>L30001<br>L40001<br>L50001<br>L60001<br>L70001 | to<br>to<br>to<br>to<br>to<br>to<br>to<br>to | L08192<br>L18192<br>L28192<br>L38192<br>L48192<br>L58192<br>L68192<br>L78192 | |
| | Shared relay (E) | E1 | to | E4096 | |
| | Special relay (M)*3 | M1 | to | M9984 | |
| | Timer (TU)*2 | TU1 | to | TU3072 | |
| | Counter (CU)*2 | CU1 | to | CU3072 | |
| | Word device bit | Specified bits of the following word devices<br>(Excluding TP, TS, CP and CS) | | | |
| Word device | Timer (TP) | TP1 | to | TP3072 | Decimal |
| | Timer (TS)*1 | TS1 | to | TS3072 | |
| | Counter (CP) | CP1 | to | CP3072 | |
| | Counter (CS)*1 | CS1 | to | CS3072 | |
| | Filer register (B)*5 | B1 | to | B262144 | |
| | Data register (D) | D1 | to | D65535 | |
| | Shared register (R) | R1 | to | R4096 | |
| | Index register (V) | V1 | to | V256 | |
| | Link register (W) | W00001<br>W10001<br>W20001<br>W30001<br>W40001<br>W50001<br>W60001<br>W70001 | to<br>to<br>to<br>to<br>to<br>to<br>to<br>to | W08192<br>W18192<br>W28192<br>W38192<br>W48192<br>W58192<br>W68192<br>W78192 | |
| | Special register (Z)*3 | Z1 | to | Z1024 | |
| | Word of bit devices above | Converting bit devices into word<br>(Excluding TU and CU) | | | |

*1 Writing is not possible.

*2 Writing to continuous devices is not possible.

*3 Reading/writing from/to continuous devices is not possible.

*4 With STARDOM, FA-M3 (F3SP59 only), if communications that include the maximum device number (32767 or 65535) occurs, system alarm "322 Dedicated device is out of range. Confirm device range." may be detected. If such system alarm is detected, do not use the last 15 bits.

*5 With STARDOM, do not use B32768 or later. If used, correct monitoring is disabled.

## 15 ALLEN-BRADLEY PLC

### (1) AB SLC500 series

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Bit (B) | B3:0/0<br>B10:0/0 | to<br>to | B3:255/15<br>B255:255/15 | Decimal |
| | Timer (Timing bit) (T)*2 | T4:0/14(TT)<br>T10:0/14(TT) | to<br>to | T4:255/14(TT)<br>T255:255/14(TT) | |
| | Timer (Completion bit) (T)*2 | T4:0/13(DN)<br>T10:0/13(DN) | to<br>to | T4:255/13(DN)<br>T255:255/13(DN) | |
| | Counter (Up counter) (C)*2 | C5:0/15(CU)<br>C10:0/15(CU) | to<br>to | C5:255/15(CU)<br>C255:255/15(CU) | |
| | Counter (Down counter) (C)*2 | C5:0/14(CD)<br>C10:0/14(CD) | to<br>to | C5:255/14(CD)<br>C255:255/14(CD) | |
| | Counter (Completion bit) (C) | C5:0/13(DN)<br>C10:0/13(DN) | to<br>to | C5:255/13(DN)<br>C255:255/13(DN) | |
| | Integer (N)*3 | N7:0<br>N10:0 | to<br>to | N7:255<br>N255:255 | |
| Word device | Bit (B)*3 | B3:0<br>B10:0 | to<br>to | B3:255<br>B255:255 | Decimal |
| | Timer (Set value) (T)*1 *2 | T4:0.1(PRE)<br>T10:0.1(PRE) | to<br>to | T4:255.1(PRE)<br>T255:255.1(PRE) | |
| | Timer (Current value) (T)*1 *2 | T4:0.2(ACC)<br>T10:0.2(ACC) | to<br>to | T4:255.2(ACC)<br>T255:255.2(ACC) | |
| | Counter (Set value) (C)*1 *2 | C5:0.1(PRE)<br>C10:0.1(PRE) | to<br>to | C5:255.1(PRE)<br>C255:255.1(PRE) | |
| | Counter (Current value) (C)*1 *2 | C5:0.2(ACC)<br>C10:0.2(ACC) | to<br>to | C5:255.2(ACC)<br>C255:255.2(ACC) | |
| | Integer (N)*1 | N7:0<br>N10:0 | to<br>to | N7:255<br>N255:255 | |

*1 Writing on the device is not allowed for 32-bit data.
*2 Monitoring or writing cannot be done in the continuous device designation mode.
*3 This is not supported by GT10.

## (2) AB Micrologix1000/1200/1500 series

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Bit (B) | B3:0/0 | to | B255:255/15 | Decimal |
| | Timer (Timing bit) (T)*3 | T3:0/14(TT) | to | T255:255/14(TT) | |
| | Timer (Completion bit) (T)*3 | T3:0/13(DN) | to | T255:255/13(DN) | |
| | Counter (Up counter) (C)*3 | C3:0/15(CU) | to | C255:255/15(CU) | |
| | Counter (Down counter) (C)*3 | C3:0/14(CD) | to | C255:255/14(CD) | |
| | Counter (Completion bit) (C)*3 | C3:0/13(DN) | to | C255:255/13(DN) | |
| | Integer (N)*4 | N3:0/0 | to | N255:255/15 | |
| Word device | Bit (B)*4 | B3:0 | to | B255:255 | Decimal |
| | Timer (Set value) (T)*1 *3 | T3:0.1(PRE) | to | T255:255.1(PRE) | |
| | Timer (Current value) (T)*1 *3 | T3:0.2(ACC) | to | T255:255.2(ACC) | |
| | Counter (Set value) (C)*1 *3 | C3:0.1(PRE) | to | C255:255.1(PRE) | |
| | Counter (Current value) (C)*1 *3 | C3:0.2(ACC) | to | C255:255.2(ACC) | |
| | Integer (N)*1 | N3:0 | to | N255:255 | |
| | 32bit integer(L)*2 | L3:0<br>L255:0 | to<br>to | L3:255<br>L255:255 | |

*1 Writing on the device is not allowed for 32 bit data.
*2 Writing on the device is not allowed for 16 bit data.
*3 Monitoring or writing cannot be done in the continuous device designation mode.
*4 This is not supported by GT10.

## (3) AB Control/Compactlogix

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | BOOL | BOOL0[0] | to | BOOL999[31999] | Decimal |
| Word device | INT | INT0[0] | to | INT999[999] | Decimal |
| | DINT*1 | DINT0[0] | to | DINT999[999] | |
| | REAL*1 | REAL0[0] | to | REAL999[999] | |

## 16 GE FANUC PLC (GE Fanuc Automation Series 90)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | input (I) | I00001 | to | I12288 | Decimal |
| | output (Q) | Q00001 | to | Q12288 | |
| | internal (M) | M00001 | to | M12288 | |
| | temporary (T) | T001 | to | T256 | |
| | system status (S) | S001 | to | S128 | |
| | system status (SA) | SA001 | to | SA128 | |
| | system status (SB) | SB001 | to | SB128 | |
| | system status (SC) | SC001 | to | SC128 | |
| | global data (G) | G0001 | to | G7680 | |
| Word device | system register (R) | R00001 | to | R32640 | Decimal |
| | analog input register (AI) | AI0001 | to | AI32640 | |
| | analog output register (AQ) | AQ0001 | to | AQ32640 | |

## 17 LS IS PLC (LS Industrial Systems MASTER-K)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | I/O relay (P) | P0000 | to | P063F | Decimal + Hexadecimal |
| | Auxiliary relay (M) | M0000 | to | M191F | |
| | Keep relay (K) | K0000 | to | K031F | |
| | Link relay (L) | L0000 | to | L063F | |
| | Special relay (F)*1 | F0000 | to | F063F | |
| | Timer contact (T) | T0 | to | T255 | Decimal |
| | Counter contact (C) | C0 | to | C255 | |
| Word device | I/O relay (P) | P000 | to | P063 | Decimal |
| | Auxiliary relay (M) | M000 | to | M191 | |
| | Keep relay (K) | K000 | to | K031 | |
| | Link relay (L) | L000 | to | L063 | |
| | Special relay (F)*1 | F000 | to | F063 | |
| | Timer current value (T) | T0 | to | T255 | |
| | Counter current value (C) | C0 | to | C255 | |
| | Step controller (S) | S0 | to | S99 | |
| | Data register (D) | D0 | to | D9999 | |

*1 Only reading is possible.

## 18 SIEMENS PLC

### (1) SIEMENS S7-300/400 series

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Input relay (I) | I0000 | to | I5117 | Decimal |
| | Output relay (Q) | Q0000 | to | Q5117 | |
| | Bit memory (M) | M00000 | to | M20477 | |
| | Word device bit | Specified bit of the following word devices (except input relay, output relay, bit memory, timer and counter) | | | - |
| Word device | Input relay (IW) | IW000 | to | IW510 | Decimal |
| | Output relay (QW) | QW000 | to | QW510 | |
| | Bit memory (MW) | MW0000 | to | MW2046 | |
| | Timer (Current value) (T)*1 | T0 | to | T511 | |
| | Counter (Current value) (C) | C0 | to | C511 | |
| | Data register (D) | D000100000 | to | D000165534 | |
| | | D000200000 | to | D000265534 | |
| | | D000300000 | to | D000365534 | |
| | | • • • | | | |
| | | D409400000 | to | D409465534 | |
| | | D409500000 | to | D409565534 | |

*1 Monitoring or writing cannot be done in the continuous device designation mode.

## (2) SIEMENS S7-200 series

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | variable memory(V) | V0 | to | V51197 | Decimal |
| | Input relay(I) | I0 | to | I77 | |
| | Output relay(Q)*3 | Q0 | to | Q77 | |
| | Bit Memory(M) | M0 | to | M317 | |
| | special memory(SM) | SM0 | to | SM1947 | |
| | Timer(T)*1 | T0 | to | T255 | |
| | Counter(C)*1 | C0 | to | C255 | |
| | sequence control relay(S) | S0 | to | S317 | |
| Word device | variable memory(VW) | VW0 | to | VW5118 | Decimal |
| | Input relay(IW) | IW0 | to | IW6 | |
| | Output relay(QW)*3 | QW0 | to | QW6 | |
| | analog input(AIW)*1 | AIW0 | to | AIW30 | |
| | analog output(AQW)*3 | AQW0 | to | AQW30 | |
| | Bit memory(MW) | MW0 | to | MW30 | |
| | special memory(SMW) | SMW0 | to | SMW192 | |
| | Timer(T)*4 | T0 | to | T255 | |
| | Counter(CW)*4 | C0 | to | C255 | |
| | High-speed counter(HC)*2 | HC0 | to | HC2 | |
| | sequence control relay(SW) | SW | to | SW30 | |

*1 Only reading is possible.
*2 Only reading 32-bit data (two-word data) is possible.
*3 Only writing while the programmable controller runs is possible.
*4 Reading and writing only 16-bit data (one-word data) are possible.

## 19 Microcomputer connection

### (1) GT15, GT SoftGOT1000, GT11

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Internal relay (M) | M0 | to | M2047 | Decimal |
| | Special relay (SM) | SM0 | to | SM63 | |
| | Latch relay (L) | L0 | to | L2047 | |
| | Word device bit | Specified bit of the following word device | | | |
| Word device | Data register (D) | D0 | to | D4095 | Decimal |
| | Link special register (SD) | SD0 | to | SD15 | |
| | File register (R) | R0 | to | R4095 | |
| | Bit device word | Converting the above bit devices to words | | | |

*1 The host is not allowed to write to/read from GB and GD devices.

### (2) GT10

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Internal relay (M) | M0 | to | M2047 | Decimal |
| | Special relay (SM) | SM0 | to | SM63 | |
| | Latch relay (L) | L0 | to | L2047 | |
| Word device | Data register (D) | D0 | to | D511 | Decimal |
| | Link special register (SD) | SD0 | to | SD15 | |
| | File register (R) | R0 | to | R4095 | |

*1 The host is not allowed to write to/read from GB and GD devices.

## 20 MODBUS(R)

| Device name | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Coils (0) | 000001 | to | 065536 | Decimal |
| | Discretes input (1) *1 | 100001 | to | 165536 | |
| Word device | Input registers (3) *1 | 300001 | to | 365536 | Decimal |
| | Holding registers (4) | 400001 | to | 465536 | |
| | Extension file register (6) | File No.: 0 to104<br>600000 | to | 609999 | |

*1 Only reading is possible.

## 21 OMRON temperature controller (OMRON THERMAC/INPANEL NEO)

| | Device name | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Status (S) *1 | S0000 to S0031<br>S0100 to S0131 | Decimal |
| Word device | Operation command (A) *2 | A0000 to A000C | Hexadecimal |
| | Variable area 0 (C0) *1 *3 | C00000 to C00006<br>C00100 to C00106 | Decimal + Hexadecimal |
| | Variable area 1 (C1) *3 | C10000 to C1001C<br>C10100 to C1011C | |
| | Variable area 3 (C3) *3 | C30000 to C3003E<br>C30100 to C3013E | |

*1 Only reading is possible.
*2 Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.
*3 Only 32-bit (2-word) designation is possible.

## 22 SHINKO indicating controller (Shinko Technos Controller)

| | Device name | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Word device bit *1 | Specified bit of the following word devices | - |
| Word device | Data item (..) | ..0001 To ..7901 | Hexadecimal |

*1 As bit specification of a word device is performed after the GOT reads the value, do not change the value with the indicating controller during this period.

## 23 CHINO controller (CHINO Controllers)

| | Device name | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Digital parameter (0) | 00001 to 09999 | Decimal |
| | Digital input data (1)*1 | 10001 to 19999 | |
| Word device | Analog input data (3)*1 | 30001 to 39999 | Decimal |
| | Analog parameter (4) | 40001 to 49999 | |

*1 Only reading is possible.

## 24 FUJI SYS temperature controllers (FUJI PXR/PXG/PXH)

| Device name | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Bit data (0) | ..00001 To ..00001 | Decimal |
| | Bit data (1)*1 | ..10001 To ..10016 | |
| | Word device bit | Specified bits of the following word devices | - |
| Word device | Word data (3)*1 | ..30001 To ..31398 | Decimal |
| | Word data (4) | ..40001 To ..43776 | |

*1 Only reading is possible.

## 25 YAMATAKE temperature controller (YAMATAKE SDC/DMC series)

| Device name | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Word device bit | Specified bit of the following word devices | - |
| Word device | Data (..) *1 | ..273 To ..31243 | Decimal |

*1 Only 16-bit (1-word) designation is possible.

## 26 YOKOGAWA temperature controller (YOKOGAWA GREEN/UT100/UT2000)

| Device name | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Internal relay | ..I0001 To ..I1024 | Decimal |
| | Word device bit*1 | Specified bits of the following word devices | - |
| Word device | Data register (D)*1 | ..D0001 To ..D1700 | Decimal |
| | File register (B)*1 | ..B0001 To ..B1600 | |
| | Bit device word | Converting the above bit devices to word devices | - |

*1 Only 16-bit (1-word) specification is possible.

## 27 RKC temperature controller (RKC SR Mini HG)

| Device name | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Word device bit | Specified bit of the following word devices | - |
| Word device | Data (..) | ..0000 To ..FFFF | Hexadecimal |

## 28 Inverter (FREQROL 500/700 series)

**Remark** Inverter data

For details of parameters, etc., refer to the following manual.

☞ Manual of the inverter being used

| Device name *4 | | Setting range | Device No. representation |
|---|---|---|---|
| Bit device | Inverter status monitor (RS) *3 | RS0:0 To RS7:31<br>RS0:100 To RS7:115 | Decimal |
| | Run command (WS) *5 *6 | WS0:0 To WS7:31<br>WS0:0 To WS7:115 | |
| Word device | Alarm definition (A) *2 *3 | A0:0 To A7:31<br>A0:100 To A7:115 | Decimal |
| | Parameter (Pr) *1 *2 | Pr0:0 To Pr993:31<br>Pr0:100 To Pr993:115 | |
| | Programmed operation (PG) *1 *2 | PG0:0 To PG89:31<br>PG0:100 To PG89:115 | |
| | Special parameter (SP) *2 *5 | SP108:0 To SP127:31<br>SP108:100 To SP127:115 | |

*1 When creating the screen, designate only either of programmed operation (PG) device or parameter (Pr) device. Do no designate both PG (PG0 to PG89) and Pr (Pr900 to Pr905) devices.

*2 Only 16-bit (1-word) designation is possible.

*3 Only reading is possible.

*4 The GOT cannot read or write data from/to consecutive devices.

For details of *5, *6, refer to the following.

### *5 Precautions for PU operation mode

When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the multi-speed operation (W3 to W7, SP121, SP122) cannot be used.
For using the multi-speed operation, follow either of the operations as below.

- Connect the GOT to the RS-485 terminal and set the operation mode to the NET operation mode (Computer link operation mode), and then operate the inverter.
- Change the motor speed with the set frequency (SP109, SP110), and then operate the inverter with the forward or reverse rotation (WS1, WS2, SP121, SP122).

*6 Precautions for WS devices

- Only writing is possible for WS devices.
  More than one WS cannot turn on at once. (Except the turned on WS device, the other WS devices turn off.)
  Bits of SP122 (word device) are assigned to WS0 to WS7.
  When more than one WS turns on at once, convert the values for the bit devices that are assigned to the word device into values for the word device. Write the converted values into SP122.
  Example: Forward rotation (WS1) and low speed operation (WS3)
  Write "10" in decimal (the value that turns on WS1 and WS3) into SP122.
- When using a WS device, [Alternate] of a bit switch cannot be used.
  Use [Set], [Reset], and [Momentary] of a bit switch.

The following shows correspondences between virtual inverter devices used in the GOT and data of the inverter.

### (1) Inverter status monitor

| Device name | Description |
|---|---|
| RS0 | Inverter running (RUN) |
| RS1 | Forward rotation (STF) |
| RS2 | Reverse rotation (STR) |
| RS3 | Up to frequency (SU) |
| RS4 | Overload (OL) |
| RS5 | Instantaneous power failure (IPF) *1 |
| RS6 | Frequency detection (FU) |
| RS7 | Alarm occurrence |

*1 Can be used only for FREQROL-A500/A700/F700 series.

### (2) Run command

| Device name | Description |
|---|---|
| WS0 | Current input selection (AU) *2 |
| WS1 | Forward rotation (STF) |
| WS2 | Reverse rotation (STR) |
| WS3 | Low speed operation (RL) *1<br>(Current input selection (AU) for FREQROL-F500 series) |
| WS4 | Middle speed operation (RM) *1 |
| WS5 | High speed operation (RH) *1 |
| WS6 | Second function selection (RT) *2 |
| WS7 | Output stop (MRS) *2 |

*1 Cannot be used for FREQROL-A500/E500 series.
*2 Can be used only for FREQROL-A700/F700 series.

### (3) Alarm definition

| Device name | Description |
|---|---|
| A0 | Second alarm in past |
| A1 | Latest alarm |
| A2 | Fourth alarm in past |
| A3 | Third alarm in past |
| A4 | Sixth alarm in past |
| A5 | Fifth alarm in past |
| A6 | Eighth alarm in past |
| A7 | Seventh alarm in past |

*1 Only reading is possible for A0 to A7.
These devices cannot be used for a write object (numerical input etc.).

(4) Parameters

The numbers of virtual devices for inverter (parameter (Pr)), used by GOT, correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

☞ Manual of the inverter being used

**Point**

(1) Monitoring Pr.37

GOT cannot monitor the parameter (Pr.37) of FREQROL-E500/S500(E)/F500J.

(2) When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.

To set these numbers from GOT, designate a number as shown below.

| Setting at inverter | Value to be set at GOT |
|---|---|
| 8888 | 65520 |
| 9999 | 65535 |

(3) Precautions for setting calibration parameter (Pr900 to Pr905)

When setting a calibration parameter (Pr900 to Pr905), it is necessary to set the value below for extension second parameter (SP108), depending on the device number to be used and the inverter model.

| Value to be set to extension second parameter (SP108) | Description |
|---|---|
| H00 | Offset / gain |
| H01 | Analog |
| H02 | Analog value at terminal |

(5) Program operation

The devices below correspond to the parameters (Pr.201 to Pr.230) of FREQROL-A500 series.

| Device name | Description |
|---|---|
| PG0 To PG9 | Program set 1 (running frequency) |
| PG10 To PG19*1 | Program set 1 (time) |
| PG20 To PG29 | Program set 1 (rotation direction) |
| PG30 To PG39 | Program set 2 (running frequency) |
| PG40 To PG49*1 | Program set 2 (time) |
| PG50 To PG59 | Program set 2 (rotation direction) |
| PG60 To PG69 | Program set 3 (running frequency) |
| PG70 To PG79*1 | Program set 3 (time) |
| PG80 To PG89 | Program set 3 (rotation direction) |

*1 To set the start time (PG10 to PG19, PG40 to PG49, PG70 to PG79), set hour or minute in the upper 8 bits, and minute or second in the lower 8 bits.

Example) To set 13 hour 35 minute

| Time to be set | 13 H | 35 M | Remark |
|---|---|---|---|
| Convert "hour" and "minute" into hexadecimal. | H0D | H23 | HEX |
| Combine upper and lower 8-bit values. | Input H0D23 or 3363. | | - |

(6) Special parameters

The numbers of the inverter's virtual devices (SP) used for the GOT correspond to instruction codes of the inverter communication function.

For instruction details, and values to be read and written, refer to the following,

☞ Manual of the inverter used

| Device name | Description | Instruction code | |
|---|---|---|---|
| | | Read | Write |
| SP108 | Second parameter changing | 6CH | ECH |
| SP109*1 | Set frequency (RAM) | 6DH | EDH |
| SP110*1 | Set frequency (RAM, E2PROM) | 6EH | EEH |
| SP111*1 | Output frequency | 6FH | - |
| SP112 | Output current | 70H | - |
| SP113 | Output voltage | 71H | - |
| SP114 | Special monitor | 72H | - |
| SP115 | Special monitor selection No. | 73H | F3H |
| SP116 | Alarm definition all clear | - | F4H |
| | Latest alarm, second alarm in past | 74H | - |
| SP117 | Third alarm in past, fourth alarm in past | 75H | - |
| SP118 | Fifth alarm in past, sixth alarm in past | 76H | - |
| SP119 | Seventh alarm in past, eights alarm in past | 77H | - |
| SP121 | Inverter status monitor (extended) | 79H | F9H |
| | Run command (extend) | | |
| SP122 | Inverter status monitor | 7AH | - |
| | Run command | - | FAH |
| SP123 | Communication mode | 7BH | FBH |
| SP124 | All parameter clear | - | FCH |
| SP125 | Inverter reset | - | FDH |
| SP127 | Link parameter extended setting | 7FH | FFH |

*1 GOT cannot monitor SP109 to SP111 if the conditions below are satisfied at the same time.
(Only FREQROL-E500/F500J/S500(E)/E700 series)

- Pr37 ≠ 0
- SP127 = 1

*2 Only reading is possible for SP111 to SP114.
These devices cannot be used for write objects (such as numerical input).

*3 Only writing is possible for SP124 and SP125.
These devices cannot be used for read object.

*4 When the GOT is connected to the PU port of the FREQROL-A500/E500/F500 (excluding the PREQROL-F500J), the mode of the inverter is "external operation mode" when the power is turned on.
When changing parameters from the GOT, change the value of SP123 to "2" (PU operation mode) in advance.

## 29 Servo amplifier

**Point**

(1) Monitoring servo amplifier

Carefully read the manual of servo amplifier to be connected and fully understand the operating procedures before monitoring.
Before operation, check the parameter settings. Improper settings may cause some machines to perform unexpected operation.
The parameter settings must not be changed excessively. Operation will be insatiable.

(2) Parameters with * in front of it's abbreviated name

For the parameter with * in front of it's abbreviated name, powering off the servo amplifier after setting then on makes the parameter valid.

(3) Data length for setting virtual devices for servo amplifier

Set the following data length for setting devices.
PRM, ST, AL, PA, PB, PC, PD, POS, SPD, ACT, DCT, DWL, AUX
: 16 bits or 32 bits (depends on the data of servo amplifier)
DI, DO, TMI, TMO, TMD
: 32 bits

If the above data length was not set, data would not be set to the servo amplifier correctly or the GOT can not monitor normally.

(a) Monitoring

- When the 16-bit data is handled as 32-bit data, the upper 16 bits are displayed as 0.
- When the 32-bit data is handled as 16-bit data, the lower 16 bits only are displayed as 0.

(b) Writing

The GOT writes within the range of data length set. Note that the servo amplifier responds correctly while the written data is invalid in the servo amplifier side when the written data is outside the range of values which can be set by the servo amplifier.

(4) Memory area for writing parameters

Parameters are written to RAM or $E^2$PROM of servo amplifier.

(a) When written to RAM

Remember that written parameters are cleared when power supply to the servo amplifier is turned off.

(b) When written to $E^2$PROM

Written parameters are not cleared even when power supply to the servo amplifier is turned off. However, there are limits in the number of writing to $E^2$PROM.
If the data is frequently updated (more than once in an hour), write the parameters to the RAM.
For details, refer to the manual of the servo amplifier used.

**Remark** Data of servo amplifier

Refer to the following manual for parameters.

☞ Manual of the servo amplifier used

(1) MELSERVO-J2M-P8A

| | Device name*2 | Setting range available | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request(SP)*3 | SP1 | to | SP2 | Decimal |
| | Operation mode selection (OM)*3 | OM0 | to | OM4 | |
| Word device | Basic parameter/expansion parameter(PRM)*1 | PRM0<br>PRM1000 | to<br>to | PRM29<br>PRM1029 | |
| | Status display (ST) | ST0 | to | ST2 | |
| | Alarm(AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | <br>to<br>to<br>to<br>to | <br>AL13<br>AL205<br>AL215<br>AL235 | |
| | External input(DI) | DI0 | to | DI2 | |
| | External output(DO) | DO0 | to | DO1 | |
| | Forced output of signal pin (for test operation) (TMO)*3 | TMO0 | | | |

*1 Use PRM0 to PRM29 when writing parameters to the servo amplifier RAM.
PRM1000 to PRM1029 are used when writing parameters to $E^2$PROM of the servo amplifier.

*2 The GOT cannot read or write data from/to consecutive devices.

For details of *3, refer to the following.

*3 Precautions for SP, OM, and TMO devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |

### (b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM4 | Output signal (DO) forced output | - |

### (c) Basic parameter/expansion parameter

| Device name | Item | Symbol*2 |
|---|---|---|
| PRM0, PRM1000 | Serial communication function selection, alarm history clear | *BPS |
| PRM1, PRM1001 | Regenerative brake option selection | *REG |
| PRM2, PRM1002 | Function selection 1 | *OP1 |
| PRM3, PRM1003 | Analog monitor 1 output | MD1 |
| PRM4, PRM1004 | Analog monitor 2 output | MD2 |
| PRM5, PRM1005 | Analog monitor 3 output | MD3 |
| PRM6, PRM1006 | Analog monitor 1 offset | MO1 |
| PRM7, PRM1007 | Analog monitor 2 offset | MO2 |
| PRM8, PRM1008 | Analog monitor 3 offset | MO3 |
| PRM9, PRM1009 | Function selection 2 | *OP2 |
| PRM10, PRM1010 | Interface unit serial communication number selection | *ISN |
| PRM11, PRM1011 | 1slot serial communication station number selection | *DSN1 |
| PRM12, PRM1012 | 2slot serial communication station number selection | *DSM2 |
| PRM13, PRM1013 | 3slot serial communication station number selection | *DSM3 |
| PRM14, PRM1014 | 4slot serial communication station number selection | *DSN4 |
| PRM15, PRM1015 | 5slot serial communication station number selection | *DSN5 |
| PRM16, PRM1016 | 6slot serial communication station number selection | *DSN6 |
| PRM17, PRM1017 | 7slot serial communication station number selection | *DSN7 |
| PRM18, PRM1018 | 8slot serial communication station number selection | *DSN8 |
| PRM19, PRM1019 | Parameter write inhibit | *BLK |
| PRM20, PRM1020 | Serial communication time-out selection | SIC |
| PRM21 to PRM29, PRM1021 to PRM1029 | For manufacturer setting | - |

*2 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (d) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Regenerative load ratio | - |
| ST1 | Bus voltage | - |
| ST2 | Peak bus voltage | - |

### (e) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL11 | Servo status when alarm occurs regenerative load factor | - |
| AL12 | Servo status when alarm occurs bus voltage | - |
| AL13 | Servo status when alarm occurs peak bus voltage | - |
| AL200 | Alarm number from alarm history most recent alarm | - |
| AL201 | Alarm number from alarm history first alarm in past | - |
| AL202 | Alarm number from alarm history second alarm in past | - |
| AL203 | Alarm number from alarm history third alarm in past | - |
| AL204 | Alarm number from alarm history fourth alarm in past | - |
| AL205 | Alarm number from alarm history fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history most recent alarm | - |
| AL231 | Detailed alarm from alarm history first alarm in past | - |
| AL232 | Detailed alarm from alarm history second alarm in past | - |
| AL233 | Detailed alarm from alarm history third alarm in past | - |
| AL234 | Detailed alarm from alarm history fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history fifth alarm in past | - |

### (f) External I/O signal

| Device name | Item | Symbol |
|---|---|---|
| DI0 | External input pin statuses CN1A/CN1B | - |
| DI1 | External input pin statuses CN5 | - |
| DI2 | External input pin statuses CN4A/CN4B | - |
| DO0 | External output pin statuses CN1A/CN1B | - |
| DO1 | External output pin statuses CN4A/CN4B | - |

### (g) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output of signal pin | - |

(2) MELSERVO-J2M- * DU

| Device name*2 | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*3 | SP0 | to | SP6 | Decimal |
| | Operation mode selection (OM)*3 | OM0 | to | OM4 | |
| | Instruction demand (for test operation) (TMB)*3 | TMB0 | to | TMB1 | |
| Word device | Basic parameter/expansion parameter (PRM)*1 | PRM0<br>PRM1000 | to<br>to | PRM84<br>PRM1084 | |
| | Status display (ST) | ST0 | to | ST10 | |
| | Alarm (AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | <br>to<br>to<br>to<br>to | <br>AL21<br>AL205<br>AL215<br>AL235 | |
| | Input signal for test operation (for test operation) (TMI)*3 | TMI0 | | | |
| | Forced output of signal pin (for test operation) (TMO)*3 | TMO0 | | | |
| | Set data (for test operation) (TMD)*3 | TMD0 | to | TMD2 | |

*1 Use PRM0 to PRM84 when writing parameters to the servo amplifier RAM.
PRM1000 to PRM1084 are used when writing parameters to $E^2$PROM of the servo amplifier.

*2 The GOT cannot read or write data from/to consecutive devices.

For details of *3, refer to the following.

*3 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

### (b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |

### (c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB0 | Clears acceleration/deceleration time constant (test mode) | - |
| TMB1 | Temporary stop command (test mode) | - |

### (d) Basic parameter/expansion parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PRM0, PRM1000 | For manufacturer setting | - |
| PRM1, PRM1001 | Function selection 1 | *OP1 |
| PRM2, PRM1002 | Auto tuning | ATU |
| PRM3, PRM1003 | CMX Electronic gear numerator (Command pulse multiplying factor numerator) | CMX |
| PRM4, PRM1004 | Electronic gear denominator (Command pulse multiplying factor denominator) | CDV |
| PRM5, PRM1005 | In-position range | INP |
| PRM6, PRM1006 | Position loop gain 1 | PG1 |
| PRM7, PRM1007 | Position command acceleration/deceleration time constant (position smoothing) | PST |
| PRM8 to PRM15, PRM1008 to PRM1015 | For manufacturer setting | - |
| PRM16, PRM1016 | Alarm history clear | *BPS |
| PRM17 to PRM18, PRM1017 to PRM1018 | For manufacturer setting | - |
| PRM19, PRM1019 | DRU parameter block | *BLK |
| PRM20, PRM1020 | Function selection 2 | *OP2 |
| PRM21, PRM1021 | Function selection 3 (Command pulse selection) | *OP3 |
| PRM22, PRM1022 | Function selection 4 | *OP4 |
| PRM23, PRM1023 | Feed forward gain | FFC |
| PRM24, PRM1024 | Zero speed | ZSP |
| PRM25 to PRM26, PRM1025 to PRM1026 | For manufacturer setting | - |
| PRM27, PRM1027 | Encoder output pulses | *ENR |
| PRM28, PRM1028 | Internal torque limit 1 | TL1 |
| PRM29 to PRM32, PRM1029 to PRM1032 | For manufacturer setting | - |
| PRM33, PRM1033 | Electromagnetic brake sequence output | MBR |
| PRM34, PRM1034 | Ratio of load inertia moment to servo motor inertia moment | GD2 |
| PRM35, PRM1035 | Position loop gain 2 | PG2 |
| PRM36, PRM1036 | Speed loop gain 1 | VG1 |
| PRM37, PRM1037 | Speed loop gain 2 | VG2 |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

(Continued to next page)

| Device name | Item | Symbol*1 |
|---|---|---|
| PRM38, PRM1038 | Speed integral compensation | VIC |
| PRM39, PRM1039 | Speed differential compensation | VDC |
| PRM40 to PRM41, PRM1040 to PRM1041 | For manufacturer setting | - |
| PRM42, PRM1042 | Input signal selection 1 | *DI1 |
| PRM43 to PRM50, PRM1043 to PRM1050 | For manufacturer setting | - |
| PRM51, PRM1051 | Function selection 6 | *OP6 |
| PRM52 to PRM53, PRM1052 to PRM1053 | For manufacturer setting | - |
| PRM54, PRM1054 | Function selection 9 | *OP9 |
| PRM55, PRM1055 | Function selection A | *OPA |
| PRM56 to PRM57, PRM1056 to PRM1057 | For manufacturer setting | - |
| PRM58, PRM1058 | Machine resonance suppression filter 1 | NH1 |
| PRM59, PRM1059 | Machine resonance suppression filter 2 | NH2 |
| PRM60, PRM1060 | Low-pass filter, adaptive vibration suppression control | LPF |
| PRM61, PRM1061 | Ratio of load inertia moment to servo motor inertia moment 2 | GD2B |
| PRM62, PRM1062 | Position control gain 2 changing ratio | PG2B |
| PRM63, PRM1063 | Speed control gain 2 changing ratio | VG2B |
| PRM64, PRM1064 | Speed integral compensation changing ratio | VICB |
| PRM65, PRM1065 | Gain changing selection | *CDP |
| PRM66, PRM1066 | Gain changing condition | CDS |
| PRM67, PRM1067 | Gain changing time constant | CDT |
| PRM68, PRM1068 | For manufacturer setting | - |
| PRM69, PRM1069 | Command pulse multiplying factor numerator 2 | CMX2 |
| PRM70, PRM1070 | Command pulse multiplying factor numerator 3 | CMX3 |
| PRM71, PRM1071 | Command pulse multiplying factor numerator 4 | CMX4 |
| PRM72 to PRM75, PRM1072 to PRM1075 | For manufacturer setting | - |
| PRM76, PRM1076 | Internal torque limit 2 | TL2 |
| PRM77 to PRM84, PRM1077 to PRM1084 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (e) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Cumulative feedback pulses | - |
| ST1 | Servo motor speed | - |
| ST2 | Droop pulses | - |
| ST3 | Cumulative command pulses | - |
| ST4 | Command pulse frequency | - |
| ST5 | Effective load ratio | - |
| ST6 | Peak load ratio | - |
| ST7 | Instantaneous torque | - |
| ST8 | Within one-revolution position | - |
| ST9 | ABS counter | - |
| ST10 | Load inertia moment ratio | - |

### (f) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL11 | Servo status when alarm occurs cumulative feedback pulses | - |
| AL12 | Servo status when alarm occurs servo motor speed | - |
| AL13 | Servo status when alarm occurs droop pulses | - |
| AL14 | Servo status when alarm occurs cumulative command pulses | - |
| AL15 | Servo status when alarm occurs command pulse frequency | - |
| AL16 | Servo status when alarm occurs effective load ratio | - |
| AL17 | Servo status when alarm occurs peak load ratio | - |
| AL18 | Servo status when alarm occurs instantaneous torque | - |
| AL19 | Servo status when alarm occurs within one-revolution position | - |
| AL20 | Servo status when alarm occurs ABS counter | - |
| AL21 | Servo status when alarm occurs load inertia moment ratio | - |
| AL200 | Alarm number from alarm history most recent alarm | - |
| AL201 | Alarm number from alarm history first alarm in past | - |
| AL202 | Alarm number from alarm history second alarm in past | - |
| AL203 | Alarm number from alarm history third alarm in past | - |
| AL204 | Alarm number from alarm history fourth alarm in past | - |
| AL205 | Alarm number from alarm history fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history most recent alarm | - |
| AL231 | Detailed alarm from alarm history first alarm in past | - |
| AL232 | Detailed alarm from alarm history second alarm in past | - |
| AL233 | Detailed alarm from alarm history third alarm in past | - |
| AL234 | Detailed alarm from alarm history fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history fifth alarm in past | - |

(g) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal for test operation | - |

(h) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output of signal pin | - |

(i) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed (test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant (test mode) | - |
| TMD2 | Writes the moving distance in pulses (test mode) | - |

(3) MELSERVO-J2S- * A

| Device name*2 | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*3 | SP0 | to | SP6 | Decimal |
| | Operation mode selection (OM)*3 | OM0 | to | OM4 | |
| | Instruction demand (for test operation) (TMB)*3 | TMB0 | to | TMB1 | |
| Word device | Basic parameter/expansion parameter (PRM)*1 | PRM0<br>PRM1000 | to<br>to | PRM84<br>PRM1084 | |
| | Status display (ST) | ST0 | to | ST14 | |
| | Alarm (AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | to<br>to<br>to<br>to<br>to | AL1<br>AL25<br>AL205<br>AL215<br>AL235 | |
| | External input (DI) | DI0 | | | |
| | External output (DO) | DO0 | | | |
| | Input signal for test operation (for test operation) (TMI)*3 | TMI0 | | | |
| | Forced output of signal pin (for test operation) (TMO)*3 | TMO0 | | | |
| | Set data (for test operation) (TMD)*3 | TMD0 | to | TMD2 | |

*1 Use PRM0 to PRM84 when writing parameters to the servo amplifier RAM.
PRM1000 to PRM1084 are used when writing parameters to $E^2$PROM of the servo amplifier.
*2 The GOT cannot read or write data from/to consecutive devices.
For details of *3, refer to the following.

*3 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

(b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |

(c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB0 | Clears the acceleration/deceleration time constant | - |
| TMB1 | Temporary stop command | - |

(d) Basic parameter/expansion parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PRM0, PRM1000 | Control mode, regenerative brake option selection | *STY |
| PRM1, PRM1001 | Function selection 1 | *OP1 |
| PRM2, PRM1002 | Auto tuning | ATU |
| PRM3, PRM1003 | Electronic gear numerator | CMX |
| PRM4, PRM1004 | Electronic gear denominator | CDV |
| PRM5, PRM1005 | In-position range | INP |
| PRM6, PRM1006 | Position loop gain 1 | PG1 |
| PRM7, PRM1007 | Position command acceleration/deceleration time constant | PST |
| PRM8, PRM1008 | Internal speed command1/limit1 | SC1 |
| PRM9, PRM1009 | Internal speed command2/limit2 | SC2 |
| PRM10, PRM1010 | Internal speed command3/limit3 | SC3 |
| PRM11, PRM1011 | Acceleration time constant | STA |
| PRM12, PRM1012 | Deceleration time constant | STB |
| PRM13, PRM1013 | S-pattern acceleration/deceleration time constant | STC |
| PRM14, PRM1014 | Torque command time constant | TQC |
| PRM15, PRM1015 | Station number setting | *SNO |
| PRM16, PRM1016 | Serial communication function selection, alarm history clear | *BPS |
| PRM17, PRM1017 | Analog monitor output | MOD |
| PRM18, PRM1018 | Status display selection | *DMD |
| PRM19, PRM1019 | Parameter block | *BLK |
| PRM20, PRM1020 | Function selection 2 | *OP2 |
| PRM21, PRM1021 | Function selection 3 (Command pulse selection) | *OP3 |
| PRM22, PRM1022 | Function selection 4 | *OP4 |
| PRM23, PRM1023 | Feed forward gain | FFC |
| PRM24, PRM1024 | Zero speed | ZSP |
| PRM25, PRM1025 | Analog speed command maximum speed/limit maximum speed | VCM |
| PRM26, PRM1026 | Analog torque command maximum output | TLC |
| PRM27, PRM1027 | Encoder output pulses | *ENR |
| PRM28, PRM1028 | Internal torque limit 1 | TL1 |
| PRM29, PRM1029 | Analog speed command offset/limit offset | VCO |
| PRM30, PRM1030 | Analog torque command offset/limit offset | TLO |
| PRM31, PRM1031 | Analog monitor 1 offset | MO1 |
| PRM32, PRM1032 | Analog monitor 2 offset | MO2 |
| PRM33, PRM1033 | Electromagnetic brake sequence output | MBR |
| PRM34, PRM1034 | Ratio of load inertia moment to servo motor inertia moment | GD2 |
| PRM35, PRM1035 | Position loop gain 2 | PG2 |
| PRM36, PRM1036 | Speed loop gain 1 | VG1 |
| PRM37, PRM1037 | Speed loop gain 2 | VG2 |
| PRM38, PRM1038 | Speed integral compensation | VIC |
| PRM39, PRM1039 | Speed differential compensation | VDC |
| PRM40, PRM1040 | For manufacturer setting | - |
| PRM41, PRM1041 | Input signal automatic ON selection | *DIA |

(Continued to next page)

| Device name | Item | Symbol*1 |
|---|---|---|
| PRM42, PRM1042 | Input signal selection 1 | *DI1 |
| PRM43, PRM1043 | Input signal selection 2 (CN1B-5) | *DI2 |
| PRM44, PRM1044 | Input signal selection 3 (CN1B-14) | *DI3 |
| PRM45, PRM1045 | Input signal selection 4 (CN1A-8) | *DI4 |
| PRM46, PRM1046 | Input signal selection 5 (CN1B-7) | *DI5 |
| PRM47, PRM1047 | Input signal selection 6 (CN1B-8) | *DI6 |
| PRM48, PRM1048 | Input signal selection 7 (CN1B-9) | *DI7 |
| PRM49, PRM1049 | Output signal selection 1 | *DO1 |
| PRM50, PRM1050 | For manufacturer setting | - |
| PRM51, PRM1051 | Function selection 6 | *OP6 |
| PRM52, PRM1052 | For manufacturer setting | - |
| PRM53, PRM1053 | Function selection 8 | *OP8 |
| PRM54, PRM1054 | Function selection 9 | *OP9 |
| PRM55, PRM1055 | Function selection A | *OPA |
| PRM56, PRM1056 | Serial communication time-out selection | SIC |
| PRM57, PRM1057 | For manufacturer setting | - |
| PRM58, PRM1058 | Machine resonance suppression filter 1 | NH1 |
| PRM59, PRM1059 | Machine resonance suppression filter 2 | NH2 |
| PRM60, PRM1060 | Low-pass filter, adaptive vibration suppression control | LPF |
| PRM61, PRM1061 | Ratio of load inertia moment to servo motor inertia moment 2 | GD2B |
| PRM62, PRM1062 | Position control gain 2 changing ratio | PG2B |
| PRM63, PRM1063 | Speed control gain 2 changing ratio | VG2B |
| PRM64, PRM1064 | Speed integral compensation changing ratio | VICB |
| PRM65, PRM1065 | Gain changing selection | *CDP |
| PRM66, PRM1066 | Gain changing condition | CDS |
| PRM67, PRM1067 | Gain changing time constant | CDT |
| PRM68, PRM1068 | For manufacturer setting | - |
| PRM69, PRM1069 | Command pulse multiplying factor numerator 2 | CMX2 |
| PRM70, PRM1070 | Command pulse multiplying factor numerator 3 | CMX3 |
| PRM71, PRM1071 | Command pulse multiplying factor numerator 4 | CMX4 |
| PRM72, PRM1072 | Internal speed command4/limit4 | SC4 |
| PRM73, PRM1073 | Internal speed command5/limit5 | SC5 |
| PRM74, PRM1074 | Internal speed command6/limit6 | SC6 |
| PRM75, PRM1075 | Internal speed command7/limit7 | SC7 |
| PRM76, PRM1076 | Internal torque limit 2 | TL2 |
| PRM77 to PRM84, PRM1077 to PRM1084 | For manufacturer setting | - |

* 1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (e) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Cumulative feedback pulses | - |
| ST1 | Servo motor speed | - |
| ST2 | Droop pulses | - |
| ST3 | Cumulative command pulses | - |
| ST4 | Command pulse frequency | - |
| ST5 | Analog speed command voltage/limit voltage | - |
| ST6 | Analog torque command voltage/limit voltage | - |
| ST7 | Regenerative load ratio | - |
| ST8 | Effective load ratio | - |
| ST9 | Peak load ratio | - |
| ST10 | Instantaneous torque | - |
| ST11 | Within one-revolution position | - |
| ST12 | ABS counter | - |
| ST13 | Load inertia moment ratio | - |
| ST14 | Bus voltage | - |

### (f) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL1 | Detailed data of current alarms | - |
| AL11 | Servo status when alarm occurs cumulative feedback pulses | - |
| AL12 | Servo status when alarm occurs servo monitor speed | - |
| AL13 | Servo status when alarm occurs droop pulses | - |
| AL14 | Servo status when alarm occurs cumulative command pulses | - |
| AL15 | Servo status when alarm occurs command pulse frequency | - |
| AL16 | Servo status when alarm occurs analog speed command voltage/limit voltage | - |
| AL17 | Servo status when alarm occurs analog torque command voltage/limit voltage | - |
| AL18 | Servo status when alarm occurs regenerative load ratio | - |
| AL19 | Servo status when alarm occurs effective load ratio | - |
| AL20 | Servo status when alarm occurs peak load ratio | - |
| AL21 | Servo status when alarm occurs instantaneous torque | - |
| AL22 | Servo status when alarm occurs within one-revolution position | - |
| AL23 | Load inertia moment ratio ABS counter | - |
| AL24 | Servo status when alarm occurs load inertia moment ratio | - |
| AL25 | Servo status when alarm occurs bus voltage | - |
| AL200 | Alarm number from alarm history most recent alarm | - |
| AL201 | Alarm number from alarm history first alarm in past | - |
| AL202 | Alarm number from alarm history second alarm in past | - |
| AL203 | Alarm number from alarm history third alarm in past | - |
| AL204 | Alarm number from alarm history fourth alarm in past | - |
| AL205 | Alarm number from alarm history fifth alarm in past | - |

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| Device name | Item | Symbol |
|---|---|---|
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history most recent alarm | - |
| AL231 | Detailed alarm from alarm history first alarm in past | - |
| AL232 | Detailed alarm from alarm history second alarm in past | - |
| AL233 | Detailed alarm from alarm history third alarm in past | - |
| AL234 | Detailed alarm from alarm history fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history fifth alarm in past | - |

### (g) External I/O signal

| Device name | Item | Symbol |
|---|---|---|
| DI0 | External input pin statuses | - |
| DO0 | External output pin statuses | - |

### (h) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal status for test operation | - |

### (i) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output status of signal pin | - |

### (j) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed (test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant (test mode) | - |
| TMD2 | Writes the moving distance in pulses (test mode) | - |

(4) MELSERVO-J2S- * CP

| | Device name*3 | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*4 | SP0 | to | SP6 | Decimal |
| | Operation mode selection (OM)*4 | OM0 | to | OM4 | |
| | Instruction demand (for test operation) (TMB)*4 | TMB0 | to | TMB1 | |
| Word device | Basic parameter/expansion parameter (PRM)*1 | PRM0<br>PRM1000 | to<br>to | PRM90<br>PRM1090 | |
| | Status display (ST) | ST0 | to | ST16 | |
| | Alarm (AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | to<br>to<br>to<br>to<br>to | AL1<br>AL27<br>AL205<br>AL215<br>AL235 | |
| | External input (DI) | DI0 | to | DI2 | |
| | External output (DO) | DO0 | to | DO1 | |
| | Point table (position) (POS)*2 | POS1<br>POS1001 | to<br>to | POS31<br>POS1031 | |
| | Point table (speed) (SPD)*2 | SPD1<br>SPD1001 | to<br>to | SPD31<br>SPD1031 | |
| | Point table (acceleration time constant) (ACT)*2 | ACT1<br>ACT1001 | to<br>to | ACT31<br>ACT1031 | |
| | Point table (deceleration time constant) (DCT)*2 | DCT1<br>DCT1001 | to<br>to | DCT31<br>DCT1031 | |
| | Point table (dwell) (DWL)*2 | DWL1<br>DWL1001 | to<br>to | DWL31<br>DWL1031 | |
| | Point table (auxiliary function) (AUX)*2 | AUX1<br>AUX1001 | to<br>to | AUX31<br>AUX1031 | |
| | Input signal for test operation (for test operation) (TMI)*4 | TMI0 | | | |
| | Forced output of signal pin (for test operation) (TMO)*4 | TMO0 | | | |
| | Set data (for test operation) (TMD)*4 | TMD0 | to | TMD2 | |

*1 Use PRM0 to PRM90 when writing parameters to the servo amplifier RAM.
PRM1000 to PRM1090 are used when writing parameters to $E^2$PROM of the servo amplifier.

*2 When writing to a point table, use the area of 1001 to 1031 (E2PROM area) of POS, SPD, ACT, DCT, DWL, or AUX.
If writing to the area of 1 to 31 (RAM area) of POS, SPD, ACT, DCT, DWL, or AUX, the value is not reflected.

*3 The GOT cannot read or write data from/to consecutive devices.

For details of *4, refer to the following.

*4 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

(b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |

(c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB0 | Clears the acceleration/deceleration time constant | - |
| TMB1 | Temporary stop command | - |

(d) Basic parameter/expansion parameter

| Device name | Item | Symbol *1 |
|---|---|---|
| PRM0, PRM1000 | Command system/regenerative brake option selection | *STY |
| PRM1, PRM1001 | Feeding function selection | *FTY |
| PRM2, PRM1002 | Function selection 1 | *OP1 |
| PRM3, PRM1003 | Auto tuning | ATU |
| PRM4, PRM1004 | Electronic gear numerator | *CMX |
| PRM5, PRM1005 | Electronic gear denominator | *CDV |
| PRM6, PRM1006 | In-position range | INP |
| PRM7, PRM1007 | Position loop gain 1 | PG1 |
| PRM8, PRM1008 | Home position return type | *ZTY |
| PRM9, PRM1009 | Home position return speed | ZRF |
| PRM10, PRM1010 | Creep speed | CRF |
| PRM11, PRM1011 | Home position shift distance | ZST |
| PRM12, PRM1012 | Rough match output range | CRP |
| PRM13, PRM1013 | Jog speed | JOG |
| PRM14, PRM1014 | S-pattern acceleration/deceleration time constant | *STC |
| PRM15, PRM1015 | Station number setting | *SNO |
| PRM16, PRM1016 | Serial communication function selection, alarm history clear | *BPS |
| PRM17, PRM1017 | Analog monitor output | MOD |
| PRM18, PRM1018 | Status display selection | *DMD |
| PRM19, PRM1019 | Parameter block | *BLK |
| PRM20, PRM1020 | Function selection 2 | *OP2 |
| PRM21, PRM1021 | For manufacturer setting | - |
| PRM22, PRM1022 | Function selection 4 | *OP4 |
| PRM23, PRM1023 | Serial communication time-out selection | SIC |
| PRM24, PRM1024 | Feed forward gain | FFC |
| PRM25, PRM1025 | Override offset | VCO |
| PRM26, PRM1026 | Torque limit offset | TLO |
| PRM27, PRM1027 | Encoder output pulses | *ENR |

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| Device name | Item | Symbol *1 |
|---|---|---|
| PRM28, PRM1028 | Internal torque limit 1 | TL1 |
| PRM29, PRM1029 | Internal torque limit 2 | TL2 |
| PRM30, PRM1030 | Backlash compensation | *BKC |
| PRM31, PRM1031 | Analog monitor 1 offset | MO1 |
| PRM32, PRM1032 | Analog monitor 2 offset | MO2 |
| PRM33, PRM1033 | Electromagnetic brake sequence output | MBR |
| PRM34, PRM1034 | Ration of load inertia moment to servo motor inertia moment | GD2 |
| PRM35, PRM1035 | Position control gain 2 | PG2 |
| PRM36, PRM1036 | Speed control gain 1 | VG1 |
| PRM37, PRM1037 | Speed control gain 2 | VG2 |
| PRM38, PRM1038 | Speed integral compensation | VIC |
| PRM39, PRM1039 | Speed differential compensation | VDC |
| PRM40 to PRM41, PRM1040 to PRM1041 | For manufacturer setting | - |
| PRM42, PRM1042 | Home position return position data | *ZPS |
| PRM43, PRM1043 | Moving distance after proximity dog | DCT |
| PRM44, PRM1044 | Stopper type home position return stopper time | ZTM |
| PRM45, PRM1045 | Stopper type home position return torque limit value | ZTT |
| PRM46, PRM1046 | Software limit + | *LMP |
| PRM47, PRM1047 | | |
| PRM48, PRM1048 | Software limit - | *LMN |
| PRM49, PRM1049 | | |
| PRM50, PRM1050 | Position range output address + | *LPP |
| PRM51, PRM1051 | | |
| PRM52, PRM1052 | Position range output address - | *LNP |
| PRM53, PRM1053 | | |
| PRM54, PRM1054 | For manufacturer setting | - |
| PRM55, PRM1055 | Function selection 6 | *OP6 |
| PRM56, PRM1056 | For manufacturer setting | - |
| PRM57, PRM1057 | Function selection 8 | *OP8 |
| PRM58, PRM1058 | Function selection 9 | *OP9 |
| PRM59, PRM1059 | Function selection A | *OPA |
| PRM60, PRM1060 | For manufacturer setting | - |
| PRM61, PRM1061 | Machine resonance suppression filter 1 | NH1 |
| PRM62, PRM1062 | Machine resonance suppression filter 2 | NH2 |
| PRM63, PRM1063 | Low-pass filter/adaptive vibration suppression control | LPF |
| PRM64, PRM1064 | Ratio of load inertia moment to servo motor inertia moment 2 | GD2B |
| PRM65, PRM1065 | Position control gain 2 changing ratio | PG2B |
| PRM66, PRM1066 | Speed control gain 2 changing ratio | VG2B |
| PRM67, PRM1067 | Speed integral compensation changing ratio | VICB |
| PRM68, PRM1068 | Gain changing selection | *CDP |
| PRM69, PRM1069 | Gain changing condition | CDS |
| PRM70, PRM1070 | Gain changing time constant | CDT |
| PRM71 to PRM90, PRM1071 to PRM1090 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (e) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Current position | - |
| ST1 | Command position | - |
| ST2 | Command remaining distance | - |
| ST3 | Point table No. | - |
| ST4 | Cumulative feedback pulses | - |
| ST5 | Servo motor speed | - |
| ST6 | Droop pulses | - |
| ST7 | Override | - |
| ST8 | Torque limit voltage | - |
| ST9 | Regenerative load ratio | - |
| ST10 | Effective load ratio | - |
| ST11 | Peak load ratio | - |
| ST12 | Instantaneous torque | - |
| ST13 | Within one-revolution position | - |
| ST14 | ABS counter | - |
| ST15 | Load inertia moment ratio | - |
| ST16 | Bus voltage | - |

### (f) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL1 | Detailed data of current alarms | - |
| AL11 | Servo status when alarm occurs current position | - |
| AL12 | Servo status when alarm occurs command position | - |
| AL13 | Servo status when alarm occurs command remaining distance | - |
| AL14 | Servo status when alarm occurs point table No. | - |
| AL15 | Servo status when alarm occurs cumulative feedback pulses | - |
| AL16 | Servo status when alarm occurs servo motor speed | - |
| AL17 | Servo status when alarm occurs droop pulses | - |
| AL18 | Servo status when alarm occurs override | - |
| AL19 | Servo status when alarm occurs torque limit voltage | - |
| AL20 | Servo status when alarm occurs regenerative load ratio | - |
| AL21 | Servo status when alarm occurs effective load ratio | - |
| AL22 | Servo status when alarm occurs peak load ratio | - |
| AL23 | Servo status when alarm occurs instantaneous torque | - |
| AL24 | Servo status when alarm occurs within one-revolution position | - |
| AL25 | Servo status when alarm occurs ABS counter | - |
| AL26 | Servo status when alarm occurs load inertia moment ratio | - |
| AL27 | Servo status when alarm occurs bus voltage | - |
| AL200 | Alarm number from alarm history most recent alarm | - |
| AL201 | Alarm number from alarm history first alarm in past | - |
| AL202 | Alarm number from alarm history second alarm in past | - |
| AL203 | Alarm number from alarm history third alarm in past | - |

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| Device name | Item | Symbol |
|---|---|---|
| AL204 | Alarm number from alarm history fourth alarm in past | - |
| AL205 | Alarm number from alarm history fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history most recent alarm | - |
| AL231 | Detailed alarm from alarm history first alarm in past | - |
| AL232 | Detailed alarm from alarm history second alarm in past | - |
| AL233 | Detailed alarm from alarm history third alarm in past | - |
| AL234 | Detailed alarm from alarm history fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history fifth alarm in past | - |

### (g) External I/O signal

| Device name | Item | Symbol |
|---|---|---|
| DI0 | Input device statuses | - |
| DI1 | External input pin statuses | - |
| DI2 | Statuses of input devices switched on through communication | - |
| DO0 | Output device statuses | - |
| DO1 | External output pin statuses | - |

### (h) Point table (position)

| Device name | Item | Symbol |
|---|---|---|
| POS1 to POS31, POS1001 to POS1031 | Point table (position) No. 1 to No. 31 | - |
| SPD1 to SPD31, SPD1001 to SPD1031 | Point table (speed) No. 1 to No. 31 | - |
| ACT1 to ACT31, ACT1001 to ACT1031 | Point table (acceleration time constant) No. 1 to No. 31 | - |
| DCT1 to DCT31, DCT1001 to DCT1031 | Point table (deceleration time constant) No. 1 to No. 31 | - |
| DWL1 to DWL31, DWL1001 to DWL1031 | Point table (dwell) No. 1 to No. 31 | - |
| AUX1 to AUX31, AUX1001 to AUX1031 | Point table (auxiliary function) No. 1 to No. 31 | - |

### (i) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal for test operation | - |

### (j) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output of signal pin | - |

### (k) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed (test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant (test mode) | - |
| TMD2 | Writes the moving distance in pulses (test mode) | - |

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| | Device name*2 | Item | | | Symbol |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*4 | SP0 | to | SP6 | Decimal |
| | Operation mode selection (OM)*4 | OM0 | to | OM4 | |
| | Instruction demand (for test operation) (TMB)*4 | TMB0 | to | TMB1 | |
| Word device | Basic parameter/expansion parameter (PRM)*1 | PRM0<br>PRM1000 | to<br>to | PRM90<br>PRM1090 | |
| | Status display (ST) | ST0 | to | ST17 | |
| | Alarm (AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | to<br>to<br>to<br>to<br>to | AL1<br>AL28<br>AL205<br>AL215<br>AL235 | |
| | External input (DI) | DI0 | to | DI2 | |
| | External output (DO) | DO0 | to | DO1 | |
| | Current position latch data (LD) | LD1 | | | |
| | The value of the general-purpose register (Rx) (RR)*3 | RR1<br>RR1001 | to<br>to | RR4<br>RR1004 | |
| | The value of the general-purpose register (Dx) (RD) | RD1 | to | RD4 | |
| | Input signal for test operation (for test operation) (TMI)*4 | TMI0 | | | |
| | Forced output of signal pin (for test operation) (TMO)*4 | TMO0 | | | |
| | Set data (for test operation) (TMD)*4 | TMD0 | to | TMD2 | |

*1 PRM0 to PRM90 are used when writing parameters to the servo amplifier RAM.
PRM1000 to PRM1090 are used when writing parameters to $E^2$PROM with the servo amplifier.
*2 The GOT cannot read or write data from/to consecutive devices.
*3 Use the integer number when writing parameters to Rx.
For details of *4, refer to the following.

*4 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

(b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |

(c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB0 | Clears the acceleration/deceleration time constant | - |
| TMB1 | Temporary stop command | - |

(d) Basic parameter/expansion parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PRM0, PRM1000 | Command system/regenerative brake option selection | *STY |
| PRM1, PRM1001 | Feeding function selection | *FTY |
| PRM2, PRM1002 | Function selection 1 | *OP1 |
| PRM3, PRM1003 | Auto tuning | ATU |
| PRM4, PRM1004 | Electronic gear numerator | *CMX |
| PRM5, PRM1005 | Electronic gear denominator | *CDV |
| PRM6, PRM1006 | In-position range | INP |
| PRM7, PRM1007 | Position loop gain 1 | PG1 |
| PRM8, PRM1008 | Home position return type | *ZTY |
| PRM9, PRM1009 | Home position return speed | ZRF |
| PRM10, PRM1010 | Creep speed | CRF |
| PRM11, PRM1011 | Home position shift distance | ZST |
| PRM12, PRM1012 | For manufacturer setting | - |
| PRM13, PRM1013 | Jog speed | JOG |
| PRM14, PRM1014 | S-pattern acceleration/deceleration time constant | *STC |
| PRM15, PRM1015 | Station number setting | *SNO |

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| Device name | Item | Symbol*1 |
|---|---|---|
| PRM16, PRM1016 | Serial communication function selection, alarm history clear | *BPS |
| PRM17, PRM1017 | Analog monitor output | MOD |
| PRM18, PRM1018 | Status display selection | *DMD |
| PRM19, PRM1019 | Parameter block | *BLK |
| PRM20, PRM1020 | Function selection 2 | *OP2 |
| PRM21, PRM1021 | For manufacturer setting | - |
| PRM22, PRM1022 | Function selection 4 | *OP4 |
| PRM23, PRM1023 | Serial communication time-out selection | SIC |
| PRM24, PRM1024 | Feed forward gain | FFC |
| PRM25, PRM1025 | Override offset | VCO |
| PRM26, PRM1026 | Torque limit offset | TLO |
| PRM27, PRM1027 | Encoder output pulses | *ENR |
| PRM28, PRM1028 | Internal torque limit 1 | TL1 |
| PRM29, PRM1029 | Internal torque limit 2 | TL2 |
| PRM30, PRM1030 | Backlash compensation | *BKC |
| PRM31, PRM1031 | Analog monitor 1 offset | MO1 |
| PRM32, PRM1032 | Analog monitor 2 offset | MO2 |
| PRM33, PRM1033 | Electromagnetic brake sequence output | MBR |
| PRM34, PRM1034 | Ration of load inertia moment to servo motor inertia moment | GD2 |
| PRM35, PRM1035 | Position control gain 2 | PG2 |
| PRM36, PRM1036 | Speed control gain 1 | VG1 |
| PRM37, PRM1037 | Speed control gain 2 | VG2 |
| PRM38, PRM1038 | Speed integral compensation | VIC |
| PRM39, PRM1039 | Speed differential compensation | VDC |
| PRM40, PRM1040 | JOG operation acceleration/deceleration time constant | JTC |
| PRM41, PRM1041 | Home position return operation acceleration/deceleration time constant | ZTS |
| PRM42, PRM1042 | Home position return position data | *ZPS |
| PRM43, PRM1043 | Moving distance after proximity dog | DCT |
| PRM44, PRM1044 | Stopper type home position return stopper time | ZTM |
| PRM45, PRM1045 | Stopper type home position return torque limit value | ZTT |
| PRM46, PRM1046 | Software limit+ | *LMP |
| PRM47, PRM1047 | | |
| PRM48, PRM1048 | Software limit- | *LMN |
| PRM49, PRM1049 | | |
| PRM50, PRM1050 | Position range output address+ | *LPP |
| PRM51, PRM1051 | | |
| PRM52, PRM1052 | Position range output address- | *LNP |
| PRM53, PRM1053 | | |
| PRM54, PRM1054 | For manufacturer setting | - |
| PRM55, PRM1055 | Function selection 6 | *OP6 |
| PRM56, PRM1056 | For manufacturer setting | - |
| PRM57, PRM1057 | Function selection 8 | *OP8 |

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| Device name | Item | Symbol*1 |
|---|---|---|
| PRM58, PRM1058 | Function selection 9 | *OP9 |
| PRM59, PRM1059 | Function selection A | *OPA |
| PRM60, PRM1060 | For manufacturer setting | - |
| PRM61, PRM1061 | Machine resonance suppression filter 1 | NH1 |
| PRM62, PRM1062 | Machine resonance suppression filter 2 | NH2 |
| PRM63, PRM1063 | Low-pass filter, adaptive vibration suppression control | LPF |
| PRM64, PRM1064 | Ratio of load inertia moment to Servo motor inertia moment 2 | GD2B |
| PRM65, PRM1065 | Position control gain 2 changing ratio | PG2B |
| PRM66, PRM1066 | Speed control gain 2 changing ratio | VG2B |
| PRM67, PRM1067 | Speed integral compensation changing ratio | VICB |
| PRM68, PRM1068 | Gain changing selection | *CDP |
| PRM69, PRM1069 | Gain changing condition | CDS |
| PRM70, PRM1070 | Gain changing time constant | CDT |
| PRM71 to PRM73, PRM1071 to PRM1073 | For manufacturer setting | - |
| PRM74, PRM1074 | OUT1 output time selection | OUT1 |
| PRM75, PRM1075 | OUT2 output time selection | OUT2 |
| PRM76, PRM1076 | OUT3 output time selection | OUT3 |
| PRM77, PRM1077 | Selected to program input polarity selection 1 | SYC1 |
| PRM78 to PRM90, PRM1078 to PRM1090 | For manufacturer setting | - |

*1 For the parameter with * in front of it's abbreviated name, powering off the servo amplifier after setting then on makes the parameter valid.

### (e) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Current position | - |
| ST1 | Command position | - |
| ST2 | Command remaining distance | - |
| ST3 | Program Number | - |
| ST4 | Step Number | - |
| ST5 | Cumulative feedback pulses | - |
| ST6 | Servo motor speed | - |
| ST7 | Droop pulses | - |
| ST8 | Override | - |
| ST9 | Torque limit voltage | - |
| ST10 | Regenerative load ratio | - |
| ST11 | Effective load ratio | - |
| ST12 | Peak load ratio | - |
| ST13 | Instantaneous torque | - |
| ST14 | Within one-revolution position | - |
| ST15 | ABS counter | - |
| ST16 | Load inertia moment ratio | - |
| ST17 | Bus voltage | - |

(f) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL1 | Detailed data of current alarms | - |
| AL11 | Servo status when alarm occurs Current position | - |
| AL12 | Servo status when alarm occurs Command position | - |
| AL13 | Servo status when alarm occurs Command remaining distance | - |
| AL14 | Servo status when alarm occurs Program Number | - |
| AL15 | Servo status when alarm occurs Step Number | - |
| AL16 | Servo status when alarm occurs Cumulative feedback pulses | - |
| AL17 | Servo status when alarm occurs Servo motor speed | - |
| AL18 | Servo status when alarm occurs Droop pulses | - |
| AL19 | Servo status when alarm occurs Override | - |
| AL20 | Servo status when alarm occurs Torque limit voltage | - |
| AL21 | Servo status when alarm occurs Regenerative load ratio | - |
| AL22 | Servo status when alarm occurs Effective load ratio | - |
| AL23 | Servo status when alarm occurs Peak load ratio | - |
| AL24 | Servo status when alarm occurs Instantaneous torque | - |
| AL25 | Servo status when alarm occurs Within one-revolution position | - |
| AL26 | Servo status when alarm occurs ABS counter | - |
| AL27 | Servo status when alarm occurs Load inertia moment ratio | - |
| AL28 | Servo status when alarm occurs Bus voltage | - |
| AL200 | Alarm number from Alarm History most recent alarm | - |
| AL201 | Alarm number from Alarm History first alarm in past | - |
| AL202 | Alarm number from Alarm History second alarm in past | - |
| AL203 | Alarm number from Alarm History third alarm in past | - |
| AL204 | Alarm number from Alarm History fourth alarm in past | - |
| AL205 | Alarm number from Alarm History fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from Alarm History most recent alarm | - |
| AL231 | Detailed alarm from Alarm History first alarm in past | - |
| AL232 | Detailed alarm from Alarm History second alarm in past | - |
| AL233 | Detailed alarm from Alarm History third alarm in past | - |

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| Device name | Item | Symbol |
|---|---|---|
| AL234 | Detailed alarm from Alarm History fourth alarm in past | - |
| AL235 | Detailed alarm from Alarm History fifth alarm in past | - |

### (g) External I/O signal

| Device name | Item | Symbol |
|---|---|---|
| DI0 | Input device statuses | - |
| DI1 | External input pin statuses | - |
| DI2 | Statuses of input devices switched on through communication | - |
| DO0 | Output device statuses | - |
| DO1 | External output pin statuses | - |

### (h) Current position latch data

| Device name | Item | Symbol |
|---|---|---|
| LD1 | Current position latch data | - |

### (i) The value of the general-purpose register (Rx)

| Device name | Item | Symbol |
|---|---|---|
| RR1, RR1001 | The value of the general-purpose register (R1) | - |
| RR2, RR1002 | The value of the general-purpose register (R2) | - |
| RR3, RR1003 | The value of the general-purpose register (R3) | - |
| RR4, RR1004 | The value of the general-purpose register (R4) | - |

### (j) The value of the general-purpose register (Dx)

| Device name | Item | Symbol |
|---|---|---|
| RD1 | The value of the general-purpose register (D1) | - |
| RD2 | The value of the general-purpose register (D2) | - |
| RD3 | The value of the general-purpose register (D3) | - |
| RD4 | The value of the general-purpose register (D4) | - |

### (k) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal for test operation | - |

### (l) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output of signal pin | - |

(m) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed(test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant(test mode) | - |
| TMD2 | Writes the moving distance in pulses(test mode) | - |

## (6) MELSERVO-J3-*A

| Device name*2 | | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*3 | SP0 | to | SP6 | Decimal |
| | Operation mode selection (OM)*3 | OM0 | to | OM4 | |
| | Instructin demand (for test operation) (TMB)*3 | TMB1 | to | TMB6 | |
| Word device | Basic setting parameter (PA)*1 | PA1<br>PA1001 | to<br>to | PA19<br>PA1019 | |
| | Gain filter parameter (PB)*1 | PB1<br>PB1001 | to<br>to | PB45<br>PB1045 | |
| | Extension setting parameter (PC)*1 | PC1<br>PC1001 | to<br>to | PC50<br>PC1050 | |
| | I/O setting parameter (PD)*1 | PD1<br>PD1001 | to<br>to | PD30<br>PD1030 | |
| | Status display (ST) | ST0 | to | ST14 | |
| | Alarm (AL) | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | to<br>to<br>to<br>to<br>to | AL1<br>AL25<br>AL205<br>AL215<br>AL235 | |
| | External input (DI) | DI0 | to | DI2 | |
| | External output (DO) | DO0 | to | DO1 | |
| | Input signal for test operation (for test operation) (TMI)*3 | TMI0 | | | |
| | Forced output of signal pin (for test operation) (TMO)*3 | TMO0 | | | |
| | Set data (for test operation) (TMD)*3 | TMD0<br>TMD3 | to | TMD1 | |

*1 1 to 50 of PA, PB, PC, and PD are used when writing data to the servo amplifier RAM.
1001 to 1050 of PA, PB, PC, and PD are used when writing data to $E^2$PROM of the servo amplifier.
*2 The GOT cannot read or write data from/to consecutive devices.
For details of *3, refer to the following.

### *3 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

(b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |

(c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB1 | Temporary stop command | - |
| TMB2 | Test operation (positioning operation) start command | - |
| TMB3 | Forward rotation direction | - |
| TMB4 | Reverse rotation direction | - |
| TMB5 | Restart for remaining distance | - |
| TMB6 | Remaining distance clear | - |

(d) Basic setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PA1, PA1001 | Control mode | *STY |
| PA2, PA1002 | Regenerative brake option | *REG |
| PA3, PA1003 | Absolute position detection system | *ABS |
| PA4, PA1004 | Function selection A-1 | *AOP1 |
| PA5, PA1005 | Number of command input pulses per revolution | *FBP |
| PA6, PA1006 | Electronic gear numerator (command pulse multiplying factor numerator) | CMX |
| PA7, PA1007 | Electronic gear denominator (command pulse multiplying factor denominator) | CDV |
| PA8, PA1008 | Auto tuning mode | ATU |
| PA9, PA1009 | Auto tuning response | RSP |
| PA10, PA1010 | In-position range | INP |
| PA11, PA1011 | Forward torque limit | TLP |
| PA12, PA1012 | Reverses torque limit | TLN |
| PA13, PA1013 | Command pulse input form | *PLSS |
| PA14, PA1014 | Rotation direction selection | *POL |
| PA15, PA1015 | Encoder output pulses | *ENR |
| PA16 to PA18, PA1016 to PA1018 | For manufacturer setting | - |
| PA19, PA1019 | Parameter block | *BLK |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (e) Gain filter parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PB1, PB1001 | Adaptive tuning mode (Adaptive filter II) | FILT |
| PA2, PB1002 | Vibration suppression control filter tuning mode (Advanced vibration suppression control) | VRFT |
| PB3, PB1003 | Position command acceleration/deceleration time constant (position smoothing) | PST |
| PB4, PB1004 | Feed forward gain | FFC |
| PB5, PB1005 | For manufacturer setting | - |
| PB6, PB1006 | Ratio of load inertia moment to servo motor inertia moment | GD2 |
| PB7, PB1007 | Model control gain | PG1 |
| PB8, PB1008 | Position loop gain | PG2 |
| PB9, PB1009 | Speed loop gain | VG2 |
| PB10, PB1010 | Speed integral compensation | VIC |
| PB11, PB1011 | Speed differential compensation | VDC |
| PB12, PB1012 | For manufacturer setting | - |
| PB13, PB1013 | Machine resonance suppression filter 1 | NH1 |
| PB14, PB1014 | Notch form selection 1 | NHQ1 |
| PB15, PB1015 | Machine resonance suppression filter 2 | NH2 |
| PB16, PB1016 | Notch form selection 2 | NHQ2 |
| PB17, PB1017 | For manufacturer setting | - |
| PB18, PB1018 | Low-pass filter setting | LPF |
| PB19, PB1019 | Vibration suppression control vibration frequency setting | VRF1 |
| PB20, PB1020 | Vibration suppression control resonance frequency setting | VRF2 |
| PB21 to PB22, PB1021 to PB1022 | For manufacturer setting | - |
| PB23, PB1023 | Low-pass filter selection | VFBF |
| PB24, PB1024 | Slight vibration suppression control selection | *MVS |
| PB25, PB1025 | Function selection B-1 | *BOP1 |
| PB26, PB1026 | Gain changing selection | *CDP |
| PB27, PB1027 | Gain changing condition | CDL |
| PB28, PB1028 | Gain changing time constant | CDT |
| PB29, PB1029 | Ratio of load inertia moment to servo motor inertia moment at changing gain | GD2B |
| PB30, PB1030 | Position loop gain at changing gain | PG2B |
| PB31, PB1031 | Speed loop gain at changing gain | VG2B |
| PB32, PB1032 | Speed integral compensation at changing gain | VICB |
| PB33, PB1033 | Vibration suppression control vibration frequency setting for changing gain | VRF1B |
| PB34, PB1034 | Vibration suppression control vibration resonance setting for changing gain | VRF2B |
| PB35 to PB45, PB1035 to PB1045 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (f) Extension setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PC1, PC1001 | Acceleration time constant | STA |
| PC2, PC1002 | Deceleration time constant | STB |
| PC3, PC1003 | S-pattern acceleration/deceleration time constant | STC |
| PC4, PC1004 | Torque command time constant | TQC |
| PC5, PC1005 | Internal speed command 1 / limit 1 | SC1 |
| PC6, PC1006 | Internal speed command 2 / limit 2 | SC2 |
| PC7, PC1007 | Internal speed command 3 / limit 3 | SC3 |
| PC8, PC1008 | Internal speed command 4 / limit 4 | SC4 |
| PC9, PC1009 | Internal speed command 5 / limit 5 | SC5 |
| PC10, PC1010 | Internal speed command 6 / limit 6 | SC6 |
| PC11, PC1011 | Internal speed command 7 / limit 7 | SC7 |
| PC12, PC1012 | Analog speed command maximum speed / limit maximum speed | VCM |
| PC13, PC1013 | Analog torque command maximum output | TLC |
| PC14, PC1014 | Analog monitor 1 output | MOD1 |
| PC15, PC1015 | Analog monitor 2 output | MOD2 |
| PC16, PC1016 | Electromagnetic brake sequence output | MBR |
| PC17, PC1017 | Zero speed | ZSP |
| PC18, PC1018 | Alarm history clear | *BPS |
| PC19, PC1019 | Encoder output pulse selection | *ENRS |
| PC20, PC1020 | Station number. setting | *SNO |
| PC21, PC1021 | Communication function selection | *SOP |
| PC22, PC1022 | Function selection C-1 | *COP1 |
| PC23, PC1023 | Function selection C-2 | *COP2 |
| PC24, PC1024 | Function selection C-3 | *COP3 |
| PC25, PC1025 | For manufacturer setting | - |
| PC26, PC1026 | Function selection C-5 | *COP5 |
| PC27 to PC29, PC1027 to PC1029 | For manufacturer setting | - |
| PC30, PC1030 | Acceleration time constant 2 | STA2 |
| PC31, PC1031 | Deceleration time constant 2 | STB2 |
| PC32, PC1032 | Command pulse multiplying factor numerator 2 | CMX2 |
| PC33, PC1033 | Command pulse multiplying factor numerator 3 | CMX3 |
| PC34, PC1034 | Command pulse multiplying factor numerator 4 | CMX4 |
| PC35, PC1035 | Internal torque limit 2 | TL2 |
| PC36, PC1036 | Status display selection | *DMD |
| PC37, PC1037 | Analog speed command offset / limit offset | VCO |
| PC38, PC1038 | Analog torque command offset / limit offset | TPO |
| PC39, PC1039 | Analog monitor 1 offset | MO1 |
| PC40, PC1040 | Analog monitor 2 offset | MO2 |
| PC41 to PC50, PC1041 to PC1050 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (g) I/O setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PD1, PD1001 | Input signal automatic ON selection 1 | *DIA1 |
| PD2, PD1002 | For manufacturer setting | - |
| PD3, PD1003 | Input signal device selection 1 (CN1-15) | *DI1 |
| PD4, PD1004 | Input signal device selection 2 (CN1-16) | *DI2 |
| PD5, PD1005 | Input signal device selection 3 (CN1-17) | *DI3 |
| PD6, PD1006 | Input signal device selection 4 (CN1-18) | *DI4 |
| PD7, PD1007 | Input signal device selection 5 (CN1-19) | *DI5 |
| PD8, PD1008 | Input signal device selection 6 (CN1-41) | *DI6 |
| PD9, PD1009 | For manufacturer setting | - |
| PD10, PD1010 | Input signal device selection 8 (CN1-43) | *DI8 |
| PD11, PD1011 | Input signal device selection 9 (CN1-44) | *DI9 |
| PD12, PD1012 | Input signal device selection 10 (CN1-45) | *DI10 |
| PD13, PD1013 | Output signal device selection 1 (CN1-22) | *DO1 |
| PD14, PD1014 | Output signal device selection 2 (CN1-23) | *DO2 |
| PD15, PD1015 | Output signal device selection 3 (CN1-24) | *DO3 |
| PD16, PD1016 | Output signal device selection 4 (CN1-25) | *DO4 |
| PD17, PD1017 | For manufacturer setting | - |
| PD18, PD1018 | Output signal device selection 6 (CN1-49) | *DO6 |
| PD19, PD1019 | Response level setting | *DIF |
| PD20, PD1020 | Function selection D-1 | *DOP1 |
| PD21, PD1021 | For manufacturer setting | - |
| PD22, PD1022 | Function selection D-3 | *DOP3 |
| PD23, PD1023 | For manufacturer setting | - |
| PD24, PD1024 | Function selection D-5 | *DOP5 |
| PD25 to PD30, PD1025 to PD1030 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (h) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Cumulative feedback pulses | - |
| ST1 | Servo motor speed | - |
| ST2 | Droop pulses | - |
| ST3 | Cumulative command pulses | - |
| ST4 | Command pulse frequency | - |
| ST5 | Analog speed command voltage/limit voltage | - |
| ST6 | Analog torque command voltage/limit voltage | - |
| ST7 | Regenerative load ratio | - |
| ST8 | Effective load ratio | - |
| ST9 | Peak load ratio | - |
| ST10 | Instantaneous torque | - |
| ST11 | Within one-revolution position | - |
| ST12 | ABS counter | - |
| ST13 | Load inertia moment ratio | - |
| ST14 | Bus voltage | - |

### (i) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL1 | Detailed data of current alarms | - |
| AL11 | Servo status when alarm occurs cumulative feedback pulses | - |
| AL12 | Servo status when alarm occurs servo monitor speed | - |
| AL13 | Servo status when alarm occurs droop pulses | - |
| AL14 | Servo status when alarm occurs cumulative command pulses | - |
| AL15 | Servo status when alarm occurs command pulse frequency | - |
| AL16 | Servo status when alarm occurs analog speed command voltage/limit voltage | - |
| AL17 | Servo status when alarm occurs analog torque command voltage/limit voltage | - |
| AL18 | Servo status when alarm occurs regenerative load ratio | - |
| AL19 | Servo status when alarm occurs effective load ratio | - |
| AL20 | Servo status when alarm occurs peak load ratio | - |
| AL21 | Servo status when alarm occurs instantaneous torque | - |
| AL22 | Servo status when alarm occurs within one-revolution position | - |
| AL23 | Load inertia moment ratio ABS counter | - |
| AL24 | Servo status when alarm occurs load inertia moment ratio | - |
| AL25 | Servo status when alarm occurs bus voltage | - |
| AL200 | Alarm number from alarm history most recent alarm | - |
| AL201 | Alarm number from alarm history first alarm in past | - |
| AL202 | Alarm number from alarm history second alarm in past | - |
| AL203 | Alarm number from alarm history third alarm in past | - |
| AL204 | Alarm number from alarm history fourth alarm in past | - |
| AL205 | Alarm number from alarm history fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history first alarm in past | - |
| AL212 | Alarm occurrence time in alarm history second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history most recent alarm | - |
| AL231 | Detailed alarm from alarm history first alarm in past | - |
| AL232 | Detailed alarm from alarm history second alarm in past | - |
| AL233 | Detailed alarm from alarm history third alarm in past | - |
| AL234 | Detailed alarm from alarm history fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history fifth alarm in past | - |

### (j) External input

| Device name | Item | Symbol |
|---|---|---|
| DI0 | Input device statuses | - |
| DI1 | External input pin statuses | - |
| DI2 | Statuses of input devices switched on through communication | - |

### (k) External output

| Device name | Item | Symbol |
|---|---|---|
| DO0 | Output device statuses | - |
| DO1 | External output pin statuses | - |

### (l) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal for test operation | - |

### (m) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output of signal pin | - |

### (n) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed (test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant (test mode) | - |
| TMD2 | For manufacturer setting | - |
| TMD3 | Writes the moving distance (test mode) | - |

## (7) MELSERVO-J3-*T

| | Device name*5 | Setting range | | | Device No. representation |
|---|---|---|---|---|---|
| Bit device | Servo amplifier request (SP)*6 | SP0 | to | SP6 | Decimal |
| | Operation mode selection(OM) *6 | OM0 | to | OM5 | |
| | Instruction demand (for test operation) (TMB) *6 | TMB1 | to | TMB6 | |
| Word device | Basic setting parameter (PA) *1 | PA1<br>PA1001 | to<br>to | PA19<br>PA1019 | Decimal |
| | Gain filter parameter (PB) *1 | PB1<br>PB1001 | to<br>to | PB45<br>PB1045 | |
| | Extension setting parameter (PC) *1 | PC1<br>PC1001 | to<br>to | PC50<br>PC1050 | |
| | Extension setting parameter(PD) *1 | PD1<br>PD1001 | to<br>to | PD30<br>PD1030 | |
| | Option unit parameter (PO) *1 | PO1<br>PO1001 | to<br>to | PO35<br>PO1035 | |
| | Status display (ST) *4 | ST0 | to | ST17 | |
| | Alarm (AL) *4 | AL0<br>AL11<br>AL200<br>AL210<br>AL230 | to<br>to<br>to<br>to<br>to | AL1<br>AL28<br>AL205<br>AL215<br>AL235 | |
| | External input(DI) *7 | DI0 | to | DI7 | |
| | External output (DO) *4 | DO0 | to | DO4 | |
| | Point table (position) (POS) *2 | POS1<br>POS1001 | to<br>to | POS255<br>POS1255 | |
| | Point table (speed) (SPD) *2 | SPD1<br>SPD1001 | to<br>to | SPD255<br>SPD1255 | |
| | Point table (acceleration time constant) (ACT) *2 | ACT1<br>ACT1001 | to<br>to | ACT255<br>ACT1255 | |
| | Point table (deceleration time constant) (DCT) *2 | DCT1<br>DCT1001 | to<br>to | DCT255<br>DCT1255 | |
| | Point table (dwell)(DWL) *2 | DWL1<br>DWL1001 | to<br>to | DWL255<br>DWL1255 | |
| | Point table (auxiliary function) (AUX) *2 | AUX1<br>AUX1001 | to<br>to | AUX255<br>AUX1255 | |
| | Point table (M code) (MCD) *2 *3 | MCD1<br>MCD1001 | to<br>to | MCD255<br>MCD1255 | |
| | Input signal for test operation (for test operation) (TM0) *6 | TMI0 | to | TMI2 | |
| | Forced output of signal pin (for test operation) (TMO) *6 | TMO0 | to | TMO1 | |
| | Set data (for test operation) (TMD) *6 | TMD0<br>TMD3 | to | TMD1 | |

*1 Use 1 to 50 of PA, PB, PC, PD, and PO when the GOT writes data to RAM of the servo amplifier.
Use 1001 to 1050 of PA, PB, PC, PD, and PO when the GOT write data to $E^2$PROM of the servo amplifier.

*2 When the GOT writes data to point tables, use 1001 to 1255 of POS, SPD, ACT, DCT, DWL, AUX, and MCD ($E^2$PROM area).

*3 MCD cannot be used as a real number.

*4 The GOT can only read data from the device.

*5 The GOT cannot read or write from/to consecutive devices.

For details of *6, refer to the following.

*7 For DI0 to DI4, the GOT can only read data from devices.

*3 Precautions for SP, OM, TMB, TMI, TMO, and TMD devices

(1) For bit devices
Only writing is possible.
[Alternate] of a bit switch cannot be used.
Use [Set], [Reset], and [Momentary] of a bit switch.

(2) For word devices
Only writing is possible.
Numerical input cannot be used.
When writing, use [Word Set] of a data set switch.

The following shows correspondences between virtual devices for servo amplifier and data of the servo amplifier used with the GOT.

(a) Servo amplifier request

| Device name | Item | Symbol |
|---|---|---|
| SP0 | Status display data clear | - |
| SP1 | Current alarm clear | - |
| SP2 | Alarm history clear | - |
| SP3 | External input signal prohibited | - |
| SP4 | External output signal prohibited | - |
| SP5 | External input signal resumed | - |
| SP6 | External output signal resumed | - |

(b) Operation mode selection

| Device name | Item | Symbol |
|---|---|---|
| OM0 | Normal mode (not test operation mode) | - |
| OM1 | JOG operation | - |
| OM2 | Positioning operation | - |
| OM3 | Motorless operation | - |
| OM4 | Output signal (DO) forced output | - |
| OM5 | One step sending | - |

(c) Instruction demand (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMB1 | Temporary stop command | - |
| TMB2 | Test operation (positioning operation) start command | - |
| TMB3 | Forward rotation direction | - |
| TMB4 | Reverse rotation direction | - |
| TMB5 | Restart for remaining distance | - |
| TMB6 | Remaining distance clear | - |

### (d) Basic setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PA1, PA1001 | Control mode | *STY |
| PA2, PA1002 | Regenerative brake option | *REG |
| PA3, PA1003 | Absolute position detection system | *ABS |
| PA4, PA1004 | Function selection A-1 | *AOP1 |
| PA5, PA1005 | Feeding function selection | *FTY |
| PA6, PA1006 | Electronic gear numerator | *CMX |
| PA7, PA1007 | Electronic gear denominator | *CDV |
| PA8, PA1008 | Auto tuning mode | ATU |
| PA9, PA1009 | Auto tuning response | RSP |
| PA10, PA1010 | In-position range | INP |
| PA11, PA1011 | Forward torque limit | TLP |
| PA12, PA1012 | Reverses torque limit | TLN |
| PA13, PA1013 | For manufacturer setting | - |
| PA14, PA1014 | Rotation direction selection | *POL |
| PA15, PA1015 | Encoder output pulses | *ENR |
| PA16 to PA18, PA1016 to PA1018 | For manufacturer setting | - |
| PA19, PA1019 | Parameter block | *BLK |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (e) Gain filter parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PB1, PB1001 | Adaptive tuning mode (Adaptive filter II) | FILT |
| PA2, PB1002 | Vibration suppression control filter tuning mode (advanced vibration suppression control) | VRFT |
| PB3, PB1003 | For manufacturer setting | - |
| PB4, PB1004 | Feed forward gain | FFC |
| PB5, PB1005 | For manufacturer setting | - |
| PB6, PB1006 | Ratio of load inertia moment to servo motor inertia moment | GD2 |
| PB7, PB1007 | Model control gain | PG1 |
| PB8, PB1008 | Position loop gain | PG2 |
| PB9, PB1009 | Speed loop gain | VG2 |
| PB10, PB1010 | Speed integral compensation | VIC |
| PB11, PB1011 | Speed differential compensation | VDC |
| PB12, PB1012 | For manufacturer setting | - |
| PB13, PB1013 | Machine resonance suppression filter 1 | NH1 |
| PB14, PB1014 | Notch form selection 1 | NHQ1 |
| PB15, PB1015 | Machine resonance suppression filter 2 | NH2 |
| PB16, PB1016 | Notch form selection 2 | NHQ2 |
| PB17, PB1017 | For manufacturer setting | - |
| PB18, PB1018 | Low-pass filter setting | LPF |
| PB19, PB1019 | Vibration suppression control vibration frequency setting | VRF1 |
| PB20, PB1020 | Vibration suppression control resonance frequency setting | VRF2 |
| PB21 to PB22, PB1021 to PB1022 | For manufacturer setting | - |
| PB23, PB1023 | Low-pass filter selection | VFBF |
| PB24, PB1024 | Slight vibration suppression control selection | *MVS |
| PB25, PB1025 | For manufacturer setting | - |
| PB26, PB1026 | Gain changing selection | *CDP |
| PB27, PB1027 | Gain changing condition | CDL |
| PB28, PB1028 | Gain changing time constant | CDT |
| PB29, PB1029 | Gain changing, Ratio of load inertia moment to servo motor inertia moment | GD2B |
| PB30, PB1030 | Gain changing, Position loop gain | PG2B |
| PB31, PB1031 | Gain changing, Speed loop gain | VG2B |
| PB32, PB1032 | Gain changing, Speed integral compensation | VICB |
| PB33, PB1033 | Gain changing, Vibration suppression control vibration frequency setting | VRF1B |
| PB34, PB1034 | Gain changing, Vibration suppression control resonance frequency setting | VRF2B |
| PB35 to PB45, PB1035 to PB1045 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (f) Extension setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PC1, PC1001 | For manufacturer setting | - |
| PC2, PC1002 | Home position return type | *ZTY |
| PC3, PC1003 | Direction of home position return | *ZDIR |
| PC4, PC1004 | Home position return speed | ZRF |
| PC5, PC1005 | Creep speed | CRF |
| PC6, PC1006 | Home position shift distance | ZST |
| PC7, PC1007 | Home position return position data | *ZPS |
| PC8, PC1008 | Moving distance after proximity dog | DCT |
| PC9, PC1009 | Hold time home position return hold time | ZTM |
| PC10, PC1010 | Hold time home position return torque limit value | ZTT |
| PC11, PC1011 | Rough match output range | CRP |
| PC12, PC1012 | Jog speed | JOG |
| PC13, PC1013 | S-pattern acceleration/deceleration time constant | *STC |
| PC14, PC1014 | Backlash compensation | *BKC |
| PC15, PC1015 | For manufacturer setting | - |
| PC16, PC1016 | Electromagnetic brake sequence output | MBR |
| PC17, PC1017 | Zero speed | ZSP |
| PC18, PC1018 | Alarm history clear | *BPS |
| PC19, PC1019 | Encoder output pulse selection | *ENRS |
| PC20, PC1020 | Station number. setting | *SNO |
| PC21, PC1021 | communication function selection | *SOP |
| PC22, PC1022 | Function selection C-1 | *COP1 |
| PC23, PC1023 | For manufacturer setting | - |
| PC24, PC1024 | Function selection C-3 | *COP3 |
| PC25, PC1025 | For manufacturer setting | - |
| PC26, PC1026 | Function selection C-5 | *COP5 |
| PC27, PC1027 | For manufacturer setting | - |
| PC28, PC1028 | Function selection C-7 | *COP7 |
| PC29 to PC30, PC1029 to PC1030 | For manufacturer setting | - |
| PC31, PC1031 | Software limit + Low | LMPL |
| PC32, PC1032 | Software limit + High | LMPH |
| PC33, PC1033 | Software limit - Low | LMNL |
| PC34, PC1034 | Software limit - High | LMNH |
| PC35, PC1035 | Internal torque limit2 | TL2 |
| PC36, PC1036 | Status display selection | *DMD |
| PC37, PC1037 | Position range output address + Low | *LPPL |
| PC38, PC1038 | Position range output address + High | *LPPH |
| PC39, PC1039 | Position range output address - Low | *LNPL |
| PC40, PC1040 | Position range output address - High | *LNPH |
| PC41 to PC50, PC1041 to PC1050 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (g) I/O setting parameter

| Device name | Item | Symbol*1 |
|---|---|---|
| PD1, PD1001 | Input signal automatic ON selection 1 | *DIA1 |
| PD2, PD1002 | For manufacturer setting | - |
| PD3, PD1003 | Input signal automatic ON selection 3 | *DIA3 |
| PD4, PD1004 | Input signal automatic ON selection 4 | *DIA4 |
| PD5, PD1005 | For manufacturer setting | - |
| PD6, PD1006 | Input signal device selection 2(CN6-2) | *DI2 |
| PD7, PD1007 | Input signal device selection 3(CN6-3) | *DI3 |
| PD8, PD1008 | Input signal device selection 4(CN6-4) | *DI4 |
| PD9, PD1009 | Output signal device selection 1(CN6-14) | *DO1 |
| PD10, PD1010 | Output signal device selection 2(CN6-15) | *DO2 |
| PD11, PD1011 | Output signal device selection 3(CN6-16) | *DD3 |
| PD12 to PD15, PD1012 to PD1015 | For manufacturer setting | - |
| PD16, PD1016 | Input polarity selection | *DIAB |
| PD17 to PD18, PD1017 to PD1018 | For manufacturer setting | - |
| PD19, PD1019 | Response level setting | *DIF |
| PD20, PD1020 | Function selection D-1 | *DOP1 |
| PD21, PD1021 | For manufacturer setting | - |
| PD22, PD1022 | Function selection D-3 | *DOP3 |
| PD23, PD1023 | For manufacturer setting | - |
| PD24, PD1024 | Function selection D-5 | *DOP5 |
| PD25 to PD30, PD1025 to PD1030 | For manufacturer setting | - |

*1 For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

### (h) Option unit parameter

| Device name | Item | Symbol |
|---|---|---|
| PO1, PO1001 | For manufacturer setting | - |
| PO2, PO1002 | MR-J3-D01 Input signal device selection 1(CN10-21, 26) | *ODI1 |
| PO3, PO1003 | MR-J3-D01 Input signal device selection 2(CN10-27, 28) | *ODI2 |
| PO4, PO1004 | MR-J3-D01 Input signal device selection 3(CN10-29, 30) | *ODI3 |
| PO5, PO1005 | MR-J3-D01 Input signal device selection 4(CN10-31, 32) | *ODI4 |
| PO6, PO1006 | MR-J3-D01 Input signal device selection 5(CN10-33, 34) | *ODI5 |
| PO7, PO1007 | MR-J3-D01 Input signal device selection 6(CN10-35, 36) | *ODI6 |
| PO8, PO1008 | MR-J3-D01 Output signal device selection 1(CN10-46, 47) | *ODO1 |
| PO9, PO1009 | MR-J3-D01 Output signal device selection 2(CN10-48, 49) | *ODO2 |
| PO10, PO1010 | Function selection 0-1 | *OOP1 |
| PO11, PO1011 | For manufacturer setting | - |
| PO12, PO1012 | Function selection 0-3 | *OOP3 |
| PO13, PO1013 | MR-J3-D01 Analog monitor 1 output | MOD1 |
| PO14, PO1014 | MR-J3-D01 Analog monitor 2 output | MOD2 |
| PO15, PO1015 | MR-J3-D01 Analog monitor 1 offset | M01 |
| PO16, PO1016 | MR-J3-D01 Analog monitor 2 offset | M02 |
| PO17 to 20, PO1017 to PO1020 | For manufacturer setting | - |

(Continued to next page)

| Device name | Item | Symbol |
|---|---|---|
| PO21, PO1021 | MR-J3-D01 Override offset | VCO |
| PO22, PO1022 | MR-J3-D01 Analog torque limitation offset | TLO |
| PO23 to 35, PO1023 to PO1035 | For manufacturer setting | - |

### (i) Status display

| Device name | Item | Symbol |
|---|---|---|
| ST0 | Current position | - |
| ST1 | Command position | - |
| ST2 | Command remaining distance | - |
| ST3 | Point table No. | - |
| ST4 | Cumulative feedback pulses | - |
| ST5 | Servo motor speed | - |
| ST6 | Droop pulses | - |
| ST7 | Override voltage | - |
| ST8 | Override | - |
| ST9 | Analog torque command voltage/limit voltage | - |
| ST10 | Regenerative load ratio | - |
| ST11 | Effective load ratio | - |
| ST12 | Peak load ratio | - |
| ST13 | Instantaneous torque | - |
| ST14 | Within one-revolution position | - |
| ST15 | ABS counter | - |
| ST16 | Load inertia moment ratio | - |
| ST17 | Bus voltage | - |

### (j) Alarm

| Device name | Item | Symbol |
|---|---|---|
| AL0 | Current alarm number | - |
| AL1 | Detailed data of current alarms | - |
| AL11 | Servo status when alarm occurs, Current position | - |
| AL12 | Servo status when alarm occurs, Command position | - |
| AL13 | Servo status when alarm occurs, Command remaining distance | - |
| AL14 | Servo status when alarm occurs, Point table No. | - |
| AL15 | Servo status when alarm occurs, Cumulative feedback pulses | - |
| AL16 | Servo status when alarm occurs, Servo motor speed | - |
| AL17 | Servo status when alarm occurs, Droop pulses | - |
| AL18 | Servo status when alarm occurs, Override voltage | - |
| AL19 | Servo status when alarm occurs, Override | - |
| AL20 | Servo status when alarm occurs, Analog torque limit voltage | - |
| AL21 | Servo status when alarm occurs, Regenerative load ratio | - |
| AL22 | Servo status when alarm occurs, Effective load ratio | - |
| AL23 | Servo status when alarm occurs, Peak load ratio | - |
| AL24 | Servo status when alarm occurs, Instantaneous torque | - |
| AL25 | Servo status when alarm occurs, Within one-revolution position | - |
| AL26 | Servo status when alarm occurs, ABS counter | - |
| AL27 | Servo status when alarm occurs, Load inertia moment ratio | - |
| AL28 | Servo status when alarm occurs, Bus voltage | - |
| AL200 | Alarm number from alarm history, Most recent alarm | - |
| AL201 | Alarm number from alarm history, First alarm in past | - |
| AL202 | Alarm number from alarm history, Second alarm in past | - |
| AL203 | Alarm number from alarm history, Third alarm in past | - |
| AL204 | Alarm number from alarm history, Fourth alarm in past | - |
| AL205 | Alarm number from alarm history, Fifth alarm in past | - |
| AL210 | Alarm occurrence time in alarm history, Most recent alarm | - |
| AL211 | Alarm occurrence time in alarm history, First alarm in past | - |
| AL212 | Alarm occurrence time in alarm history, Second alarm in past | - |
| AL213 | Alarm occurrence time in alarm history, Third alarm in past | - |
| AL214 | Alarm occurrence time in alarm history, Fourth alarm in past | - |
| AL215 | Alarm occurrence time in alarm history, Fifth alarm in past | - |
| AL230 | Detailed alarm from alarm history, Most recent alarm | - |
| AL231 | Detailed alarm from alarm history, First alarm in past | - |
| AL232 | Detailed alarm from alarm history, Second alarm in past | - |
| AL233 | Detailed alarm from alarm history, Third alarm in past | - |
| AL234 | Detailed alarm from alarm history, Fourth alarm in past | - |
| AL235 | Detailed alarm from alarm history, Fifth alarm in past | - |

### (k) External input

| Device name | Item | Symbol |
|---|---|---|
| DI0 | Input device statuses 1 | - |
| DI1 | Input device statuses 2 | - |
| DI2 | Input device statuses 3 | - |
| DI3 | External input pin statuses 1 | - |
| DI4 | External input pin statuses 2 | - |
| DI5 | Statuses of input devices switched on through communication 1 | - |
| DI6 | Statuses of input devices switched on through communication 2 | - |
| DI7 | Statuses of input devices switched on through communication 3 | - |

### (l) External output

| Device name | Item | Symbol |
|---|---|---|
| DO0 | Output device statuses 1 | - |
| DO1 | Output device statuses 22 | - |
| DO2 | Output device statuses 3 | - |
| DO3 | External output pin statuses 1 | - |
| DO4 | External output pin statuses 2 | - |

### (m) Point table (position)

| Device name | Item | Symbol |
|---|---|---|
| POS1 to POS255, POS1001 to POS1255 | Point table (position) No.1 to 255 | - |
| SPD1 to SPD255, SPD1001 to SPD1255 | Point table (speed) No.1 to 255 | - |
| ACT1 to ACT255, ACT1001 to ACT1255 | Point table (acceleration time constant) No.1 to 255 | - |
| DCT1 to DCT255, DCT1001 to DCT1255 | Point table (deceleration time constant) No.1 to 255 | - |
| DWL1 to DWL255, DWL1001 to DWL1255 | Point table (dwell) (DWL) No.1 to 255 | - |
| AUX1 to AUX255, AUX1001 to AUX1255 | Point table (auxiliary function) No.1 to 255 | - |
| MCD1 to MCD255, MCD1001 to MCD1255 | Point table (M code) No.1 to 255 | - |

### (n) Input signal for test operation (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMI0 | Input signal for test operation 1 | - |
| TMI1 | Input signal for test operation 2 | - |
| TMI2 | Input signal for test operation 3 | - |

### (o) Forced output of signal pin (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMO0 | Forced output from signal pin (CN6) | - |
| TMO1 | Forced output from signal pin (CN10) | - |

(p) Set data (for test operation)

| Device name | Item | Symbol |
|---|---|---|
| TMD0 | Writes the speed (test mode) | - |
| TMD1 | Writes the acceleration/deceleration time constant (test mode) | - |
| TMD3 | Writes the moving distance (test mode) | - |

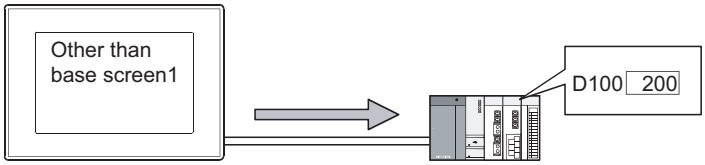
# 2.10 Precautions for Object Setting

Do not write from multiple objects to one device with the same trigger.
GOT and controller may execute the operation that is unnecessary for users.

Example: Status monitor function

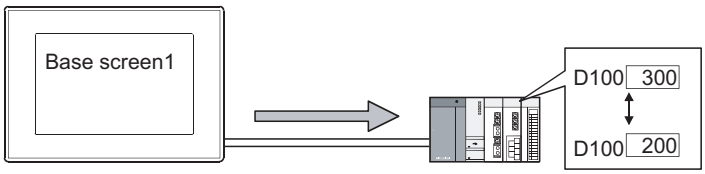
| Items | Condition | Action |
|---|---|---|
| Screen tab | X0 in ON status (object base screen1) | Data SET D100 300 |
| Project tab | X0 in ON status | Data SET D100 200 |

(1) The trigger is enabled when monitoring the screen other than base screen1 (X0 OFF ON) <no problem>
Write 200 to D100 of PLC CPU.




The status monitor of project unit (save 200 to D100)

(2) The trigger is enabled when monitoring base screen1 (X0 OFF ON) <with problem>
Write 300 and 200 to D100 of PLC CPU.
(When displaying numeric value on GOT, display 200 and 300 in turn.)




The status monitor of screen unit (save 300 to D100)
The status monitor of project unit (save 200 to D100)

# 2.11 Precautions for Using Unicode Text File

The following describes precautions to be attended to when using the Unicode text file that has been imported/exported by GT Designer2.

(1) Applicable OS
Import/export of Unicode text file is possible with the OS shown below.

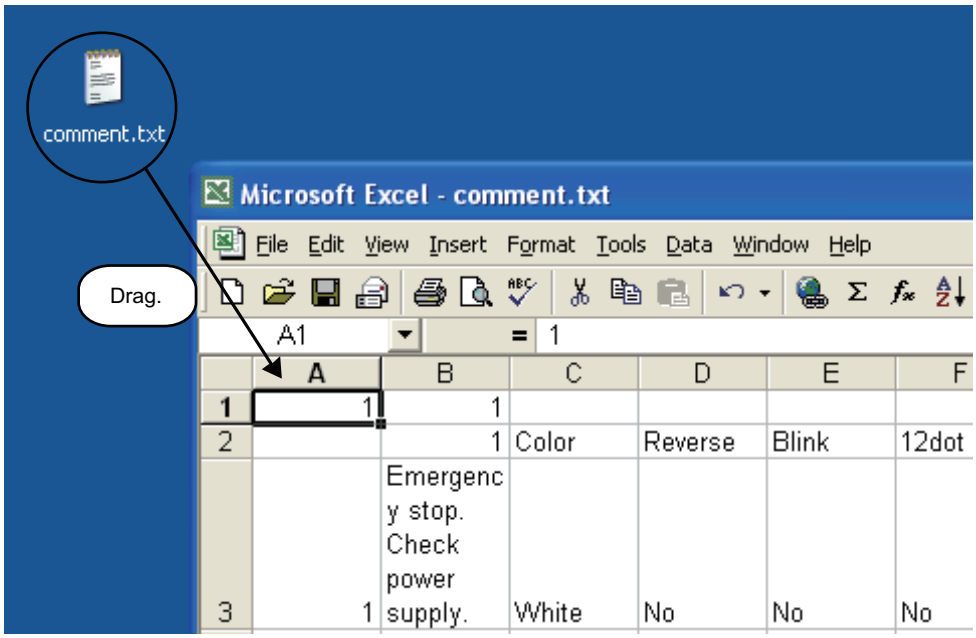
- Microsoft® Windows® 2000 Professional
- Microsoft® Windows® XP Professional
- Microsoft® Windows® XP Home Edition

(2) Storing Unicode text file
To store the exported and edited Unicode text file, store it in the Unicode text file format (*.txt).

(3) Applicable character code of Unicode text file
The character code applicable to Unicode text file is Unicode (file format: UTF16 LittleEndian).

(4) Displaying Unicode text file
To display Unicode text file on a personal computer, etc. use the application compatible to the Unicode.
If the application used to display the Unicode text file is not compatible to the Unicode, the file may not be displayed correctly.

(5) Editing a Unicode text file by Microsoft® Excel
To open a Unicode text file that contains a comment of multiple lines by the Microsoft® Excel, drag the Unicode text file to the Microsoft® Excel.
If the Unicode text file is opened in other methods, it may not be displayed in the Microsoft® Excel correctly.

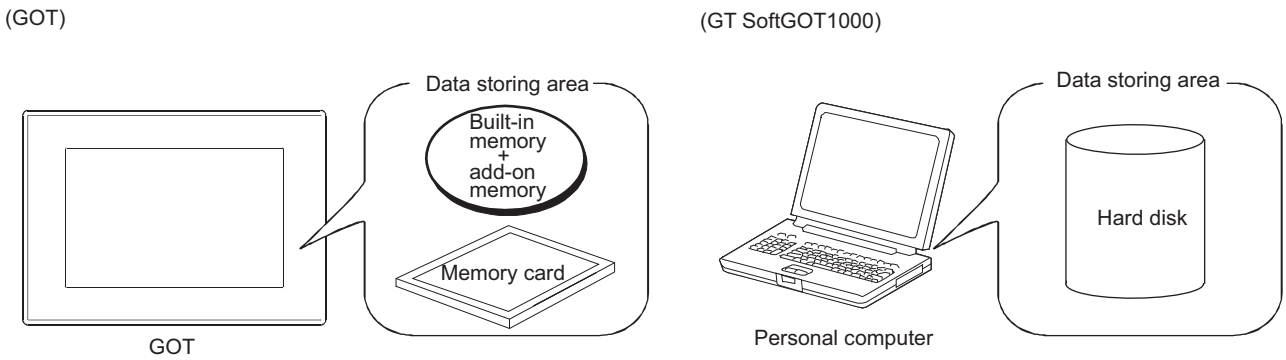


# 2.12 Precautions for Using GT SoftGOT1000

This manual explains operations assuming the use of GT15 or GT11.
When using GT SoftGOT1000, confirm the following and create screens considering the differences with GT15 and GT11.

## 1 Data storing area

Data are stored in the personal computer's hard disk.




For details of data storing area, refer to the following manual.
☞ GT SoftGOT1000 Version 2 Operating Manual (Section 3.3.1 Precautions for using the GT SoftGOT1000)

## 2 Clock data to be used

The clock data of the personal computer where GT SoftGOT1000 is installed is used.
An object displays the clock data of the personal computer.

## 3 Extended functions and optional functions

The extended functions and optional functions can be used without installing the extended function OS and option OS.

## 4 Option function board and multi-color display board

Option functions and multi-color display (up to 65536 colors) can be used without installing the option function board and the multi-color display board.

## 5 Multi-channel function

Only channel No. 1 can be monitored.

## 6 Simultaneous press operation

Since GT SoftGOT1000 uses a mouse (pointer), operation is accomplished by a single-point pressing. It is not possible to design 2-point pressing configuration on the GOT screen for the purpose of safe operation.
To design such a safe configuration, create a touch switch that has the interlock function by a script, for example. (☞ Section 16.2.7 Program examples)

## 7 Relationship between power ON/OFF and reset of GOT and start/end of monitoring by GT SoftGOT1000

| GOT | GT SoftGOT1000 |
|---|---|
| Power ON, reset | Monitor start |
| Power OFF | Monitor end |

# 2.13 Precautions for Option Function Board

The following shows the option function boards used for each GOT.

| GOT | Option function board |
|---|---|
| GT16 | GT16-MESB |
| GT15 | GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M |
| GT11 | GT11-50FNB |
| GT10 | Not necessary |

An option function board (GT15-FNB or GT11-50FNB) is built in the following GOTs.

| Item | Model | Description |
|---|---|---|
| GT15 | All models | Function version D or later *1 |
| GT11 | GT1155-QTBDQ, GT1155-QTBDA, GT1155-QSBDQ, GT1155-QSBDA, GT1150-QLBDQ, GT1150-QLBDA | |
| | GT1155-QTBD | Hardware Version A or later |
| | GT1155HS-QSBD, GT1150HS-QLBD | Hardware Version B or later |
| | GT1155-QSBD, GT1150-QLBD | Hardware Version C or later |

*1 For using an option function board built in the GOT, the latest standard monitor OS must be installed on the GOT. For OS versions, refer to the following.

☞ Appendix7 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series)

Option functions operated with the GT15-FNB or GT11-50FNB can be used without installing an additional option function board.
For using functions operated with the GT16-MESB, GT15-QFNB(□M), or GT15-MESB48M, and for adding more memory to the GT15, install an applicable option function board.
For option function boards required for each option function, refer to the following manual.

☞ GOT1000 Series Extended/Option Functions Manual

An additional option function board can be installed on the GOT with a built-in option function board. (An option function board inapplicable to the GOT cannot be used. (An option function board for the GT11 cannot be installed on the GT15.))

For how to check function versions and hardware versions, refer to the following manuals.

☞ GT15 User's Manual
GT11 User's Manual
GT11 Handy GOT User's Manual

# Memo

# 3. COMMON SETTING

This section explains how to set devices and others commonly used in whole projects.
The following items can be set in the System Environment dialog box.

| Items | Description | Model | Reference |
|---|---|---|---|
| System Settings | Set the GOT type for project data to be created and the type of a controller to connect the GOT. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.1 |
| Project Title | Set the detail information of project data (project ID, detailed explanation, author, and others). | | GT Designer2 Version □ Basic Operation/Data Transfer Manual (7.4 Setting the project title) |
| Auxiliary Setting | Set operations of the cursor, key window, and others. | | 4.4 |
| System Information | Control GOT operations via a controller and set a device to notify the GOT status to the controller and others. | | 3.6 |
| Screen Switching | Set a device to switch base screens or to display window screens. | | 3.2 |
| Security | Set the security for the objects, screen display/operation, upload operation, and utility operation. | | 3.5 |
| Key Window | Set a key window to be used. | | 4.5 |
| Dialog Window | Customize system messages to be displayed on the GOT. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.12 |
| Switching Station No. | Set a device to switch monitored station numbers of an object. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.3 |
| Video/RGB | Set a device to be used for the video display or the RGB display. | GT16 GT15 SoftGOT1000 GT11 GT10 | 13.4<br>13.5 |
| Multimedia | Set the settings to record, play video images, and others using the multimedia function. | GT16 GT15 SoftGOT1000 GT11 GT10 | 13.10 |
| Print Format | Set the format for printing out using the report function. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.13 |
| Communication Settings | Set the communication settings between the GOT and a controller. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.7 |
| GOT Setup | Set the screen save time, whether to set the clock setting, and the buzzer sound length long/short. | | 3.8 |
| Language Switching | Set the device to switch comments to be displayed on an object. | | 3.4 |
| KANA KANJI Conversion | Set the option selection window to be used for the Kana-kanji conversion function (enhanced version).<br>(This function is dedicated to Japanese version.) | GT16 GT15 SoftGOT1000 GT11 GT10 | 7.3 |
| Clock Setting | Set the GOT clock data to be the same as that of the external device. | GT16 GT15 SoftGOT1000 GT11 GT10 | 2.5 |

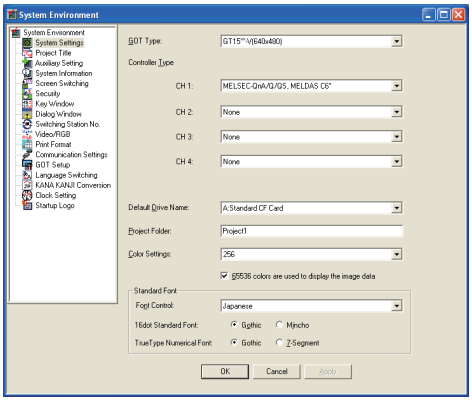
(Continued to next page)

| Items | Description | Model | Reference |
|---|---|---|---|
| Startup Logo | Make the settings to display any BMP screen at the GOT startup. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.10 |
| Handy GOT | Set the ON/OFF operation of the grip switch LEDs. | GT16 GT15 SoftGOT1000 GT11 GT10 | 3.11 |

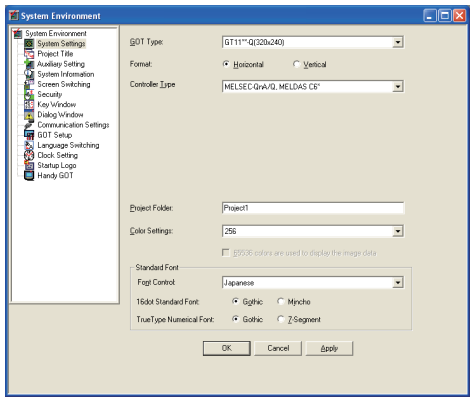
# 3.1 GOT/Controller Type Setting

GT16 GT15 GT Soft GOT1000 GT11 GT10

In [System Settings] within the dialog box, set the GOT type that uses the project to be created and the controller type connected to that GOT.
These settings can be changed after the project is created.




(Example:The screen for setting the GT15)




(Example:The screen for setting the GT11)

## 3.1.1 Settings

1. Follow (1) or (2) below:

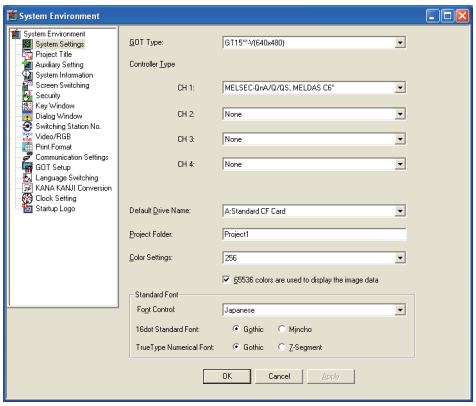
   (1) Changing the GOT and controller settings during project setting
   - Select [Common] → [System Environment] from the menu.

   (2) When making settings at a creation of a new project:
   The wizard is displayed when making a new project.
   Follow the steps below after finishing the wizard.

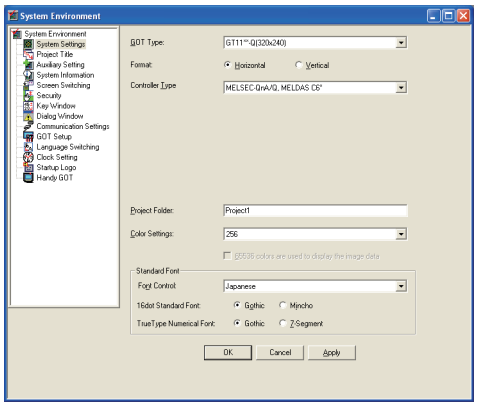
2. After the "System Environments" dialog box appears, make the settings with reference to the following explanation.

## 3.1.2 Setting items

This section explains the setting items for GOT type and controller type.




(Example:The screen for setting the GT15)




(Example:The screen for setting the GT11)

| Item | Description | Model |
|---|---|---|
| GOT Type | Select the GOT type to be used.<br>Display the Resolution button when [GT SoftGOT1000(Resolution Specification)(XxY)*5] is selected.<br>Click the Resolution button to select resolutions from the Specify Resolution dialog box *6 for GT SoftGOT1000. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Format | Select the display format (Horizontal/Vertical) on GOT. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Controller Type/Controller Type CH 1 | Select the controller type to be connected to GOT while considering the available device range, as the device setting will be made within the device range of the selected controller.<br>When accessing multiple controllers, select the controller type of the largest device range. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| CH 2 to CH 4 | Setting is necessary when the multi-channel function is used.<br>The number of channels that can be set differs depending on the GOT to be used.<br>For details, refer to the following.<br>☞ Section 2.8 Multi-channel Function | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Default Drive Name | Specify a default drive for functions that use the CF card.<br>The drive set with this item will be set as the default of each function where drive setting can be made. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Project Folder*1 | This is indispensable for creating a project. Specify it without fail.<br>Input allowable characters: ASCII characters (*2), within 1 to 32 characters. | |
| Color Settings | Select the color setting for the screen displayed in GOT<br>Select the color setting in accordance with the GOT display color.<br>The color setting applicable for GT Designer2 will be set. | |
| 65536 colors are used to display the image data | Check this item when importing BMP/JPEG format figure data in 65536 colors.<br>(When the GOT to be used is not compatible with 65536 colors, image data is displayed on the applicable colors of the GOT.)<br>If not check, figure data is imported in the number of colors specified in the Color Settings.*3 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Standard Font | Select the standard font to be used by the GOT. (☞ Section 2.3.1 Fonts) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Font Control | Select the standard font (Standard) to be used by the GOT *4. (☞ Section 2.3.1 Fonts) | |
| 16dot Standard Font | Select the font type of 16-dot standard font from Gothic and Mincho when [Japanese] or [Japanese (supporting Europe)] is selected for [Font Control]. *4 | |
| TrueType Numerical Font | Select a font type of the TrueType numerical font to be used on the GOT.*4 (☞ Section 2.3.1 Fonts) | |

*1 When project data is transferred from GT Designer2 to a memory card, or uploaded from the GOT to a memory card, the folder set in "Project Folder" is created within the memory card. Do not change the directory path of the folder.
(Example: Changing the path to "abc/XYZ/Project1".)
If the directory path is changed as shown above, the folder named "abc/XYZ" will remain within the GOT when the project data is downloaded to C drive and an attempt is made to delete the folder using the GOT utility.
The BootOS must be installed again to delete the above folder.

*2 Among ASCII characters, the following characters can be used. The following folder names may not be used.
Allowable ASCII characters: #, $, %, &, ‘, (, ), +, -, ., 0 to 9, =, @, A to Z, [, ], ^, _, a to z, {, }, •, space.
However, commas (",") may not be used.
Folder names that may not be used: COM1 to COM9, com1 to com9, LPT1 to LPT9, lpt1 to lpt9, AUX, aux, CON, con, NUL, nul, PRN, prn, CLOCK$, clock$, name starting with "G1" , "g1" or "." (period), name ending with "." (period), name consisting of "." (one period) or ".." (two periods)

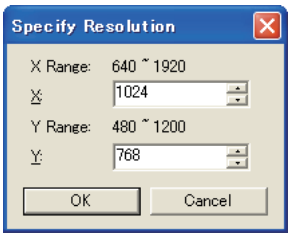
*3 For the GOT types that allow display in 65536 colors, refer to the following.
☞ GT16 User's Manual (Hardware) (Section 3.2 Performance Specifications)
GT15 User's Manual (Section 3.2 Performance Specifications)

*4 If select a font not installed in the GOT, the installed font is selected to display.

*5 X and Y are resolution values for GT SoftGOT1000 set by the user.

## *6 Specify Resolution dialog box

When [GT SoftGOT1000(Resolution Specification)(XxY)] is selected for the GOT type, set resolutions for GT SoftGOT1000 to be displayed on the screen of personal computer.




| Item | Description | Setting range |
|---|---|---|
| X | Set the horizontal resolutions (X axis) for GT SoftGOT1000. | 640 to 1920<br><Default: 1024> |
| Y | Set the vertical resolutions (Y axis) for GT SoftGOT1000. | 480 to 1200<br><Default: 768> |

**Point**

(1) When Multiple CPU system is used
To monitor the multiple CPU system of other station by GOT, select [MELSECQ(Multi)/Q-Motion] or [MELSEC-QnU, Q17nD/M/NC/DR, CRnD-700].
The PLC CPU type of host station (QCPU, QnACPU or ACPU) is not relevant.
PLC No. setting is disabled if other controller type has been selected.

(2) When connecting GOT to remote I/O station
When connecting GOT to a remote I/O station in MELSECNET/H network system, set "MELSEC-QnA/Q/QS, MELDAS C6*" as controller type.

## 3.1.3 Precautions

There are no precautions for setting the GOT and controller type.
However, there are the following cautions for changing the GOT and controller type.

**Point**

(1) When changing the GOT type
GOT1000 series has the settings related to the communication interface and communication driver in the Communication Settings of GT Designer2 and download the settings to the GOT.
If the GOT type is changed from the GOT-A900 series to the GOT1000 series, make sure to set Communication Settings. (Without the settings, the monitoring by the GOT is not possible.)
☞ Section 3.7 Communication Interface Setting (Communication Settings)

(2) When changing the GOT type and controller type
When changing the GOT type and controller type, the set contents will not be deleted by mistake.
It is recommended to copy the existing project file before changing

### 1 Precautions for changing the GOT type

If GOT type is changed, this may change or delete the some function settings or affect the figure/frame settings.
Therefore, change GOT type while paying full attention to followings. (Also, make sure to check other settings.)

(1) After GOT type is changed, some settings, figures and objects may be deleted, if they are not supported by the GOT currently set.
Even if GOT type is changed to the previous one, the deleted settings will not be restored.

(2) "Undo", "Redo" settings will be reset when GOT type is changed.

(3) Some setting items must be set after GOT type change is completed, as they are not included in the previous GOT type. Note that default values are set for these setting items.

(4) Object shape settings after GOT type change

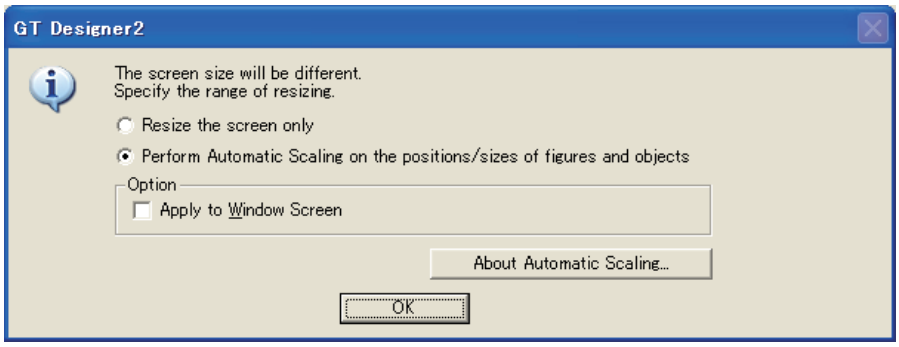
(a) When the shape is set [None], the setting remains [None].

(b) A basic figure will be changed to the same figure, if it is included in the currently set GOT.
However, it will be changed to the first basic figure, i.e., figure set at the top of the combo box, if not included.

(5) The applicable device range/type differs with the GOT type. GT Designer2 displays the device out of the range as "??". In this case, make device settings again.
Some device types (BCD, real number) may be deleted, as they are not supported by the GOT.

(6) User defined libraries will not be changed.
The data within user defined libraries are usable even after GOT type is changed. However, if they include figures or objects that are not supported by the GOT, the libraries cannot be used.

(7) Changing to the GOT of which screen size is different
When the different GOT type is selected, positions and sizes of figures and objects set on the screen can be selected whether set or not the adjusting positions and sizes automatically.




| Item | Description |
|---|---|
| Resize the screen only | Check this item to change the screen size only.<br>When this item is checked, positions and sizes of figures and objects on the screen are not changed after the GOT type is changed. |
| Perform Automatic Scaling on the positions/sizes of figures and objects | Check this item to automatically change positions and sizes of figures and objects to adjust those of the changed GOT type. |
| Apply to Window Screen | Check this item to automatically adjust the positions and sizes of figures and objects on the window screen. |
| About Automatic Scaling... | Clicking this item displays the explanation for the automatic scaling. |

When [Perform Automatic Scaling on the positions/sizes of figures and objects] is checked, figures and objects are changed as follows:

(a) Automatic scaling of figures and objects
When the different GOT type is selected, figures and objects are zoomed in or zoomed out automatically.
Figures and objects are zoomed in or zoomed out automatically corresponding to the GOT screen size.
- On the base screen
  Figures and objects are zoomed in or zoomed out automatically corresponding to the GOT screen size.

- On the window screen
  When the used GOT type is changed to a smaller type, the window screen is zoomed out automatically. (The window screen is not zoomed in.)
  Figures and objects are zoomed out automatically corresponding to the maximum size of screen.

The following items are restricted to be zoomed in or zoomed out.

| Item | Restriction |
|---|---|
| Numerical Display/Input, Ascii Display/ Input, Date/Time Display | • The numerical size is zoomed in or zoomed out within the available display range set for GT Designer2.<br>• When [6 x 8dot] is set for the fonts, the object area is not zoomed in or zoomed out.<br>• When the frame format is set, figures set for objects are zoomed in or zoomed out and the object area is not zoomed in or zoomed out. |
| Data List, Advanced Alarm Display, Alarm History | The object area is not zoomed in or zoomed out.<br>When the frame format is set, only figures are zoomed in or zoomed out. |
| Parts Movement | Objects are zoomed in or zoomed out when [Line] is set for the movement way. |
| Parts Display, Set Overlay Screen, Window Position | For the parts display and the set overlay screen, objects and the screen size are not zoomed in or zoomed out.<br>For the window position, the position set on the base or window screen is not changed. |

(b) The display range for automatic scaling
Figures and objects set out of the display range are not zoomed in or zoomed out even if changing to the different type of GOT screen.
Relayout figures and objects into the display range when figures and objects are out of the display range.

(c) Changing the logo image size
If changed to the GOT of which screen size is different, the size of the logo image may be changed.
When the size of the logo image is changed, set the logo image again.

(8) The setting cannot be changed from GOT1000 series to GOT-A900 Series or GOT-F900 Series.
To create a project of GOT-A900 or GOT-F900 Series, specify the GOT-A900 or GOT-F900 Series as a GOT type from the first step.

(9) Changing GOT types from GT11 or GT10 to GT16, GT15, or GT SoftGOT1000
The settings on the Basic tab and the Format tab of the scrolling alarm display correspond to the settings of the advanced user alarm observation and the advanced alarm popup display, respectively.

## 2 Cautions for changing the controller type

(1) If the controller type is changed, the device will also be changed.
When the controller type is changed, GT Designer2 displays the device cannot be converted (no corresponding device type, or setting available range is exceeded) as "??". In this case, set the device again.

(2) If the changed controller type does not correspond to the network, the network will be set to host station.

(3) If the controller type is changed to [None]
The GT Designer2 displays device of the changed channel No. as "??". When "??" is displayed, set the device again.
Since the channel No. is retained, the objects can be re-used in other channel No. by using the Replace Devices, Replace CH No. or Device List.
(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1 Edit Function)

# 3.2 Switching Screen Device Setting

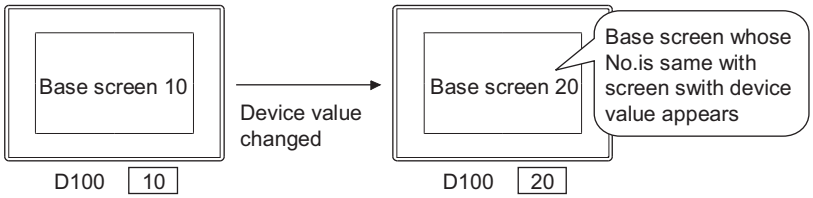
For GOT, set the device for screen switching in order to switch base screens and display window screen.

Device types for screen switching are as follows:
- Device for base screen switching
- Device for overlap window1 switching
- Device for overlap window2 switching
- Device for overlap window3 switching
- Device for overlap window4 switching
- Device for overlap window5 switching
- Device for superimpose window1 switching
- Device for superimpose window2 switching
- Device for dialog window switching

## 1 Switching base screens

Switch base screens by setting a base screen No. to the device for base screen switching.
There are the following two methods for specifying the base screen No. At using these methods, the screen No. is stored into the switching screen device.
- The screen No. is stored into the set device.
- The screen is switched by the touch switch (go to screen switch).

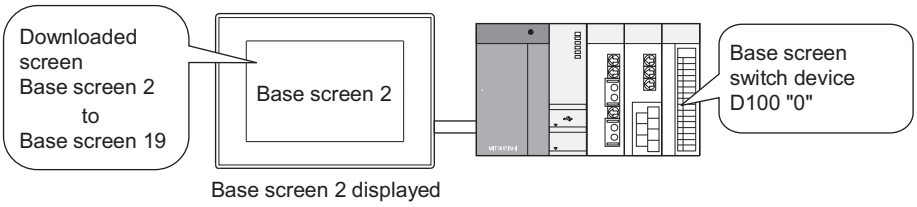
Example: In the case of device for base screen switching: D100




**Remark**

The value of the device for base screen switching when GOT is powered on

When the value of device for base screen switching is 0, GOT will display the base screen with the lowest screen No. among those screens in the GOT. (System alarms will not be displayed.)
When the value of device is a screen No. that does not exist in the GOT, the base screens do not switch. (A system alarm will be displayed.)



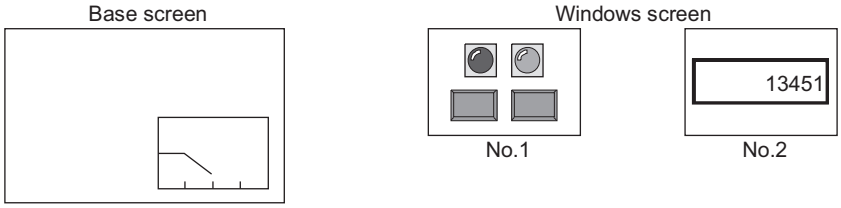
## 2 Displaying or erasing window screen

The device for window screen switching stores the window screen No. to switch window screens; and stores 0 to erase the window screens.

There are the following two methods for specifying the window screen No. At using these methods, the screen No. is stored into the switching screen device.

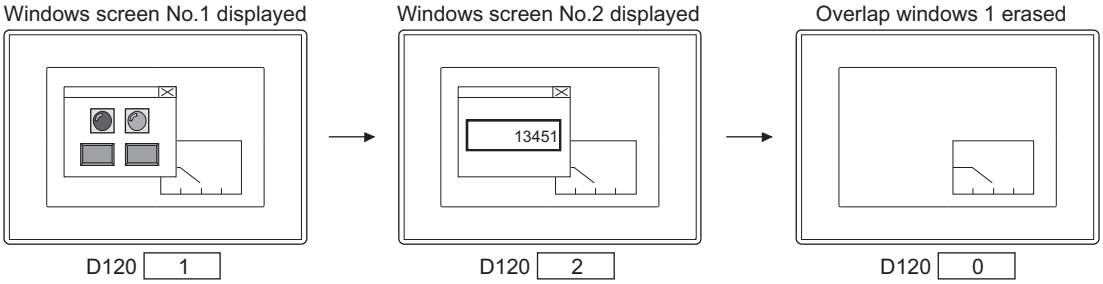
- The screen No. is stored into the set device.
- The screen is switched by the touch switch (go to screen switch).

<Downloaded window screen>




<Example of GOT Display>

Device for overlap window 1 switching: D120



**Remark**

(1) Methods of erasing window screen by touch operation
When the close key is displayed on an overlap window or a dialog window, touch it to erase the window screen.

☞ Section 2.1.2 Window screen specifications

(2) Position of window screen display
Set the position of window screen display using GT Designer2.
(Note that display position cannot be set for a dialog window (display position is fixed).)

☞ Section 2.1.2 Window screen specifications

Specify the display position based on the device value.

☞ Section 3.2.3 Setting items

**Hint!**

Switching screen device setting

Switching screen device is set as the following.

(1) GOT internal device
It is recommended to use this device only for switching the screen by the touch switch (go to screen switch).
Screen switching cannot be controlled by the controller.
However, screen switching of only base screens can be controlled by the controller with the script function.

(Script example)
[w:GD10]=[w:D10];  //D10 value is stored into GD10.

(2) Controller device
It is recommended to use this device to control screen switching from the controller.
Screen switching can also be performed by the touch switch (go to screen switch).

## 3.2.1 Relevant settings

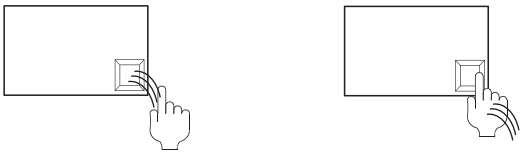
For screen switching, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following descripton, if necessary.

(1) Functions relevant to screen switching only
…Relevant to screen switching only.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to screen switching only

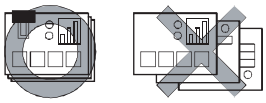
| • Check the switching timing of the go to screen switch |
|---|
| The switcing timing when switching the screen by touching the go to screen switch can be set. |



The screen is switched at a timing when the finger is released from the switch. (OFF)

The screen is switched at a timing when the finger touches the switch. (ON)

Setting for each project | Setting for each screen



Setting items
• [Screen Switching Switch Synchronous Mode]

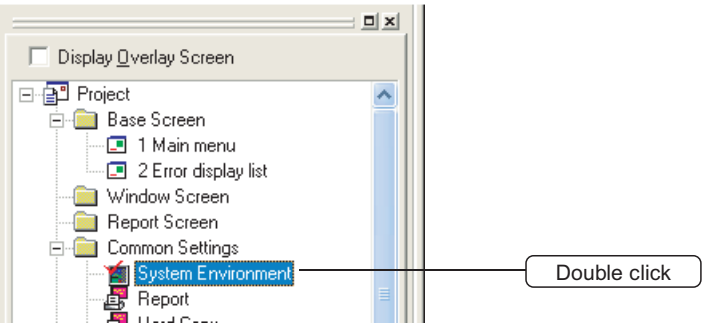
## 3.2.2 Settings

1. Select [Common] → [System Environments] from the menu.
2. Double-click on [Screen Switching] in [System Environments] .
3. As the setting dialog box appears, make the settings with reference to the following explanation:

**Remark**

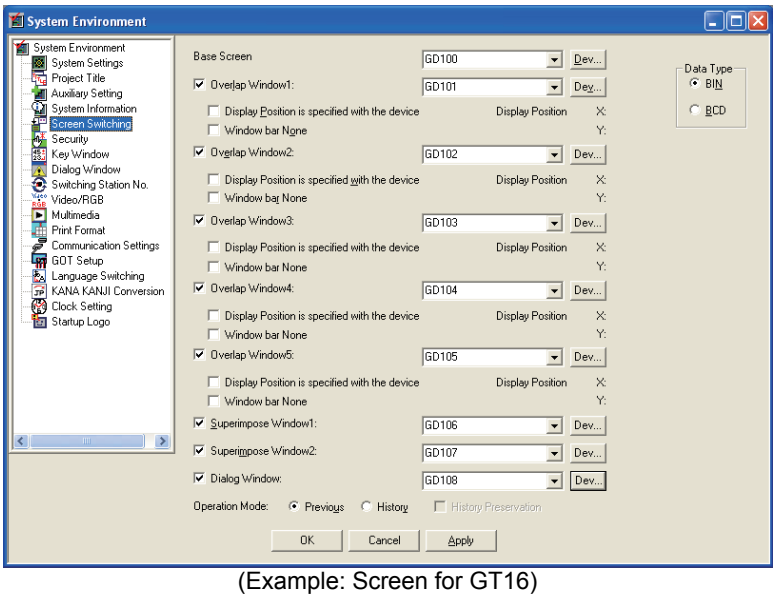
When setting in project workspace

Double-click on [System Environments] and "System Environment" dialog box appears, then double-click on [Screen Switching].



## 3.2.3 Setting items

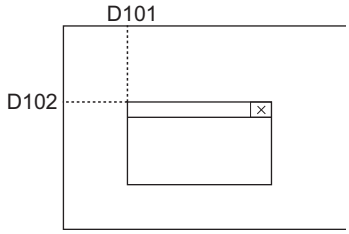
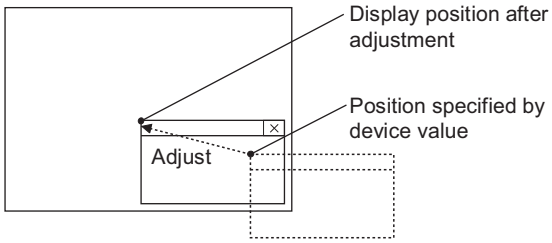
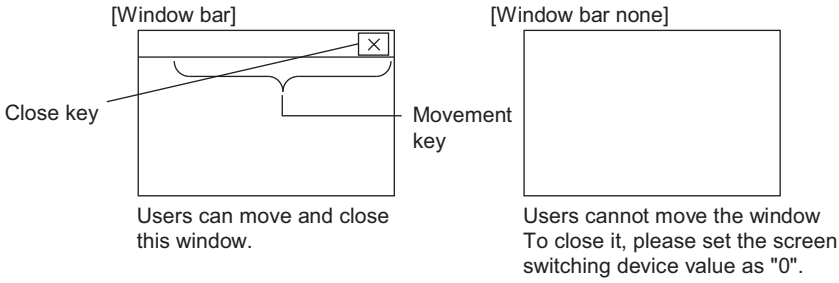
Set the screen switching device for each screen (base screen, overlap windows 1, 2, 3, 4, and 5, superimpose windows 1 and 2, dialog window).




(Example: Screen for GT16)

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data format to process screen switching device value.<br>BIN : Processes the screen switching device value as binary value.<br>BCD : Processes the screen switching device value as BCD value.<br>The range of the screen (screen No.) can be switched will depend on the set data format.<br>BIN : 1 to 32767<br>BCD : 1 to 9999 | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Base Screen | Set the screen switching device for base screen. (☞ Section 5.1 Device Setting) | |

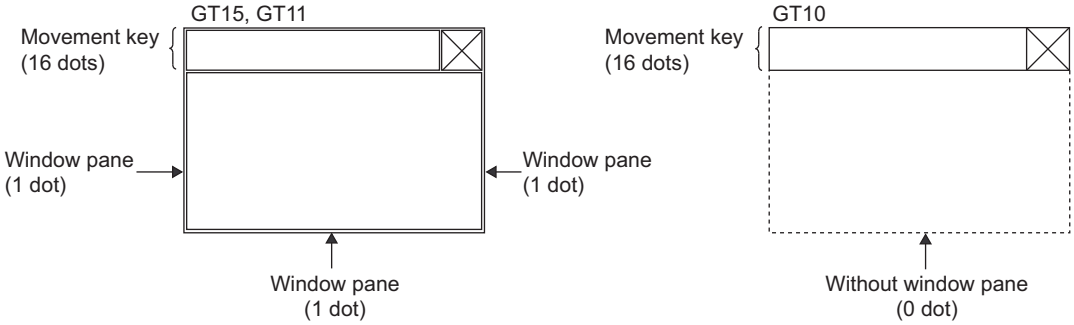
(Continued to next page)

| Item | | Description | Model |
|---|---|---|---|
| Overlap Window 1<br>Overlap Window 2<br>Overlap Window 3<br>Overlap Window 4<br>Overlap Window 5 | | Check any of these items to display the overlap windows.<br>The overlap windows 3, 4, and 5 are available for GT16 and GT SoftGOT1000 only.<br>(☞ Section 5.1 Device Setting)<br>The overlap windows will not be displayed without setting the switching screen devices. | |
| | Display Position is specified with the device. | Check this item to specify the display position of the window based on the device value.<br>The devices that store display positions will be set consecutively starting from the device set in [Screens Switching].<br>When using a GOT with a matrix resistive display, set a multiple of 16 for X- and Y- coordinates for an overlap window.<br>When specifying a value that cannot be divided by 16, a remainder of 7 or less is rounded down, and a remainder of 8 or more is rounded up.<br>If the result of rounding is the same coordinate as the original one, re-drawing is not made.<br>☞ Appendix5 GOT Displays<br>Example: In the case that switching screen device is set to D100.<br>Display position X: D101<br>Y: D102<br>The window screen will be displayed as follows:<br>  <br><br>If the device value exceeding the range for display in GOT is stored as the device value that stores display position, the GOT will automatically adjust the display position and then display the window screen.<br>The device value will not be updated with the above adjustment.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Window bar None*1 | Check this item to display the overlap window without window bar.<br>  <br> | |
| Superimpose Window 1<br>Superimpose Window 2 | | Check this item to display superimpose window.<br>Then set the switching screen device for the superimpose window<br>(☞ Section 5.1 Device Setting)<br>The superimpose windows will not be displayed without setting the switching screen devices. | |

(Continued to next page)

| Item | Description | Model |
|---|---|---|
| Dialog Window | Check this item for displaying a dialog window.<br>After that set the screen switching device for dialog window.<br>(☞ Section 5.1 Device Setting)<br>A dialog window is not displayed unless a screen switching device is set. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operation Mode | Select the action when “Back” is selected for the switching target screen in touch switch (Go To Screen Switch). (For GT10, [Previous] cannot be set.)<br>Previous : Action in previous mode (upper previous switch mode)<br>History : Action in history mode (back switch mode)<br>For details of the touch switch (Go To Screen Switch), refer to:<br>☞ Section 6.2.6 Setting items of go to screen switch | GT16 GT15 SoftGOT1000 GT11 GT10 |
| History Preservation | Check this item when store the history data in the memory card when “history” is selected as an operation mode. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 With GT10, None window frames are set in the overlap window with the movement key and the close key.
If necessary, set the window frame on the display with objects or other items.



## 3.2.4 Precautions

This section provides the precautions for setting the switching screen device.

### 1 Precautions for drawing

(1) Switching screen device for screen switching
Use the switching screen device only when switching GOT screens.

(2) Switching base screen device
The default value of switching base screen device is set to "GD100".
Change the switching base screen device when "GD100" is used in other objects.

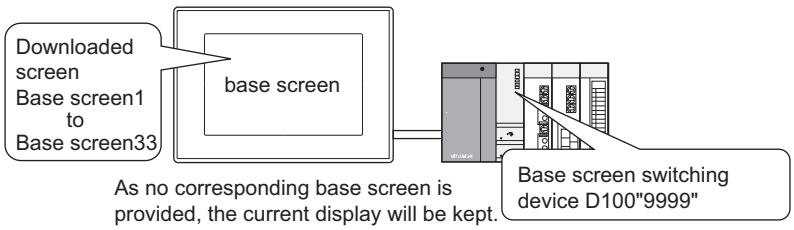
(3) Display restrictions of used set objects
When a line graph with the locus display setting is set on the base screen, some windows cannot be displayed.
The following shows the windows that cannot be displayed on each GOT.

| GOT | Windows that cannot be displayed |
|---|---|
| GT16 | Overlap window 5 |
| GT15, GT SoftGOT1000, GT11, GT10 | Overlap window 2 |

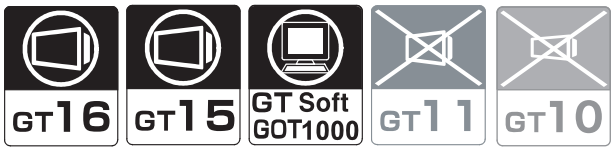
### 2 Precautions for use

(1) If the value that cannot be displayed is stored into the switching screen device during GOT monitoring.
If the screen No. that is not downloaded is saved as the value of the switching screen device, the screen currently displayed will be kept.
This action is common in all types of screens (base screen, overlap windows, and superimpose windows).

Example: In case of base screen



# 3.3 Switching Station No. Device Setting

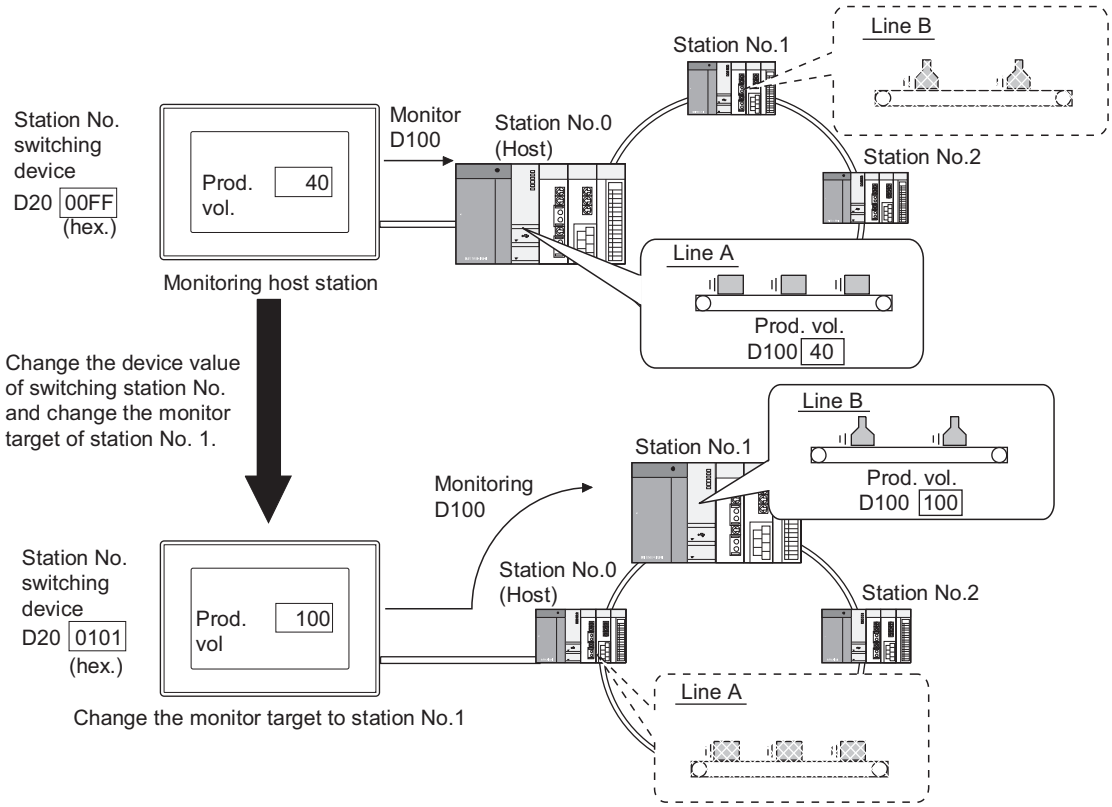



Station No. switching is a function to switch the monitored station No. of the object.
In a system with the same controlled multiple machines to a network, for example, the multiple machines can be monitored on the same monitor screen by using station No. switching.
As the number of object to be set can be reduced, the built-in memory of GOT can be saved.
Switching station No. can be carried out for the station No. that can be monitored by GOT.
For more information on station No. that can be monitored by GOT (accessible range),Refer to the following.

☞ Section 2.7.2 Access range for monitoring

## 3.3.1 Methods of switching station No.

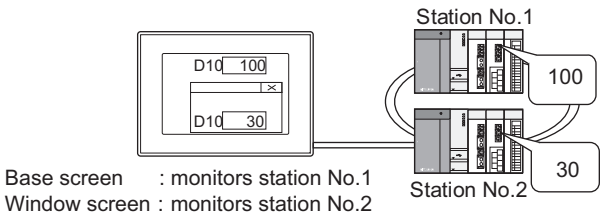
The device dedicated to switching station No. is used to switch the station No.
The screen object is redrawn after changing the value stored in the station No. switching device




Application example

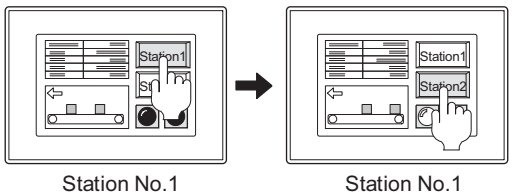
Monitor different station Nos. on base screen and window screen.

☞ Set on "Station No. switching device" dialog box




Use Touch switch to change monitor target.

☞ Set using the Touch switch



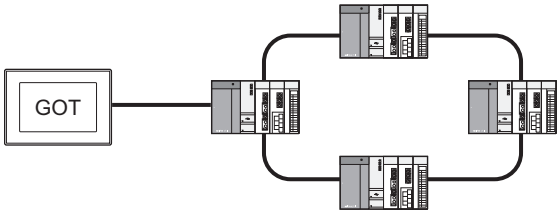
## 1 Methods of switching station No.

Station No. switching is executed by switching the station No. stored to the station No. switching device. The station No. can be specified in either of the following methods. The station No. is stored into the station No. switching device by the methods.

- Store the station No. on the set device
- Use the touch switch (Switching Station No. Switch) to change the station number.

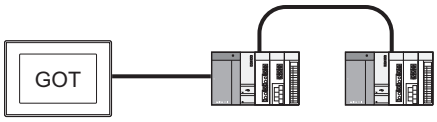
(1) Store a value in the device for switching station No.
Station No. can be switched if a value is stored in the device for switching station No. as follows:.

- When GOT has been incorporated into the data link system (MELSECNET/B, (II)) or CC-Link system




| Switching target | Storage value (hexadecimal) |
|---|---|
| Master station | 0000H |
| Local station (1 to 64) | 0001H to 0040H |
| Station No. set for each object<br>(The same monitor target is set if "Switching station No." has not been set.) | 00FEH |
| Host (connection target) monitor | 00FFH |

- When the GOT is included in a network system (MELSECNET/H, MELSECNET/10) or Ethernet system*1




| Switching target | Storage value (hexadecimal) |
|---|---|
| Network No. (1 to 255) | Relation between change target and storage value is as follows:<br>When monitoring PLC station No: 18, network No.: 1<br>0112H<br>└PLC station No.<br>└Network No. |
| PLC station No. (1 to 64) | |
| Station No. set for each object<br>(The same monitor target is set if "Switching station No." has not been set.) | 00FEH |
| Host station (connection target) monitor | 00FFH |

*1 For Ethernet connection, Ethernet setting is required on GT Designer2.
Refer to the following manual for details of the setting method.

☞ GOT1000 Series Connection Manual

(2) Use touch switch to switch station No.
Touch the touch switch dedicated to switching station No. to switch the station No.

☞ Section 6.2.6 Setting items of go to screen switch

**Point**

When using GOT data register (GD) for switching station No. device

Module connected to station No.0 of network No.0 is monitored until setting the value of switching station No. device (GD) after turning on GOT.
Thus, the system alarm "402 Communication timeout. Confirm communication pathway or modules." will occur depending on the connection type.
To not occur the system alarm, create the initial displaying screen and set the value to switching station No. device in the screen.

## 3.3.2 Relevant settings

For station No. change, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

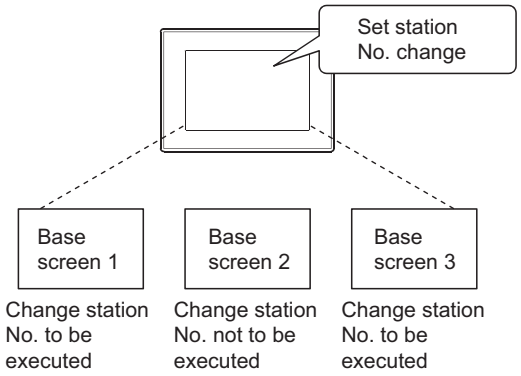
(1) Functions relevant to station No. change only
…Relevant to numerical display/numerical input only.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

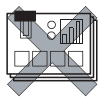
(1) Functions relevant to station No. change only

• Station No. change execution/in execution

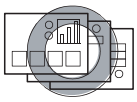
Station No. change can be set to be executed or not for each screen.




Setting for each project



Setting for each screen



Setting items

• [Carry out station No. change]

## 3.3.3 Settings

1. Select [Common] → [System Environment] from the menu.
2. As "System Environment" dialog box appears, double-click on [Switching Station No]. in the dialog box.
3. As the setting dialog box appears, make the settings with reference to the following explanation.

**Point**

Before setting switching station No.

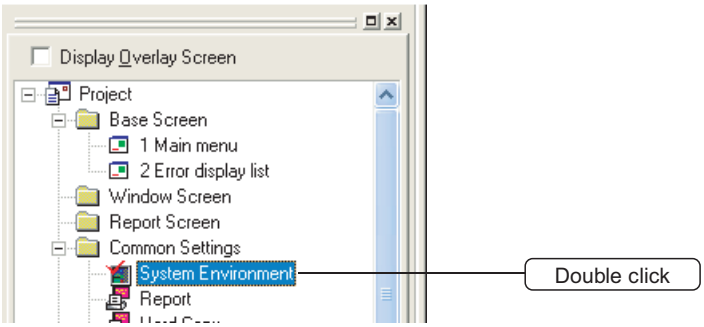
When switching station No., set the function available or unavailable for each of base screen and window screen.
To use the function, make it available in the [Auxiliary Setting] for each screen.

☞ Section 4.4 Auxiliary Settings

**Remark**

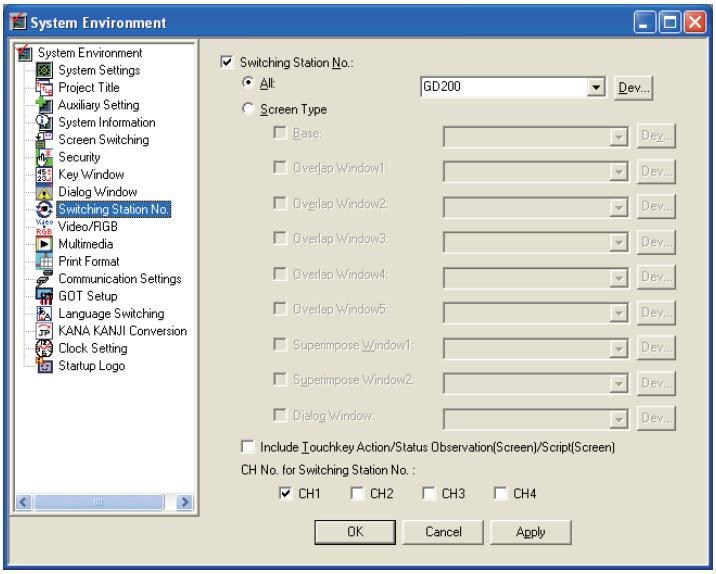
When making the settings in project workspace

Click on [System Environment] to display "System Environment" dialog box, and then double click on [Switching Station No.] there.



## 3.3.4 Setting items

Set a switching station No. device.
Use the device common to all screens or the different device for each screen.




(Example: GT16)

| Items | | Description | Model |
|---|---|---|---|
| Switching Station No. | | Check this item to use "Switching station No.". | GT16 GT15 SoftGOT1000 GT11 GT10 |
| All | | Check this item to make "Switching station No." available for all screens.<br>Then set the switching station No. device. | |
| Screen Type | | Check this item to specify the target station No. by screen type.<br>Then check the screen type to carry out "Switching station No."<br>The overlap windows 3, 4, and 5 are available for GT16 and GT SoftGOT1000 only. | |
| | Base | Check the screen type(s) that will perform "Switching station No.".<br>Then set the switching station No. device for each screen type.<br>"Switching station No." will not be performed without this setting.<br><br>Example:<br>Base screen → Monitors host station<br>Overlap window1 → Monitors host station<br>→ Monitors other station (Station 1)<br>Monitors other station (Station 3)<br><br>Switching station No. device (hexadecimal)<br>● Base screen : 00FFH → : 0101H<br>● Overlap window1 : 00FFH → : 0103H | |
| | Overlap Window1 | | |
| | Overlap Window2 | | |
| | Overlap Window3 | | |
| | Overlap Window4 | | |
| | Overlap Window5 | | |
| | Superimpose Window1 | | |
| | Superimpose Window2 | | |
| | Dialog Window | | |

(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Include Touchkey Action/Status Observation(Screen)/Script (Screen) | Check this item to make touch switch action/status observation/script object functions the targets for switching station No. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| CH No. for Switching Station No. | Select the channel No. taken as the target for the switching of the station No. when using the multi-channel function.<br>The number of channels that can be set differs depending on the GOT to be used.<br>For details, refer to the following.<br>☞ Section 2.8 Multi-channel Function | |

**Point**

Action of touch switch/status observation/script function

When using the device of which station No. has been switched to perform all actions of switch function, status observation function, and script function, check [Include Touchkey action/Status Observation(Screen)/Script(Screen)].
If it is not checked, each object operates as shown below:

| Object | Function | Monitor/Action object |
|---|---|---|
| Touch switch function | ON/OFF figure to display status | Device of which station No. has been switched. |
| | Device for indirect comment | |
| | Action at touch | Device of which station No. set in the object |
| Status observation function (screen) | Trigger device | Device of which station No. has been switched. |
| | Action when condition success | Device of which station No. set in the object |
| Script function | Screen script, object script | Device of which station No. has been switched. |
| | Script function monitor device | |
| | Script function write device | Device of which station No. set in the object |

## 3.3.5 Precautions

This section provides the precautions for switching station No.

### 1 Controller compatible with "Switching station No.".

"Station No. switching" is available only when a controller shown below is monitored.

- MELSEC-Q
- MELSEC-QnA
- MELSEC-A
- Third party PLCs (Only via the Ethernet connection)
- Robot controller
- Temperature controller
- Inverter
- Servo amplifier
- CNC connection

### 2 Function incompatible with "Switching station No."

The devices of the following functions are not compatible with "Switching station No."
GOT monitors the device of the station No. set in each function.
Note that if the object compatible with "Switching station No." has been set in the same screen, GOT will monitor the different station No. depending on the object when carrying out "Switching station No."

- Screen switching function
- Switching station No. function
- Clock function
- System information function
- Advanced alarm observation
- Advanced alarm popup display
- User alarm display*1
- Alarm history display
- Operation log function
- Trend graph*1
- Line graph*2
- MES interface function
- Scatter graph*1
- Historical Trend Graph*5
- Status observation function*3
- Time action function
- Logging function
- Device data transfer function
- Recipe function
- Advanced recipe function
- Report function
- Hard copy function
- Video/RGB display function
- Script function*4
- Gateway function

*1 Only when the [memory storage] has been set, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the [memory storage] is not set.

*2 Only when the [Locus] has been set, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the [Locus] is not set.

*3 Only when the settings have been made for each project, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the settings have been made for each screen.

*4 The screen script and object script monitor the device of the station No. after switching.
The project script monitors the device of the station No. set at the object.

*5 Switching station No. is enabled for other than logging device

### 3 Re-drawing the screen after switching station

The screen objects are re-drawn immediately after switching the station No. Thus, the object displaying speed may decrease temporarily.

### 4 Switching station No. during input operation

When inputting a numeric value or ASCII, finish the input operation before switching the station No.
If station No. is switched during inputting operation, the correct data may not be written in the monitored device.
To write a station No. from the controller to a switching station No. device, use key window output signal (system signal 2-1. b11) to interlock.
The key window output signal is turned on while the key window is displayed.

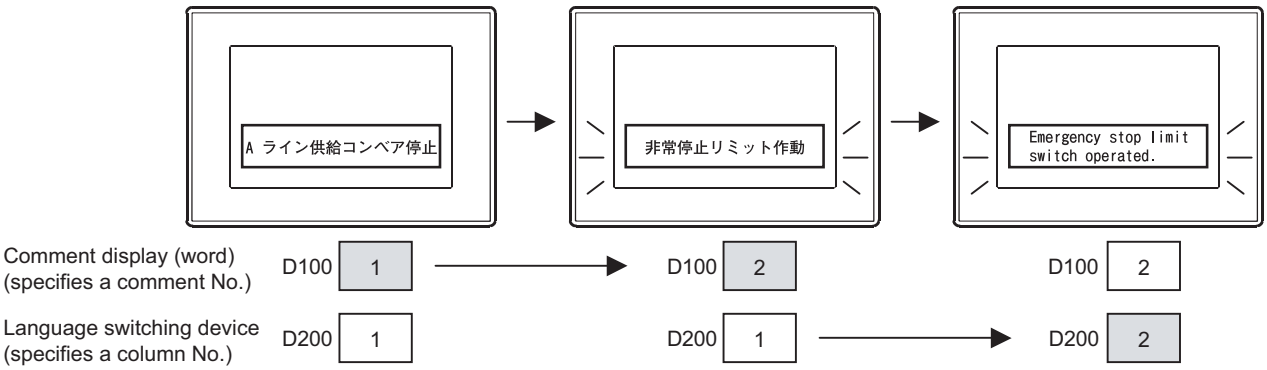
# 3.4 Setting Language Switching Device

The comment displayed on the objects can be switched by writing a column No. of comment group in the language switching device set up by GT Designer2.
If registering messages of Japanese, English, Chinese and other language in each column of comment group, the language of the comment displayed can be switched.
For the comment registration, refer to the following.

For the comment registration, refer to the following.

☞ Section 4.1 Comment Registration

Example: When switching language by Comment display (Word):



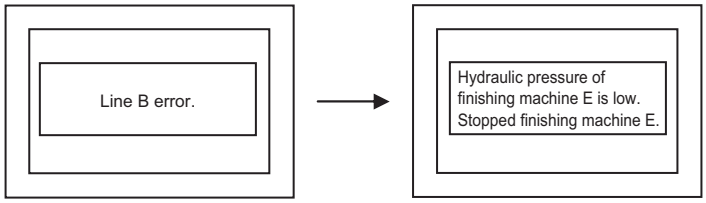

No. 1 Comment Group 1 Comment List

| Column No. | | | |
|---|---|---|---|
| Comment No. | 1 | 2 | 3 |
| 1 | Aライン供給コンベア停止。 | A-line supply conveyer stopped. | A生产线的補給输送带停止 |
| 2 | 非常停止リミット作動。 | Emergency stop limit switch operated. | 紧急停止装置起动 |
| 3 | 加工品リミット油圧低下 | Product limit switch does not operate. | 加工起动装置不工作 |
| 4 | 加工機-1の油圧低下。 | Hydraulic pressure of finishing machine 1 is low. | 加工机-1的油压下降 |

**Point**

Languages to be displayed

By registering comments of the same language in several columns of a comment group, the comment group can be used as not language switching but comment switching.
For example, if outlines (English) are registered in column No.1 and details (English) in column No.2, the appropriate comments can be displayed according to the user's application.




Outline display　　Detail display

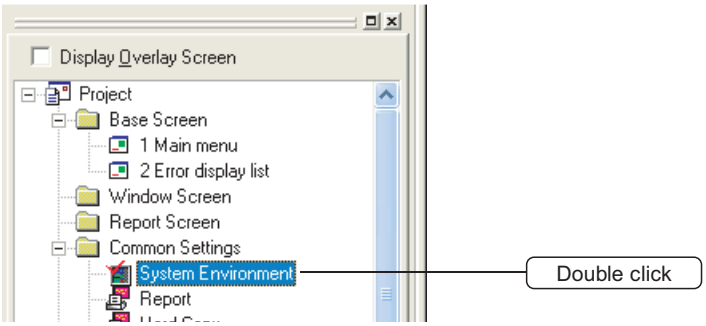
## 3.4.1 Settings

1. Select [Common] → [System Environment] on the menu bar.
2. Double-click the "Language Switching" of System Environment.
3. The setting dialog box is displayed. Set the items with reference to the following description.

**Remark**

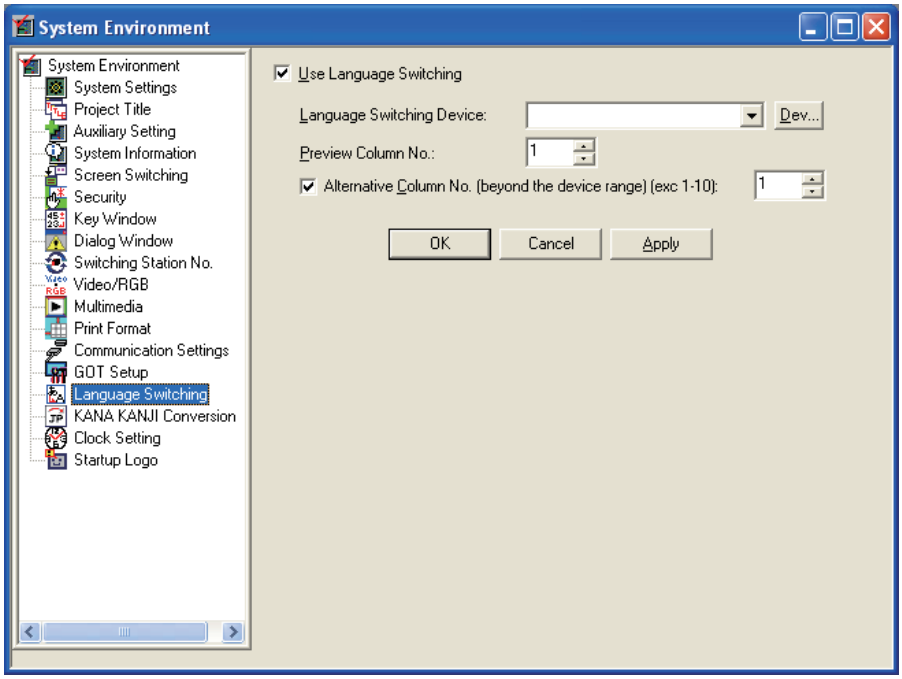
When setting in the workspace (project):

If double-clicking "System Environment," the System Environment setting dialog box is displayed. Then, double-click "Language Switching."



## 3.4.2 Setting items

Set the language switching device.




| Item | | Description | Model |
|---|---|---|---|
| Use Language Switching | | Check when using more than one column in comment group.<br>Do not check if using only one column. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Preview Column No. | Set the column No. of the comments to be previewed on GT Designer2. | |
| | Alternative Column No. (beyond the device range) (exc 1-10) | Check this item to set the column No. of the comments to be displayed when the language switching device value is set to any other than 1 to 10.<br>After checking, set the column No. for the device value other than 1 to 10. | |

## 3.4.3 Precautions

The following shows the precautions for setting the language switching device.

### 1 Precautions for drawing

(1) Device setting
The language switching device can be set for each project.
It cannot be set up for each screen.

(2) When the language switching device is not set
In this case, register comments in the column No.1 of comment group.
Even if comments are registered in the column No.2-10 of comment group, they cannot be displayed.

(3) When switching to Chinese characters of standard font (Option) (GT16, GT15 only)
Mounting an option function board or installing the corresponding font data is required according to the GOT.
When the option function board is not mounted or the font data is not installed on the GOT, Chinese characters of the standard font (Standard) are displayed.
The following shows which GOT requires an option function board or option function OS.

| GOT | Option function board | Option function OS |
|---|---|---|
| GT16 | Not required | Required |
| GT15 | Required | Required |

For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

For the installation method of the option function board, refer to the manual below.

☞ GT15 User's Manual (Section 9.10 Option Function Board)

For the standard font (Standard), refer to the following.

☞ Section 2.3.1 Fonts

(4) Applicable object functions
The language switching function is available only for objects that are supported by comment group.
For the objects supported by comment group, refer to the following.

☞ Section 4.1.1 Required knowledge for comment registration

### 2 Precautions for use

(1) Value to be stored in the language switching device
If a column number value of an unregistered comment group is stored, the comment is not displayed correctly at each object.
When "0" is stored, display varies depending on the specification of the object to be used.
For details of display at each object, refer to the following.

☞ Setting method for the object to be set

(2) Influence on objects when language switching is performed

When language switching is performed during GOT monitoring, the currently displayed screen is displayed again, so that the display of objects may be influenced.

Be careful if the following objects are arranged on the screen being monitored when switching language.

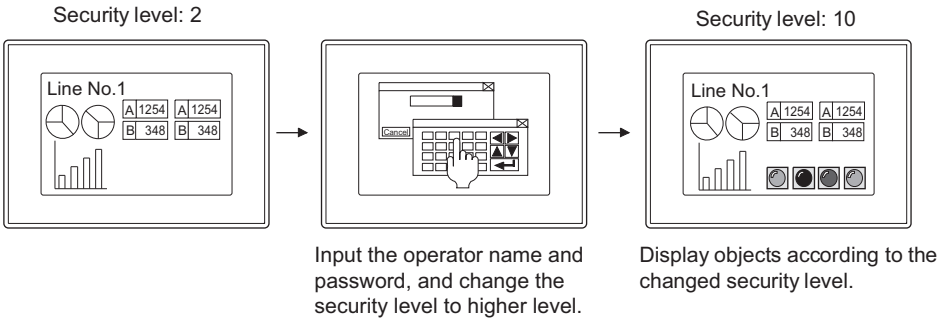
| Object | Description |
|---|---|
| Trend Graph | If store memory is not set, the historical information is erased. |
| Scatter Graph | |
| Alarm List (User Alarm) | If store memory is not set, the occurrence time of alarm is changed to the time of language switching.<br>If display is being scrolled, data are displayed from the top. |
| Alarm History | If display is being scrolled, data are displayed from the top. |
| Advanced Alarm Display | |
| Data List | |
| Parts Movement | If the display mode is set to Locus, the locus is erased. |

# 3.5 Security Setting

The security setting is available for objects, the screen display or operation, the upload operation, and the utility operation.
The security setting restricts users.

## 1 Restricting the object and screen display/operation

With setting the security level (0 to 15) per object and screen, the screen display can be changed according to the user's security level.
The authentic method for changing security levels includes the security level authentication and the operator authentication.




(1) Operator authentication
The operator authentication is an authentic method with the operator information of the user when the security level is changed.

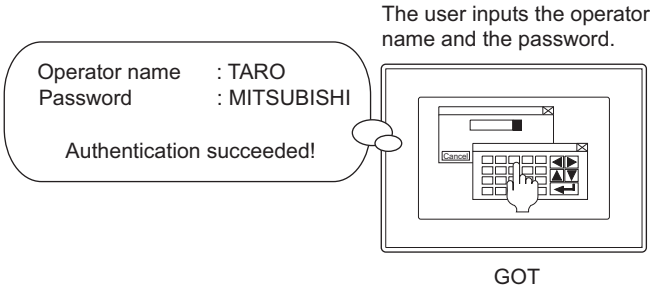
☞ Section 5.8 Security Function

With the operation log function, the user information can be stored as a history.
With setting the automatic logout and the password expiration date, the security can be enhanced.
The operator authentication includes the following the authentic types.

(a) Password authentication

GT16 GT15 Soft GOT 1000 GT11 GT10

The authentication is executed by the operator name and the password that the user inputs.
For using the password authentication, install the extended function OS (Operator authentication) on the GOT.



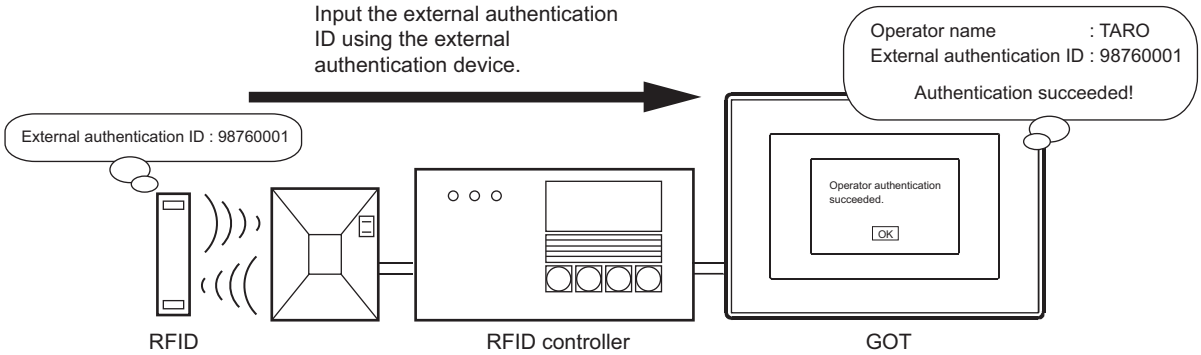
(b) External authentication

GT16 GT15 Soft GOT 1000 GT11 GT10

The authentication is executed by the external authentication ID that is input using an external authentication device.
For using the external authentication, the following external authentication device can be used.

- RFID

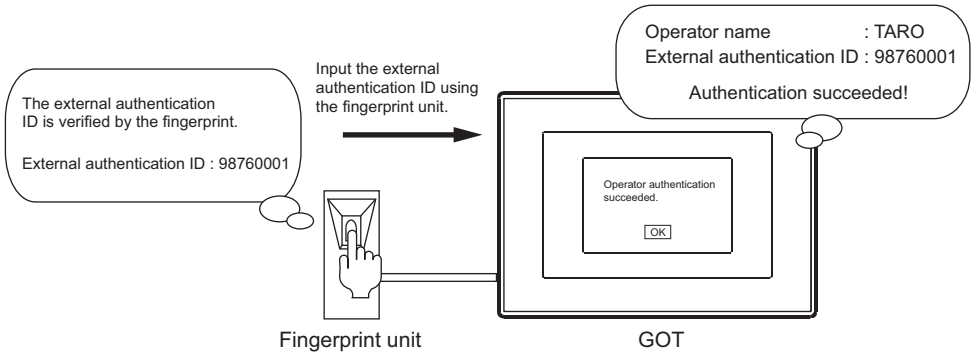
For using the external authentication, install the extended function OS (Operator authentication, RFID) on the GOT.




(c) Fingerprint authentication

GT16 GT15 Soft GOT 1000 GT11 GT10

The authentication is executed by the external authentication ID identified by the fingerprint information that is input using the fingerprint unit.
Up to 100 pieces of fingerprints authentication information can be registered.
Up to two fingerprints can be registered for a piece of fingerprint authentication information.
For using the fingerprint authentication, install the extended function OS (Operator authentication, Fingerprint Authentication) on the GOT.




(2) Security level authentication

GT16 GT15 Soft GOT 1000 GT11 GT10

The security level authentication is an authentic method with a password for each security level when security levels are changed.

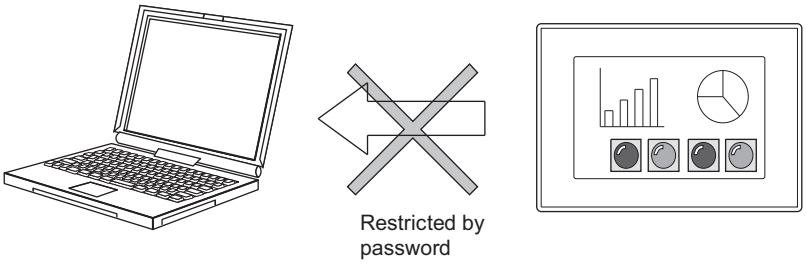
☞ Section 5.8 Security Function

## 2 Restricting the upload operation

GT16 GT15 Soft GOT1000 GT11 GT10

The security authentication can restrict the screen data upload operation.
For details of data transmission operation, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Chapter8 TRANSFERRING DATA)




## 3 Restricting the utility operation

GT16 GT15 Soft GOT1000 GT11 GT10

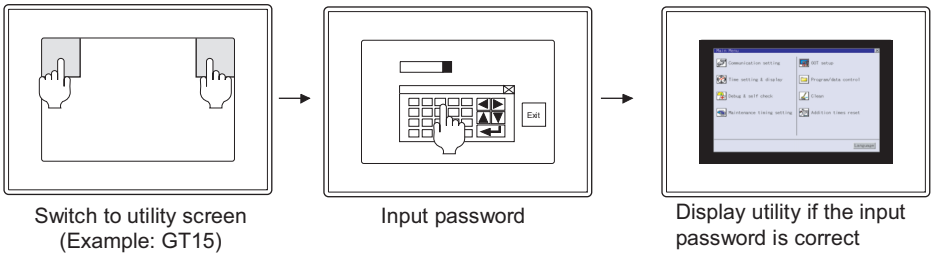
When starting the utility, the authentication for security prevents the user from unnecessary utility operations.
For details of utility operation, refer to the following manual.

☞ GT16 User's Manual (Basic Utility)

GT15 User's Manual

GT11 User's Manual

GT10 User's Manual

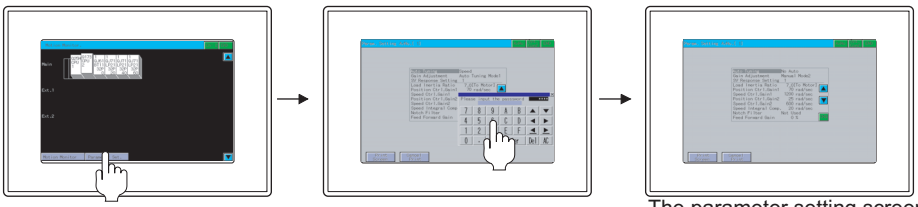


## 4 Restricting parameter setting screen display

GT16 GT15 Soft GOT1000 GT11 GT10

When displaying the parameter setting screen of the Q motion monitor function or the servo amplifier monitor function, the input of a preset password is requested so that inadvertent changing of the parameter settings in the targeted motion controller CPU (Q series)/servo amplifier can be avoided.
For details of the servo amplifier monitor function and the Q motion monitor function, refer to the following manual.

☞ GOT1000 Series Extended / Option Functions Manual



Switching to the parameter setting screen → Inputting the password → The parameter setting screen is displayed only when the correct password is input.

## 3.5.1 Authentic method

For restricting displays and operations of objects and screens, set the authentic method.
The authentic method includes the following types.
- Operator authentication
- Security level authentication

The following explains functions and settings for each authentic method.

### 1 Operator authentication

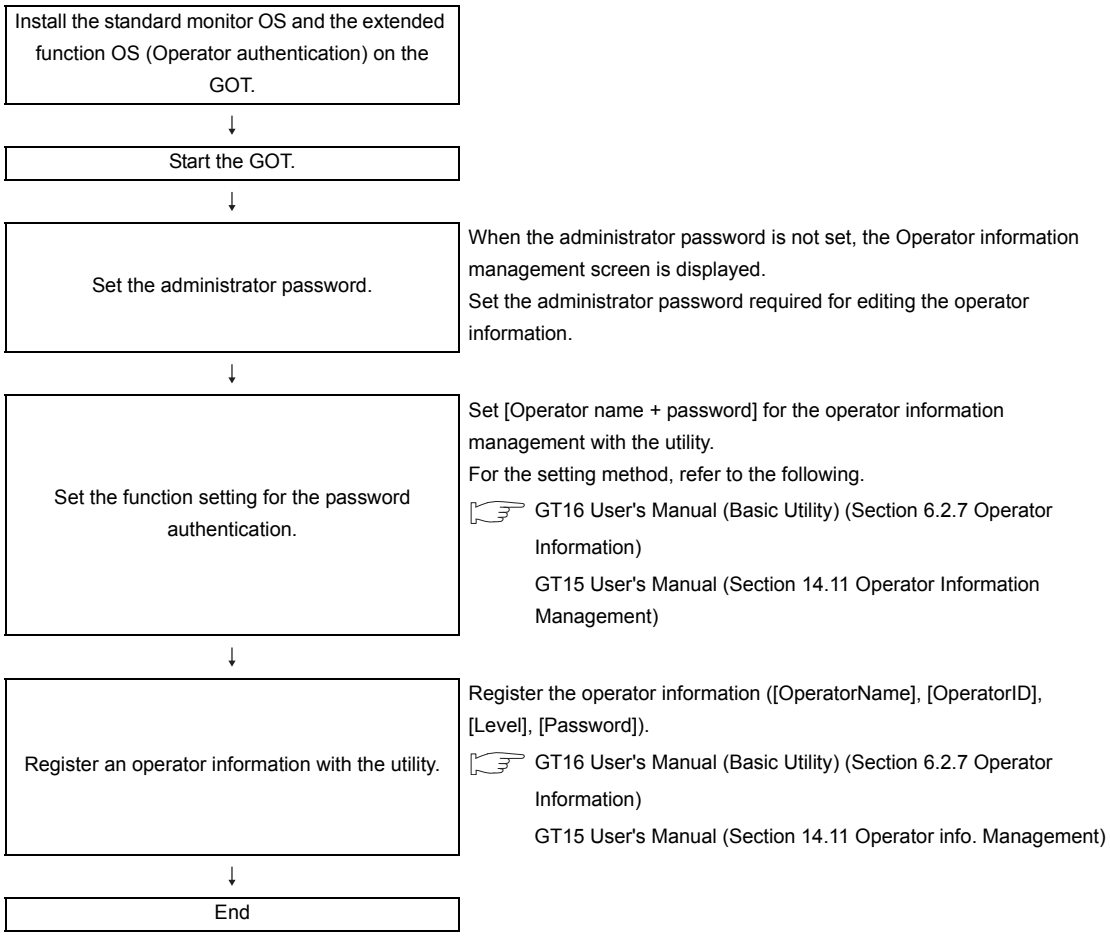
Set the information of an operator (Operator information) for the operator authentication.
The operator information can be exported to a memory card, and the operator information can be imported with another GOT.
When the operator authentication is set, the operator information (operator name and operator ID) can be stored as a history with the operation log function.
(☞ 15.2 Operation Log Function)

With setting the following functions, the security can be enhanced.
- Automatic logout function : Automatically logging out of the GOT when the GOT is not operated for a certain period
- Password expiration date :The expiration date can be set for a password.

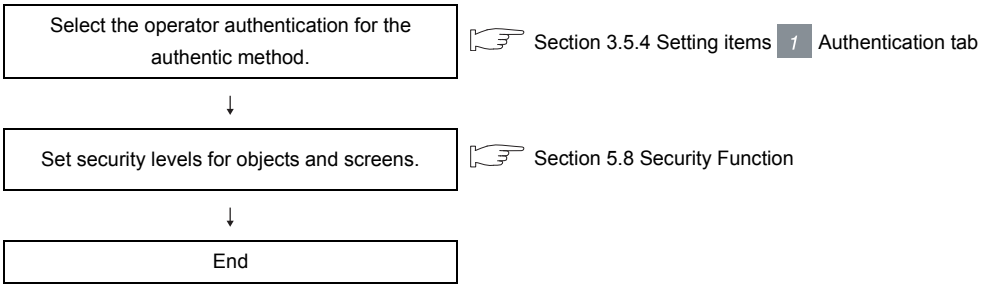
(1) Settings for password authentication
Set the following for the password authentication.
- Utility
- GT Designer2

The following show steps for each setting.

(a) Settings with the utility



(b) Settings on GT Designer2




**Point**

(1) Login of administrator
Logging into the GOT with the operator name of administrator cannot be executed.
Log into the GOT with the operator registered in the utility.

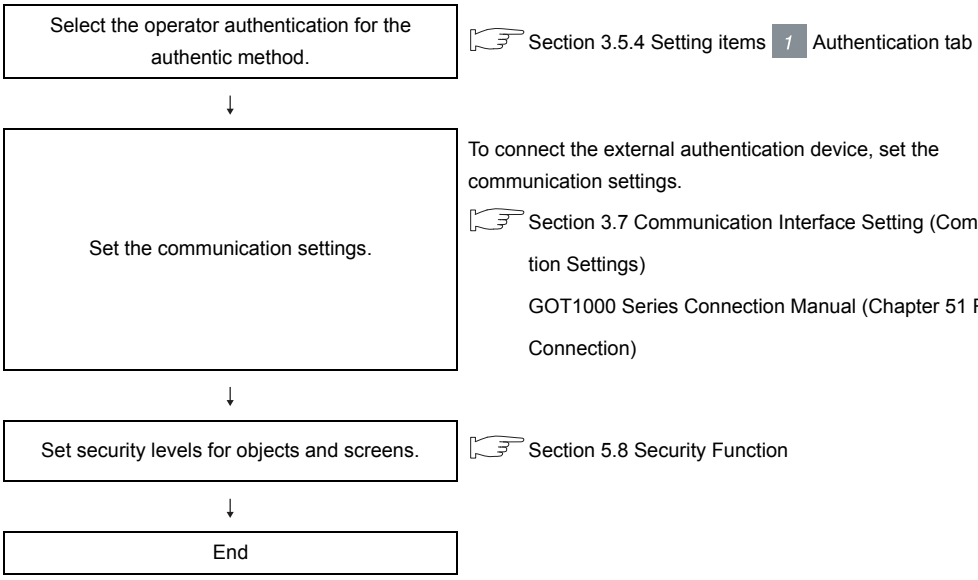
(2) Settings for external authentication
Set the following for the external authentication.
- Utility
- GT Designer2

The following shows steps for each setting.

### (a) Settings with the utility

| | |
|---|---|
| Connect the external authentication device to the GOT. | Connect the external authentication device (RFID) to the GOT.<br>☞ GOT1000 Series Connection Manual (Chapter 51 RFID Connection) |
| ↓ | |
| Install the standard monitor OS and the extended function OS (Operator authentication, RFID) on the GOT. | |
| ↓ | |
| Start the GOT. | |
| ↓ | |
| Set the administrator password. | When the administrator password is not set, the Operator information management screen is displayed.<br>Set the administrator password required for editing the operator information. |
| ↓ | |
| Set the function setting for the external authentication. | Set the following for the operator information management with the utility.<br>• [Auth method]:<br>Select [External auth (general)].<br>• [Initial position input]:<br>Set the initial position of the external authentication ID in the data read from the external authentication device.<br>• [Valid byte count input]:<br>Set the digit of the external authentication ID.<br>For the setting method, refer to the following.<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)<br>GT15 User's Manual (Section 14.11 Operator info. Management) |
| ↓ | |
| Register an operator information with the utility. | Register the operator information ([OperatorName], [OperatorID], [Level], [Ext.auth. ID]).<br>Check [Use ext. auth. ID].<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)<br>GT15 User's Manual (Section 14.11 Operator info. Management) |
| ↓ | |
| End | |

(b) Settings on GT Designer2




**Point**

(1) Registration of external authentication ID
For using the external authentication, register the external authentication ID for the operator information.
For how to register the operator information, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)

☞ GT15 User's Manual (Section 14.11 Operator info. Management)

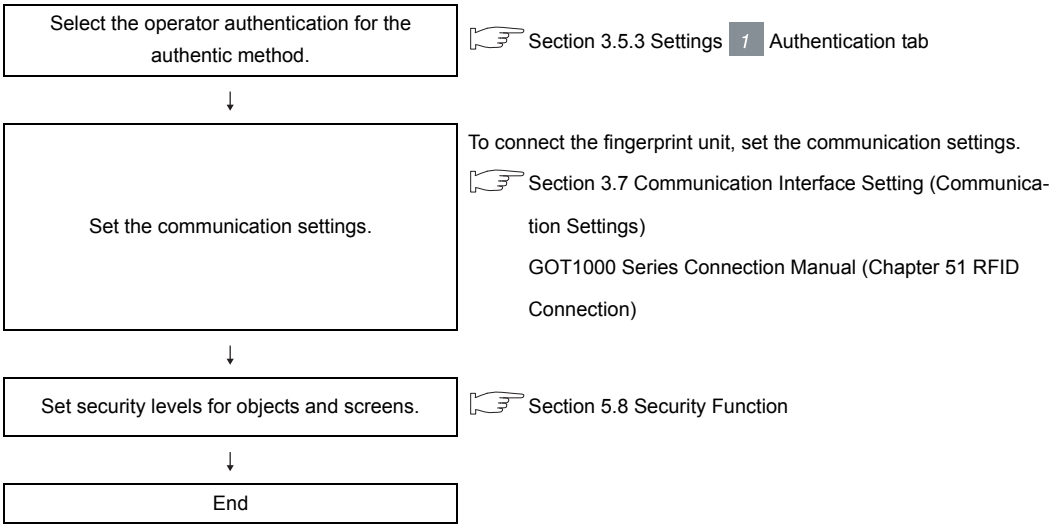
(3) Settings for fingerprint authentication
Set the following for the fingerprint authentication.
- Utility
- GT Designer2

The following shows steps for each setting.

### (a) Settings with the utility

| | |
|---|---|
| Connect the fingerprint unit to the GOT. | Connect the fingerprint unit to the GOT.<br>☞ GOT1000 Series Connection Manual (Chapter 45 Fingerprint Authentication Device Connection) |
| ↓ | |
| Install the standard monitor OS and the extended function OS (Operator authentication, Fingerprint Authentication) on the GOT. | |
| ↓ | |
| Start the GOT. | |
| ↓ | |
| Set the administrator password. | When the administrator password is not set, the Operator information management screen is displayed.<br>Set the administrator password required for editing the operator information. |
| ↓ | |
| Set the function setting for the fingerprint authentication. | Set the following for the operator information management with the utility.<br>• [Auth method]:<br>Select [Fingerprint authentication].<br>For the setting method, refer to the following.<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)<br>GT15 User's Manual (Section 14.11 Operator info. Management) |
| ↓ | |
| Register an operator information with the utility. | Register the operator information ([OperatorName], [OperatorID], [Level], [Ext.auth. ID]).<br>Check [Use ext. auth. ID].<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)<br>GT15 User's Manual (Section 14.11 Operator info. Management) |
| ↓ | |
| Set the administrator password for the fingerprint authentication information. | At the first setting of the fingerprint authentication information, set the administrator password to register, change, or delete the fingerprint authentication information.<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.8 Fingerprint information)<br>GT15 User's Manual (Section 14.12 Fingerprint authentication) |
| ↓ | |
| Register fingerprint authentication information with the utility. | Register the fingerprint authentication information (fingerprints, [Fingerprint ID], [Number of registered fingerprints]).<br>☞ GT16 User's Manual (Basic Utility) (Section 6.2.8 Fingerprint information)<br>GT15 User's Manual (Section 14.12 Fingerprint authentication) |
| ↓ | |
| End | |

(b) Settings on GT Designer2




**Point**

(1) Registration of external authentication ID
For using the fingerprint authentication, register the external authentication ID for the operator information.
For registering the operator information, the number of bytes for the external authentication ID must be 7 bytes or less.
For using the fingerprint authentication, the number of valid bytes for the external authentication ID must be in the range of 4 bytes to 7 bytes.
For how to register the operator information, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)

GT15 User's Manual (Section 14.11 Operator info. Management)

(2) Setting for fingerprint registration ID
The number of the fingerprint registration ID must be the same as that of the external authentication ID.
For the fingerprint authentication, the user is specified by verifying the fingerprint ID and the external authentication ID.
When the ID number of the fingerprint registration ID and the external authentication ID does not match, the user cannot log into the GOT using the fingerprint authentication.

(4) Common settings for operator authentication
Set the following for the automatic logout time and the password expiration date.
- Function setting with the utility (automatic logout time, password expiration date)

☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)

☞ GT15 User's Manual (Section 14.11 Operator info. Management)

(5) How to change security levels
The security level can be changed on screens for login and logout.
The screens for login and logout can be displayed with special function switches or the utility.
For changing security levels, refer to the following.

☞ Section 5.8 Security Function

## 2 Security level authentication

Set passwords for each security level for the security level authentication.

(1) Settings
Set the following for the security level authentication.
- Setting security levels for objects and screens
- Setting passwords for each security level on GT Designer2 ( ☞ Section 3.5.4 1 (1) Security level)

(2) How to change security levels
The security level can be changed on a screen for the password input.
The screen for the password input can be displayed with special function switches or the utility.
For changing security levels, refer to the following.

☞ Section 5.8 Security Function

## 3.5.2 Relevant settings

For the security, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description if necessary.

(1) Functions relevant to security only
• • • Relevant to the security only.

(2) Functions relevant to security and others
• • • Confirm the relevant functions when making settings.

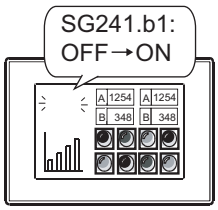
### 1 GOT internal devices (☞Section 2.9.1 GOT internal devices)

(1) Functions relevant to security only

• Insufficient security level notification
(Read device: GS241.b0 to b4, b8 to b12)

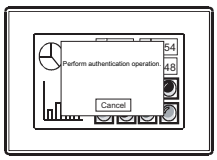
Notifies the screen that cannot be displayed because of the insufficient security level.

Because of the insufficient security level, the overlap window is hidden.



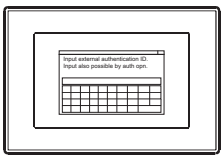

• External authentication reception signal
(Read device: GS240.b14)

Notifies that the login screen for the external authentication or fingerprint authentication is displayed.




• External authentication ID input reception signal
(Read device: GS241.b15)

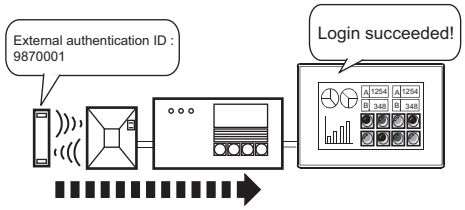
Notifies that the external authentication ID input key window is displayed.




(2) Functions relevant to security and others

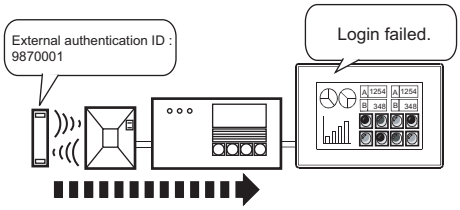
• External authentication success signal
(Read device: GS240.b0)

Notifies that the external authentication or fingerprint authentication succeeds.




• External authentication failure signal
(Read device: GS240.b1)

Notifies that the external authentication or fingerprint authentication fails.



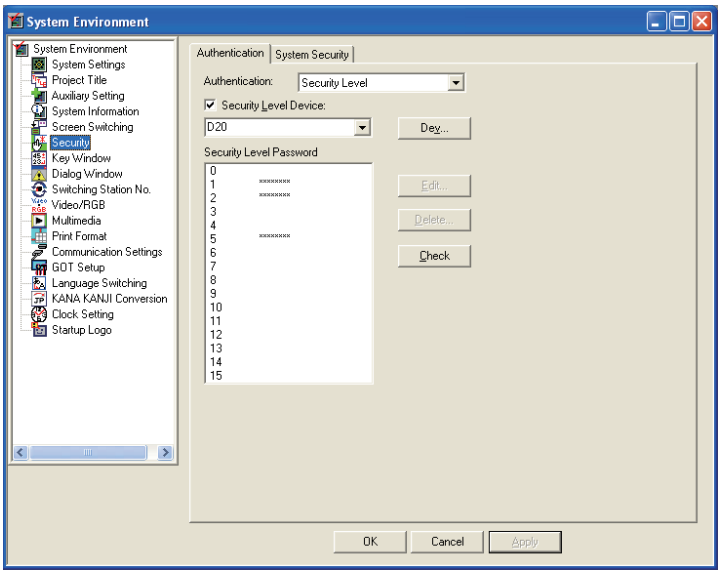
## 3.5.3 Settings

1. Select [Common] → [System Environment] from the menu.
2. Double click on [Security] in "System Environment" dialog box.
3. A dialog box for setting the security is display, and then set the security with the following.

## 3.5.4 Setting items

### 1 Authentication tab

Set the authentic method.

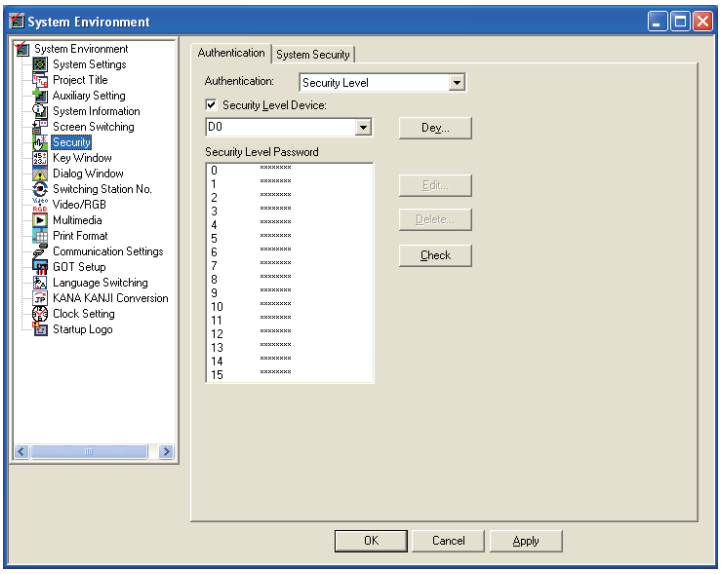



**Authentication** | System Security

| Item | Description | Model |
|---|---|---|
| Authentication | Set the authentic method when the security level is changed for changing displays.<br>(For GT11 and GT10, [Operator] cannot be set.)<br>• Security Level :The security level is changed only with the password.<br>• Operator :The security level is changed with an operator name and a password. | GT16 GT15 SoftGOT1000 GT11 GT10 |

The setting items differ depending on the selected authentic method.
The setting items for each authentic method are shown in the next page.

(1) Security level



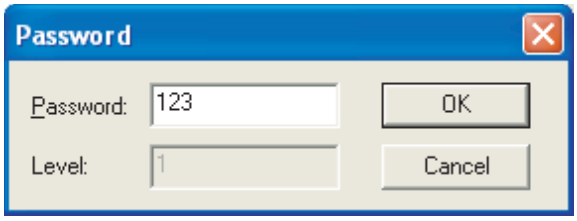

## Authentication | System Security

| Item | Description | Model |
|---|---|---|
| Security Level Device | Check this item to use security function.<br>Check the item, and then set the device that the security level value for a screen displayed on the GOT is stored (Security level device).<br>If the level device is not controlled by controller, set GOT internal device (GD) .<br>The security level can be changed by changing the level device value from the controller.<br>Example: Level device: D10<br>Base screen 1 — D10: 3 → Set to security level 3<br>Base screen 1 — D10: 8 → Set to security level 8 | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Security Level Password | Passwords for changing the security level are listed.<br>(Passwords are displayed as "*".)<br>Select the security level No. (0 to 15) for which the password to be registered from the password list.<br>Passwords can be set for each security level.<br>Security level 0 : Security function is not set<br>Security level 1 : Low<br>↓<br>Security level 15 : High | |
| Edit*1*2 | This setting is available for setting a new password or changing the preset password.<br>Specify different passwords for each security level. The same password may not be specified.<br>To use the same password, click on the Cancel button. | |
| Delete*3 | Deletes the registered password. | |
| Check | At clicking, error message is displayed when some passwords are overlapped. | |

For details of *1 to *3, refer to the following.

*1 Registering new password

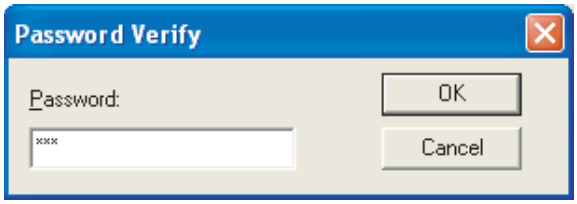
Enter numeric characters in 1 to 8 digits as new password and then click on OK button.



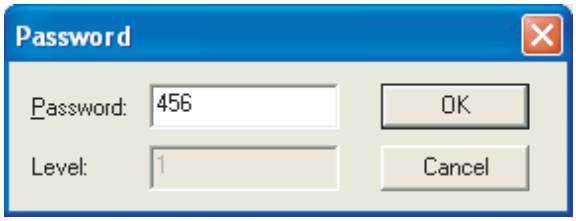

*2 Changing password

Before changing password, enter the current password and then verify the password.

1. In "Password Verify" dialog box, enter the current password, and then click on OK button.

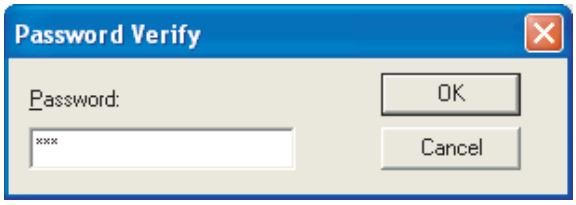



2. As "Password" dialog box appears, enter numerical characters in 1 to 8 digits as new password, and then click on OK button.

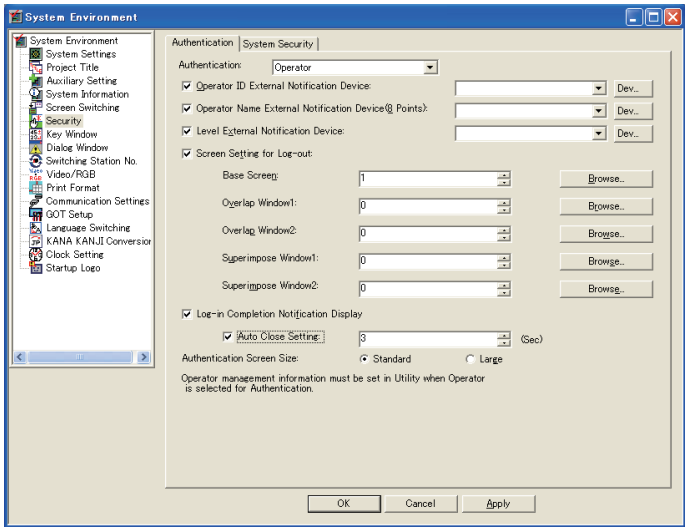



*3 Deleting password

In "Password Verify" dialog box, enter the current password, and then click on OK button.



(2) Operator




## Authentication System Security

| Item | Description | Model |
|---|---|---|
| Operator ID External Notification Device | Check the item for notifying the operator ID of an operator.<br>Set the operator ID in [Operator info. Management] of the utility.<br>Check the item, and then set the device that the operator ID of an operator is stored (Operator ID external notification device). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operator ID External Notification Device (8 Points) | Check the item for notifying the login operator name.<br>Check the item, and then set the device that the operator name of an operator is stored (Operator name external notification device).<br>Eight points of devices, starting from the set device, are set as the operator name external notification devices. | |
| Level External Notification Device | Check the item for notifying the security level of an operator.<br>Set the security level in [Operator info. Management] of the utility.<br>Check the item, and then set the device that the security level of an operator is stored (Level external notification device). | |
| Screen Setting for Log-out *1 | Check the item for specifying a screen displayed when logging out of the GOT.<br>Check the item, and then specify a screen displayed after logging out of the GOT.<br>When a window screen is specified as the screen displayed when logging out of the GOT, set a switching screen device.(☞ Section 3.2 Switching Screen Device Setting) | |
| Log-in Completion Notification Display | Check the item for displaying the login completion notification with successful login. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Auto Close Setting | Check the item for automatically closing the dialog box after the login completion notification is displayed.<br>After checking the item, set the display time of the dialog box.<br>Setting range: 1 to 60 seconds (Default: 3 seconds) | |
| Authentication Screen Size | Select the size of the operator authentication screen.<br>•Standard •Large (Default: Standard)<br>When the GOT type is set to [GT15**-Q(320 × 240)], [Standard] is specified. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 Screen setting for log-out

The timing for displaying the screen specified for [Screen Setting for Log-out] differs depending on operations when logging out of the GOT.

(1) When logging out of GOT with special function switches or the automatic logout function
After logging out of the GOT, the screen specified for [Screen Setting for Log-out] is displayed.

(2) When logging out of GOT with utility
After logging out of the GOT, the Main Menu screen for the utility is displayed.
When the operation for switching the Main Menu screen to the user-created screen is operated, the screen specified for [Screen Setting for Log-out] is displayed.

**Point**

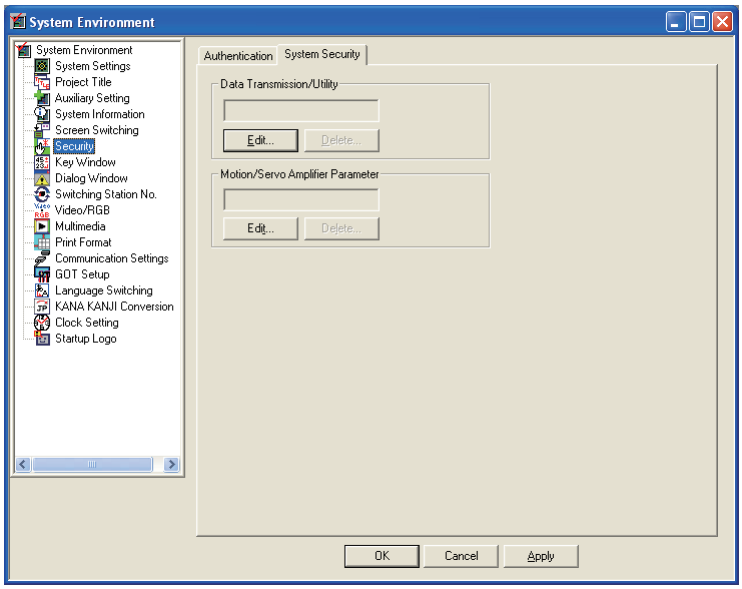
Settings of operator information

Set the operator information, including the operator ID and security level, with the utility.
For settings of the operator information, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)
GT15 User's Manual (Section 14.11 Operator info. Management)

## 2 System Security tab

Set the password to restrict screen data upload, utility start from the GOT .



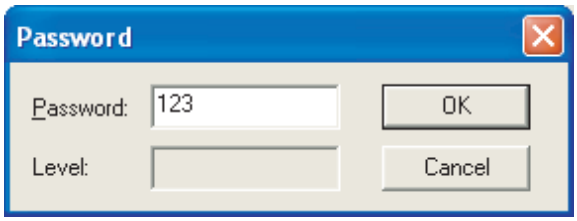

Authentication | System Security

| Item | | Description | Model |
|---|---|---|---|
| Data Transmission/ Utility | Edit*1*2 | Registers or changes the password that restricts GOT screen data upload and utility screen display. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Delete*3 | Deletes the registered password. | |
| Motion/Servo Amplifier Parameter | Edit*1*2 | Registers or changes the password used for displaying the parameter setting screen for the motion monitor/servo amplifier monitor function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Delete*3 | Deletes the registered password. | |

For details of *1 to *3, refer to the following.

*1 Registering new password

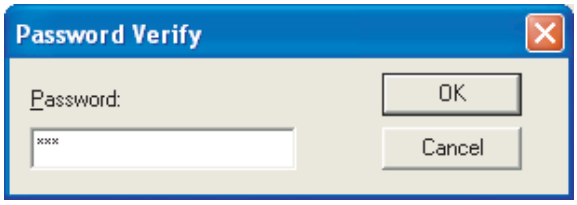
In "Password" dialog box, enter alphanumeric characters (0 to 9, A to F) in 1 to 8 digits as new password and then click on OK button.



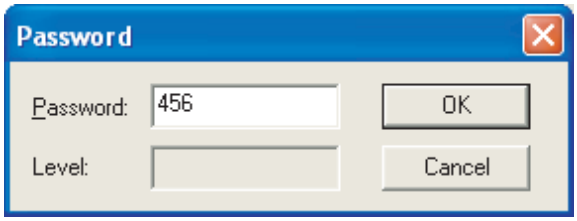

*2 Changing password

Before changing password, enter the current password and then verify the password.

1. In "Password Verify" dialog box, enter the current password, and then click on OK button.

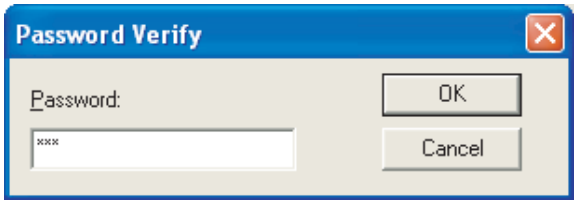



2. As "Password" dialog box appears, enter alphanumeric characters (0 to 9, A to F) as new password, and then click on OK button.



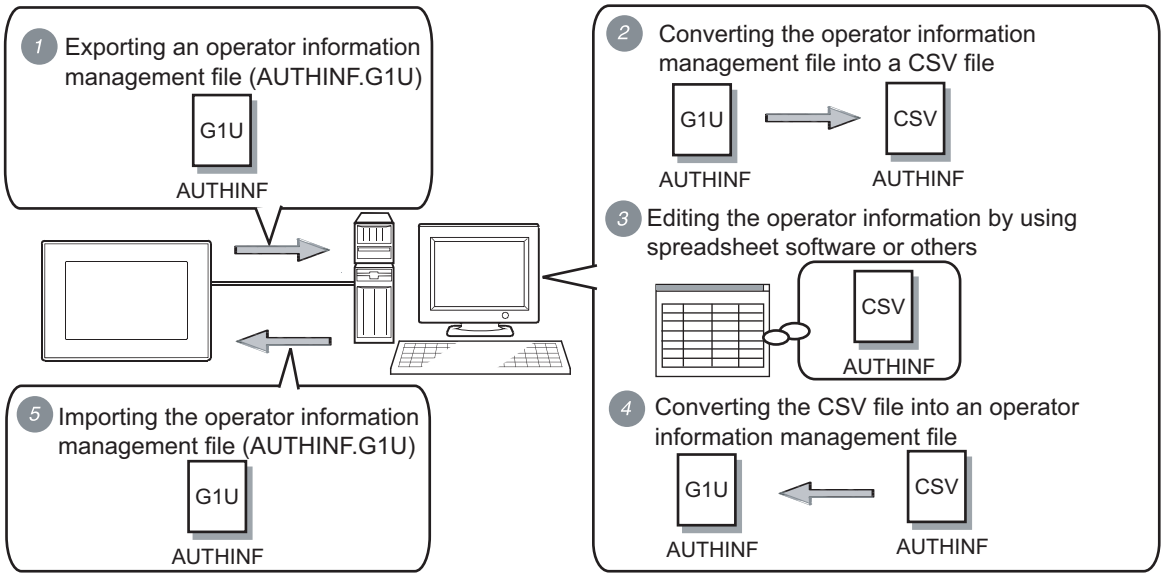

*3 Deleting password

In "Password Verify" dialog box, enter the current password, and then click on OK button.



## 3.5.5 GOT operator management information conversion tool

With the GOT operator management information conversion tool, an operator information management file (AUTHINF.G1U) exported from the GOT can be converted into a CSV file.
After the CSV file is edited on the personal computer, the CSV file can be converted into an operator information management file.
By converting the edited CSV file into an operator information management file and importing the file to the GOT, a lot of operator information can be registered, changed, or deleted at a time.




### 1 How to obtain software

Obtain the software with either of the following.

- GT Works2 or GT Designer2 CD-ROM (Disc2)
  Folder name: OperatorMgrInfoConv
  File name: GTOperatorInfoConv.exe
- Download the software from the the MITSUBISHI ELECTRIC FA NETWORK SERVICE (MELFANSweb) website.

  (MELFANSweb website:
  http://wwwf2.mitsubishielectric.co.jp/melfansweb/english/index.html)

## 2 Operating environment

The following shows the operating environment.

| Item | Description |
|---|---|
| OS | Microsoft® Windows® 2000 Professional Service Pack4 (English version)<br>Microsoft® Windows® XP Professional Service Pack2 (English version)*2<br>Microsoft® Windows® XP Home Edition Service Pack2 (English version)*2<br>Microsoft® Windows Vista® Ultimate (English version)*1*2<br>Microsoft® Windows Vista® Enterprise (English version)*1*2<br>Microsoft® Windows Vista® Business (English version)*1*2<br>Microsoft® Windows Vista® Home Premium (English version)*1*2<br>Microsoft® Windows Vista® Home Basic (English version)*1*2<br>Microsoft® Windows® 7 Ultimate (English versions)*1*3*4*5<br>Microsoft® Windows® 7 Enterprise (English versions)*1*3*4*5<br>Microsoft® Windows® 7 Professional (English versions)*1*3*4*5<br>Microsoft® Windows® 7 Home Premium (English versions)*1*3*5<br>Microsoft® Windows® 7 Starter (English versions)*1*2 |
| Computer | Compatible with the operating environment for the above OS.*6 |
| Hard disk space | 500MB or more (Excluding operator information management files) |
| Disk drive | CF card drive or USB drive (Not required when the GOT is connected to the personal computer) |
| Display color | True Color or more |
| Display | Resolution of 800 x 600 dots or more |
| Others | The mouse, keyboard, and printer must be compatible with the above OS. |

*1 The standard user or administrator account is required for using the GOT operator management information conversion tool.
*2 Only the 32-bit OS is available.
*3 The 32-bit OS and the 64-bit OS are available.
*4 Windows XP Mode is not supported.
*5 Windows Touch is not supported.
*6 For the operating environment for each OS, refer to the following.

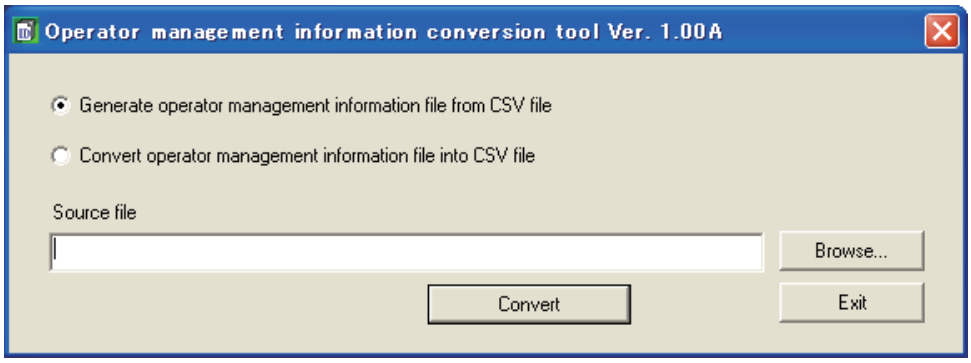
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual

## 3 How to start

Installing GOT operator management information conversion tool is not required.
Copy the execution file "GTOperatorInfoConv.exe" in a folder, and then execute the file in the folder.

## 4 Converting an operator information management file

1. Start the GOT operator management information conversion tool.
   The following dialog box appears.




- To convert a CSV file into an operator information management file (AUTHINF.G1U)
  Check [Generate operator management information file from CSV file].
- To convert an operator information management file (AUTHINF.G1U) into a CSV file
  Check [Convert operator management information file into CSV file].

2 Input the path of the operator information management file in the source file field.

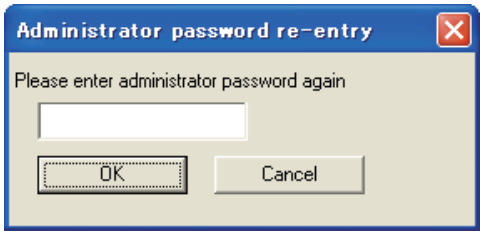
By clicking the [Browse...] button, a CSV file or an operator information management file can be selected in the Open dialog box.

3 After the input, click the [Convert] button.
Clicking the button displays the following dialog box.

- To convert a CSV file into an operator information management file (AUTHINF.G1U)
  Set the administrator password.

  Input the administrator password, and then click the [OK] button.
  The Administrator password re-entry dialog box appears.

  Input the administrator password again, and then click the [OK] button.




  When the input administrator password is correct, the operator information management file (AUTHINF.G1U) is created in the folder that stores the input source file.

- To convert an operator information management file (AUTHINF.G1U) into a CSV file
  Authenticate the operator information management file (AUTHINF.G1U) with the administrator password.
  Input the administrator password set for the operator information management file, and then click the [OK] button.
  When the input administrator password is correct, the CSV file (AUTHINF.CSV) is created in the folder that stores the input source file.

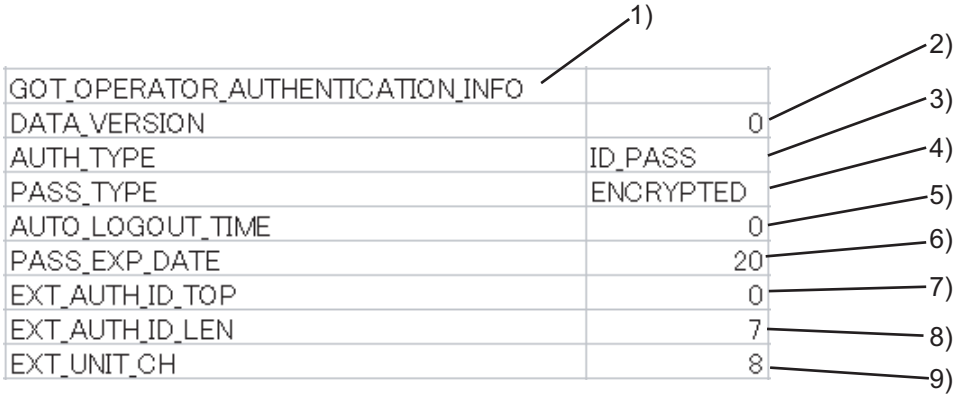
## 5 CSV file (AUTHINF.CSV)

A CSV file contains the data as shown below.
Set each setting item without changing the order of the items as shown in the tables below.
In the following cases, the data format is invalid and a CSV file is not converted into an operator information management file (AUTHINF.G1U).

- When any of the setting items is deleted
- When the order of the setting items is changed
- When any of the settings is incorrect

(1) Header part

In the header part, configure the common setting for each operator information.



| | | |
|---|---|---|
| GOT_OPERATOR_AUTHENTICATION_INFO | | 1) |
| DATA_VERSION | 0 | 2) |
| AUTH_TYPE | ID_PASS | 3) |
| PASS_TYPE | ENCRYPTED | 4) |
| AUTO_LOGOUT_TIME | 0 | 5) |
| PASS_EXP_DATE | 20 | 6) |
| EXT_AUTH_ID_TOP | 0 | 7) |
| EXT_AUTH_ID_LEN | 7 | 8) |
| EXT_UNIT_CH | 8 | 9) |

| No. | Item | Description |
|---|---|---|
| 1) | GOT_OPERATOR_AUTHENTICATION_INFO | Keyword to declare that the file is an operator information management file. |
| 2) | DATA_VERSION | Set the version of the CSV file.<br>Setting range :0 |
| 3) | AUTH_TYPE | Set the authentic type of the operator authentication.<br>Set any of the following.<br>ID_PASS :Set this item when the authentic type is the password authentication.<br>EXT_AUTH :Set this item when the authentic type is the external authentication.<br>EXT_FP :Set this item when the authentic type is the fingerprint authentication. |
| 4) | PASS_TYPE | Set the password type.<br>Set any of the following.<br>ENCRYPTED :Set this item to specify an encrypted password for [PASSWD] in the data part.<br>Even if an unencrypted password is specified for [PASSWD], the file is correctly converted.<br>For the password encyption, refer to the following.<br>☞ This section 6 Precautions<br>PLAIN :Set this item to specify an unencrypted password for [PASSWD] in the data part. |
| 5) | AUTO_LOGOUT_TIME | Set the automatic logout time.<br>Setting range: 0 (Automatic logout disabled)/1 to 60 (minute) |
| 6) | PASS_EXP_DATE | Set the password expiration.<br>Setting range: 0 (No expiration)/1 to 1000 (day) |

(Continued to next page)

| No. | Item | Description |
|---|---|---|
| 7) | EXT_AUTH_ID_TOP | Set the initial position of the external authentication ID.<br>When converting a CSV file into an operator information management file, 0 is set in the following cases.<br>• When nothing or invalid value is set<br>• When [AUTH_TYPE] (Authentic type) is set to [EXT_FP]<br>Setting range*1: 0 to 1998 (byte) |
| 8) | EXT_AUTH_ID_LEN | Set the number of bytes for the external authentication ID.<br>When converting a CSV file into an operator information management file, the set value varies depending on the case as shown below.<br>• When nothing or invalid value is set :4<br>• When [AUTH_TYPE] (Authentic type) is set to [EXT_FP] :7<br>Setting range: 2 to 16 (byte) |
| 9) | EXT_UNIT_CH | Set the channel for connecting an external authentication device.<br>Setting range: 8 (CH) |

*1 The total set value of [EXT_AUTH_ID_TOP] and [ EXT_AUTH_ID_LEN] must be 2000 or less.
If the total set value exceeds 2000, the file cannot be converted correctly.

(2) Data part

In the data part, set the individual operator information.

| 1) OPE_ID | 2) OPE_NAME | 3) LEVEL | 4) PASSWD | 5) IS_PASSWD_EXP | 6) IS_EXT_AUTH | 7) EXT_AUTH_ID |
|---|---|---|---|---|---|---|
| 3 | ICHIRO@ | 5 | MITSUBISHI0001 | 0 | 1 | 31323334353637@ |
| 2 | JIRO@ | 1 | MITSUBISHI0002 | 0 | 1 | 303030303031 36@ |
| 1 | SABURO@ | 9 | MITSUBISHI0003 | 1 | 1 | 303030393939 39@ |

| No. | Item | Description |
|---|---|---|
| 1) | OPE_ID | Set the operator ID.<br>Setting range: 1 to 32766 |
| 2) | OPE_NAME | Set the operator name.<br>Setting range: 1 to 16 one-byte alphanumeric characters (A to Z, a to z, 0 to 9) |
| 3) | LEVEL | Set the security level of the operator.<br>Setting range: 0 to 15 |
| 4) | PASSWD | Set the password for the operator.<br>Setting range*1: 0 to 16 one-byte alphanumeric characters (A to Z, a to z, 0 to 9) |
| 5) | IS_PASSWD_EXP | Set whether to set the password expiration.<br>Setting range: 0 (Without expiration)/1 (With expiration) |
| 6) | IS_EXT_AUTH | Set whether to set the external authentication ID.<br>Setting range: 0 (Without setting)/1 (With setting) |
| 7) | EXT_AUTH_ID | Set the external authentication ID.<br>The setting method varies depending on the setting for [AUTH_TYPE].*2 |

*1 Setting range for an unencrypted password
For the password encryption, refer to the following.

☞ This section 6 Precautions

For *2, refer to the following.

*2 Setting method of external authentication ID

The number of bytes for the external authentication ID is the value set for [EXT_AUTH_ID_LEN].
The setting method of the external authentication ID varies depending on the setting for [AUTH_TYPE].

- When [AUTH_TYPE] is set to [ID_PASS] (Password authentication)
  The external authentication ID setting is not required.
  When converting an operator information management file exported from the GOT into a CSV file, the external authentication ID is displayed with ASCII characters. However, the ID is not recognized.
- When [AUTH_TYPE] is set to [EXT_AUTH] (External authentication)
  Set the external authentication ID with hexadecimal numbers.
- When [AUTH_TYPE] is set to [EXT_FP] (Fingerprint authentication)
  Set the external authentication ID with decimal numbers.

## 6 Precautions

(1) Precautions for editing a CSV file

(a) Password encryption
To encrypt the password ([PASSWD]) of a CSV file edited on the personal computer, convert the CSV file into an operator information management file, and then convert the operator information management file into a CSV file again by using the GOT operator management information conversion tool.
When converting the operator information management file into a CSV file, the password is encrypted.

(b) When setting an unencrypted password
To set an unencrypted password for [PASSWD], handle the CSV file carefully.
The unencrypted password is displayed as it is.
To not to leak the password, set nothing for [PASSWD] and set the password on the GOT, or encrypt the file by using the method shown in (a) above.

(c) Value input
When editing a CSV file by using spreadsheet software, the leading zeros of a value beginning with zeros can be removed.
To input a value beginning with zeros, add "@" to the beginning or end of the value.
"@" is not recognized as a value during conversion.

(2) Precautions for converting a file

(a) Automatic addition of "@"
When converting an operator information management file into a CSV file, "@" may automatically be added to the set values of some setting items to not to remove zeros by using spreadsheet software.
When converting the CSV file into an operator information management file, "@" is not recognized as a value. Therefore, deleting "@" is not required.

## 3.5.6 Precautions

### 1 Precautions on drawing

(1) Operator authentication

(a) Security level of the screen displayed at logout

When a security level (1 or more) is set for the screen displayed when logging out of the GOT, the screen for login is displayed after logging out of the GOT.

Set the security level of 0 for the screen displayed when logging out of the GOT.

☞ Section 3.5.4 Setting items

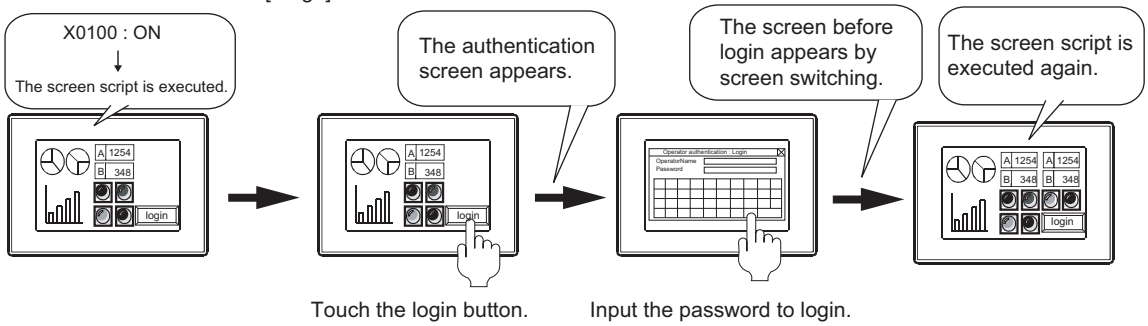
(b) When the authentication screen size is set to [Large]

When a login/logout touch switch is placed on a screen, do not set the screen script and the status observation function that operate with screen switching for the screen.

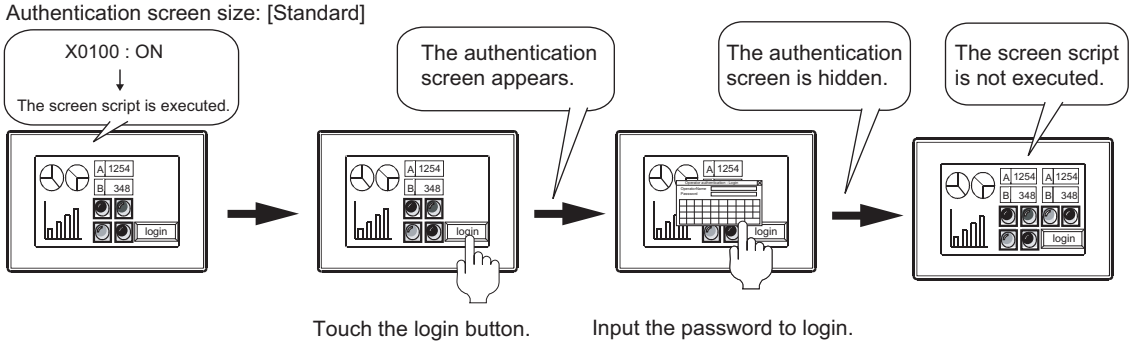
After authentication, the screen that is displayed before login appears again by screen switching.

Therefore, the screen script and the status observation function may be executed without intention if the functions are set for the screen.

Authentication screen size: [Large]




Authentication screen size: [Standard]




(2) Security level authentication

When the security level device value is changed with the numerical input function, the key window used for the value input is deleted after the input is completed, regardless of the setting for [Close cursor and key window when RET key is pressed] in the auxiliary setting (per project).

When [Display cursor and key window] is set for [Action when condition success] or [Action when switching screens] in the auxiliary setting (per project or screen), the key window is redisplayed.

The cursor position for redisplaying the key window is the same position set for switching screens.

☞ Section 4.4 Auxiliary Settings

## 2 Precautions on OS

(1) Operator authentication
For using the operator authentication, the required extended function OS varies according to the authentic type.
Install the following extended function OS on the GOT.
- Password authentication: Operator authentication
- External authentication: Operator authentication, RFID
- Fingerprint authentication: Operator authentication, Fingerprint Authentication

(2) Security level authentication
For using the security level authentication, do not install the extended function OS (Operator authentication) on the GOT.
When the extended function OS (Operator authentication) is installed on the GOT, the security level authentication cannot be used.
When the extended function OS (Operator authentication) is already installed on the GOT, delete the OS.

## 3 Precautions for hardware

(1) Connectable channel No.
To use the operator authentication (external authentication/fingerprint authentication), the external authentication device or fingerprint unit can be connected to the RS-232 interface built in the GOT (Channel No.8) only.
Do not set any channel number other than the channel No.8 in the communication settings.
Multiple external authentication devices or fingerprint units cannot be connected to one GOT.

(2) Temporary measures for failure of the external authentication device
When the external authentication device or fingerprint unit breaks down for the operator authentication (external authentication/fingerprint authentication), changing the authentic type to the password authentication using the utility is available in an emergency.
To change authentic types, the administrator password is required.
For how to change authentic types, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 6.2.7 Operator Information)

☞ GT15 User's Manual (Section 14.11 Operator info. Management)

## 4 Precautions for use

(1) Registration of external authentication ID
For using the operator authentication (external authentication/fingerprint authentication), set the external authentication ID for the operator information.
When the external authentication ID is not set, the corresponding user cannot log into the GOT.
When the authentic type is changed from [External auth (general)] to [Fingerprint authentication] with the utility, all the external authentication IDs are deleted. In that case, set the IDs again.

(2) Registration of fingerprint information
For the operator authentication (fingerprint authentication), a fingerprint can be registered for multiple fingerprint registration IDs.
Unauthorized login is possible depending on the usage. Before the registration, consider the operational rules for registering fingerprints.

## 5 Management of password and external authentication ID

(1) Solutions when forgetting the password or external authentication ID
Follow the solutions as below.

(a) Operator authentication

| Situation | Solution |
|---|---|
| When forgetting the password of an operator | Delete the operator information with the forgotten password, and register an operator information again. |
| When forgetting the external authentication ID<br>When losing the external authentication device | External authentication:<br>Check the operator information on the Operator information management screen, and then set the external authentication ID for the external authentication device again.<br>Fingerprint authentication:<br>Check the operator information on the Operator information management screen, and then set the fingerprint registration ID again on the Fingerprint information management screen. |
| When forgetting the administrator password or system security password | Install CoreOS.<br>When CoreOS is installed, the built-in flash memory of the GOT is formatted. (Each OS, project data, and others are deleted.)<br>Upload data to be backed up to a personal computer and memory card before installing CoreOS.<br>For installing CoreOS, refer to the following.<br>☞ GT16 User's Manual (Basic Utility) (Chapter 7 INSTALLATION OF COREOS, BOOTOS AND STANDARD MONITOR OS)<br>GT15 User's Manual (Chapter 18 INSTALLATION OF COREOS,BOOROS AND STANDARD MONITOR OS) |

(b) Security level authentication
Create a project data again. (Only passwords cannot be reset.)

(2) Making a note of the password

The already registered password cannot be checked later. Therefore, always make a note of the password.

When passwords are forgotten, security levels cannot be changed.

To prevent the password from being forgotten, it is recommended to fill out the following list.

Tear-off line

Password list

Installation name (No.): _____ Manager: _____

1. Keep this memo safe from loss.
2. Do not reveal the password.
   The GOT display may change depending on the security level.
3. As the security level No. is greater, the security level is highe

| Security level | | Password (Operator authentication: One-byte alphanumeric characters 1 to 16 digits), Security level authentication: One-byte numbers 1 to 8 digits) | Date of entry or change | Remarks |
|---|---|---|---|---|
| Level | User (operator or department) | | | |
| 8 | (John Mitsubishi) | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 2004.6.1 | Example |
| 8 | Manager of worksite (John Mitsubishi) | 8 8 8 8 8 8 8 8 | 2004.6.1 | Do not set the security function. |
| | | | | |
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# 3.6 System Information Setting

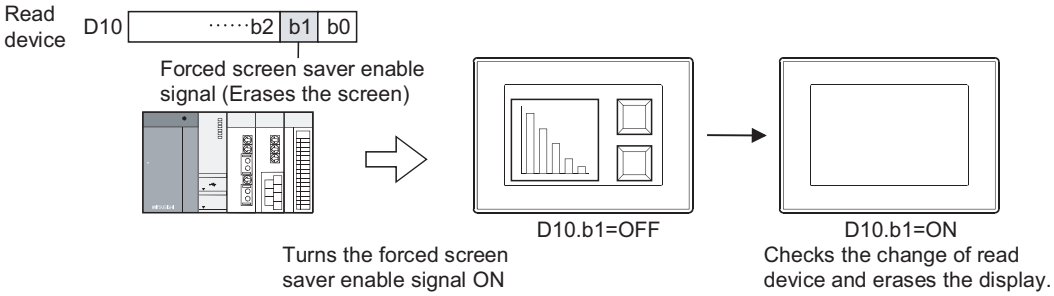
According to the data written to device, GOT operations (screen erasing, invalidating key input, etc) will be controlled via controller and GOT status will be notified to controller.
The following two types of devices are provided for setting the system information.

- Read device: controls GOT operation via controller
- Write device: notifies controller of GOT operation status

## 1 Controlling GOT operation (read device)

Controller writes the value to the read device specified for GOT operation and controls GOT operation.

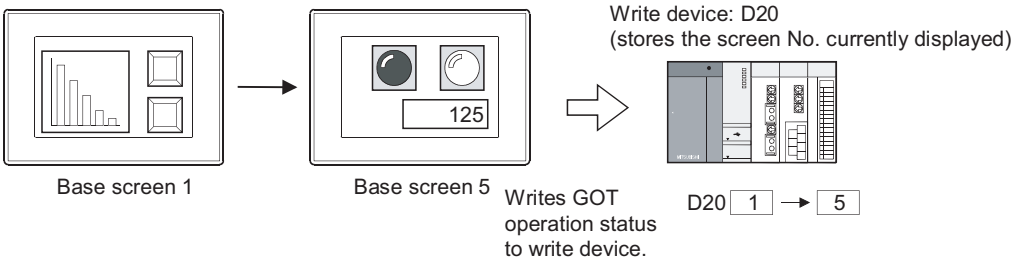
Example: Turning the GOT to screen save mode forcibly by controller.




## 2 Writing GOT status (write device)

GOT writes action status to write device to notify controller.

Example: Write the base screen No. currently displayed to the device.




**Point**

Monitoring system information data/update timing

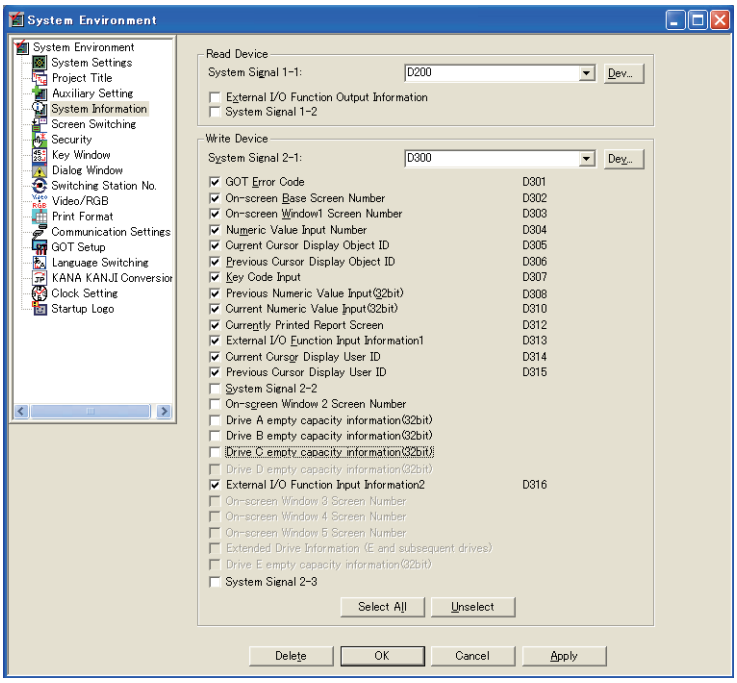
The following explains monitoring the read device set in the system information and deciding the timing to update the write device.

- Read device :monitored at intervals of GOT monitor period.
  The read device value needs to be longer compared to the interval of GOT monitor period.
  The monitor period value is stored in the GOT internal device (GS8).
  Section 2.9.1 GOT internal devices
- Write device :updated when the GOT operation status has changed.

## 3 Function overview

The following operations can be confirmed and controlled in the system information.

System information setting screen

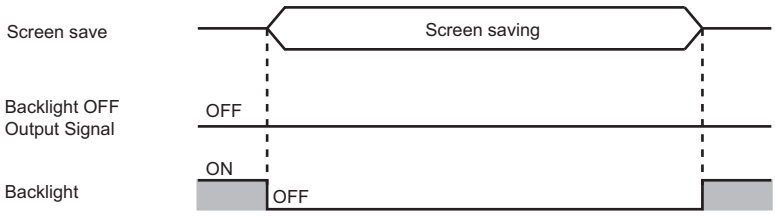
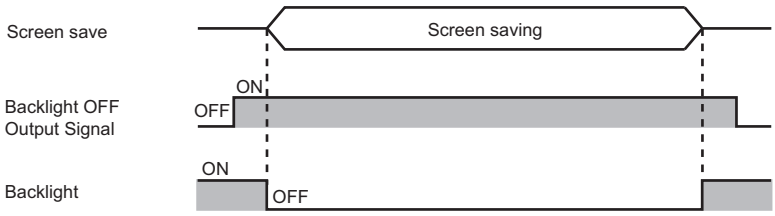



### (1) Read device

Read device

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 1-1 | Bit No. | Signal name | — | — |
| | b0 | Automatic Screen Saver Disable Signal | ON :Disables screen saver function (that turns monitor screen display OFF).<br>OFF :Enables screen saver function.<br>(☞ Section 3.6.4 5 Control of Screen Display) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b1 | Forced Screen Saver Enable Signal | ON :Forcibly turns the GOT into screen saver mode.<br>OFF : Common status (Displays screen again)<br>(☞ Section 3.6.4 5 Control of Screen Display) | |
| | b2 | Forced Screen Saver Touch-cancel Signal | ON :Disables screen saver when the screen is touched even during forced screen saving. (During ON, the Forced Screen Saver Touch-cancel Signal (System Signal 1-1. b1) operates at the rising.<br>OFF :Keeps the screen saving status even if the screen is touched during forced screen saving. (During OFF, the Forced Screen Saver Touch-cancel Signal operates as during ON.) | |
| | b3 | Key Code Read Complete Signal | ON :Turns off the key input signal (System signal 2-1. b3).<br>OFF :Does not clear the above signal.<br>(☞ Section 3.6.4 2 Confirm the input key code by input key) | |

(Continued to next page)

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 1-1 | Bit No. | Signal name | --- | --- |
| | b4 | Numeric Value Input Read Complete Signal | ON :Turns off the numeric value input signal (System signal 2-1. b4).<br>OFF :Does not turn off the above signal.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>* Checking the box for "Ascii input is targeted in the system information output" in Auxiliary Setting or turning on the GOT's internal device, GS450.b2 enables operations by the Ascii input function.<br>For GT10, the signal is always used for the numerical input function and Ascii input function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | b5 | Barcode Input Disable Signal (CH8 ) | ON :Disables bar code function.<br>OFF :Enables bar code function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | b6 | External device I/O complete signal (CH8) | ON :Turns off the external device input signal (CH8) (System signal 2-1. b6).<br>OFF :Does not turn off the above signal.<br>(☞ Section 13.3 Bar Code Function)<br>(☞ Section 13.9 RFID Function) | |
| | b7 | Backlight OFF Output Signal | ON :Turns OFF the backlight during screen saving.<br>OFF :The backlight is ON during screen saving.<br>The backlight behaviors differently depending on the [Screen save backlight] setting of the utility.<br>• When [Screen save backlight] is OFF (The backlight will be turned OFF.)<br>The setting of the utility is preceded.<br>The backlight will not be turned ON even if this signal is turned OFF.<br>  <br><br>• When [Screen save backlight] is ON (The backlight will not be turned OFF.)<br>The setting of this signal is preceded.<br>The backlight will be turned OFF when this signal is turned ON.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | b8 | Buzzer Three-shot Output Signal | ON :Outputs buzzer 3 times.<br>OFF :Does not output buzzer.<br>The buzzer length is the same with the [Buzzer volume] setting ([SHORT], [LONG]) of the GOT setup (utility). (When [OFF], the buzzer volume is the same as the [LONG] setting.) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | b9 | Key-In Disable Signal | ON :Disables all key-input.<br>OFF :Enables key-input. | |

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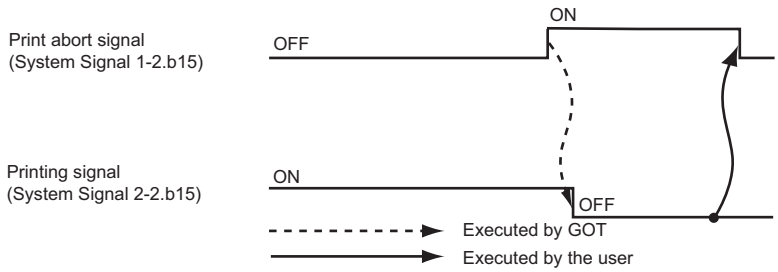
| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 1-1 | Bit No. | Signal name | --- | --- |
| | b10 | Hard copy setting validate signal | ON :Enables the hard copy output.<br>OFF :Disables the hard copy output.<br>(☞ Section 13.2 Hard Copy) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b11 | Must not be used | --- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b12 | Hard copy white/black reverse signal | ON :Outputs the monitor screen after reversing white/black display.<br>OFF :Outputs the monitor screen without reversing white/black display.<br>(☞ Section 13.2 Hard Copy) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b13 | GOT Error Reset Signal | ON :Processes the following signals.<br>• Stores "0" to [GOT error code storage area (Write Device)]<br>• Turns [GOT error detection signal (System signal 2-1, b13)] OFF.<br>• Clears system alarm messages.<br>OFF :Does not process the above signals.<br>(☞ Section 3.6.4 1 Confirm the error occurred in GOT) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b14 | Buzzer Output Signal | ON :Keeps buzzer.<br>OFF :Does not output buzzer.<br>Even if [Buzzer Volume] of GOT utility screen (Setup) is set as [None] , buzzer volume will be output when the bit is ON. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b15 | Buzzer One-shot Output Signal | ON :Outputs buzzer once.<br>OFF :Does not output buzzer.<br>The length of buzzer volume is same with the settings (Long, Short) made in [Buzzer Volume] of GOT utility. (When set as [None], buzzer volume is same as the setting of [Long].) | |
| External Iinput and output function/ output informati on *1 | b0 to15 | ---- | Functions for each bit differ depending on the GOT to be used. | |

(Continued to next page)

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 1-2 | Bit No. | Signal name | --- | --- |
| | b0 | File Access Error Reset Signal | ON :Batch-resets the File Access Error Signal (System Signal 2-2.b7, b8, b9) of the drive A, drive B, drive D and drive E.<br>OFF :Does not reset the File Access Error Signal (System Signal 2-2.b7, b8, b9) of the drive A, drive B, drive D and drive E.<br>When set to ON, the next File Access Error Signal will not be turned on. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b1 | RFID request signal (CH8 ) | ON :The GOT requests to read the data.<br>OFF :The GOT does not request to read the data.<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b2 | Bar code input disable signal (CH5) | ON :Disables bar code function.<br>OFF :Enables bar code function. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b3 | External device I/O complete signal (CH5) | ON : Turns off the external device input signal (CH5) (System signal 2-3. b0).<br>OFF : Does not turn off the above signal.<br>(☞ Section 13.3 Bar Code Function)<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b4 | RFID request signal (CH5) | ON :The GOT requests to read the data.<br>OFF :The GOT does not request to read the data.<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b5 | Bar code input disable signal (CH6) | ON :Disables bar code function.<br>OFF :Enables bar code function. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b6 | External device I/O complete signal (CH6) | ON : Turns off the external device input signal (CH6) (System signal 2-3. b1).<br>OFF : Does not turn off the above signal.<br>(☞ Section 13.3 Bar Code Function)<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b7 | RFID request signal (CH6) | ON :The GOT requests to read the data.<br>OFF :The GOT does not request to read the data.<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b8 | Bar code input disable signal (CH7) | ON :Disables bar code function.<br>OFF :Enables bar code function. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b9 | External device I/O complete signal (CH7) | ON : Turns off the external device input signal (CH7) (System signal 2-3. b2).<br>OFF : Does not turn off the above signal.<br>(☞ Section 13.3 Bar Code Function)<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b10 | RFID request signal (CH7) | ON :The GOT requests to read the data.<br>OFF :The GOT does not request to read the data.<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b11 to b12 | Must not be used | --- | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 1-2 | Bit No. | Signal name | --- | --- |
| | b13 | D drive automatic recovery confirmation complete signal | ON : Turns off the D drive automatic recovery signal (System Signal 2-2. b13).<br>OFF : Does not turn off the D drive automatic recovery signal (System Signal 2-2. b13).<br>These object functions cannot be set for GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b14 | Must not be used | --- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b15 | Print abort signal | ON :Aborts printing.<br>OFF :Not abort printing.<br><br>Printing (printing by the hard copy function or report function) is aborted at the rising edge of this signal.<br><br>In response to the abort of printing, GOT turns off the Printing signal (System Signal 2-2.b15).<br>The user should turn off this signal after confirming that the printing signal is turned off.<br><br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 External input and output function/output information

Functions for each bit of the external input and output function/output information differ depending on the GOT to be used.

(1) GT16 and GT15

| Name | | Description | Model |
|---|---|---|---|
| Bit No. | Signal name | ---- | ---- |
| b0 to b15 | Output signal Y0 to YF | With writing data to be output into the bits, external outputs (lamps and relays) can be executed. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(2) GT11 and GT10

| Name | | Description | Model |
|---|---|---|---|
| Bit No. | Signal name | ---- | ---- |
| b0 to 5 | Operation switch LED control signal | Operation switch LEDs (L1 to L6) for the GT11 Handy GOT are turned on or off.<br>ON :Turns on operation switch LEDs.<br>OFF :Turns off operation switch LEDs. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| b6 | Grip switch LED control signal | The bit is enabled only when [Depend on Bit Device condition] for the handy GOT in the system environment is checked.<br>Do not use the bit when [Always OFF] for the handy GOT in the system environment is checked.<br>ON :Turns on a grip switch LED.<br>OFF :Turns off a grip switch LED. | |
| b7 to b11 | Reserved | ---- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| b12 | Backlight control enable bit | ON: Enables the backlight control (blinking, color specification).<br>OFF: Disables the backlight control. (The backlight color is the color specified in the Auxiliary tab on the Screen Property screen.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| b13 | Backlight blinking | ON :Blinks the backlight.<br>OFF :Does not blink the backlight. | |
| b14 to b15 | Backlight color specification | Controls the backlight color.<br>The backlight color varies depending on the type of GOT.<br>• For GT1030 and GT1020 (backlight color: green, red, and orange)<br>b14 is OFF and b15 is OFF : Not lit<br>b14 is OFF and b15 is ON : Red<br>b14 is ON and b15 is OFF : Green<br>b14 is ON and b15 is ON : Orange<br>• For GT1030 and GT1020 (backlight color: white, red, and pink)<br>b14 is OFF and b15 is OFF : Not lit<br>b14 is OFF and b15 is ON : Red<br>b14 is ON and b15 is OFF : White<br>b14 is ON and b15 is ON : Pink<br>• For GT10 other then those above<br>The signal is invalid. | |

(2) Write device

Write device

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-1 | Bit No. | Signal name | --- | --- |
| | b0 | Screen saving signal | ON :GOT is in screen saver mode.<br>OFF :GOT is not in screen saver mode. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b1 | GOT Ready Signal | ON :GOT status normal at power-on<br>OFF :GOT status abnormal at power-on<br>If the signal will not be ON by resetting the GOT again, its possible cause is hardware error of GOT. Consult your local Mitsubishi service center or representative. | |
| | b2 | Must not be used | --- | |
| | b3 | Key Input Signal | ON :Key input done<br>OFF :No key input<br>(☞ Section 3.6.4 2 Confirm the input key code by input key) | |
| | b4 | Numeric Value Input Signal | ON :The value input by value input function has been updated.<br>OFF :The value input by value input function has not been updated.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>Checking the box for "Ascii input is targeted in the system information output" in Auxiliary Setting or turning on the GOT's internal device, GS450.b2 enables operations by the Ascii input function. (For GT10, the signal is always used for the numerical input function and Ascii input function.)<br>The signal does not switch when a numerical value is input to the numerical input box that the user ID is not set. (For GT10, the signal switches even when a numerical value is input to the numerical input box in which the user ID is not set.) | |
| | b5 | Human Sensor Detection Signal | ON :The human sensor has detected human motion.<br>OFF :The human sensor has detected no human motion.<br>(When it has not detected within the period specified in the GOT's utility.)<br>(☞ Section 3.6.4 5 Control of Screen Display)<br>This signal turns ON for approx. 60 seconds after GOT startup due to the sensor's characteristic.<br>Applicable to GT1695, GT1685, GT1595, and GT1585. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b6 | External device I/O signal (CH8) | • When the channel No.8 is used for the barcode function<br>ON :The data read by bar code reader has been stored into the specified device.<br>OFF :No data has been read by bar code reader.<br>(☞ Section 13.3 Bar Code Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | | • When the channel No.8 is used for the RFID function<br>ON :The data read by the RFID reader/writer is stored into the specified device. (With the dedicated protocol)<br>The data transfer to the RFID controller is completed. (With the nonprocedural protocol)<br>OFF :[External device I/O complete signal (CH8) (System signal 1-1.b6) turns off [RFID request signal (CH8) (System signal 1-2.b1)].<br>(☞ Section 13.9 RFID Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b7 | Hard copy output signal | ON :Printing by the hard copy function<br>OFF :Hard copy printing has been completed or aborted.<br>(☞ Section 13.2 Hard Copy) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b8 | Report output signal | ON :Printing by the report function<br>OFF :Report printing has been completed or aborted.<br>(☞ Section 13.1 Report Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b9 | Must not be used | --- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b10 | Recipe Processing Signal | ON :Recipe being processed (Write/Read operation)<br>OFF :Recipe process completed, or interrupted.<br>(☞ Section 12.2 Recipe Function) | |

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| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-1 | Bit No. | Signal name | --- | --- |
| | b11 | Key window Output Signal | ON :Key window being displayed<br>OFF :Key window not displayed | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b12 | Hardcopy Sub-signal | ON :The number of files (file No.) for screen data stored in memory card by hard copy function exceeds 9900<br>OFF :The number of files (file No.) of screen data stored in memory card by hard copy function is less than 9900<br>(☞ Section 13.2 Hard Copy) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b13 | GOT Error Detection Signal | ON :GOT error has occurred.<br>OFF :Normal<br>(☞ Section 3.6.4 1 Confirm the error occurred in GOT) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b14 | Numeric Value Error Detection Signal | ON :The value exceeding the input range has been stored into the write target device of numeric value input function (Check this item on screen switching)<br>OFF :The value within the input range has been stored into the write target device of numeric value input function.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>When no input range formula is preset to the numeric input object, detection is not performed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b15 | Printer error detection signal | ON :A printer error occurs during printing because of the powered off printer, cable disconnection, no paper, paper jam, and others. (The signal turns off when causes of the error are removed.)<br>OFF :Normal | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GOT Error Code | | | The details of the error occurred on the GOT are stored.<br>(☞ Section 3.6.4 1 Confirm the error occurred in GOT) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| On-screen Base Screen Number | | | The base screen being displayed is stored.<br>The stored screen number is as follows. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| On-screen Window 1 Screen Number | | | The number of the window screen (Overlap window 1) being displayed is stored.<br>The stored screen number is as follows. | |

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| When displaying other than user-created screens (utility, RGB and others) | -1 | Stores the number of the user-created base screen previously displayed |
| During screen switching | 0 | |
| Base screen being displayed | 1 to 32767 | 1 to 9999 |

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| Not displayed or during screen switching | 0 | |
| The number of overlap window 1 being displayed | 1 to 32767 | 1 to 9999 |

Confirm the window screen status of the superimpose window 1 and 2 by the screen switching device. (☞ Section 3.2 Switching Screen Device Setting)

(Continued to next page)

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-1 | Bit No. | Signal name | --- | --- |
| Numeric Value Input Number | | | The user ID number of the numerical input function is stored when the input value is determined.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>When the input value is determined, the numerical input No. is stored and the Numeric Value Input Signal (System Signal 2-1.b4) is turned on.<br>Operates with the ASCII input function if check [Ascii input is targeted in the system information output] of the Auxiliary Setting or turn on the GOT internal device GS450.b2.<br>Applicable to only GT1595-X, GT1585V-S, and GT1585-S. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Current Cursor Display Object ID | | | The object ID No. of the object on which the cursor is currently displayed is stored.<br>(☞ Section 3.6.4 3 Confirmation of the numeric value input determination timing)<br>"0" is stored when delete the cursor if check [When the cursor deleted, system information is cleared] or turn on the GOT internal device GS450.b3. | |
| Previous Cursor Display Object ID | | | The object ID No. of the object on which the cursor is previously displayed is stored.<br>(☞ Section 3.6.4 3 Confirmation of the numeric value input determination timing)<br>"0" is stored when delete the cursor if check [When the cursor deleted, system information is cleared] or turn on the GOT internal device GS450.b3. | |
| Key Code Input | | | When inputting values with the input key (Numerical input, ASCII input or touch switch), the specified key code is stored.<br>(☞ Section 3.6.4 2 Confirm the input key code by input key)<br>When a key code is stored, the Key Input Signal (System Signal 2-1.b3) is turned on. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Previous Numeric Value Input (32bit) | | | The previous value (32 bits) before changing with the numerical input function is stored.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>Effective only for the numerical input object to which the user ID is set. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Current Numeric Value Input (32bit) | | | The input value (32 bits) determined with the numerical input function is stored.<br>(☞ Section 7.1 Numerical Display/Numerical Input)<br>Effective only for the numerical input object to which the user ID is set. | |
| Printing report number | | | The screen number of the report screen currently printed is stored.<br>(☞ Section 13.1 Report Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| External I/O function/input information 1 | b0 to b7 | Input signal X0 to X7 | Input data are written in the bits.<br>An external input can take up to three seconds to write data in a bit.<br>For avoiding the delay time, use GOT internal devices (GB10 to GB25, GB30 to GB37, GB50 to GB57).<br>(☞ Section 13.7 External I/O/Operation Panel) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b8 | Power status notification signal | The status of the power supply for an external I/O device is notified.<br>ON :Without the power supply<br>OFF :With the power supply | |
| | b9 to b15 | Reserved | ---- | |
| Current Cursor Display User ID | | | The user ID No. of the object on which the cursor is currently displayed is stored.<br>(☞ Section 3.6.4 3 Confirmation of the numeric value input determination timing)<br>Operates with the ASCII input function if check [Ascii input is targeted in the system information output] of the Auxiliary Setting or turn on the GOT internal device GS450.b2.<br>Applicable to only GT1595-X, GT1585V-S, and GT1585-S.<br>"0" is stored when delete the cursor if check [When the cursor deleted, system information is cleared] or turn on the GOT internal device GS450.b3. | GT16 GT15 SoftGOT1000 GT11 GT10 |

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| Name | | | Description | Model |
|---|---|---|---|---|
| | Bit No. | Signal name | --- | --- |
| Previous Cursor Display User ID | | | The user ID No. of the object on which the cursor is previously displayed is stored.<br>(☞ Section 3.6.4 4 Confirm cursor's display position)<br>Operates with the ASCII input function if check [Ascii input is targeted in the system information output] of the Auxiliary Setting or turn on the GOT internal device GS450.b2.<br>Applicable to only GT1595-X, GT1585V-S, and GT1585-S.<br>"0" is stored when delete the cursor if check [When the cursor deleted, system information is cleared] or turn on the GOT internal device GS450.b3. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| System Signal 2-2 | b0 | Drive A File Accessing Signal | ON :File accessing in the drive A<br>OFF :Not file accessing in the drive A | |
| | b1 | Drive B File Accessing Signal | ON :File accessing in the drive B<br>OFF :Not file accessing in the drive B | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b2 | Drive C File Accessing Signal | ON :File accessing in the drive C<br>OFF :Not file accessing in the drive C | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b3 | Drive D File Accessing Signal | ON :File accessing in the drive D<br>OFF :Not file accessing in the drive D<br>These object functions cannot be set for GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b4 | Drive A Full Signal | ON :The empty capacity of the drive A is less than 1K byte.<br>OFF :The empty capacity of the drive A is 1K bytes or more. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b5 | Drive B Full Signal | ON :The empty capacity of the drive B is less than 1K byte.<br>OFF :The empty capacity of the drive B is 1K bytes or more. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b6 | Drive D Full Signal | ON :The empty capacity of the drive D is less than 1K byte.<br>OFF :The empty capacity of the drive D is 1K bytes or more.<br>These object functions cannot be set for GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b7 | Drive A File Access Error Signal | ON :Drive A file access error<br>OFF :Drive A file access is normal. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b8 | Drive B File Access Error Signal | ON :Drive B file access error<br>OFF :Drive B file access is normal. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b9 | Drive D File Access Error Signal | ON :Drive D file access error<br>OFF :Drive D file access is normal.<br>These object functions cannot be set for GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |

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| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-2 | Bit No. | Signal name | --- | --- |
| | b10 | Must not be used | --- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b11 | Cursor Displaying Signal | ON :Displaying the numerical input/ASCII input cursor<br>OFF :Not displaying the numerical input/ASCII input cursor | |
| | b12 | Built-in Battery Voltage Drop Signal | ON :A voltage drop of the GOT built-in battery is detected.<br>OFF :The voltage of the GOT built-in battery is normal.<br>The battery backup data is guaranteed within the data backup time after this signal switches ON, however, replace the battery immediately.<br>For the data backup time, refer to the following manual.<br>☞ • GT15 User's Manual (Section 9.11.4 Battery Life)<br>• GT11 User's Manual (Section 17.4 Battery Voltage Low Detectionand Battery Replacement) | |
| | b13 | D drive automatic recovery signal | ON : Notifies that the D drive has been recovered automatically.<br>OFF : Does not notify that the D drive has been recovered automatically.<br>The bit cannot be set for the GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b14 | Backlight Shutoff Detection Signal | ON :A blown backlight bulb of GOT is detected.<br>OFF :The backlight of GOT is normal.<br>The bit cannot be set for the GT104□, GT1030, and GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b15 | Printing signal | ON :Printing (printing by the hard copy function or report function)<br>OFF :Printing has been finished or aborted (printing by the hard copy function or report function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| On-screen Window 2 screen number | | | Check this item when store the window screen (overlap window 2) being displayed.<br>The screen number to be stored is as follows.<br>Confirm the window screen status of the superimpose window 1 and 2 by the screen switching device. (☞ Section 3.2 Switching Screen Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Drive A empty capacity information (32bit) | | | Check this item when store the empty capacity (32 bits) of the drive A. (Unit, byte) | GT16 GT15 SoftGOT1000 GT11 GT10 |

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| Not displayed or during screen switching | 0 | |
| The screen number of overlap window 2 being displayed | 1 to 32767 | 1 to 9999 |

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| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-2 | Bit No. | Signal name | ---- | ---- |
| Drive B empty capacity information (32bit) | | | Check this item when store the empty capacity (32 bits) of the drive B. (Unit, byte) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Drive C empty capacity information (32bit) | | | Check this item when store the empty capacity (32 bits) of the drive C. (Unit, byte) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Drive D empty capacity information (32bit) | | | Stores the empty capacity (32 bits) of the drive D. (Unit, byte) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| External I/O function/input information 2 | b0 to b7 | Input signal X8 to XF | Input data are written in the bits.<br>An external input can take up to three seconds to write data in a bit.<br>For avoiding the delay time, use GOT internal devices (GB10 to GB25, GB30 to GB37, GB50 to GB57).<br>(☞ Section 13.7 External I/O/Operation Panel) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b8 to b15 | Reserved | ---- | GT16 GT15 SoftGOT1000 GT11 GT10 |
| On-screen Window 3 screen number | | | Check this item when store the window screen (overlap window 3) being displayed.<br>The screen number to be stored is as follows. | GT16 GT15 SoftGOT1000 GT11 GT10 |

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| Not displayed or during screen switching | 0 | |
| The screen number of overlap window 3 being displayed | 1 to 32767 | 1 to 9999 |

| On-screen Window 4 screen number | Check this item when store the window screen (overlap window 4) being displayed.<br>The screen number to be stored is as follows. | GT16 GT15 SoftGOT1000 GT11 GT10 |
|---|---|---|

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| Not displayed or during screen switching | 0 | |
| The screen number of overlap window 4 being displayed | 1 to 32767 | 1 to 9999 |

| On-screen Window 5 screen number | Check this item when store the window screen (overlap window 5) being displayed.<br>The screen number to be stored is as follows. | |
|---|---|---|

| Screen displayed | Data format of the screen switching device | |
|---|---|---|
| | BIN | BCD |
| Not displayed or during screen switching | 0 | |
| The screen number of overlap window 5 being displayed | 1 to 32767 | 1 to 9999 |

(Continued to next page)

Write device

| Name | | | Description | Model |
|---|---|---|---|---|
| | Bit No. | Signal name | --- | --- |
| Extended Drive Information (E and subsequent drives) | | | Check this item when storing the drive information for the drive E. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | b0 | Drive E File Accessing Signal | ON :File accessing in the drive E<br>OFF :Not file accessing in the drive E | |
| | b1 | Drive E Full Signal | ON :The empty capacity of the drive E is less than 1K byte.<br>OFF :The empty capacity of the drive E is 1K bytes or more. | |
| | b2 | Drive E File Access Error Signal | ON :Drive E file access error<br>OFF :Drive E file access is normal. | |
| | b3 to b15 | Reserved | ---- | |
| Drive E empty capacity information(32bit) | | | Check this item when store the empty capacity (32 bits) of the drive E. (Unit, byte) | |

| Name | | | Description | Model |
|---|---|---|---|---|
| System Signal 2-3 | Bit No. | Signal name | ---- | ---- |
| | b0 | External device I/O signal (CH5) | • When the channel No.5 is used for the barcode function<br>ON :The data read by bar code reader has been stored into the specified device.<br>OFF :No data has been read by bar code reader.<br>(☞ Section 13.3 Bar Code Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | | • When the channel No.5 is used for the RFID function<br>ON :The data read by the RFID reader/writer is stored into the specified device. (With the dedicated protocol)<br>The data transfer to the RFID controller is completed. (With the nonprocedural protocol)<br>OFF :[External device I/O complete signal (CH5) (System signal 1-2.b3)] turns off [RFID request signal (CH5) (System signal 1-2.b4)].<br>(☞ Section 13.9 RFID Function) | |
| | b1 | External device I/O signal (CH6) | • When the channel No.6 is used for the barcode function<br>ON :The data read by bar code reader has been stored into the specified device.<br>OFF :No data has been read by bar code reader.<br>(☞ Section 13.3 Bar Code Function) | |
| | | | • When the channel No.6 is used for the RFID function<br>ON :The data read by the RFID reader/writer is stored into the specified device. (With the dedicated protocol)<br>The data transfer to the RFID controller is completed. (With the nonprocedural protocol)<br>OFF :[External device I/O complete signal (CH6) (System signal 1-2.b6)] turns off [RFID request signal (CH6) (System signal 1-2.b7)].<br>(☞ Section 13.9 RFID Function) | |
| | b2 | External device I/O signal (CH7) | • When the channel No.7 is used for the barcode function<br>ON :The data read by bar code reader has been stored into the specified device.<br>OFF :No data has been read by bar code reader.<br>(☞ Section 13.3 Bar Code Function) | |
| | | | • When the channel No.7 is used for the RFID function<br>ON :The data read by the RFID reader/writer is stored into the specified device. (With the dedicated protocol)<br>The data transfer to the RFID controller is completed. (With the nonprocedural protocol)<br>OFF :[External device I/O complete signal (CH7) (System signal 1-2.b9)] turns off [RFID request signal (CH7) (System signal 1-2.b10)].<br>(☞ Section 13.9 RFID Function) | |
| | b3 to b15 | Must not be used | ---- | |

## 3.6.1 List of relevant object items

A list of object items related to System Information is shown below.

○ : Relevant, — : Irrelevant

| System signal 1-1 (Read device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| b0 | Automatic Screen Saver Disable Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Forced Screen Saver Enable Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Forced Screen Saver Touch-cancel Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Key Code Read Complete Signal | — | — | — | ○ | — | — | ○ | — | — | ○ | ○ | ○ | ○ | ○ | — | ○ | — | — | — | — | — | — | — |
| b4 | Numeric Value Input Read Complete Signal | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Bar code input invalid signal (CH8) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O complete signal (CH8) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Backlight OFF Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Buzzer Three-shot Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Key-In Disable Signal | — | ○ | — | ○ | — | — | ○ | — | — | ○ | ○ | ○ | ○ | ○ | — | ○ | — | — | — | — | — | — | — |
| b10 | Hard copy setting validate signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Hard copy white/black reverse signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | GOT Error Reset Signal | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | ○ | — | — | — | — | — | — | — | — |
| b14 | Buzzer Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Buzzer One-shot Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 1-1 (Read device) | | Graph /Meter | | Trigger → action | | | | Rec-ipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b0 | Automatic Screen Saver Disable Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Forced Screen Saver Enable Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Forced Screen Saver Touch-cancel Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Key Code Read Complete Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Numeric Value Input Read Complete Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Bar code input invalid signal (CH8 ) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O complete signal (CH8) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Backlight OFF Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Buzzer Three-shot Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Key-In Disable Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b10 | Hard copy setting validate signal | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Hard copy white/black reverse signal | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | GOT Error Reset Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Buzzer Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Buzzer One-shot Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System Information (Read device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| External I/O function/output information (GT16, GT15) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/output information (GT11, GT10) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 to b5 | Operation switch LED control signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | Grip switch LED control signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 1-2 (Read device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| b0 | Fail Access Error Reset Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | RFID request signal (CH8) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Bar code input disable signal (CH5) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | External device I/O complete signal (CH5) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | RFID request signal (CH5) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Bar code input disable signal (CH6) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O complete signal (CH6) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | RFID request signal (CH6) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System Information (Read device) | | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| External I/O function/output information (GT16, GT15) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/output information (GT11, GT10) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b0 to b5 | Operation switch LED control signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | Grip switch LED control signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 1-2 (Read device) | | Graph /Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b0 | Fail Access Error Reset Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | RFID request signal (CH8) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Bar code input disable signal (CH5) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | External device I/O complete signal (CH5) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b4 | RFID request signal (CH5) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Bar code input disable signal (CH6) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O complete signal (CH6) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b7 | RFID request signal (CH6) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 1-2 (Read device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| b8 | Bar code input disable signal (CH7) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | External device I/O complete signal (CH7) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | RFID request signal (CH7) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | D drive automatic recovery confirmation complete signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Print abort signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 1-2 (Read device) | | Graph /Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b8 | Bar code input disable signal (CH7) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | External device I/O complete signal (CH7) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b10 | RFID request signal (CH7) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b13 | D drive automatic recovery confirmation complete signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Print abort signal | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-1 (Write device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| b0 | Screen Saving Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | GOT Ready Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Key Input Signal | — | ○ | — | ○ | — | — | ○ | — | — | ○ | ○ | ○ | ○ | ○ | — | ○ | — | — | — | — | — | — | — |
| b4 | Numeric Value Input Signal | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Human Sensor Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O signal (CH8) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Hard copy output signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Report output signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Recipe Processing Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Key Window Output Signal | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Hardcopy Sub-signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | GOT Error Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Numeric Value Error Detection Signal | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Printer error detection signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-1 (Write device) | | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b0 | Screen Saving Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | GOT Ready Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Key Input Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b4 | Numeric Value Input Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b5 | Human Sensor Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | External device I/O signal (CH8) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Hard copy output signal | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Report output signal | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b10 | Recipe Processing Signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Key Window Output Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| b12 | Hardcopy Sub-signal | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | GOT Error Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Numeric Value Error Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Printer error detection signal | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System Information (Write device) | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| GOT Error Code | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | ○ | — | — | — | — | — | — | — | — |
| On-screen Base Screen Number | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window1 Screen No. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Numeric Value Input Number | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Current Cursor Display Object ID | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Previous Cursor Display Object ID | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Key Code Input | — | ○ | — | ○ | — | — | ○ | — | — | ○ | ○ | ○ | ○ | ○ | — | ○ | — | — | — | — | — | — | — |
| Previous Numeric Value Input (32 bit) | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Current Numeric Value Input (32 bit) | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Printing report number | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/input information 1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Current Cursor Display User ID | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Previous Cursor Display User ID | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System Information (Write device) | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| GOT Error Code | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Base Screen Number | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window1 Screen No. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Numeric Value Input Number | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Current Cursor Display Object ID | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Previous Cursor Display Object ID | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Key Code Input | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Previous Numeric Value Input (32 bit) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Current Numeric Value Input (32 bit) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Printing report number | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/input information 1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Current Cursor Display User | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Previous Cursor Display User ID | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-2 (Write device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| b0 | Drive A File Accessing Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b1 | Drive B File Accessing Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b2 | Drive C File Accessing Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Drive D File Accessing Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Drive A Full Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b5 | Drive B Full Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b6 | Drive D Full Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Drive A File Access Error Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b8 | Drive B File Access Error Signal | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| b9 | Drive D File Access Error Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Cursor Displaying Signal | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Built-in Battery Voltage Drop Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | D drive automatic recovery signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Backlight Shutoff Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Printing signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-2 (Write device) | | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| b0 | Drive A File Accessing Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b1 | Drive B File Accessing Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b2 | Drive C File Accessing Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b3 | Drive D File Accessing Signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b4 | Drive A Full Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b5 | Drive B Full Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b6 | Drive D Full Signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b7 | Drive A File Access Error Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b8 | Drive B File Access Error Signal | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b9 | Drive D File Access Error Signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b11 | Cursor Displaying Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b12 | Built-in Battery Voltage Drop Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b13 | D drive automatic recovery signal | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b14 | Backlight Shutoff Detection Signal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| b15 | Printing signal | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System Information (Write device) | | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| On-screen Window 2 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive A empty capacity information (32bit) | | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| Drive B empty capacity information (32bit) | | — | — | — | — | — | — | — | — | — | ○ | ○ | ○ | — | — | — | ○ | — | — | — | — | — | — | — |
| Drive C empty capacity information (32bit) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive D empty capacity information (32bit) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/input information 2 | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 3 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 4 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 5 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Extended Drive Information (E and subsequent drives) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive E empty capacity information(32bit) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-3 (Write device) | Lamp, Switch | | Numerical, Character display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lamp display | Touch switch | Numerical display | Numerical input | Data List | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| External device I/O signal (CH5) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External device I/O signal (CH6) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External device I/O signal (CH7) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

| System signal 2-2 (Write device) | | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bit No. | Description | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| On-screen Window 2 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive A empty capacity information (32bit) | | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive B empty capacity information (32bit) | | — | — | — | — | ○ | — | ○ | ○ | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive C empty capacity information (32bit) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive D empty capacity information (32bit) | | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| External I/O function/input information 2 | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 3 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 4 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| On-screen Window 5 screen number | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Extended Drive Information (E and subsequent drives) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Drive E empty capacity information(32bit) | | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, — : Irrelevant

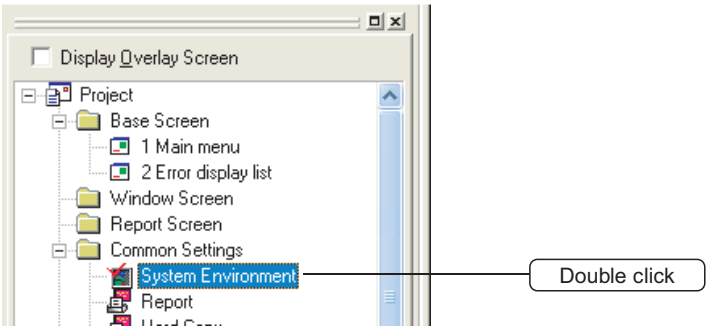
| System signal 2-3 (Write device) | Graph /Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report function | Hardcopy | Bar code function | Video display | RGB display | Remote personal computer operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| External device I/O signal (CH5) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| External device I/O signal (CH6) | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |
| External device I/O signal (CH7) | — | — | — | — | — | — | — | — | | — | ○ | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — |

## 3.6.2 Setting methods

1. Select [Common] → [System Environment] from the menu.
2. Double click on [System Information] in "System Environment" dialog box.
3. As the setting dialog box appears, make the settings according to the following explanation.

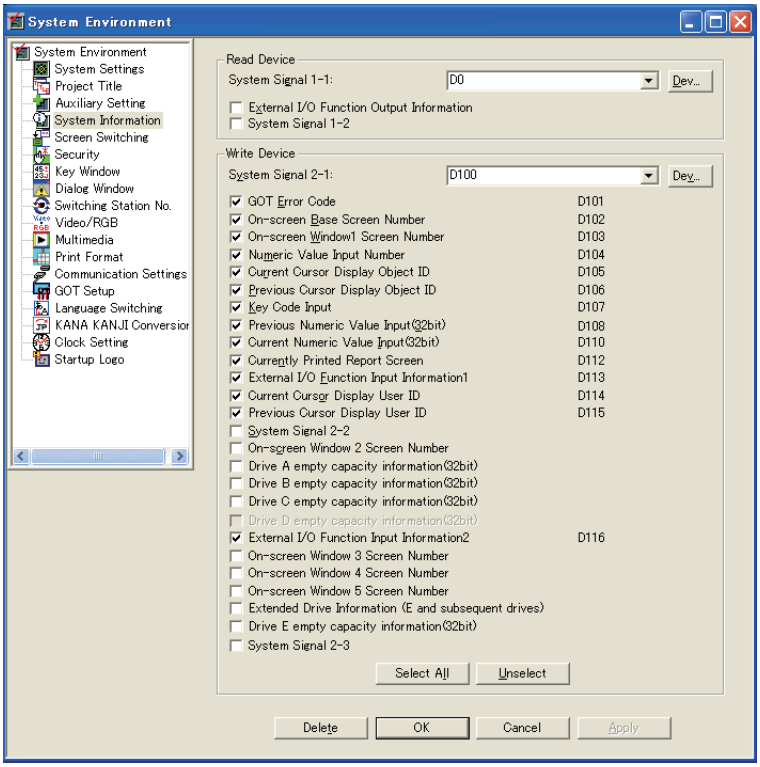
**Remark** When making the settings in project work space

Double click on [System Environment] to display "System Environment" dialog box, and then double click on [System Information] there.




## 3.6.3 Setting items

Set devices and functions to be used in the system information.




Example: Setting screen for GT16

| Item | Description | Model |
|---|---|---|
| Read Device | Set this item to control GOT operations with the device of controller.*1<br>If a device No. is assigned to the system signal 1-1, the devices of the following Nos. will be consecutively assigned to the items following to the system signal 1-1 automatically.<br>Check only the items to be used. (The unchecked items will not be set.) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Write Device | Set this item to write GOT operations to controller.*1<br>If the device No. is assigned to the system signal 2-1 or the base screen currently displayed is set, the devices of the following Nos. will be consecutively assigned to the items following to the system signal 2-1.<br>Check only the items to be used. (The unchecked items will not be set.) | |
| Select All/Unselect | Selects/Deselects all the items selected in [Write Device]. | |
| Delete | Deletes the set read and write devices. | |

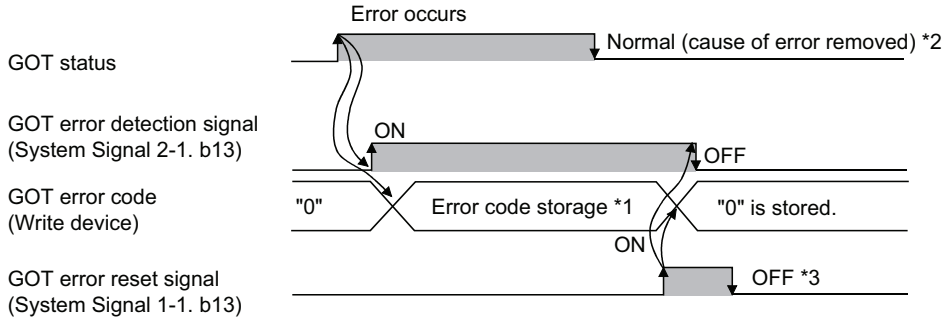
*1 The GOT internal device (GD) can also be used.
When not communicate with the controller, specify the internal device.

## 3.6.4 Application example

### 1 Confirm the error occurred in GOT

The code of the error occurred in GOT can be confirmed.
The error codes within the range of error code 300 to 699 are displayed.
For the details of error code, refer to the following manuals.

☞ GT□ User's Manual

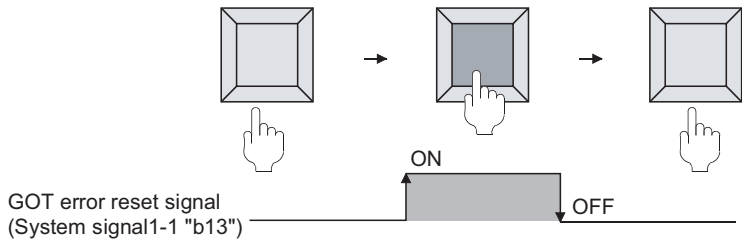



*1. When multiple errors occur simultaneously, the latest error code will be stored.
*2. The "GOT Error Code" is not cleared automatically even if removing the error source.
Clear the error code by using the GOT error reset signal.
*3. Switch the "GOT Error Reset Signal" off after confirming the "GOT Error Detection Signal" is switched off.
If the "GOT Error Rest Signal" is ON, the "GOT Error Code" will be reset when an error occurs the next.

**Hint!**

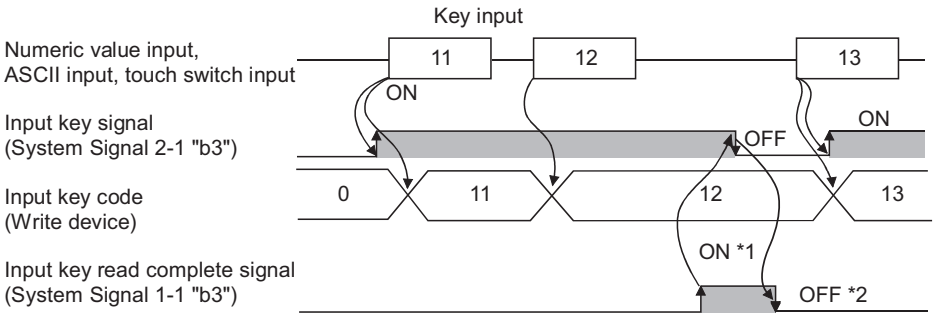
Error Reset Method

An error can be reset by using GOT as explained below.
When the cause of error is removed, error can be reset by touching the touch switch.
Example:Create the touch switch that keeps GOT error reset signal ON only while being touched.



## 2 Confirm the input key code by input key

The input key code can be confirmed by input key (Numeric value input, ASCII input, touch switch).

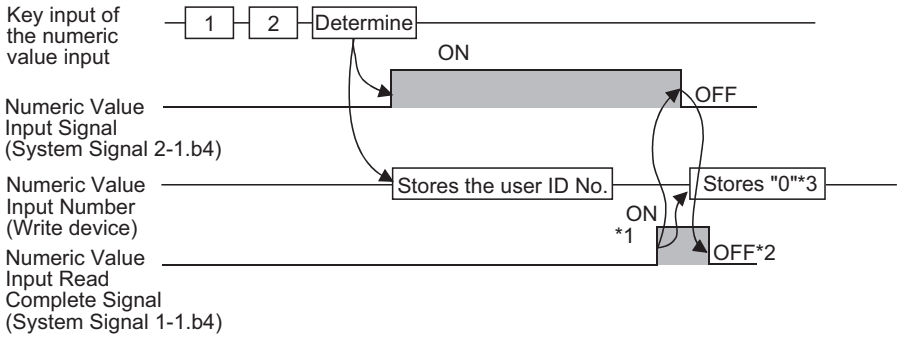



*1. When key input is completed, the stored key code is held.
When the "Key code read complete signal" turns ON, the "Input key signal" turns OFF.

*2. Switch the "Key Code Read Complete Signal" OFF after confirming the "Input Key Signal" is switched off.
If the "Key Code Read Complete Signal" is ON, the stored key code will be reset at the next key input.

## 3 Confirmation of the numeric value input determination timing

The timing of which the input value was determined can be confirmed with the user ID written in the numerical input No.




*1 After the numeric value input determination, the stored user ID No. is held.
The Numeric Value Input Signal is cleared by the "Numeric Value Input Read Complete Signal" ON.

*2 Switch the "Numeric Value Input Read Complete Signal" OFF after confirming the "Numeric Value Input Signal" is switched off.
If the "Numeric Value Input Read Complete Signal" is ON, the user ID will not be stored or the Numeric Value Input Signal cannot be switched ON.

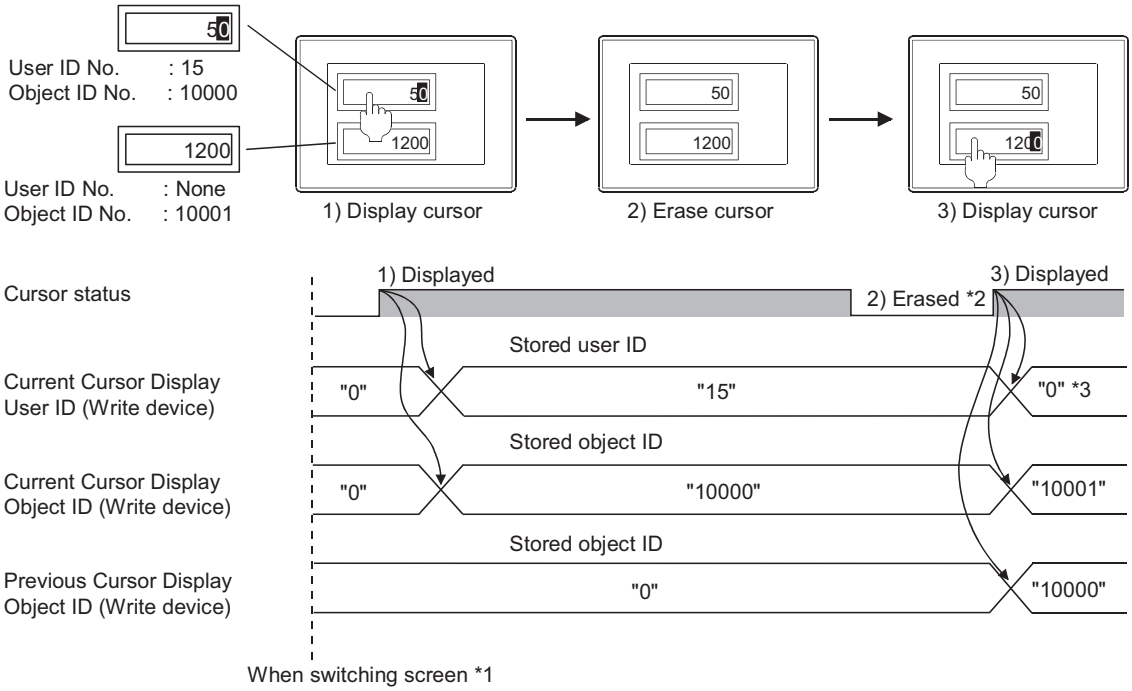
*3 For GT10, the device does not store "0". (The value stored in the numeric value input number does not change.)

## 4 Confirm cursor's display position

The cursor's display position can be confirmed by writing the data of the object (numeric value input function, ASCII input function) in which cursor is located into the device.
The object information to be written are classified into the following types:

User ID : Can be set to any object.
Set user ID on setting dialog box of each object.
Object ID : Automatically set when setting an object with GT Desiger2.

Example: Operation example of cursor display




*1 If a cursor is not displayed when switching screens, "0" will be stored.
*2 The stored user ID and object ID can be held even if a cursor is erased.
*3 If a cursor is displayed at the object (numeric input function, ASCII input function) with a user ID unset, the cursor position numeric value input will be "0".
*4 The Current or Previous Cursor Display User ID operates with the ASCII input function if the GOT internal device GS450.b2 is switched ON.

**Hint!** Deleting the stored user ID and object ID when a cursor is deleted.

Turn ON the GOT internal device (monitor common control: (GS450.b3) to store "0" when a cursor is deleted.
For details of GOT internal devices, refer to the following.

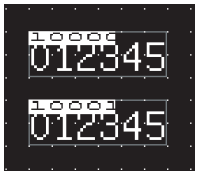
Section 2.9.1 GOT internal devices

**Remark** Object ID

Object ID will be set automatically when object is set.
The object ID cannot be changed by user.

(1) Method of confirming object ID
Object ID can be confirmed on the GT Designer2 screen.
To display object ID, select [View] → [Options] menu to display the Preferences dialog box, on which check the [Object ID] check box on the View tab.

Object ID not displayed

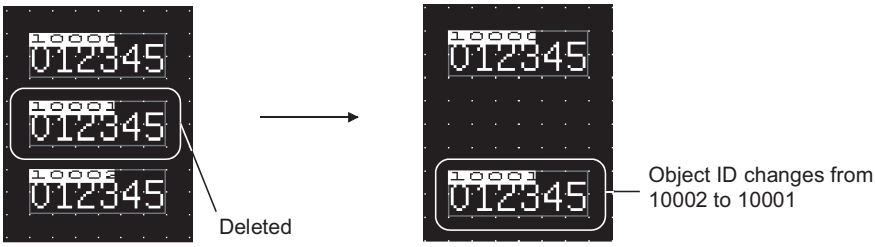



Object ID displayed

For details of the above operation, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Chapter 5 Screen Configuration of GT Designer2)

(2) Methods of changing object ID
If the arranged object is deleted, the object ID will change automatically.



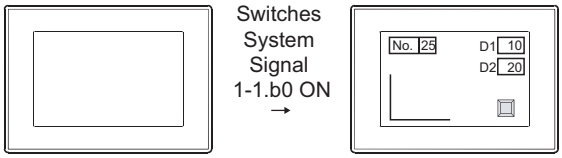
## 5 Control of Screen Display

(1) Disable screen saver function

The screen saver function, which is set within the GOT utility, is designed to turn off the screen display if the GOT is not touched within a specified time. This function prevents the screen performance from deteriorating over its operable life.

By turning [Automatic screen saver disable signal] ON in the system information, the function that is set within the GOT utility (Setup) is disabled

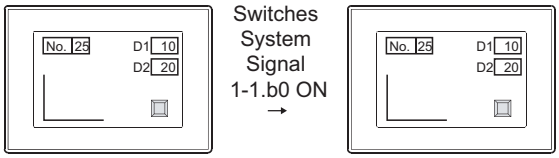
Example 1: Display the monitor screen erased by automatic screen saver function




Screen disappeared

Screen appears

Example 2: Disables screen saver function to start even after the specified period has passed.



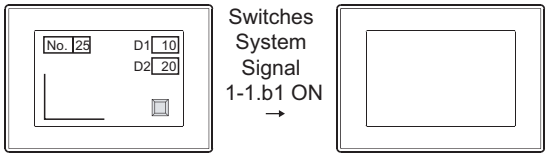

Set screen saver period to 30 minutes

Screen does not goes to screen saver mode after 30 minutes have passed (The set time is made invalid to keep the monitor screen displayed)

(2) Erase screen

By turning [Forced screen saver enable signal] ON, the displayed monitor screen can be erased. While the bit is ON, monitor screen will not appear even when the GOT screen is touched.

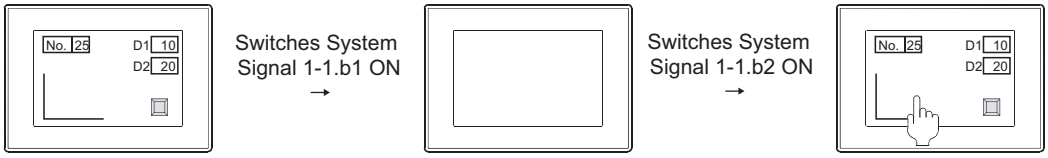
Example: Erase displayed monitor screen




Screen disappeared

In addition, the monitor screen can be displayed by switching the "Forced Screen Saver Touch-cancel Signal" ON and touching the screen to cancel the forced screen saver function started with the "Forced Screen Saver Enabled Signal".

Example: Displaying the monitor screen that is forcibly erased



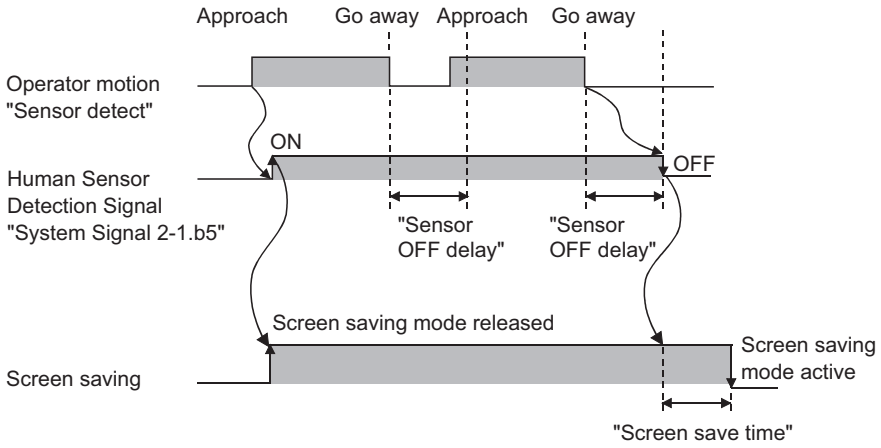

The screen is erased.

The screen is displayed by touching the screen.

(3) Display control by human sensor (Specific to GT1695M-X, GT1685M-S, GT1595-X, GT1585V-S and GT1585-S)

The human sensor is a function that releases the GOT from the screen saving mode without the necessity to touch the GOT.

This function releases the GOT from the screen saving mode when the operator has come closer to the GOT.




When there is no operator around the GOT for the time set as "Sensor OFF delay", the "Human Sensor Detection Signal" turns OFF.

When the time set as the "Screen save time" elapses after the "Human Sensor Detection Signal" turns OFF, the GOT enters the screen saving mode.

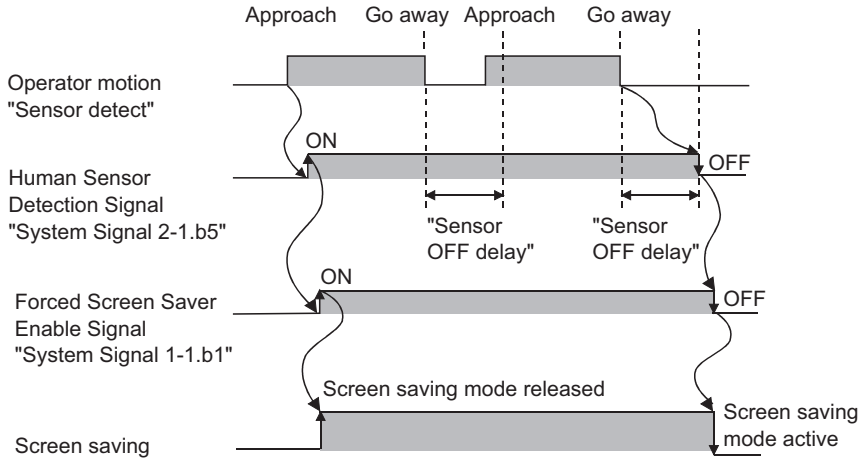
Make the human sensor settings (such as "Sensor detect" and "Sensor OFF delay") using the GOT utility.

Refer to the following manual for the GOT utility.

☞ GT16 User's Manual (Basic Utility) (Chapter 2 DISPLAY AND OPERATION SETTINGS (GOT SET UP))

GT15 User's Manual (Chapter 11 Display and Operation Setting (GOT Setup))

**Hint!** It is possible to make the settings so that the GOT will be released from the screen saving mode only when human movement is detected; the screen saving mode will not be released by touch or externally.



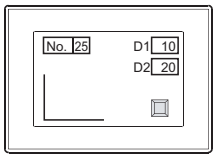
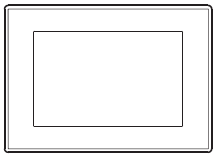
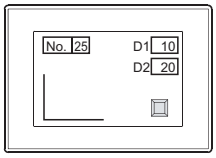
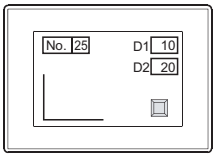
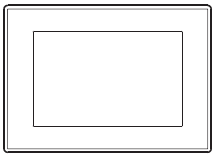
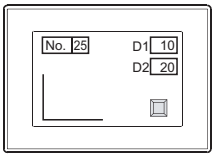

Associate the "Human Sensor Detection Signal" with "Forced Screen Saver Enable Signal" in the sequence program to control the screen saving mode.

With this setting, the GOT enters the screen saving mode after the Sensor OFF delay time elapses, regardless of the screen saving time.

**Remark** GOT Screen Control

The following shows the priority among functions that control the screen status (Displayed/ Not displayed):

Low → Priority → High

| Display Screen | Screen Saver Function (Utility) | Screen Saver Disable Signal | Forced Screen Saver Enable Signal | Forced Screen Saver Touch-cancel Signal |
|---|---|---|---|---|
|  |  <br>With screen saver function<br>  <br>Without screen saver function |  <br>ON<br>Screen save function of utility is disabled. |  <br>ON<br>Forces the screen to go into the screen saver mode. The screen saver settings, the status of screen saver disable signal and human sensor are irrelevant. |  <br>ON<br>Forcibly cancels the screen saver mode by touching. The status of forced screen saver enable signal is irrelevant. |

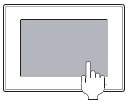
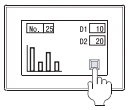
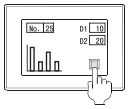
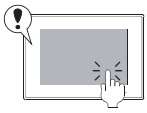
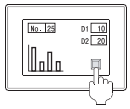
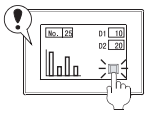
## ⚠ DANGER

- Incorrect operation of the touch switch(s) may lead to a serious accident if the GOT backlight is gone out. When the GOT backlight goes out, the display turns black and causes the monitor screen to appear blank, while the input of the touch switch (s) still remains active.
  This may confuse an operator in thinking that the display is in "screensaver" mode, who then tries to release the GOT display from this mode by touching the display screen, which may cause a touch switch to operate.
  Note that the following occurs on the GOT when the backlight goes out.
  - The monitor screen disappears even when the screensaver mode is not set.
  - The monitor screen will not come back on by touching the display, even if the GOT is in screensaver mode.

  The screensaver operation status can be confirmed by the display status of the POWER LED.
  - Lit in green:Power is correctly supplied
  - Lit in orange:Screen saving and backlight off
  - Blinks in orange/green:Blown back light bulb
  - Not lit:Power is not supplied

(4) Relation between screen saver functions and Key-In Disable Signal

The relation between screen saver functions and Key-In Disable Signal is as follows.

| Forced screen saver enable signal | Key-in disable signal | Screen saver function | Screen status |
|---|---|---|---|
| ON | ON/OFF | ON/OFF | The GOT screen goes into the screen saver status.<br>  No response to touching |
| OFF | ON | ON | When the key-in disable signal turns on, the GOT screen does not go into the screen saver status.<br>When the key-in disable signal turns on while the GOT screen is in the screen saver status, the screen saver status is canceled.<br>  No response to touching |
| | | OFF | The GOT screen does not go into the screen saver status.<br>  No response to touching |
| | OFF | ON | The GOT screen goes into the screen saver status.<br>   Touch the screen, and then the screen saver status is canceled. |
| | | OFF | The GOT screen does not go into the screen saver status.<br>  Touch the object, and then the object responds to touching. |

## 3.6.5 Precautions

This section provides the precautions for using system information

### 1 Precautions for drawing

Do not use a special register as a read device or write device, as it is an internal device of which specifications are defined within PLC CPU, and cannot be used as a normal internal device for system information.
If a special registered is used as described above, GOT may not operate correctly.

### 2 Precautions for using system information

Do not write to the device set as a read device directly from controller.
The write device information saved in the internal of the GOT wil be overwritten.

# 3.7 Communication Interface Setting (Communication Settings)

Set up communications between the GOT and the controller.

**Point**

Setting channel No. and driver of communication interfaces

When using the GOT for the first time, be sure to set the channel No. and driver for the communication interfaces referring to this section and download the settings into the GOT.
When downloading a project data without making this setting, set the channel No., driver and other items on [Communication Setting] of the utility.
(The Communication Setting of the utility is disabled for GT10. (Can be displayed on the utility for confirmation only.) Be sure to make settings on GT Designer2.)

GT16 User's Manual (Basic Utility) (Chapter3 COMMUNICATION INTERFACE SETTING (COMMUNICATION SETTING))
GT15 User's Manual (Chapter10 COMMUNICATION INTERFACE SETTING (COMMUNICATION SETTING))
GT11 User's Manual (Chapter9 COMMUNICATION INTERFACE SETTING)

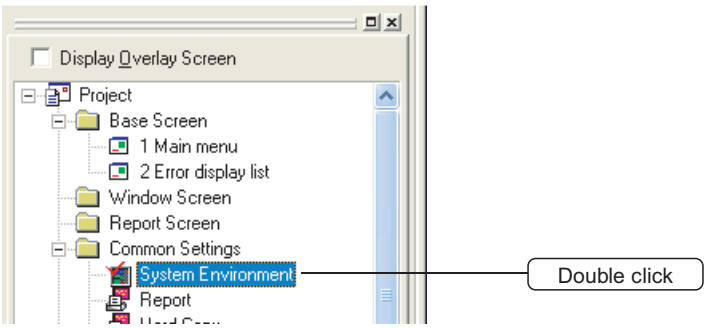
## 3.7.1 Settings

1. Select [Common] → [System Environment].
2. The system environment dialog box is displayed. Double-click [Communication Settings].
3. The setting dialog box is displayed. Refer to the description below to continue the setting.

**Remark**

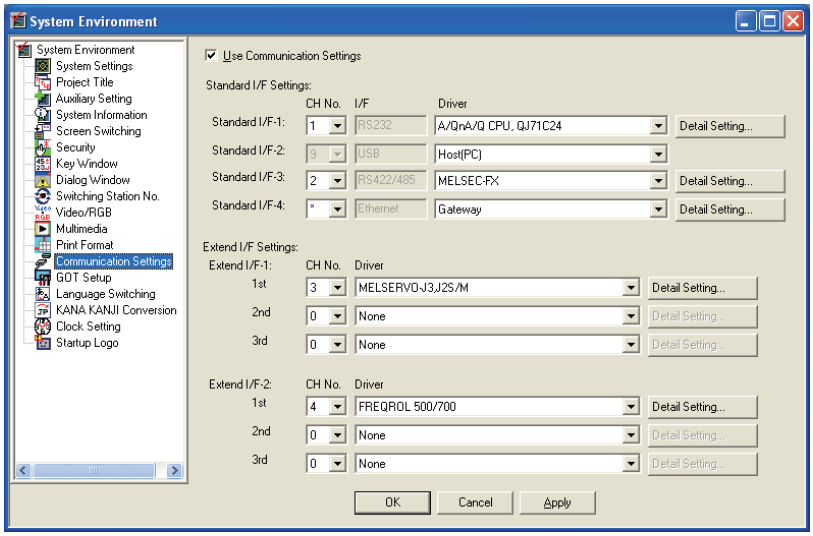
When setting from project workspace

Double-clicking [System Environment] displays the system environment setting dialog box. Double-click [Communication Settings].

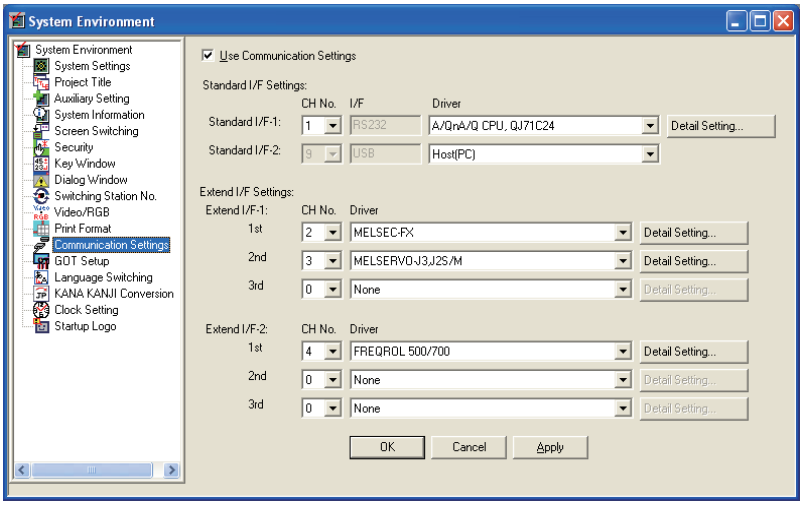


## 3.7.2 Setting items

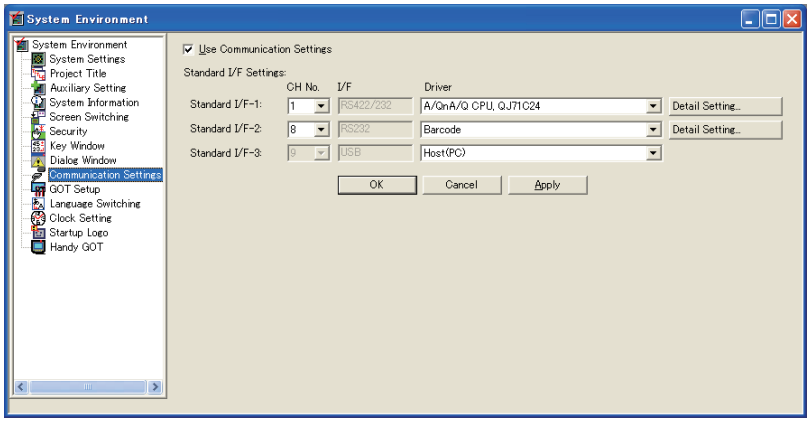
Make settings for communications between the GOT and controller.
Specify the same driver as the one installed in GOT for each interface.




(Example 1: The screen for setting the GT16)




(Example 2: The screen for setting the GT15)



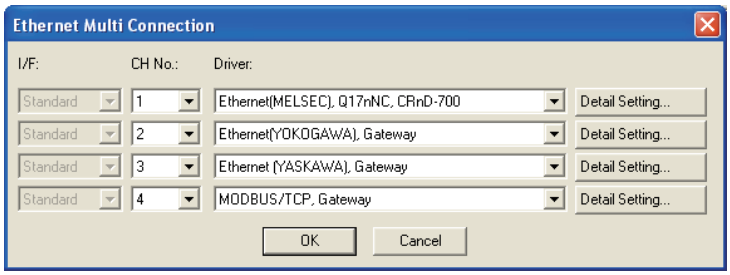

(Example 3: The screen for setting the GT11)

| Item | | Description | Model |
|---|---|---|---|
| Use Communication Settings | | Be sure to check this to perform communication settings. (☞ Section 3.7.3 Precautions) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Standard I/F Settings | | Set channel No. and drivers to the GOT standard interfaces.<br>GT16 : Standard I/F-1, Standard I/F-2, Standard I/F-3, Standard I/F-4<br>GT15, GT1030, GT1020 : Standard I/F-1, Standard I/F-2<br>GT11, GT105□, GT104□ : Standard I/F-1, Standard I/F-2, Standard I/F-3 | |
| | CH No. | Set the channel No. from among the numbers shown below.<br>The number of channels that can be set differs depending on the GOT to be used.<br>0 : Not attached or not used even if attached<br>1 to 4 : Used for connecting a controller of channel No. 1 to 4<br>8 : Used for barcode reader connection, RFID connection, fingerprint authentication device connection, or remote personal computer operation connection<br>9 : Used for connecting Host(PC)<br>* : Used for gateway function, MES interface function, and Ethernet download<br>Multi*1 : Used for multi-channel Ethernet connection | |
| | I/F | The communication type of the GOT standard interface is displayed. | |
| | Driver | Set the driver for the device connected.<br>• None • Host(PC) • The driver for a connected device | |
| | Detail Setting*1 | Make detail settings such as a drive's transmission speed and data length.<br>Clicking the Detail Setting button displays the Communication Detail Settings dialog box for each driver.<br>Set the items required for each driver.<br>(☞ This section 1 Communication Detail Settings dialog box) | |
| Extend I/F Setting | | Set a channel No. and driver of the interface of the extension unit attached to the GOT. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | CH No. | Set the channel No. from among the numbers shown below.<br>The number of channels that can be set differs depending on the GOT to be used.<br>0 : Not attached or not used even if attached<br>1 to 4 : Used for connecting a controller of channel No. 1 to 4<br>5 to 7 : For the barcode reader connection, RFID connection, and remote personal computer operation connection<br>* : For the gateway function, MES interface function, Ethernet download, report function, hard copy (For printer output), video/RGB input, RGB output, Multimedia function, CF card unit, CF card extension unit, sound output, and external I/O/operation panel | |
| | Driver | Set the driver for the device connected.<br>• Not used<br>• The driver for a connected device | |
| | Detail Setting | Set the details of the driver, such as stage No. and slot No.<br>(This detail setting is not required when [Printer], [RGB Output], [PC Remote Operation], [CF Card Unit], [Sound Output], or [External I/O / Operation Panel] is set for [Driver].))<br>Clicking the Detail Setting button displays the Communication Detail Settings dialog box for each driver.<br>Set the items required for each driver.<br>(☞ This section 1 Communication Detail Settings dialog box) | |

For details of *1, refer to the explanation below.

*1 Setting multi-channel Ethernet connection

When [Multi] is selected for [CH No.], clicking the Detail Setting button displays the Ethernet Multi Connection dialog box.




| Item | Description | Model |
|---|---|---|
| I/F | The communication type for each GOT standard interface is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| CH No. | Set the channel No. for the Ethernet connection by selecting from the following.<br>0 :Not used<br>1 to 4 :For controllers of the channel No. 1 to 4<br>* :For gateway function, MES interface function, and Ethernet download | |
| Driver | Set the driver for the controller.<br>• Not used • Driver for controller | |
| Detail Setting | Set the details of the driver, such as the baud rate and the data length.<br>Clicking the Detail Setting button displays the Communication Detail Settings dialog box for each driver.<br>Set the items required for each driver.<br>(☞ This section 1 Communication Detail Settings dialog box) | |

**Point**

(1) Setting channel No.2 to 4
Set the channel No. 2 to 4 for using the multi-channel function.
The number of available channels varies according to the GOT used.
For the communication settings for using the multi-channel function, refer to the following.

☞ Section 2.8 Multi-channel Function

(2) Drivers
The displayed drivers vary according to the settings of [Controller Type] and [CH No.] of the project.
When the driver to be set is not displayed, check if the settings of [Controller Type] and [CH No.] are correct.

(3) GT1030 and GT1020
For the GT1030 and GT1020, set the channel No. for [Standard I/F Settings] as shown below.
- Standard I/F-1: CH No. 1
- Standard I/F-2: CH No. 9

(4) Standard I/F and Extend I/F
For the standard I/F and the extend I/F of each GOT, refer to the following.

☞ GT16 User's Manual (Hardware)

GT15 User's Manual

GT11 User's Manual

GT10 User's Manual

## 1 Communication Detail Settings dialog box

The following table shows the list of connection type and the communication detail settings that are displayed.

| Item | Displayed communication detail settings (communication driver name) | Reference |
|---|---|---|
| Bus connection | Bus (Q) | This Section (1) |
| | Bus (A/QnA) | This Section (2) |
| Direct CPU connection | A/QnA/QCPU, QJ71C24<br>(For GT10, QnA/Q CPU for connecting to QnA series CPU and Q series CPU, MELSEC-A for connecting to A series CPU) | This Section (3) |
| | MELSEC-FX | This Section (4) |
| Computer link connection | A/QnA/QCPU, QJ71C24<br>(QnA/QCPU for GT10) | This Section (3) |
| | AJ71QC24, MELDAS C6* | This Section (5) |
| | AJ71C24/UC24 | This Section (6) |
| MELSECNET/H connection (PLC to PLC network)<br>MELSECNET/10 connection (PLC to PLC network)<br>(When the GT15-J71LP23-25 or GT15-J71BR13 is used) | MELSECNET/H | This Section (7) |
| MELSECNET/10 connection (PLC to PLC network)<br>(When the GT15-75J71LP23-Z or GT15-75J71BR13-Z is used) | MELSECNET/10 | This Section (8) |
| CC-Link IE controller network connection | CC-Link IE Controller Network | This Section (9) |
| CC-Link connection (intelligent device station)<br>(When the GT15-J61BT13 is used) | CC-Link Ver.2(ID) | This Section (10) |
| CC-Link connection (intelligent device station)<br>(When the GT15-75J61BT13-Z is used) | CC-Link(ID) | This Section (11) |
| CC-Link connection (via G4) | CC-Link(G4) | This Section (12) |
| Ethernet connection | Ethernet(MELSEC), Q17nNC, CRnD-700 | This Section (13) |
| OMRON PLC connection | OMRON SYSMAC | This Section (14) |
| KEYENCE PLC connection | KEYENCE KV-700/1000 | This Section (15) |
| KOYO EI PLC connection | KOYO KOSTAC/DL | This Section (16) |
| SHARP PLC connection | SHARP JW | This Section (17) |
| JTEKT PLC connection | JTEKT TOYOPUC-PC | This Section (18) |
| TOSHIBA PLC connection | TOSHIBA PROSEC T/V | This Section (19) |
| TOSHIBA MACHINE PLC connection | TOSHIBA MACHINE TCmini | This Section (20) |
| HITACHI IES PLC connection | HITACHI HIDIC H | This Section (21) |
| | HITACHI HIDIC (Protocol 2) | This Section (22) |
| HITACHI PLC connection | HITACHI S10mini/S10V | This Section (23) |
| FUJI FA PLC connection | FUJI MICREX-F | This Section (24) |
| PANASONIC PLC connection | Panasonic MEWNET-FP | This Section (25) |
| YASKAWA PLC connection | YASKAWA GL/CP9200(SH/H)/CP9300MS | This Section (26) |
| | YASKAWA MP | This Section (27) |
| | Ethernet(YASKAWA), Gateway | This Section (28) |
| YOKOGAWA PLC connection | YOKOGAWA FA500/FA-M3/STARDOM | This Section (29) |
| | Ethernet(YOKOGAWA), Gateway | This Section (30) |

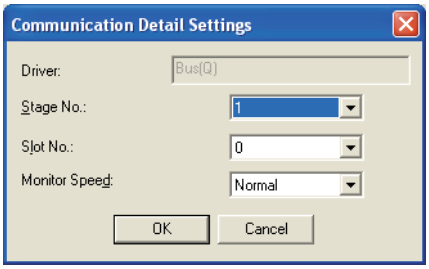
(Continued to next page)

| Item | Displayed communication detail settings (communication driver name) | Reference |
|---|---|---|
| ALLEN-BRADLEY PLC connection | AB SLC500, AB 1:N | This Section (31) |
| | AB MicroLogix | This Section (32) |
| | AB Control/CompactLogix | This Section (33) |
| | EtherNet/IP(AB), Gateway | This Section (34) |
| GE FANUC PLC connection | GE Fanuc Automation(SNP-X) | This Section (35) |
| LS IS PLC connection | LS Industrial Systems MASTER-K | This Section (36) |
| SIEMENS PLC connection | SIEMENS S7-300/400 | This Section (37) |
| | SIEMENS S7-200 | This Section (38) |
| Microcomputer connection | Computer | This Section (39) |
| MODBUS® /RTU connection | MODBUS/RTU | This Section (40) |
| MODBUS® /TCP connection | MODBUS/TCP, Gateway | This Section (41) |
| OMRON temperature controller connection | OMRON THERMAC/INPANEL NEO | This Section (42) |
| SHINKO indicating controller connection | Shinko Technos Controller | This Section (43) |
| CHINO controller connection | CHINO Controllers(MODBUS) | This Section (44) |
| FUJI SYS temperature controller connection | FUJI PXR/PXG/PXH | This Section (45) |
| YAMATAKE temperature controller connection | YAMATAKE SDC/DMC | This Section (46) |
| YOKOGAWA temperature controller connection | YOKOGAWA GREEN/UT100/UT200 | This Section (47) |
| RKC temperature controller connection | RKC SR Mini HG (MODBUS) | This Section (48) |
| Inverter connection | FREQROL 500/700 | This Section (49) |
| Servo amplifier connection | MELSERVO-J3, J2S/M | This Section (50) |
| Barcode reader connection | Barcode | This Section (51) |
| RFID connection | RFID | This Section (52) |
| Remote personal computer operation connection | PC Remote Operation | - |
| Fingerprint authentication device connection | Fingerprint Authentication | - |
| CNC connection | AJ71QC24, MELDAS C6* | This Section (5) |
| | MELSECNET/H | This Section (7) |
| | MELSECNET/10 | This Section (8) |
| | CC-Link Ver.2(ID) | This Section (10) |
| | CC-Link(ID) | This Section (11) |
| | Ethernet(MELSEC), Q17nNC, CRnD-700 | This Section (13) |
| GOT multidrop connection | Multidrop(Slave) | This Section (53) |
| Gateway function | Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway | This Section (54) |
| | Ethernet(YASKAWA), Gateway | This Section (28) |
| | Ethernet(YOKOGAWA), Gateway | This Section (30) |
| | EtherNet/IP(AB), Gateway | This Section (34) |
| | Gateway | This Section (55) |

(Continued to next page)

| Item | Displayed communication detail settings (communication driver name) | Reference |
|---|---|---|
| MES interface function | Ethernet(MELSEC), Q17nNC, CRnD-700 | This Section (13) |
| | Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway | This Section (54) |
| | Ethernet(YASKAWA), Gateway | This Section (28) |
| | Ethernet(YOKOGAWA), Gateway | This Section (30) |
| | EtherNet/IP(AB), Gateway | This Section (34) |
| | MODBUS/TCP, Gateway | This Section (41) |
| | Gateway | This Section (55) |
| | Ethernet download | This Section (56) |
| Ethernet download | Ethernet download | This Section (56) |
| Printer connection | Printer | – |
| Video input / RGB input | Video/RGB | This Section (57) |
| RGB output | RGB Output | – |
| Multimedia connection | Multimedia | This Section (58) |
| CF card unit | CF Card Unit | – |
| CF card extension unit | CF Card Unit | – |
| Sound output | Sound Output | – |
| External I/O/operation panel | External I/O / Operation Panel | – |

(1) Bus (Q)

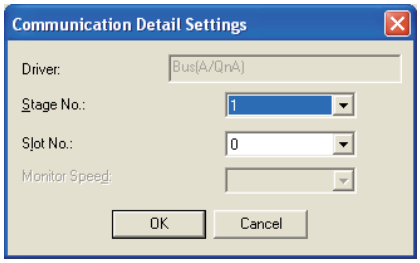



| Item | Description | Setting range |
|---|---|---|
| Stage No. | Specifies the number of stages to be extended. | 1 to 7<br><Default : 1> |
| Slot No. | Specifies the slot number. | 0 to 9<br><Default : 0> |
| Monitor Speed | Set the monitor speed of the GOT.<br>This setting is not valid in all systems. | High*1/Nomal/Low*2<br><Default : Nomal> |

*1 This is effective when large data are collected with otber than the monitor screen (such as logging or recipe function).
When the Q00J/Q00/Q01CPU is connected, however, the sequence scan time may be influenced.
To avoid any influence on the sequence scan item, do not specify [high].
(The High Performance model on the sequence scan time less influenced them.)

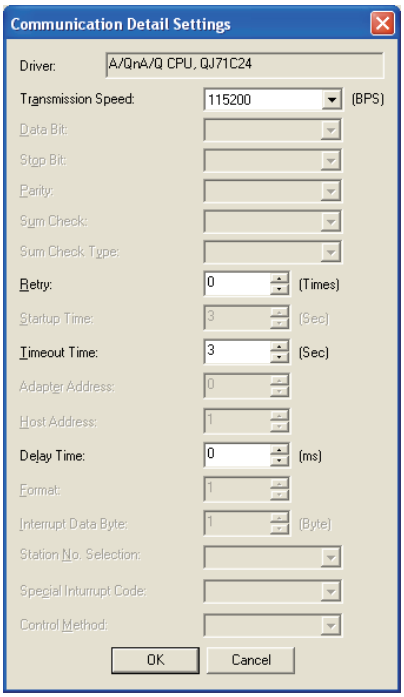
*2 This should be set when having the sequence scan time less influenced than when [Normal] is set in the case the Q00J/Q00/Q01CPU is connected/
In this case, the monitor speed may be lowered.

(2) Bus (A/QnA)



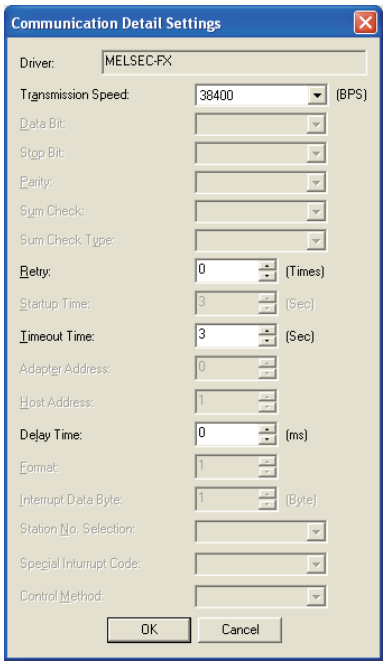

| Item | Description | Setting range |
|---|---|---|
| Stage No. | Specifies the number of stages to be extended. | 1 to 7<br><Default : 1> |
| Slot No. | Specifies the slot number. | 0 to 7<br><Default : 0> |

(3) A/QnA/QCPU, QJ71C24



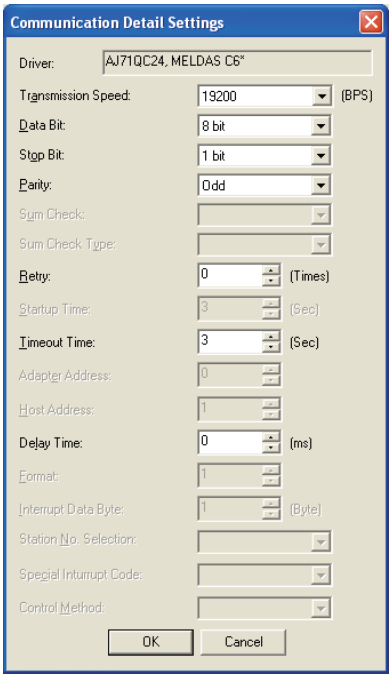

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices.<br>When the transmission speed exceeds the maximum transmission speed to which the communication device supports, the transmission speed will be the maximum transmission speed of the communication device. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 115200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

### (4) MELSEC-FX



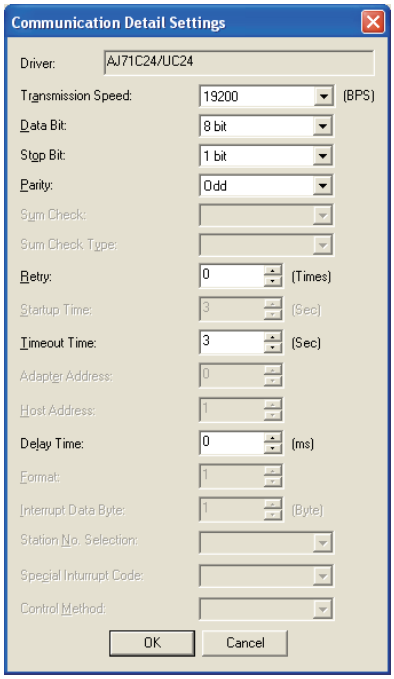

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br>< Default : 38400bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

### (5) AJ71QC24, MELDAS C6*



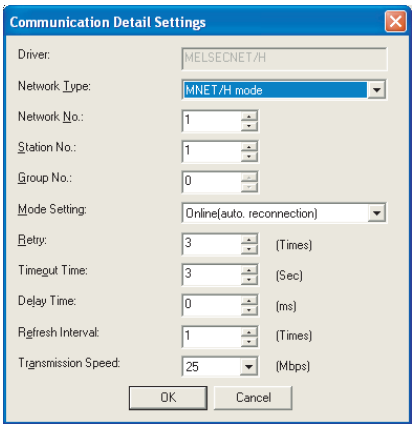

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

(6) AJ71C24/UC24




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

### (7) MELSECNET/H



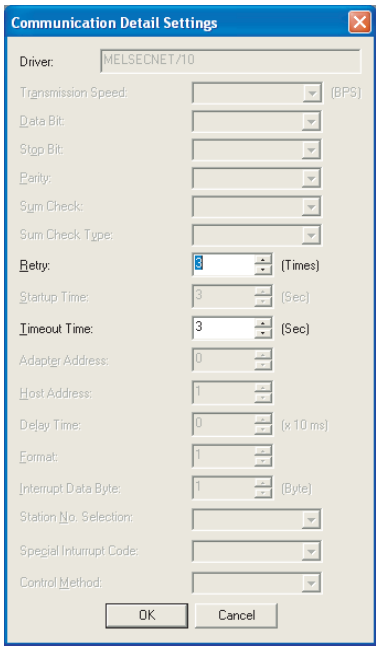

| Item | Description | Setting range |
|---|---|---|
| Network Type | Sets the network type. | • MNET/H mode<br>• MNET/10 mode<br>• MNET/H EXT mode *1<br><Default: MNET/H mode> |
| Network No. | Sets the network number. | 1 to 239<br><Default: 1> |
| Station No. | Sets the station number of GOT. | 1 to 64<br><Default: 1> |
| Mode | Set the operation mode of GOT. | • Online (auto. reconnection)<br>• Offline<br>• Test between slave station *2<br>• Self-loopback test *2<br>• Internal self-loopback test *2<br>• H/W test *2<br><Default: Online (auto. recon-nection)> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default: 3 Sec> |
| Delay Time | Sets the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default: 0 ms> |
| Refresh Interval | Sets the number of times the send/receive data is refreshed in communications to secure the data at each station.<br>Setting for this parameter is valid when [Secured data send]/[Secured data receive] of the network parameter is checked at the control station side in the MELSECNET/H network system. | 1 to 1000 (Times)<br><Default: 1 Time> |
| Transmission Speed | Sets the transmission speed of communications.<br>Only 10 Mbps is selectable when [MNET/10 mode] is set for [Network Type]. | 10Mbps / 25Mbps<br><Default: 25 Mbps> |

*1 Setting is not possible in the QCPU redundant system.

*2 For details, refer to the following manual.

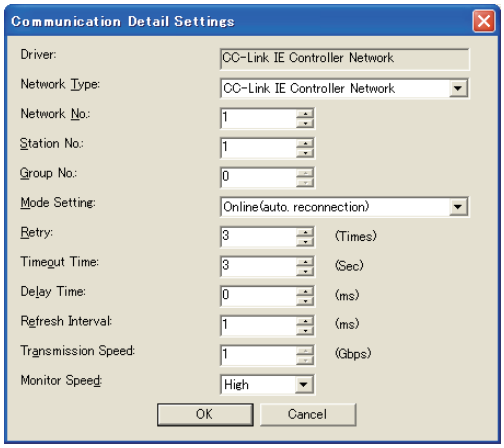
☞ Reference manual (PLC to PLC network) of the MELSECNET network system to be used

(8) MELSECNET/10




| Item | Description | Setting range |
|---|---|---|
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Timeout Time | Set time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |

### (9) CC-Link IE Controller Network

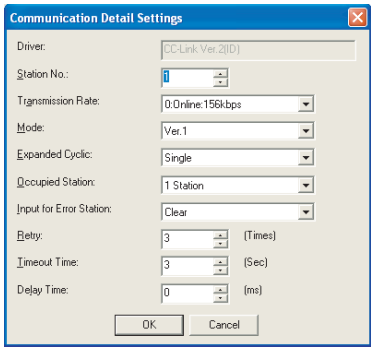



| Item | Description | Setting range |
|---|---|---|
| Network No. | Sets the network number. | 1 to 239<br><Default: 1> |
| Station No. | Sets the station number of GOT. | 1 to 120<br><Default: 1> |
| Mode Setting | Set the operation mode of GOT. | • Online (auto. reconnection)<br>• Offline<br>• Test stations *1<br>• Self-loopback test *1<br>• Internal self-loopback test *1<br>• Line test*1<br>• H/W test *1<br><Default: Online (auto. reconnection)> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default: 3 Sec> |
| Delay Time | Sets the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default: 0 ms> |
| Refresh Interval | Sets the number of times the send/receive data is refreshed in communications to secure the data at each station.<br>Valid when [Block data assurance per station is available.] is checked by the control station side network parameters of the CC-Link IE controller network. | 1 to 1000ms<br><Default: 1 ms> |
| Monitor Speed | Set the monitor speed for the CC-Link IE controller network. | High/Normal/Low<br><Default: High> |

*1 For details, refer to the following manual.

☞ CC-Link IE Controller Network Reference Manual

(10) CC-Link Ver.2(ID)




| Item | Description | Setting range |
|---|---|---|
| Station No. | Sets the station number of GOT. | 1 to 64<br><Default: 1> |
| Transmission Rate*1 | Sets the transmission speed and the mode of communications of a GOT. | 0 to E<br><Default: 0> |
| Mode | Sets the CC-Link mode. | Ver.1 / Ver.2 / Additional / Offline<br><Default: Ver.1> |
| Expanded Cyclic | Performs the expanded cyclic setting. | Single / Double / Quadruple / Octuple<br><Default: Single > |
| Occupied Station | Sets the number of stations occupied by the GOT. | 1 Station / 4 Stations<br><Default: 1 Station> |
| Input for Error Station | Sets whether the input data is cleared or retained at the occurrence of an alarm. | Clear / Hold<br><Default: Clear> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default: 3 Sec> |
| Delay Time | Sets the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default: 0 ms> |

For details of *1, refer to the following.

## *1 Transmission Rate

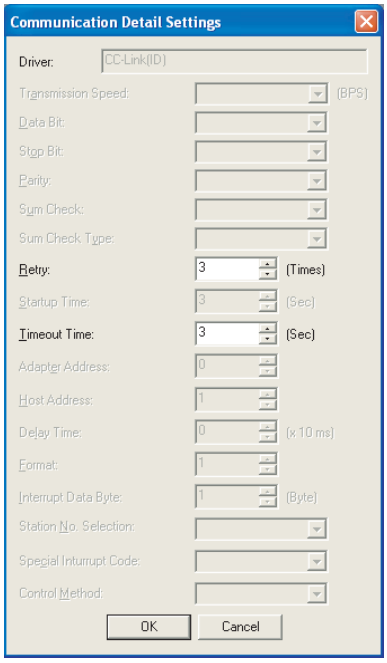
Setting details of transmission speed in the CC-Link are shown in the table below.

| Setting | Description |
|---|---|
| 0 | Online: 156 kbs |
| 1 | Online: 625 kbs |
| 2 | Online: 2.5 Mbs |
| 3 | Online: 5 Mbs |
| 4 | Online: 10 Mbs |
| A | Hardware test: 156 kbs |
| B | Hardware test: 625 kbs |
| C | Hardware test: 2.5 Mbs |
| D | Hardware test: 5 Mbs |
| E | Hardware test: 10 Mbs |

For details of the hardware test, refer to the following manual.

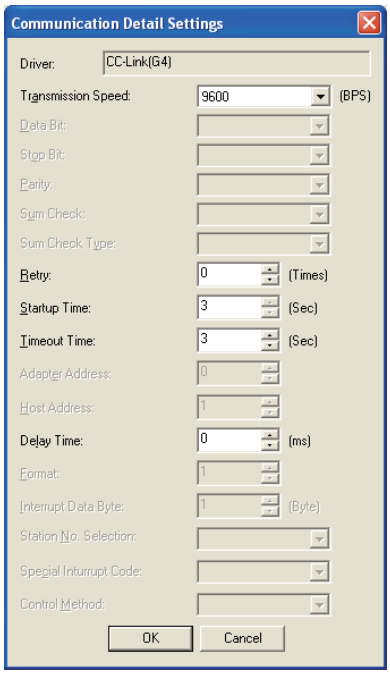
☞ Master/Local Module User's Manual of the CC-Link module to be used

(11) CC-Link(ID)




| Item | Description | Setting range |
|---|---|---|
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Timeout Time | Set time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |

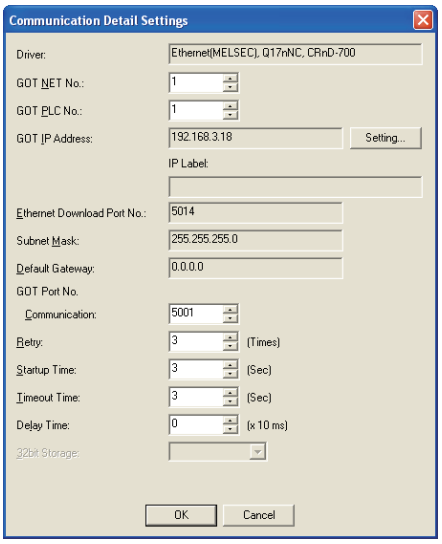
(12) CC-Link(G4)




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps > |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br>(For GT10, 3 is fixed.)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

(13) Ethernet(MELSEC), Q17nNC, CRnD-700

(a) For GT16



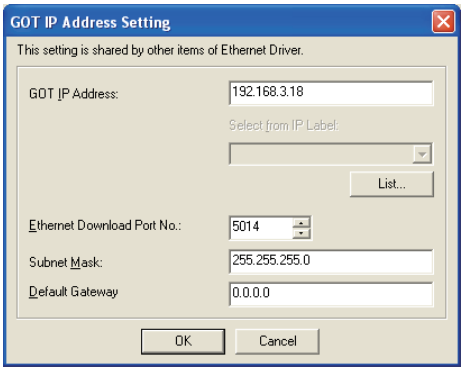

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5001> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

For details of *1, refer to the following.

*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

*1 GOT IP address setting

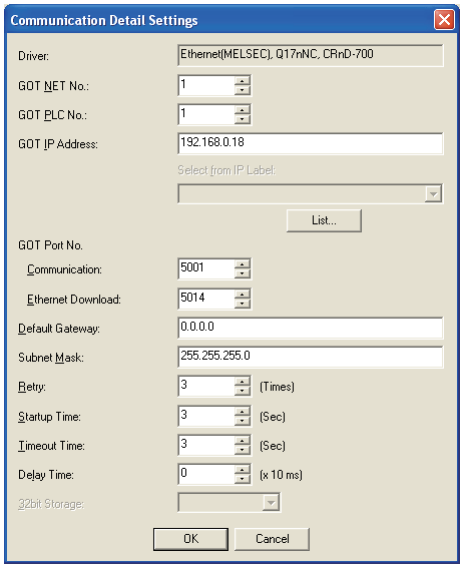
Clicking the Setting button in the Communication Detail Settings dialog box displays the GOT IP Address Setting dialog box.
Set the GOT IP address used for the Ethernet connection.




| Item | Description | Setting range |
|---|---|---|
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255 <Default : 192.168.3.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | ---- |
| Ethernet Download Port No. | Sets the port No. used by GOT to connect with Ethernet download.*1 | 1024 to 5010, 5014 to 65534 <Default : 5014> |
| Subnet Mask | Sets when using subnetwork. (Via router only) Operates with the default value when not using subnetwork. | 0.0.0.0 to 255.255.255.255 <Default : 255.255.255.0> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255 <Default : 0.0.0.0> |

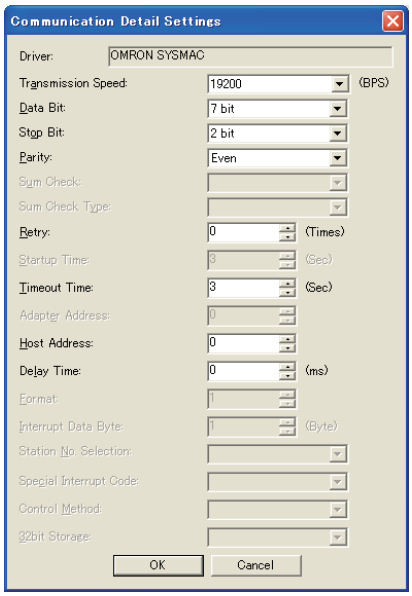
*1 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

(b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default : 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | — |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module. | 1024 to 5010, 5014 to 65534<br><Default : 5001> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 65534<br><Default : 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default : 0.0.0.0> |
| Subnet Mask | Sets when using subnetwork. (Via router only) Operates with the default value when not using subnetwork. | 0.0.0.0 to 255.255.255.255<br><Default : 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

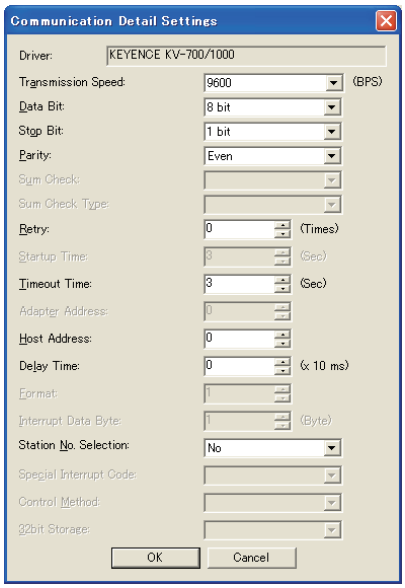
## (14) OMRON SYSMAC




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to GOT) in the network of GOT. | 0 to 31<br><Default : 0> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

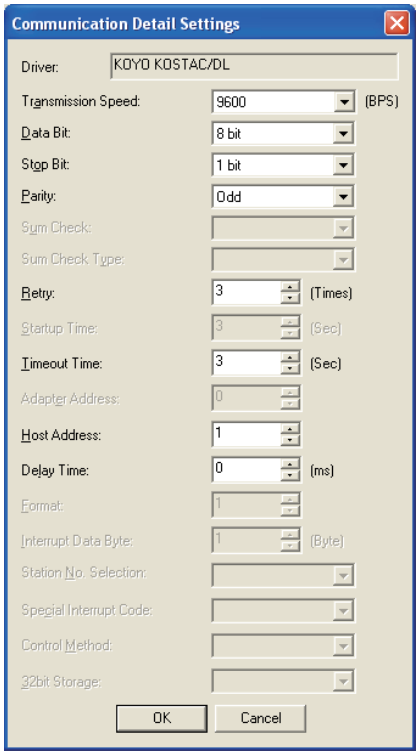
* In [Detail setting] of the utility, the delay time to lower the load of the network/PLC connected can be set.

## (15) KEYENCE KV-700/1000



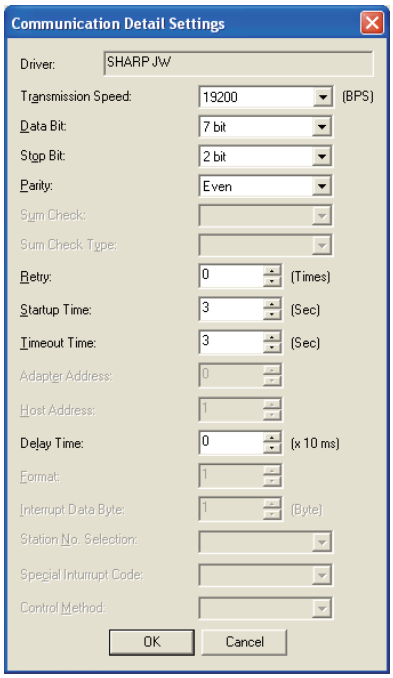

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default: 9600 bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit/8bit<br><Default: 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit/2bit<br><Default: 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None/Even/Odd<br><Default: Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 0 to 9<br><Default: 0> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (×10 ms)<br><Default: 0ms> |
| Station No. Selection | Specifies whether to use station No. during communication.<br>When specifying with [Yes], the station No. is fixed to [0]. | Yes/No<br><Default: No> |

(16) KOYO KOSTAC/DL



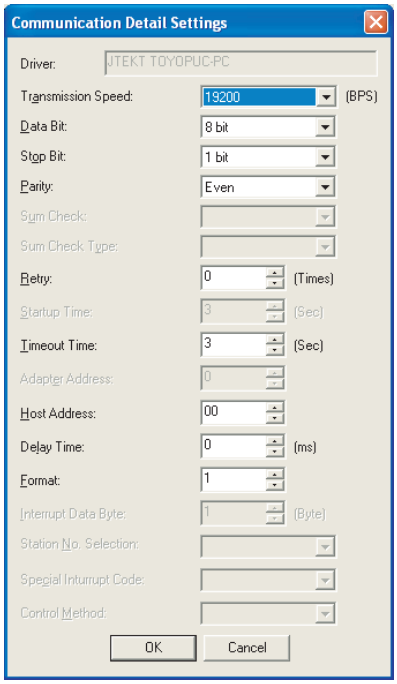

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200(BPS)<br><Default: 9600bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7bit / 8bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default: 1 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: Odd> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 50 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to the GOT) in the network in hexadecimal. | 1 to 90<br><Default:1> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default: 0ms> |

### (17) SHARP JW



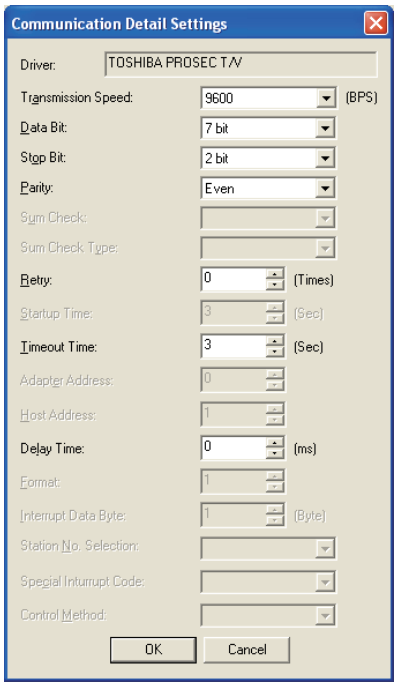

| Item | Description | Setting range |
|---|---|---|
| Transmission speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (× 10ms)<br><Default : 0 ms> |

### (18) JTEKT TOYOPUC-PC



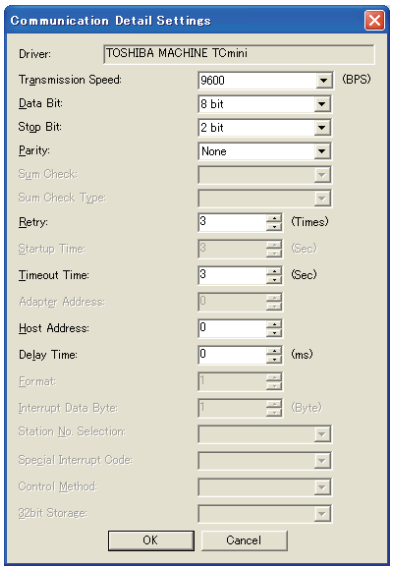

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Set when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 / 11520 (BPS)<br><Default: 19200 bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7 bit / 8 bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1 bit / 2 bit<br><Default: 1 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to the GOT) in the network in hexadecimal. | 00 to 37<br><Default: 00> |
| Delay Time | Sets the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default: 0 ms> |
| Format | Selects the communication format. | 1 / 2<br><Default: 1> |

### (19) TOSHIBA PROSEC T/V



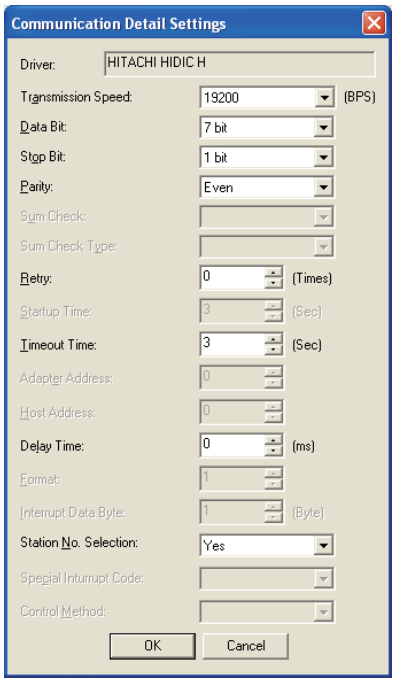

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 (BPS)<br><Default : 9600bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

### (20) TOSHIBA MACHINE TCmini



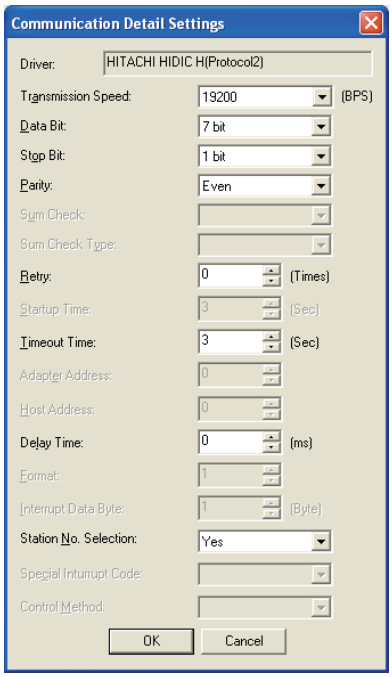

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200(BPS)<br><Default: 9600bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7bit / 8bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default: 2 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: None> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to the GOT) in the network in hexadecimal. | 0 to 63<br><Default:0> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default: 0ms> |

### (21) HITACHI HIDIC H



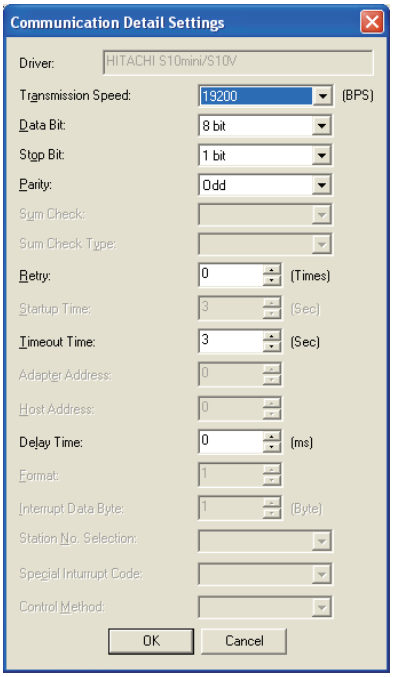

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |
| Station No. Selection | Specifies whether to use station No. during communication.<br>When specifying with "Yes", the station No. is fixed to "0". | Yes / No<br><Default : Yes> |

### (22) HITACHI HIDIC H (Protocol 2)



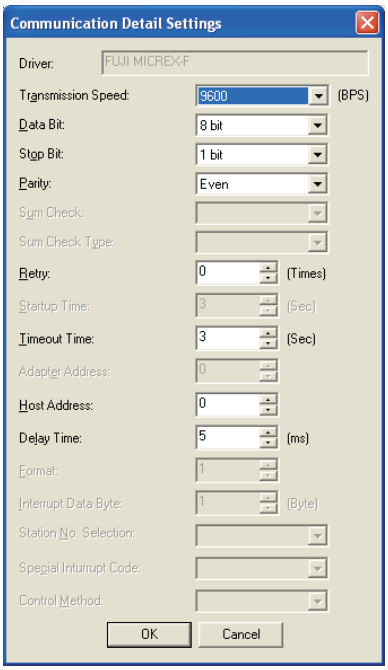

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |
| Station No. Selection | Specifies whether to use station No. during communication.<br>When specifying with [Yes], the station No. is fixed to [0]. | Yes / No<br><Default : Yes> |

### (23) HITACHI S10mini/S10V



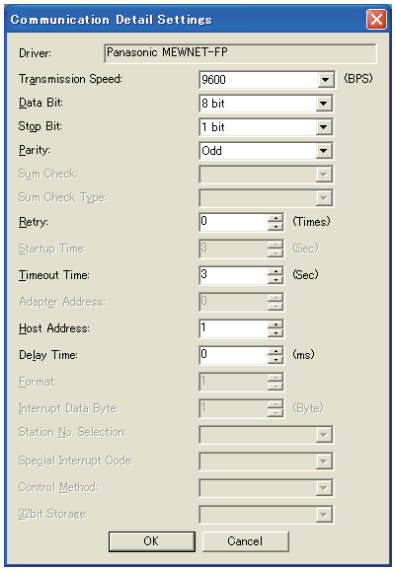

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 19200bps> |
| Data Bit | Set when changing the data length used for the communication with a controller. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specify the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity sheck. | None / Even / Odd<br><Default : Odd> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Set time required for communication to time out. | 3 to 30 Sec<br><Default : 3 Sec> |
| Delay Time | Set the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default : 0ms> |

### (24) FUJI MICREX-F



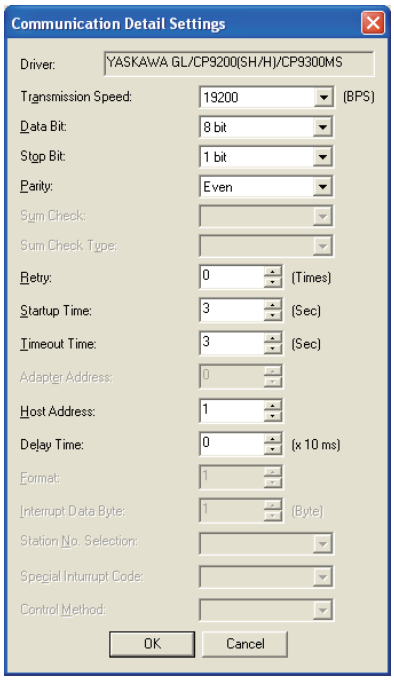

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Set when changing the data length used for the communication with a controller. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specify the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity sheck. | None / Even / Odd<br><Default : None> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Set time required for communication to time out. | 3 to 30 Sec<br><Default : 3 Sec> |
| Host Address | Specify the host address (station No. od the temperature controller connected to the GOT) in the connected network. | 0 to 99<br><Default : 0> |
| Delay Time | Set the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default : 5ms> |

### (25) Panasonic MEWNET-FP




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400/ 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to GOT) in the network of GOT. | 1 to 31<br><Default : 1> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

### (26) YASKAWA GL/CP9200(SH/H)/CP9300MS



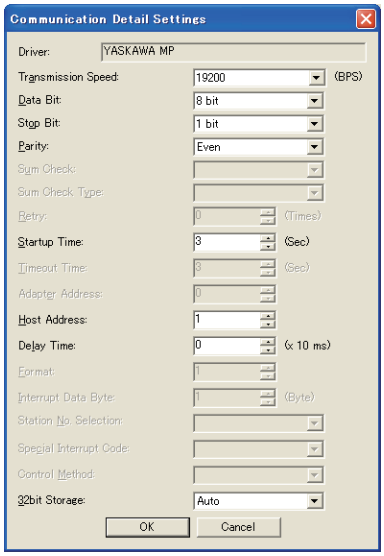

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 (BPS)<br><Default : 19200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to GOT) in the connected network. | 1 to 31<br><Default : 1> |
| Delay Time | Sets for adjusting the communication demanding timing of the GOT. | 0 to 30 (× 10ms)<br><Default : 0ms>*1 *2 |

*1 Set a value 30 ms or larger when CP9200 (H) is used.

*2 When CP9300MS (MC compatible) is used, the value to be set should be as indicated below.

- If port 0 is used: 10 ms or larger
- If port 1 is used: 30 ms or larger

## (27) YASKAWA MP




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 (BPS)<br><Default : 19200bps> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to GOT) in the connected network. | 1 to 31<br><Default : 1> |
| Delay Time | Sets for adjusting the communication demanding timing of the GOT. | 0 to 30 (× 10ms)<br><Default : 0ms>*1 *2 |
| 32bit Storage | Set the stored order with 2 word data(32-bit data)<br>☞ This section 3 Storage order for 32-bit data (2 word data) | LH Order / HL Order / Auto<br><Default: Auto> |

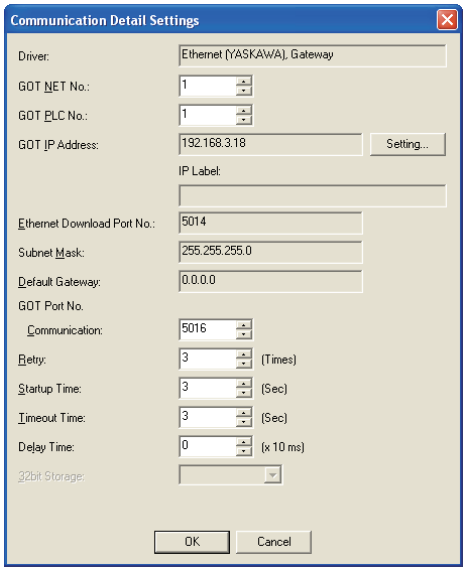
*1 Set a value 30 ms or larger when CP9200 (H) is used.

*2 When CP9300MS (MC compatible) is used, the value to be set should be as indicated below.

- If port 0 is used: 10 ms or larger
- If port 1 is used: 30 ms or larger

(28) Ethernet (YASKAWA), Gateway

(a) For GT16



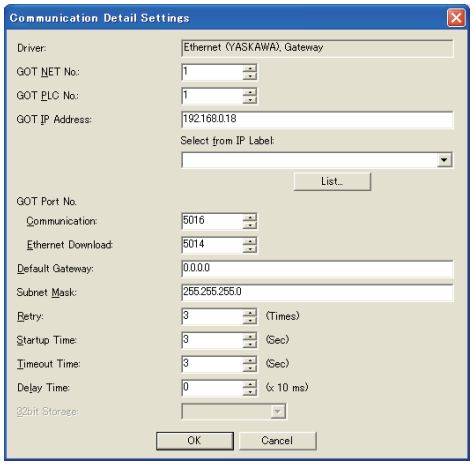

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5016> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

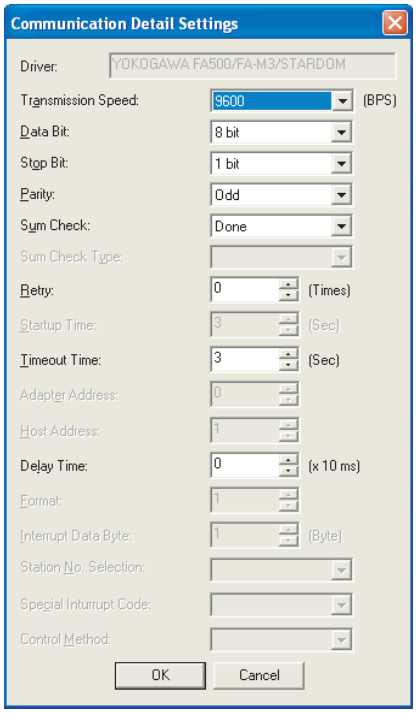
*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

(b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default: 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default: 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default: 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | - |
| GOT Port No. (Communication) | Set the GOT's port No. to be used for connecting with the controllers. | 1024 to 65534 (Except 5011, 5012, 5013)<br><Default: 5016> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default: 0.0.0.0> |
| Subnet Mask | Sets when using subnetwork. (Via router only) Operates with the default value when not using subnetwork. | 0.0.0.0 to 255.255.255.255<br><Default: 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default: 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default: 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default: 0 ms> |

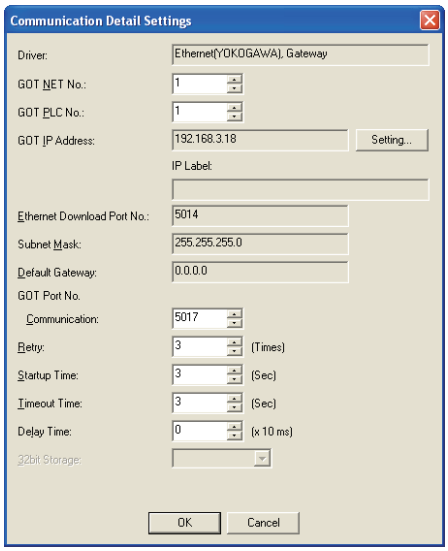
### (29) YOKOGAWA FA500/FA-M3/STARDOM




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : None> |
| Sum Check | Specifies whether to execute sum check or not during communication. | Done / None<br><Default : Done> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (× 10ms)<br><Default : 0 ms> |

(30) Ethernet(YOKOGAWA), Gateway

(a) For GT16



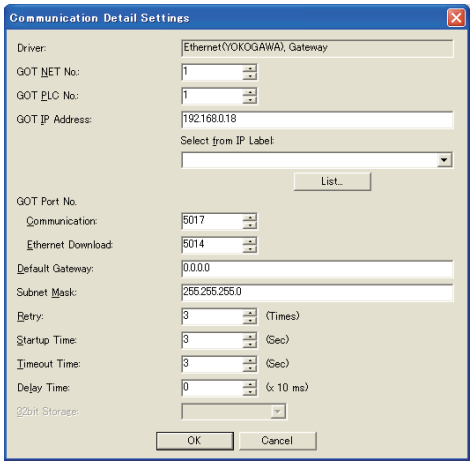

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5017> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

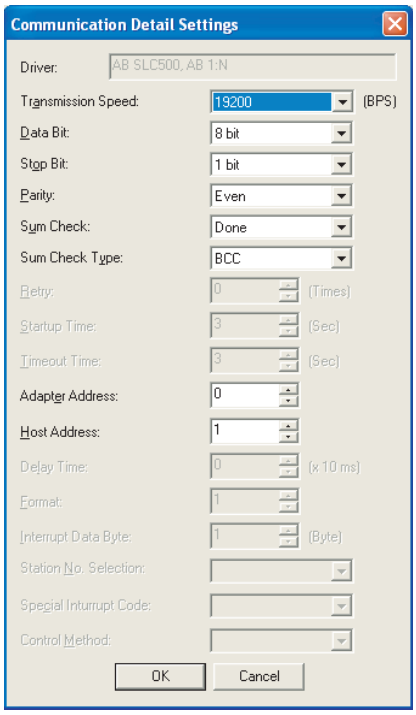
*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

(b) For GT15



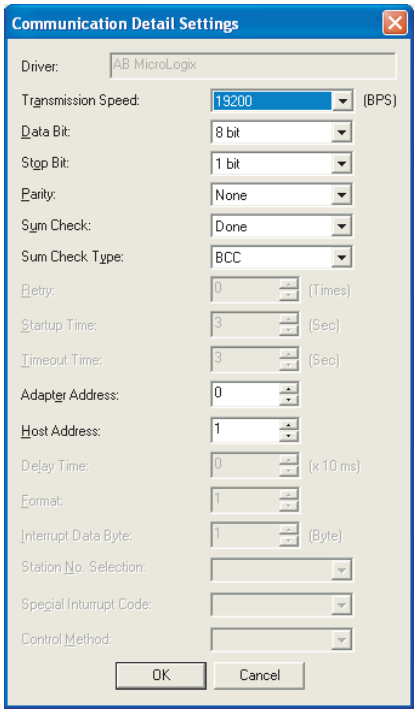

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default: 1> |
| GOT PC No. | Sets the station No. of GOT | 1 to 64<br><Default: 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default: 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | - |
| GOT Port No. (Communication) | Set the GOT's port No. to be used for connecting with the controllers. | 1024 to 65534 (Except 5011, 5012, 5013)<br><Default: 5017> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default: 0.0.0.0> |
| Subnet Mask | Sets when using subnetwork. (Via router only) Operates with the default value when not using subnetwork. | 0.0.0.0 to 255.255.255.255<br><Default: 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 ( Sec)<br><Default: 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 ( Sec)<br><Default: 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (×10ms)<br><Default: 0ms> |

(31) AB SLC500, AB 1:N



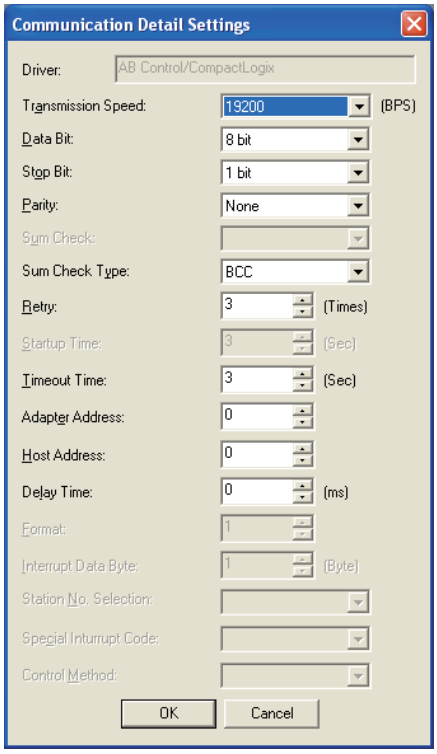

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 (BPS)<br><Default : 19200bps> |
| Adapter Address | Specifies the adapter address (station No. of PLC to be monitored by GOT) in the connected network. | 0 to 31<br><Default : 0> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 31<br><Default : 1> |

### (32) AB MicroLogix




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 (BPS)<br><Default : 19200bps> |
| Sum Check Type | Sets this item when changing the data length used for communication with communication devices. | BCC / CRC16<br><Default : BCC> |
| Adapter Address | Specifies the adapter address (station No. of PLC to be monitored by GOT) in the connected network. | 0 to 31<br><Default : 0> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 31<br><Default : 1> |

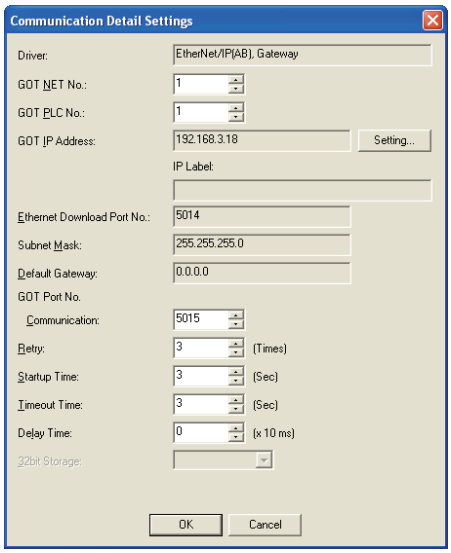
### (33) AB Control/CompactLogix




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 19200bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit/8bit<br><Default: 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit/2bit<br><Default: 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None/Even/Odd<br><Default: None> |
| Sum Check Type | Sets this item when changing the data length used for communication with communication devices. | BCC / CRC16<br><Default : BCC> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Adapter Address | Specifies the adapter address (station No. of PLC to be monitored by GOT) in the connected network. | 0 to 254<br><Default : 0> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 254<br><Default: 0> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |

(34) EtherNet/IP(AB), Gateway

(a) For GT16



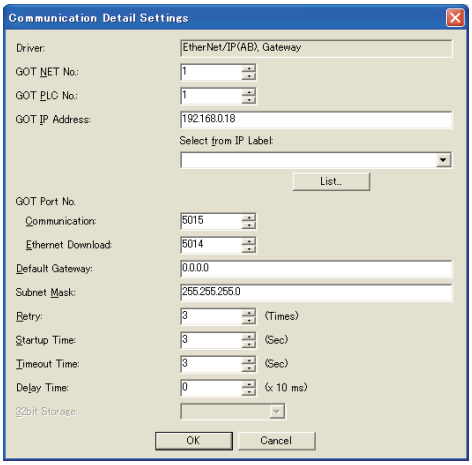

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5015> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

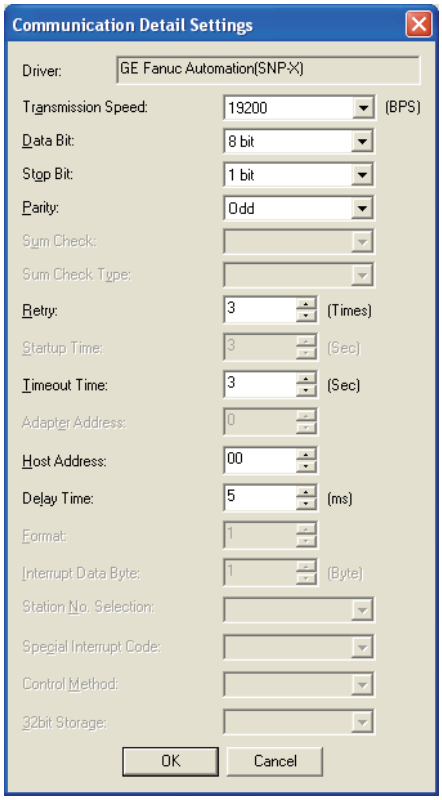
*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

(b) For GT15



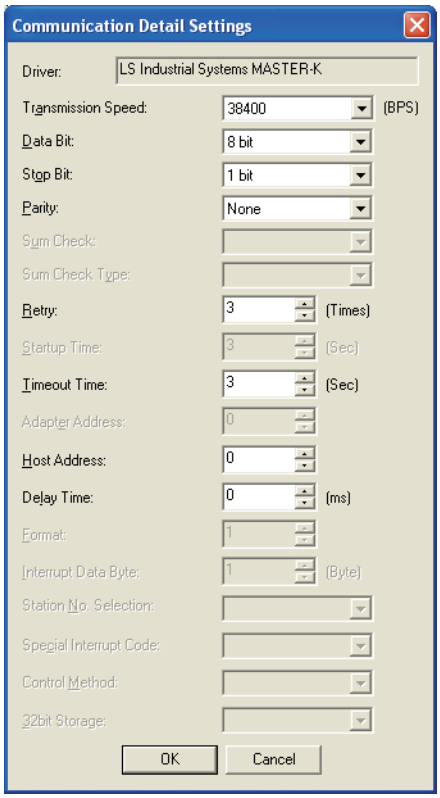

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default : 192.168.0.18> |
| Select from IP Label | (☞ This section 2 The IP address registration of the GOT | - |
| GOT Port No. (Communication) | Set the GOT's port No. to be used for connecting with the controllers. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5015> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default : 0.0.0.0> |
| Subnet Mask | Sets when using subnetwork. (Via router<br>only) Operates with the default value when not using subnetwork. | 0.0.0.0 to 255.255.255.255<br><Default : 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to<br>time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 ( 10ms)<br><Default : 0 ms> |

### (35) GE Fanuc Automation(SNP-X)



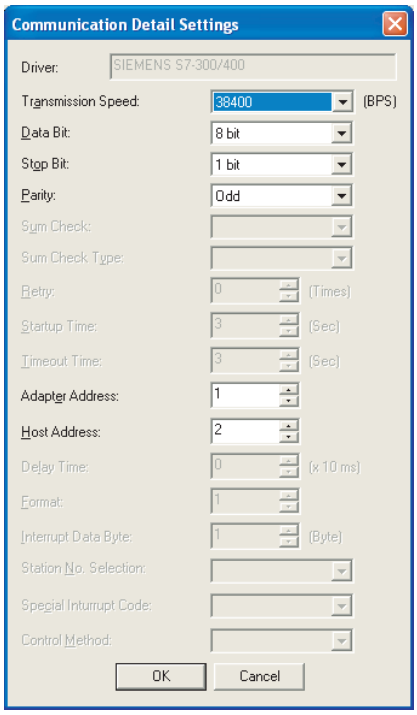

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200(BPS)<br><Default: 19200bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7bit / 8bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default: 1 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: Odd> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to the GOT) in the network in hexadecimal. | 00 to 31<br><Default:00> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default: 5ms> |

### (36) LS Industrial Systems MASTER-K



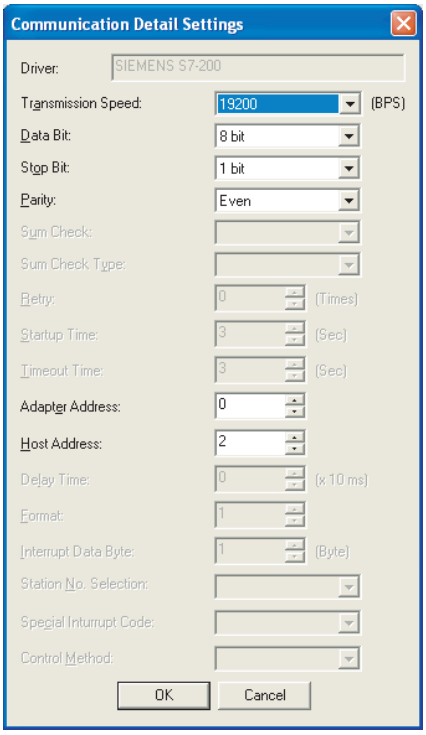

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200(BPS)<br><Default: 38400bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7bit / 8bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default: 1 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: None> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the PLC connected to GOT) in the connected network. | 0 to 31<br><Default:0> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 300 (ms)<br><Default: 0ms> |

### (37) SIEMENS S7-300/400



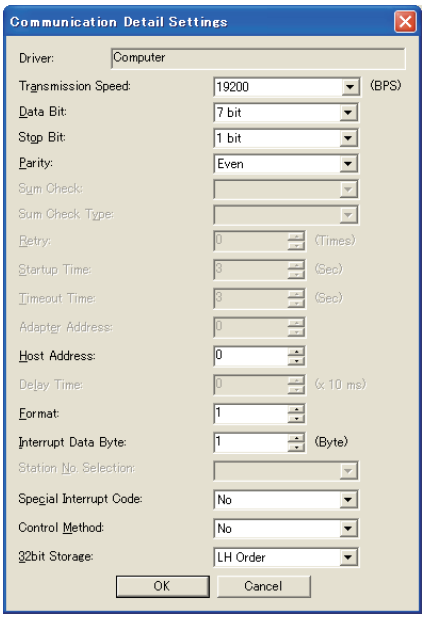

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 (BPS)<br><Default : 38400bps> |
| Adapter Address | Specifies the adapter address (station No. of PLC to be monitored by GOT) in the connected network. | 1 to 31<br><Default : 1> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 31<br><Default : 2> |

### (38) SIEMENS S7-200



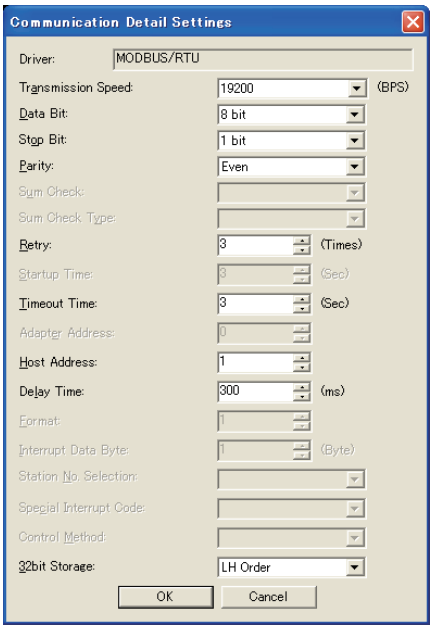

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600/19200/38400/57600/115200 (BPS)<br><Default: 19200 bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit/8bit<br><Default: 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit/2bit<br><Default: 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None/Even/Odd<br><Default: Even> |
| Adapter Address | Specifies the adapter address (station No. of PLC to be monitored by GOT) in the connected network. | 0 to 31<br><Default: 0> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 31<br><Default: 2> |

(39) Computer




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 19200bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 7bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Even> |
| Host Address | Specifies the host address (station No. of the GOT to which a controller is connected) in the connected network. | 0 to 31<br><Default : 0> |
| Format | Selects communication format. | 1 to 15<br><Default : 1> |
| Interrupt Data Byte | Specifies the number of the interrupt data bytes. | 1 / 2 / 4 (Byte)<br><Default : 1Byte> |
| Special Interrupt Code | Selects whether a special interrupt code is output or not. | Yes / No<br><Default: No> |
| Control Method | Selects whether XON/XOFF control is made or not. | No / XON / XOFF<br><Default: No> |
| 32bit Storage | Set the stored order with 2 word data(32-bit data)<br>☞ This section 3 Storage order for 32-bit data (2 word data) | LH Order / HL Order<br><Default : LH Order> |

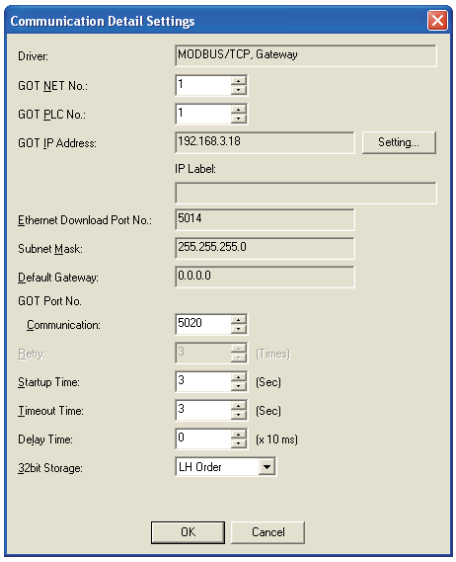
(40) MODBUS/RTU




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600/19200/38400/57600/ 115200 (BPS)<br><Default : 19200bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 1 to 247<br><Default: 1> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |
| 32bit Storage | Set the stored order with 2 word data(32-bit data)<br>☞ This section 3 Storage order for 32-bit data (2 word data) | LH Order / HL Order<br><Default : LH Order> |

(41) MODBUS/TCP, Gateway

(a) For GT16



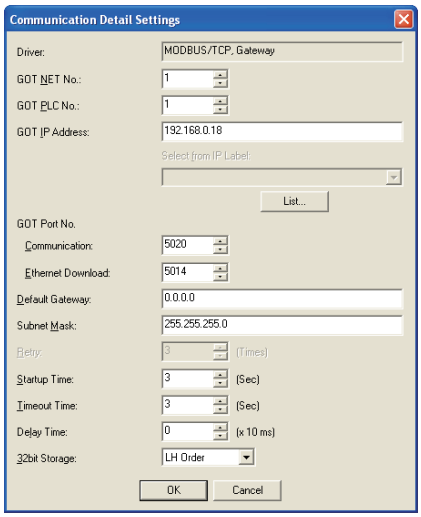

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 247<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5020> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (×10ms)<br><Default : 0 ms> |
| 32bit Storage | Set the stored order with 2 word data(32-bit data)<br>☞ This section 3 Storage order for 32-bit data (2 word data) | LH Order / HL Order<br><Default : LH Order> |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

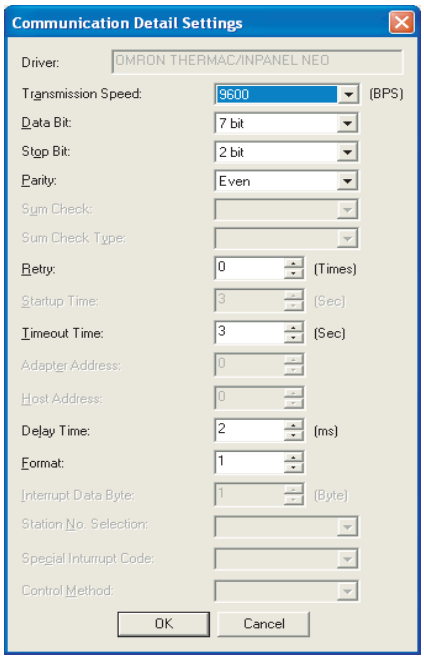
*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

(b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 247<br><Default : 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default : 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | — |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module. | 1024 to 5010, 5014 to 65534<br><Default : 5020> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 65534<br><Default : 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default : 0.0.0.0> |
| Subnet Mask | Sets when using sub network. (Via router only)<br>Operates with the default value when not using sub network. | 0.0.0.0 to 255.255.255.255<br><Default : 255.255.255.0> |
| Srartup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |
| 32bit Storage | Set the stored order with 2 word data (32-bit data)<br>☞ This section 3 Storage order for 32-bit data (2 word data) | LH Order / HL Order<br><Default : LH Order> |

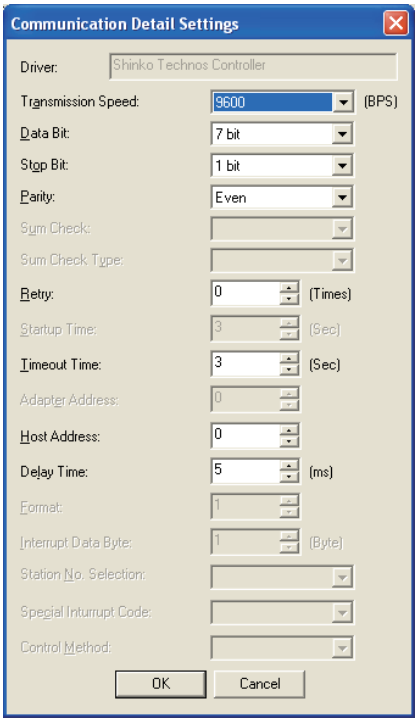
## (42) OMRON THERMAC/INPANEL




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 7bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 2bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30<br><Default : 2ms>*1 |
| Format | Selects communication format. | 1 to 2<br><Default : 1> |

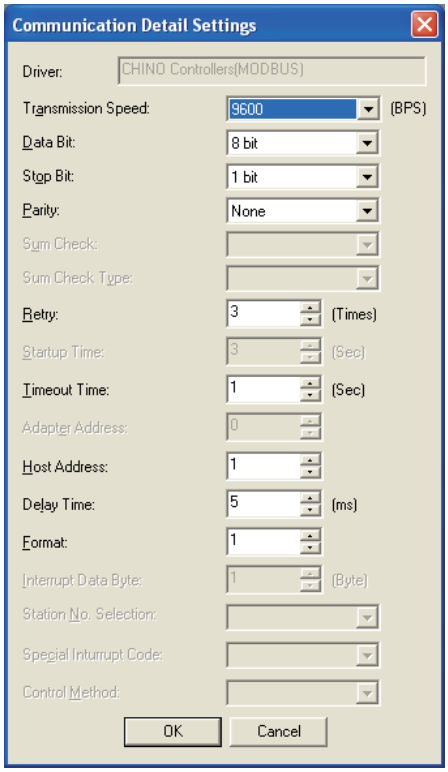
*1 Set a value 5 ms or larger when E5ZN is used.

## (43) Sinko Technos Controller




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Set when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default: 9600 bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7 bit / 8 bit<br><Default: 7 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1 bit / 2 bit<br><Default: 1 bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity check. | None / Even / Odd<br><Default: Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3Sec> |
| Host Address | Specifies the host address (station No. of the temperature controller controller connected to the GOT) in the connected network. | 0 to 94<br><Default: 0> |
| Delay Time | Set for adjusting the communication request timing of the GOT. | 0 to 300<br><Default: 0ms> |

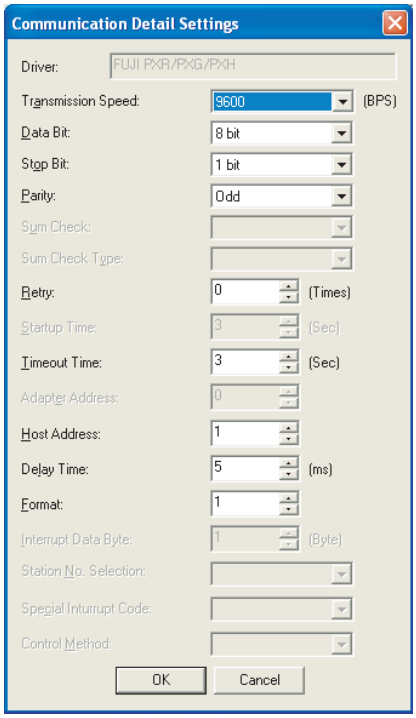
(44) CHINO Controllers(MODBUS)




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Set when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 115200 (BPS) <Default: 9600 bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7 bit / 8 bit <Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1 bit / 2 bit <Default: 1 bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity check. | None / Even / Odd <Default: None> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times) <Default: 3 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec) <Default: 1 Sec> |
| Host Address | Specifies the host address (station No. of the temperature controller controller connected to the GOT) in the connected network. | 1 to 99 <Default: 1> |
| Delay Time | Set for adjusting the communication request timing of the GOT. | 0 to 300 <Default: 5ms>*1 |
| Format | Selects the communication format. | 1 to 2 <Default: 1> |

*1 Set the delay time to 30ms or more with the DZ1000 and DZ2000.

### (45) FUJI PXR/PXG/PXH

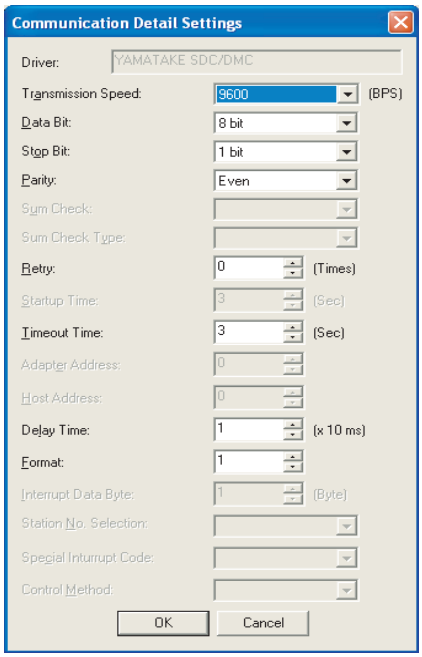



| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Set when changing the transmission speed of the communication with a controller. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default: 9600 bps> |
| Data Bit | Set when changing the data length used for communication with a controller. | 7 bit / 8 bit<br><Default: 8 bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1 bit / 2 bit<br><Default: 1 bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format of parity check. | None / Even / Odd<br><Default: Odd> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default: 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default: 3 Sec> |
| Host Address | Specifies the host address (station No. of the temperature controller connected to the GOT) in the network in hexadecimal. | 1 to 255 *1<br><Default: 1> |
| Delay Time | Sets for adjusting the timing for the GOT to output the communication request. | 0 to 300 (ms)<br><Default: 5 ms> *2 |
| Format | Selects the communication format. | 1 to 2<br><Default: 1> |

*1 Do not set a value in the range from 200 to 215.

*2 Set 5 ms or larger for the delay time.
When 0 ms is set, communication may be disabled.

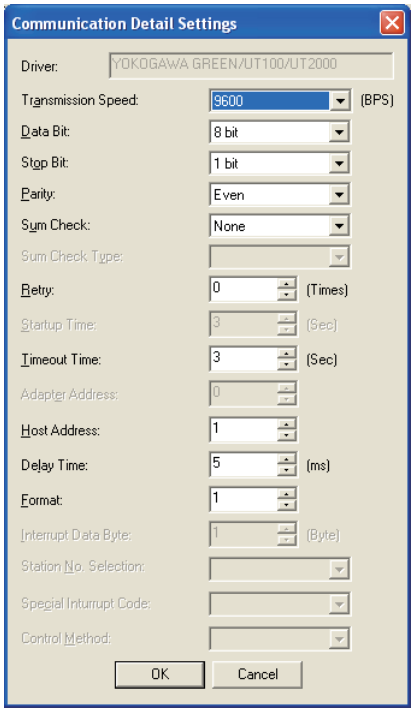
(46) YAMATAKE SDC/DMC




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Even> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (×10 ms)<br><Default : 10ms>*1 |
| Format | Selects communication format. | 1 to 2<br><Default : 1> |

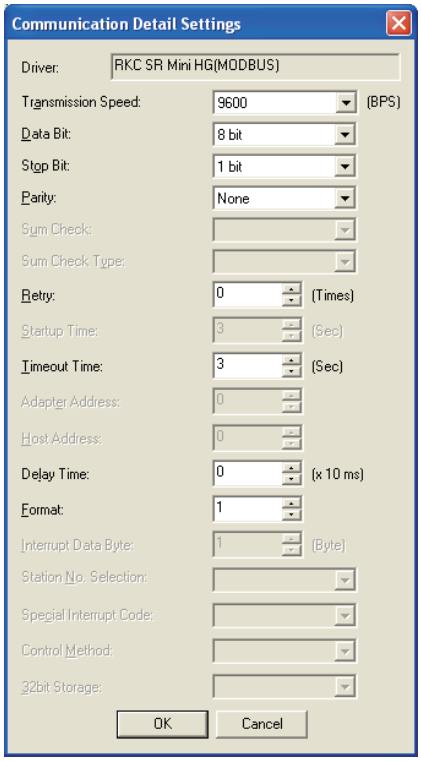
*1 For Delay Time, set a value 10 ms or larger.
Communication may be disabled if 0 ms is set.

## (47) YOKOGAWA GREEN/UT100/UT2000



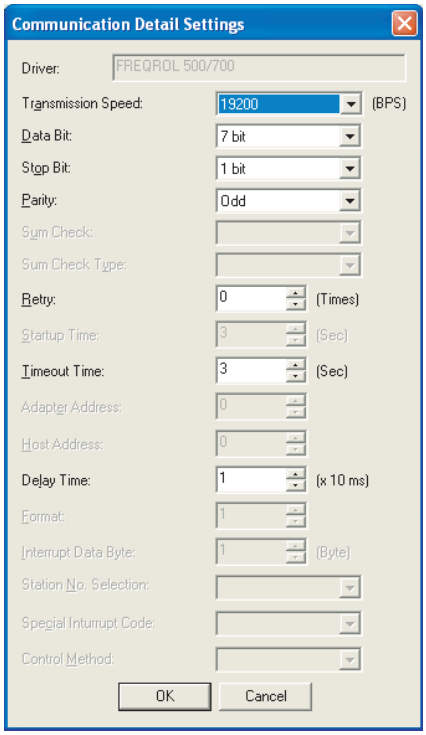

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with a controller. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Set the changing the data length used for the communication with a controller. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specify the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity check. | None / Even / Odd<br><Default : Even> |
| Sum Check | Specify whether to execute sum check or not during communication | Done / None<br><Default : None> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specify the host address (station No. of the temperature controller connected to the GOT) in the connected network. | 1 to 99<br><Default : 1> |
| Delay Time | Set for adjusting the communication request timing of the GOT. | 0 to 300<br><Default : 5ms> |

### (48) RKC SR Mini HG (MODBUS)



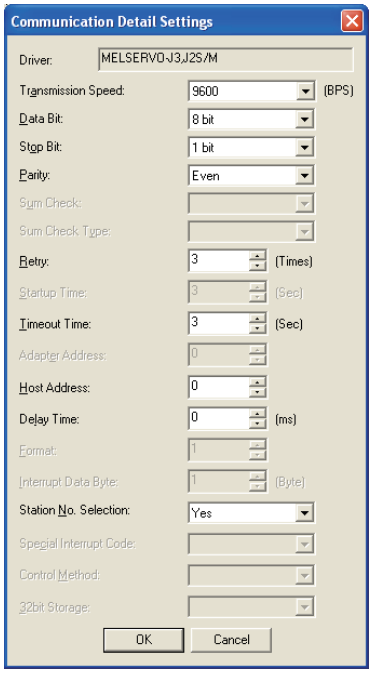

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : None> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (×10 ms)<br><Default : 0> |
| Format | Select a communication format.<br>Format 1: For connecting to the SR mini HG or SRZ<br>Format 2: For connecting to CB series | 1 / 2<br><Default: 1> |

### (49) FREQROL 500/700



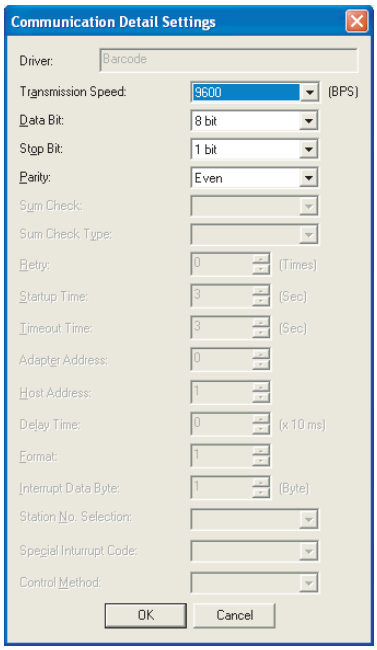

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 7bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Odd> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 1 to 30 (Sec)<br><Default : 1 Sec> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 30 (×10 ms)<br><Default : 10> |

### (50) MELSERVO-J3, J2S/M



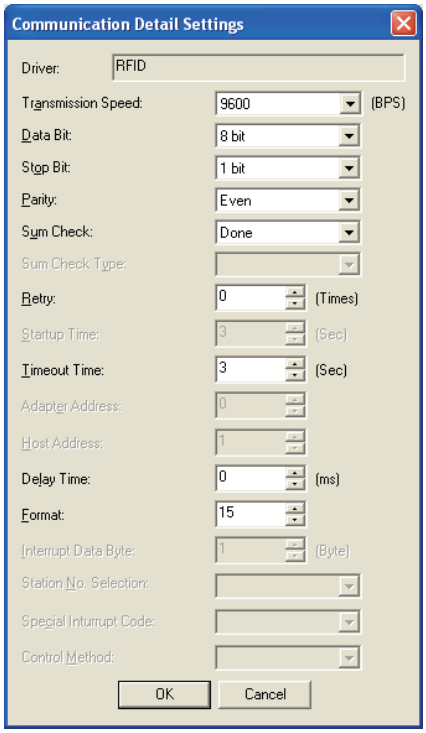

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Host Address | Specifies the host address (station No. of the adapter to which GOT is connected) in the connected network. | 0 to 31<br><Default : 0> |
| Delay Time | Sets for adjusting the communication request timing of the GOT. | 0 to 300 (ms)<br><Default : 0ms> |
| Station No. Selection | Specifies whether to use station No. during communication.<br>When specifying with [Yes], the station No. is fixed to [0]. | Yes / No<br><Default : Yes> |

### (51) Barcode



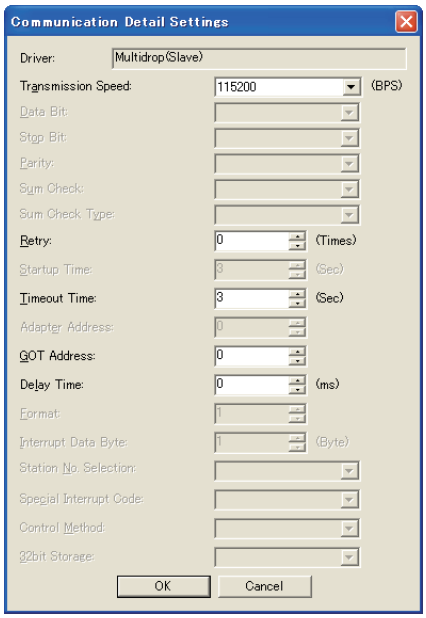

| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Sets this item when changing the data length used for communication with communication devices. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specifies the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specifies whether parity is checked or not. If parity is checked, specifies the format for parity check. | None / Even / Odd<br><Default : Even> |

### (52) RFID




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with a controller. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200 (BPS)<br><Default : 9600bps> |
| Data Bit | Set the changing the data length used for the communication with a controller. | 7bit / 8bit<br><Default : 8bit> |
| Stop Bit | Specify the stop bit length during communication. | 1bit / 2bit<br><Default : 1bit> |
| Parity | Specify whether parity is checked or not. If parity is checked, specify the format for parity check. | None / Even / Odd<br><Default : Even> |
| Sum Check | Specify whether to execute sum check or not during communication | Done / None<br><Default : Done> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout Time | Sets time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 3000 (ms)<br><Default : 0ms> |
| Format | Selects the communication format.<br>Format10: Dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.)<br>Format 11: Dedicated protocol (ICU-60S manufactured by MARS TECHNO SCIENCE Corp.)<br>Format 12: Dedicated protocol (ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.)<br>Format15: Nonprocedural protocol | 10/11/12/15<br><Default : 15> |

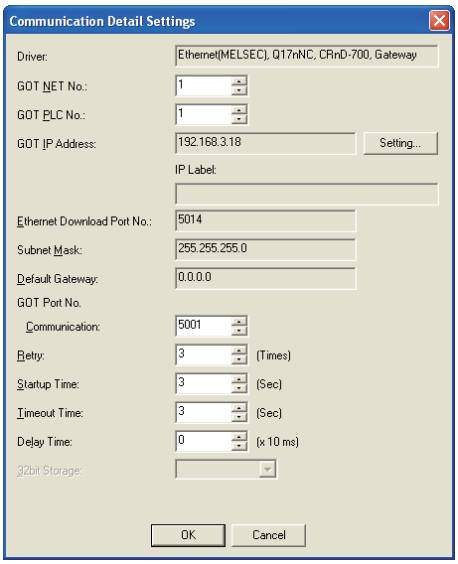
### (53) Multidrop(Slave)




| Item | Description | Setting range |
|---|---|---|
| Transmission Speed | Sets when changing the transmission speed of the communication with communication devices. | 4800 / 9600 / 19200 / 38400 / 57600 / 115200(BPS)<br>< Default : 115200bps> |
| Retry | Set the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 0 Times> |
| Timeout time | Set time required for communication to time out. | 3 to 30 (Sec)<br><Default : 3 Sec> |
| GOT Address | Set the station No. of the GOT. | 0 to 15<br><Default: 0> |
| Delay Time | Sets the transmission delay time to reduce the load in the network and the connected PLC. | 0 to 300 (ms)<br><Default: 0 ms> |

(54) Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway

(a) For GT16



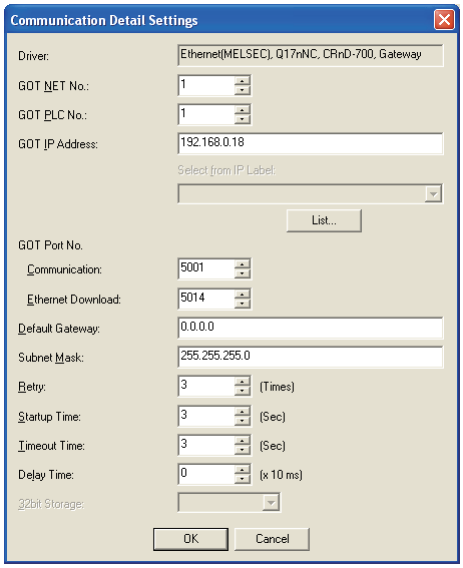

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| GOT Port No. (Communication) | Sets the port No. used by GOT to connect with Ethernet module.*2 | 1024 to 5010, 5014 to 65534<br><Default : 5001> |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

*1 For details of *1, refer to the following.

This section 1 (13) *1 GOT IP address setting

*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

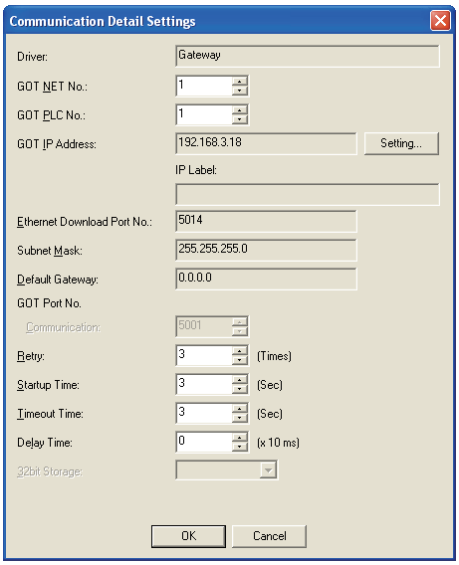
(b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255<br><Default : 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | — |
| GOT Port No. (Communication) | Set the GOT's port No. to be used for connecting with the controllers. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5001> |
| GOT Port No. (Ethernet Download) | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 44817, 44819 to 65534<br><Default: 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255<br><Default : 0.0.0.0> |
| Subnet Mask | Sets when using sub network. (Via router only)<br>Operates with the default value when not using sub network. | 0.0.0.0 to 255.255.255.255<br><Default : 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Srartup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

(55) Gateway

(a) For GT16



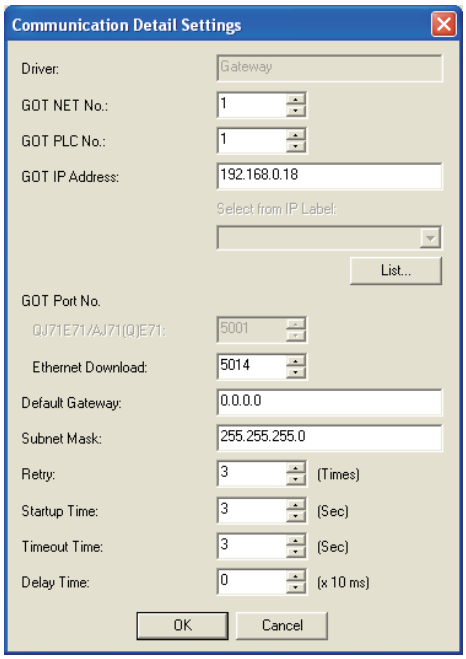

| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |
| Retry | Sets the number of retries to be performed when a communication error occurs. When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Startup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

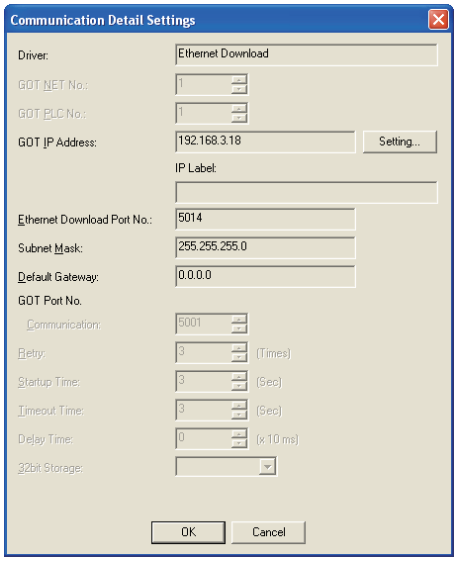
(b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT NET No. | Sets the network No. of GOT | 1 to 239<br><Default : 1> |
| GOT PLC No. | Sets the station No. of GOT | 1 to 64<br><Default : 1> |
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0. to 255.255.255.255<br><Default : 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | — |
| Ethernet Download | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 65534<br><Default : 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0. to 255.255.255.255<br><Default : 0.0.0.0> |
| Subnet Mask | Sets when using sub network. (Via router only)<br>Operates with the default value when not using sub network. | 0.0.0.0. to 255.255.255.255<br><Default : 255.255.255.0> |
| Retry | Sets the number of retries to be performed when a communication error occurs.<br>When receiving no response after retries, the communication times out. | 0 to 5 (Times)<br><Default : 3 Times> |
| Srartup Time | Specifies the time period from the GOT startup until GOT starts the communication with the PLC CPU. | 3 to 255 (Sec)<br><Default : 3 Sec> |
| Timeout Time | Sets time required for communication to time out. | 3 to 90 (Sec)<br><Default : 3 Sec> |
| Delay Time | Sets the delay time to lower the load of the network/PLC connected. | 0 to 10000 (× 10ms)<br><Default : 0 ms> |

### (56) Ethernet Download

#### (a) For GT16



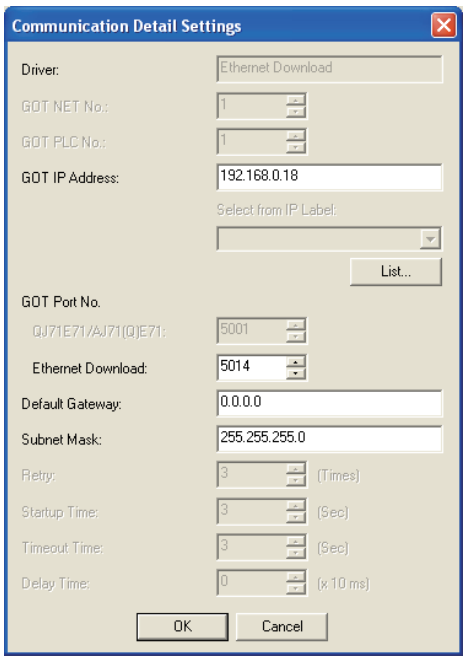

| Item | Description | Setting range |
|---|---|---|
| GOT IP Address | Displays the IP address of the GOT. | *1 |
| IP Label | Displays the IP label selected in the IP Label List dialog box. | *1 |
| Ethernet Download Port No. | Displays the port No. used by the GOT for the Ethernet download. | *1 |
| Subnet Mask | Displays the subnet mask when using a subnetwork. (Via a router only) | *1 |
| Default Gateway | Displays the router address of the default gateway for the GOT connected. (Via a router only) | *1 |

*1 For details of *1, refer to the following.

☞ This section 1 (13) *1 GOT IP address setting

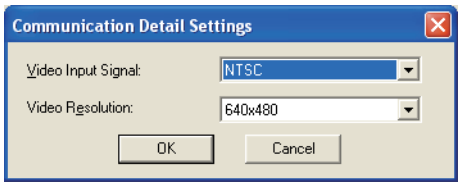
*2 When [EtherNet/IP(AB), Gateway] is set for the driver in the communication settings, "44818" cannot be set.

#### (b) For GT15




| Item | Description | Setting range |
|---|---|---|
| GOT IP Address | Sets the IP address of GOT. | 0.0.0.0 to 255.255.255.255 <Default : 192.168.0.18> |
| Select from IP Label | ( ☞ This section 2 The IP address registration of the GOT) | — |
| Ethernet Download | Sets the port No. used by GOT to connect with Ethernet download. | 1024 to 5010, 5014 to 65534 <Default : 5014> |
| Default Gateway | Sets the router address of default gateway to which GOT is connected. (Via router only) | 0.0.0.0 to 255.255.255.255 <Default : 0.0.0.0> |
| Subnet Mask | Sets when using sub network. (Via router only) Operates with the default value when not using sub network. | 0.0.0.0 to 255.255.255.255 <Default : 255.255.255.0> |

### (57) Video / RGB

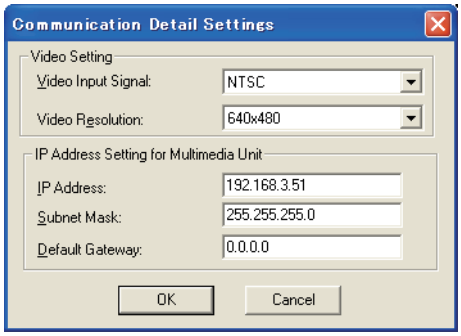



| Item | Description | Setting range |
|---|---|---|
| Video Input Signal | Selects the video input signal format. | NTSC / PAL<br><Default: NTSC> |
| Video Resolution | Selects video resolution. *1 | 640 × 480 / 720 × 480 / 768 × 576<br><Default: 640 × 480> |

*1 The selectable items vary according to the GOT to be used.
The following shows the items selectable for each GOT.

| GOT | Video input signal setting | |
|---|---|---|
| | NTSC | PAL |
| GT16 | 640 × 480 | 640 × 480 / 720 × 480 / 768 × 576 |
| GT15 | | 640 × 480 / 720 × 480 |

### (58) Multimedia




| Item | Description | Setting range |
|---|---|---|
| Video Input Signal | Selects the video input signal format. | NTSC / PAL<br><Default: NTSC> |
| Video Resolution | Selects video resolution. | When the video input signal is set to [NTSC]: 640 × 480<br>When the video input signal is set to [PAL]: 768 × 576 |
| IP Address *1 | Set the IP address of the multimedia unit. | 0.0.0.0 to 255.255.255.255<br><Default: 192.168.3.51 > |
| Subnet Mask*1 | Set the subnet mask for the subnetwork connected to the multimedia unit. (Via a router only) | 0.0.0.0 to 255.255.255.255<br><Default: 255.255.255.0 > |
| Default Gate-way*1 | Set the router address of the default gateway for the network connected to the multimedia unit. (Via a router only) | 0.0.0.0 to 255.255.255.255<br><Default: 0.0.0.0 > |

*1 Settings are not required when connecting the multimedia unit to Ethernet.

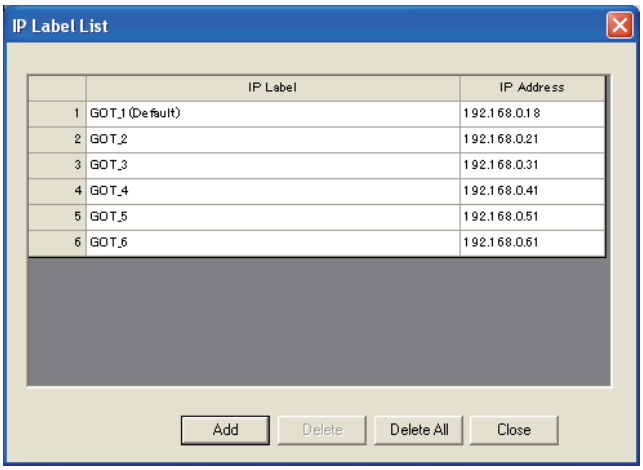
## 2 The IP address registration of the GOT

The IP address used by the GOT is assigned to a unique name.
If selecting a IP label from [Select from IP Label], the IP address corresponding to the IP label will be set to [GOT IP Address] automatically.
The maximum of 255 IP labels can be set.

(1) Settings

1. Click the [List...] button on the Communication Detail Settings dialog box.
2. The IP Label List dialog box is displayed.
   Input [IP Label] and [IP Address].
3. After adding [IP Label] and [IP Address], click the [Close] button to close the IP Label List dialog box.
4. Select the IP label registered by 3 from [Select from IP Label] on the Communication Detail Settings dialog box.
   The IP address corresponding to the selected IP label is set to [GOT IP Address].

(2) Setting items




| Item | Description |
|---|---|
| Add | Adds a new IP label. Up to 255 IP labels can be added. |
| Delete | Deletes the IP label being selected. |
| Delete All | Deletes all IP labels. |
| Close | Closes the IP Label List dialog box. |

(3) Applications

The registered IP labels can be used for the following.

- When setting a GOT IP address on the Communication Detail Settings.

  (☞ This section 1 Communication Detail Settings dialog box)
- When setting a GOT IP address in the case of the GOT communication with the Ethernet (Ethernet download)

  (☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8 TRANSFERRING DATA))

**Point**

Using the registered IP label and IP address on another PC

The registered IP label and IP address are not saved in the project. (saved in the PC)

To use the project in another PC, set the IP label and IP address again.

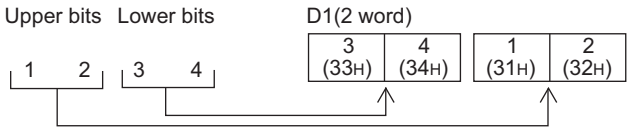
## 3 Storage order for 32-bit data (2 word data)

Two-word data (32-bit data) consists of upper bits (16 bits) and lower bits (16 bits).

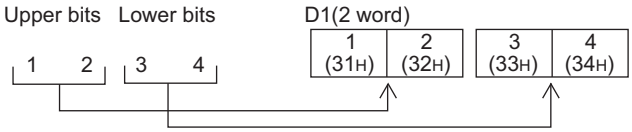
When storage order for 32-bit data is set to [LH Order], the data are stored in the devices with the lower to upper order.

When storage order for 32-bit data is set to [HL Order], the data are stored in the devices with the upper to lower order.

Example) ASCII codes "1234" are stored in D1(2 word) with the LH order.




Example) ASCII codes "1234" are stored in D1(2 word) with the HL order.



## 3.7.3 Precautions

### 1 Precautions on hardware

The Communication Setting of the utility is disabled for GT10. (Can be displayed on the utility for confirmation only.)
Be sure to make settings on GT Designer2.

### 2 Priority used when settings are done by utility

This setting can be made with the utility of the GOT.
(Note that IP labels and IP addresses can be set only by the GT Designer2.)

- If the settings done according to this section are downloaded to the GOT after setting by the utility on the GOT, the communication settings explained here become effective.
- If the communication settings are downloaded to the GOT and then changed by the utility, the changes made by the utility become effective.
  When screen data are uploaded from the GOT, data changed by the utility are uploaded.

### 3 Precautions for changing setting

(1) Downloading the communication setting data
When changing the communication setting, make sure to download the communication setting data to the GOT.
Failure to do so does not reflect the data set on GT Designer2 as the GOT data.
When the communication setting is not configured on the GOT, the GOT cannot communicate with controllers.

(2) Enabling the communication setting
When changing the communication setting, do not uncheck [Use Communication Settings].
Without checking [Use Communication Settings], the communication setting data cannot be downloaded.

## 4 Setting Extend I/F

When using the following communication units or option units, set the channel No. and the driver as indicated in the table below.
The GOT will not communicate with the controller unless CH No. and driver are set as specified below.

○: Communication enabled ×: Communication disabled

| Communication unit, option unit*1 | Extend I/F to be set | |
|---|---|---|
| | Extend I/F-1<br>1st stage | Extend I/F-2<br>1nd stage |
| Bus connection unit<br>(GT15-QBUS2, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L) | ○ | × |
| MELSECNET/H communication unit (GT15-J71LP23-25, GT15-J71BR13) | ○ | × |
| MELSECNET/10 communication unit (GT15-75J71LP23-Z, GT15-75J71BR13-Z) | × | ○ |
| CC-Link communication unit (GT15-J61BT13) | ○ | × |
| CC-Link communication unit (GT15-75J61BT13-Z) | × | ○ |
| Video input unit (GT16M-V4, GT15V-75V4) | ○ | × |
| RGB input unit (GT16M-R2, GT15V-75R1) | ○ | × |
| Video/RGB input unit (GT16M-V4R1, GT15V-75V4R1) | ○ | × |
| RGB output unit (GT16M-ROUT, GT15V-75ROUT) | ○ | × |
| Multimedia unit (GT16M-MMR) | ○ | × |

*1 When installing a unit on another unit, refer to the following.

☞ Section 2.8 Multi-channel Function

## 5 Drivers and functions when connecting to Ethernet

For GT16 and GT15, the Ethernet connection, gateway function, Ethernet download, and MES interface function are available.
(For GT16, use the standard I/F-4. For GT15, mount the Ethernet communication unit.)
The available functions vary according to the driver set in the communication settings.

○: Enabled ×: Disabled

| CH No. | Driver name | Function | | | |
|---|---|---|---|---|---|
| | | Ethernet connection*1 | Gateway function*2 | Enternet download | MES interface function*3 |
| 1 to 4 | Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway | ○ | ○ | ○ | ○ |
| 1 to 4 | Ethernet(MELSEC), Q17nNC, CRnD-700 | ○ | × | ○ | ○ |
| 1 to 4 | Ethernet(YASKAWA), Gateway | ○ | ○ | ○ | ○ |
| 1 to 4 | Ethernet(YOKOGAWA), Gateway | ○ | ○ | ○ | ○ |
| 1 to 4 | EtherNet/IP(AB), Gateway | ○ | ○ | ○ | ○ |
| 1 to 4 | MODBUS/TCP, Gateway | ○ | ○ | ○ | ○ |
| * | Gateway | × | ○ | ○ | ○ |
| * | Ethernet download | × | × | ○ | ○ |

*1 When using the Ethernet connection, the Ethernet setting has to be made.
For details, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter10 ETHERNET CONNECTION)

*2 When using the gateway function, the setting for the gateway function has to be made.
For details, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter55 GATEWAY FUNCTION)

*3 When using the MES interface function, the setting for the MES interface function has to be made.
For details, refer to the following manual.

☞ GOT1000 Series MES Interface Function Manual (Chapter6 MES INTERFACE FUNCTION)

**Point**

Selecting a driver

Select a driver compatible with the function to be used.
When using the gateway function on the GT15, for example, mount the option function board and install the option OS (Gateway) on the GOT.
If setting the driver of [Ethernet(MELSEC), Q17nNC, CRnD-700, Gateway] or [Gateway] without the operations above, an error occurs.

## 6 Precautions for connecting GOT to Q17nDCPU and CNC C70 series

Because the Q17nDCPU and CNC C70 take some time to start, errors may occur when the GOT and Q17nDCPU turn on simultaneously.
When errors occur, set the opening screen time to 18 seconds or more.
For how to change the opening screen time, refer to the following.

☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)

# 3.8 Setting of GOT Display and Operations (GOT Setup)

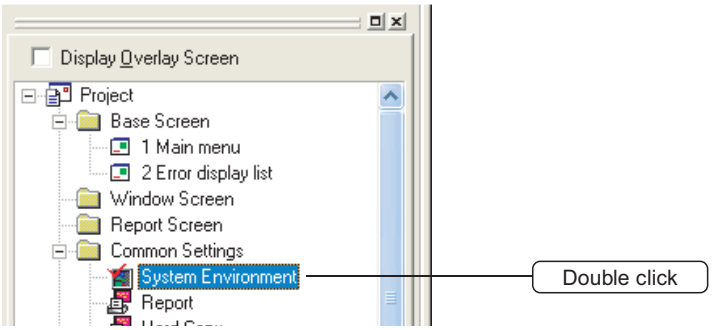
Sets screen save time, whether to set clock setting and the buzzer sound length long/short.
These settings can also be set by the utility.

## 3.8.1 Settings

1. Select [Common] → [System Environment] menu.
2. The system environment setting dialog box is displayed. Double-click "GOT Setup".
3. The setting dialog box is displayed. Refer to the following description to perform the setting.

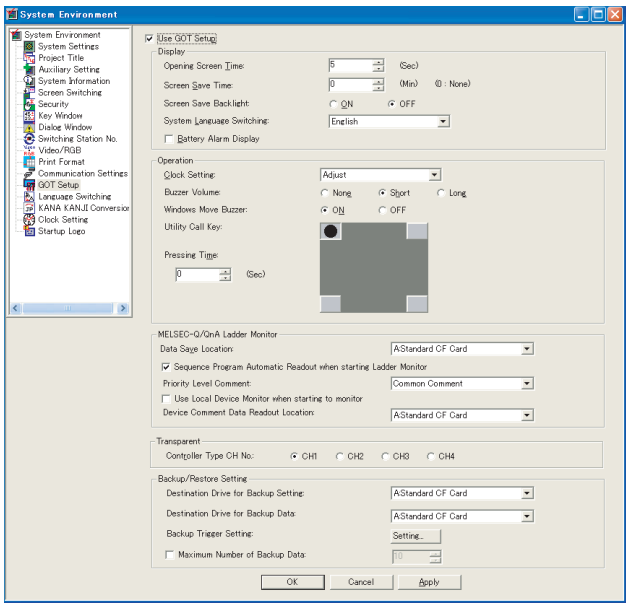
**Remark** Performing the setting in project workspace

The system environment setting dialog box is displayed by double-clicking "System Environment". Double-click "GOT Setup."

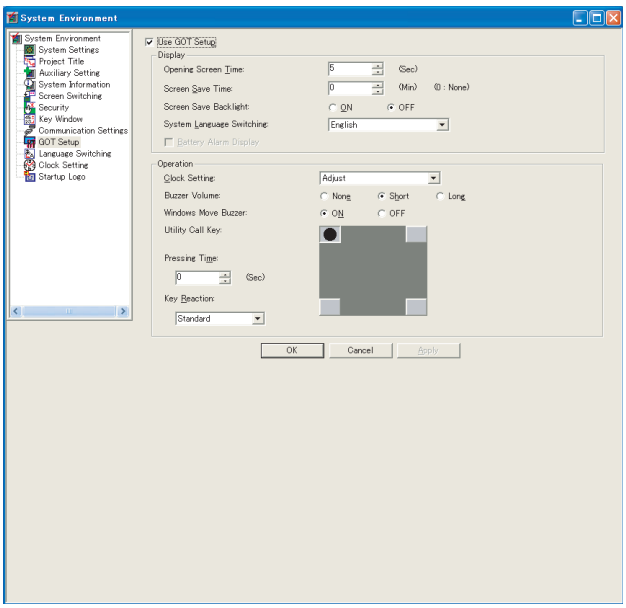


## 3.8.2 Setting items

Set the display and operations of GOT.




(Example: GT15 setting)




(Example: GT10 setting)

| Item | | Description | Model |
|---|---|---|---|
| Use GOT Setup | | Check when performing setup.(☞ Section 3.8.3 Precautions) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display | Opening Screen Time | Set the opening screen time (0 to 60s, default: 5s) when the GOT main unit is started up. | |
| | Save Screen Time | Set the time to turn off the display of the monitor screen by the screen saving function (0 to 60min, default: 0). If set to "0", the screen is displayed constantly. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Screen Save Backlight | Specify if turn off the backlight by the screen saving function at the same time as the display of the monitoring screen is turned off.<br>• ON : The backlight is not turned off.<br>• OFF : The backlight is turned on (default).<br>The Screen Save Backlight behaviors differently depending on the setting of the Backlight OFF output signal (System Signal 1-1.b7).<br>For details, refer to the Backlight OFF output signal (System Signal 1-1.b7) of the following manual.<br>☞ Section 3.6 System Information Setting | |
| | System Language Switching | Specify the language used for the display of system messages, utility and system alarm.<br>• Japanese • English • Chinese (Simplified) • Chinese (Traditional)<br>• Korean • German<br>(For GT10, [Korean] cannot be selected.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Battery Alarm Display | Check this option for displaying the system alarm (500 Warning! Built-in battery voltage is low.).<br>For details of system alarm, refer to the following manuals.<br>☞ GT16 User's Manual (Hardware) (Section 10 TROUBLESHOOTING)<br>GT15 User's Manual (Section 20 TROUBLESHOOTING)<br>GT11 User's Manual (Section 18 ERROR MESSAGE AND SYSTEM ALARM) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Item | | | Description | Model |
|---|---|---|---|---|
| Operation | Clock Setting | | Specify not using the function for matching time with the controller or the method of using the function.<br>• None<br>• Adjust (default)<br>• Broadcast<br>• Adjust/Broadcast<br>For the details of the function for matching time, refer to the following.<br>☞ Section 2.5 Clock Function | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Buzzer Volume | | Specify the length of buzzer sounded at touch key input (SHORT/LONG) or not using buzzer (default: Short). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Windows Move Buzzer | | Specify whether to sound buzzer or not when move a window.<br>• ON : Sound buzzer (default)<br>• OFF : Not sound buzzer | |
| | Utility Call Key*1*2 | | Specify the key position for calling the utility from the monitoring screen.<br>One or two points out of four corners can be specified freely. At least a point must be specified.<br>(Only one point for GT16, GT1595-X, GT SoftGOT1000, and GT1020)<br>When the key position is set at one point, the utility screen is displayed by pressing the key position for pressing time. | |
| | | Pressing Time | When the key position is set at one point, set the time to keep pressing the key position to display the utility screen.<br>(0 to 5 sec, default: 0) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | | Key Reaction | For GT10, the number of malfunctions when touching the touch panel unnecessarily can be reduced.<br>Set the key reaction to [Standard], [+10ms], [+20ms], [+40ms], [+80ms], or [+120ms].<br>(Default: [Standard])<br>When a touch key is touched for less than the set time, the GOT does not recognize the touch operation. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Touch Detection Mode | | For GT16 and GT1595-X, incorrect inputs (responses of parts other than the touched part) when more than 2 points are touched simultaneously on the GOT screen can be reduce.<br>False Input Reducation: Responses of parts other than the touched part are reduced.<br>Enable Stroke Tracing Press: Responses of parts other than the touched part are not reduced. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| MELSEC-Q/QnA Ladder Monitor | | | Set a data save location for the MELSEC-Q/QnA ladder monitor, SFC monitor, or ladder editor.<br>Set details for the sequence program readout or comment display. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Save Location | | Select a data location for the MELSEC-Q/QnA ladder monitor, SFC monitor, or ladder editor (C: Built in Flash Memory/A: Standard CF Card/B: Extended Memory Card/None, Default is C: Built in Flash Memory.) | |
| | Sequence Pragram Autmatic Readout when starting Ladder Monitor | | Check this item when applying automatic reading of the sequence program from the PLC CPU at the start of the ladder monitor from a touch switch or the advanced alarm display. | |
| | Priority Level Comment | | Specify common comment or comment by program to be displayd with the ladder monitor if either of the comment types is set for the same device in the sequence program. | |
| | Use Local Device Monitor when starting to monitor | | When the ladder monitor is started, check the item for starting monitoring local devices. | |
| | Device Comment Data Readout Location | | Select the drive to be used for collectively reading device comment data stored in a CF card. | |
| Transparent | | | When using the multi-channel function, specify the channel No the controller for which the FA transparent function is executed. (Default: CH1)<br>The number of channels that can be set differs depending on the GOT to be used.<br>For details, refer to the following.<br>☞ Section 2.8 Multi-channel Function | |

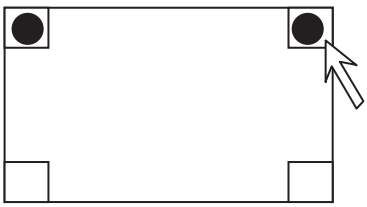
(Continued to next page)

| Item | | Description | Model |
|---|---|---|---|
| Backup/Restore Setting | | Set the storage locations that setting data for backups and backup data are stored. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Destination Drive for Backup Setting | Set the storage location that the setting data for backups is stored. | |
| | Destination Drive for Backup Data | Set the storage location that backup data are stored. | |
| | Backup Trigger Setting*2 | Set when backup data automatically depending on the condition.<br>When clicking the Setting button, the Backup Trigger Setting dialog box is displayed.<br>Set the backup trigger [Rise/Time] with the displayed dialog box. | |
| | Maximum Number of Backup Data | Check when setting the maximum stored number of backup data. (1 to 50) | |

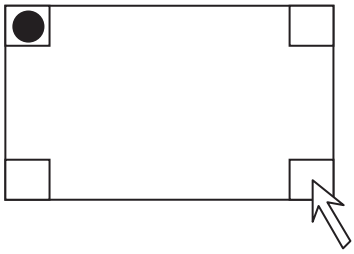
*1 Setting the utility call key positions

● (a black circle enclosed with a square) indicates that the area is the utility call key. By clicking the □ areas at the four corners of the screen, the areas change to ●.
To cancel the utility call key, click the ● area to change it to a square □.

When ● is displayed at two corners, if specifying utility call key on another square area, follow the procedure below.



Click the utility call key to cancel.



The corner clicked is changed to a square □. Click the square □ to set for a new utility call key.

The corner clicked is changed to ●, and specified to a utility call key.

*2 Precautions for advanced alarm popup display (GT16, GT1595-X only)

When [Display Position Switching] is set to [Switch] in the advanced alarm popup display setting, set either of the following for the utility call key.

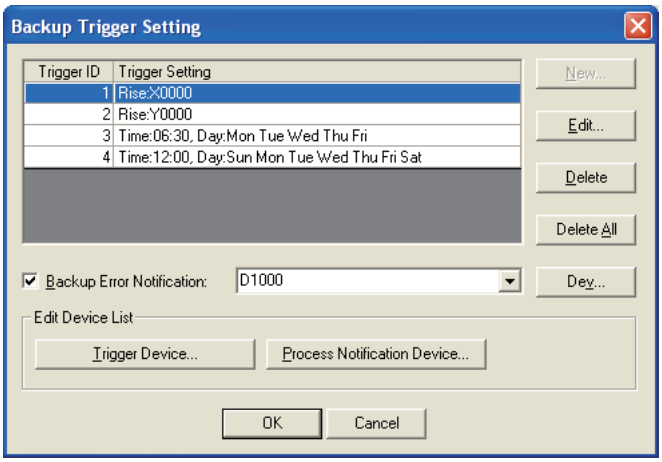
- Setting the position of the utility call key to the upper-right or lower-left corner
- Setting [Pressing Time] of the utility call key to 1 or more seconds

When [Pressing Time] is set to 0 and the key position is set to the lower-left corner, the operation is as described below.
If the positions of the key and the advanced alarm popup display overlap, the utility screen appears by switching the display position of the advanced alarm popup display.
For the advanced alarm popup display, refer to the following.

☞ 8.5 Advanced Alarm Popup Display

*3 Backup trigger setting dialog box

Set and edit the backup trigger setting.
The backup trigger setting can register up to 4.
Followings are setting items.

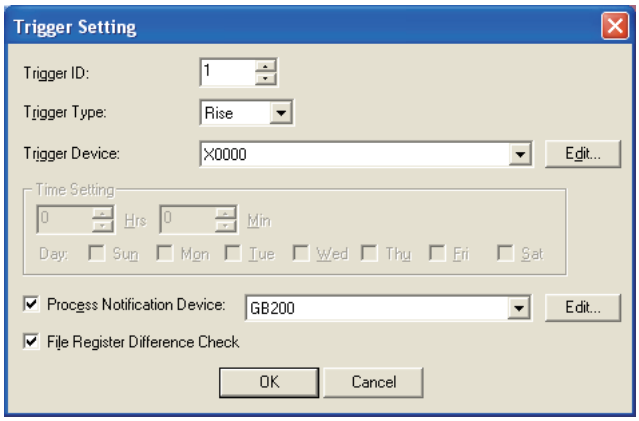



| Item | | Description |
|---|---|---|
| Trigger ID | | Displays the backup trigger setting ID. |
| Trigger Setting | | Displays setting items of the backup trigger setting.<br>Double click on lines to display the Trigger Setting dialog box.<br>(☞ This section (1) Trigger setting dialog box) |
| Backup Error Notification | | Check this item to store the backup trigger setting ID into the specified device if an error occurs during the backup. |
| Edit Device List | | Displays and edits the list to set the trigger setting.<br>Each up to 10 devices can register for the trigger device and the process notification device. |
| | Trigger Device | Click on this item to display the Device List (Trigger Device) dialog box.<br>(☞ This section (2) Device List dialog box) |
| | Process Notification Device | Click on this item to display the Device List (Process Notification Device) dialog box.<br>(☞ This section (2) Device List dialog box) |
| New | | Set a new line of the backup trigger setting. |
| Edit | | Edit setting items of the backup trigger setting.<br>Click on this item to display the Trigger Setting dialog box with the selected trigger setting.<br>(☞ This section (1) Trigger setting dialog box) |
| Delete | | Click on this item to delete the backup trigger setting with the selected line. |
| Clear All | | Click on this item to delete all of the displayed backup trigger setting. |

(1) Trigger setting dialog box

Set conditions and others to execute the backup.

Followings are setting items.

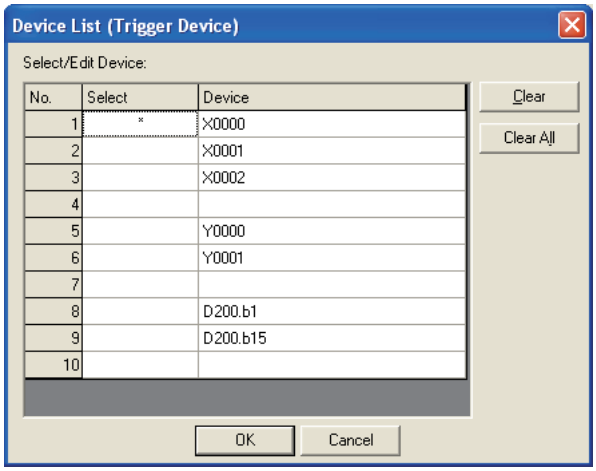



| Item | Description |
|---|---|
| Trigger ID | Displays the backup trigger setting ID. (Range: 1 to 4) |
| Trigger Type | Select the backup setting condition to execute.<br>• Rise : Backup the data when the trigger device rises.<br>• Time : Backup the data with the time that is specified in the time setting. |
| Trigger Device | When the trigger type is set to [Rise], select a trigger device.<br>Select the trigger device from devices that is set in the Device List (Trigger Device) dialog box.<br>Click the Edit button, and then the Device List (Trigger Device) dialog box appears.<br>(☞ (2) Device List dialog box) |
| Time Setting | When the trigger type is set to [Time], set the time and days that the GOT executes the backup.<br>Multiple days can be set. |
| Process Notification Device | Check when setting the device to notify that the backup is on the processing.<br>After the check, select a process notification device.<br>Select a process notification device from devices that is set in the Device List (Process Notification Device) dialog box.<br>Click the Edit button, and then the Device List (Process Notification Device) dialog box appears.<br>(☞ (2) Device List dialog box) |
| File Register Difference Check | When the item is checked, the GOT checks if data stored in file registers are changed when the backup is executed.<br>When the data stored in the file registers are changed, the GOT executes the backup.<br>For details of file registers, refer to the following manual.<br>(☞ QCPU User's Manual (Function Explanation, Program Fundamentals) (Section 9.7 File Register)) |

(2) Device List dialog box

Set and select devices used as the trigger device or the process notification device.

Followings are setting items.




| Item | Description |
|---|---|
| Select | Select devices used as the trigger device and the process notification device.<br>Selected devices are displayed with [*].<br>This item can be set only when open the Trigger Setting dialog box. |
| Device | Select devices used as the trigger device and the process notification device.<br>Devices can set up to 10.<br>Input directly or click the Dev. button to set the device.<br>(☞ Section 5.1 Device Setting) |
| Clear | Clear the clicked No. of setting items. |
| Clear All | Clear all of displayed lines. |

## 3.8.3 Precautions

### 1 Priority with utility setting

The setting described in this section can also be set by the utility of GOT.

- If the setting described in this section is performed by the utility and then downloaded to GOT, the setting becomes effective.
- If the setting is downloaded to GOT and then changed by the utility, the setting changed by the utility becomes effective.
  If screen data are uploaded from GOT, the content changed by the utility is reflected onto the data.

### 2 Precautions for changing setting

(1) Downloading the common setting data
When changing the GOT setup setting, make sure to download the common setting data to the GOT.
Failure to do so does not reflect the data set on GT Designer2 as the GOT data.

(2) Enabling the GOT setup setting
When changing the GOT setup setting, do not uncheck [Use GOT Setup].
Without checking [Use GOT Setup], the setup information is not downloaded to the GOT when the common setting data are downloaded.
When the setup information is not downloaded to the GOT, the GOT operates with the data existed in the GOT.
When the common setting data do not exist in the GOT, the GOT operates with the default data.

# 3.9 Setting GOT Clock Data (Clock Setting)

Set the method for matching clock data between the GOT and the external device.
There following three methods:

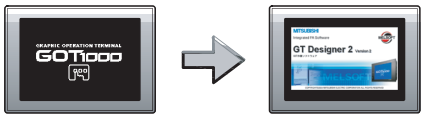
| Item | Description |
|---|---|
| Adjust | Make the clock data of the GOT matched with those of the external device. |
| Broadcast | Make the clock data of the external device matched with those of the GOT. |
| Adjust/Broadcast | • Make the clock data of the GOT and multiple controllers matched with those of one controller.<br>• The adjust and broadcast functions are used independently meeting the situation. |

Refer to the following for the clock data matching methods and decide which method to apply.

☞ Section 2.5 Clock Function

# 3.10 Setting the GOT Startup Logo

Make settings for displaying a BMP screen at the GOT startup.
The logo displayed at the GOT startup can be changed.



The BMP screen specified is displayed at the GOT startup.

## 1 The startup logo setting procedure

Set the startup logo in the following procedure.

**Point**

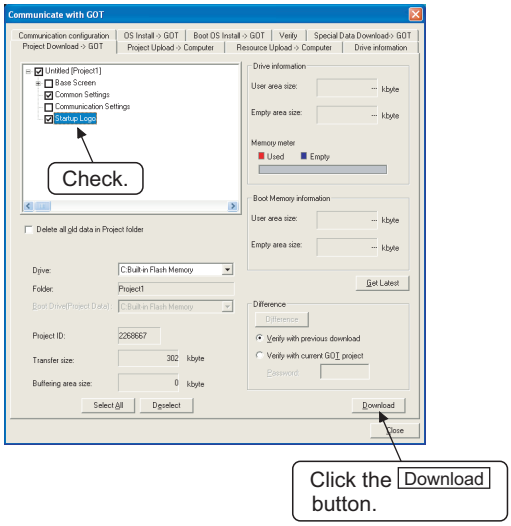
When OS boot drive is set to [A:Standard CF Card]

For displaying the startup logo when the OS boot drive is set to [A: Standard CF Card], the latest BootOS must be installed on the GOT.
For the OS version, refer to the following.

☞ Appendix7 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series)

(1) When using GT16, GT15, GT11, or GT10

1. Open the setting dialog box. (☞ Section 3.10.1 Settings)
2. Specify a BMP file to be used for the startup logo. (☞ Section 3.10.2 Setting items)
3. Download the startup logo to the GOT.




4. The specified BMP screen is displayed as the startup logo at the GOT startup.

(2) When using GT SoftGOT1000

Perform steps 1 to 3 below for the project to be monitored.

1. Open the setting dialog box. ( Section 3.10.1 Settings)
2. Specify a BMP file to be used for the startup logo. ( Section 3.10.2 Setting items)
3. Start up the GT SoftGOT1000. After that start monitoring of the created project, and the specified BMP screen is displayed as the startup logo.

## 2 The startup logo deleting procedure

Delete the startup logo in the following procedure.

(1) When using GT16, GT15, GT11, or GT10

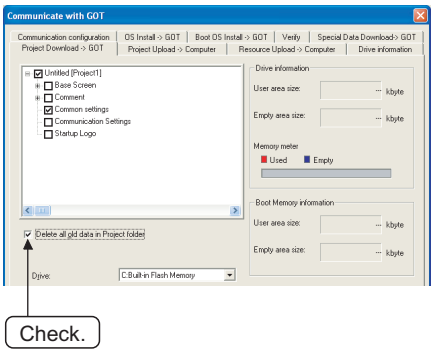
**Point**

When OS boot drive is set to [A:Standard CF Card]

When the OS boot drive is set to [A: Standard CF Card], the startup logo cannot be deleted with the method described in (b).
The startup logo can be deleted with the method described in (a) or with writing project data without the startup logo set and the OS into the CF card.

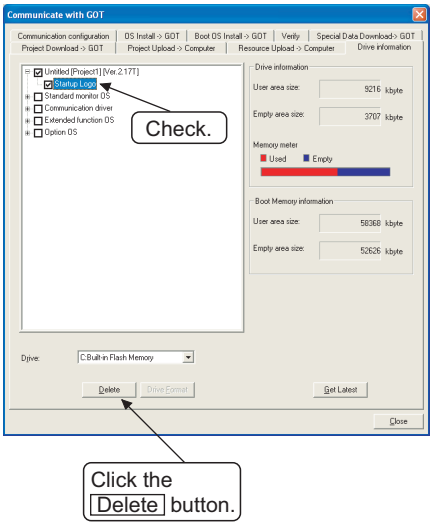
(a) Deleting the startup logo at the project data downloading

1. Open the setting dialog box.( Section 3.10.1 Settings)
2. Uncheck [Select Startup Logo] on the setting dialog box.
   ( Section 3.10.2 Setting items)
3. Download the project of the changed setting to the GOT.
   Check [Delete all old data in Project folder] at the downloading.



(b) Deleting the startup logo on the Drive information

The startup logo can be deleted at [Drive information].




(2) When using GT SoftGOT1000

Perform steps 1 to 2 below for the project to be monitored.

1 Open the setting dialog box. ( Section 3.10.1 Settings)

2 Uncheck [Select Startup Logo] on the setting dialog box. ( Section 3.10.2 Setting items)

## 3.10.1 Settings

1 Select [Common] → [System Environment] from the menu.

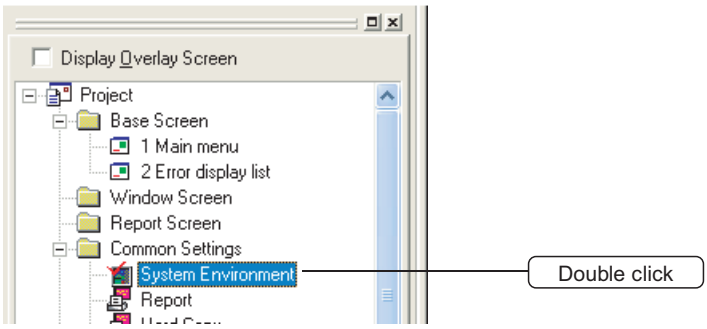
2 As the System Environment setting dialog box appears, double-click on [Startup Logo].

3 As the setting dialog box appears, make the settings with reference to the following explanation.

**Remark**

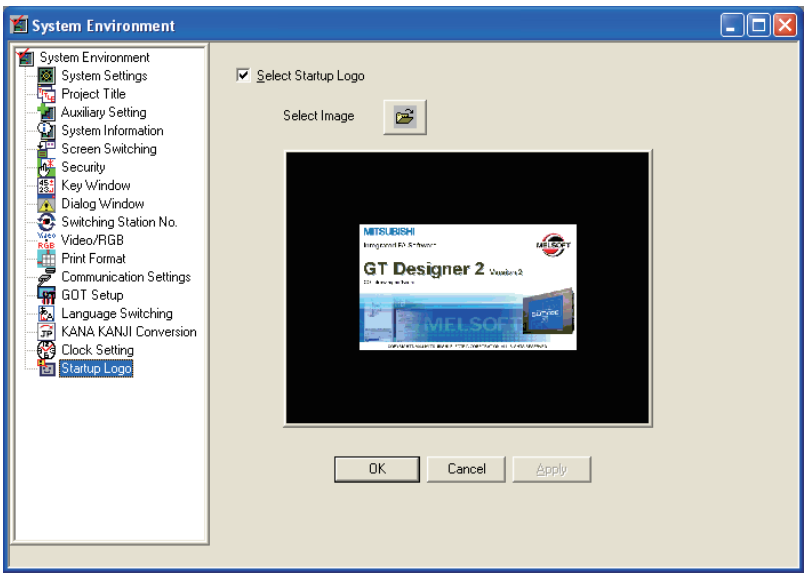
When making the settings in the project workspace

Double-click on [System Environment] and the System Environment setting dialog box appears, then double-click on [Startup Logo].



## 3.10.2 Setting items

Set the screen to be displayed at the GOT startup.




| Item | | Description | Model |
|---|---|---|---|
| Select Startup Logo | | Check this item when displaying a BMP file on the GOT.<br>After checking, select a BMP file to be displayed on the GOT with [Select Image].Without selecting any BMP file with [Select Image], the startup logo will not be displayed.<br>When this item is not checked, the default screen (the GOT1000 series logo) will be displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Select Image | Clicking this button displays the screen for selecting a file.<br>Select a BMP file stored in the PC. | |

**Hint!** Setting the startup logo displaying time

The startup logo displaying time can be changed with [Opening Screen Time] of the GOT Setup. (☞ Section 3.8.2 Setting items)

## 3.10.3 Precautions

### 1 Precautions on drawing

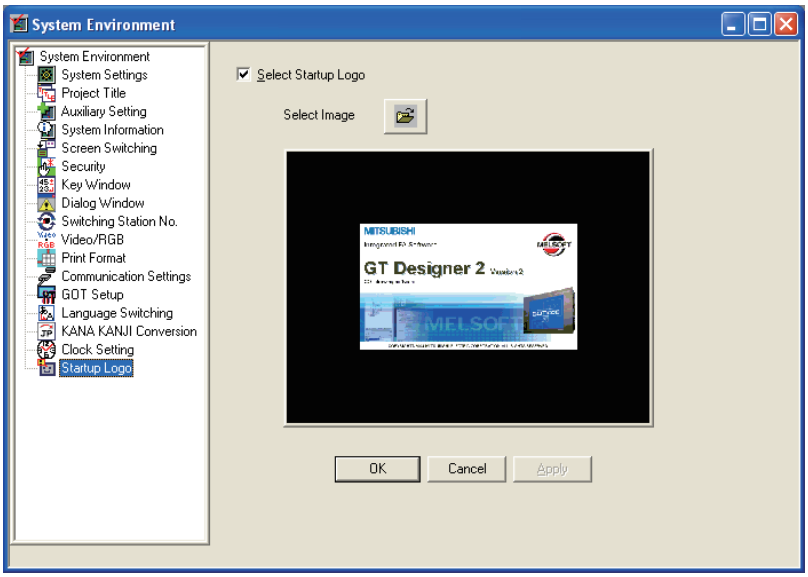
(1) The BMP file size
Use the BMP file smaller than the GOT screen size.
If using the BMP file larger than the GOT screen size, only the portion fitted in the screen is displayed.

(2) The number of colors for the startup logo

(a) When using GT16, GT15, GT11, or GT10
The colors not displayable on the GOT in use are subtracted.
Also, the startup logo is displayed in 256 colors even when the BMP file uses 256 colors or more.

(b) When using GT SoftGOT1000
The BMP file used as the startup logo is displayed in the maximum of 65536 colors.

The startup logo can be previewed by the GT Designer2.



# 3.11 Handy GOT Setting

ON/OFF operations of the grip switch LEDs must be set.
For functions and settings for Handy GOT, refer to the following manual.

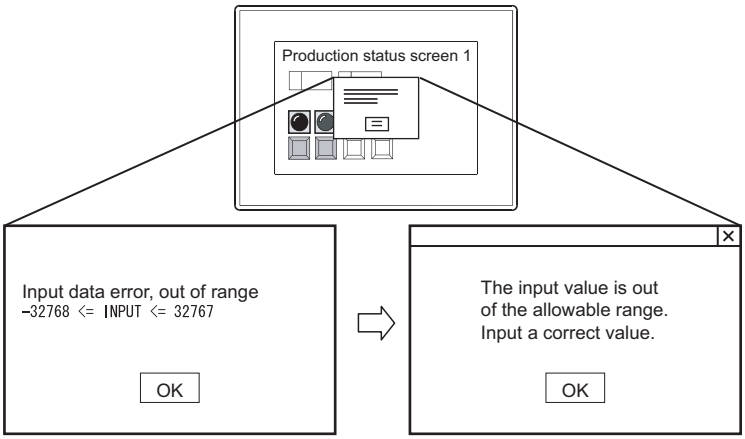
☞ GT11 Handy GOT User's Manual

# 3.12 Customizing Message to be Displayed by GOT (Dialog Window)

System messages to be displayed by GOT can be customized or created by the user.

## 1 Customizing the contents of system message displayed by GOT

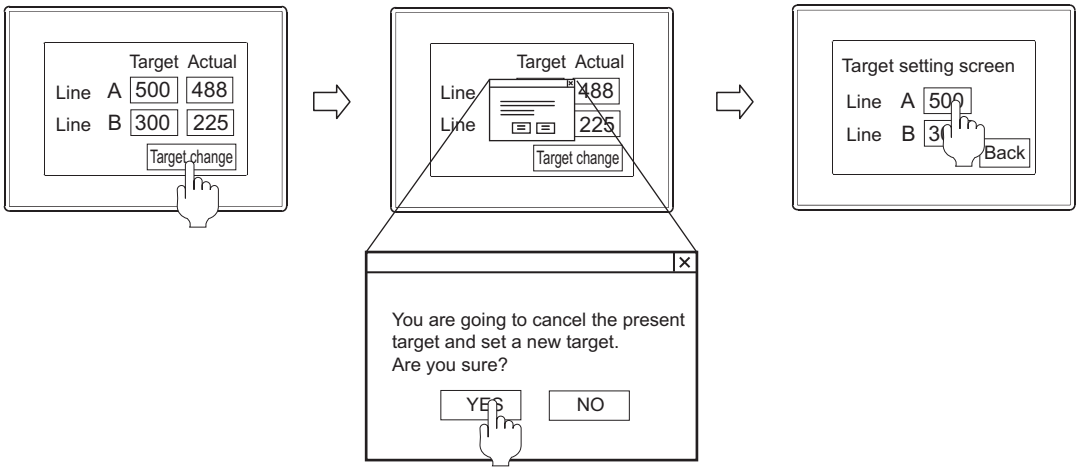
A dialog window can be displayed instead of the system message that GOT displays.
This allows the message to be changed to more specific one or appropriate for the equipment.




System message displayed by GOT　　Message created by the user

## 2 Displaying the screen created by the user as a system message

A window screen indicating system error or warning can be created and displayed as a dialog window on the GOT.
This makes it possible for the user to display a dialog that does not allow displaying of the next screen unless a response to the displayed message is input, to display a dialog that requires the operator to confirm the contents of information, etc.




A dialog window such as guiding an operator to confirm the operation can be displayed.

**Point**

Before setting a dialog window

This section explains how to create a dialog window.
For the display on the GOT and its action, refer to the following.

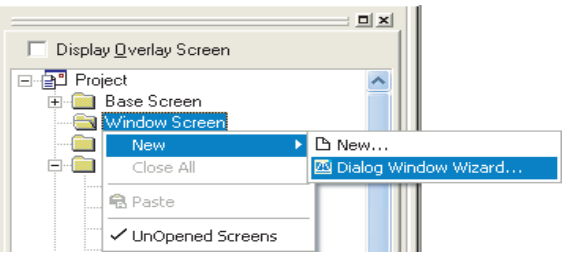
☞ Section 2.1.2 1 Methods of displaying window screen

## 3.12.1 Creating a dialog window

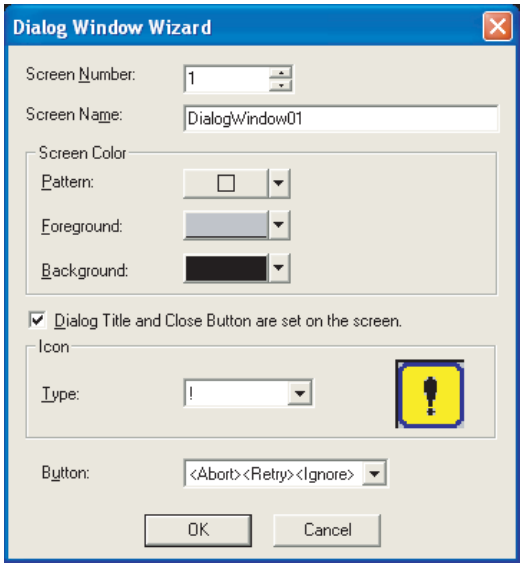
The following shows how to create a dialog window.

1. In the workspace, select [Window Screen].

2. Right click the mouse and select [New] → [Dialog Window Wizard].

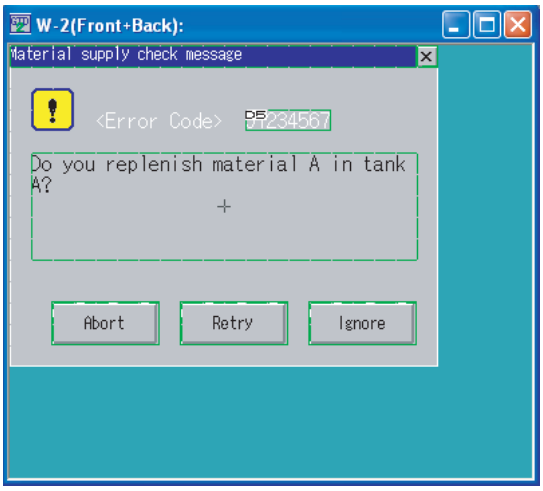



3. The setting dialog box is displayed.
   Set the data below and click the [OK] button.




| Item | | Description | Model |
|---|---|---|---|
| Screen Number | | Specify the screen number. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Screen Name | | Input the screen name.<br>Up to 32 characters can be input (either in 2-byte characters or in 1-byte characters). | |
| Screen color | Pattern | Select the pattern, pattern color and background color of the screen<br>The selected pattern is displayed in the selected pattern color on the selected background color.<br>Example)<br>Background color :<br>Pattern :<br>Pattern color :<br>Pattern + Pattern color<br>Background color | |
| | Foreground | | |
| | Background | | |
| Dialog Title and Close Button are set on the screen. | | Check this item when displaying the title bar and close button in the dialog window. | |
| Icon | Type | Select the icon type. | |
| Button | | Select the button type. | |

4 The template of the dialog window is displayed. Input the screen name and message to be displayed, arrange objects and make other necessary settings.




**Hint!**

To change the attributes and/or icon after creating the dialog window

(1) To change the screen number, screen name and background color
Change them by displaying the screen properties.

(2) To change the dialog title, close button, icon and button
They are stored in the library of GT Designer2.
Change them using library data.

**Remark**

Creation and size changing of a dialog window

The screen created in a window screen can be used as a dialog window even without using the wizard above.
The size of a dialog window can be changed as with an ordinary window screen. Set the size ranging from 94 × 81 (horizontal × vertical) to 320 × 240 (horizontal × vertical) dots.
When the dialog window is created outside the above range, the GOT cannot display the window correctly.

For specifications of window screens, refer to the following.

☞ Section 2.1.2 Window screen specifications

For how to create and change the size of a window screen, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Chapter 7 CREATING AND EDITING THE SCREEN (PROJECT DATA))

## 3.12.2 Settings

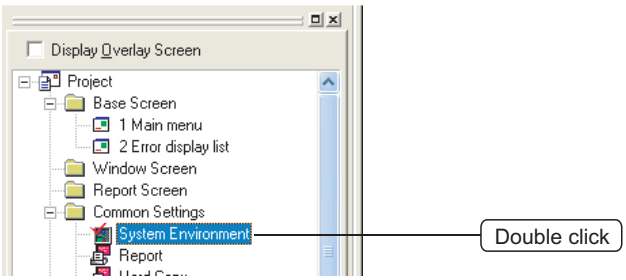
### 1 Customizing the system message displayed on GOT

(1) When setting for each project

1. Select [Common] → [System Environment].
2. The [System Environment] dialog box is displayed. Double click [Dialog Window].
3. The [setting] dialog box is displayed. Make settings referring to the explanation given below.

**Remark** Using the project work space

Double click [System Environment] and the [System Environment] dialog box is displayed. Double click [Dialog Window].

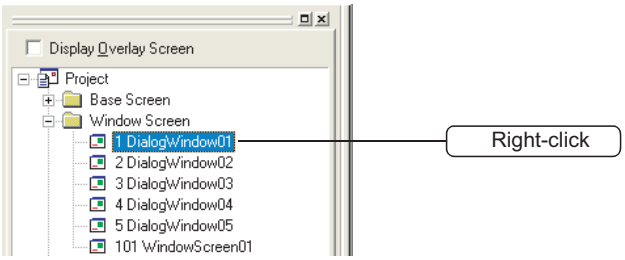



(2) When setting for each screen

1. Select the screen where setting should be made and select [Screen] → [Property].
2. The [setting] dialog box is displayed. Click the [Dialog Window] tab and make settings referring to the explanation given below.

**Remark** Using the project work space

After selecting a screen, right click the mouse and select [Property]. This displays the [setting] dialog box. Click the [Dialog Window] tab.




### 2 Displaying the user-created screen as a system message

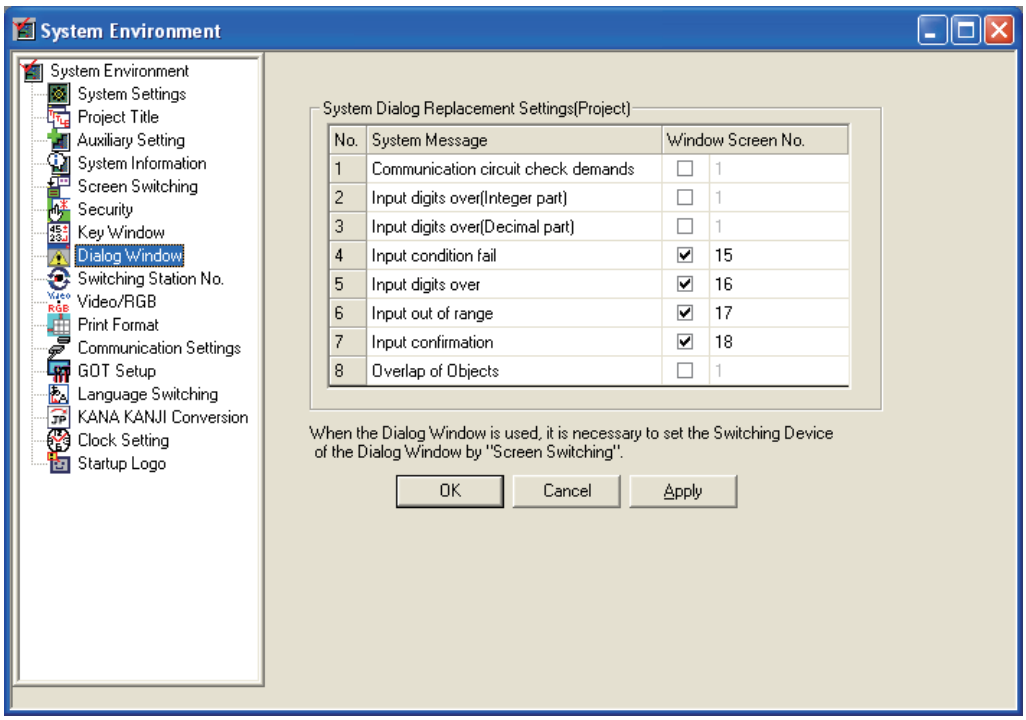
Store the window screen number of the window screen to be displayed as a dialog window to the screen switching device (dialog window).
For how to set a screen switching device, refer to the following.

☞ Section 3.2 Switching Screen Device Setting

## 3.12.3 Setting items

### 1 Setting dialog box for each project

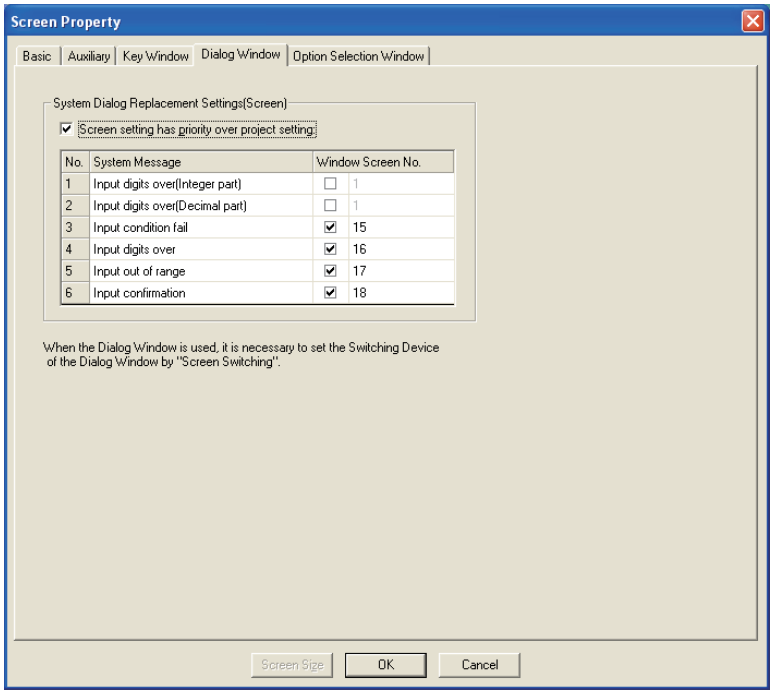
Set a dialog window for each project.




| Item | Description | Model |
|---|---|---|
| System Message | Displays GOT system messages that can be replaced with window screens. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Window Screen No. | Check the GOT system messages to be replaced with window screens.<br>Then select the number of the window screen to be displayed.<br>Setting "0" for a window screen number hides the system message. | |

## 2 Setting dialog box for each screen

Set a dialog box for each screen.




Basic | Auxiliary | Key Window | **Dialog Window**

| Item | | Description | Model |
|---|---|---|---|
| Screen setting has priority over project setting | | Check this item to give a higher priority to the contents set here than the setting made for each project. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | System Message | Displays GOT system messages that can be replaced with window screens. | |
| | Window Screen No. | Check the GOT system messages to be replaced with window screens.<br>Then select the number of the window screen to be displayed.<br>Setting "0" for a window screen number hides the system message. | |

## 3.12.4 Precautions

### 1 Precautions for drawing

(1) Screen switching devices
To use a dialog window, set the screen switching device.
For details of screen switching devices, refer to the following.

☞ 3.2 Switching Screen Device Setting

(2) Maximum number of objects that can be arranged (set) on one screen
Up to 32 objects can be arranged (set) on a screen.
If 33 or more objects are arranged (set), they are not displayed on the GOT.
(The input value area/input range area (maximum and minimum values) of the key window setting are excluded.)

(3) Objects and figures that can be arranged (set)
The following objects and figures can be used.

(a) Objects
Touch switch, numerical display, comment display, and input value area/input range area (maximum and minimum values) of the key window setting

(b) Figures
All figures

(4) Precautions for setting objects

(a) Input value area/input range area (maximum and minimum values) of the key window setting
The input value area/input range area (maximum and minimum values) of the key window setting can be displayed on the GOT only when replacing the following system messages.
- Input digits over (Integer part)
- Input digits over (Decimal part)
- Input digits over
- Input out of range
- Input confirmation

(b) Touch switch, numerical display and comment display
Touch switches, numerical display and comment display can be set only in the tabs indicated below.
Some of the functions in the tabs cannot be used.

| Item | | Settable tab | Precautions |
|---|---|---|---|
| Touch switch | Bit switch | Basic tab | Layer cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |
| | Data set switch | Basic tab | Layer cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |
| | Go to screen switch | Basic tab | Layer cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |
| | Change station No. switch | Basic tab | Layer cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |

(Continued to next page)

| Item | | Settable tab | Precautions |
|---|---|---|---|
| Touch switch | Key code switch | Basic tab | Layer cannot be used.<br>Key codes other than 000D$_H$ (execute) and 001B$_H$ (cancel) cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |
| | Multi action switch | Basic tab | Layer cannot be used.<br>Extended Action cannot be set.<br>Key codes other than 000D$_H$ (execute) and 001B$_H$ (cancel) cannot be used. |
| | | Lamp tab | Lamp function cannot be used. |
| | | Text tab | — |
| Numerical display | | Basic tab | Layer cannot be used.<br>Blink cannot be used. |
| | | Data Operation tab | — |
| Comment display | Bit comment<br>Word comment | Basic tab | Layer cannot be used.<br>Blink cannot be used. |
| | | Comment tab | Blink cannot be used. |

(c) System dialog replacement settings on base screens and window screens
When displaying system dialog as a superimpose window or called screen (Set Overlay Screen), the system dialog replacement settings of the window screens are invalid.
- When displaying system dialog as a superimpose window
  The system dialog replacement settings of the base screen on which the superimpose window is displayed is valid.
- When displaying system dialog as a called screen (Set Overlay Screen)
  The system dialog replacement settings of the basic screen is valid.

(d) Other precautions
- Overlaying of objects is not allowed.
- Screen overlay cannot be used.
- Auxiliary setting cannot be used.
- When setting a key code (000D$_H$ (execute) or 001B$_H$ (cancel)) in multi action switch, make setting so that "0" is stored to a dialog window switching device.
- The script function on a dialog window does not operate.

(5) Displaying of a dialog window

(a) Objects on a dialog window
The device status of an object is the same as when the dialog window has been displayed.
Even if a device value is changed while the object is displayed on the dialog window, the display of the object on the dialog window is not changed.

(b) Displaying system message and dialog window
System message and dialog window cannot be displayed simultaneously.
When an attempt is made to display them simultaneously, a system message is displayed.

(c) Base/window screen switching and dialog window display
Do not switch the screen display between base screen and window screen at the same time a dialog window is displayed.
Switching of base/window screen display may be delayed.
(Base/window screen switching takes place after the dialog window is closed.)

(6) Dialog window size
The size of a window screen to be used as a dialog window must be in the range of 94 × 81 dots (horizontal × vertical) to 320 × 240 dots (horizontal × vertical).
A window screen created in the size outside the range specified above will not be displayed on the GOT correctly.

(7) Erasing a dialog window
Always make a setting to erase a dialog window (such as the setting of a touch switch to close the window and a program to write "0" to the dialog window switching device).
Operation of a monitor screen or the utility will be disabled on the GOT unless the dialog window is erased.

## 2 Precautions for use

(1) If another system message occurs while a dialog set at [System Dialog Replacement Settings] is displayed

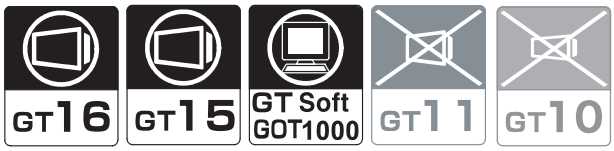
(a) When the occurred system message is a system message set at [System Dialog Replacement Settings]
The currently displayed dialog window remains displayed.
The occurred system message is not displayed.

(b) When the occurred system message is a system message that is set for GOT
The currently displayed dialog window closes and "0" is stored in the dialog window switching device.
After that a new system message is displayed.

If a button is arranged on the currently displayed dialog window, the following processing is executed before the dialog window closes.
- For the dialog window where only the OK button is arranged, the same processing as the one for touching the OK button is executed.
- For the dialog window where the CANCEL button exists, the same processing as the one for touching the CANCEL button is executed.

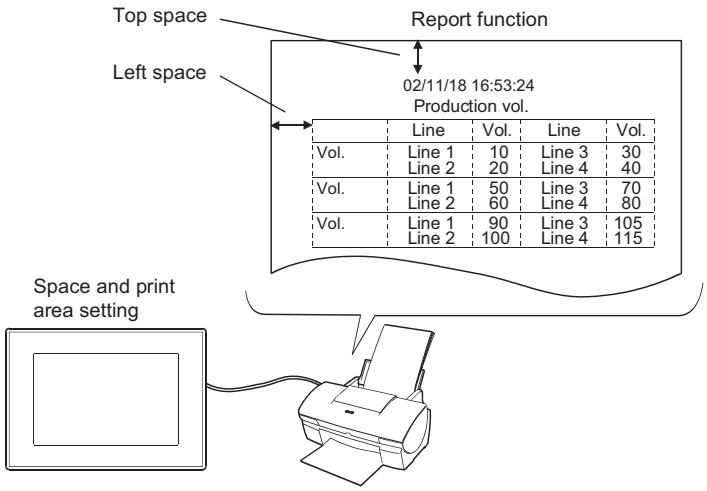
(2) Communications with GT Designer2
While a dialog window is displayed, communications between a GT Designer2 and a GOT may be disabled.
In this case, close the dialog window.

# 3.13 Print Format Setting




Set the format for printing with the report function.
This setting is common to the print (common) tag setting of the report function.
(With this setting, the same settings are updated on the print (common) tag of the report function automatically.)

Section 13.1 Report Function

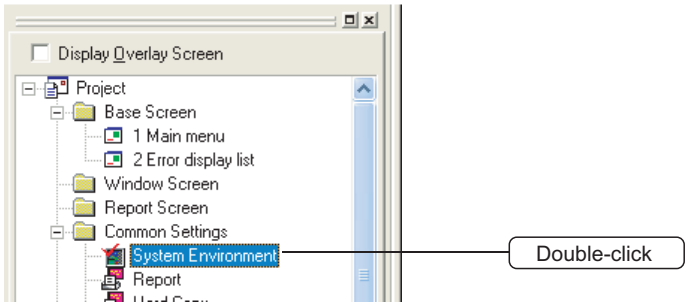



## 3.13.1 Settings

1. Select [Common] → [System Environment] in the menu.
2. When "System Environment" dialog box appears, double click on [Print Format] .
3. As the setting dialog box appears, make the settings with reference to the following explanation:

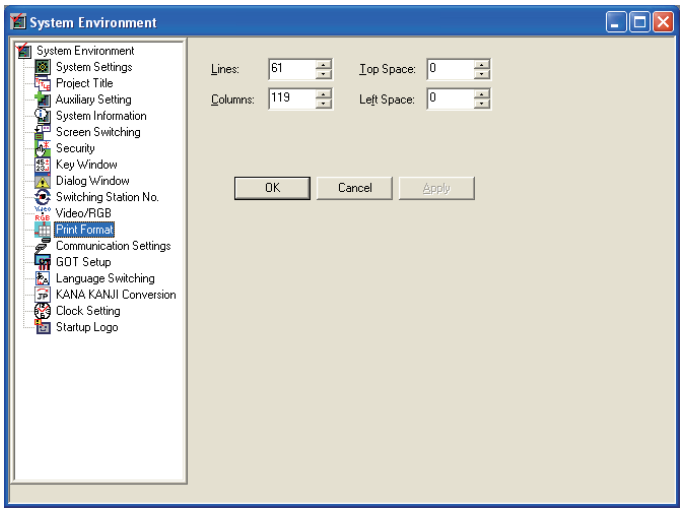
**Remark** When setting in project workspace

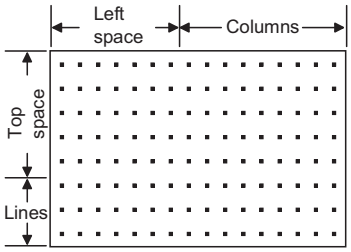
Double click on [System Environment] , and "System Environment" dialog box appears, then double click on [Print Format].



## 3.13.2 Setting items

Set the format for printing.




| Item | Description | Model |
|---|---|---|
| Lines | Set the number of lines (1 to 70) and columns (1 to 124) for one page and the size of margins to be secured at the top (number of lines: 0 to 31) and at the left (number of columns: 0 to 123) of the table to be printed.   | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Columns | | |
| Top Space | | |
| Left Space | | |

**Remark**

Relationships between the character type (2-byte or 1-byte) and the number of columns

A 2-byte character (1 × 1) occupies two columns while a 1-byte character (1 × 1) occupies one column.

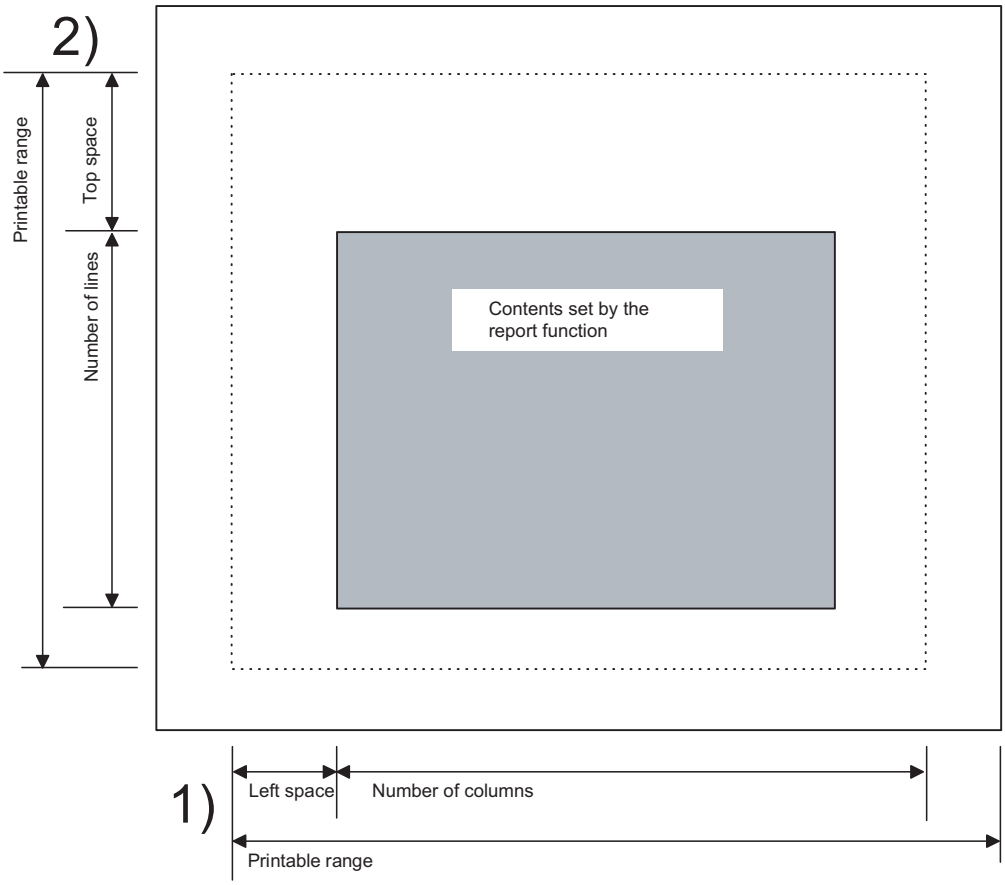
## 3.13.3 Precautions

### 1 Precautions on drawing

(1) Setting precautions

(a) With the report screen, the screen size automatically changes to the print format setting.

(b) Change the print format setting so that it meets the printable range of the printer to be used. (Setting should be made so that "Printable range > Top space + Number of lines, or Left space + Number of columns".)
Calculate as below to find the setting values for the print format.




1) Finding the maximum setting value (width) of "Number of columns + Left space"

(Printable area width of the printer [mm]) / 25.4 × 15

Example) When the printable area width of the printer is "190 mm"
190 / 25.4 × 15 = 112.20・・・
In the print format setting, set [Columns] and [Left Space] so that the total of these set values becomes 112 or less.

2) Finding the maximum setting value (height) of "Number of lines + Top space"

(Printable area height of the printer [mm]) / 4.23

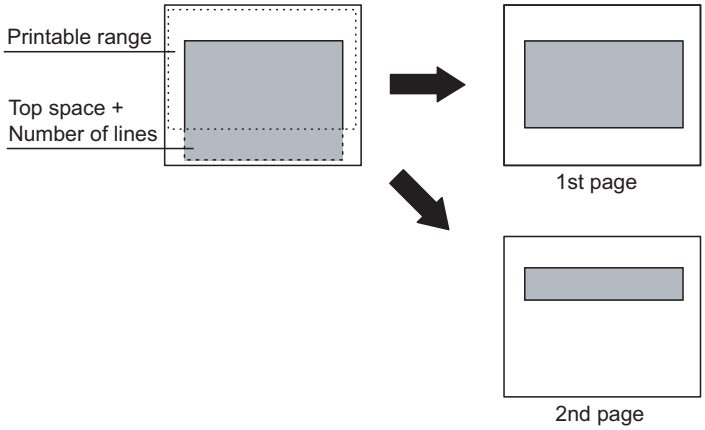
Example) When the printable area height of the printer is "280 mm"
280 / 4.23 = 66.19 ▪▪▪
In the print format setting, set [Lines] and [Top Space] so that the total of these set values becomes 66 or less.

The printable area varies depending on the printer to be used.
For details of the printer specifications, refer to the Instruction Manual of the printer.

**Remark**

When "Top space + Number of lines" exceeds the printable range

When "Top space + Number of lines" exceeds the printable range, the lines overflowing the printable range are printed in the next page.



# Memo

# 4. PREPARATORY OPERATION FOR OBJECT SETUP

## 4.1 Comment Registration

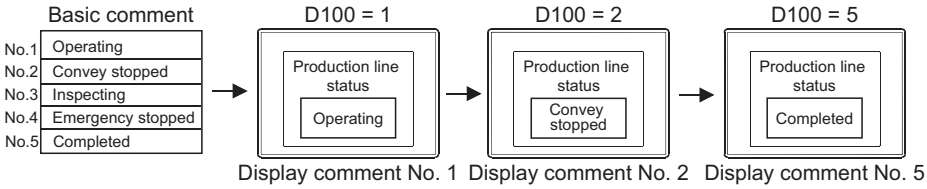
### 4.1.1 Required knowledge for comment registration

#### 1 Comments

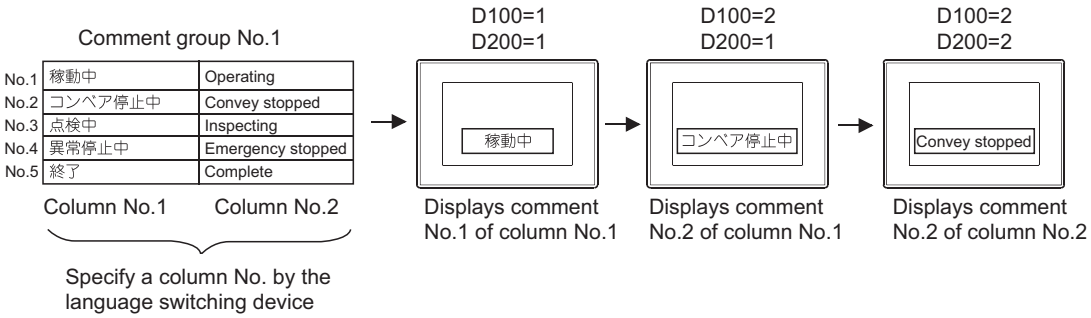
Comments are character strings registered by users using GT Designer2.
Comments can be displayed with multiple object functions by registering them as a basic comment or a comment group in advance.

(☞ This section 2 Basic comments and comment groups)

(1) Displaying basic comments by the comment display function (☞ Section 7.5 Comment Display)
The comments registered as basic comments are displayed.
The comment No. corresponding to the monitored device value is displayed.




(2) Displaying comments registered in comment group by the comment display function
(☞ Section 7.5 Comment Display)
The comments registered in comment group are displayed.
The comment No. corresponding to the monitored device value is displayed.
The column of the comment displayed can be switched by the language switching device.
(☞ Section 3.4 Setting Language Switching Device)



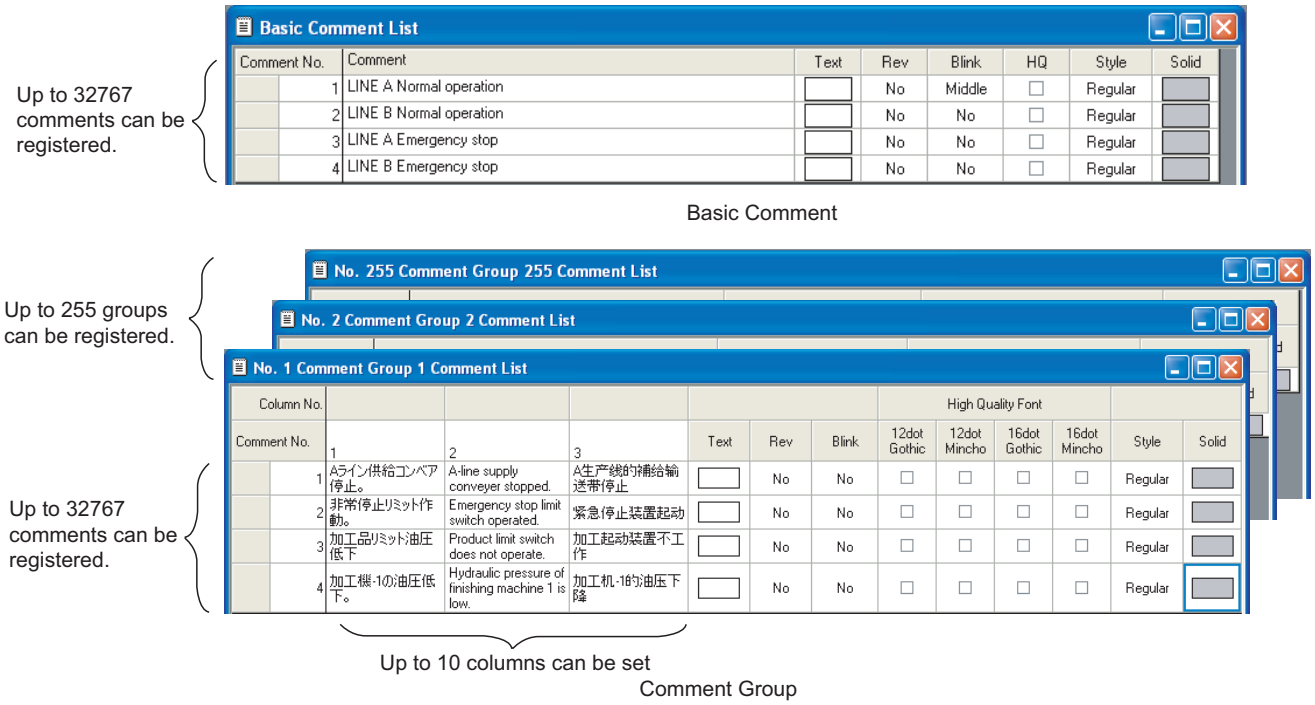
## 2 Basic comments and comment groups

Basic comments and comment groups represent the groups of the comments to be displayed with each object function.
Because the objects available for display are different between the basic comment and comment group, check the following list and register comments to the applicable type.
The differences between basic comment and comment group are shown below.

| Item | Basic comment | Comment group | Model |
|---|---|---|---|
| Max. No. of groups | 1 | Up to 255 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Max. No. of comments | Up to 32767 | Up to 3276 for each comment group | |
| No. of comment columns | 1 | 10 for each comment group | |
| Title | Change not allowed (Fixed as Basic Comment) | Can be changed (Up to 32 characters regardless of 1byte or 2byte characters) | |
| KANJI region specification | None (Japan only) | Japan, China (GB) - Mincho, China (Big5) - Gothic | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment edit dialog | Up to 10 of basic comments and comment groups can be displayed simultaneously*1 | | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Applicable object*2 | Touch switch,Comment display,<br>Data list,Alarm history,<br>User alarm display,<br>Report function | Lamp, Touch switch, Comment display,<br>Advanced alarm display (user alarm),<br>Advanced alarm popup display,<br>Alarm history display,<br>Report function | |
| Font | 16dot (Standard/HQ Mincho) | 12dot (Standard/HQ Mincho/HQ Gothic)<br>16dot (Standard/HQ Mincho/HQ Gothic)<br>Stroke font | |
| Comment | up to 512 characters for each comment regardless of 1byte or 2byte characters | | |
| Type of importable or exportable file | Test file, CSV file,<br>Unicode text file*3 | CSV file,<br>Unicode text file*3 | |

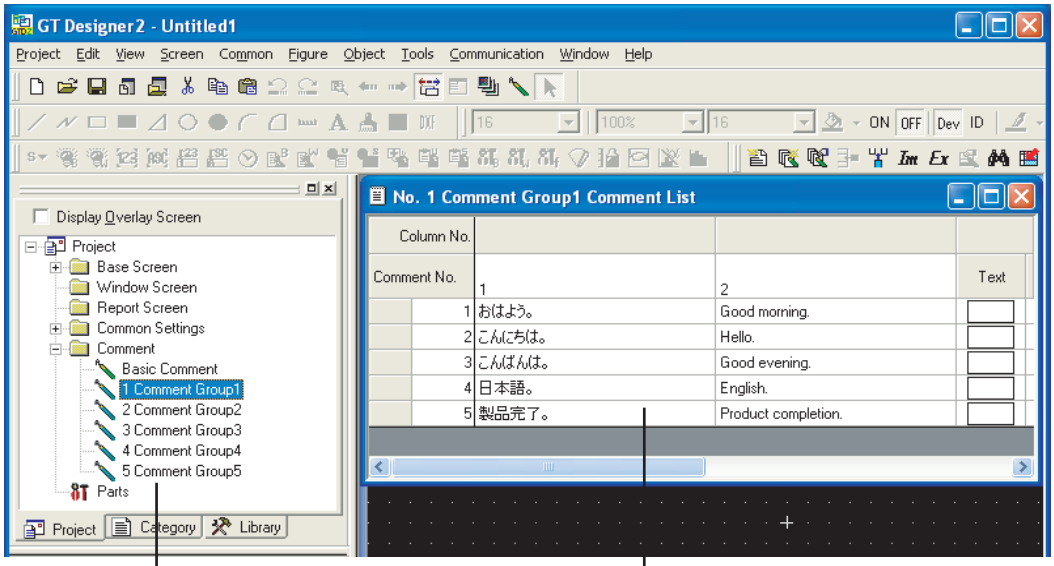
*1 This number varies depending on the performance of the PC used.
*2 Comments available for each object are shown in the caution of each object.
*3 When Microsoft® Windows® 2000 Professional, Windows® XP Professional, or Windows® XP Home Edition is used, file import or export is possible.

• Outline of basic comment and comment group




## 3 Comment registration screens

Comments are edited from the following two screens.



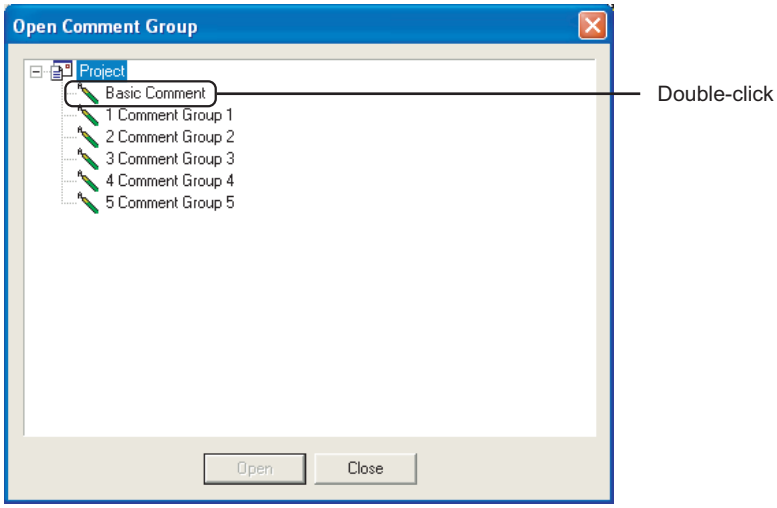

"Comment list dialog box"
Set up the comments and attributes of basic comment and each comment group.

"Project workspace"
This is useful for managing comment groups, for example, adding/deleting comment groups or changing their names.
Double-clicking basic comment or any of the comment groups displays the corresponding comment list dialog box.

## 4.1.2 Displaying comment list dialog box

### 1 Basic Comment

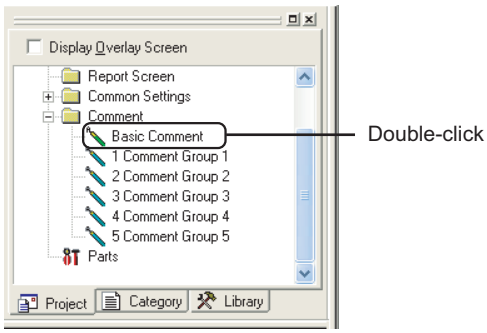
1. Perform one of the following operations.
   - Click (Comment).
   - Select [Common] → [Comment] → [Comment].
2. The open comment group dialog box is displayed.
   Select [Basic Comment] and click the Open button, or double-click [Basic Comment].




3. The Basic Comment List dialog box appears.
   Refer to Section 4.1.3 3 for the setup.

**Remark** Displaying the dialog box from project workspace

The comment list dialog box can be also displayed by double-clicking (Basic Comment) in project workspace.



## 2 Comment group

(1) Creating a new comment group

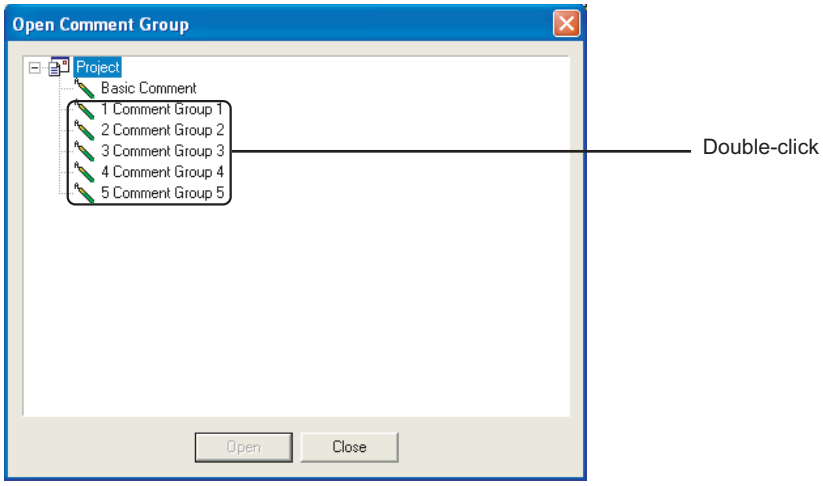
1. Create a comment group by either of the following operations.
   - Click (New Comment Group).
   - Select [Common] → [Comment] → [New Comment Group].
2. The comment group property dialog box is displayed.
   Set up group No., title, kanji region and so on, and click the OK button.

   Section 4.1.3 Basic operations for comment registration

3. The comment list dialog box is displayed.
   Refer to Section 4.1.3 3 for the setup.

(2) Displaying a existing comment group

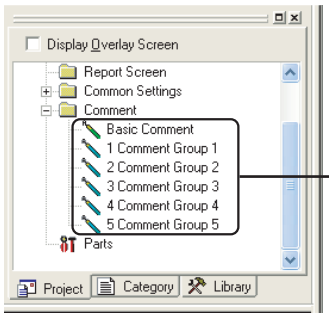
1. Perform either of the following operations.
   - Click (Comment).
   - Select [Common] → [Comment] → [Comment].
2. The open comment group dialog box is displayed.
   Select any of the comment groups and click the Open button, or double-click it.




3. The comment list dialog box is displayed.
   Refer to Section 4.1.3 3 for the setup.

**Remark** Displaying the dialog box from project workspace

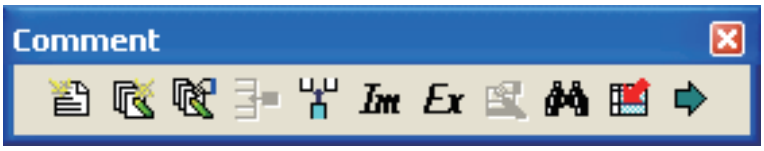
The comment list dialog box can be also displayed by double-clicking (Comment Group) in project workspace.




Double-click the comment group you want to open.

## 1 Basic operations of toolbar (Comment list setting)

This section explains how to operate the toolbar used for basic comment and comment groups.

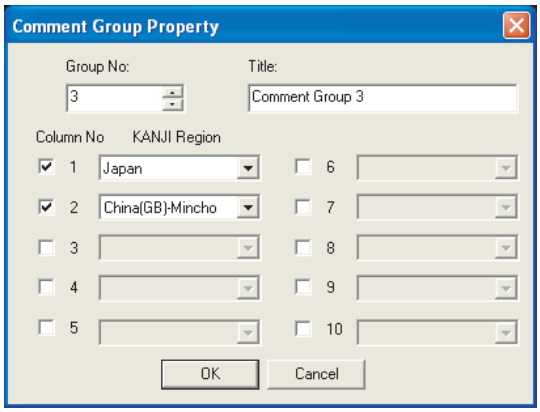



| Item | Description |
|---|---|
| New Comment | Adds a new comment. |
| New Comment Group | Creates a new comment group.<br>Clicking this displays the comment group property dialog box. *1 |
| Comment Group Property | Displays the comment group property dialog box of the comment group being displayed. *1 |
| Insert Row | Adds a comment between other comments. |
| Insert Column | Adds a comment column is just before the selected comment column. |
| Import | Imports a text file or CSV file as comments. |
| Export | Exports comments as a text file or CSV file. |
| Attribute | Displays the attribute setup dialog box of the selected comment. *2 |
| Search | Displays the search dialog box.<br>Entering the characters to be searched, selecting a search direction (upwards or downwards), and then clicking the Search Next button searches the entered characters. |
| Jump | Jumps to the specified comment No. |
| Attribute Display/Non-Display | Enables the setting of whether to display the comment attribute or not. |

For details of *1, *2, refer to the following.

*1 Comment group property dialog box

Set the group No., title, column No., and kanji region of the comment group.



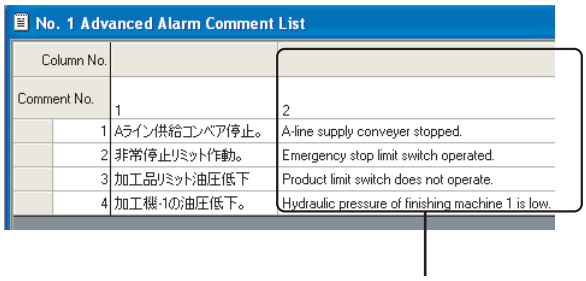

(Example:Setting screen for GT15)

| Item | Description | Model |
|---|---|---|
| Group No. | Set a group No. of the comment group. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Title | Set a title of the comment group (up to 32 characters). | |
| Column No. | Check the column No. of the column you want to set when setting more than one comment column. | |
| KANJI Region | Select the kanji region used for each comment.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Japanese kanji characters are displayed.<br>China (GB) -Mincho : Chinese characters (simplified) are displayed.<br>China (Big5) - Gothic : Displays traditional Chinese characters.<br>Example: Differences between Japanese and Chinese-Mincho<br>置 置<br>Japan China(GB)-Mincho | GT16 GT15 SoftGOT1000 GT11 GT10 |

**Point**

Kanji region setting

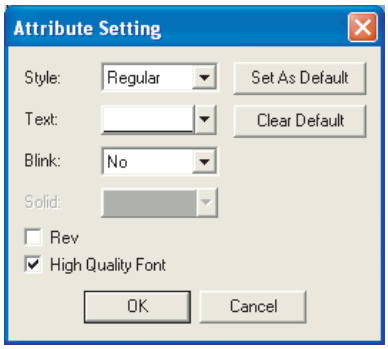
This setting is necessary when using kanji for each comment column.
However, because this is not the language setting, you do not have to change the setting from the default (Japan) if using a language irrelevant to kanji (e.g. English).



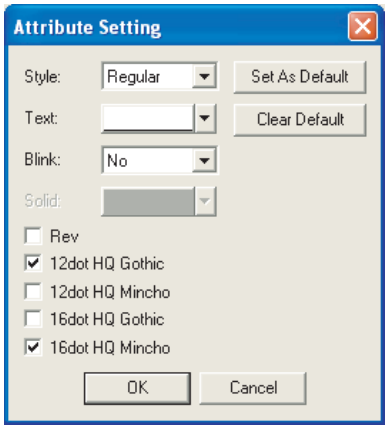

English can be entered and displayed even if the kanji region is set to Japan.

*2 Attribute setting dialog box

Set comment attributes (e.g. style, text color).




Attribute Setting dialog box
for Basic Comment

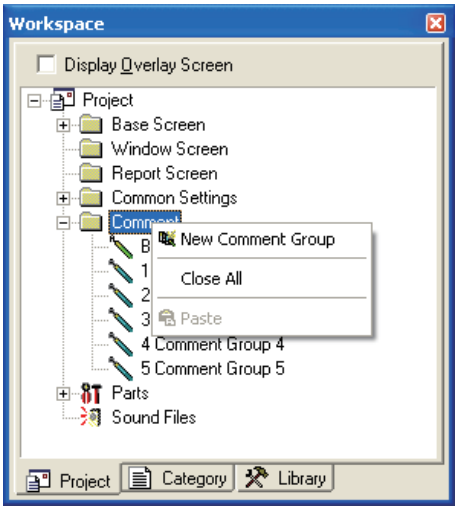



Attribute Setting dialog box
for Comment Group

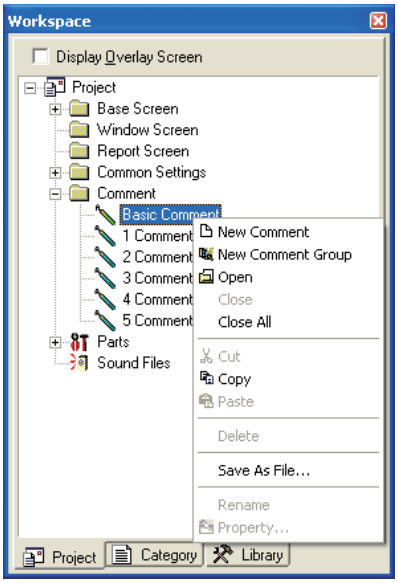
| Item | Description | Model |
|---|---|---|
| Style | Select a style (font) of the comment. Regular Bold Solid Raised | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Text | Select a color of the comment. | |
| Blink | Specify how comments are to be blinked when displayed (No/Low/Medium/High). | |
| Solid | Select a color of the shadow when solid or raised is selected in style. | |
| Rev | Check this when highlighting the comment. | |
| High Quality Font | Check this when displaying the comment using the highquality font. | |
| 12dot HQ Gothic | Check this when displaying 12dot HQ Gothic in the comment group. | |
| 12dot HQ Mincho | Check this when displaying 12dot HQ Mincho in the comment group. | |
| 16dot HQ Gothic | Check this when displaying 16dot HQ Gothic in the comment group. | |
| 16dot HQ Mincho | Check this when displaying 16dot HQ Mincho in the comment group. | |
| Set as Default | Click this when setting the changed attribute as a default value. | |
| Clear Default | Click this when clearing the changed attribute to the default value. | |

## 2 Basic operations in project workspace

Select a target item, and right-click it to select a setting option.
The menu options displayed vary depending on the selected target.




Right-click on [Comment]




Right-click on [Basic Comment] or [Comment Group]

| Item | Description |
|---|---|
| New Comment | Adds a new comment to the selected basic comment or comment group. |
| New Comment Group | Select this when creating a new comment group.<br>When selected, the comment group property dialog box*1 is displayed.<br>Set the group No., title, and kanji region of the comment group. |
| Open | Displays the comment list dialog box of the selected comment group. |
| Close | Close the selected comment list dialog box. |
| Close All | Close all of the comment list dialog boxes being displayed. |
| Cut | Cuts off the selected comment group. |
| Copy | Copies the selected comment group. |
| Paste | Pastes the copied or cut comment group. |
| Delete | Deletes the selected comment group. |
| Save As File | Saves the selected basic comment or comment group as a text/CSV file. |
| Rename | Changes the name of the comment group. |
| Property | When selected, the comment group property dialog box *1 is displayed, and the group No., title, and kanji region of the comment group can be changed. |

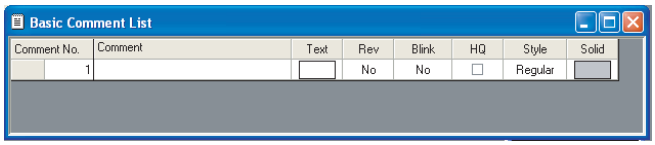
For the details of *1, refer to the following.

☞ The explanation of *1 in 1 Basic operations of toolbar (Comment list setting) of this section.

## 3 Basic operations in comment list dialog box

This dialog box is displayed by operations from the project workspace or "Open comment group" dialog box.
Add new comments with the toolbar or the menu displayed by right-clicking the mouse.

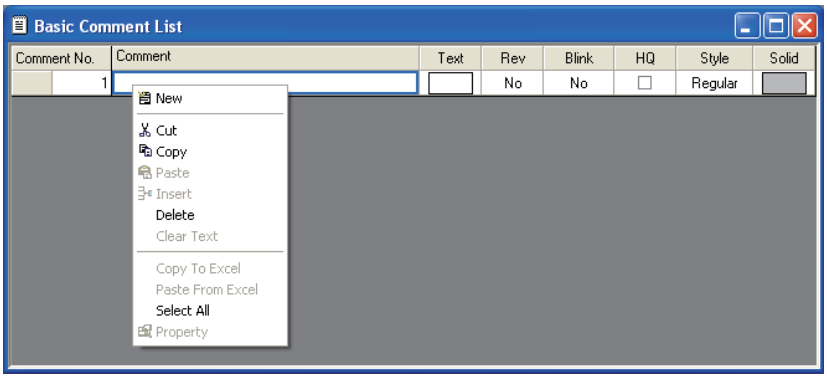
(1) Comment List dialog box for Basic Comment




(a) Setting items for Basic Comment List

| Item | Description |
|---|---|
| Comment No. | Displays the comment number . |
| Comment | Enter a comment. |
| Text | Select a display color of the comment. |
| Rev | Check this when making the comment highlighted. |
| Blink | Specify how the comment is to be blinked (No/Low/Medium/High). |
| HQ | Check this when displaying the comment in a HQ font. |
| Style | Select a style (font) to display the comment. Regular Bold Solid Raised |
| Solid | Select a shadow color when solid or raised is selected in Style. |

(b) Menu displayed by right clicking



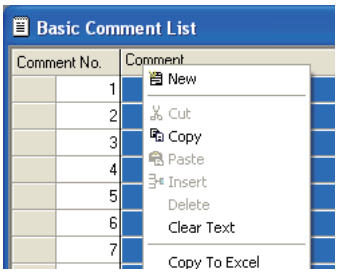

| Item | Description |
|---|---|
| New | Adds a new comment row. |
| Cut *1 | Cuts a comment selected. |
| Copy | Copies a comment selected. |
| Paste | Pastes a comment copied or cut. |
| Insert | Inserts a row to the row selected. |
| Delete *1 | Deletes a comment selected. |
| Clear Text | Clears a comment of the row or column selected. *3 |
| Copy to Excel | Copies a comment selected to Excel.<br>Copy a comment in row or column unit. *3<br>After copying, paste the comment on Excel. |
| Paste From Excel | Pastes a comment selected from Excel.<br>Copy or cut a comment on Excel and paste it on the Basic Comment List dialog box. |
| Select All | Selects all comments in Basic Comment List. |
| Property | Displays the Attribute Setting dialog box of the comment selected. *2 |

*1 Disabled for an entire column.

*2 For the Attribute Setting dialog box, refer to the following.

This section 1 *2 Attribute setting dialog box

*3 When selecting a column, select the Comment column.

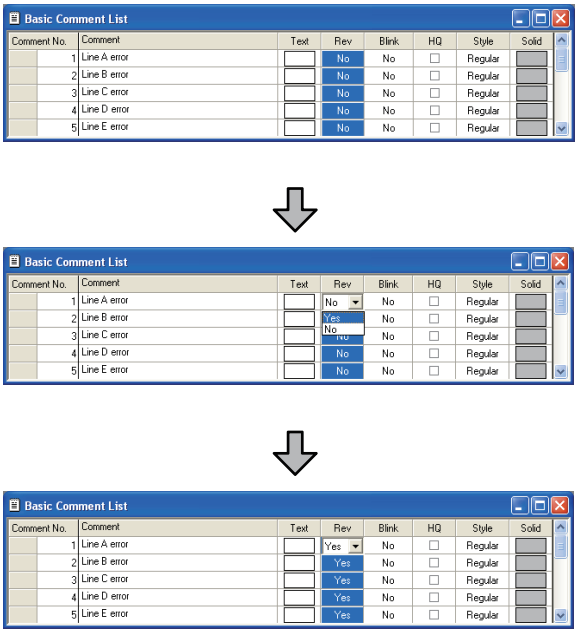


**Hint!**

(1) How to select more than one comment
If there is more than one comment, all the comments can be selected by the operations below.
- Click the top left cell ([Comment No.] area) by the mouse.
- Click [Select All] in the menu displayed by right-clicking the mouse.

(2) Reusing comments between different projects
Comments can be pasted to the different project comment.
(☞ This section 3 (1) (b) Menu displayed by right clicking)

(3) Batch setting of Text, Rev, Blink, HQ, Style or Solid
You can apply the same setting to all comments simultaneously by selecting a column before making a setting.

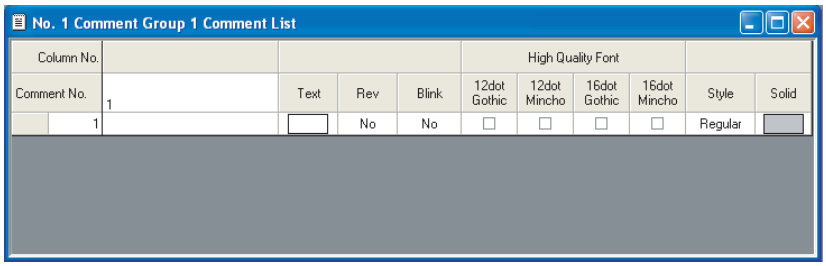



1 Select a column.

2 Make a setting with the column selected.

3 All comments are batch set to the same.

(1) Comment List dialog box for comment group




(a) Setting items for Comment List

| Item | | Description |
|---|---|---|
| Comment No. | | Set a comment No. |
| Column No. | | Set a comment column No. |
| Text | | Select a color of the comment. |
| Rev | | Check this when making the comment highlighted. |
| Blink | | Specify how the comment is to be blinked (No/Low/Medium/High). |
| High Quality Font *1 | 12dot Gothic | Check this when displaying the comment in 12-dot HQ Gothic. |
| | 12dot Mincho | Check this when displaying the comment in 12-dot HQ Mincho. |
| | 16dot Gothic | Check when displaying the comment in 16-dot HQ Gothic. |
| | 16dot Mincho | Check when displaying the comment in 16-dot HQ Mincho. |
| Style | | Select a style (font) to display the comment. Regular Bold Solid Raised |
| Solid | | Select a shadow color when solid or raised is selected in style. |

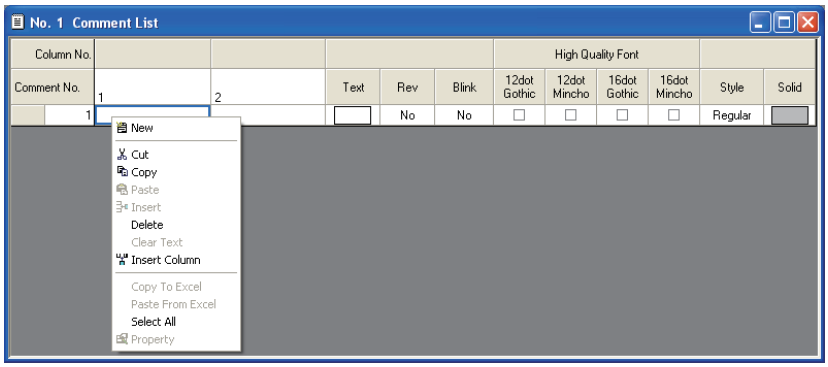
For details of *1, refer to the following.

*1 Using HQ fonts

When a HQ font is set for each object, if the HQ font specified for the object is not checked in comment registration, characters are not displayed in the HQ font.

Example: When comments are registered, if 16dot HQ Gothic and 16dot HQ Mincho are checked:

(b) Menu displayed by right clicking



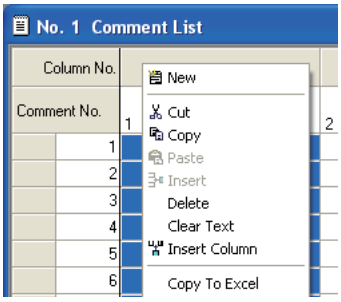

| Item | Description |
|---|---|
| New | Adds a new comment row. |
| Cut *1 | Cuts a comment selected. |
| Copy | Copies a comment selected. |
| Paste | Pastes a comment copied or cut. |
| Insert | Inserts a row to the row selected. |
| Delete *1 | Deletes a comment selected. |
| Clear Text | Clears a comment of the row or column selected. *3 |
| Insert Column | Inserts a column. |
| Copy to Excel | Copies selected comments to Excel.<br>Copy comments in a row or column unit. *3<br>After copying, paste the comments on Excel. |
| Paste From Excel | Pastes selected comments from Excel.<br>Copy or cut comments on Excel and paste them on the Basic Comment List dialog box. |
| Select All | Selects all comments in Basic Comment List. |
| Property | Displays the Attribute Setting dialog box of the comment selected. *2 |

*1 Disabled for an entire column.

*2 For the Attribute Setting dialog box, refer to the following.

This section 1 *2 Attribute setting dialog box

*3 When selecting a column, select the Comment column.



**Hint!**

(1) How to select more than one comment

If more than one comment exist, all the comments can be selected by the operation below.

- Click the top left cell (the "Comment No." area) by the mouse.
- Click [Select All] in the menu displayed by right-clicking the mouse.

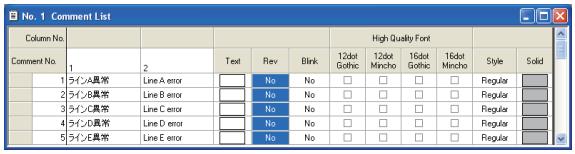
(2) Reusing comments between different projects

Comments can be pasted to the different project comment.

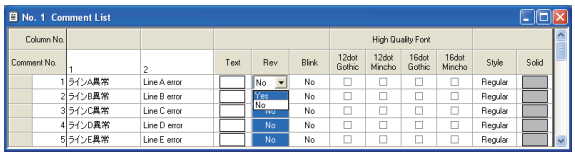
☞ This section 3 (1) (b) Menu displayed by right clicking

(3) Batch setting of Text, Rev, Blink, High Quality Font, Style or Solid

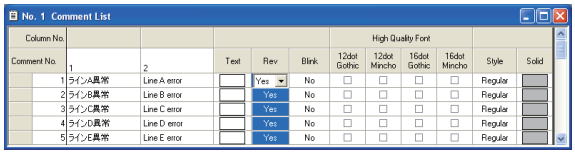
You can apply the same setting to all comments simultaneously by selecting a column before making a setting.




1 Select a column.




2 Make a setting with the column selected.



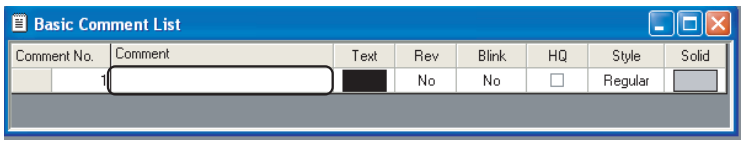

3 All comments are batch set to the same.

## 4.1.4 Comment registration

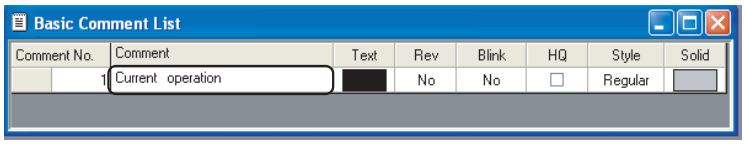
Register comments displayed by the object functions.

### 1 Registering comments as basic comment

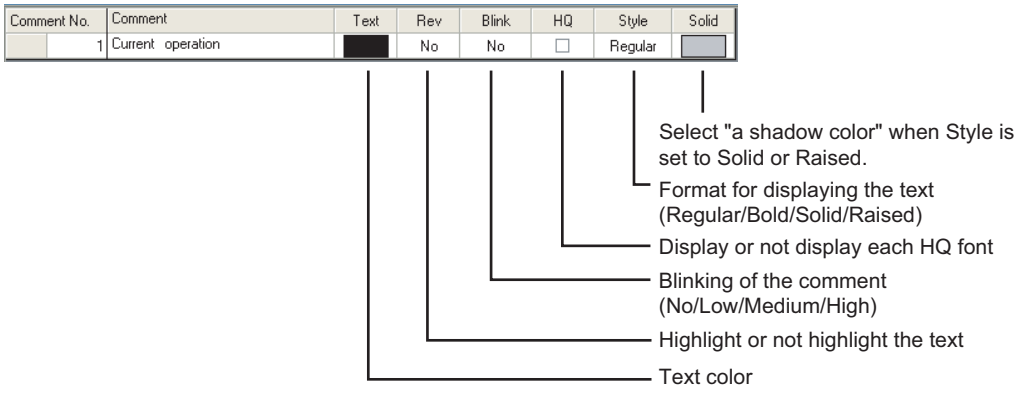
1. Click the comment field of the comment No. to which the comment is to be registered.



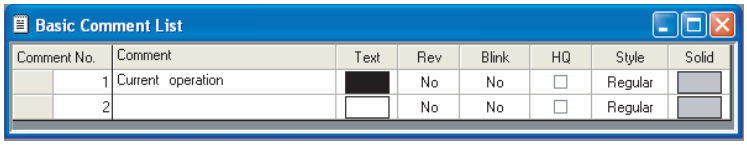

2. Enter a comment in the comment text box.




3. Set the display attributes of the comment.



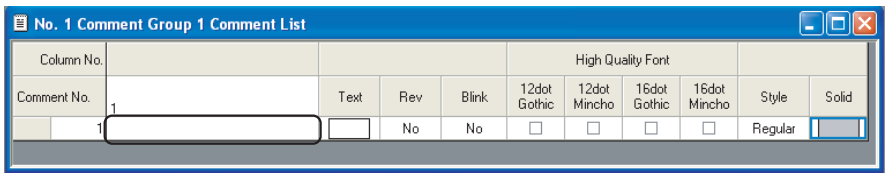

4. After registering the comment, click the (New Comment) button.
The next comment column is displayed.



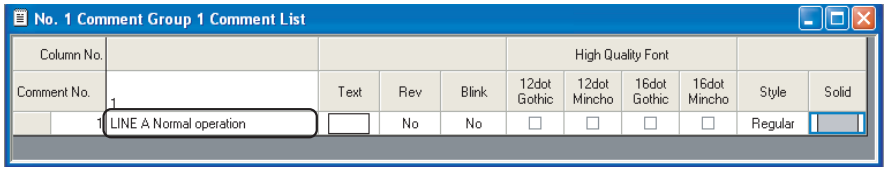

5. When all the comment registration is completed, click the ☒ button at the upper right corner of the Comment List window to close the window.

## 2 Registering comments as comment group

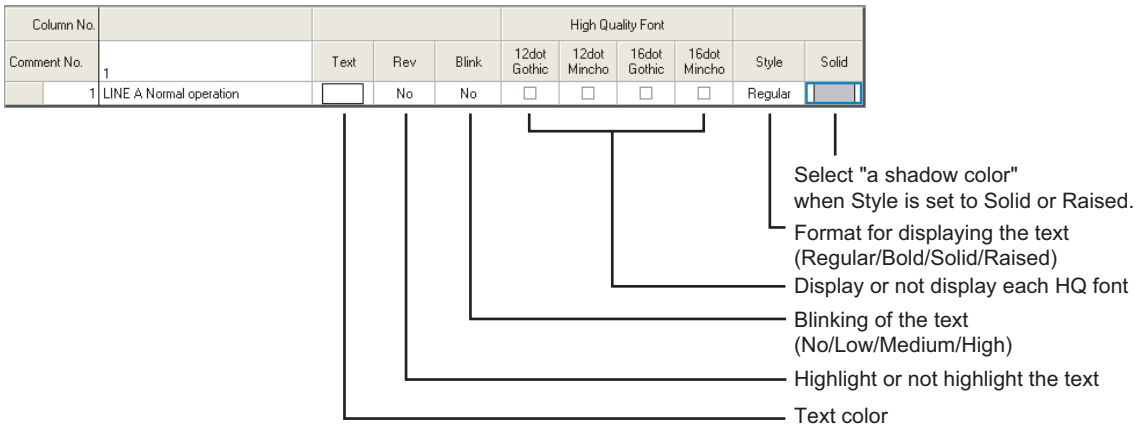
1. Click the comment field of the comment No. to which the comment is to be registered.



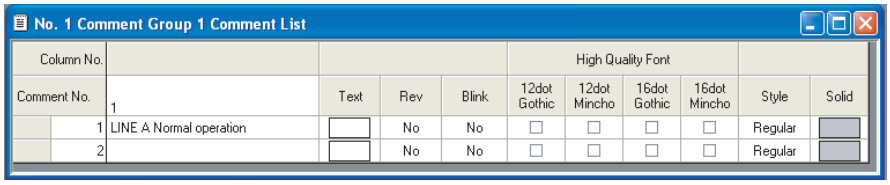

2. Enter the comment in the comment text box.




3. Set the display attributes of the comment.




4. After registering the comment, click the (New Comment) button.
The next comment column is displayed.

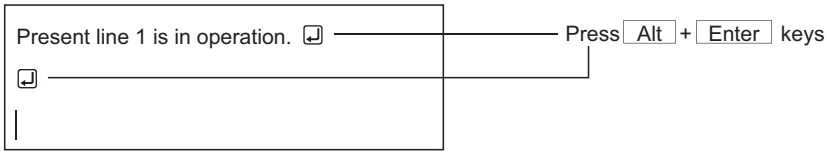



5. When all the comment registration is completed, click the ☒ button at the upper right corner of the Comment List window to close the window.

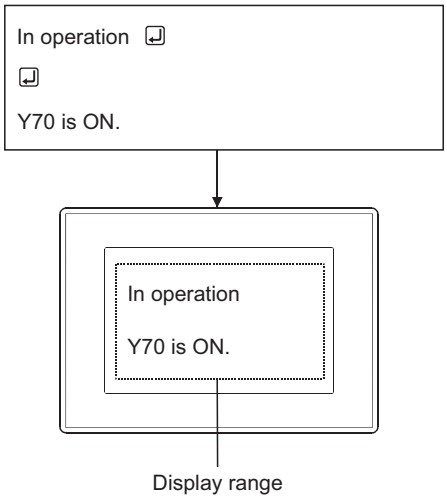
**Remark**

(1) Creating a multi-line comment

(a) To begin a new line, press Alt + Enter keys at the end of the current line.




(b) A comment composed of multiple lines is displayed on the GOT as follows.




(2) Creating comments by keyboard

Because the cursor in the Comment List dialog box moves when the keys shown below are pressed, comments can be entered without using the mouse.

(Comment numbers are added by Alt + N keys.)

(a) When a cell is selected

- → key: Move to the right cell.
- ← key: Move to the left cell.
- ↑ key: Move to the upper cell.
- ↓ key: Move to the lower cell.

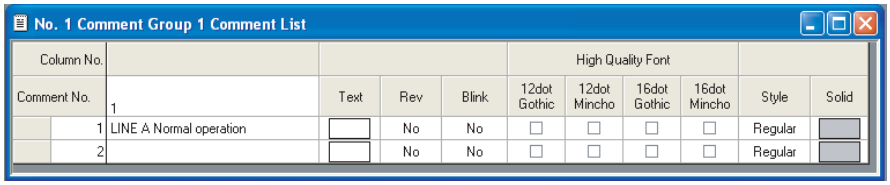
(b) When a line is selected

- → key: Move to the comment cell in the same line.
- ← key: Move to the comment cell in the same line.
- ↑ key: Move to the comment cell in the upper line.
- ↓ key: Move to the comment cell in the lower line.

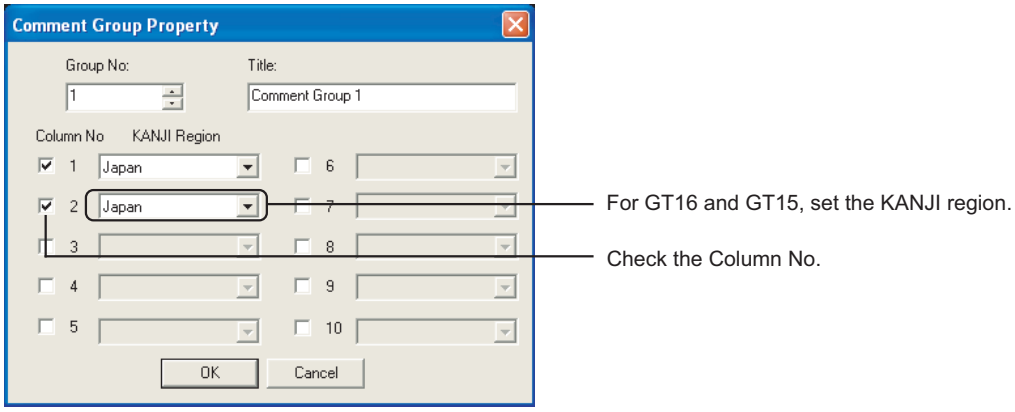
## 4.1.5 Registering comment group columns

Register columns for a comment group.

1. Display the comment list dialog box of the comment group.

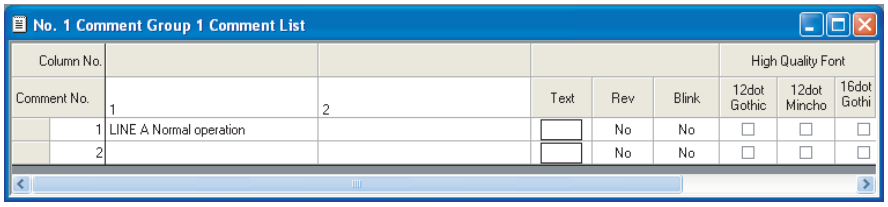



2. Click (Comment Group Property).
The comment group property dialog box is displayed. Check the Column No. to be added.
For GT16 and GT15, set the KANJI region.
After the setting, click the OK button.




(Example:Setting screen for GT15)

3. The column is registered.




**Point**

Registering columns by insert column

Columns can be added by clicking (Insert Column) as well.

However, there are the following restrictions:

(1) KANJI Region setting
When a column is added by insert column, the Kanji region is set to "Japan".
The setting for the Kanji region can be changed in the comment group property dialog box.

(2) Column No. setting
Because the column No. setting is not available when using insert column, the column No. that have already been registered may be changed.
Be careful about this if the language switching device has been set.

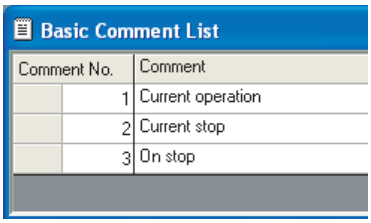
Section 3.4 Setting Language Switching Device

## 4.1.6 Copying or cutting a comment registered

Copy a comment registered.

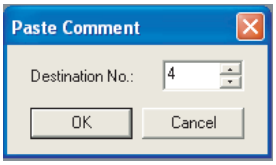
### 1 Copying or cutting a comment for another comment No.

1. Select a comment row to be copied or cut.

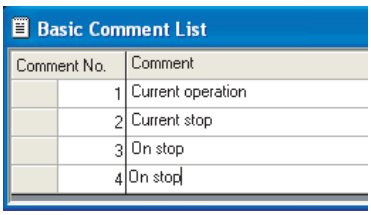



2. Click the [Copy] or [Cut] button and then click the [Paste] button.

3. The Paste Comment dialog box is displayed.
   Specify a copy destination No. and click the OK button.

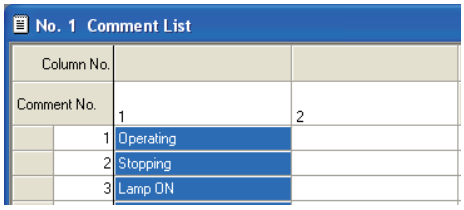



4. The selected comment is pasted.

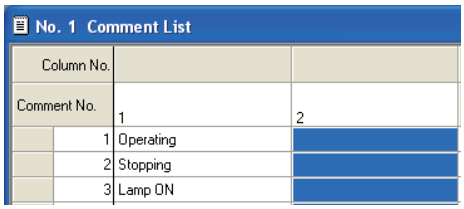


## 2 Copying or cutting a comment for another column

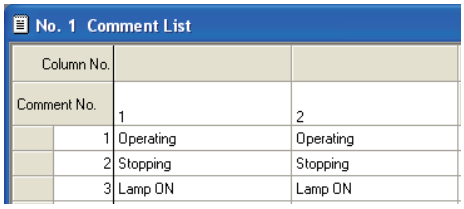
1. Select a comment column to be copied or cut and click the [Copy] or [Cut] button.




2. Select a column to which the comment is pasted, and click the [Paste] button.



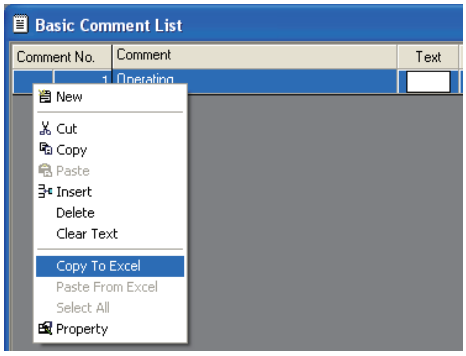

3. The comment is pasted.



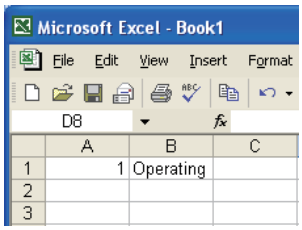
## 3 Copying/pasting a comment to/from Excel

### (1) Copying to Excel

1. Select a comment row or column to be copied and right-click on the row/column.
   Select [Copy To Excel] from the displayed menu.

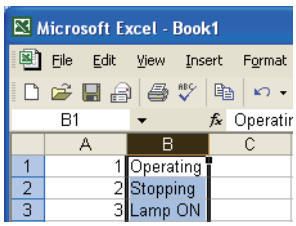



2. Perform the paste operation on the Excel, and the comments are pasted.

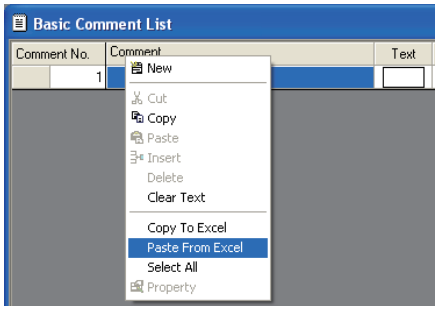



### (2) Pasting from Excel

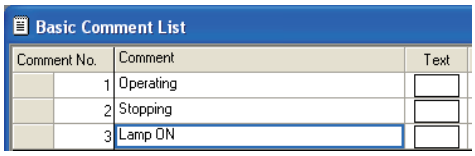
1. Perform a copy operation on the Excel.




2. Select a comment row/column to which the row/column of the Excel is pasted and right-click on the row/column.
   Select [Paste From Excel] from the displayed menu.

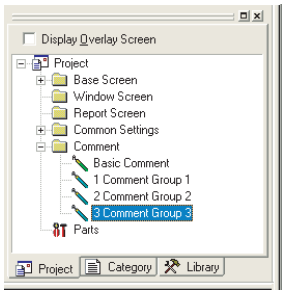



3. The comment is pasted.



**Point**

(1) Copying in project workspace
By operations in project workspace, the basic comment or comment groups can be copied.




1. Right-click the mouse and select [Copy].
2. Right-click the mouse again to select [Paste].
3. Enter a comment group No. and title in the comment group property dialog box, and click the OK button.

(2) Copying comments between comment groups
Comments can be copied from the basic comment to a comment group or from comment group No.1 to No.2.

1. Select a comment to be copied.
2. Click the (Copy) button.
3. Open the comment list dialog box of Basic Comment/Comment Group, and click the (Paste) button.
4. When copying an entire row, the Paste Comment dialog box is displayed. Set the destination No. and click the OK button.
5. The selected comment is copied.

(3) Cutting columns
Columns can be cut only when there are two or more columns in the comment group.
For Basic Comment, any column cannot be cut.

(4) Copying/cutting columns of comment groups
The setting of KANJI Region is also copied/cut.

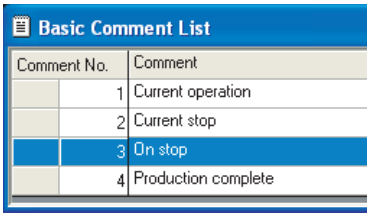
(5) In the case that pasting an entire row is disabled
Pasting may be disabled according to the comments of the pasting destination when copying/cutting and paste an entire row.
In such a case, copy/cut the relevant cells one by one or directly input the comment to the pasting destination.

## 4.1.7 Deleting/clearing the text of a comment registered

### 1 Deleting comments

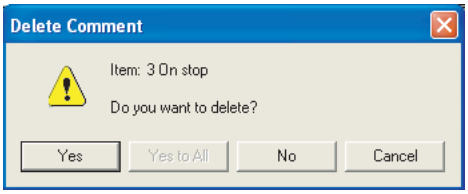
Delete a registered comment.
This section explains how to delete a comment in a row unit.
When deleting a comment in a column unit, follow the method below.

1. Select a comment to be deleted.

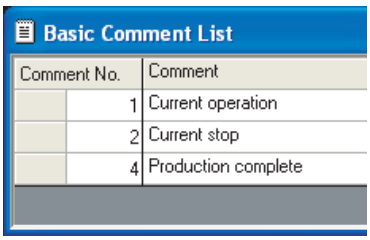



2. Select [Edit] → [Delete] from the menu bar.

3. The delete comment dialog box is displayed.
   Click the Yes button.

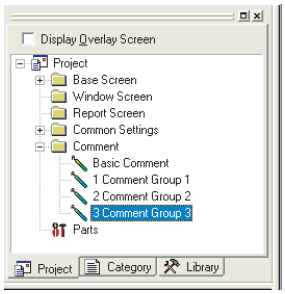



4. The selected comment is deleted.




**Point**

(1) Deletion in project workspace
Comment groups can be deleted in project workspace.



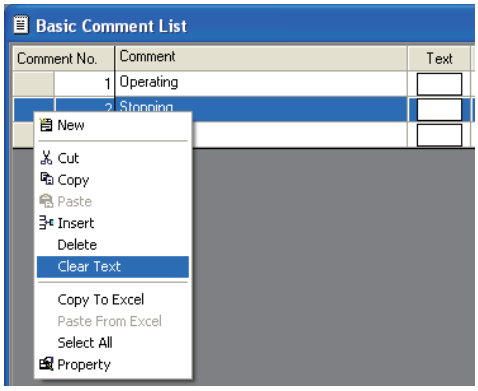

1. Right-click the mouse to select [Delete].
2. The delete comment dialog box is displayed.
   Click the Yes button.

(2) Deleting a comment in a column unit
Deleting a comment in a column unit is enabled only for a comment group with two or more columns.

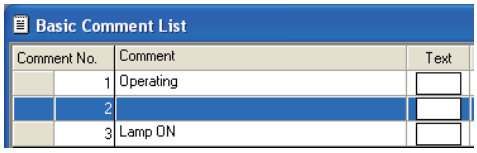
## 2 Clear Text

The comment texts are cleared in a row or column unit.

1. Select a comment row or column and right-click on it.
   Select [Clear Text] from the displayed menu.



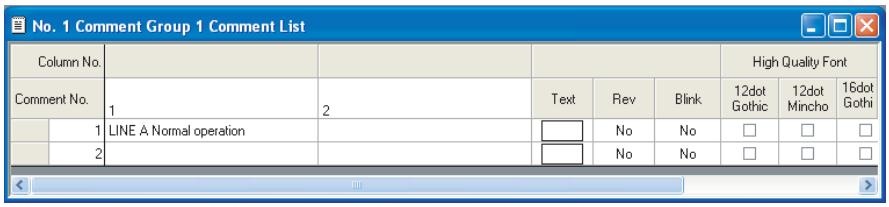

2. The texts are cleared.



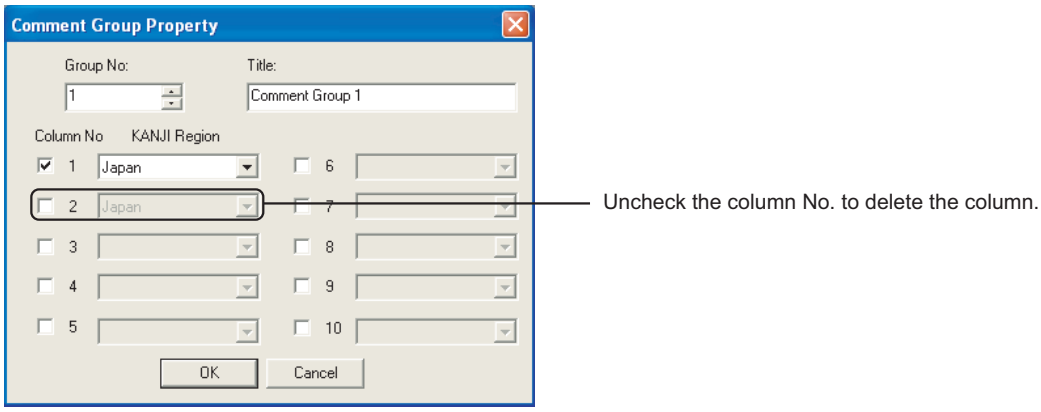
## 4.1.8 Deleting columns in comment group

Delete a column of the registered comment group.

1. Display the comment list dialog box of a comment group.

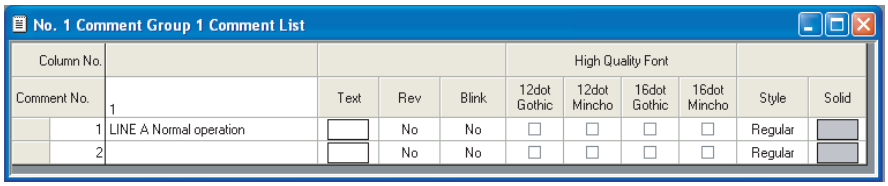



2. Click (Comment Group Property).
The comment group property dialog box is displayed.
Remove the check mark of the column No. to be deleted, and click the OK button.




(Example:Setting screen for GT15)

3. The column is deleted.




**Remark** Deletion of columns

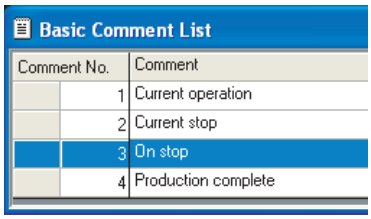
Columns of a comment group can also be deleted with the comment list dialog box.

(☞ Section 4.1.7 Deleting/clearing the text of a comment registered)

## 4.1.9 Changing registered comment settings

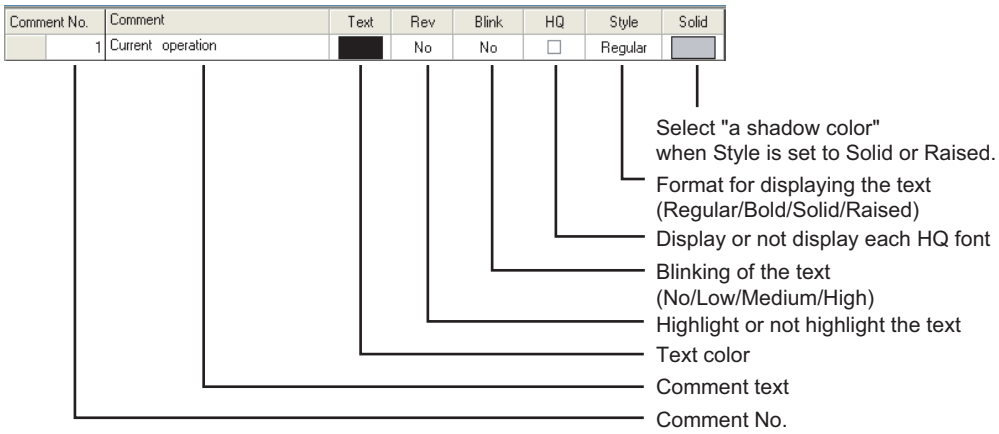
Change the text, comment No. and display attributes of a registered comment.

1. Select the target comment.

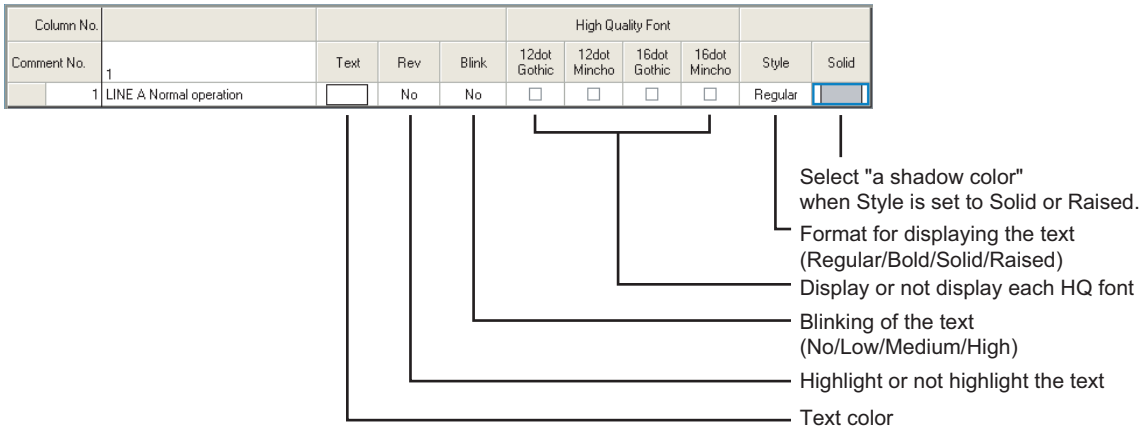



2. Change the setting items of the comment.

(1) Basic comment




(2) Comment group

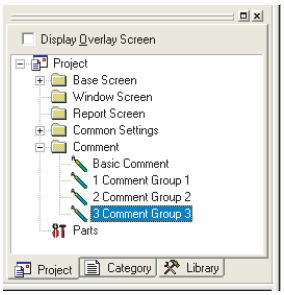



3. After changing the comment settings, click the ☒ button at the upper right corner of the comment list window to close the window.

**Point**

Changing settings in project workspace

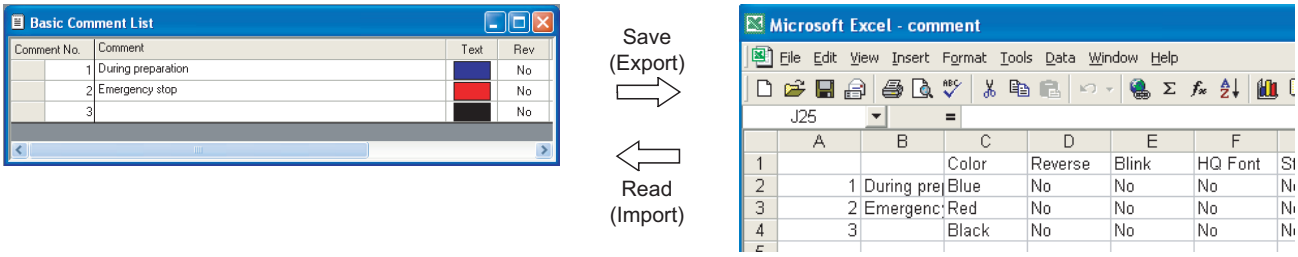
The settings of a comment group can be changed in project workspace.




1. Right-click the mouse to select [Property].
2. The comment group property dialog box is displayed.
   Change the settings of the comment group, and then click the OK button.

## 4.1.10 Saving/Reading comments as file

Registered comments can be saved as a text file (*.TXT), Unicode text file (*.TXT), or CSV file (*.CSV).
In addition, the file created by a commercial word-processor or spreadsheet software (text/CVS file) can be read as comments.

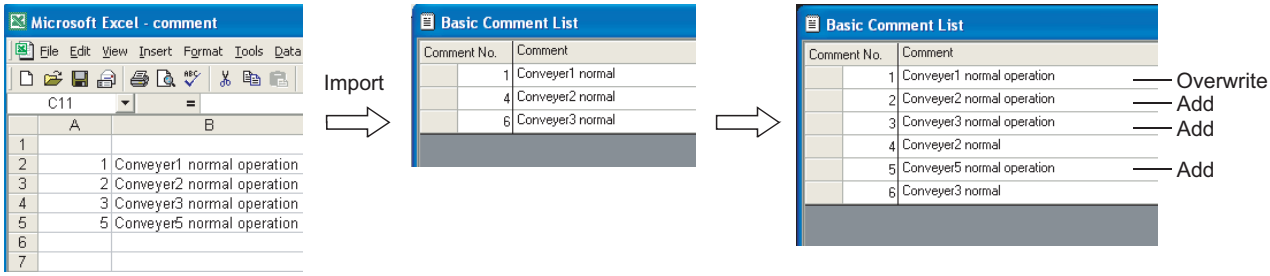



GT Designer2 Commercial word-processor/spreadsheet software

**Point**

(1) Operations for adding/overwriting comments when importing them from a file
The comment Nos. in the file to be imported are compared with those that have already registered, and the data are handled as follows:

- If the comment No. is different each other, the comment in the file is added.
- If the comment No. is the same, the comment in the file is overwritten.




CSV file GT Designer2 GT Designer2

Comments can be created efficiently by predetermining each comment No. and sharing the creation by multiple persons.

(2) Cautions for exporting comments from GT Designer2
If comments are exported from GT Designer2, all the registered comments are reflected onto the file.
If the file is overwritten during export, all the comments saved in the past are lost.

**Remark**

(1) Unicode text file
The Unicode text file is used when importing/exporting comments by the multi-language input function.
For the multi-language input function, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual

(2) How to save/read comments in a row or column unit in/from the Excel
Refer to the following for details.

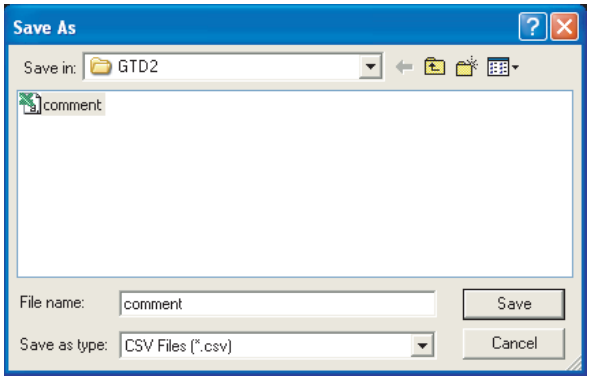
☞ Section 4.1.6 3 Copying/pasting a comment to/from Excel

## 1 Saving comments as file (Export)

Save registered comments as a text file, Unicode text file, or CSV file.

1. Click the [Ex] "Export" button.

2. The save as dialog box is displayed.




Select a file type in the Save as type field (txt: text file or Unicode text file, csv: CSV file).

Enter a file name, select a place to save the file, and click the [Save] button.

3. When the comments writing is completed, click the [×] button at the upper right corner of the Comment List dialog box.

**Point**

When multilingual comments are registered

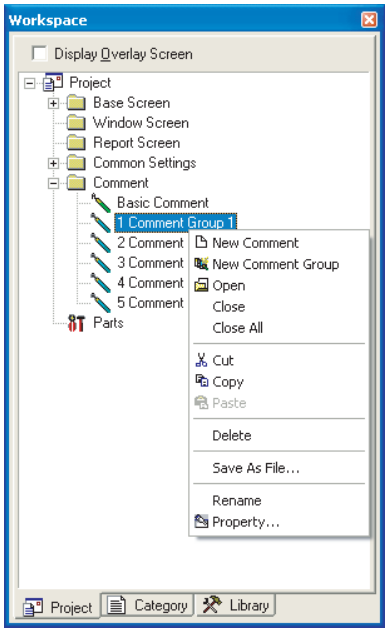
The comment group that includes multilingual comments cannot be saved correctly in a CSV file.
Save the comment group in a Unicode text file.

☞ This section 2 Reading text file, unicode text file, or CSV file (Import)

**Remark** Saving comments in project workspace

To save comments as a file in project workspace, perform the following operations.

1. Right-click the mouse to select [Save As File...].



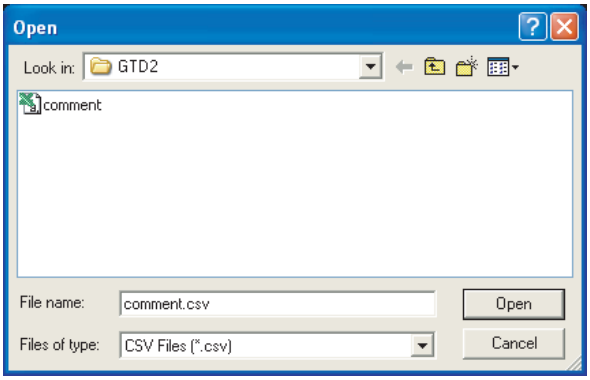

2. The Save As dialog box is displayed.
   Give a file name, select a place to save the file, and click the Save button.

## 2 Reading text file, unicode text file, or CSV file (Import)

Read a text file, Unicode text file, or CSV file as comments.

1. Click the [Im] "Import" button.

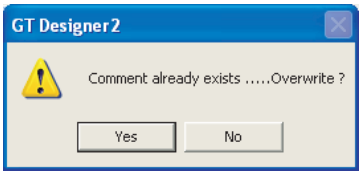
2. The open dialog box is displayed.




Select a file type in the Save as type field (txt: text file or Unicode text file, csv: CSV file).

Specify a file to read, and click the [Open] button.

3. If the comments have already been registered, a dialog box to confirm overwriting is displayed. Click the [Yes] button.




4. When the comment reading is completed, click the [×] button at the upper right corner of the comment list dialog box.

## 4.1.11 Editing comment saved as Text/CSV file

This section explains how to edit the comments saved in a Text/CSV file.

### 1 Text file (Basic Comment only)

Edit the comment saved/read as a text file by a text editor as follows.

```
//1 ↵                    ── Comment No.
"In operation now" ↵     ── Comment text
166,0,2,1,3,0, ↵         ── Display attributes
```

1. Before entering a comment, enter [/] [/] and a comment No. in one-byte characters, and then press the [Enter] key.

```
//1 ↵
▌
```

2. Enter the comment.

   Enclose the comment with the one-byte double-quotation symbols [ " ], and then enter the comma symbol [ , ].

   Press the [Enter] key at the last.

   Create a comment text within 1 to 512 characters regardless of whether the character size is one-byte or two-byte.

```
//1 ↵
"In operation now" ↵
▌
```

3. Set the comment attributes.

```
//1 ↵
"In operation now" ↵
166,0,2,1,3,0,          ▌
```

Enter all as one-byte characters.

[ ], [ ], [ ], [ ], [ ], [ ], ↵

- Solid (Set a color using No. of text color.)
- Style (0: Regular 1: Bold 2: Solid 3: Raised)
- Use a HQ font (0: No, 1: Yes)
- Blink (0: No 1: Low 2: Middle 3: High)
- Reverse (0: No, 1: Yes)
- No. of text color

| | | | | | |
|---|---|---|---|---|---|
| 255: white | 109: dark white | 0: black | 182: gray | 3: blue | 2: dark blue |
| 224: red | 160: dark red | 227: purple | 162: dark purple | 28: green | 20: dark green |
| 31: aqua | 22: dark aqua | 252: yellow | 180: dark yellow | | |

For the other color numbers, select "More Colors..." in "Text Color" in the comment list dialog box, and confirm the color in the text color list.

**Point**

(1) Cautions for saving a file
The edited file must be saved in the text file (*.txt) format.

(2) Cautions for entering a comment
Do not enter only a sequence of a double-quotation ("), a comma (,) and a return mark ( ↵ ) as a comment text because data will not be imported correctly.
If such a case is identified, correct the comment on the text file, and then import it again.

**Remark**

Writing a multiple-line comment

When writing a multiple-line comment, press the [Enter] key at the end of a line.
When providing a line of space, press the [Enter] key at the line.

```
//1 ↵
"In operation now↵
↵
Y70 is ON"
```

The entry of [/] [/] [1] and the [Enter] key are processed as comment 1.
Comment No.

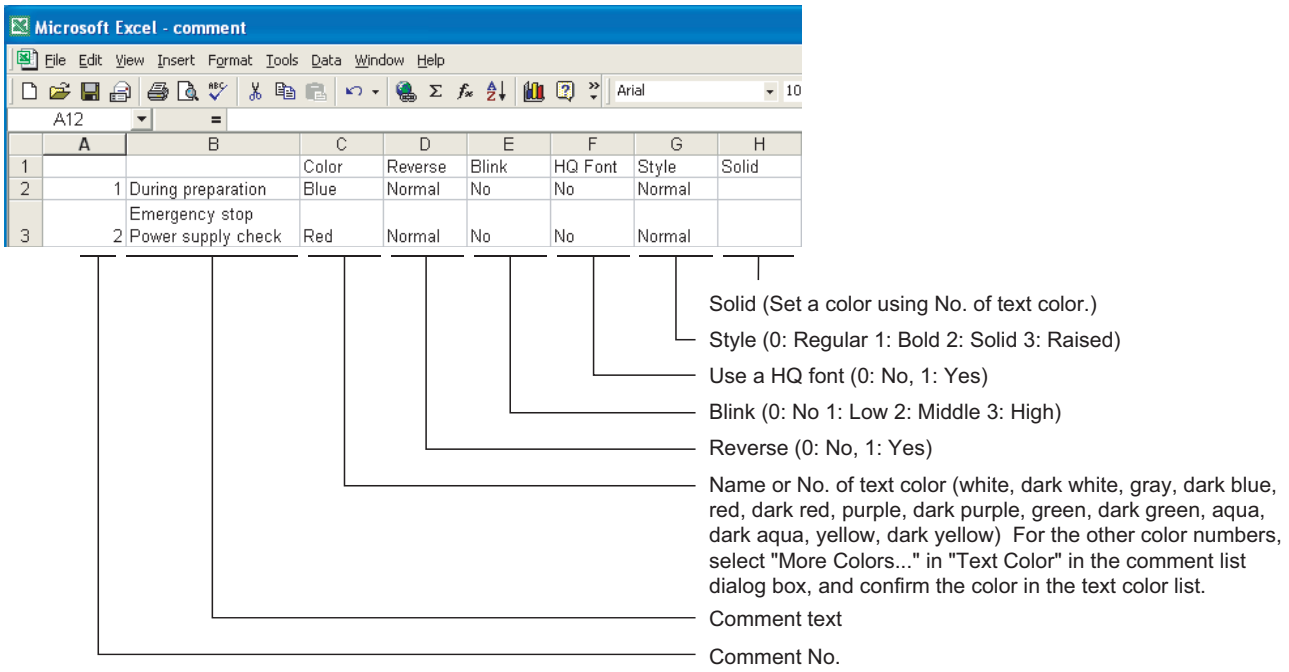
```
//1 ↵                    Processed as comment No.1
"In operation now ↵
↵
Y70 is ON" ↵
↵
X30 is ON ↵
250, 0, 0, 1, 1, ↵
//2 ↵                    Processed as comment No.2
"In stop now" ↵
150, 1, 3, 1, 1, ↵
//3 ↵                    Processed as comment No.3
"Operation start", ↵
101, 0, 1, 0, 1, ↵
```

## 2 CSV format file

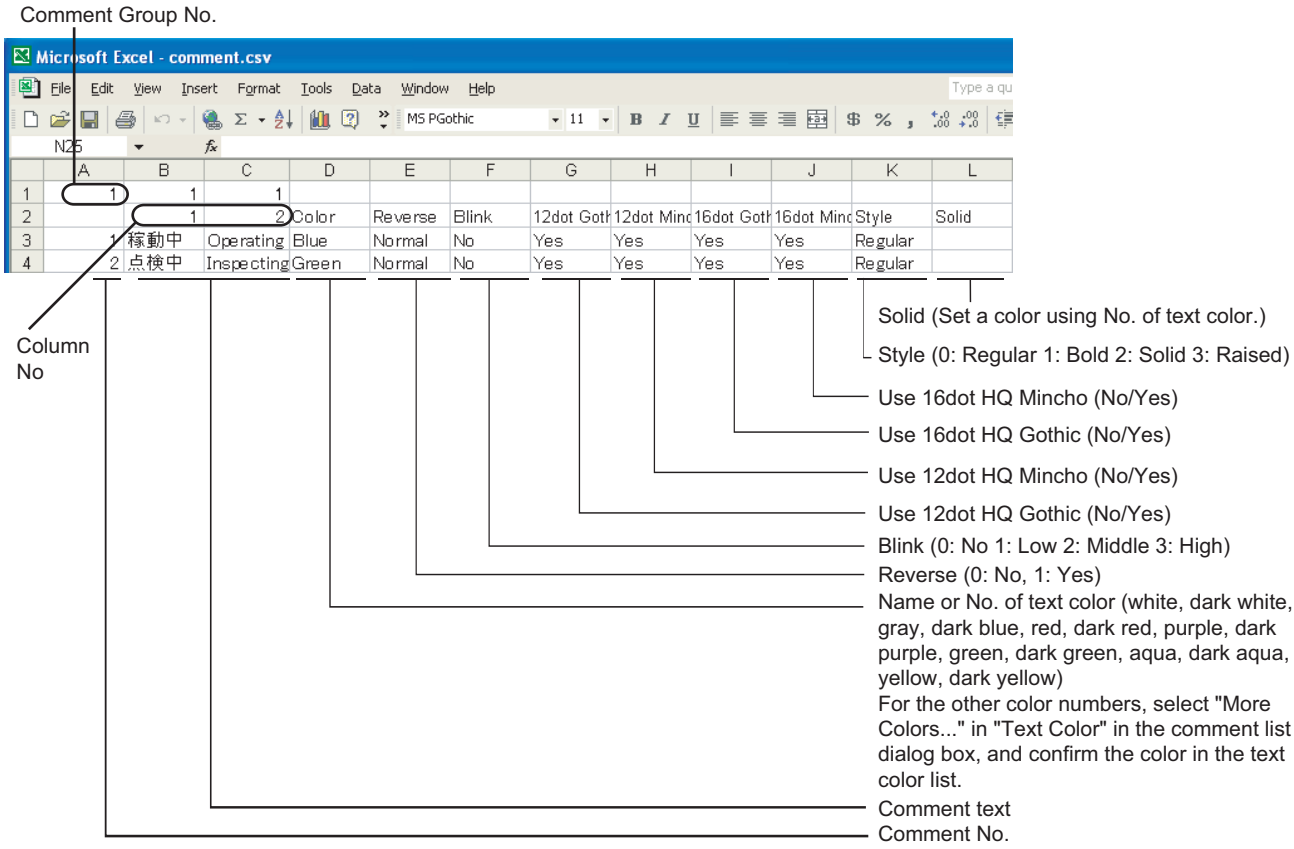
When saving or reading comments as a CSV format file, edit them as explained below.

(1) When editing comments by spreadsheet software
Create each setting item as follows on the spreadsheet.
(The following is an example when Microsoft® Excel is used.)

(a) Basic comment




(b) Comment group



(2) When editing comments by text editor

The comment data saved in a CSV file is configured as follows on the text.

(a) Basic comment

A character string is enclosed with double-quotation marks (" ").

```
, , Color, Rev, Blink, HQ Font, Style, Solid ↵
1,"During preparation", Blue, No, No, No, Regular ↵
2,"Line A, supply stop", Red, No, No, No, Solid, Red ↵
```

7 fields delimited by 6 commas (,). Commas in a string are recognized as characters.

Added if the style is "Solid" or "Raised."

| Comment |
| --- |
| Line A, supply stop |

(b) Comment group

Comment group No.

```
1, 1, 1,,,,,,,,
,1, 2, Text, Rev, Blink, 12dot HQ Gothic, · · · · , Style, Solid
1, "稼動中", "(Operating)", Blue, No, No, Yes, Yes, Yes, Yes, Regular,
2, "点検中", "(Inspecting)", Green, No, No, Yes, Yes, Yes, Yes, Regular,
```

Comment column No.

**Point**

Precaution for saving a file

The edited file must be saved in the CSV file (*.csv) format.

**Remark**

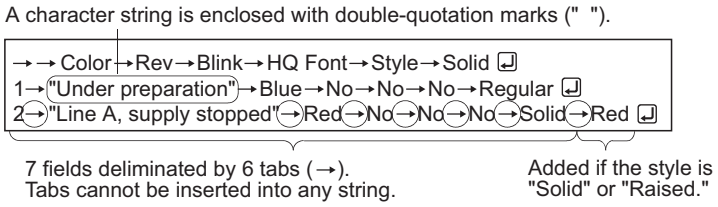
When the display attributes of the comment are not read

If the number of commas and their positions in the CSV file are not correct, the display attributes will not be read.

Before reading them, confirm the number of commas and their positions.

## 3 Unicode text file

When saving the comments as a Unicode text file or reading them into GT Designer2, edit the comments as explained below.




**Point**

(1) Displayed language

When Unicode text files are edited in multiple languages, comment strings are displayed in the language that the user entered.

Attributes (color, reverse, blink and so on) are displayed in English.

For entering multiple languages, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual

(2) Caution for saving the file

The edited file must be saved in the Unicode text file (*.txt) format.

(3) Precautions for using Unicode text file

Refer to the following for the precautions when using a Unicode text file.

☞ Section 2.11 Precautions for Using Unicode Text File

## 4.1.12 Precautions for comment registration

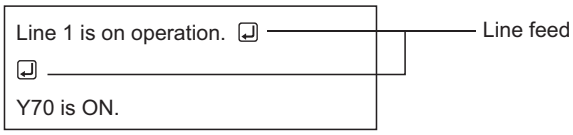
### 1 Maximum number of registerable comments

(1) Basic comment
Up to 32767 comments can be registered.

(2) Comment group
Up to 255 comment groups can be registered, and each group can include comments of up to 32767 lines x 10 columns.

### 2 Maximum number of characters registerable in a comment

A comment can be created with 1 to 512 characters regardless whether they are one- or two-byte characters.
One line feed equals to two characters.




### 3 Character size for displayed comments

Specify the character size for the displayed comments in the dialog box provided for each object setting.

### 4 Display attributes of comments

Some display attributes set to comments are not available depending on the object function.
For the restriction on the comment display for each object function, refer to the relevant section of each object function.

- List of attributes set in comment registration and for each object

| Item | Text Color | Reverse | Blink | HQ Font | Style | Solid |
|---|---|---|---|---|---|---|
| Comment Display | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| Data List Display | — | — | — | ● | — | — |
| Alarm List Display | ○ | ○ | — | ○ | ○ | ○ |
| Alarm History Display | — | — | — | — | — | — |
| Touch Switch | *1 | — | — | ◎ | *1 | *1 |
| Lamp Display | ◎ | — | — | ◎ | ◎ | ◎ |
| Advanced Alarm Display (List/History) | ● | — | — | ● | ● | ● |
| Advanced Alarm Display (Popup) | ◎ | — | — | ● | ● | ● |

*1 When [Text] or [Indirect Text (Basic Comment)] is selected for [Text Type]: ●, when [Comment Group] is selected for [Text Type]: ◎

◎ : Displayed according to the attributes registered with the comment. They can be changed at each object setting.

● : The attributes registered by the comment are not displayed. They are set at each object setting.

○ : Displayed according to the attributes registered with the comment.
They can not be changed at each object setting.

— : Not used.

## 5 HQ font of Chinese (GB, Big5)

GT16 GT15 Soft GOT 1000 GT11 GT10

(1) Chinese (GB) characters
The Chinese (GB) characters will not be displayed in 12dot HQ Gothic or 16dot HQ Gothic setting. If 12dot HQ Gothic or 16dot HQ Gothic is checked in comment registration, the characters are displayed as 12dot HQ Mincho or 16dot HQ Mincho.

(2) Chinese (Big 5) characters
The China (Big 5) characters will not be displayed in 12dot HQ Mincho or 16dot HQ Mincho setting. If 12dot HQ Mincho or 16dot HQ Mincho is checked in comment registration, the characters are displayed as 12dot HQ Gothic or 16dot HQ Gothic.

# 4.2 Parts Registration

There are two types for the parts displayed.
- Parts registered in the GT Designer2
- Parts of BMP/JPEG files saved in the memory card

This section describes how to register parts in the GT Designer2.
For how to display a BMP/JPEG file stored in the memory card as parts, refer to the following.
- How to store a BMP/JPEG file in the memory card

☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

- How to display a BMP/JPEG file stored in the memory card

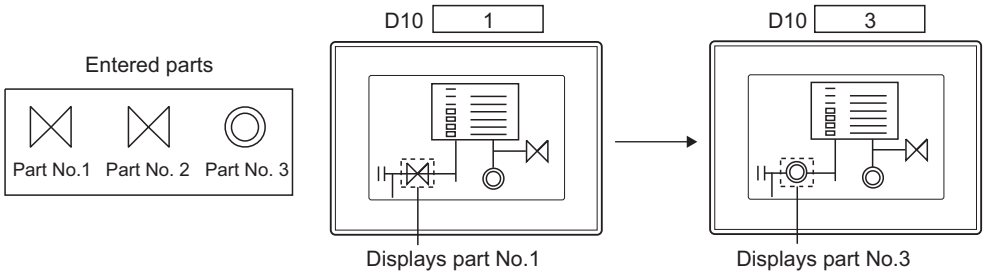
☞ Section 9.1.3 Arrangement and settings

## 4.2.1 Required knowledge for parts registration

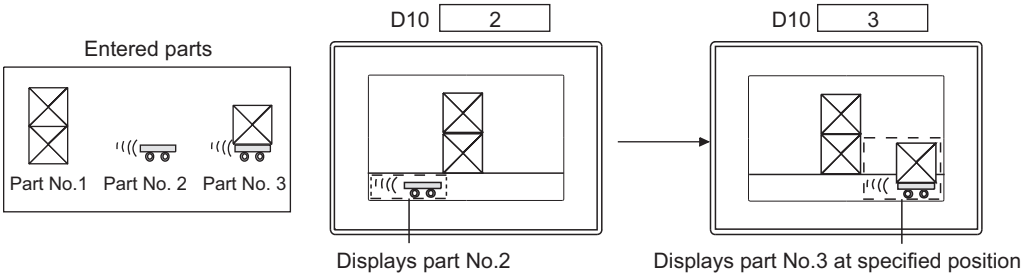
### 1 Parts

User-created figures are registered as parts.
The registered figures can be displayed as parts by the part display function and the parts movement function.

(1) Use the parts display function (☞ Section 9.1 Parts Display)
The several kinds of figures can be displayed by changing a monitor device value.

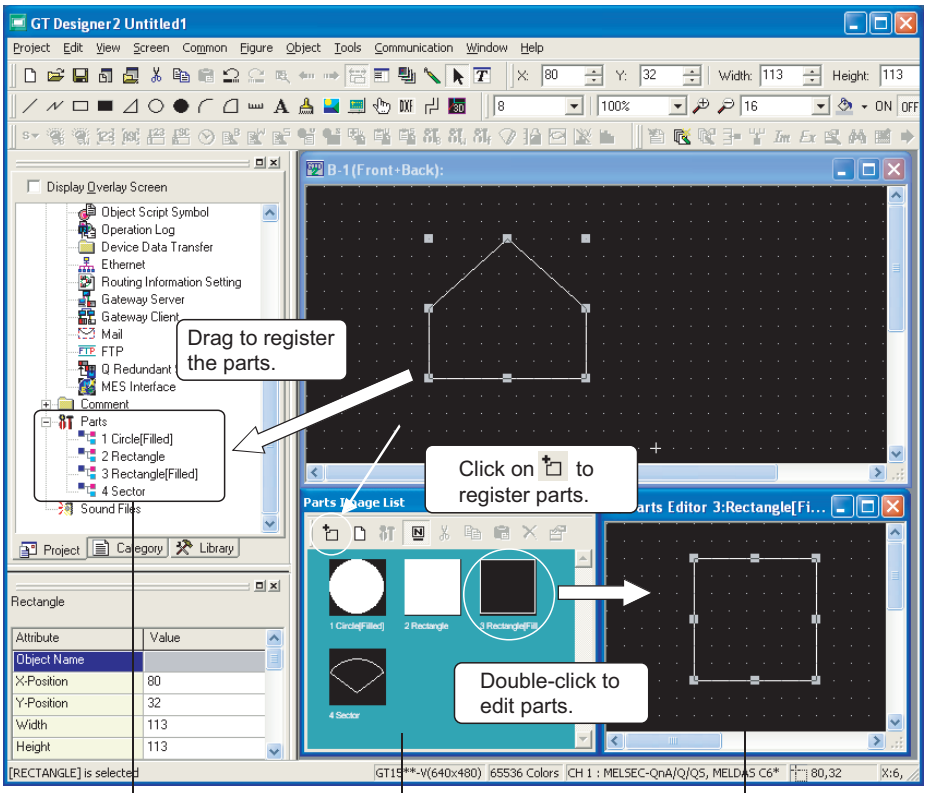



(2) Use the parts movement display (☞ Section 9.2 Parts Movement)
By changing a monitor device value, several kinds of figures can be displayed changing each position.



## 2 Screens for registering and editing parts

Register/edit parts on three screens.




[Project Workspace]

- Drag to register figures as parts.
- Double-click to display "Parts Image Display" or "Parts Editor".

[Parts Image Display]

- Click on to register figures as parts.
- Parts editing can be done on "Parts Editor" with confirming a parts image .

[Parts Editor]

- Registered parts can be edited easily on the dedicated editor.

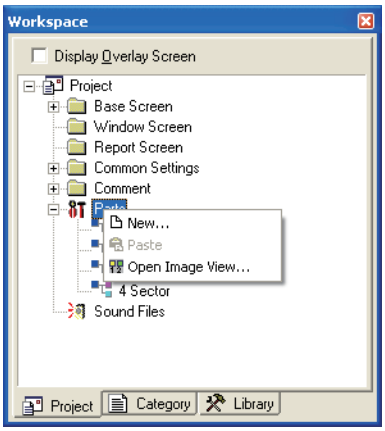
**Remark** Setting editor background color

The background color of the figures in the Parts Editor screen and the Library Editor screen can be set in the Preferences screen.
For the settings, refer to the following manual.

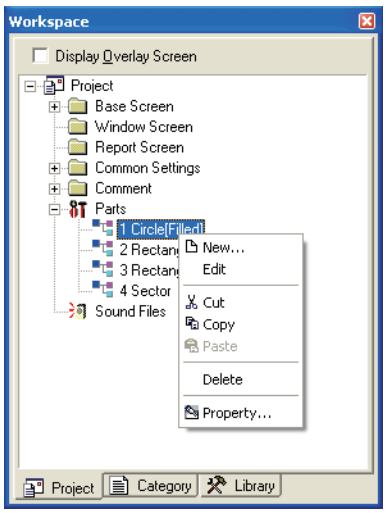
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 5.4 Customizing Screen Configuration and Toolbars)

## 1 Basic operation of project workspace

Select an operation execution object and right click it to select setting items.
Owing to the difference of selected objects, the displayed items will be different.




Right click when select [Parts]

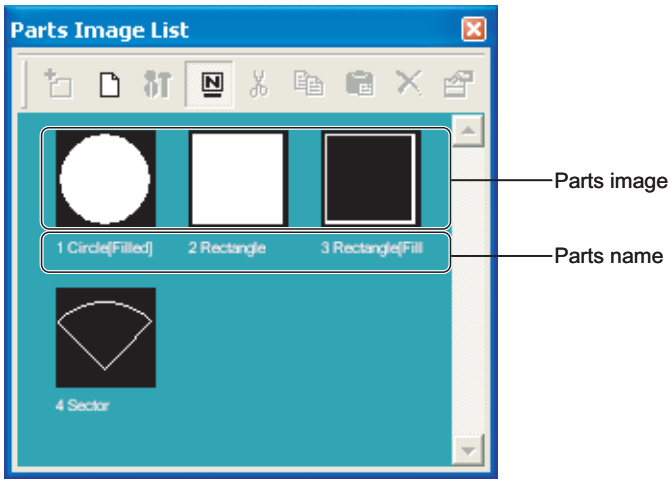



Right click when select parts name

| Items | Description |
|---|---|
| New | Register a new part. |
| Edit | The selected parts can be edited/corrected on [Parts Editor] screen. |
| Cut | Cut the selected parts. |
| Copy | Copy selected parts. |
| Paste | Paste the copied or cut parts. |
| Delete | Delete the selected parts. |
| Property | Change [No.] and [Parts Name] of the selected parts. |
| Open Image View | Display the parts image in Parts image display dialog box. |

## 2 Basic operation of parts image display dialog box

Select [Common] → [Parts] from the menu for displaying.

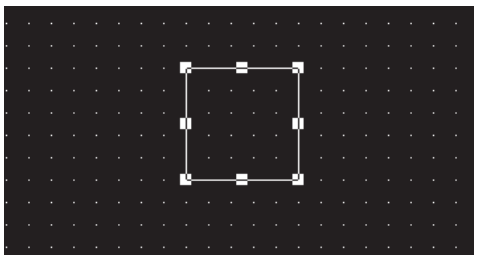



| Items | Description |
|---|---|
| [Register] | Register selected figure to parts. |
| [New Parts] | Register a new part. |
| [Edit] | Correct the contents of registered parts. |
| [Name] | Switch display/not display parts name. |
| [Cut] | Cut the selected parts. |
| [Copy] | Copy the selected parts. |
| [Paste] | Paste the copied or cut parts. |
| [Delete] | Delete the selected parts. |
| [Property] | Change [No.] and [Name] of the selected parts. |

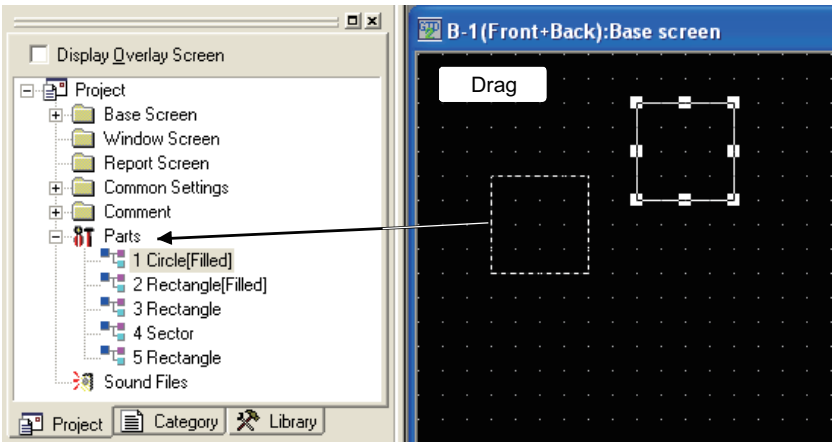
## 4.2.3 Registering parts

Register the parts displayed by parts display function and parts movement display function.

1. Select the figure to be registered.

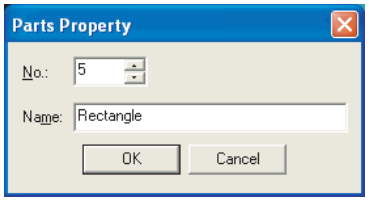


2. Drag the figure to be registered to the parts in project workspace.

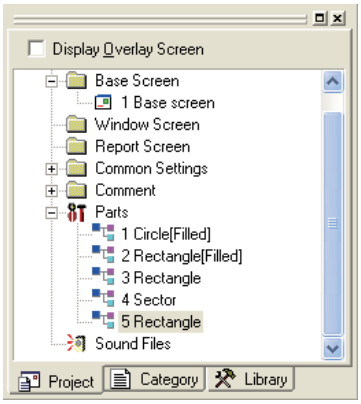



3. Display parts property dialog box.

   Input No. and the name of the parts to be registered, and click on OK button.




4. The registration is completed.

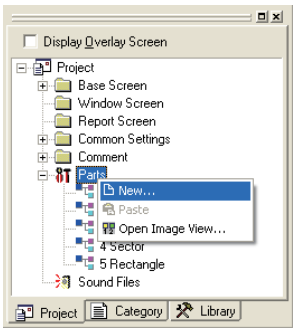



Project workspace

**Remark**

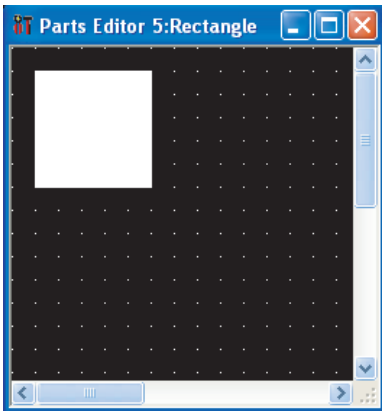
(1) When registering parts on the [Parts Editor] screen
The figure registered as parts can be created on the [Parts Editor] screen.

1. Right click to select [New...] from the menu.

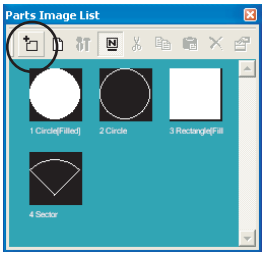



2. The parts property dialog box is displayed.
Input No. and the name of the parts to be registered, and click on OK button.

3. When the Parts Editor screen is displayed, draw the figure to be set as parts.
After drawing the figure, close the Parts Editor screen.




(2) When registering parts in parts image dialog box
When registering parts in parts image dialog box, select the figure to be registered and operate as follows.

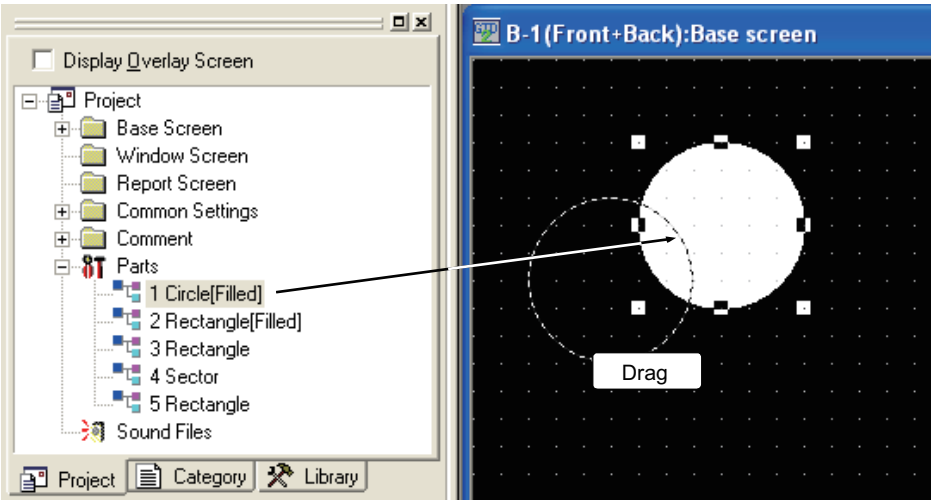



1. Click on [Register].

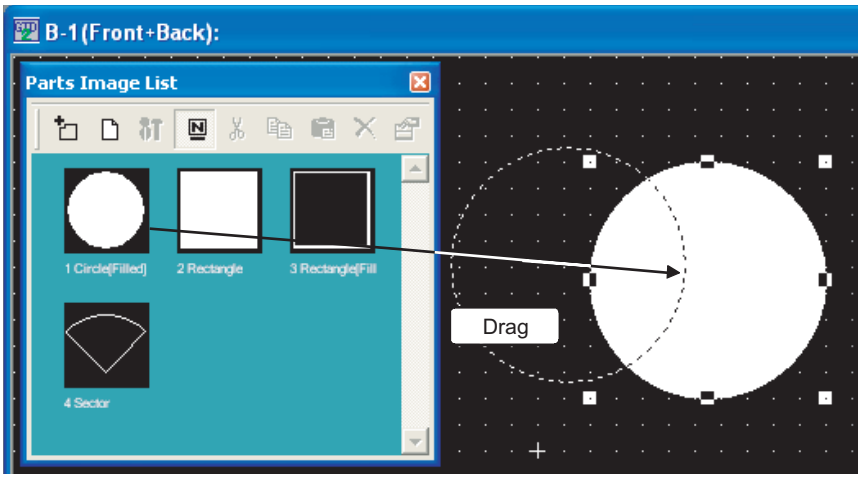
2. When the parts property dialog box is displayed, input No. and the names of the parts to be registered, and click on OK button.

(3) Paste the figure registered in parts to the screen
Select the parts to be read, and drag it to drawing screen.

- Paste from the project workspace




- Paste from the parts image display dialog box




**Hint!**

The figure that can be registered as parts

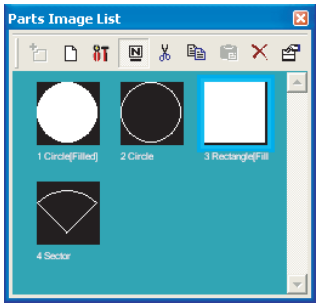
The BMP file /JPEG file *1 /DXF file/IGES file data imported as a figure can also be registered by the same procedure as figures.
*1 JPEG files can be registered for GT16 and GT15 only.

☞GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 11 DRAW AND EDIT)

## 4.2.4 Copying the registered parts

Copy the registered parts to other part No.

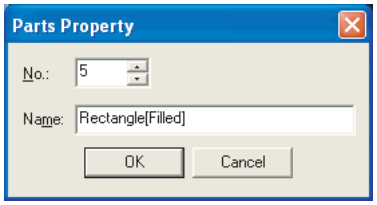
1. Select the parts to be copied.



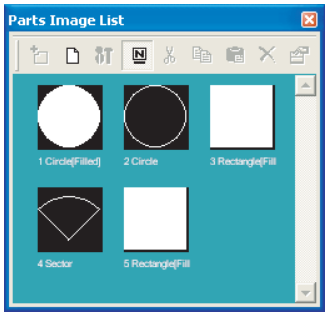

2. Click on [Copy], then click on [Paste].

3. Parts property dialog box is displayed.

   Set the destination [No.] and [Name], and click on OK button.



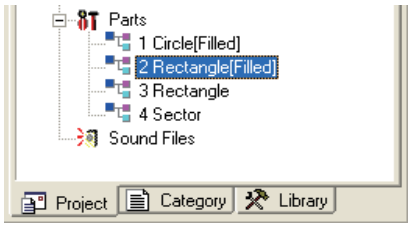

4. Copy the selected parts.




**Remark**

When operating in the project workspace

When copying in the project workspace, select the parts and operate them as follows.

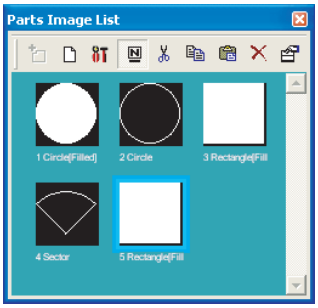



1. Right click, and select [Copy] from the menu.
2. Right click again, and select [Paste] from the menu.
3. Input the destination No. and names.

## 4.2.5 Deleting the registered parts

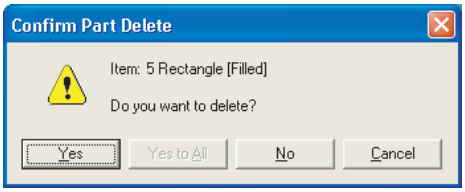
Delete the registered parts.

1. Select the parts to be deleted.

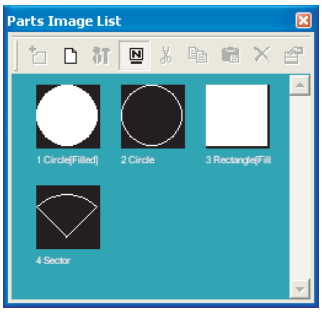



2. Click on [Delete].

3. When the parts delete confirmation dialog box is displayed, click on Yes button.

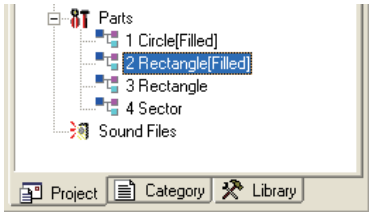



4. Delete the selected parts.




**Remark** When operating in the project workspace

When deleting parts in the project workspace, select the parts and operate them as follows.



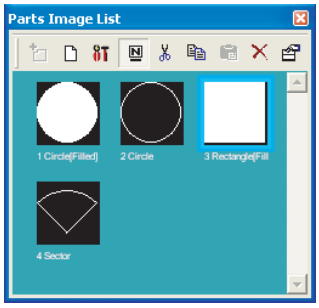

1. Right click, and select [Delete] from the menu.

2. When the parts delete confirmation dialog box is displayed, click on Yes button.

## 4.2.6 Changing the registered parts settings

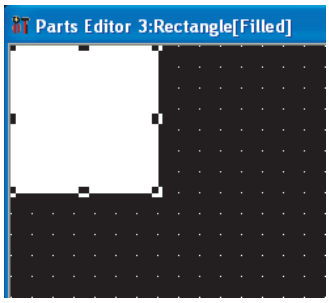
Edit the registered parts.

1. Select the parts to be edited.




2. Click on [Edit]. (The parts can be double-clicked too.)

3. When the [Parts Editor] screen is displayed, edit the parts.

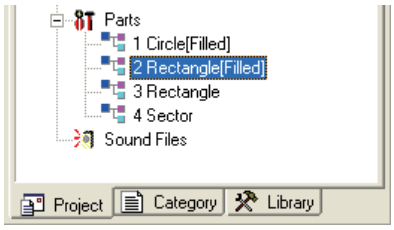



4. When parts edit is completed, close the screen.

   (Click on button at the top-right of screen.)

**Remark** When operating in the project workspace

When editing parts in the project workspace, select the parts and operate them as follows.



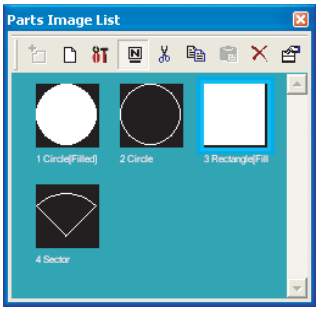

1. Right click, and select [Edit] from the menu. (It can be double-clicked too.)

2. When the [Parts Editor] screen is displayed, edit the parts.

## 4.2.7 Changing property of the registered parts

Change the No. and name of registered parts.

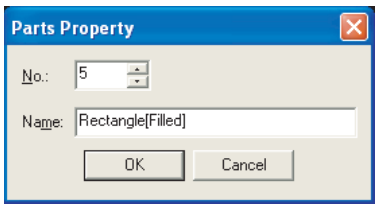
1. Select the parts whose property is to be changed.



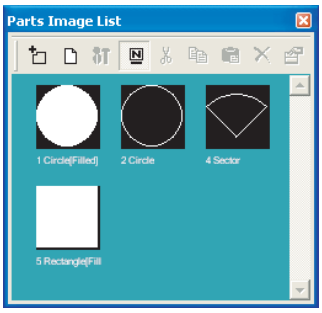

2. Right click the mouse, and select [Property] menu.

3. The parts property dialog box is displayed.

   Input the [No.] and [Name] to be changed, and click on OK button.

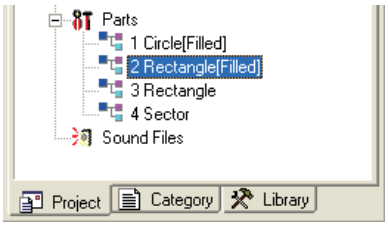



4. Change the property of selected parts.




**Remark** When operating in the project workspace

When changing parts property in the project workspace, select the parts and operate them as follows.




1. Right click to select [Property] from the menu.

2. In the parts property dialog box, set the [No.] and [Name] to be changed.

## 4.2.8 Precautions

### 1 Maximum number of Parts that can be registered

Up to 32767 parts can be registered.

### 2 Memory capacity required for parts

It is same with memory capacity for drawing figure.

☞ Section 2.2 Figures and Data Capacity

### 3 Precautions when registering figure as parts

(1) Line width of figure outline frame

For a figure to be registered as parts, its frame must be drawn in 1-dot line.
If drawn in 2-dot or wider line, it may not appear in actual width on GOT.
However, the frame of 2-dot or wider line can be displayed by following the steps below.

(a) When display with changing the color of figure (figure displayed as mark)

Example: Combine three figures drawn in 1-dot line to make one figure with 3-dot-wide frame. drawn.

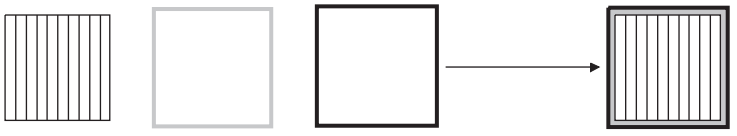
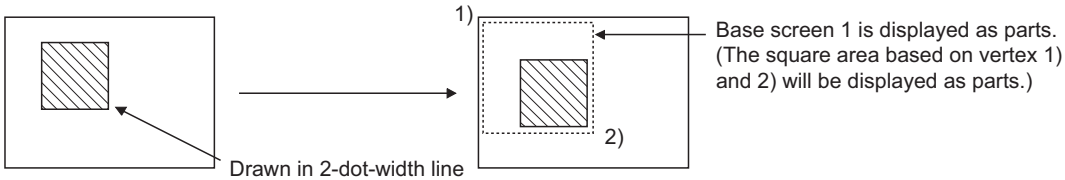


Figure A (Length X Width 16 X 16 dot)
Figure B (Length X Width 18 X 18 dot)
Figure C (Length X Width 20 X 20 dot)
Total frame width frame of figure A,B and C is 3 dot

(b) Set a figure drawn in 2-dot or wider line on an unused base screen and display the base screen as parts using parts display function.

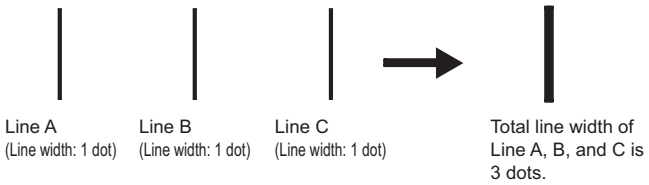



(2) Line width (except slant lines)

When the width of a line (except slant lines) to be registered as a part is 2 to 7 dots, the line may not be displayed with the set width on a GOT.
When displaying a 2-dot or more line on a GOT, refer to the following steps.

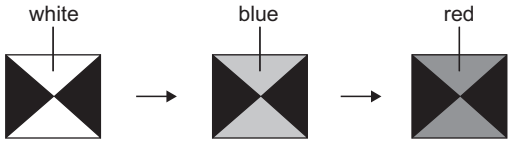
(a) Drawing a 2-dot or more line with 1-dot lines

Example) Combine three 1-dot lines and make a part with 3-dot line width.




(b) Creating a rectangle (filled) and dragging the rectangle to change into the shape of a line

(3) Changing the color of a figure on the screen (figure marked as a mark)
The white area of a part displayed as a mark by Parts Display/Parts Movement, can be changed to another color.




Change the area color from white to other colors.

Register the part displayed as a mark as below.

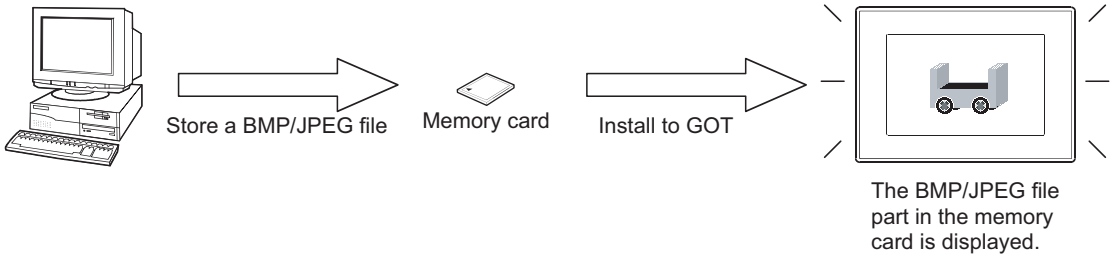
- Draw the color changing area of the figure in white.
- Do not use any figure read from the BMP/JPEG format file.
  The above figures will not change in color even if displayed as a mask.

# 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

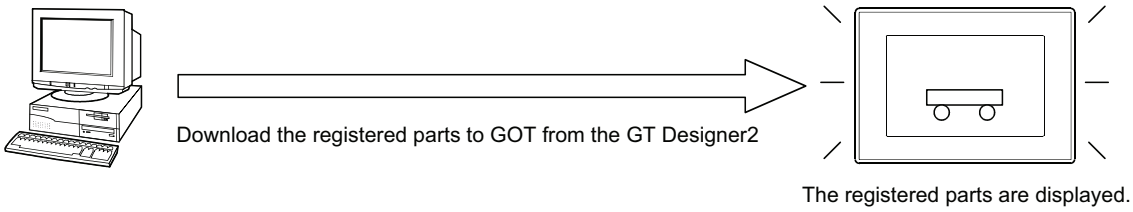
The parts of the BMP/JPEG files stored in the memory card (herein after referred to as BMP/JPEG file parts) can be displayed as parts in Parts Display/Parts Movement.
By registering parts in the memory card as BMP/JPEG file parts, the size of the project data stored in the GOT can be reduced.
This section explains how to store a BMP/JPEG file in the memory card.
For how to display a BMP/JPEG file stored in the memory card, refer to the following.

For Parts Display: Section 9.1.2 Parts displaying method
For Parts Movement: Section 9.2.2 Moving and displaying parts

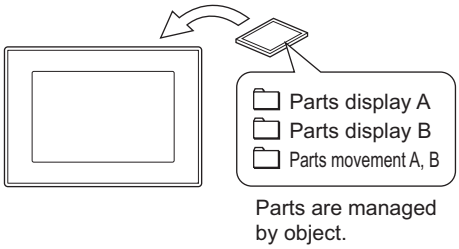
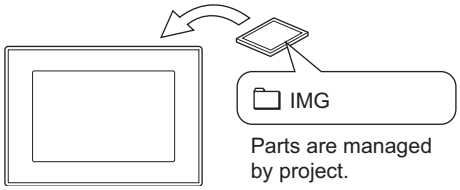
- When displaying a BMP/JPEG file part




- When displaying registered part



BMP/JPEG file parts can be displayed by the following two methods.

| Item | BMP/JEPG fils part (object units) | BMP/JEPG fils part (project units) |
|---|---|---|
| Overview | Specifying the BMP/JEPG file part stored in the memory card in each object setting of parts display or parts movement | Specifying part numbers from 9001 as the numbers used for BMP/JEPG file parts only and displaying the parts for parts display or parts movement |
| Storage folder name | Any folder name | Fixed |
| Storage file name | Any file name | Fixed |
| Available drive | A drive, B drive | A drive |
| Effective setting range | Object units | Project units |
| Number of settable parts | Max, 65536 | Max, 999 |
| Image |   |   |

**Remark** About DXF/IGES data

DXF/IGES files cannot be displayed as parts even when they are stored in the memory card.
To use DXF/IGES files as parts, import them to GT Designer2.

**Remark** Time taken to display a BMP/JPEG file part (reference)

The length of time necessary for a BMP/JPEG file part to be displayed on the GOT screen is indicated below for each GOT type.
Depending on the project data to be used, the time may differ from the time shown below.

| GOT Type | Data range of BMP file to be displayed | | Time taken to display a part (Reference, sec.) | |
|---|---|---|---|---|
| | Resolution (dots) | Number of colors (colors) | BMP file part | JPEG file part *1 |
| GT SoftGOT1000 | 1280 × 1024 | 24-bit full color | 0.62 | 0.92 |
| | | 256 | 0.67 | 0.8 |
| | | Monochrome | 0.65 | 0.78 |
| GT1695M-X/GT1595-X | 1024 × 768 | 24-bit full color | 3.2 | 1.54 |
| | | 256 | 1.68 | 1.55 |
| | | Monochrome | 0.62 | 1.52 |
| GT1685M-S/GT1675M-S/ GT1665M-S/GT1585V-S/ GT1585-S/GT1575V-S/ GT1575-S | 800 × 600 | 24-bit full color | 1.16 | 2.0 |
| | | 256 | 0.69 | 1.86 |
| | | Monochrome | 0.3 or less | 1.95 |
| GT1675M-V/GT1665M-V/ GT1575-V/GT1565-V | 640 × 480 | 24-bit full color | 1.22 | 0.80 |
| | | 256 | 0.82 | 0.72 |
| | | Monochrome | 0.3 or less | 0.77 |
| GT1575-VN | 640 × 480 | 256 | 0.78 | 0.55 |
| | | Monochrome | 0.3 or less | 0.57 |
| GT1572-VN/GT1562-VN | 640 × 480 | 16 | 0.78 | 0.55 |
| | | Monochrome | 0.3 or less | 0.57 |
| GT1555-V | 640 × 480 | 24-bit full color | 1.14 | 0.61 |
| | | 256 | 0.67 | 0.61 |
| | | Monochrome | 0.3 or less | 0.59 |
| GT1555-Q | 320 × 240 | 24-bit full color | 0.45 | 0.41 |
| | | 256 | 0.40 | 0.39 |
| | | Monochrome | 0.32 | 0.44 |
| GT1550-Q | 320 × 240 | Monochrome | 0.35 | 0.46 |

*1 Values measured using a JPEG file part, by converting the BMP format into JPEG format.

## 1 The BMP/JPEG files that can be displayed

The following describes the data format of the BMP/JPEG file that can be used as BMP/JPEG file parts.

(1) BMP file

The BMP data specified below can be used.

| Item | Description |
|---|---|
| Data format | The BMP data *1 of 24-bit, 8-bit, 4-bit or 1-bit |
| Number of colors *2 | 65536 colors *3, 256 colors, 16 colors or monochrome |
| Resolution *4 | Max.: GT SoftGOT1000: 1600×1200, 1280×1024, 1024×768, 800×600, 640×480<br>GT1695M-X, GT1595-X: 1024×768<br>GT1685M-S, GT1675M-S, GT1665M-S, GT1585V-S, GT1585-S,<br>GT1575V-S, GT1575-S :800 × 600<br>GT1675M-V, GT1665M-V, GT1575-V, GT1575-VN, GT1572-VN,<br>GT1565-V, GT1562-VN, GT1555-V: 640 × 480<br>GT1555-Q and GT1550-Q: 320×240<br>Min.: 1×1 dot |

*1 The BMP data compressed by compression software cannot be used.
If used, the system alarm of "536 Image file error or invalid file format." occurs.

*2 For the BMP files stored in the memory card, the number of colors will be reduced to the number supported by the GOT in use.

*3 For the GOT types that allow display in 65536 colors, refer to the following.

☞ GT16 User's Manual (Hardware) (Section 3.2 Performance Specifications)
GT15 User's Manual (Section 3.2 Performance Specifications)

*4 When specifying an image file larger than the display size of the GOT in use, the system alarm of "536 Image file error or invalid file format." occurs.

(2) JPEG file

The JPEG data specified below can be used.

| Item | Description |
|---|---|
| File format | JFIF |
| Data format | Base line |
| Number of colors *1*2 | Full-color, gray-scale |
| Resolution *3 | Max.: GT SoftGOT1000: 1600×1200, 1280×1024, 1024×768, 800×600, 640×480<br>GT1695M-X, GT1595-X: 1024×768<br>GT1685M-S, GT1675M-S, GT1665M-S, GT1585V-S, GT1585-S,<br>GT1575V-S, GT1575-S :800 × 600<br>GT1675M-V, GT1665M-V, GT1575-V, GT1575-VN, GT1572-VN,<br>GT1565-V, GT1562-VN, GT1555-V: 640 × 480<br>GT1555-Q and GT1550-Q: 320×240<br>Min.: 1×1 dot |

*1 For the JPEG files stored in the memory card, the number of colors will be reduced to the number supported by the GOT in use.

*2 For the GOT types that allow display in 65536 colors, refer to the following.

☞ GT16 User's Manual (Hardware) (Section 3.2 Performance Specifications)
GT15 User's Manual (Section 3.2 Performance Specifications)

*3 When specifying an image file larger than the display size of the GOT in use, the system alarm of "536 Image file error or invalid file format." occurs.

**Point**

Difference between data available to BMP/JPEG file parts and registered parts

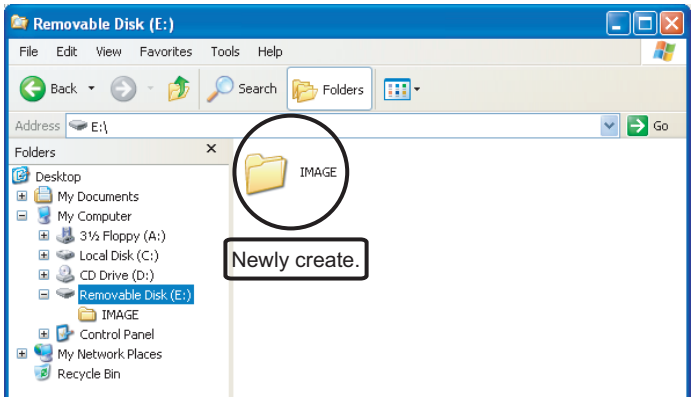
The BMP/JPEG file that can be stored in the memory card (BMP/JPEG file parts) differs with the BMP/JPEG file that can be used in the GT Designer2 (registered parts). The data used as a registered part may not be used as a BMP/JPEG file part. For the BMP/JPEG file that can be used as registered parts, refer to the following.

Section 2.2 2 Figures in BMP/JPEG/DXF/IGES file format

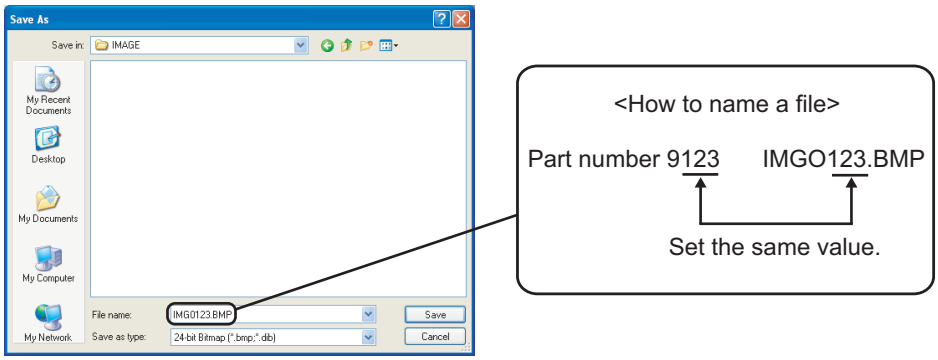
## 4.3.2 Storing a BMP/JPEG file part in the memory card

### 1 Displaying BMP/JPEG files (object units)

1. Create a folder to store a BMP/JEPG file part in the memory card.
   Use a folder name set in each object.



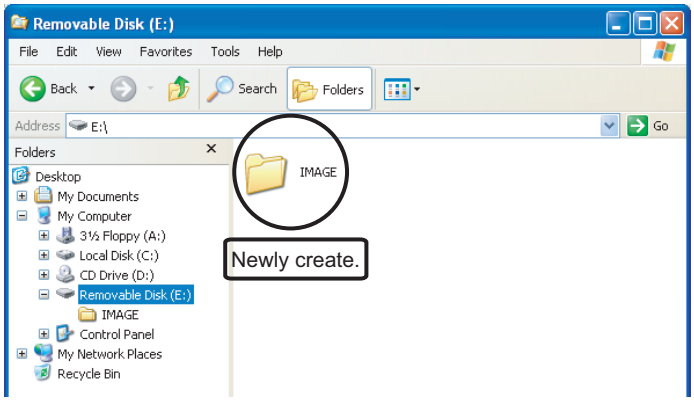

2. Store a BMP/JPEG file to be used as a part in the folder created by 1 .
   Use a BMP/JEPG file name that has been set in each object.
   Example) In a case where file name: IMG, part number. : 0123, digits: 4



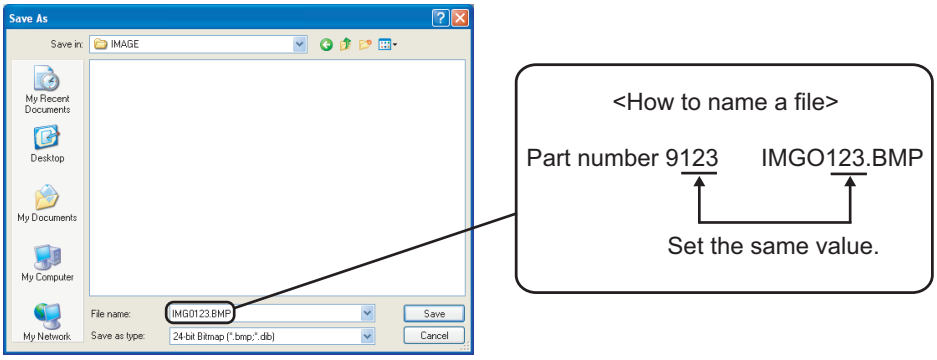

The part number varies depending on the number set for [Digits] in each object.
5 digits: 00001 to 65535 4 digits: 0001 to 9999 3 digits: 001 to 999
2 digits: 01 to 99 1digits: 1 to 9

## 2 Displaying BMP/JPEG files (project units)

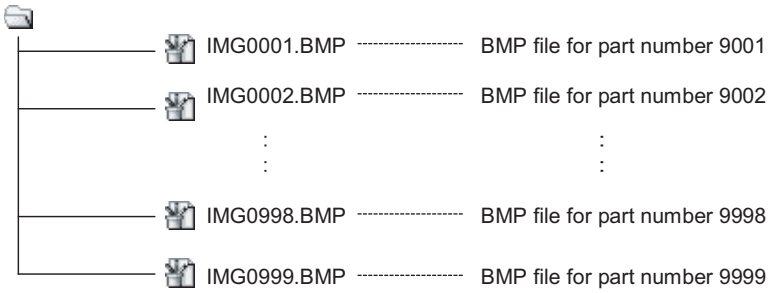
1. Create a folder named "IMAGE" for storing BMP/JPEG file parts in the memory card.
   If storing BMP/JPEG file parts in other than "IMAGE" folder, the BMP/JPEG file parts will not be displayed in Parts Display/Parts Movement.




2. Store a BMP/JPEG file to be used as apart in the "IMAGE" folder in the memory card by naming it with "IMG****. BMP" or "IMG****. JPG". (Assign "****" with a number from 0001 to 0999.)
   The lower 3 digits of "****" corresponds to those of part numbers.
   Example: Naming the BMP file to be displayed as a part of the part number 9123.




- The structure in the memory card (for BMP files)



**Point**

(1) When storing a BMP file and JPEG file of the same file name
The JPEG file part is preceded.

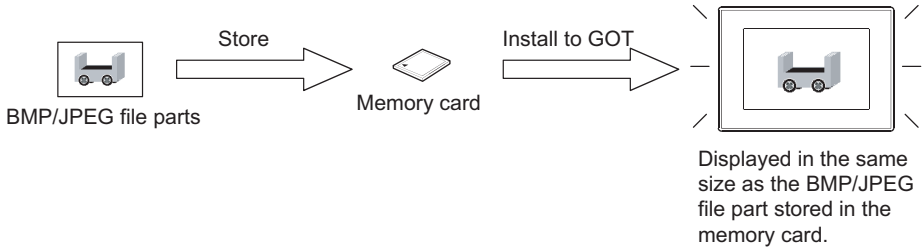
(2) Previewing a BMP/JPEG file part to be registered
The BMP/JPEG file parts to be stored in the memory card can be previewed by the GT Designer2. (☞ Section 4.2 Parts Registration)
If the display of a BMP/JPEG file becomes unclear due to the color reduction or other reasons, adjust the BMP/JPEG file.

## 4.3.3 Precautions

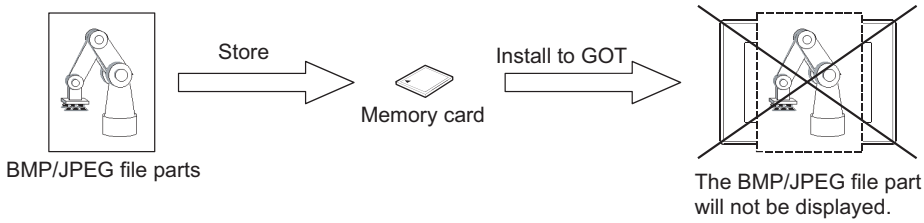
### 1 Precautions on drawings

(1) The size of the BMP/JPEG file parts stored in the memory card
The BMP/JPEG file part is displayed on the GOT in the same size as the BMP/JPEG file part stored in the memory card.
Any BMP/JPEG file part larger than the GOT display size cannot be displayed.
Be sure to use BMP/JPEG file parts smaller than the display size of the GOT you use for the BMP/JPEG file parts to be stored in the memory card.

• When the BMP/JPEG file part is the same size or smaller than the GOT display size




• When the BMP/JPEG file part is larger than the GOT display size

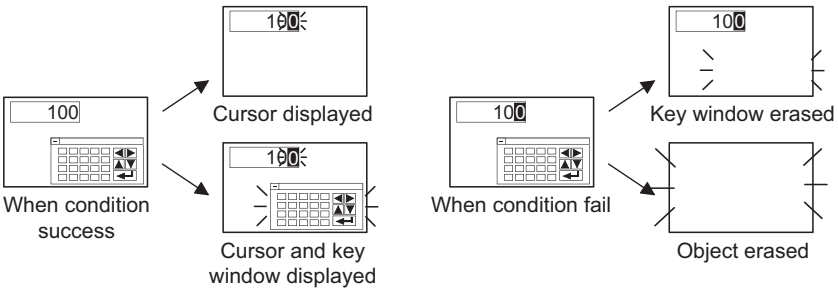


# 4.4 Auxiliary Settings

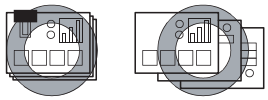
Operation of cursor, key window or other can be set for each screen or project.
The auxiliary settings are explained as follows:

## 1 Action of cursor and key window when condition success/ switching screen/condition fail

When condition success/switching screen, cursor and key window are displayed.
When condition fail, cursor and key window are erased.



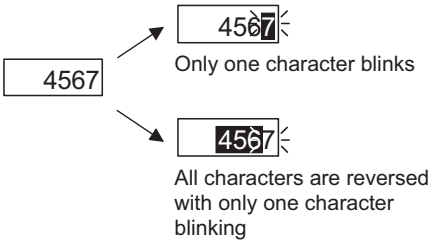

Setting for each project | Setting for each screen



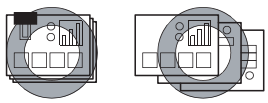
Setting items
- [Action when condition success]
- [Switching screen option]
- [Action when condition fail]
- [Cursor position]

## 2 Methods of displaying cursor input area

For numeric input and ASCII input, cursor display method is selectable.



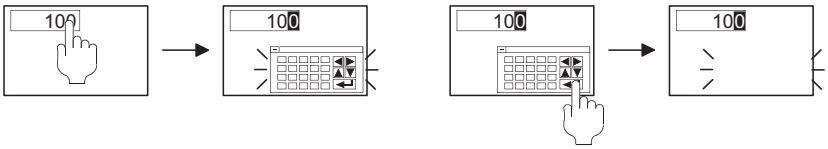

Setting for each project | Setting for each screen



Setting items
- [Cursor input area]

## 3 Methods of displaying/erasing key window

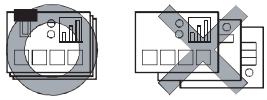
Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.




Display key window with input touch

Press RET key (input definition), key window is erased.

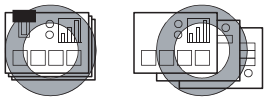
Setting for each project | Setting for each screen



Setting items

- [Close cursor and key window when RET key is pressed.]

Setting for each project | Setting for each screen

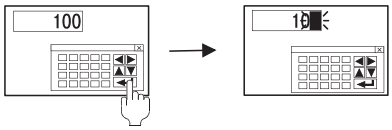


Setting items

- [When touch input is detected, open key window at the same time]

## 4 Displaying/Hiding the cursor key

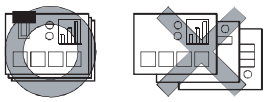
The cursor key can be hidden when the RET key or an arrow key is pressed.




When pressing the RET key

Cursor is displayed.

Setting for each project | Setting for each screen

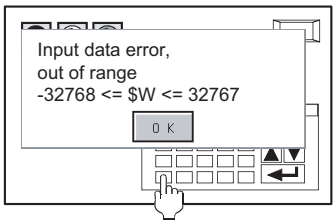


Setting items

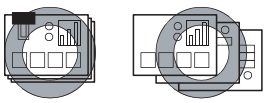
- [Do not display the cursor when RET key is pressed]

## 5 Input range check during numerical value input

The input range can be checked when a numerical value is input.




Setting for each project | Setting for each screen

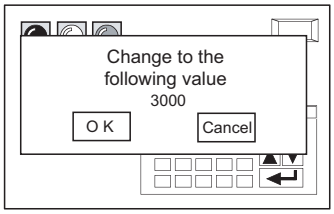


Setting items

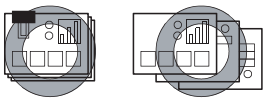
- [Check the input range while inputting the numerical value]

## 6 Displaying/Hiding the input check dialog box during numerical/ASCII input

When numerical/ASCII characters are input, the input confirmation dialog can be displayed by pressing the RTN key.




Setting for each project | Setting for each screen



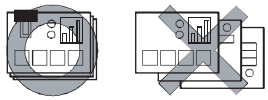
Setting items

- [When numerical/ascii input is detected, display input confirmation dialog]

## 7 Using sound file for touch key sound

A sound when touching a touch switch can be set. (A sound file is required.)

Setting for each project | Setting for each screen

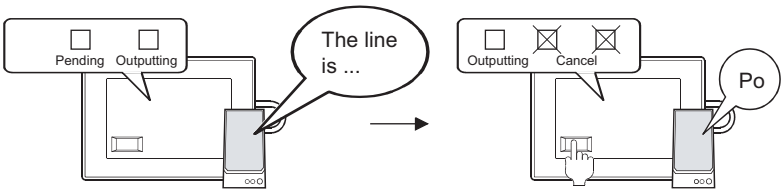


Setting item

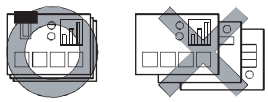
- [The Sound File is used for the touch key sound]

## 8 Giving top priority to sound output for switches

All running sound outputs are cancelled, and then a touch key sound is output when a touch switch is touched.




Setting for each project | Setting for each screen

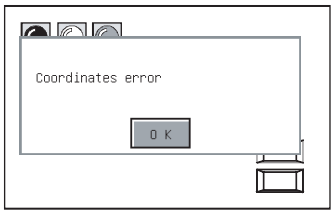


Setting item

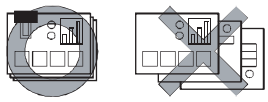
- [Prioritize the sound output of a switch]

## 9 Check for overlapping objects

If objects overlap when screen calling function and superimpose window are used, message will appear on GOT. As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

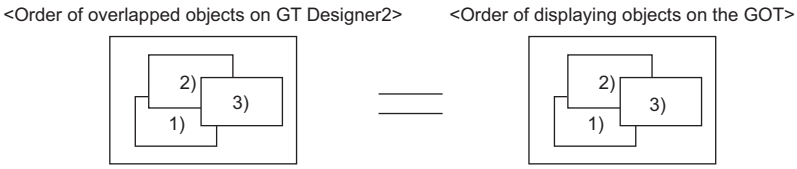


Setting items

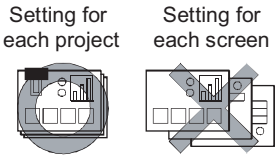
- [Carry out check for overlapping objects within GOT]

## 10 Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.




Setting for each project | Setting for each screen

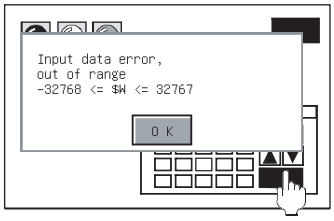


Setting items

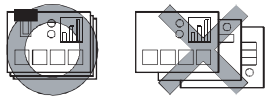
- [Adjust object display order in GOT to the one in GT Designer2]

## 11 Displaying input range for numeric value Input

When a numeric value out of input range is input, a message appears showing the input range.




Setting for each project | Setting for each screen

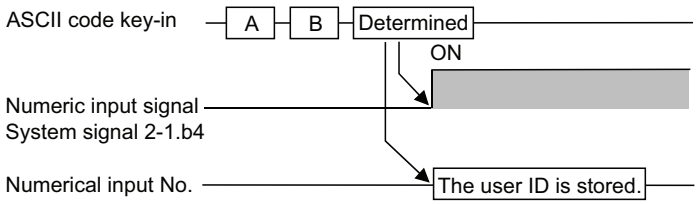


Setting items

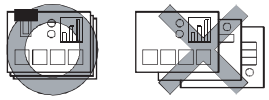
- [Display the input range when inputs the out of range in numerical input]

## 12 Outputting ASCII input to the system information

When ASCII characters are input, the input signal/No. can be output to the system information.




Setting for each project | Setting for each screen

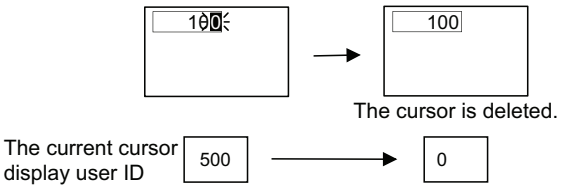


Setting items

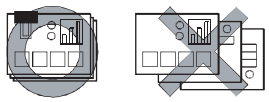
- [Ascii input is targeted in the system information output]

## 13 Clearing the system information when the cursor is deleted

When the cursor is deleted, the system information such as cursor display object ID and cursor display user ID can be cleared.




Setting for each project | Setting for each screen

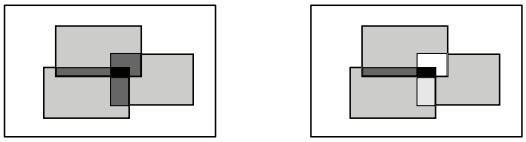


Setting items

- [When the cursor deleted, system information is cleared]

## 14 Inverting the grouped parts (XOR display)

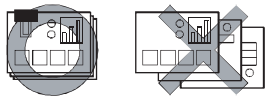
When the drawing mode of parts display is set to XOR, the grouped parts can be inverted (XOR display) at once.



Inverting the grouped figures (XOR display) at once

Inverting each of the grouped figures (XOR display)
(The figures are inverted one by one in the overlapping order.)

Setting for each project | Setting for each screen

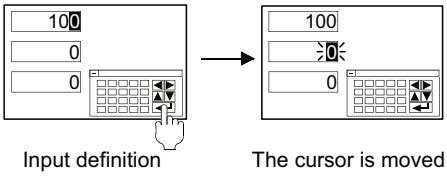


Setting items

- [While display mode of part display is XOR, grouped figures are displayed by XOR]

## 15 Action of cursor key

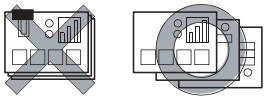
If multiple areas for numerical input and ASCII input are provided, the input order can be set.
After input definition, the cursor is moved to the next input area automatically.




Input definition

The cursor is moved to the next input area.

Setting for each project | Setting for each screen

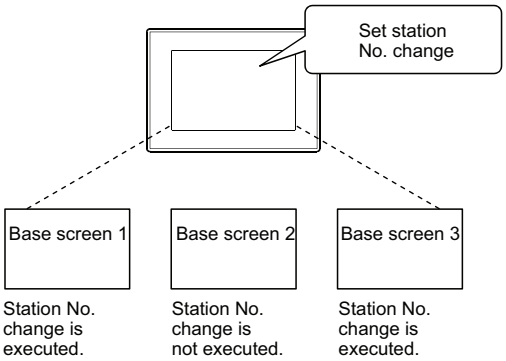


Setting items

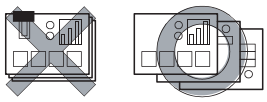
- [Defined key action]
- [Position to specify area]

## 16 Station No. change execution/inexecution

Station No. change can be set to be executed or not for each screen.




Setting for each project | Setting for each screen

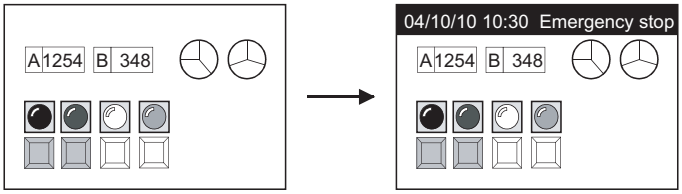


Setting items

- [Carry out station no. change]

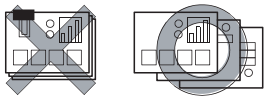
## 17 Enabling/Disabling advanced alarm popup display

The advanced alarm popup display is enabled or disabled for each screen. The display position can be selected from the top row, center row, and bottom row.




The corresponding comment pops up at the top row of the screen when an alarm occurs

Setting for each project | Setting for each screen

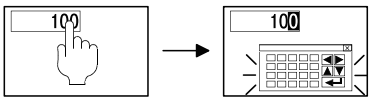


Setting items

- [Carry out display of advanced alarm pop up]

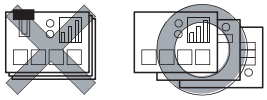
## 18 Moving/Not moving key window

Moving or Not moving of a key window can be set for each screen.




The key window appears on the screen without hiding the input cursor.

Setting for each project | Setting for each screen

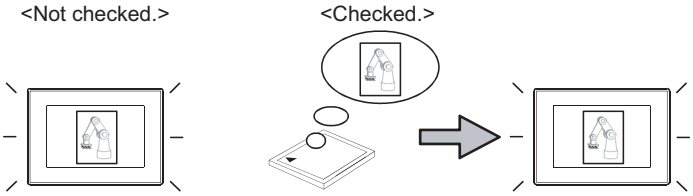


Setting items

- [Move key window]

## 19 Using/Not using the image files in the memory card

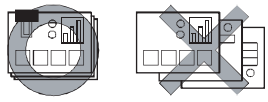
Whether to use the image files stored in the memory card for the objects of Parts Display/Parts Movement can be specified.




Displays the parts registered in the GOT.

Displays the BMP/JPEG file parts in the memory card.

Setting for each project | Setting for each screen

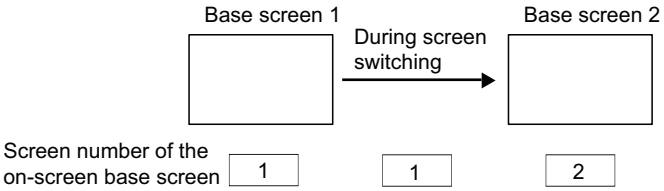


Setting items

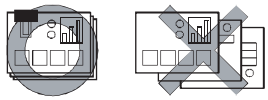
- [The image file in a memory card is used for the Parts Image of Parts Display/Movement]

## 20 Not writing "0" to [On-screen base screen number] (system information) even during screen switching

"On-screen base screen number" of system information, where "0" is usually written in screen switching, can be set so as not to be written with "0" even when the screen is switched. (The current value is maintained.)




Setting for each project | Setting for each screen

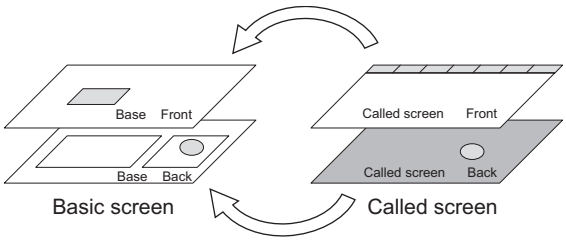


Setting items

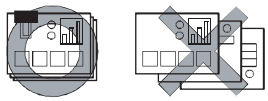
- [When the screen is switched, On-screen Number (System Information) is maintained. (Zero is not written.)]

## 21 Placement position of called screens

When calling a screen, the placement position (Front/Back) of the called screen to the basic screen can be set.




Setting for each project | Setting for each screen

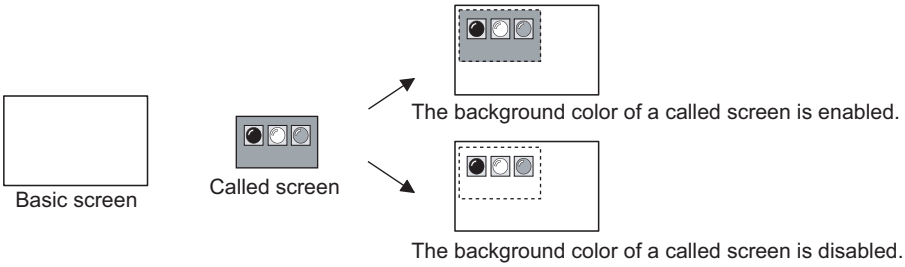


Setting items

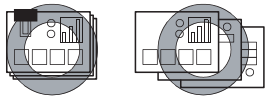
- [Place the overlay screen under the basic screen]

## 22 Enabling/disabling background color of called screen

When the set overlay screen function is used, the background color of a called screen can be set to enabled or disabled per basic screen.




Setting for each project | Setting for each screen

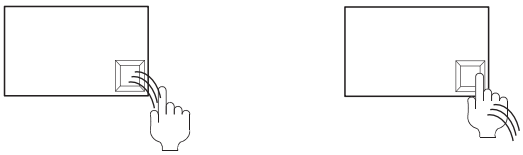


Setting items

- [Disable background colors of overlay screen when setting an overlay screen]
- [Use screen color]

## 23 Switching timing of the go to screen swith

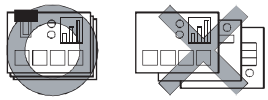
The switching timing when switching the screen by touching the go to screen switch can be set.



The screen is switched at a timing when the finger is released from the switch. (OFF)

The screen is switched at a timing when the finger touches the switch. (ON)

Setting for each project | Setting for each screen



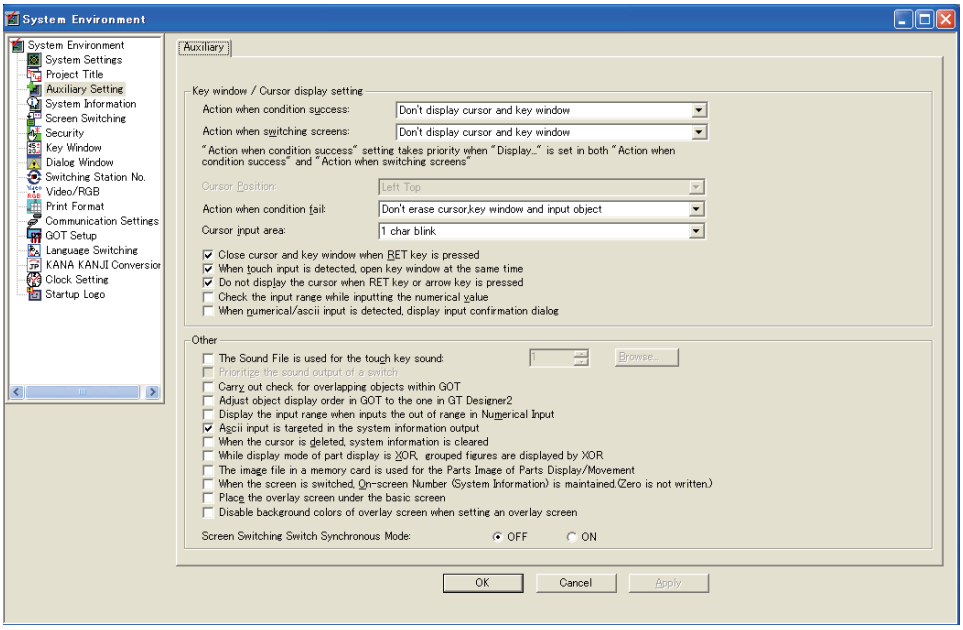
Setting items

- [Screen Switching Switch Synchronous Mode]

## 4.4.1 List of relevant object items

A list of object items related to auxiliary settings is shown below.

(1) Auxiliary setting screen for each project




(Example:Setting screen for GT15)

○ : Relevant, —: Irrelevant

| Auxiliary setting items | Lamp, Switch | | Numerical, Character Display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lamp display | Touch switch | Numerical display | Numerical input | Data list | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| Action when condition success | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Action when switching screens | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cursor position | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Action when condition fail | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cursor input area | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Close cursor and key window when RET key is pressed | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When touch input is detected, open key window at the same time | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Do not display the cursor when RET key or allow key is pressed | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Check the input range while inputting the numerical value | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When numerical/ ascii input is detected, display input confirmation dialog | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| The Sound File is used for the touch key sound | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Prioritize the sound output of a switch | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry out check for overlapping objects within GOT | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ |
| Adjust object display order in GOT to the one in GT Designer2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — | — | ○ | ○ | ○ | — | ○ | — | ○ | ○ | ○ | ○ |
| Display the input range when inputs the out of range in Numerical Input | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Ascii input is targeted in the system information output | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When the cursor deleted, system information is cleared | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| While display mode of part display is XOR, grouped figures are displayed by XOR | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Auxiliary setting items | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Computer remote operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Action when condition success | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Action when switching screens | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Cursor position | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Action when condition fail | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Cursor input area | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Close cursor and key window when RET key is pressed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| When touch input is detected, open key window at the same time | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Do not display the cursor when RET key or allow key is pressed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Check the input range while inputting the numerical value | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| When numerical/ ascii input is detected, display input confirmation dialog | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| The Sound File is used for the touch key sound | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — |
| Prioritize the sound output of a switch | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry out check for overlapping objects within GOT | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — |
| Adjust object display order in GOT to the one in GT Designer2 | ○ | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — |
| Display the input range when inputs the out of range in Numerical Input | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Ascii input is targeted in the system information output | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When the cursor deleted, system information is cleared | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| While display mode of part display is XOR, grouped figures are displayed by XOR | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

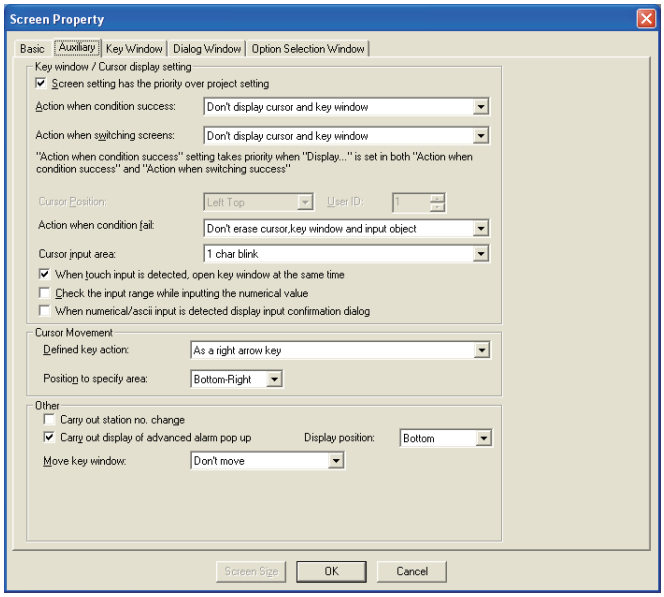
○ : Relevant, —: Irrelevant

| Aixiliary setting items | Lamp, Switch | | Numerical, Character Display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lamp display | Touch switch | Numerical display | Numerical input | Data list | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display (User alarm) | Advanced alarm display (System alarm) | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| The image file in a memory card is used for the Parts Image of Parts Display/ Movement | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — |
| When the screen is switched, On-screen Number (System Information) is maintained. (Zero is not written.) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — |
| Place the overlay screen under the basic screen | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Disable background colors of overlay screen when setting an overlay screen | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Screen Switching Switch Synchronous Mode | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Aixiliary setting items | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | | Other | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Computer remote operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | Debug | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | Script function | Station No. switching | Key windows |
| The image file in a memory card is used for the Parts Image of Parts Display/ Movement | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When the screen is switched, On-screen Number (System Information) is maintained. (Zero is not written.) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Place the overlay screen under the basic screen | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — |
| Disable background colors of overlay screen when setting an overlay screen | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — | — | — |
| Screen Switching Switch Synchronous Mode | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

(2) Auxiliary setting items for each screen




(Example:Setting screen for GT15)

○ : Relevant, —: Irrelevant

| Auxiliary setting items | Lamp, Switch | | Numerical, Character Display | | | | | | | Alarm | | | | | | | | Parts | | Graph/Meter | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lamp display | Touch switch | Numerical display | Numerical input | Data list | ASCII display | ASCII input | Clock display | Comment display | Advanced alarm display | Advanced alarm display | Advanced alarm popup display (User alarm) | Advanced alarm popup display (System alarm) | User alarm display | System alarm display | Alarm history display | Scrolling alarm display | Parts display | Parts movement | Panel meter display | Level display | Trend/Line/Bar graph | Statistics graph |
| Screen setting has the priority over project setting | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Action when condition success | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Action when switching screens | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cursor position | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Action when condition fail | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Cursor input area | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When touch input is detected, open key window at the same time | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Check the input range while inputting the numerical value | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When numerical/ascii input is detected display input confirmation dialog | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Defined key action | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Position to specify area | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry out station no. change | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry out display of advanced alarm pop up | — | — | — | — | — | — | — | — | — | — | — | ○ | ○ | — | — | — | — | — | — | — | — | — | — |
| Carry out display of alarm flow | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | — | — |
| Move key window | — | — | — | ○ | — | — | ○ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

○ : Relevant, —: Irrelevant

| Auxiliary setting items | Graph/ Meter | | Trigger → action | | | | Recipe | | External I/O | | | | | | | | | | Debug | Other | | | | | | Script function | Station No. switching | Key windows |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scatter graph | Historical trend graph | Status observation function | Time action function | Logging function | Device data transfer function | Recipe function | Advanced recipe function | Report | Hardcopy | Bar code function | Video display | RGB display | Computer remote operation function | External I/O/ Operation panel | Sound output | RFID function | Multimedia function | | Set overlay screen function | Operation log function | Document display function | Test function | Gateway function | MES interface function | | | |
| Screen setting has the priority over project setting | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Action when condition | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Action when switching | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Cursor position | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Action when condition fail | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Cursor input area | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| When touch input is detected, open key window at the same time | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Check the input range while inputting the numerical value | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| When numerical/ascii input is detected display input confirmation dialog | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Defined key action | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Position to specify area | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |
| Carry out station no. change | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ | — |
| Carry out display of advanced alarm pop up | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry out display of alarm | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Move key window | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | ○ |

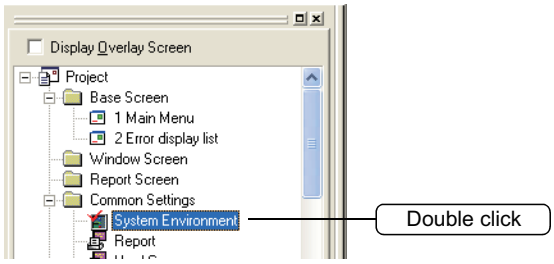
## 4.4.2 Settings

### 1 When setting for each project

1. Select [Common] → [System Environment] from the menu.
2. As the System Environment dialog box appears, double click on [Auxiliary Settings].
3. As the Auxiliary Settings dialog box appears, make the setting with reference to the following explanation (☞Section 4.4.3 1 ).

**Remark** When setting in project workspace

Double click on System Environment and the System Environment dialog box appears, then double click on Auxiliary Settings.

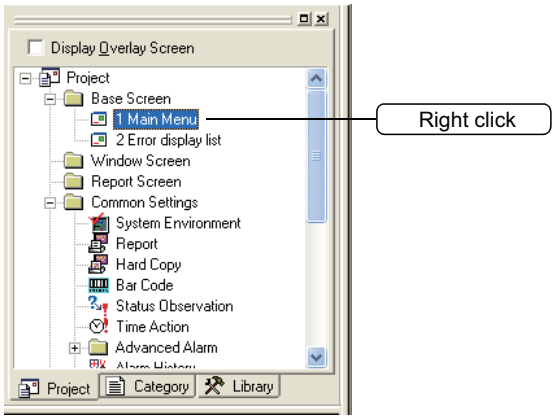



### 2 When setting for each screen

1. Select a screen, and then select [Screen] → [Properties] from the menu.
2. As the setting dialog box appears, click on the Auxiliary tab, and then make the setting with reference to the following explanation (☞Section 4.4.3 2 ).

**Remark** When setting in project workspace

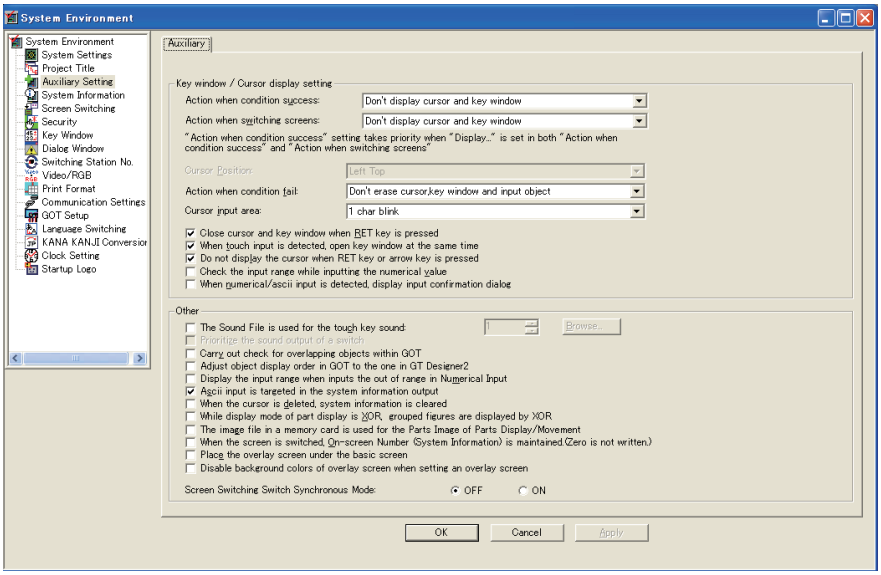
Select a screen and right-click on the screen with a mouse, and then select [Property]. As the setting dialog box appears, double click on the Auxiliary tab.



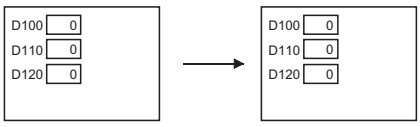
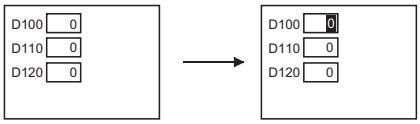
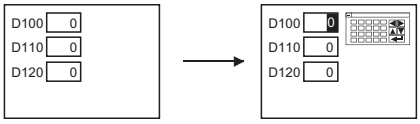
## 4.4.3 Setting items

### 1 Setting dialog box for each project

Make the auxiliary settings for each project.



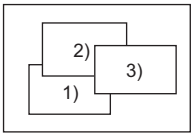
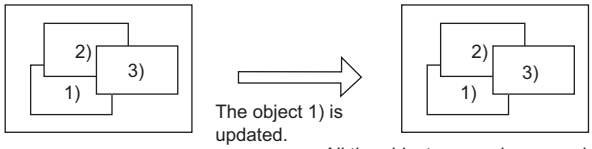
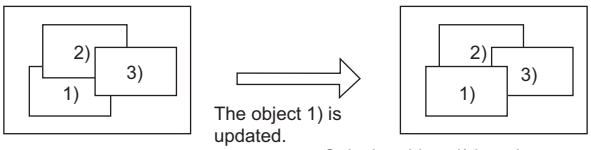

(Example:Setting screen for GT15)

| Items | Description | Model |
|---|---|---|
| Action when condition success | Set the display method of cursor and key window with numerical input function and ASCII input function when the condition is satisfied/switching screen. (For setting [Action when condition success], [Display cursor only] and [Display cursor and key window] cannot be set for GT10.)<br>Cursor and key window are not displayed:<br>When the condition is satisfied/switching screen, the cursor or key window is not displayed.<br>In the case of key input, touch the input area.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Action when switching screens | Only cursor is displayed:<br>When the condition is satisfied/switching screen, the cursor is displayed automatically.<br>If there is key for key input on the screen, key input can be executed.<br>  <br><br>Both the cursor and key window are displayed:<br>When the condition is satisfied/switching screen, the cursor and key window are displayed.<br>Even if there is no key for key input on the screen, key input can be executed.<br>  <br> | |
| Cursor position | Set the cursor position when switching screen.<br>Left top :When switching screen, the cursor is displayed on input area in upper left part of the screen.<br>User ID minimum :When switching screen, the cursor is displayed on the input area in which minimum user ID has been set. | |

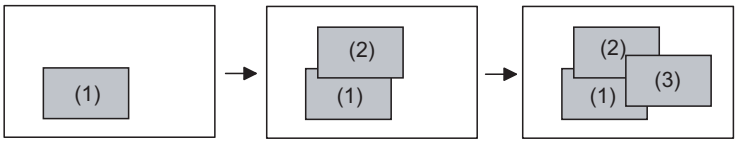
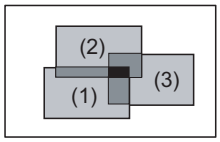
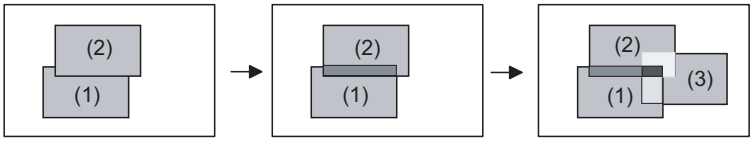
(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Action when condition fail | Set the display method of cursor and key window with numerical input function, ASCII input function and switch touch function when the condition is not satisfied.<br>They will be erased only when the trigger has been set to [ON] or [OFF].<br>Shape of numeric value/ ASCII input (frame) is displayed as it is.<br>(For GT10, [Erase cursor and key window] and [Erase cursor,key window and input object] cannot be set.)<br>Cursor, key window and input object are not erased:<br>When the condition is not satisfied, cursor/key window/ object is displayed as it is.<br>Cursor and key window are erased:<br>When the condition is not satisfied, cursor/ key window is erased.<br>Cursor, key window and input object are erased:<br>When the condition is not satisfied, cursor/key window/ object is erased. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Cursor input area | Set the display method of input area in input area.<br>1 character blink :One character blinks within input area.<br>4567<br>All reverse + 1 character blink :The characters are reversed within input area, and only one character blinks<br>4567 | |
| Close cursor and key window when RET key is pressed. | Check this item to automatically close the key window and input cursor when numeric value or ASCII characters are input and then input definition key is pressed on the key window. | |
| When touch input is detected, open key window at the same time | Check this item to automatically display the key window when the input area for numeric value/ASCII input is touched. (When the ASCII input is used with GT15, GT SoftGOT1000, and GT11, set the ASCII key sheet No. for the key window setting.)<br>D100 0 D110 0 D120 0 → D100 0 D110 0 D120 0 | |
| Do not display the cursor when RET key or allow key is pressed | Check this item when not display the cursor even when the OK or arrow key is touched. If touch the cursor displaying object directly, the cursor can be displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Check the input range while inputting the numerical value | Check this item when perform an input range check during numerical input.<br>* The range check can be performed even if the GOT internal device GS450.b1 is turned on.<br>To perform a range check when determining the input data, uncheck this item and turn off GS450.b1. | |
| When numerical/ascii input is detected, display input confirmation dialog | Check this item when display a confirmation dialog box during numerical/ASCII input.<br>* The input confirmation dialog box is also displayed when the GOT internal device GS450.b0 is turned on. | |
| The Sound File is used for the touch key sound | Check the item for playing a user-prepared sound file when a touch switch is touched.<br>Check the item, and then input a sound file number to be used.<br>Click the Details button, and then the sound file name that is currently set can be checked.<br>For how to set sound files, refer to the following.<br>☞ Section 13.8 Sound output | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Prioritize the sound output of a switch | Check the item, and then all playing sound outputs are cancelled and the touch key sound is output when a touch switch is touched. | |
| Carry out check for overlapping objects within GOT | Check this item to make the GOT to display a message when objects are overlapped due to screen calling function and superimpose window.<br>This item cannot be checked when [Adjust object display order in GOT to the one in GT Designer2] is checked. | GT16 GT15 SoftGOT1000 GT11 GT10 |

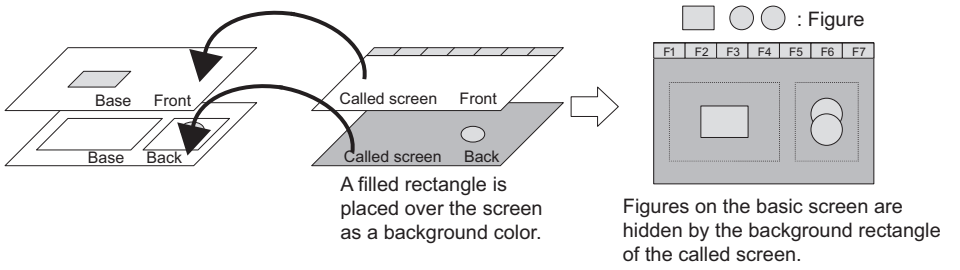
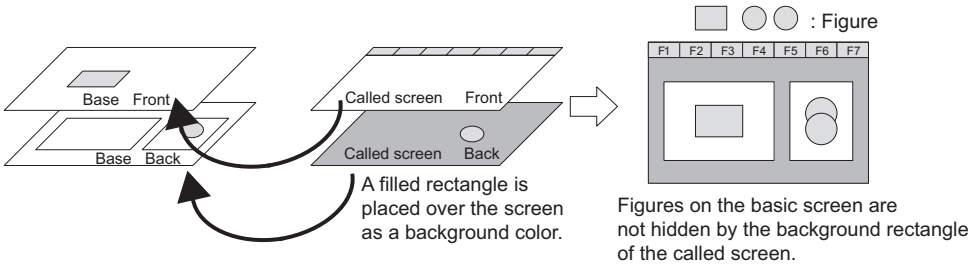
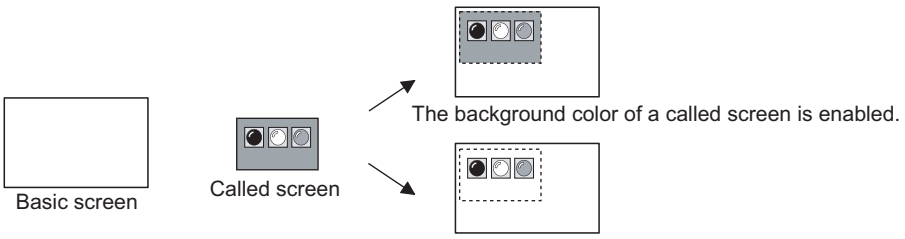
(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Adjust object display order in GOT to the one in GT Designer2 | Check this item to adjust the order of displaying objects on the GOT to that of the overlapped objects on GT Designer2. (Superimposing layers on the overlap window is also enabled.)<br>For superimposing figures and objects, refer to the following.<br>☞ Section 2.4 Specifications of Available Object Functions<br>This item cannot be checked when [Carry out check for overlapping objects within GOT] is checked.<br>Example) When objects that are overlapped on one layer with GT Designer2 is displayed on the GOT<br>  <br>3)...Third placed object (Top)<br>2)...Second placed object (Middle)<br>1)...First placed object (Bottom)<br>• When the order of displaying objects on the GOT is adjusted to that of the overlapped objects on GT Designer2<br>  <br>The object 1) is updated.<br>All the objects are redrawn, and the order of displaying objects on the GOT is adjusted to that of the overlapped objects on GT Designer2.<br>• When the order of displaying objects on the GOT is not adjusted to that of the overlapped objects on GT Designer2<br>  <br>The object 1) is updated.<br>Only the object 1) is redrawn, and the object is displayed at the top on the GOT. (The order of displaying objects on the GOT differs from that of the overlapped objects on GT Designer2.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display the input range when inputs the out of range in Numerical Input | Check this item to display a message showing the input range if the value out of range is input on a key window while numerical input function is used. | |
| Ascii input is targeted in the system information output | Check this item when output the numeric value input read complete signal (system signal 1-1.b4), numeric value input signal (system signal 2-1.b4), numeric value input number, current cursor display user ID and previous cursor display user ID of the system information function during ASCII input.<br>* The system information output at ASCII input can be performed even if the GOT internal device GS450.b2 is turned on. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| When the cursor deleted, system information is cleared | Check this time when store "0" in the current cursor display object ID, previous cursor display object ID, current cursor display user ID and previous cursor display user ID when the cursor is erased.<br>* System information clear at cursor erase can be performed even if the GOT internal device GS450.b3 is turned on. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

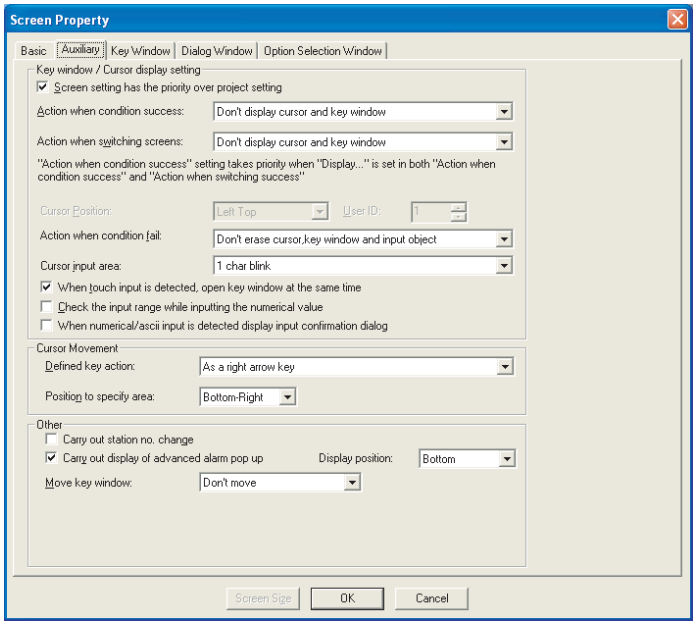
| Items | Description | Model |
|---|---|---|
| While display mode of part display is XOR, grouped figures are displayed by XOR | Check this item when perform the XOR display of grouped figures at a time when XOR display is specified in the display mode of the parts display function.<br><br>Example: When performing XOR display of grouped figures shown below<br><br>  <br><br>Overlay figure (2) on figure (1).<br>Overlay figure (3) on figures (1) and (2) and group all of them.<br><br>• When performing XOR display of grouped figures at a time<br><br>  <br><br>• When not performing XOR display of grouped figures<br><br>  <br><br>Perform XOR display of figures (1) and (2).<br>Perform XOR display of figure (3) over the XOR display of figures (1) and (2). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| The image file in a memory card is used for the Parts Image of Parts Display/ Movement | Check this item when display the BMP/JPEG file parts stored in the memory card as parts of Parts Display/ Parts Movement. (☞ Section 9.1.3 Arrangement and settings) | |
| When the screen is switched, On-screen Number (System Information) is maintained. (Zero is not written.) | Check this item when not writing "0" to [On-screen base screen number] and [On-screen window 1 screen number] of system information during screen switching. (☞ Section 3.6 System Information Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Place the overlay screen under the basic screen | Check this item when placing a called screen under the basic screen.<br><br>When placing a called screen on the basic screen<br><br>  <br><br><br>When placing a called screen under the basic screen<br><br>  <br><br><br>The called screen front layer is placed under the basic screen front layer and the called screen back layer is placed under the basic screen back layer. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Disable background colors of overlay screen when setting an overlay screen | Check the item for disabling the background color of a called screen when the set overlay screen function is used.<br><br>  <br> | |
| Screen Switching Switch Synchronous Mode | Select a Synchronization mode of the go to screen switch (OFF (the screen is switched at a timing when the finger is released from the switch/ON (the screen is switched at at timing when the finger touches the switch)). | GT16 GT15 SoftGOT1000 GT11 GT10 |

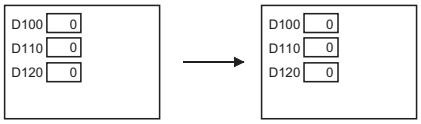
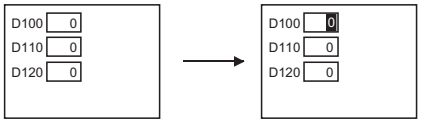
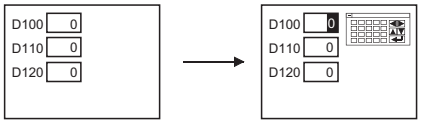
## 2 Setting dialog box for each screen

Make the auxiliary settings for each screen on base screens or window screens.



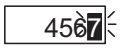
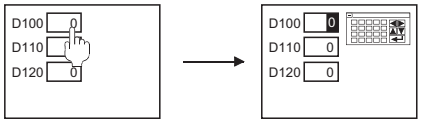

Example 1: The screen for setting the GT15

Basic | **Auxiliary** | Key Window | Dialog Window

| Items | | Description | Model |
|---|---|---|---|
| Screen setting has the priority over project setting | | Check this item to give screen settings priority over project setting. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Action when condition success<br>Action when switching screens | Set the display method of cursor and key window with numerical input function and ASCII input function when the condition is satisfied/switching screen. (For setting [Action when condition success], [Display cursor only] and [Display cursor and key window] cannot be set for GT10.)<br>Cursor and key window are not displayed:<br>When the condition is satisfied/switching screen, the cursor or key window is not displayed.<br>In the case of key input, touch the input area.<br>  <br>Only cursor is displayed:<br>When the condition is satisfied/switching screen, the cursor is displayed automatically.<br>If there is a key for key input on the screen, key input can be executed.<br>  <br>Both cursor and key window are displayed:<br>When the condition is satisfied/switching screen, the cursor and key window are displayed.<br>Even if there is no key for key input on the screen, key input can be executed.<br>  | |

(Continued to next page)

Basic | **Auxiliary** | Key Window | Dialog Window

| Items | | Description | Model |
|---|---|---|---|
| | Cursor position | Set the cursor position when switching screen.<br>(For GT10, [User ID minimum] and [User ID order] cannot be set.)<br>Left top :When switching screen, the cursor is displayed on input area in upper left part of the screen.<br>User ID minimum :When switching screen, the cursor is displayed on the input area in which minimum user ID has been set.<br>User ID order :When switching screen, the cursor is displayed on the input area in which the set user ID order has been set. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Action when condition fail | Set the display method of cursor and key window with numerical input function, ASCII input function and switch touch function when the condition is not satisfied.<br>They will be erased only when the trigger has been set to [ON] or [OFF].<br>Shape of numeric value/ ASCII input (frame) is displayed as it is.<br>(For GT10, [Erase cursor and key window] and [Erase cursor,key window and input object] cannot be set.)<br>Cursor, key window and input object are not erased:<br>When the condition is not satisfied, cursor/ key window/ object is displayed as it is.<br>Cursor and key window are erased:<br>When condition is not satisfied, cursor/ key window is erased.<br>Cursor, key window and input object are erased:<br>When the condition is not satisfied, cursor/ key window/ object is erased. | |
| | Cursor input area | Set the display method of input area in input area.<br>1 character blink :One character blinks within input area.<br>  <br>All reverse + 1 character blink:The characters are reversed within input area, and only one character blinks<br> | |
| When touch input is detected, open key window at the same time | | Check this item to automatically display the key window when the input area for numeric value/ASCII input is touched. (When the ASCII input is used with GT15, GT SoftGOT1000, and GT11, set the ASCII key sheet No. for the key window setting.)<br>  | |
| Check the input range while inputting the numerical value | | Check this item to check the input rage during numerical value input.<br>* Input range check can be conducted by turning on the GOT internal device GS450.b1.<br>To check the input range when the input is determined, uncheck this item and turn off the GS450.b1. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| When numerical/ascii input is detected, display input confirmation dialog | | Check this item to display the input confirmation dialog box when the input definition key is pressed.<br>* The dialog can be displayed by turning ON the GOT internal device GS450.b0. | |

(Continued to next page)

Basic | **Auxiliary** | Key Window | Dialog Window

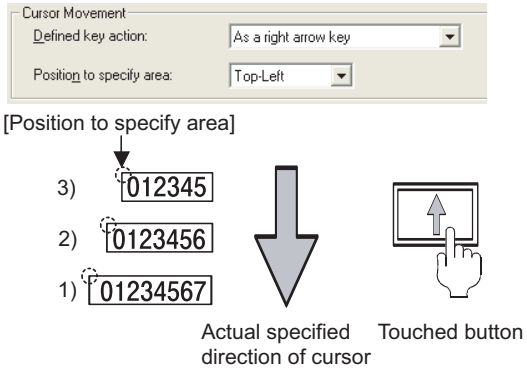
| Items | Description | Model |
|---|---|---|
| Defined key action *1 | Select the position to display the input cursor after defined key for numeric value input/ASCII input function is input.<br>As a right arrow key:<br>After defined key input, the cursor moves to the input area at the right of the position set in [Position to Specify Area].<br>As a down arrow key:<br>After defined key input, the cursor moves to the input area at the bottom of the position set in [Position to Specify Area].<br>No movement:<br>After defined key input, the cursor does not move from the written input area.<br>User ID order (no cursor move when it's immovable):<br>After defined key input, the cursor moves to the input areas in user ID order.<br>(This setting is valid when the settings of move destination ID have been made on "Numeric input/ASCII input function" option tab dialog box.)<br>Clear cursor and key window:<br>After defined key input, cursor and key window are erased. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Position to specify area *1 | Select a position within input area as a base point to move the input cursor.<br>Bottom-right :Move the cursor based on the position at the lower-right of input area.<br>Top-left :Move the cursor based on the position at the upper-left of input area. | |
| Carry out station no. change | Check this item to use station No. change function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Carry out display of advanced alarm pop up | Check this item to use the advanced alarm popup display function.<br>After checking, select a position to display the occurring alarm on the screen.<br>Top :Display at the top of the screen.<br>Center :Display in the center of the screen.<br>Bottom :Display at the bottom of the screen. | |
| Carry out display of alarm flow | Check this item to use the scrolling alarm display function.<br>After checking, select a position to display the occurring alarm on the screen.<br>Top :Display at the top of the screen.<br>Center :Display in the center of the screen.<br>Bottom :Display at the bottom of the screen. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Move key window | Select a method of displaying key window.<br>(For GT10, [Automatic Move] cannot be selected.)<br>Don't move :Key window is displayed at the set fixed position.<br>Automatic move :Key window is displayed at the position that is not overlapping with input area. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Specify the touch area. | Check this item to set the touch area and the frame region, respectively. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| The backlight is blinked | Check when using backlight blinking. | |
| Backlight color | Select a color for the backlight. | |

For details of *1, refer to the following.

*1 Relation between [Position to specify area] and specified area of cursor

(1) When the cursor is not moved as designed
The following diagram shows the example of which the cursor is moved to the opposite position with the cursor direction of the touched arrow key.
When changing the setting of [Position to specify area] from [Top-Left] to [Bottom-Right], the cursor is enabled to move the same cursor direction as the direction of the touched arrow key.

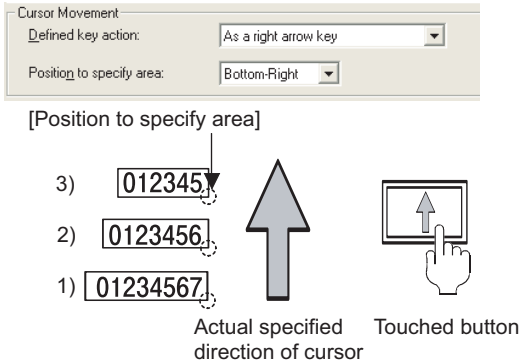
(Before setting change)




The cursor is moved in the order, 3) → 2) → 1).

As the top-left parts of three objects are not on the same x-coordinate, the cursor is moved to the closest object on the left when operating to move the cursor to top direction.

(After setting change)

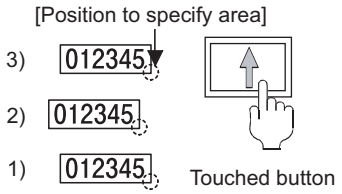



The cursor is moved in the order, 1) → 2) → 3).

As the bottom-right parts of three objects are on the same x-coordinate, the cursor is moved to the same direction as the arrow key when changing [Position to specify area] from [Top-Left] to [Bottom-Right].

(2) When the cursor is not moved as designed even if changing the setting of above (1)
Readjust the arrangement of the objects as follows.

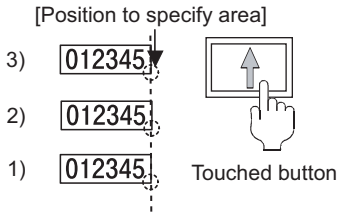
(Before setting change)




The cursor is moved in the order, 1) → 3) → 2).

As the [Position to specify area] is not on the same x-coordinate, the cursor is moved in the order, 1) → 3) → 2).

(After setting change)




The cursor is moved in the order, 1) → 2) → 3).

Arrange the objects so that the [Position to specify area] may be on the same x-coordinate. (When moving the cursor from side to side, arrange the objects so that the [Position to specify area] may be on the same y-coordinate.)

(3) When the cursor is not moved as designed even if readjust the arrangement of the objects
Directly touch the object to input.

## 4.4.4 Precautions

### 1 Precautions when making the auxiliary settings for each project

(1) When setting [Screen Switching Switch Synchronous Mode] is set to [ON]
When using an ON synchronized [Go To Screen Switch], the screen switches if just the screen is touched.
For operations after touching a touch switch, pay attention to the following.
- To prevent malfunctions, when the [Go To Screen Switch] is kept touching and the screen switches,touch switches on the switched screen work when the finger is released from the screen and touch the screen again.
- After switching screens, the GOT does not monitor devices until the finger is released from the screen.

(2) When adjusting the order of displaying objects on the GOT to that of the overlapped objects on GT Designer2

(a) Display speed of GOT
When [Adjust object display order in GOT to the one in GT Designer2] is checked, all the objects on the GOT screen are redrew by updating just one object on the screen.
Therefore, the GOT takes more time to display the objects compared to unchecking the item.

(b) Locus display
When using the following objects, even if the locus display is set, the locus is erased by updating the GOT screen.

| Object | Setting to display the locus |
|---|---|
| Bit parts display | [Display Mode] is set to [Overwrite]. |
| Word parts display | |
| Fixed parts display | |
| Bit parts movement | [Display Mode] is set to [Locus]. |
| Word parts movement | |
| Fixed parts movement | |
| Scatter graph | [Mode] is set to [Locus].<br>(When using [Store Memory], the locus is not erased by updating the GOT screen.) |

(c) Blinking
The interval of blinking can be inconstant.
When objects with the blink setting are overlapped, the order of displaying the objects on the GOT can differ from that of the overlapped objects on GT Designer2.

(d) Operation of object script
Even if the object script is set for objects, the script does not operate.

(e) Superimposing the numerical display/comment display on the level display
Even if [Adjust object display order in GOT to the one in GT Designer2] is checked, up to one numerical display or comment display can be superimposed on the level display in the XOR display mode.
For precautions of the level display, refer to the following.

☞ Section 10.2.5 Precautions

(f) Line graph with locus setting
A line graph with the locus setting is displayed at the top.

(g) For advanced user alarm display, advanced system alarm display, and historical trend graph
Even if [Adjust object display order in GOT to the one in GT Designer2] is checked, the order of displaying objects on the GOT cannot be adjusted to that of the overlapped objects on GT Designer2.
Do not overlap the advanced user alarm display, the advanced system alarm display, or the historical trend graph with the other objects.

## 2 Precautions when making the auxiliary settings for each screen

(1) Setting of [Defined key action]
Make sure to uncheck [Close cursor and key window when RET key is pressed] in the project setting when [Close cursor and key window when RET key is pressed] and [User ID order (no cursor move when it's immovable)] are used for defined key action setting,
If checked, action of [Close cursor and key window when RET key is pressed] will be executed with priority.

# 4.5 Key Window

This section explains how to operate key window for numeric value input function and ASCII input function as well as how to create user-key-window.

## 4.5.1 Key window type

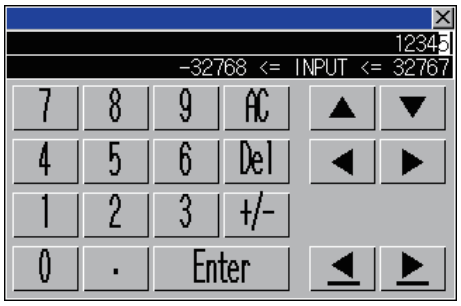
Key window can be classified into two types: GOT original key window (Default key window) and key window created by user (User-created key window).
Applicable key windows (key windows for the numerical input and ASCII input) differ depending on the GOT to be used.
The following shows key windows applicable to each GOT.

| Item | Default key window | User-created key window |
|---|---|---|
| GT16, GT15, GT SoftGOT1000, GT11 | 123 Key window for the numerial input<br>~~ABC~~ Key window for the ASCII input | 123 Key window for the numerical input<br>ABC Key window for the ASCII input |
| GT10 | 123 Key window for the numerical input<br>ABC Key window for the ASCII input | 123 Key window for the numerical input<br>ABC Key window for the ASCII input |

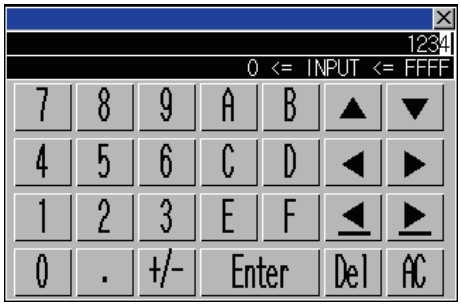
### 1 Default key window

A key window according to a data type of the input area (ASCII, hexadecimal, decimal, octal, or binary) is automatically displayed.
When the data type of input area is hexadecimal, decimal, octal or binary, the key window for hexadecimal input will be displayed.

(1) Key window for decimal input



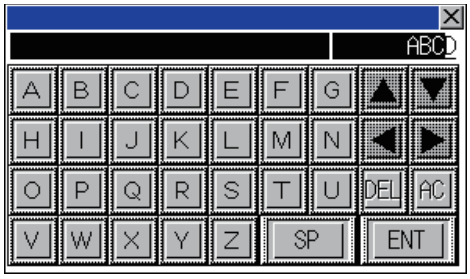

(2) Key window for hexadecimal input



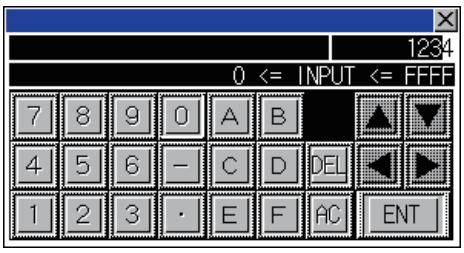
## 2 User-created key window

User's original key window can be created by registering a user-created window as key window.
To use ASCII input function, create a key window with a user-created key window.

(1) User-created key window
(Created for ASCII input)



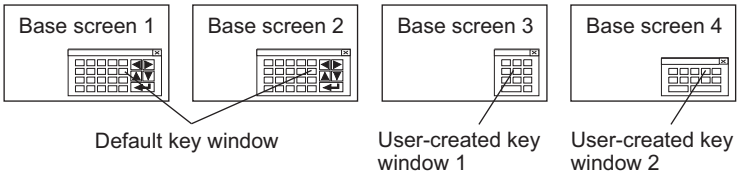

(2) User-created key window
(Created for numeric input (hexadecimal))




**Remark** Key window to be displayed

A key window to be displayed can be set in project unit or screen unit.
A suitable key window for each screen can be displayed from multiple key windows created beforehand.

☞ Section 4.5.5 How to create user-created key window



## 4.5.2 Relevant settings

For key window, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to key window only
…Relevant to key window only.

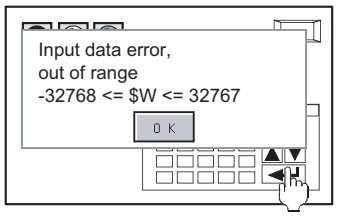
(2) Functions relevant to key window and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

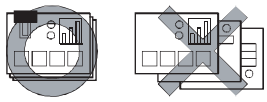
(1) Functions relevant to key window only

• Displaying input range for numeric value Input

When a numeric value out of input range is input, a message appears showing the input range.



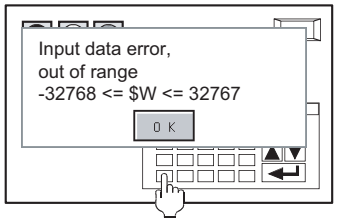

Setting for each project | Setting for each screen



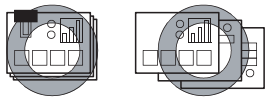
Setting items
• [Display the input range when inputs the out of range in numerical input]

• Input range check during numerical value input

The input range can be checked when a numerical value is input.




Setting for each project | Setting for each screen

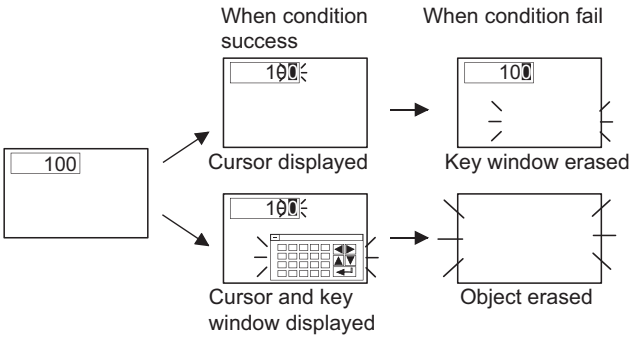


Setting items
• [Check the input range while inputting the numerical value]

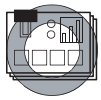
## (2) Functions relevant to key window and others

• Action of cursor and key window when condition success/switching screen/condition fail

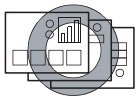
When condition success/switching screen, cursor and key window are displayed.
When condition fail, cursor and key window are erased.




Setting for each project



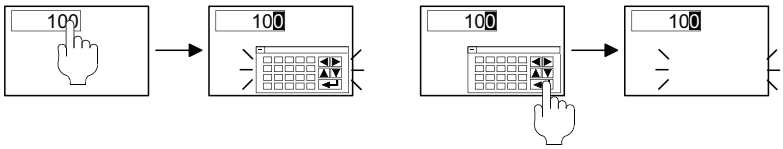
Setting for each screen



Setting items
- [Action when condition success]
- [Switching screen option]
- [Action when condition fail]
- [Cursor position]

• Methods of displaying/erasing key window

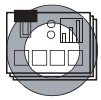
Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.



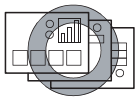

Display key window with input touch

Press the RET key (input definition), key window is erased.

Setting for each project



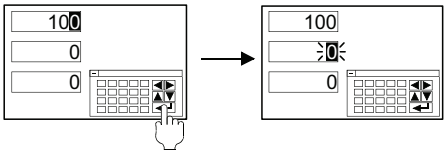
Setting for each screen



Setting items
- [Close cursor and key window when RET key is pressed.]
- [When touch input is detected, open key window at the same time]

• Action of cursor key

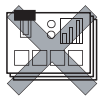
If multiple areas for numerical input and ASCII input are provided, the input order can be set.
After input definition, the cursor is moved to the next input area automatically.




Input definition

The cursor is moved to the next input area.

Setting for each project

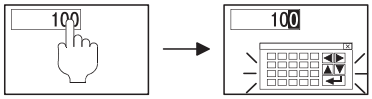


Setting for each screen

Setting items
- [Defined key action]
- [Position to specify area]

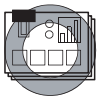
• Enabling/Disabling the key window movement

The key window movement is enabled or disabled for each screen.

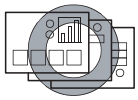



The key window appears on the screen without hiding the input cursor.

Setting for each project



Setting for each screen

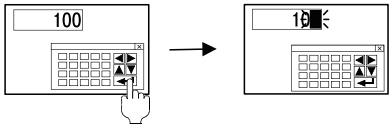


Setting items

• [Move key window]

• Displaying/Hiding the cursor key

The cursor key can be hidden when the RET key or an arrow key is pressed.




When pressing the RET key

Cursor is displayed.

Setting for each project

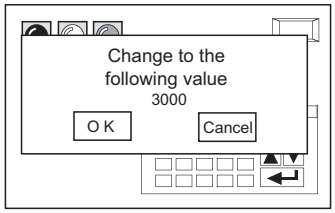
Setting for each screen

Setting items

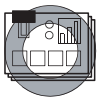
• [Do not display the cursor when RET key is pressed]

• Displaying/Hiding the input check dialog box during numerical/ASCII input

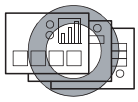
When numerical/ASCII characters are input, the input confirmation dialog can be displayed by pressing the RTN key.




Setting for each project



Setting for each screen



Setting items

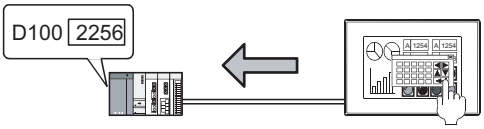
• [When numerical/ASCII input is detected, display input confirmation dialog]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to key window only

• Previous Numeric Value Input (32 bit)
(Write device)

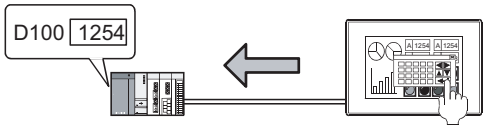
Notifies the value before changed by the numeric value input function (32 bits).




The value before changed is notified

• Current Numeric Value Input (32 bit)
(Write device)

Notifies the value determined by the numeric value input function (32 bits).

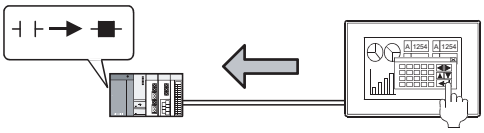



The changed value is notified

### (2) Functions relevant to key window and others

• Numeric Value Input Signal
(Write device: System Signal 2-1.b4)

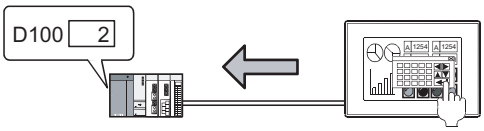
The determined numerical value input can be notified.



The numerical value input is determined

• Numeric Value Input Number
(Write device)

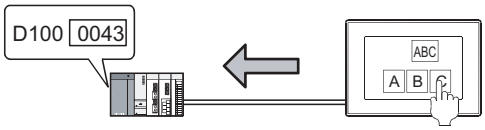
Notifies the user ID of the determined numeric value input.




Numeric value input (user ID: 2) determined

• Key Code Input
(Write device)

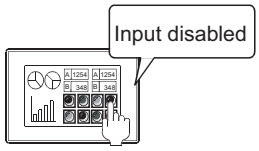
Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.




The key code is notified

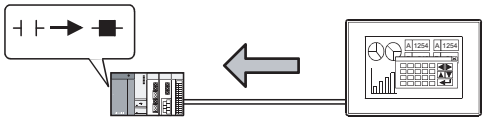
• Key-In Disable Signal
(Read device: System Signal 1-1.b9)

Disables all key inputs.




• Key window Output Signal
(Write device: System Signal 2-1.b11)

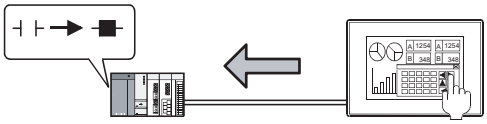
Notifies that the key window is on the screen.



Key window on the screen

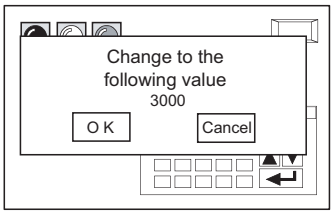
• Key Input Signal
(Write device: System Signal 2-1.b3)

Notifies the key input.

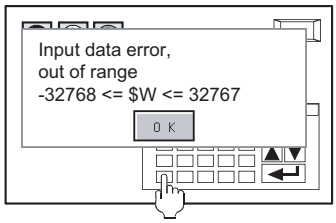


## 3 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to key window only

| • Numerical/ASCII Value Input Confirmation Dialog Setting Signal<br>(Write device: GS450.b0) |
|---|
| Displays the dialog for confirming input data when the RTN key is pressed. (Specific to numeric value input or ASCII input)<br>  <br> |

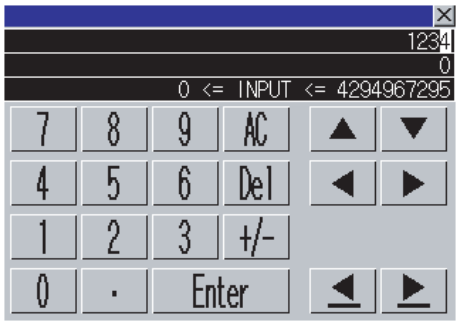
(2) Functions relevant to key window and others

| • Numeric Input Range Check Setting Signal<br>(Write device: GS450.b1) |
|---|
| Checks the input range during numerical value input.<br>  <br> |

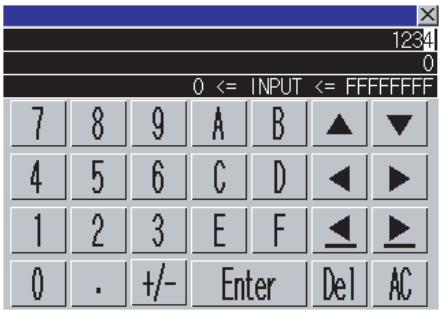
## 4.5.3 Keys on default key window and display items

### 1 GT16, GT15, GT SoftGOT1000, and GT11

The following explains keys of a default key window and display items.




(Example: Key window for decimal)




(Example: Key window for hexadecimal)

| Items | Description |
|---|---|
| 1234 *1 | Displays the input value. |
| 0 *1 | Displays the current value. |
| 0 <= INPUT <= FFFF *1*2 | Displays the numerical input range.<br>INPUT :Indicates the input value.<br>< (>) :The value at the left (right) term is smaller than the value at the right (left) term.<br>== :The value at the left (right) term is the same as the value at the right (left) term.<br><= (>=) :The value at the left (right) term is equal to or smaller than the value at the right (left) term.<br>!= :The value at the left (right) term is different from the value at the right (left) term. |
| 0 ~ F . | The key to input numeric value and decimal point. |
| +/- | Changes the sign (+ or -) of the input value. |
| ◀ ▶ ▲ ▼ | The key to move the input cursor. |
| ◀ ▶ *3 | Moves the cursor in the object being input. |
| Del | The key to delete the least significant digit of the numeric value being input and shift the whole numeric value to right by one digit. |
| AC | The key to erase whole input numeric value. |
| Enter | The key to write the input numeric value to a device. (Enter key) |
| ✕ | The key to close key window. |

*1 The input value, current value, and input range are displayed on the key window in that order.
Each area can be set to be hidden.

☞ Section 4.5.5 2 Setting to display key window

*2 When state is set by numerical input, the input range of the state with minimum No. will be displayed.

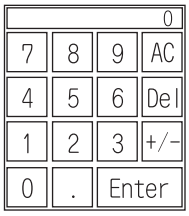
☞ Section 5.4 State Setting

*3 If move the cursor while range check is performed during a numeric value input, the range check is performed not during inputting but after determining the input value.
To perform a range check while inputting a value, hide the cursor (cancel inputting of the numeric value) and re-input the numeric value.

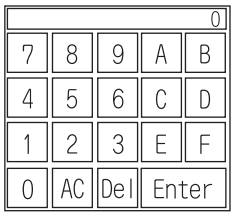
☞ Section 7.1.5 Precautions

## 2 GT10

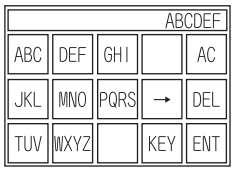
The following explains keys of a default key window and display items.



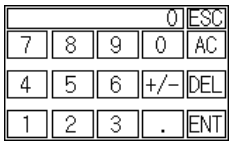

(Example: Decimal key window for GT105□and GT104□)



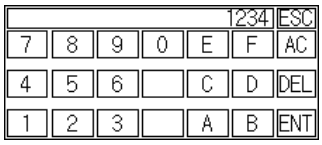

(Example: Hexadecimal key window for GT105□ and GT104□)



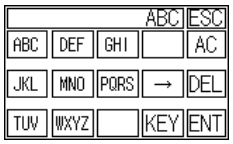

(Example: ASCII key window for GT105□ and GT104□)




(Example: Decimal key window for GT1030 and GT1020)




(Example: Hexadecimal key window for GT1030 and GT1020)



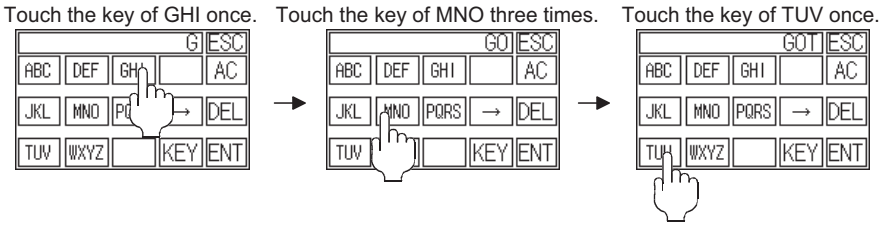

(Example: ASCII key window for GT1030 and GT1020)

| Items | Description |
|---|---|
| 1234 | Displays input values and characters. |
| 0 to F, ABC to WXYZ | Keys to input characters. |
| ESC | Closes a key window. |
| AC | The key to erase whole characters. |
| DEL | The key to erase the least significant digit of characters being input and shift the whole characters to the right by one digit. |
| ENT | The key to write the input characters into a device. (Enter key) |
| → | The key to move the input cursor. |
| KEY | The key to switch key types.<br>A key type (alphabet, value, or symbol) switches every time the key is touched. |
| ☒ | The key to close key window. |

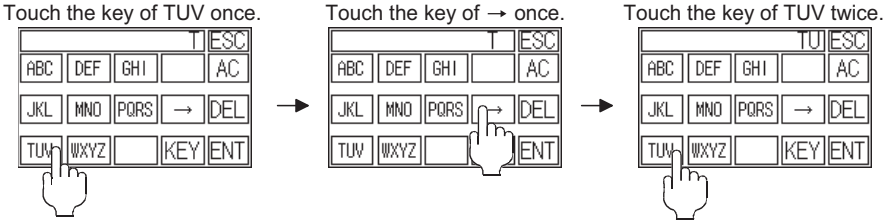
*1 How to input characters with key window for ASCII input

Multiple characters are assigned to one key on a key window for the ASCII input for GT10.
With touching the same key several times, a character to be input is switched.

(1) When inputting "GOT"




(2) When inputting "TU"



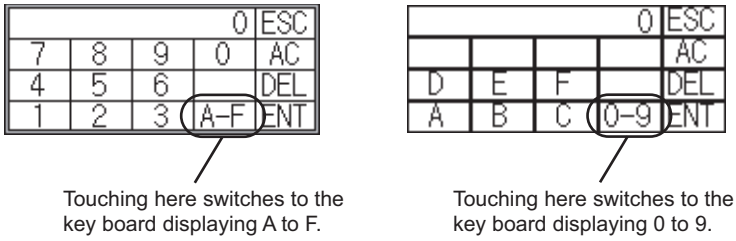
**Remark** Key window for GT10

(1) Key window for GT10
Key windows for GT10 differ from those for other GOTs.
(The input range display and the key for moving the cursor are not provided.)

(2) Key window for hexadecimal with GT1020
With GT1020, the key window for hexadecimal cannot display all keys on the same key window.

Input the data with switching the key window by touching the A-F key or 0-9 key.

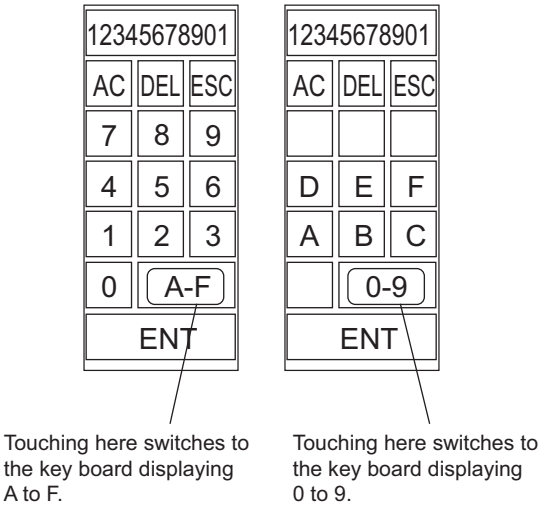
Key window for hexadecimal with GT1020




(3) Key window for hexadecimal in vertical type
The key window for hexadecimal in vertical type cannot display all keys on the same key window.

Input the data with switching the key window by touching the A-F key or 0-9 key.

Key window for hexadecimal in vertical display

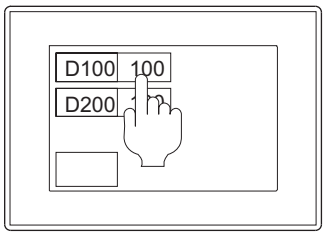


## 4.5.4 How to operate key window

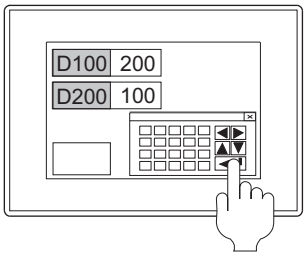
This section explains the methods of displaying a key window.

### 1 Basic operation method

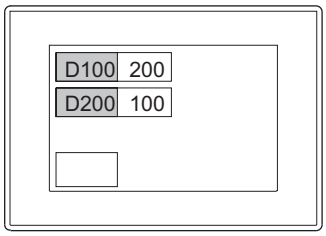
Basic operation method of key window is explained as follows.
In the following case, numerical input function is used to explain key window operation as an example.
The operation is the same as when ASCII input function is used.




1 Touch the numerical input function to be input.




2 As a key window appears, input the numeric value.
Then, touch the RET key.
By default, a key windows is displayed at the lower-right.
The user can set key window position.



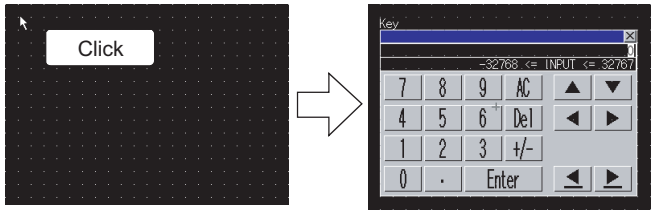

3 The input value is updated, and key window is closed.

**Remark**

(1) Key window position
Key window position can be set as follows.

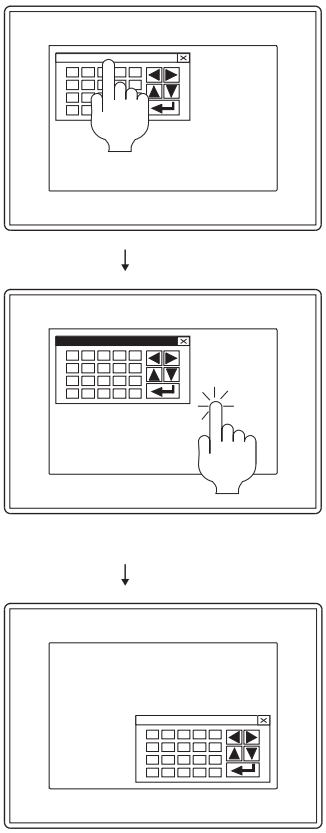
1 Select [Object] → [Window Position] → [Key Window] menu.

2 Click on the position to display a key window with a mouse.



## 2 Method of moving key window

This section explains how to move a key window.



1. If touch the upper part of key window, the bar is highlighted.
   The highlighted bar indicates the key window is in movable mode.

2. Touch the position to move the key window to within three seconds.
   If not touched in more than three seconds, the movement mode of the key window will be released. Even if the position in which the object has been set is touched within less than three seconds, the object wil not operate.

3. The key window moves to the specified position.

**Hint!**

Buzzer volume setting

The buzzer that is sounded when moving a window can be set by [Buzzer Volume] or [Windows Move Buzzer] of the GOT utility or GT Designer2. If [Buzzer Volume] is set to "None", the buzzer will not be output.

- "Operations setting" of the GOT utility

  ☞ GT16 User's Manual (Basic Utility) (Chapter 2 DISPLAY AND OPERATION SETTINGS (GOT SET UP))
  GT15 User's Manual (Chapter11 DISPLAY AND OPERATION SETTINGS (GOT SET UP))
  GT11 User's Manual (Chapter10 DISPLAY AND OPERATION SETTINGS (GOT SET UP))
  GT10 User's Manual (Chapter11 DISPLAY AND OPERATION SETTINGS (GOT SET UP))

- "GOT setup" of [Common] → [System Environment] of GT Designer2.

  ☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)

## 4.5.5 How to create user-created key window

Create a user-created window for executing the numerical input and ASCII input with an original key window.
To use a user-created key window, arrange touch switches on a window screen and set the screen as key window.
The user-created key window can be displayed instead of default key window, and can control as default key window.

**Hint!**

(1)To create key window quickly

Keys for numeric input/ASCII input have been registered in the library.
A user-created key window can be created quickly by utilizing those keys.

Example:The key registered in the library
(Keys other than following types have been registered.)

Keys for numerical input

Keys for ASCII input

For details of library, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Chapter 10 Using Library)

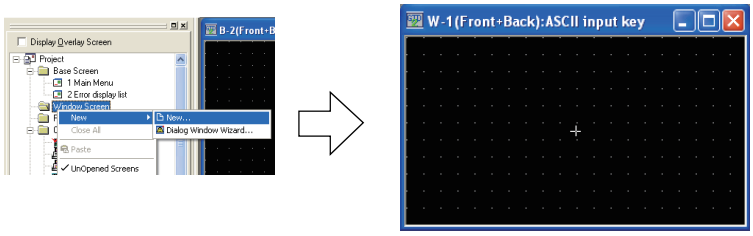
## 1 Outline procedure

The outline procedure of creating a user-created key window is as follows.

Start

↓

**Create a window screen.**



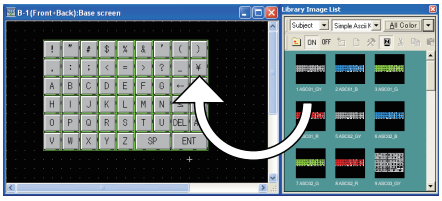

Right click in workspace　　Create a new window screen

•••Create a new window screen.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section7.5 Creating a New Screen)

↓

**Set touch switches assigned with key code on the window screen.**



Set touch switches on the window screen. Library is available.

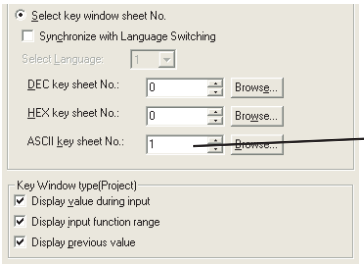
•••Set the touch switch assigned with key code on window screen.

☞ Section 6.2 Touch Switch

By utilizing the key for numeric input/ASCII input in the library, it can be easily set.

↓

**Make the settings in order that the created window screen will be displayed as a key window.**



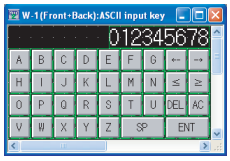

Select a key window to be used as a key window for ASCII input.

•••Set the screen to be used commonly for a whole project or used for each base screen.

☞ 2 Setting to display key window

↓

**Make the required settings to display input value and input range.**



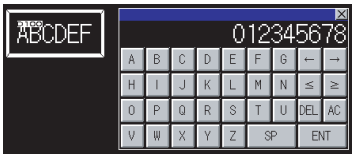

Set input value position and number of digits.

•••Set the view format and position of input value and input range.

☞ 3 Settings of input value area, input range area, previous value area

↓

**Preview on GT Designer2.**




•••Confirm the display image on GT Designer2.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section7.12 Viewing Created Screen Image)

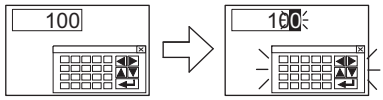
↓

(Continued to next page)

(From previous page)

↓

**Set the cursor action and key window action as necessary.**




When condition success, cursor and key window are displayed automatically.

Cursor and key window are displayed.

↓

Completed

•••Set the key window display method and cursor action.

☞ Section 4.4 Auxiliary Settings

## 2 Setting to display key window

Set a key window to be used for a whole project or for each screen.

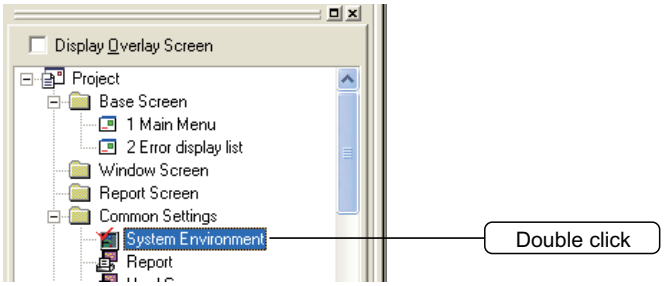
(1) Settings

(a) When setting a key window used for a whole project

1. Select [Common] → [System Environment] from the menu.
2. As [System Environment] dialog box appears, double click on [Key Window].
3. As the setting dialog box appears, make the settings with reference to the following explanation ((2)(a)).

**Remark** When setting in project workspace

If double-click the [System Environment], the System Environment setting dialog box will appear. Then, double-click the [Key Window].

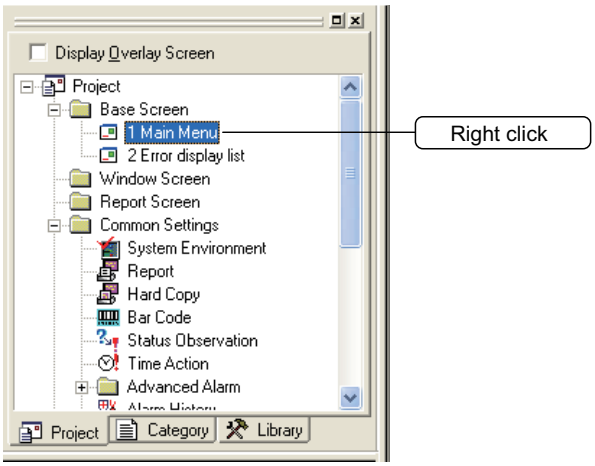



(b) When setting a key window used for each screen

1. Select a screen, and then select [Screen] [Property] from the menu.
2. As the setting dialog box appears, double click on "Key window" tab dialog box, and make the settings with reference to the following explanation ((2) (b)).

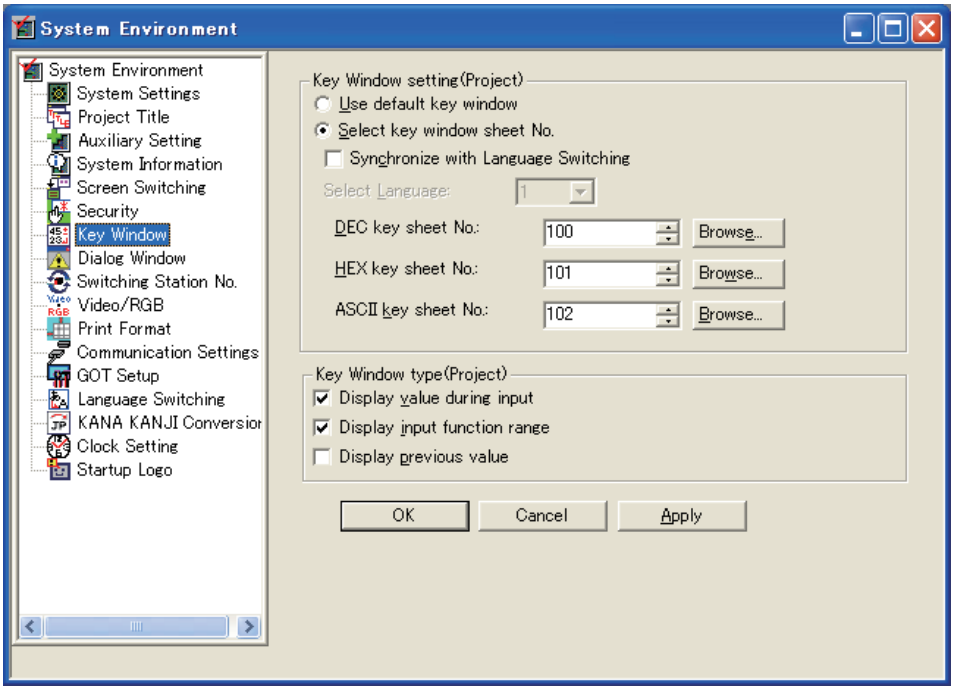
**Remark** When setting in project workspace

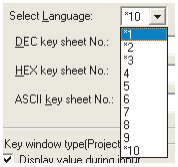
Select a screen and right-click on the screen with a mouse, and then select [Property]. As the setting dialog box appears, double click on "Auxiliary" tab dialog box.



(2) Setting items

(a) When setting a key window for a whole project




| Items | | Description | Model |
|---|---|---|---|
| Key window setting (Project) | | Select the type of the key window to be used. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Use default key window | Select this item to use a default key window. | |
| | Select key window sheet No. | Select this item to use a user-created key window<br>Set a window screen to be used as a key window for numerical input (Decimal/Hexadecimal) and ASCII input.<br>The screen can be confirmed by clicking on [Browse] button.<br>DEC/HEX key sheet No. :When set to 0, a default key window will be displayed.<br>ASCII key sheet No. :When set to 0, a key window will not be displayed. | |
| | Synchronize with Language Switching*2 | Check this item to change the key window display in synchronization with the value of language switching device (☞ 3.4 Setting Language Switching Device).<br>After checking, select the language at [Select Language] (value stored in language switching device: 1 to 10) and set the window screen to be corresponded to the selected language.<br>An asterisk (*) is affixed to the language that has been set.<br>  | |
| Key window type (Project) | | Select the items displayed in the key window. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Display value during input*1 | Check this item to display the value being input on a key window. | |
| | Display input function range*1 | Check this item to display the data input range on a key window. | |
| | Display previous value*1 | Check this item to display the current value on a key window. | |

*1 To display the value being input, input range, and current value on a user-created key window, set the input value area, input range area, and current value area on the key window.

(☞This section 3 Settings of input value area, input range area, previous value area)

For details of *2, refer to the following.

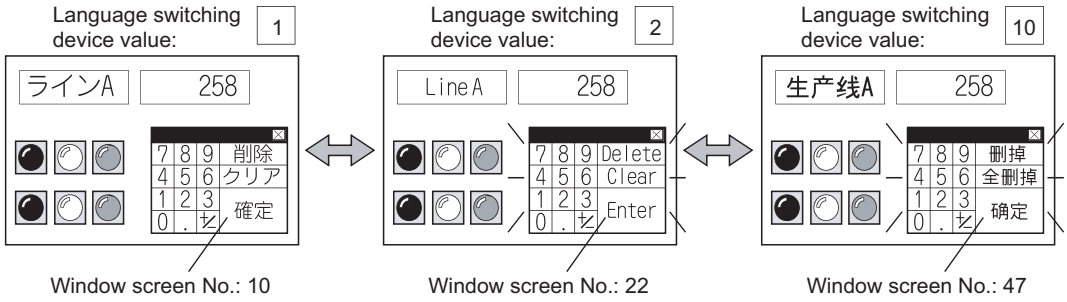
*2 Relationship between [Select Language] and the key window to be displayed

The key window, set for [Select Language], is displayed in synchronization with the language switching device value.

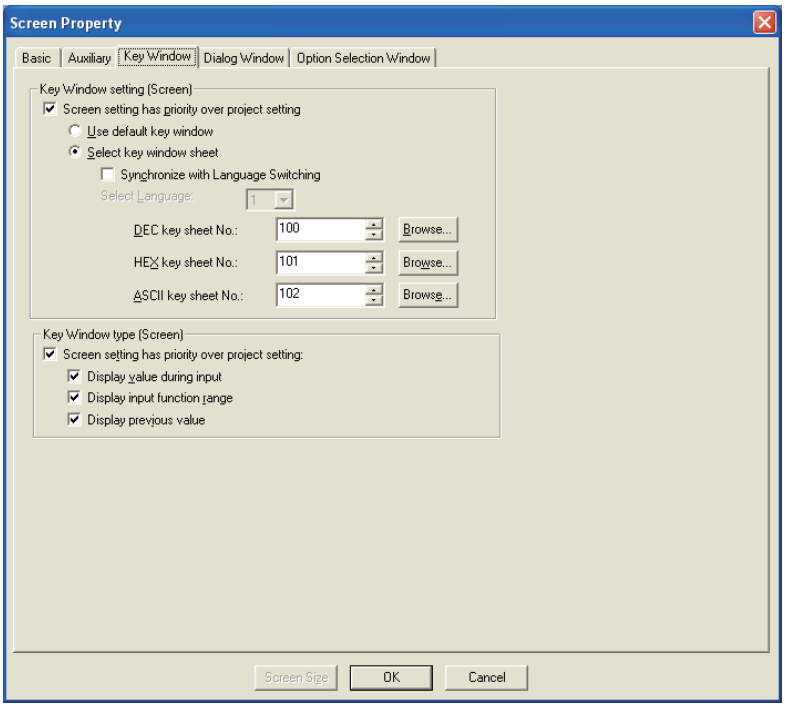
(Setting example of GT Designer2)

| Select language | DEC key sheet No. | Description |
|---|---|---|
| *1 | 10 | Window screen 10 is displayed for the key window when the language switching device value is "1". |
| *2 | 22 | Window screen 22 is displayed for the key window when the language switching device value is "2". |
| 3 | 0 | The standard key window is displayed when the language switching device value is "3". |
| : | : | : |
| 9 | 0 | The standard key window is displayed when the language switching device value is "9". |
| *10 | 47 | Window screen 47 is displayed for the key window when the language switching device value is "10". |

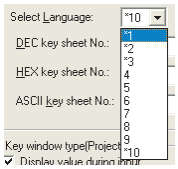
(Example of language switching on GOT)



(b) When setting a key window for each screen




Basic | Auxiliary | **Key Window** | Dialog Window

| Items | | Description | Model |
|---|---|---|---|
| Key window setting (Screen) | | Select the type of the key window to be used. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Screen setting has priority over project setting | Check this item to give screen settings priority over project setting.<br>After setting, select the type of key window to be used. | |
| | Use default key window | Select this item to use a default key window. | |
| | Select key window sheet | Select this item to use a user-created key window<br>Set a window screen to be used as a key window for numerical input (Decimal/Hexadecimal) and ASCII input.<br>The screen can be confirmed by clicking on [Browse] button.<br>DEC/HEX key sheet No. :When set to 0, a default key window will be displayed.<br>ASCII key sheet No. :When set to 0, a key window will not be displayed. | |
| | Synchronize with Language Switching*2 | Check this item to change the key window display in synchronization with the value of language switching device (☞ 3.4 Setting Language Switching Device).<br>After checking, select the language at [Select Language] (value stored in language switching device: 1 to 10) and set the window screen to be corresponded to the selected language.<br>An asterisk (*) is affixed to the language that has been set.<br>  | |
| Key window type (Screen) | | Select an item to be displayed on the key window. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Screen setting has priority over project setting | Check this item when giving priority to this setting over the setting for the project.<br>After setting, select displayed contents for the key window | |
| | Display value during input*1 | Check this item when displaying the value being input on the key window. | |
| | Display input function range*1 | Check this item when displaying the data input range on the key window. | |
| | Display previous value*1 | Check this item to display the current value on a key window. | |

*1 To display the value being input, input range, and current value on a user-created key window, set the input value area, input range area, and current value area on the key window.

(☞This section 3 Settings of input value area, input range area, previous value area)

*2 For details, refer to the following.

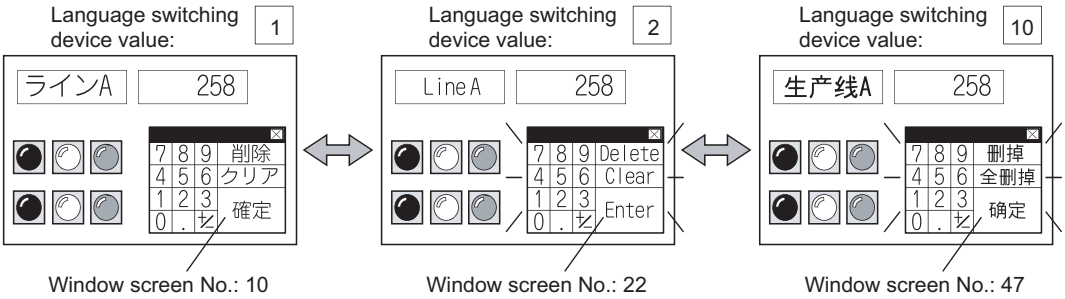
## *2 Relationship between Select Language and the key window to be displayed

The key window, set for Select Language, is displayed in synchronization with the language switching device value.

(Setting example of GT Designer2)

| Select language | DEC key sheet No. | Description |
|---|---|---|
| *1 | 10 | Window screen 10 is displayed for the key window when the language switching device value is "1". |
| *2 | 22 | Window screen 22 is displayed for the key window when the language switching device value is "2". |
| 3 | 0 | The standard key window is displayed when the language switching device value is "3". |
| : | : | : |
| 9 | 0 | The standard key window is displayed when the language switching device value is "9". |
| *10 | 47 | Window screen 47 is displayed for the key window when the language switching device value is "10". |

(Example of language switching on GOT)

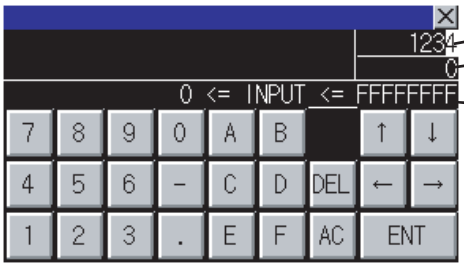


## 3 Settings of input value area, input range area, previous value area

In the key window setting, set the areas of the value being input, input range, and current value on a user-created key window.
The applicable key settings differ according to the GOT type.

○ : Applicable × : Not applicable

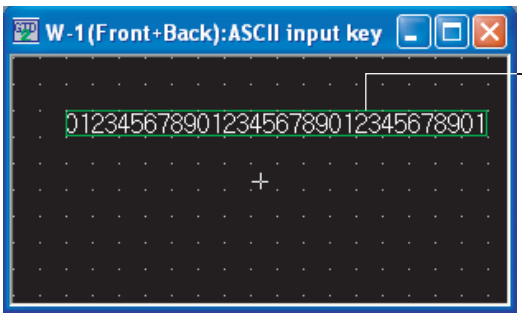
| GOT type | Key window settings | | | | |
|---|---|---|---|---|---|
| | Input value area | Input range area | Input maximum input area | Input minimum value area | Previous value area |
| GT15 | ○ | ○ | ○ | ○ | ○ |
| GT SoftGOT1000 | ○ | ○ | ○ | ○ | ○ |
| GT11 | ○ | ○ | ○ | ○ | ○ |
| GT10 | ○ | × | ○ | ○ | × |




Input value area : Displays the value being input.
Previous value area : Displays the current value.
Input range area : Displays the allowable range of input.
(Display example: 0 <= INPUT <= FFFF)
Input maximum value area : Displays only the maximum value that can be input.
(Display example: FFFF)
Input minimum value area : Displays only the minimum value that can be input.
(Display example: 0)

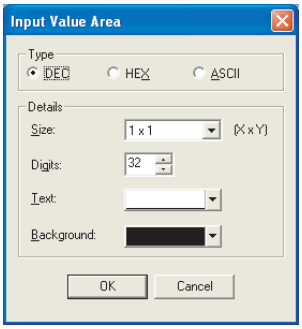
1. Select the menu as shown below:
   [Object] → [Key Window Settings] → [Input Value Area]
   [Input Range Area]
   [Input Maximum Value Area]
   [Input Minimum Value Area]
   [Previous Value Area]

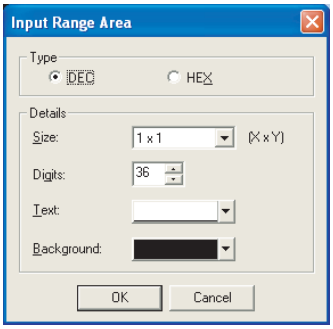
2. Click the position to display the input value area, input range area, or previous value area.

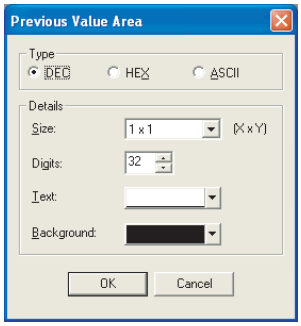



The input value area, input range area, or previous value area is placed by clicking.

3. Double-click the placed input value area, input range area, or previous value area to set the attributes.



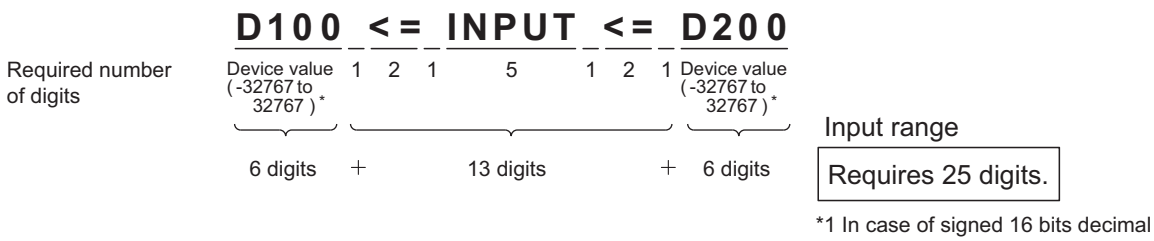
| Items | | Description | Model |
|---|---|---|---|
| Type | | Select the view format of the input value to be displayed.<br>DEC :Select this item when a decimal key window has been created.<br>HEX :Select this item when a hexadecimal key window has been created.<br>ASCII :Select this item when a key window for ASCII input has been created. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Details | Size | Select character size of the input value to be displayed. | |
| | Digits*1 | When setting Input Value Area<br>Set the number of digits for displaying input value.<br>DEC :1 to 32 digits (1 to 20 digits for GT10)<br>HEX :1 to 8 digits<br>ASCII :1 to 100 digits<br>When setting Input Range Area<br>Set the number of digits for displaying input range<br>DEC/HEX : 15 to 78 digits<br>When setting Input Maximum Value and Input Minimum Value Areas<br>Set in the number of digits of the maximum and minimum values.<br>DEC : 1 to 32 digits<br>HEX : 1 to 8 digits<br>When setting the previous value area<br>Set the number of digits for displaying the current value.<br>DEC :1 to 32 digits<br>HEX :1 to 8 digits<br>ASCII :1 to 100 digits | |
| | Text | Select the color of text to be displayed. | |
| | Background | Select the background color of text. | |

For details of *1, refer to the following.

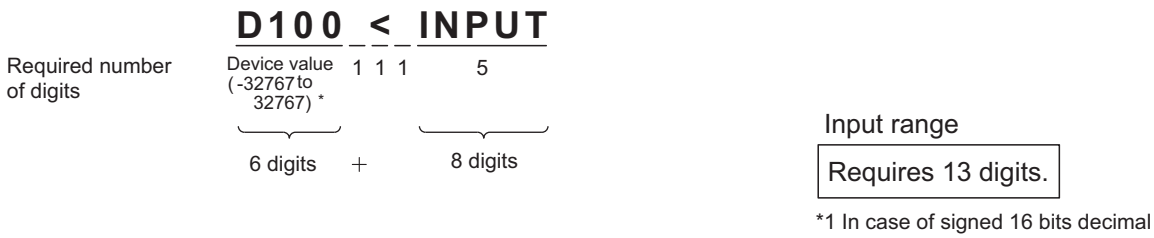
*1 To specify an input range area in the user-created key window

If a device is specified in a range equation and the device value exceeds the preset number of digits, "?" may be displayed.
Specify the input range in consideration of the potential device value with reference to the following example.

Example 1: If D100 <= INPUT <= D200




Example 2: If D100 < INPUT



## 4.5.6 Precautions

This section provides the precautions for using key window are as follows.

### 1 Precautions for using default key window and user-created key window.

A key window cannot be displayed when details of alarm is displayed on a comment window by using alarm list display function and alarm history display function.

### 2 Precautions for creating user-created key window

(1) Precautions for using GT10

Be sure to set a key for the ESC key. (Key code 001BH (Cancel))

(2) Object that can be set on user-created key window

Make sure to set only touch switches in which key codes for numerical input/ASCII input has been set on a user-created key window.

(3) Action of the touch switch set on a user-created key window

(a) If the actions of key code, bit SET and word SET are set together in the action setting, only key code action will be available.

(b) Even if ON/OFF shape is set, touch switch will be displayed in OFF shape.

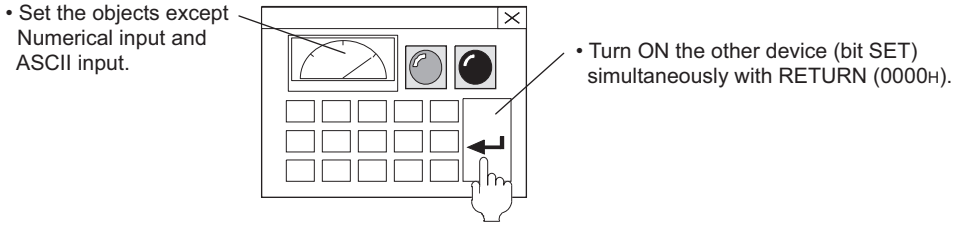
(c) For setting touch switches on a user-created key window, place the switches on the back layer. When placing the switches on the front layer, the GOT does not display the switches. Additionally, the switches do not operate even when touching the positions that the switches are placed.

**Hint!**

To create a key that includes function (1) and (2)

When creating a key window with a key that includes the above functions, use a normal window screen as a key window without making the settings for displaying the key window.

Example: Normal overlap window used as key window



(4) Size of user-created key window

The key window size is same with the size of set window screen.

It can be changed by changing the size of window screen.

For changing the size of the window screen, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 7.5 Creating a New Screen)

The applicable size of window screen is different according to the status of close key and move key, i.e., whether they are displayed or not.

☞ Section 2.1.2 Window screen specifications

(5) Input value area/input range area/previous value area

(a) Multiple input value areas, input range areas, and previous value areas cannot be set on one window screen.

# 5. COMMON SETTINGS FOR OBJECTS

This chapter is described the items to be set commonly after Chapter 6.

## 5.1 Device Setting

This chapter explains the setting method of the device applicable for monitoring or writing using object functions.

### 5.1.1 Device setting

**1** Device that can be set by GT Designer2

For details on the device type and setting range, please refer to the following.

☞ Section 2.9 Supported Devices

**2** Device usable for controller monitoring

The device range available for setting by GT Designer2 depends on the controller type selected when the GT Designer2 project is created. (☞ Section 3.1 GOT/Controller Type Setting)
As the following table shows, the device range set by GT Designer2 may be different with the usable range in controller.

Example: Device setting range of difference between SIEMENS PLC and GT Designer2

| Device setting range | SIEMENS PLC:<br>SIMATIC S7-300 Series (Input relay) | PANASONIC PLC:<br>MEWNET-FP Series (Index register) |
|---|---|---|
| PLC | 10000 to 11277 | IX0 to IX13, IY0 to IY13 |
| GT Designer2 | 10000 to 15117 | Setting not allowed |

GT Designer2 does not check whether the device settings (device name, device No.) are actually available for the target controller.
For the availability, check it as follows:

(1) Check the following when drawing
- Device type and setting range available for setting by GT Designer2.

  ☞ Section 2.9 Supported Devices

- Device type and setting range available for controller monitoring

  ☞ User's Manual of the connected controller

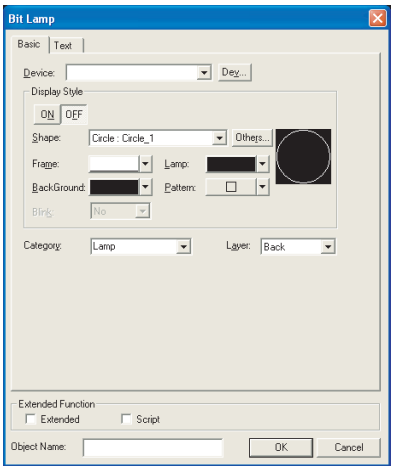
(2) Check when monitoring
Check the device name and range with the system alarm.
If try to monitor the device name or device range that cannot be used by a controller, "322 Dedicated device is out of range." occurs.

## 5.1.2 Settings

Set a device using the setting dialog box provided for each object function.

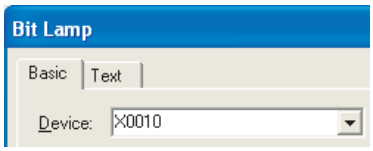
Example: Setting a device to be monitored by "Lamp"

1 Click the Dev button, and the setting dialog box is displayed.

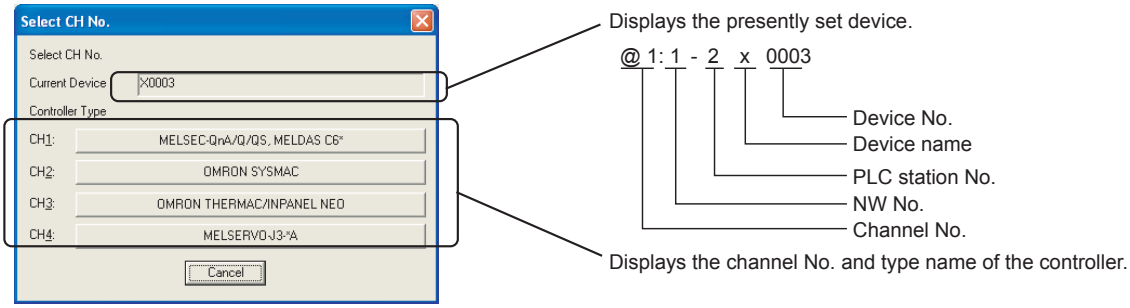



**Hint!** Direct input of a device

It is possible to input a device from the keyboard.




2 Depending on the settings in [Preferences] of GT Designer2, the [Select CH No.] dialog box is displayed when the [...] button is clicked.




Display in the Select CH No. dialog box can be changed using [Preferences] of GT Designer2. To display [Preferences], select [Project] → [Preferences]. For [Preferences] of GT Designer2, refer to the following.

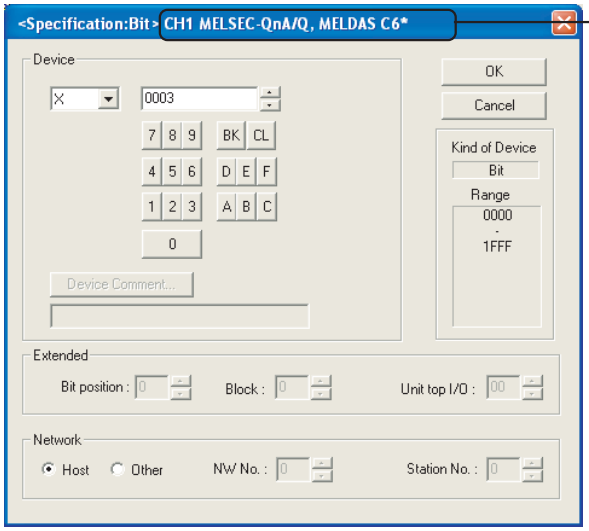
Section 5.3.1 1 Object Arrangement and Display Image Setting

**Hint!** Displaying the Select CH No. dialog box

Click the Dev button in the setting dialog box of object function while pressing the Shift key of the personal computer, and the Select CH No. dialog box is displayed independently of the [Preferences] setting.

Section 5.3.1 1 Object Arrangement and Display Image Setting

3 Click the controller type, and the device setting dialog box is displayed.




Displays the channel No. and type name of the controller, which are set presently.

Device setting dialog box

**Point**

(1) Changing the communication settings
After setting a device, do not change the channel setting to [None] in communication settings.
If changed, it must be set the device again for the channel for which [None] is set.

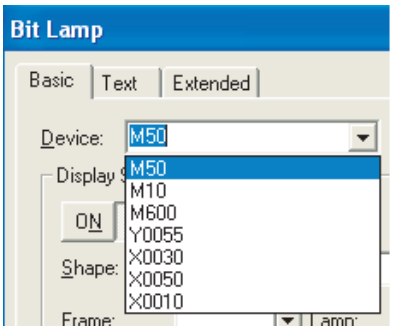
☞ 3.7.2 Setting items

(2) Specifying a bit device to the device of word format (16/32bits).
For a device number, set a multiple of 16.

**Hint!**

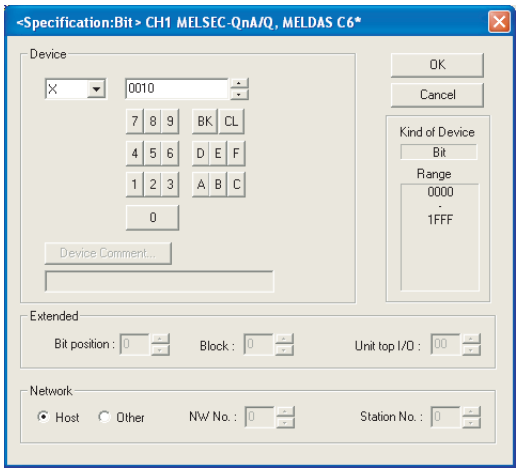
Setting of frequently-used device.

Once a device is set, it can be selected from the displayed list for setting from the next time.
Maximum 10 device names can be added to the list. If more than 10 devices are kept, the device name will be deleted from the oldest one.



## 5.1.3 Setting items

### 1 Mitsubishi Electric PLC, CNC




(Example:Setting screen for GT15)

| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input).<br>When setting BM (buffer memory), set the buffer memory address in the space for the device number. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Device Comment | Reading the device comment data created by GX Developer and confirming the device comment/device name is available during device setting.<br>(☞ Basic Operation/Data Transfer Manual (Section 12.2 Referring to Device Comment When Setting Devices) | |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| | Block | Set the block number of the extended file register.<br>(It can be set when "ER" is selected as the device name.) | |
| | Unit top I/O | Set the head I/O number of the buffer memory for the intelligent function module.<br>Set the first 2 digits of the 3-digit head I/O number.<br>(It can be set when "BM" is selected as the device name.) | |
| Network*1 | | Set the station number of the controller to be monitored. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Host | Select this when monitoring the host controller. | |
| | Other*2 | Select this when monitoring other controller.<br>Then, set the station number and network number of the controller to be monitored.<br>NW No. : Set the network No.<br>Station No . : Set the station No. | |

For details of *1, *2, refer to the following.

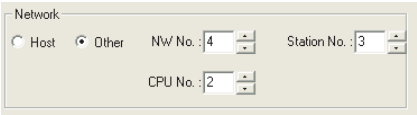
*1 When monitoring multiple CPU system

Set the CPU No. (1 to 4) in the network setting when monitoring a multiple CPU system.
When the CPU No. is set to "0", the monitoring target differs depending on the connection method.

| Connection method | Monitoring target |
|---|---|
| • Direct CPU connection | Connected PLC CPU |
| • Bus connection • Computer link connection • MELSECNET connection • Ethernet connection • CC-Link connection | Control CPU |

When GT SoftGOT1000 is installed on the PC CPU module, refer to the following.
When GT SoftGOT1000 monitors the multiple CPU system with the PC CPU module via the bus connection, do not set the CPU No. to "0".
When the CPU No. is set to "0", GT SoftGOT1000 cannot monitor the PC CPU module because the monitoring target is set to the PC CPU module itself.

For monitoring a programmable controller with a single CPU, set the CPU No. to "0".

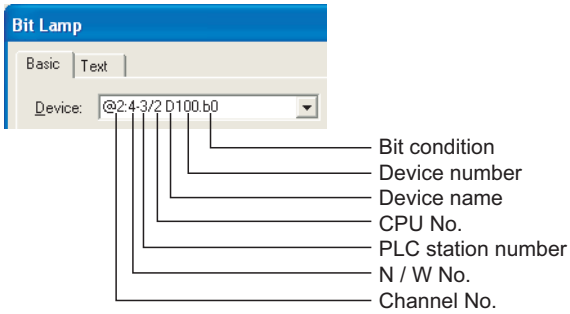



*2 When monitoring B and W assigned in link parameter and network parameter.

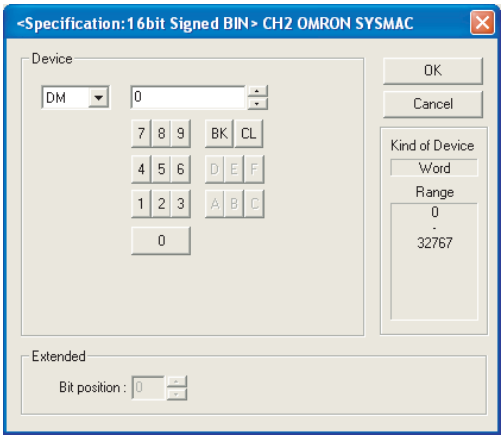
Set device B and W running cyclic communication as [Host].
If it is set as [Other] in the network setting, the cyclic transmission will be changed to the transient transmission irrespective of the network type, resulting in delay of the object display.

**Hint!** Setting device by inputting directly from keyboard

When setting it by inputting directly from the keyboard, set the items as follows:

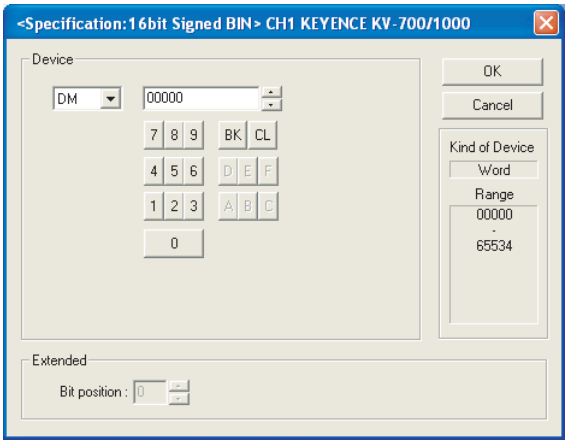


## 2 OMRON PLC




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |

## 3 KEYENCE PLC



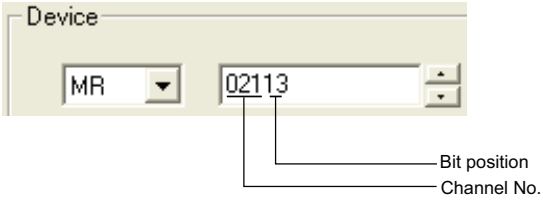

| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | GT16 GT15 SoftGOT 1000 GT11 GT10 |

For details of *1, refer to the following.

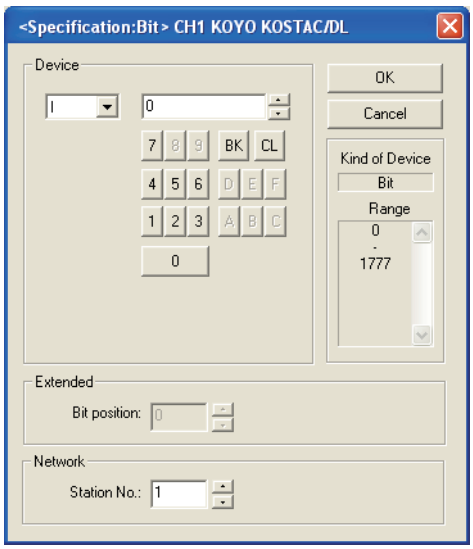
### *1 Device settings of KEYENCE PLC

Make the device setting for KEYENCE PLC as follows.

(1) Setting relays, internal auxiliary relays, latch relays and control relays
Make settings for these devices by a channel number and a bit position.

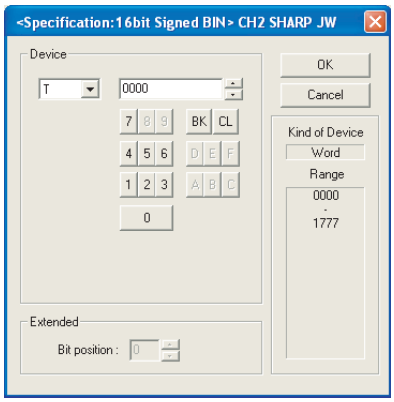


## 4 KOYO EI PLC




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |
| Network | | Set the monitor target of the set device. | |
| | Staion No. | Set this item when monitoring the PLC of the specified station No. | |

## 5 SHARP PLC




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |

For details of *1, refer to the following.

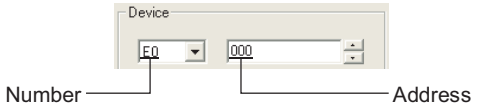
### *1 Device settings of SHARP PLC

Make the device setting for SHARP PLC as follows:

(1) Set a register as a bit device.

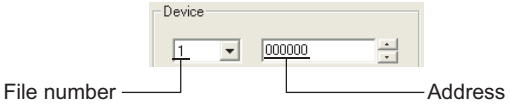
(a) Registers

Set the type (first 2 digits) and the address.




(b) File register

Set the file number and the address.

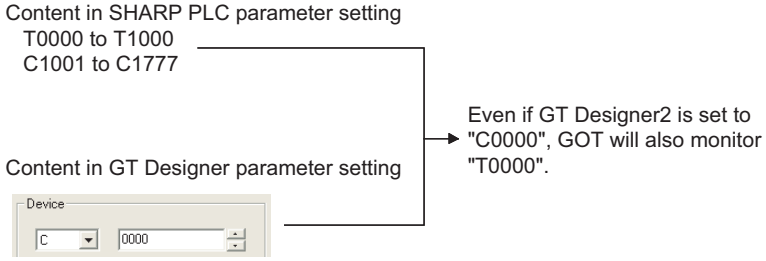


**Remark** Monitoring the timer and the counter:

(a) Address setting

Be sure not to set the same address range for the timer and the counter.
Even if these addresses are overlapped, GOT will display no error.
GOT monitors them according to the address instead of the device name.
Therefore, if the device invalid for the SHARP PLC side parameter is set using GT Designer2, GOT will monitor other device (the device corresponding to the set device address range).

Example:



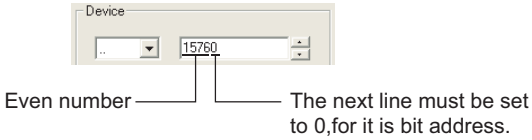

(b) Contact writing into timer and counter

Writing the contact for the timer and counter can only be done while the CPU is in RUN (while the timer and counter is in operation).

(2) Set a register and memory as a word device

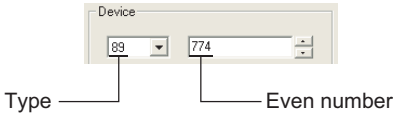
(a) I/O relay

Set a combination of the device address (multiple of 16)+bit address format (fixed to 0).

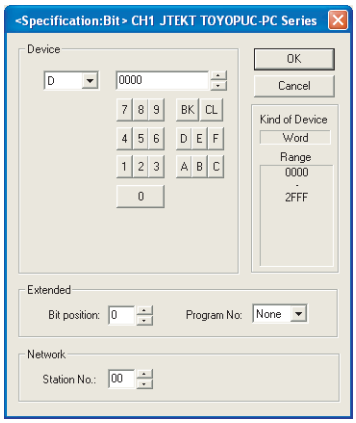



(b) Registers and file register

Set the device address (multiple of 16).



## 6 JTEKT PLC



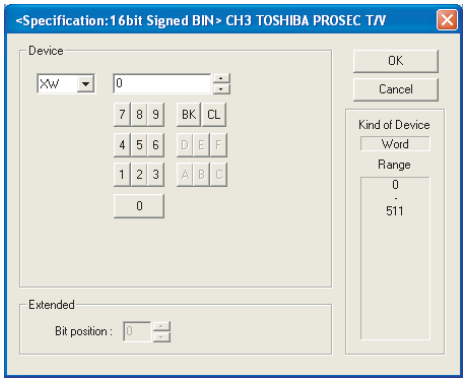

| Item | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Sets the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| | Program No.*1 | Sets the number of the program for which the device is set. | |
| Network | | Sets the monitoring target for the set device. | |
| | Station No. | Select the station No. when monitoring the PLC of the specified station No. (octal) | |

For details of *1, refer to the following.

### *1 About program number setting (when PC3JG or PC3J is used)

Setting of a program number is allowed for the devices indicated below.
Internal relay (M), keep relay (K), link relay (L), special relay (V), edge detection (P), timer (T), counter (C), data register (D), link register (R), special register (S), current value register (N)

## 7 TOSHIBA PLC



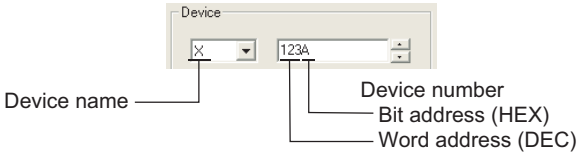

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |

For details of *1, refer to the following.

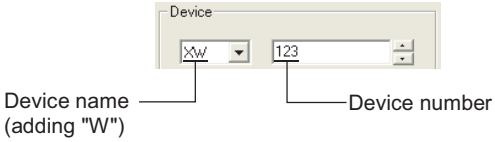
### *1 Device settings for TOSHIBA PLC

Make the device setting for TOSHIBA PLC as follows:

(1) Set a relay as a bit device
Set the device using the format of word address (DEC)+bit address (HEX)




(2) Set a relay as a word device
Set the word address (DEC).
For device name setting, enter "W" after the bit device name.

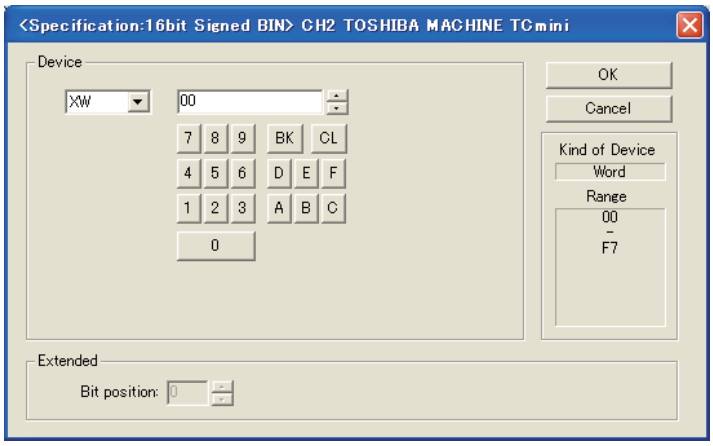



**Remark** Notation of device address (when using PROSEC V series)

The notation of device address setting is different between the TOSHIBA PLC peripheral software and GOT. Refer to the following for details.

☞ Section 2.9 Supported Devices

## 8 TOSHIBA MACHINE PLC



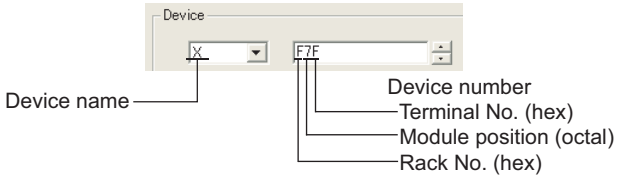

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

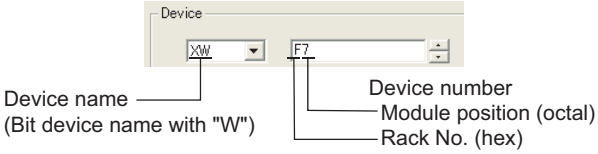
### *1 Device settings for TOSHIBA MACHINE PLC

Make the device setting for TOSHIBA MACHINE PLC as follows:

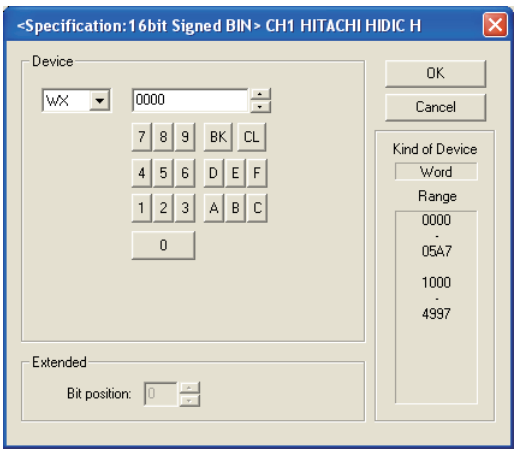
(1) Setting relay address or word register address as bit device
Set the device No. with the rack No. (hex), module position (octal), and terminal No. (hex), in that order.




(2) Setting relay address as word device
Set the device No. with the rack No. (hex) and module position (octal), in that order.
For the device name, set a bit device name with "W".



## 9 HITACHI IES PLC




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |

For details of *1, refer to the following.

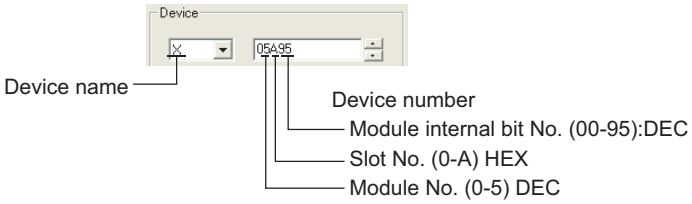
### *1 Device setting for HITACHI IES PLC

Make the device setting for HITACHI IES PLC as follows:

(1) When specifying an external I/O device

(a) When setting a bit device

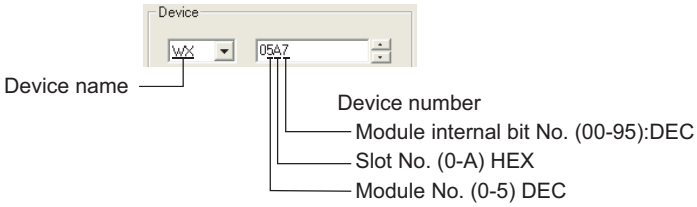
Set the device using the format of module No.+ slot No.+ module bit No.




(b) When setting a word device

Set the device using the format of module No.+ slot No.+ module bit No.

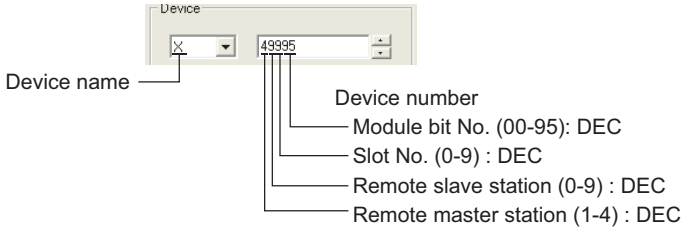
For the device name setting, enter "w" before the bit device name.



(2) When specifying a remote external I/O device

(a) Setting a bit device

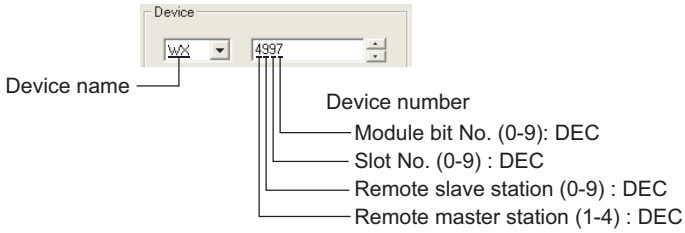
Set the device using the format of remote master station + remote slave station + slot No. + module bit No.



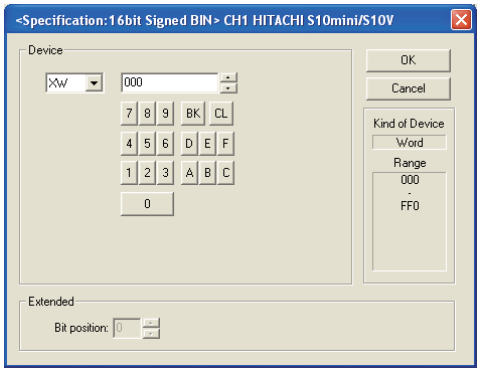

(b) When setting a word device.

Set the device using the format of remote master station + remote slave station + slot No. + module bit No.

For device name setting, enter "W" before the bit device name.



## 10 HITACHI PLC




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position*2 | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |

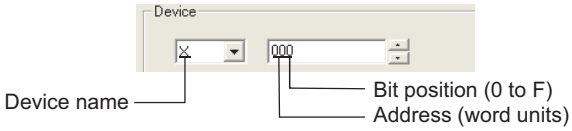
For details of *1, refer to the following.

*2 The uppermost bit is b0 and the lowermost bit is b15.

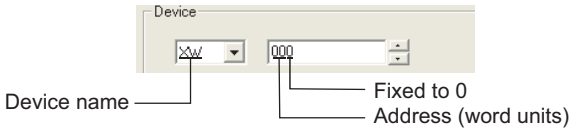
### *1 Device setting for HITACHI PLC

Make the device setting for HITACHI PLC as follows:

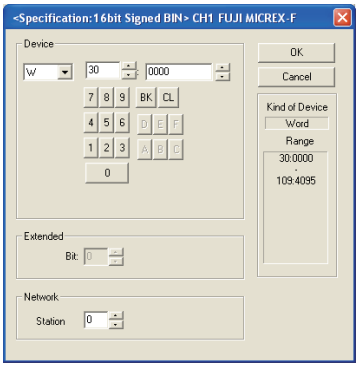
(1) When specifying a bit device.
Set the device using the format of address (word unit)+ bit position (0 to F).




(2) When specifying a word device.
For external input (XW), external output (YW), internal register (RW), extended internal register (MW, AW), keep relay (KW), on-delay timer (TW), one-shot timer (UW), up-down counter (CW), global link register (GW), event register (EW), system register (SW), transfer register (JW), and receive register (QW), set as follows.



## 11 FUJI FA PLC




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position*2 | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |
| Network | | Set the monitor target of the set device. | |
| | Staion No. | Set this item when monitoring the PLC of the specified station No. | |

For details of *1, refer to the following.

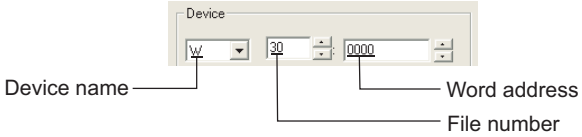
*2 The uppermost bit is b0 and the lowermost bit is b15.

### *1 Device setting for FUJI FA PLC

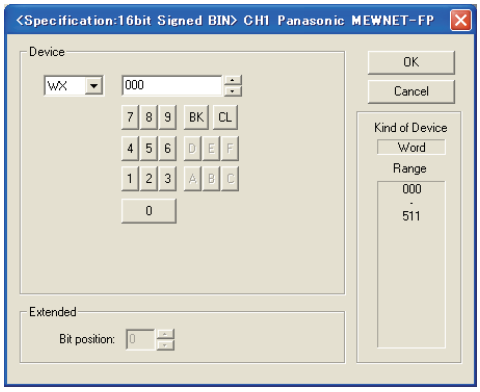
Make the device setting for FUJI FA PLC as follows:

(1) When setting a bit device.
Set the device using the format of word number (DEC)+ bit position (0 to F (HEX)).

(2) When setting a word device.
For direct access (W24) and under file (W30 to W109, W9), set as follows.



## 12 PANASONIC PLC



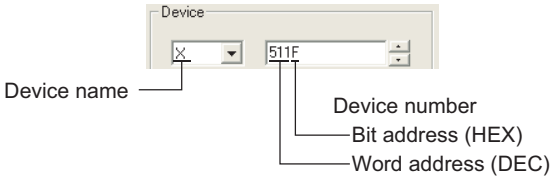

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

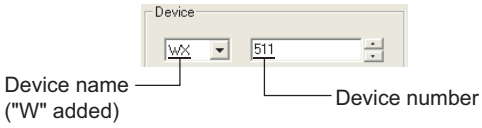
### *1 Device settings for PANASONIC PLC

Set a device for PANASONIC PLC as follows:

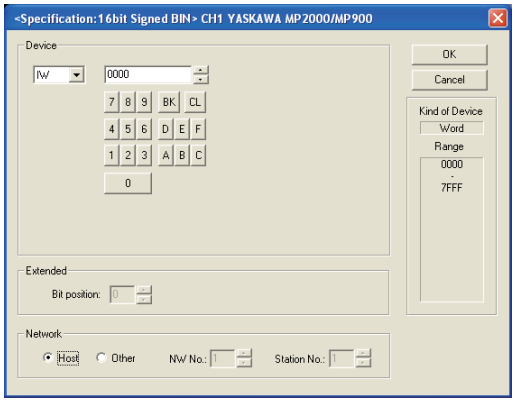
(1) Set a contact as a bit device
Set the device using the format of word address (DEC)+ bit address (HEX).




(2) Set a contact as a word device
Set the device number.
Enter "W" before the device name, not including the bit address.



## 13 YASKAWA PLC



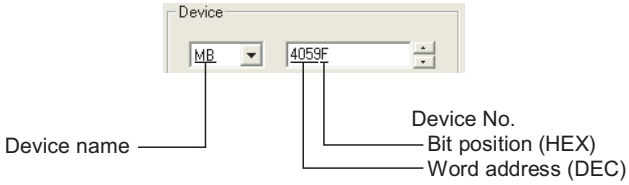

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Network | | Set the station No. of the controller to be monitored. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select [Host] for monitoring the controller set as the host station. | |
| | Other | Select [Other] for monitoring the controller set as the other station.<br>After selecting the item, set the station No. of the controller to be monitored.<br>NW No.: Set the network No.<br>Station No.: Set the station No. | |

For details of *1, refer to the following.

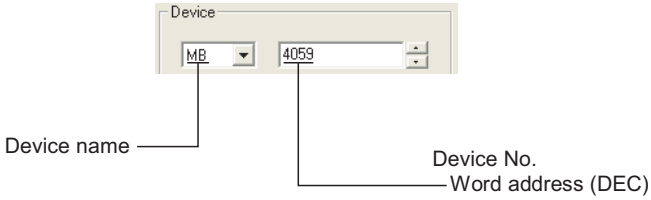
### *1 Device settings for YASKAWA PLC (For CP-9200SH, CP-9300MS, MP-920, MP-930)

Set the coil device (MB) as follows:

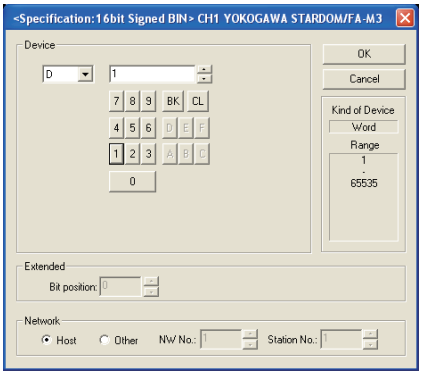
(1) Set the link and coil as a bit device
Set it in the format of word address (DEC)+bit position (HEX).




(2) Set a register as a word device
Set it with a word address (DEC).

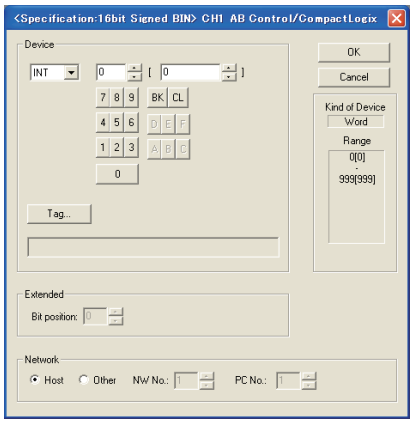


## 14 YOKOGAWA PLC




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting). | |
| Network | | Set the station No. of the controller to be monitored. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select [Host] for monitoring the controller set as the host station. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Other | Select [Other] for monitoring the controller set as the other station.<br>After selecting the item, set the station No. of the controller to be monitored.<br>NW No.: Set the network No.<br>Station No.: Set the station No. | |

## 15 ALLEN-BRADLEY PLC




(Example:Setting screen for GT15)

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the file numbers/element number by 0 to 9 buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Tag... | | The device can be set by selecting a tag in the tag file that is imported to GT Designer2.<br>(☞ 15.7 Tag Import Function)<br>Clicking this button displays the Tag View dialog box.*2 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | | Set the station number of the PLC connected to the specified device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select this when monitoring the host PLC. | |
| | Other | Select this when monitoring the other PLC.<br>Then, set the station number of the PLC to be monitored.<br>NW No. : Set the network No.<br>Station No.: Set the station No. | |

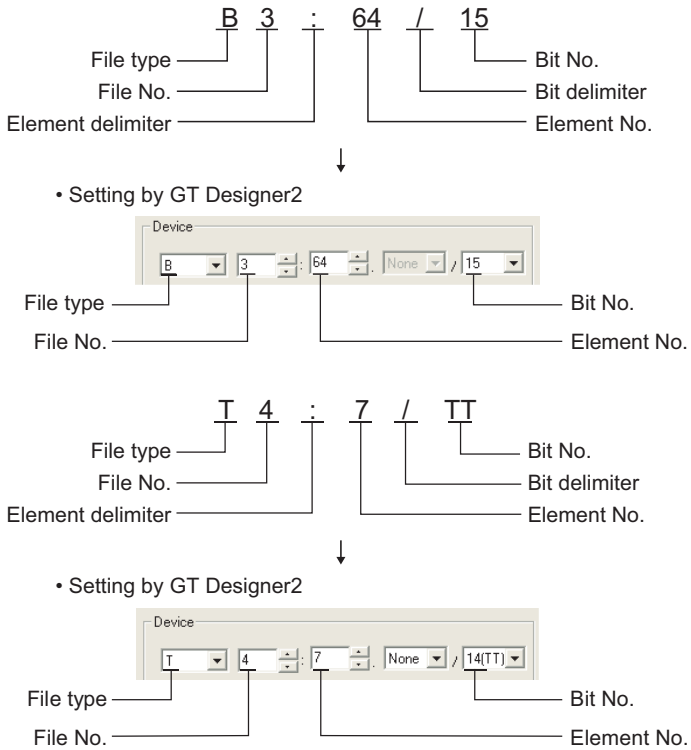
For details of *1 and *2, refer to the following.

*1 Device settings for ALLEN-BRADLEY PLC

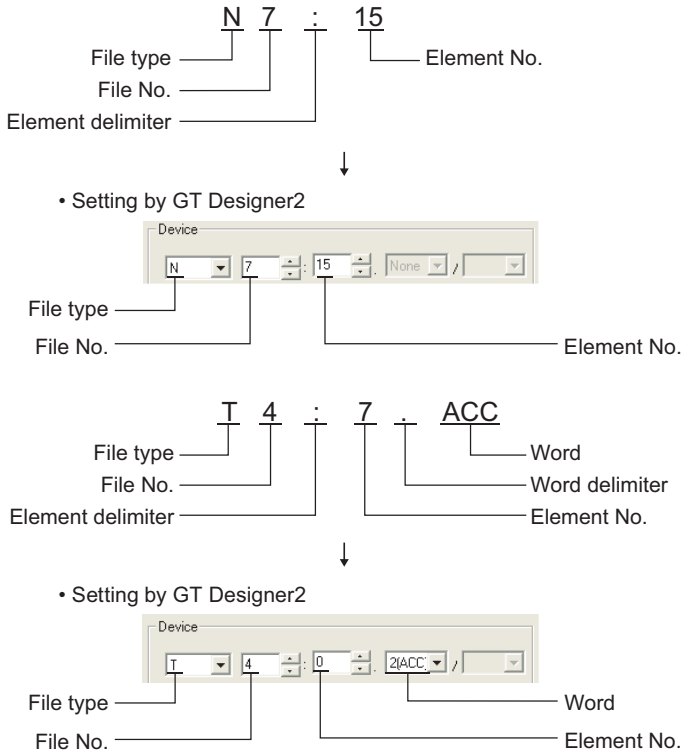
The ALLEN-BRADLEY PLC device addressing consists of a file and element.
Make setting as follows using GT Designer2.

(1) AB SLC500 and AB Micro Ligix

(a) Set a bit address as a bit device

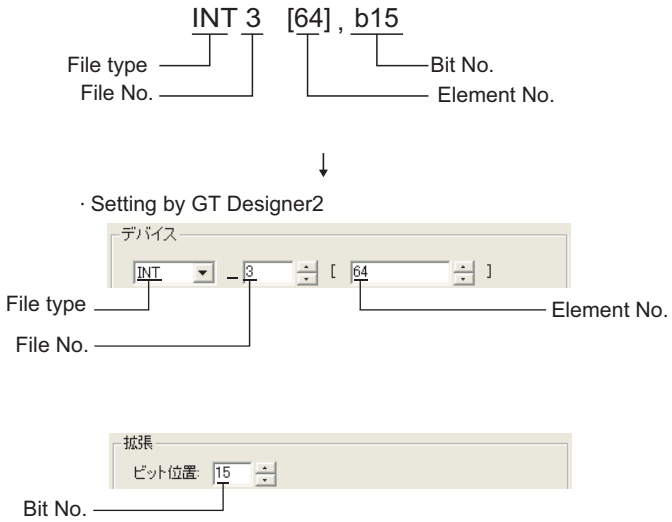



(b) Set an element address as a word device

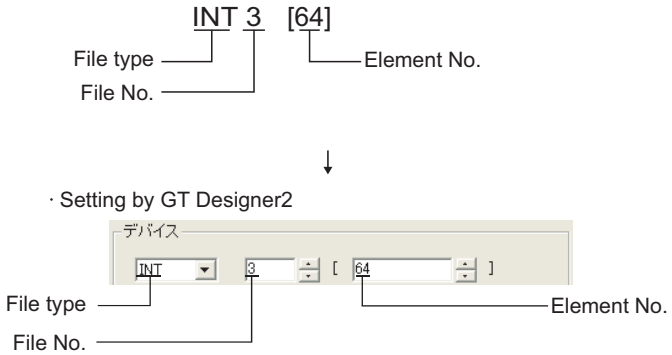


(2) AB Control/CompactLogix

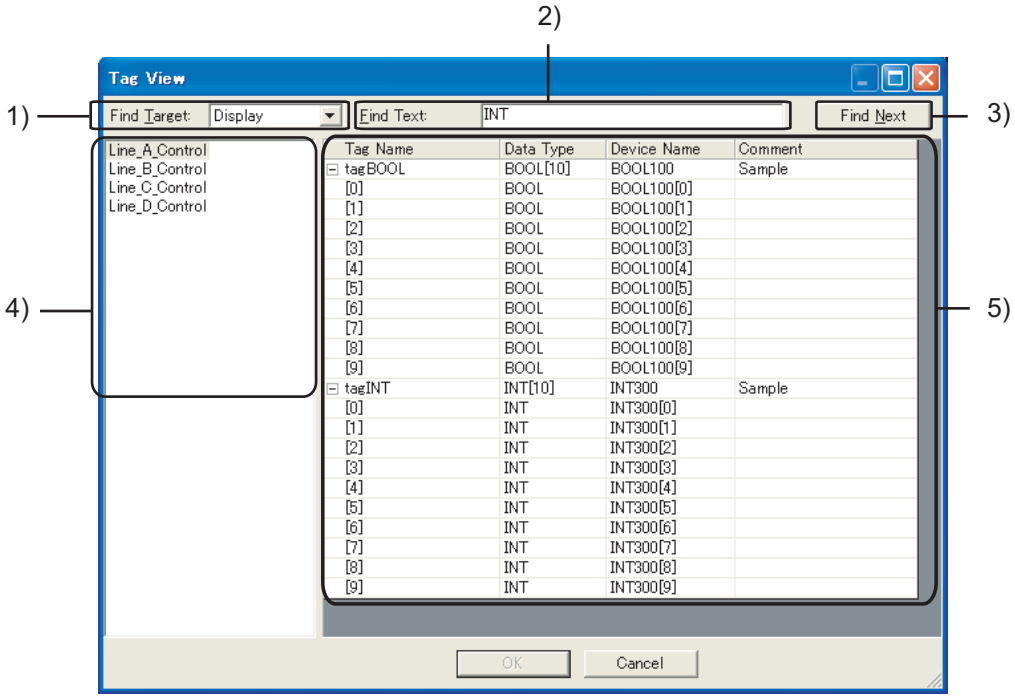
(a) Set a bit address as a bit device




(b) Set an element address as a word device

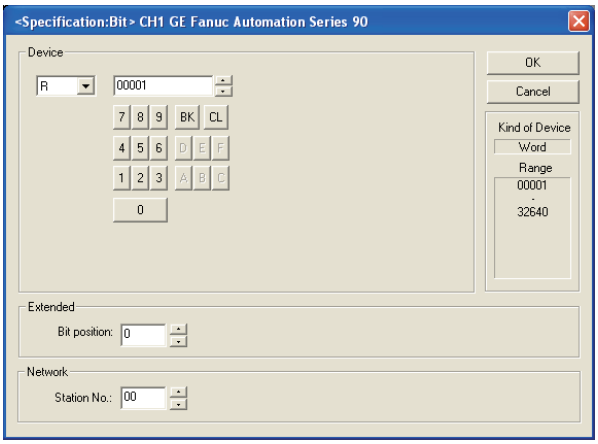


*2 Setting items in Tag View dialog box



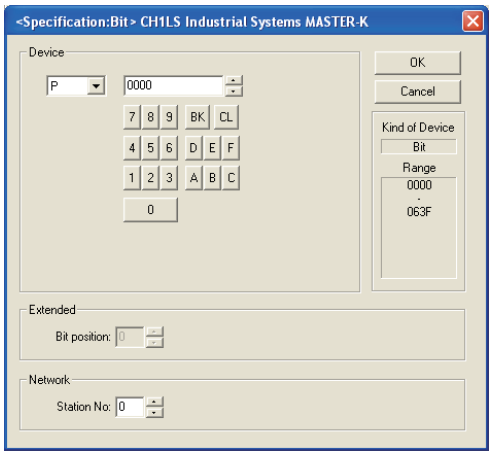

| No. | Item | | Description | Model |
|---|---|---|---|---|
| 1) | Find Target | | Set the tag information to be searched. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| 2) | Find Text | | Set a string to be searched for.<br>For one-byte alphanumeric characters, uppercase and lowercase characters are not distinguished. | |
| 3) | Find Next | | Clicking this button searches for the string with the settings of [Find Target] and [Find Text]. | |
| 4) | Tag file list | | Displays a list of tag files imported to GT Designer2.<br>Clicking a tag file name displays the data of the tag file on the right side of the tag file list. | |
| 5) | Tag list | | Displays a list of tags for the selected tag file.<br>By selecting a tag and clicking the OK button, the tag is set as a device. | |
| | | Tag Name | Displays the tag names.<br>Clicking the + button displays element numbers for the corresponding tag. | |
| | | Data Type | Displays the file types of tags. | |
| | | Device Name | Displays the device names on GT Designer2. | |
| | | Comment | Displays the comments set for tags. | |

## 16 GE FANUC PLC




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.). | |
| Network | | Set the monitor target of the set device. | |
| | Staion No. | Set this item when monitoring the PLC of the specified station No. | |

## 17 LS IS PLC




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | Station No. | Monitors the temperature controller of the specified station No.<br>0 to 31 : To monitor the PLC of the specified station No.<br>100 to 115 : To specify the station No. of the PLC to be monitored by the value of GOT data register (GD). | |

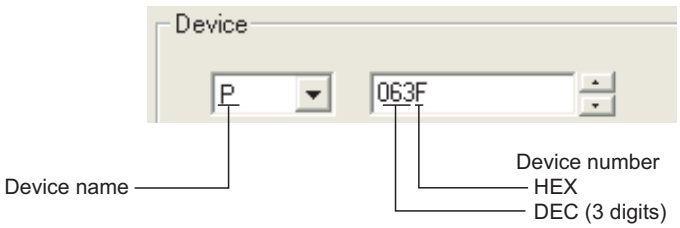
| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 31<br>(If setting a value outside the range above, a device range error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

For details of *1, refer to the following.

### *1 Device setting for LS IS PLC

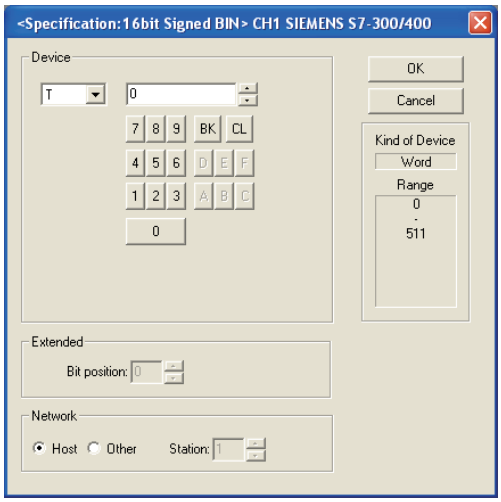
Make the device setting for LS IS PLC as follows:

(1) When setting bit device (excluding timer and counter)
Set the bit device using the decimal number (three digits) and the hexadecimal number.



## 18 SIEMENS PLC

### (1) S7-300/400 series




(Example:Setting screen for GT15)

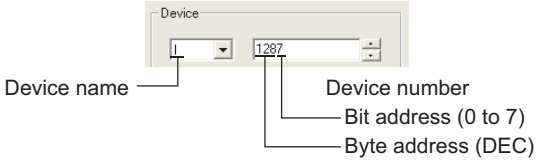
| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or direct input it). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Display the device type (Bit/Word) selected in [Device]. | |
| Range | | Display the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position for the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | | Set the monitor target of the set device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select this to monitor the PLC specified as the host from the GOT utility (setup). | |
| | Other | Select this when monitoring the PLC other than the one specified as [Host].<br>Then, set the PLC MPI address. | |

For details of *1, refer to the following.

*1 Device settings of SIEMENS PLC (S7-300/400 series)

Make the device setting for SIEMENS PLC as follows:

(1) Set a bit memory as a bit device
Set the device using the format of byte address (DEC)+bit address (0 to 7)

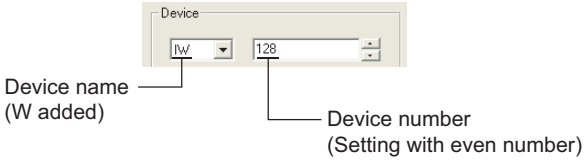



**Remark** Notation of bit memory

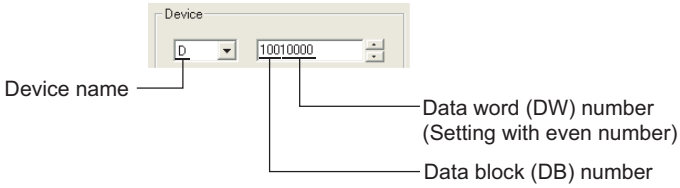
The difference in bit memory notation between GOT and PLC is as follows:

| Notation of GOT | Notation of PLC |
|---|---|
| Q0007 | Q0.7 |

(2) Set a bit memory as a word device
Set it with device number.
For the device name setting, enter "W" after the bit memory device name.




(3) When setting a data register
Set the device using the format of data block (DB) + data word (DW).

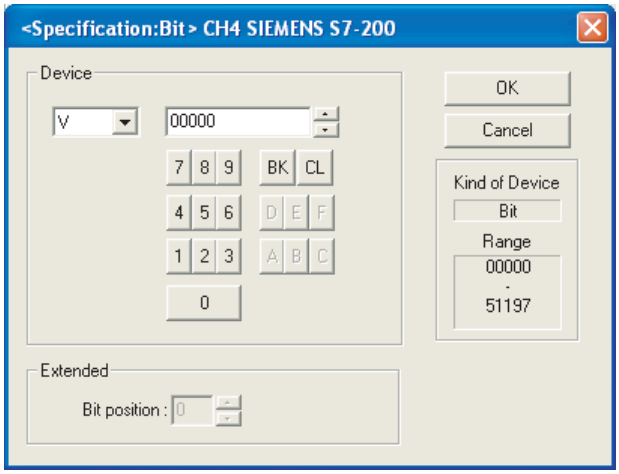



**Remark**

(1) Before setting data register
(a) It is necessary to define the data block using a peripheral software and sequence program, before using a data register.
(b) Setting more than one data block cannot be done.

(2) Timer (Current value) (T)
Only one device can be set for the write target of this device.
Therefore, multiple devices, such as, using the recipe function, etc., cannot be used.

(2) S7-200 series



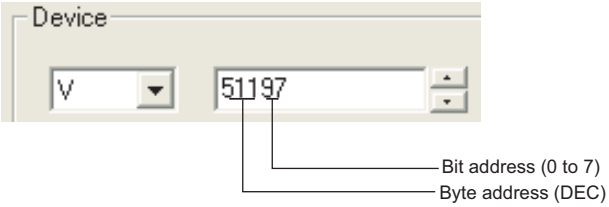

| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |

For details of *1, refer to the following

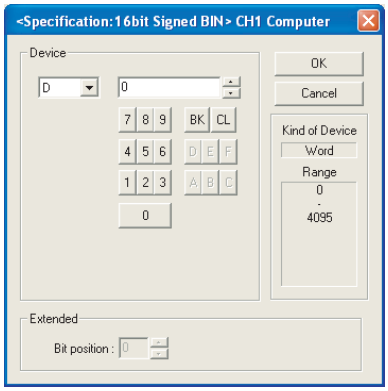
*1 Device settings of SIEMENS PLC (S7-200 series)

Make the device setting for SIEMENS PLC as follows.

(1) Setting bit devices (excluding timers and counters)
Make settings for bit devices by byte address (decimal) and bit address (0 to 7).

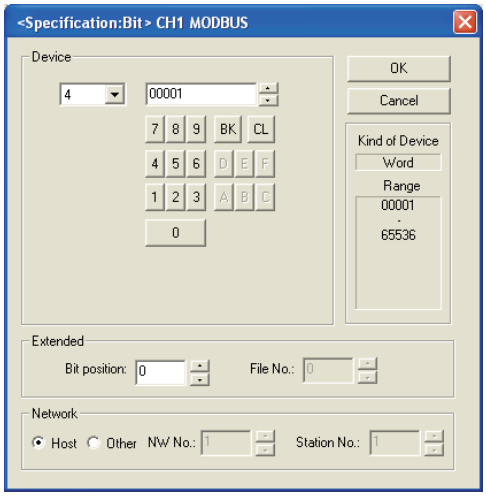


## 19 Microcomputer



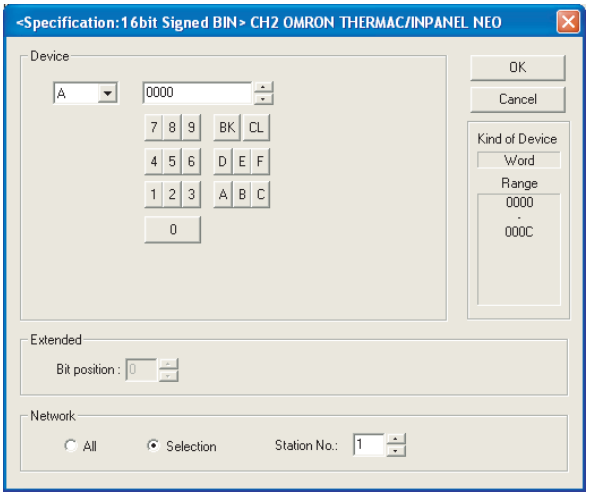

| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Display the device type (Bit/Word) selected in [Device]. | |
| Range | | Display the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name selected in [Device] in bit device setting.) | |

## 20 MODBUS® connection




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Display the device type (Bit/Word) selected in [Device]. | |
| Range | | Display the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name selected in [Device] in bit device setting.) | |
| | File No. | Set the file No.<br>The file No. can be set only when select 6 at [Device]. | |
| Network | | Set the station number of the controller to be monitored. | |
| | Host | Select this when monitoring the host controller. | |
| | Other | • GT16, GT15<br>Select this when monitoring the other controllers.<br>Then, set the station number and network number of the controller to be monitored.<br>NW No. : For the MODBUS®/RTU connection, set "1".<br>For the MODBUS®/TCP connection, set the network No.<br>Station No.: Set the station No.<br>• GT11, GT10<br>Select this item when monitoring the controller set as the other station.<br>After selecting this item, set the station No. of the controller to be monitored.<br>Station No. : Set the station No. | |

## 21 OMRON temperature controller




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | | Set the monitor target of the set device. | |
| | All | Select this when writing data to all temperature controllers.<br>During monitoring, the temperature controller of station No. 0 is monitored.<br>(When writing the data in numerical input, data is written to all connected temperature controllers during input, and the temperature controller of station No. 0 is monitored during other than input (i.e. display).) | |
| | Station No. | Select this when monitoring the temperature controller of the specified station No.<br>After selecting "Selection", set the station No. in the range indicated below.<br>0 to 99 : To monitor the temperature controller of the specified station No.<br>100 to 115 : To specify the station No. of the temperature controller to be monitored by the value of GOT data register (GD). | |

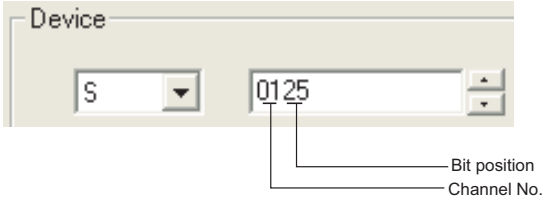
| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 99<br>(If setting a value outside the range above, a device range error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

For details of *1, refer to the following

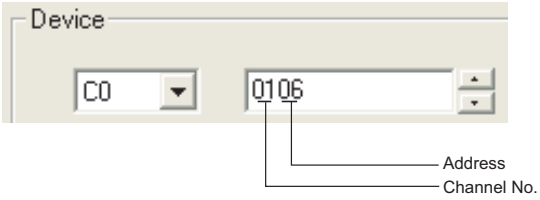
*1 Device settings of OMRON temperature controller

Make the device settings for OMRON temperature controller as follows.

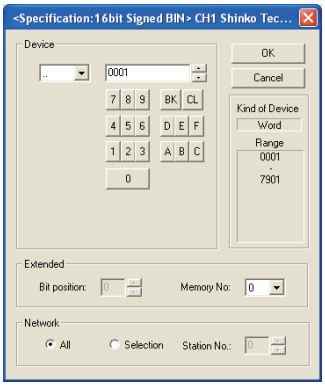
(1) Setting statues
Make settings for statues by a channel number and a bit position.




(2) Setting variable area 0, variable area 1 and variable area 2
Make setting for variable areas by a channel number and address.



## 22 SHINKO indicating controller

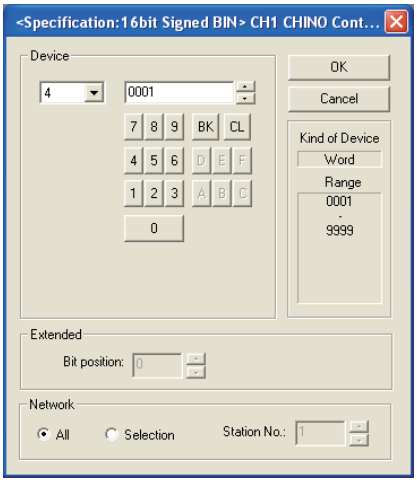



| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Display the device type (Bit/Word) selected in [Device]. | |
| Range | | Display the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name selected in [Device] in bit device setting.) | |
| | Memory No. | Set the memory number (None, 0 to 7) of the device to be monitored.<br>The device name is displayed as follows when the memory number (0 to 7) is set. | |

| Memory No. | Displayed device name |
|---|---|
| None | Device Number |
| 0 | M0/Device Numbe |
| 1 | M1/Device Numbe |
| 2 | M2/Device Numbe |
| 3 | M3/Device Numbe |
| 4 | M4/Device Numbe |
| 5 | M5/Device Numbe |
| 6 | M6/Device Numbe |
| 7 | M7/Device Numbe |

<table>
<tr><th colspan="2">Items</th><th>Description</th><th>Model</th></tr>
<tr><td colspan="2">Network</td><td>Set the monitor target of the set device.</td><td rowspan="3">GT16 GT15 SoftGOT 1000 GT11 GT10</td></tr>
<tr><td></td><td>All</td><td>Select this item when writing data to all the indigating controllers connected.<br>During a monitoring, the indicating contoroller set for [Host Address] of the communication detail setting is monitored.<br>(When inputting data with the numerical input function, the data is written to all the connected indicating controllersduring input; the indicating controller that is set for [Host Address] is monitored during other than input (display).)</td></tr>
<tr><td></td><td>Selection</td><td>Select this item when monitoring the indicating controller of the station No. specified.<br>After selecting, set the station No. of the indicating controller in the following range.<br>0 to 94 : The indicating controller of the station No. specified is monitored.<br>95 : Same as the setting of [All].<br>100 to 115 : Specify the station No. of the indicating controller to be monitored with the GOT data register (GD).
<table>
<tr><th>Station No.</th><th>GOT data register (GD)</th><th>Setting range</th></tr>
<tr><td>100</td><td>GD10</td><td rowspan="7">0 to 94<br>(If setting a value outside the range above, a device range error occurs.)</td></tr>
<tr><td>101</td><td>GD11</td></tr>
<tr><td>102</td><td>GD12</td></tr>
<tr><td>:<br>:</td><td>:<br>:</td></tr>
<tr><td>113</td><td>GD23</td></tr>
<tr><td>114</td><td>GD24</td></tr>
<tr><td>115</td><td>GD25</td></tr>
</table></td></tr>
</table>

## 23 CHINO controller




| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by to buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | | Sets the monitoring target for the set device. | |
| | All | Select the item when data are written in all the connected controllers.<br>The controller set for [Host Address] of the communication detail settings is monitored.<br>(When inputting data with the numerical input function, data is written to all the connected controllers during input. The controller set for [Host Address] is monitored during other than input (display).) | |
| | Station No. | Select the item when the controller with the specified station No. is monitored.<br>Select the item, and then set the station No. for the controller in the following range.<br>1 to 99 : The controller with the specified station No. is monitored.<br>100 to 115 : Specify the station No. for the controller to be monitored with a GOT data register (GD). | |

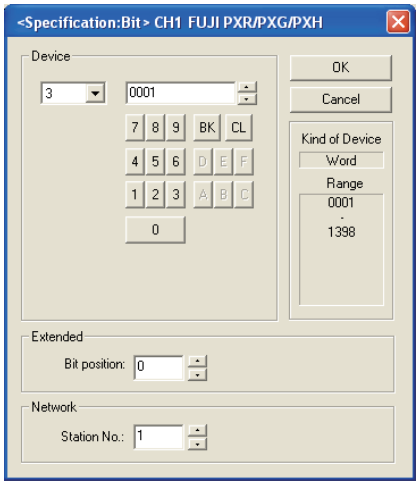
| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 99<br>(If setting a value outside the range above, a device range error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

For details of *1, refer to the following.

### *1 Device settings for CHINO controller

Devices are set with reference numbers.
For parameters corresponding to each reference number, refer to the manual of the controller to be used.

## 24 FUJI SYS temperature controllers




| Item | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | Station No. | Monitors the temperature controller of the specified station number.<br>1 to 119, 216 to 255 : Monitors the temperature controller of the specified station number.<br>200 to 215 : The station number of the temperature controller to be monitored is specified by the value of the data register (GD) of the GOT. | |

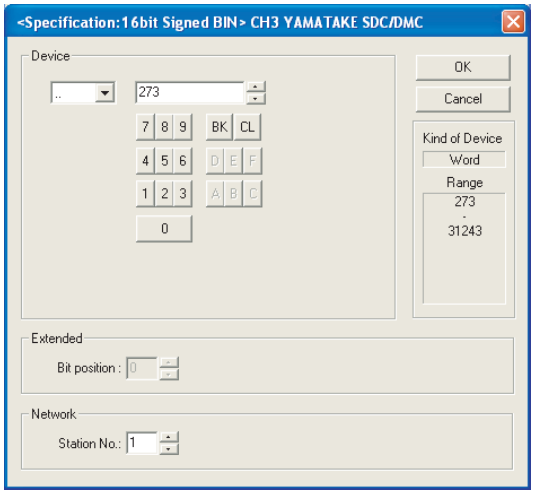
| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 200 | GD10 | 1 to 255<br>(If setting a value outside the range above, a device range error occurs.) |
| 201 | GD11 | |
| 202 | GD12 | |
| :<br>: | :<br>: | |
| 213 | GD23 | |
| 214 | GD24 | |
| 215 | GD25 | |

For details of *1, refer to the following.

*1 About device setting for the temperature controller of Fuji Electric Systems

Devices are set with the coil and register numbers of the temperature controller.
For the relation between the numbers and parameters etc. (such as an address map of coil/register number and a parameter), refer to the manual of the temperature controller to be used.

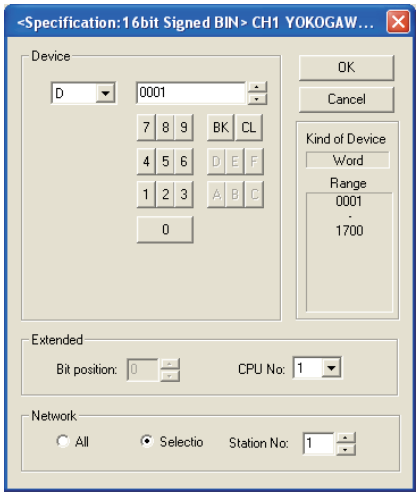
## 25 YAMATAKE temperature controller




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | Station No. | Monitors the temperature controller of the specified station No.<br>0 to 127 : To monitor the temperature controller of the specified station No.<br>200 to 215 : To specify the station No. of the temperature controller to be monitored by the value of GOT data register (GD). | |

| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 200 | GD10 | 0 to 127<br>(If setting a value outside the range above, a device range error occurs.) |
| 201 | GD11 | |
| 202 | GD12 | |
| :<br>: | :<br>: | |
| 213 | GD23 | |
| 214 | GD24 | |
| 215 | GD25 | |

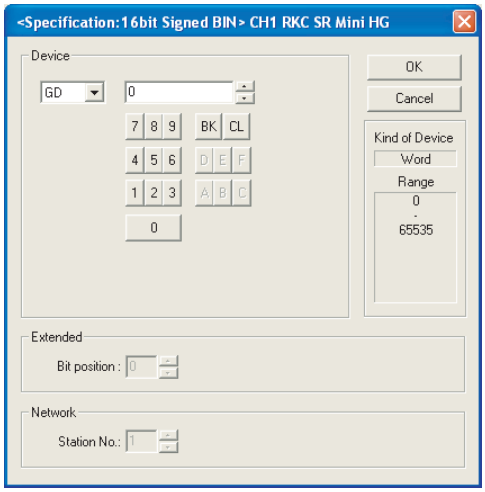
## 26 YOKOGAWA temperature controller




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| | CPU No. | Set the CPU No. (1, 2) of the device to be monitored.<br>When device B is selected, the CPU No. is fixed to 1. | |
| Network | | Set the monitor target of the set device. | |
| | All | Select this item when writing data to all the temperature controllers connected.<br>When bit specification of word device is preformed, data are written to the indicating controller of the station No. set for [Host Address] of the communication detail settings.<br>Monitoring and writing with bit specification of word device are performed only for the station No. set for [Host Address].<br>(When inputting data with the numerical input function, the data is written to all the connected temperature controller that is set for [Host Address] is monitored during other than input (display).) | |
| | Station No. | Set is item when monitoring the temperature controller of the specification No.<br>After selecting, set the station No. of the temperature controller in the following range.<br>0 to 99 : The temperature controller of the station No. specified is monitored.<br>200 to 215 : Specify the station No. of the temperature controller to be monitored with the GOT data register (GD). | |

| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 99<br>(If setting a value outside the range above, a device range error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

## 27 RKC temperature controller



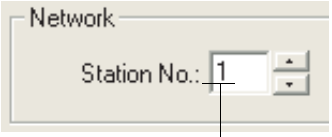

| Items | | Description | Model |
|---|---|---|---|
| Device*1 | | Select the device name to be set.<br>Then, set the device number by 0 to F buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | |
| Network | Station No.*1 | Monitors the temperature controller of the specified station No.<br>0 to 16 : To monitor the temperature controller of the specified station No.<br>100 to 115 : To specify the station No. of the temperature controller to be monitored by the value of GOT data register (GD). | |

| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 16<br>(If setting a value outside the range above, a device range error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

For details of *1, refer to the following.

### *1 Device settings of RKC temperature controller

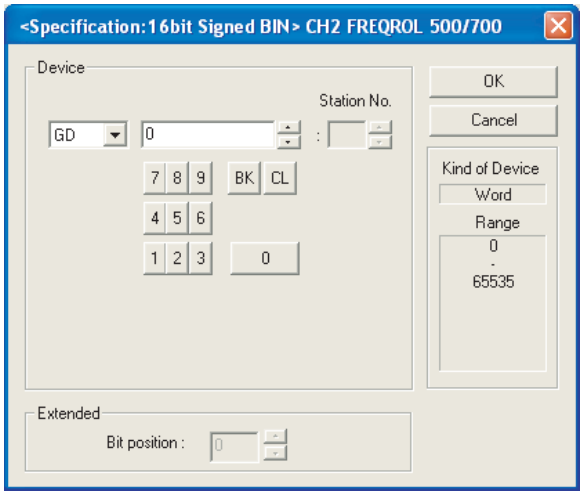
Make the station No. settings for OMRON temperature controller as follows.




Set by a value of "unit address + 1".

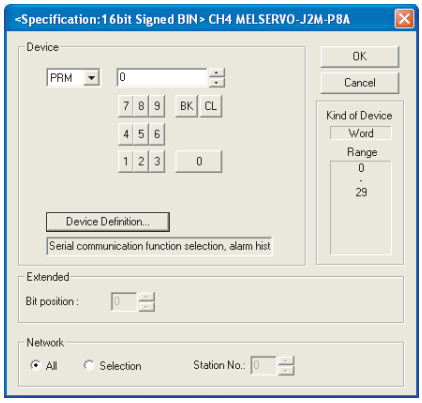
- For unit address 0: Set "1".
- For unit address F: Set "16".

## 28 Inverter




| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to 9 buttons (or by direct input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Station No. | | Monitors the Inverter of the specified station No.<br>0 to 31 : To monitor the Inverter of the specified station No.<br>100 to 115 : To specify the station No. ofs the Inverter to be monitored by the value of GOT data register (GD).<br><br>Station No. / GOT data register (GD) / Setting range<br>100 / GD10<br>101 / GD11<br>102 / GD12<br>: / :<br>: / :<br>113 / GD23<br>114 / GD24<br>115 / GD25<br>Setting range: 0 to 31 (If setting a value outside the range above, a device range error occurs.) | |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name is selected in [Device] in bit device setting.) | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 29 Servo amplifier



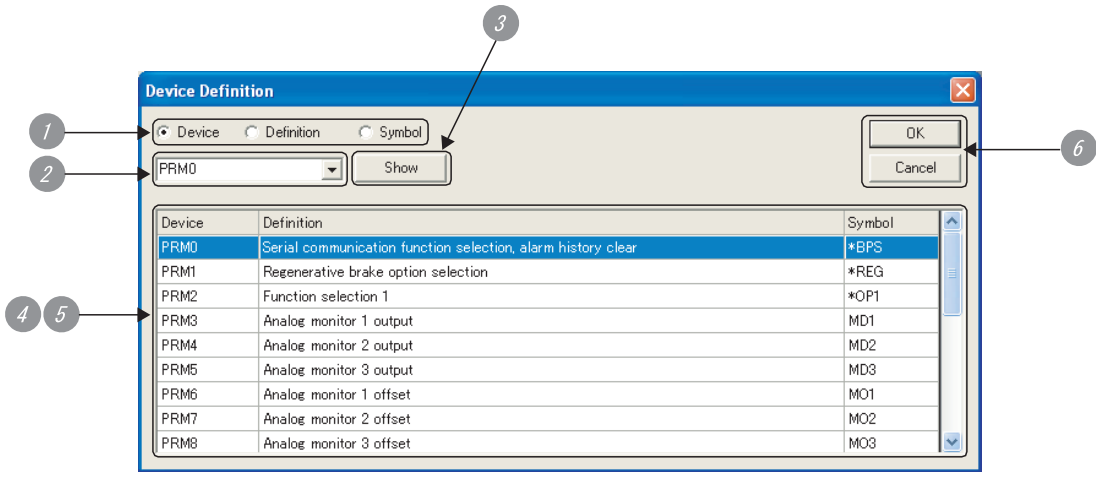

| Items | | Description | Model |
|---|---|---|---|
| Device | | Select the device name to be set.<br>Then, set the device number by 0 to 9 buttons (or direct input it). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kind of Device | | Displays the device type (Bit/Word) selected in [Device]. | |
| Range | | Displays the setting range available for the device selected in [Device]. | |
| Device Definition*1 | | Clicking the Device Definition button displays the dialog box indicating the correspondence between the GOT virtual device for a servo amplifier and the definition of servo amplifier.<br>If select an item on the displayed dialog box, the definition of the servo amplifier is displayed in the text box below. | |
| Extended | Bit position | Set the bit position of the word device to be monitored.<br>(It can be set if the word device name selected in [Device] in bit device setting.) | |
| Network | | Set the monitor target of the set device. | |
| | All | Select this item when writing data to all servo amplifiers connected.<br>During a monitoring, the servo amplifier of Station No. 0 is monitored.<br>When inputting data by Numerical Input, the data is written to all servo amplifiers connected during inputting; the servo amplifier of Station No. 0 is monitored during other than inputting (displaying). | |
| | Selection | Select this item when monitoring the servo amplifier of the Station No. specified.<br>After selecting, set station numbers of servo amplifiers in the following range.<br>0 to 31 : The servo amplifier of the Station No. specified will be monitored.<br>100 to 115 : Specify the Station No. of the servo amplifier to be monitored with a GOT data register (GD). | |

| Station No. | GOT data register (GD) | Setting range |
|---|---|---|
| 100 | GD10 | 0 to 31<br>(If setting a value out of the range above, a timeout error occurs.) |
| 101 | GD11 | |
| 102 | GD12 | |
| :<br>: | :<br>: | |
| 113 | GD23 | |
| 114 | GD24 | |
| 115 | GD25 | |

For details of *1, refer to the following.

*1 Device Definition dialog box

When setting a device on the Device dialog box and click the Device Definition button, the correspondence between the GOT virtual device for a servo amplifier and the definition of the servo amplifier is displayed.




The device can be searched with the servo definition or other items on this dialog box to set a device.

1 Select a key item for searching.

Device : Select this item when searching a device with the virtual device for a servo amplifier used by the GOT.

Definition : Select this item when searching a device with the definition of a servo amplifier.

Symbol : Select this item when searching a device with the symbol of a servo amplifier.

2 Input a device, definition or symbol by which the searching is performed.

Input a device, definition or symbol according to the key item for the searching method specified in 1.

3 Click the Show button.

4 The items that matches to the specified condition are displayed.

The display contents are as follows.

Device : The GOT virtual device for a servo amplifier is displayed.

Definition : The definition of the servo amplifier is displayed.

Symbol : The abbreviated name for the servo amplifier is displayed.

5 Select a device to be set.

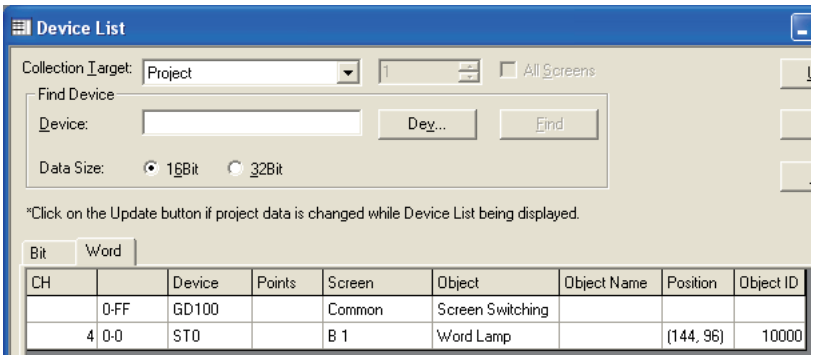
6 Clicking the OK button reflects the device selected by 4 to the Device dialog box.

**Point**

When selecting [All] in the Network setting

The network No. 0 and Station No. FF are displayed on Device List and when printing.

(Device List screen)



# 5.2 Numeric Data that can be Handled with GOT

GOT supports and handles the following 7 types of numeric data.
- 16- or 32-bit signed binary (binary including a sign)
- 16- or 32-bit unsigned binary (binary including no sign)
- 16- or 32-bit BCD (Binary Coded Decimal)
- 32-bit real number (floating point data)

The range of each numeric data type is shown below.
The data range varies depending on the data length (16 or 32 bits).

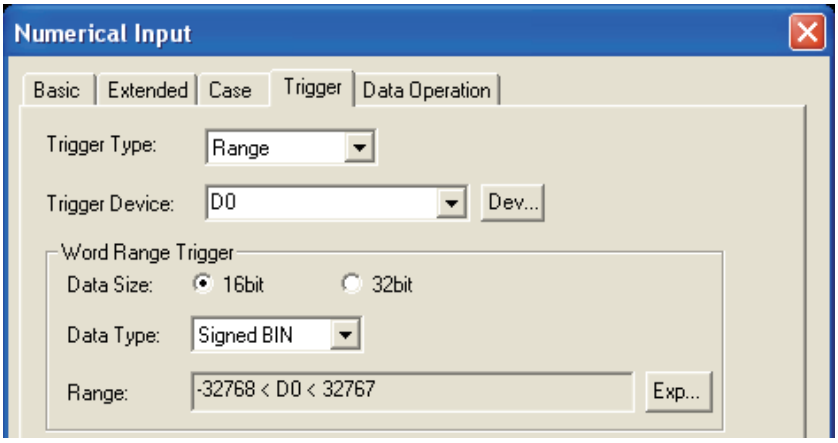
| Data type | Data range | |
|---|---|---|
| | Data length: 16 bits | Data length: 32 bits |
| Signed BIN | -32768 to 32767 | -2147483648 to 2147483647 |
| Unsigned BIN | 0 to 65535 | 0 to 4294967295 |
| BCD | 0 to 9999 | 0 to 99999999 |
| Real number | Not used | Signed 13-digit notation (floating point format only) *1 |

*1: The real number precision is given up to the sixth decimal place. The accuracy of the 7th and later decimal places cannot be guaranteed.
If a number having 7th and later digits is displayed on GOT, there are cases the displayed value differs from the value displayed on GX Developer.
Example: When the value of a real number (floating point data) of the controller is 4.123
Display on GX Developer : 4.123000
Display on GOT (display of up to 6th digit) : 4.123000
Display on GOT (display of up to 13th digit) : 4.1230001449585

For details of real number (floating point data), refer to the following.

QCPU User's Manual (Function Explanation, Program Fundamentals) (Section 3.9.4 Real numbers (floating decimal point data)

The following shows an example where the data length and data type are set on the Trigger tab in the Numerical Input.

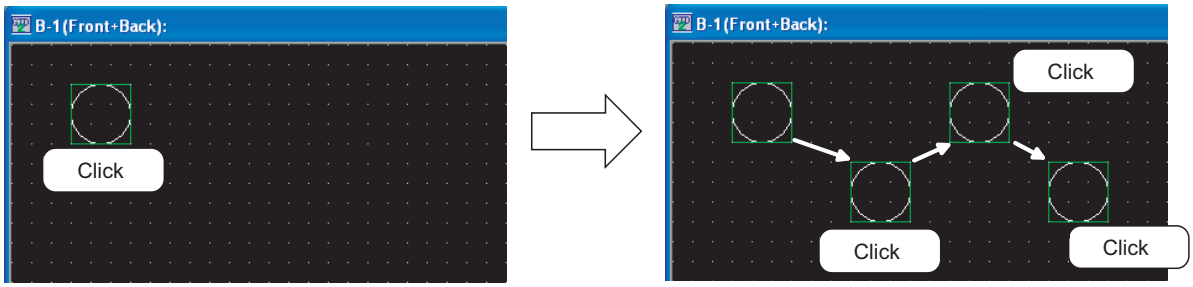


# 5.3 Object Arrangement and Display Image Setting

## 5.3.1 Object arrangement

If the menu/icon for setting object is selected, the cursor will go to arrangement mode (+).
In default setting, clicking on the drawing screen arranges an object. When continuously clicked on the screen, multiple same type objects will be continuously arranged.

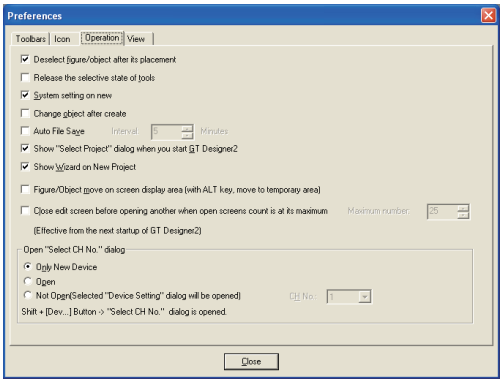
The arrangement mode can be released by right-clicking the mouse or using the ESC key.



## 1 To change the object arrangement method

Object arrangement method can be changed in the Preferences dialog box.
(Select [Project] → [Preferences] from the menu to display the dialog box.)
For details of the Preferences dialog box, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual




Preferences dialog box

Toolbars | Icon | **Operation** | View

| Items | Description | Model |
|---|---|---|
| Figure/Object deselect-after create | Checked : After arranging objects, the selected status (status with handle) is reset.<br>Not checked : With the selected status (status with handle), figures/objects are arranged on the drawing screen. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Tool de-select after use | Checked : After setting figures/objects, the tool selected status is reset. It is convenient to arrange different figures/objects.<br>Not checked : After setting figures/objects, the selected status remains active. It is convenient to arrange the same figures/objects continuously. | |
| System setting on new | Checked : The system settings dialog box (GOT type, controller type, etc.) appears in creation of a new project.<br>Not checked : The system settings dialog box (GOT type, controller type, etc.) does not appear in creation of a new project. | |
| Change object after create | Checked : After arranging objects on the drawing screen, the settings dialog box automatically appears.<br>Not checked : After arranging objects on the drawing screen, the settings dialog box does not automatically appear. | |
| Auto File Save | Checked : File is automatically saved.<br>Saving interval (5 to 720) is set.<br>Not checked : File is not automatically saved. | |
| Show "Select Project" dialog when you start GT Designer2 | Checked : When the GT Designer2 is started, the project selection dialog box (New, Open, etc.) appears.<br>Not checked : When the GT Designer2 is started, the project selection dialog box (New, Open, etc.) does not appear. | |
| Show wizard on new project | Checked : When creating a new project, the wizard screen appears.<br>Not checked : When creating a new project, the wizard screen does not appear. | |
| Figure/Object move on screen display area (with ACT key, move to temporary area.) | Checked : Allows movement of figure/object to the temporary area.<br>Not checked : Does not allow movement of figure/object to the temporary area. | |

(Continued to next page)

Toolbars | Icon | **Operation** | View

| Items | Description | Model |
|---|---|---|
| Close edit screen before opening another when open screens count is at its maximum | Set the maximum number of screens to be displayed (1 to 25 screens).<br>The setting is enabled on the next start-up of GT Designer2. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Open "Select CH No." dialog | It is possible to set display/hide for the Select CH No. dialog box when setting devices.<br>Only New Device<br>: The Select CH No. dialog box is displayed only when setting a new device.<br>Open : The Select CH No. dialog box is always displayed.<br>Not Open (Selected "Device Setting" dialog will be opened)<br>: When a number ("1" to "4") is set for CH No., the device setting dialog box of the specified channel No. is displayed. If "Latest" is set for CH No., the device setting dialog box of the same channel No. as that of the previously displayed device setting dialog box is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 5.3.2 Object shape setting

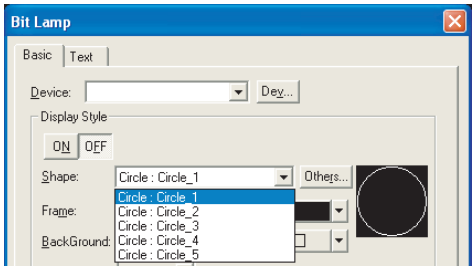
Frames, i.e., shapes can be set to objects in order to make distinction between display images and ranges of objects such as touch switches, lamps and others.

### 1 Setting procedure

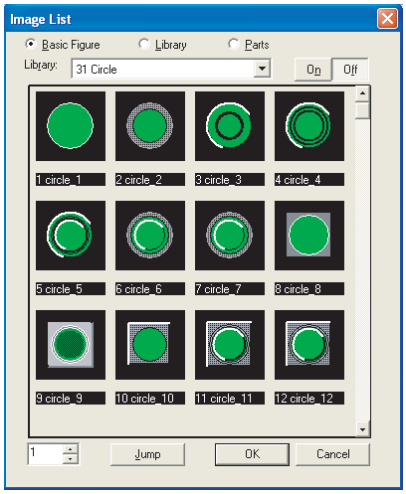
Set the shape in the object setting dialogue box.

The following explains the setting procedure of shape with the example of bit lamp.

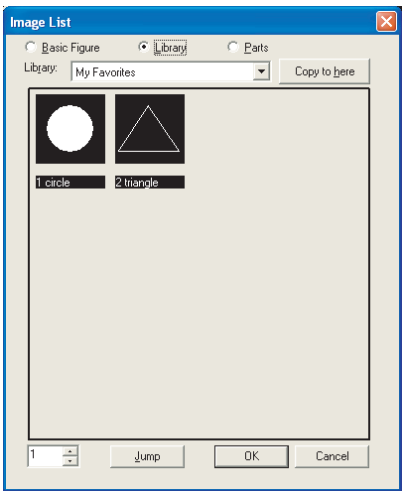
1. Five basic shapes can be selected in the Basic tab.
   To select other shapes than basic ones, click on the Others button.



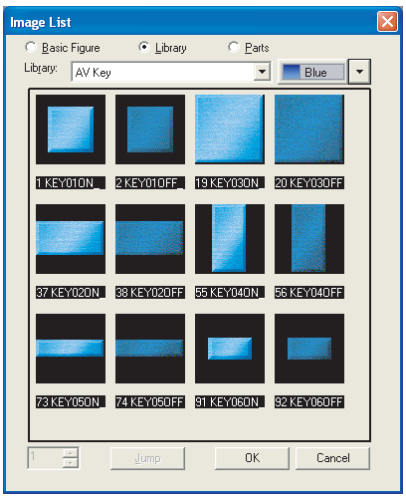

2. Click on the Others button to display the "Image List" dialogue box. Select one shape among them.




(Screen selecting [Basic Figure])




(Screen when selecting [Library] (my favorites))




(Screen when selecting [Library] (except my favorites))

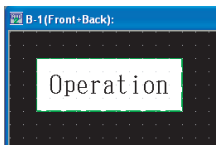
## Basic Text

| Items | Description | Model |
|---|---|---|
| Basic Figure, Library*1*2, Parts (Only for lamp function and touch switch function) | Select the shape for an object.<br>Basic figure : Basic shapes that have been registered for each object<br>Library : Shapes that have been registered as library (My favorite, User defined Libraries, System Libraries).<br>Parts : Figures that have been registered as parts | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Library | Switch the basic shape type or library type. | |
| On/Off (Only for lamp function and touch function) | The buttons are displayed when [Basic Figure] is selected.<br>These buttons are used to switch the shapes displayed at the time of ON/OFF.<br>Mixed setting of basic figures, library figures, and parts is not allowed.<br>(Setting of a basic figure for ON shape and a library figure for OFF shape is not possible, for example.) | |
| Copy to here | Click this button to register only the figure of the selected object to My Favorites or User Library.<br>For details of the Copy to here button, refer to the following manual.<br>☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 10.3 Creating Original Library) | |
| Blue | The item is displayed when [Library] (except my favorites) is selected.<br>Switch colors of the displayed figure. | |
| Image List | Select the shape for an object. | |
| 1 | Set the No. of shape to be displayed. Click on the Jump button to switch the shapes. | |

For details of *1, *2, refer to the following.

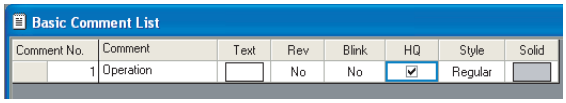
### *1 Use of high quality font

When the high quality font is included in the library used as the figures of the lamp display or touch switch function, also make the following setting (1) or (2).
Adjust the high quality font type (example: 16dot HQ Mincho), too.
The text is not displayed as the high quality font on the GOT screen without the above setting.
Example: When displaying 16dot HQ Mincho

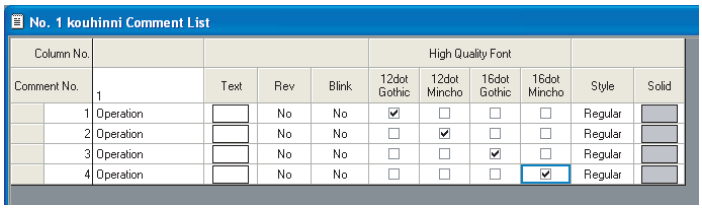



(1) Register to comment
Register the same texts used the high quality font as a comment of high quality font.
It is not necessary to display the registered comment.

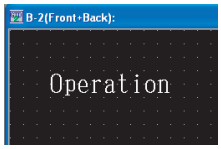
(a) If HQ is specified for the basic comment, the 16dot HQ Mincho font is used.




(b) If HQ font is used for the comment group, a high quality font type can be specified.



(2) Arrange text on screen
Arrange the same texts used the high quality font on the screen as a text of the high quality font.
It is not necessary to display the registered comment.
It is recommended to create a screen to arrange the high quality font.




*2 Precautions for setting switch and lamp shapes

(1) Cautions for changing switch/lamp shape
When switch/lamp shape is changed, the ON/OFF shapes may not be switched automatically depending on the shape used as switch/lamp. Make sure to check whether the ON/OFF shape can be automatically switched before changing the switch/lamp shape, and make the relevant setting as necessary.
Example: Lamp (Bit)

Shape as basic figure → Shape as basic figure

ON shape is changed

If the ON shape is changed, the OFF shape will be changed automatically.

Shape within library → Shape within library

ON shape is changed

Even if the ON shape is changed, the OFF shape will not be changed automatically.

(2) Precautions for setting piping figure registered in library for switch and lamp shapes
When a piping figure registered in the library is set for switch and lamp shapes, the GOT may not display the piping figure depending on the object size.
In that case, resize the object so that the GOT can display the piping figure.

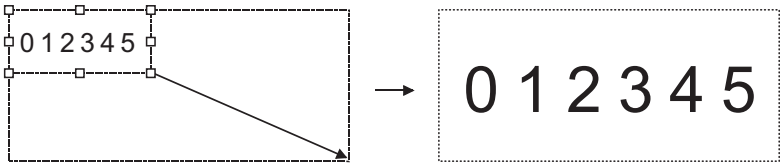
## 5.3.3 Object size change

This section explains how to change the size of arranged object.

### 1 Object size change

(1) Method of changing size

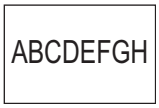
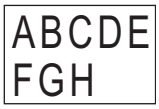
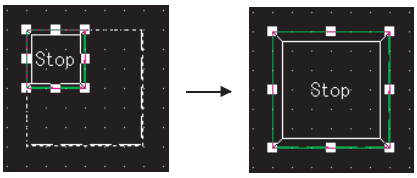
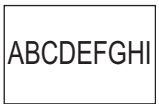
1. Select the object to be changed in size.
2. Position the cursor over the sizing handles, click and drag it to change the object size.




**Remark** The size of some objects cannot be changed using the above method.

The size of data list and alarm history is determined according to the text size set on the corresponding basic tab. Therefore, changing the size using the above method is not applicable.
To change the object size, open the setting dialogue box and change the text size within the basic tab.

(2) Text size
The text size changes with the object size.
The changing details are different according to object types.

| Change of text size | Object | Details of change |
|---|---|---|
| Changeable | Numerical display<br>Numerical input | The text size is enlarged 0.5 to 8 times from the original object size.<br>  <br> |
| | ASCII display<br>ASCII input | The text size is enlarged 0.5 to 8 times from the original object size.<br>  <br> |
| Unchangeable | Touch switch<br>Lamp<br>Alarm list<br>Comment display<br>Data list<br>Alarm history<br>Trend graph<br>Line graph<br>Bar graph<br>Statistics graph<br>Scatter graph<br>Panel meter | The text size can be changed by setting text size from the dialog box of each object.<br>Example: Touch switch<br>  <br><br>Example: Bar graph<br>  <br> |

**Point**

Character size of touch switch, lamps, panelmeters

The character size of the text displayed on a touch switch or lamp (When [Text] is set for [Text Type]) and the character size of panelmeter are changed along with the object size when [Adjust Direct Text Size] selected from [Edit] of GT Designer2 is checkd.

(3) Automatic adjustment of text strings on the GOT

When [Text Type] is set to [Comment Grope] for the text string to be displayed on an object, setting of [Adjust Text Size] is enabled.

By setting [Adjust Text Size], the character size of the text string will be automatically adjusted along with the display frame when the text string is not fit in the display frame.

In addition, the minimum size for automatic text size adjustment can be set with [Minimum Size].

The following shows objects for which [Adjust Text Size] can be set.

| Object | | | |
|---|---|---|---|
| Touch switch, | Lamp, | Comment display, | Advanced alarm |

The following explains operations when [Adjust Text Size] is checked and not checked.

| When the text string is not fit in the display frame | Checked | Not checked |
|---|---|---|
| Display frame<br>Text string displayed<br>ABCDEFGH | ABCDEFGH<br>When the text string is not fit in the display frame, the character size is adjusted automatically so that the text string is fit in the display frame. | ABCDE<br>FGH<br>Line feed is performed for the text string. |
| Display frame<br>Text string displayed<br>ABCDEFGHIJK | ABCDEFGHI<br>When the text string is not fit in the display frame even with the set minimum text size, the text string is aligned to the left and overflowed text part are not displayed. | ABCDE<br>FGHIJ<br>When the text string is not fit in the display frame even when line feed is performed, the overflowed text part is not displayed. |

**Remark**

When high quality fonts are set for comments

When the character size is adjusted to an odd multiple of the font size by automatic text size adjustment, the comment will be displayed in a standard font even if high quality font is set for the comment.

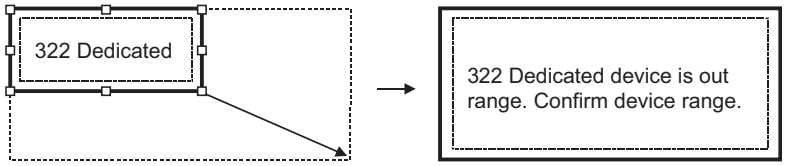
Example) When 16-doc HG Gothic is set as font

| Multiple | Charagter size | Display |
|---|---|---|
| Even multiple | 16 × 2 = 32 dots, 16 × 4 = 64 dots, ... | High Quality font |
| Odd multiple | 16 × 3 = 48 dots, 16 × 5 = 80 dots, ... | Standard font |

## 2 Change size of object with shape

(1) Method of changing size

1. Select the object to be changed in size.
2. Position the cursor over the sizing handles, click and drag it to change the object size.




**Hint!**

(1) Shape kinds

Two shape kinds are available as below.

(a) Shape of fixed width (when enlarged)

In the case of a switch

In the case of numeric display

(b) Shape of varying width (when enlarged)

In the case of a switch

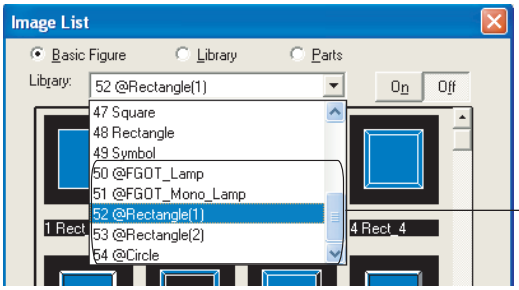
In the case of numeric display

In both cases (a) and (b), the width of shape is narrowed corresponding to the reduced shape size when the shape is reduced.

(2) Selecting shape

A shape can be selected in the image list dialog box of each object.

Symbol @ is prefixed to the library name for shapes that have the fixed width (case (a) in (1) above).




The shape for which the width is fixed when the shape size is enlarged (case (a) in (1) above).

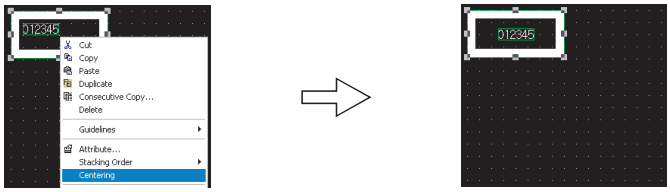
(2) Misalignment of object and shape

Some objects, to which shape is set, may cause the following phenomena;

When the whole object size is changed, i.e., enlarged by click and drag, only the shape is enlarged, but the object remains at the original position, resulting in misalignment between the object and shape.

(a) Center the object in its shape

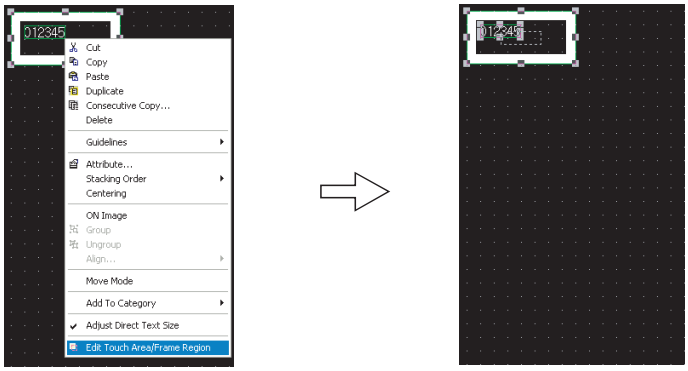
Right click on the object to realign the shape with the object.




Right-click the mouse and select [Centering] in menu.

(b) Move the object to any position within the shape

The position of object and shape can be changed separately as instructed below.

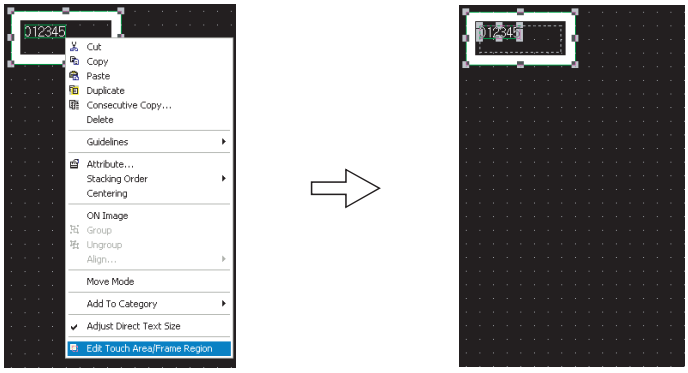



Right-click the mouse and select [Edit Touch Area/Frame Region] in menu.

Drag the object to align it with the shape.

(c) Change the size of object and shape separately

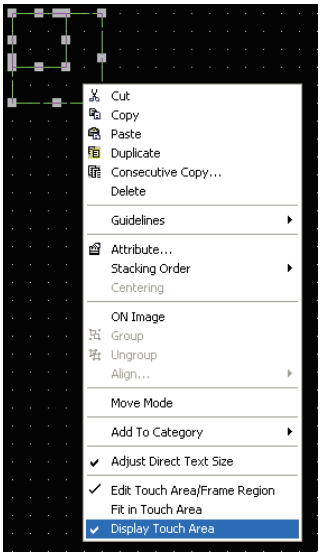
The size of object and shape can be changed separately as instructed below.



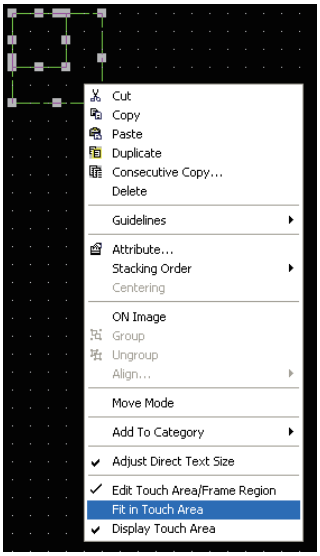

Right-click the mouse and select [Edit Touch Area/Frame Region] in menu.

Drag the object to change its size.

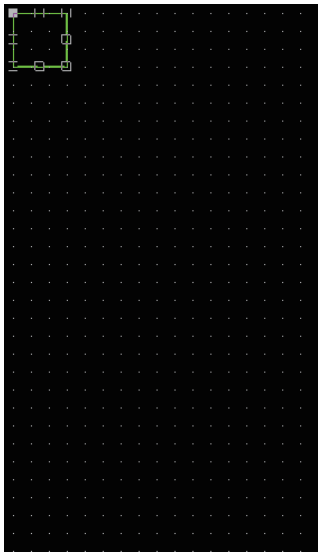
(3) Fitting touch switch valid area in object frame
A touch switch valid area can be fit in an object frame.




Right-click on an object, and then check [Display Touch Area].




Right-click on an object, and then select [Fit in Touch Area].



The touch switch valid area is fit in the object frame.

# 5.4 State Setting

With this setting, the ON/OFF status of bit device can be changed as well as the color of object shape according to the word device value.

- Word device value being monitored by object function.
- Bit device ON/OFF for display change.
- Word device value for display change.

The objects compatible with state setting and the conditions for display change are listed in the following table.

○ : Applicable × : N/A

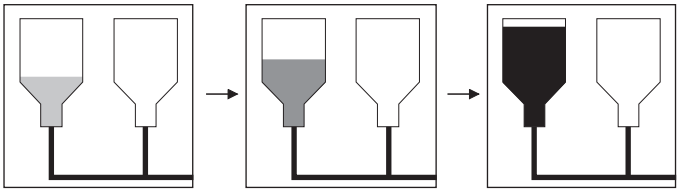
| Object type | Conditions for display changing | | |
|---|---|---|---|
| | Word device value being monitored | Display changing device | |
| | | Bit device ON/OFF | Word device value |
| Numerical display<br>Word parts display<br>Parts movement (word)<br>Word lamp | ○ | ○ | ○ |
| Numerical input<br>Data list<br>Word comment<br>Level<br>Panel meter<br>Scatter graph | ○ | × | ○ *1 |

*1 The word device value being monitored must be set as the condition for display change.

## 1 Display changes according to the word device value being monitored.

Example: Level display function

- Word device D100 being monitored.



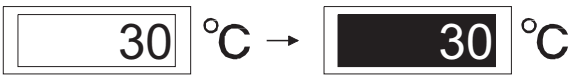
D100=40 D100=60 D100=80

Display color changes according to the word device value being monitored.

## 2 Display changes according to word device ON/OFF.

Example: Numerical display function

- Bit device D500 (temperature) being monitored
- Bit device M10 (ON in error occurrence) for display changing



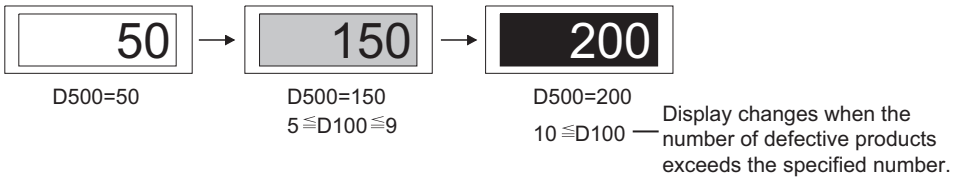

D500=30

D500=30
M10 ON — Display changes due to an error occurrence.

### 3 Display changes according to word device value

Example: Numerical display function

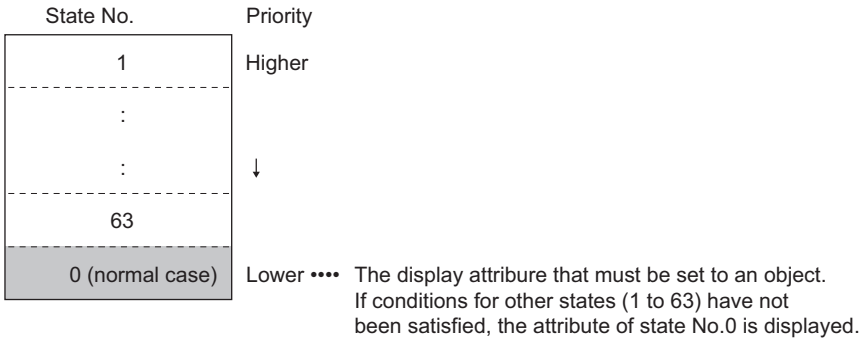
- Word device D500 (production output) being monitored.
- Word device D100 (defective products) for display changing



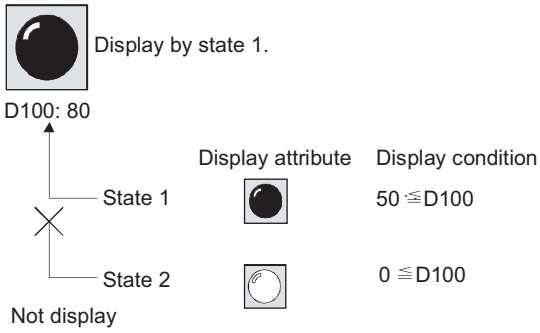

## 5.4.1 Display priority

Up to 64 (0 to 63) states can be set to one object.
When display change conditions overlap, the state of the smaller No. will be displayed with the priority.

[Display priority]




Example: When conditions for displaying state 1 and 2 occur simultaneously.

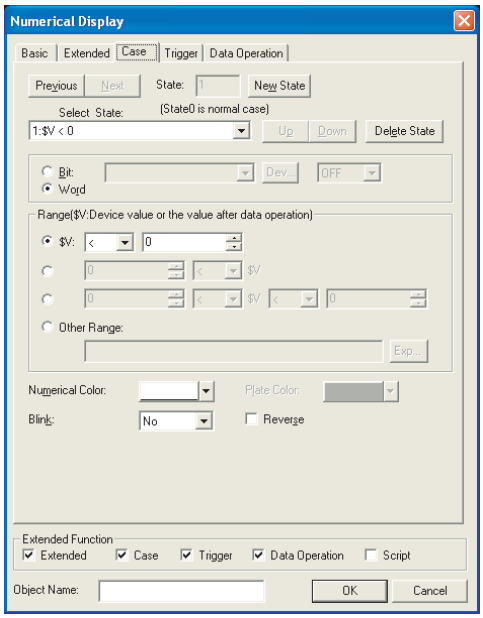



## 5.4.2 Arrangement and settings

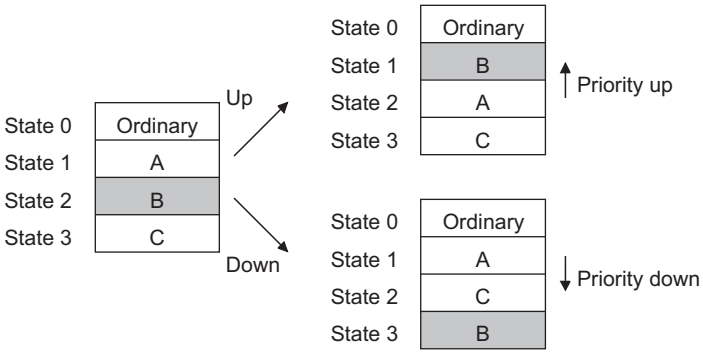
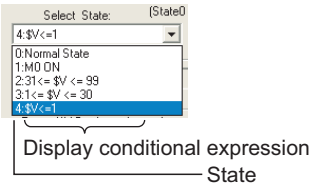
State is set for each object function.
For details, refer to the arrangement and setting of the object.

## 5.4.3 Setting items

This section explains the setting items for state setting with the example of numerical display.

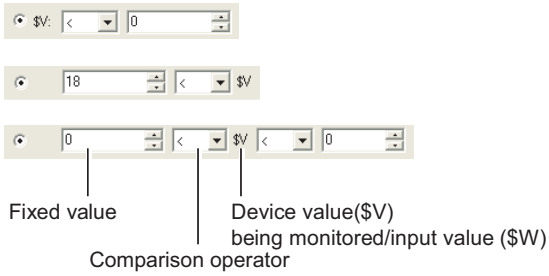



Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | New State | Create a new state. | |
| | Delete State | Delete a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority level of the current state.<br>Example: Changing the priority level of "B" in state 2 with the [Up]/[Down] buttons.<br>  <br> | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab.<br>  <br> | |

(Continued to next page)

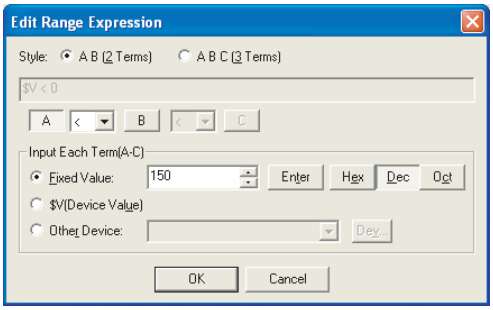
Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Device | Select the display change conditions according to state.<br>Bit : Select it when changing the display according to the ON/OFF status of bit device. After selecting "Bit", set the bit device and device status (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>Word : Select it when changing the display according to the value of word device. After selecting [Word], set a condition expression for the word device value in [Range]. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Range | Set the value of word device range to change the display using a conditional expression.<br>• Select the conditional expression from the following patterns.<br>Combine device value ($V, $W) and fixed value to set the conditional expression.<br>  <br><br>• When setting the operation expression other than the above 3 patterns.*1<br>User-setting conditional expression.<br>Click on the [Range] button after selecting [Others].<br>For user-setting conditional expression, the word device for display change can be set as a condition.<br> <br> | |
| 0 (Fixed value) | Input the value in decimal. | |
| < (Comparison operator) | Set the comparison operator of conditional expression.<br>< : The left value is smaller than right value.<br>== : The left value is equal to the right value.<br><= : The left value is smaller than or equal to the right value.<br>!= : The left value is not equal to the right value. | |
| $V ($W) | Indicates the device value monitored using the object.<br>Indicates the operation value when data operation function is used.<br>(The input value of numerical input function is expressed as $W.) | |
| Exp... *1 | Used to display the range input dialogue box. | |
| Numerical Color | Set the color of numeric value when display conditions of the state are satisfied. | |
| Plate Color | Select the plate color when display conditions of the state are satisfied.<br> <br> | |
| Blink | Select the blinking pattern of numerical value when display conditions of state are satisfied.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Reverse | Check this item to reverse the numerical value when display conditions of state are satisfied. | |

For details of *1, refer to the following.

*1 Setting the Edit Range Expression dialog box

This dialog box is used to set the value range of word device used for state.

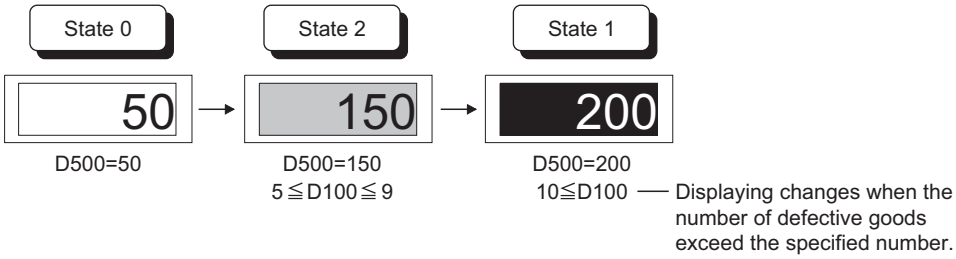



| Items | Description | Model |
|---|---|---|
| Style | Select the format of the conditional expression.<br>A B (2 items) : Display condition range is set using two expressions.<br>A B C (3 items) : Display condition range is set using three expressions.<br>Example:<br>• $V == 500<br>• 10 <= $V($W) <= D50<br>Value of the word device for dispay change.<br>Set the comparison operator (<,<=,==,!=) of the conditional expression.<br>$V: Indicate the value of the device monitored using object.<br>It indicates operation value when data operation function is used.<br>$W:Indicate the input value of the data input function.<br>Fixed value directly set by user (hexadecimal system/decimal system/ octal system) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| A | Click the 0 to C button to set the fixed value or variable at [Input Each Term[A-C]]. | |
| < | Set the comparison operator of conditional expression.<br>< : The left value is smaller than the right value.<br>== : The left value equals the right value.<br><= : The left value is smaller than or equivalent with the right value.<br>!= : The left value doesn't equal the right value. | |
| Input Each Term (A-C) | Set the description of condition expression items.<br>Fixed value : Set the fixed value.<br>Then, input the numeric value and click on the Enter button.<br>The data type of numeric value can be selected with the Hex Dec Oct buttons.<br>$V, $W (Device value) : Specify the word device that is set as monitoring and writing target by using the object.<br>Other device : Set the word device for display change.<br>(☞ Section 5.1 Device Setting) | |

## 5.4.4 Example of state setting operation

This section explains the state setting operation with the example of numerical display setting.

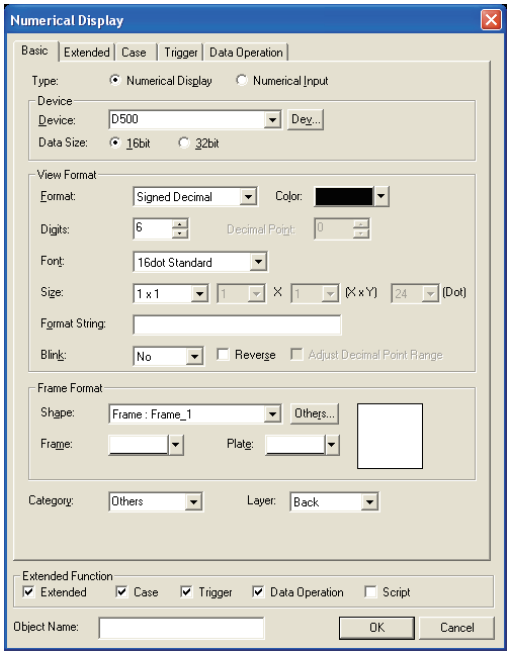
- The monitor word device D500 (productivity)
- The word device for display changes D100 (the number of defective goods)




1 Set state 0.

Set state 0 on the Basic tab.

The display attribute set on the Basic tab is displayed except when the conditions set for state 1,2 are applied.




(1) Setting the conditions of displaying state 0 is not required.

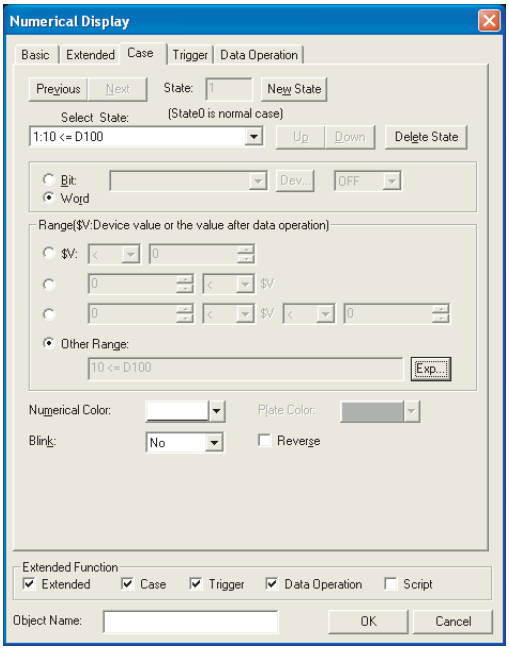
(2) Set the display attribute of state 0.

The display attribute set here is changed when the conditions for each state are satisfied.

- Color : Black
- Blink : No
- Reverse : Unchecked
- Plate : White

### 2 Set state 1

Set state 1 on the case tab.




(1) Create state 1 by clicking [New State].

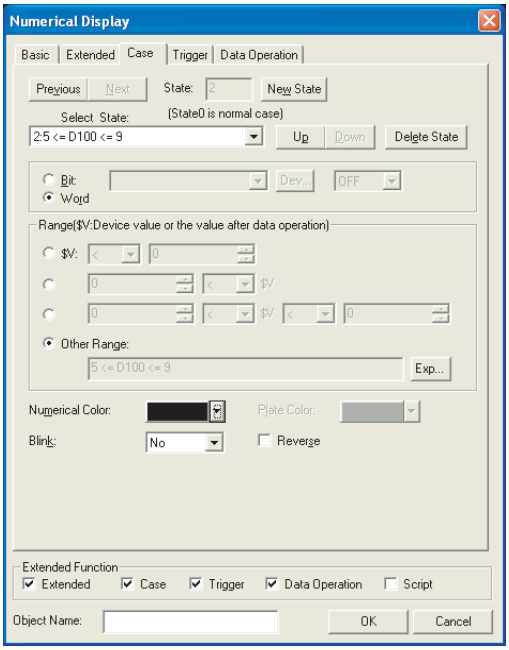
(2) Set the conditions displaying state1.

- Others (10<=D100)

(3) Set the display attribute of state1.

- Numerical Color : White
- Blink : No
- Reverse : Unchecked
- Plate color : Black

### 3 Set state 2.




(1) Click on the [New State] to create State2.

(2) Set the conditions of displaying State2.

- Others (5<=D100<=9)

(3) Set the display attribute of State2.

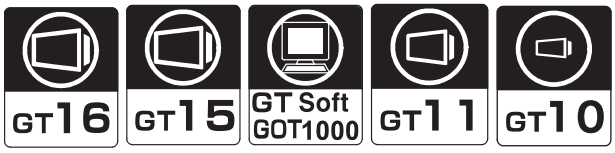
- Numerical Color: Black
- Blink : No
- Reversed : Unchecked
- Plate Color :Gray Color

## 5.4.5 Precautions

### 1 Precautions for drawing

Do not set the conditional expressions that cannot be satisfied (e.g. "100<$V<10").
GT Designer2 does not check whether the conditional expressions are applicable or not.
If this kind of conditional expression is set, the corresponding state will not be displayed during monitoring by GOT.

# 5.5 Trigger Setting



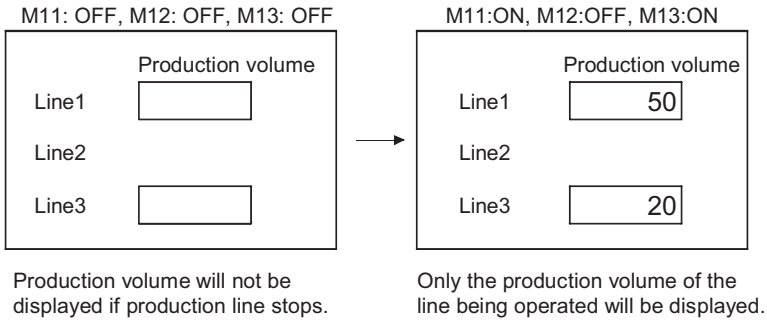

The following triggers can be set for monitoring and writing operations of each object function.

(1) Trigger (for display)
Set for the object that monitors device.
When the trigger is not satisfied, the object will stop device monitor or disappear.

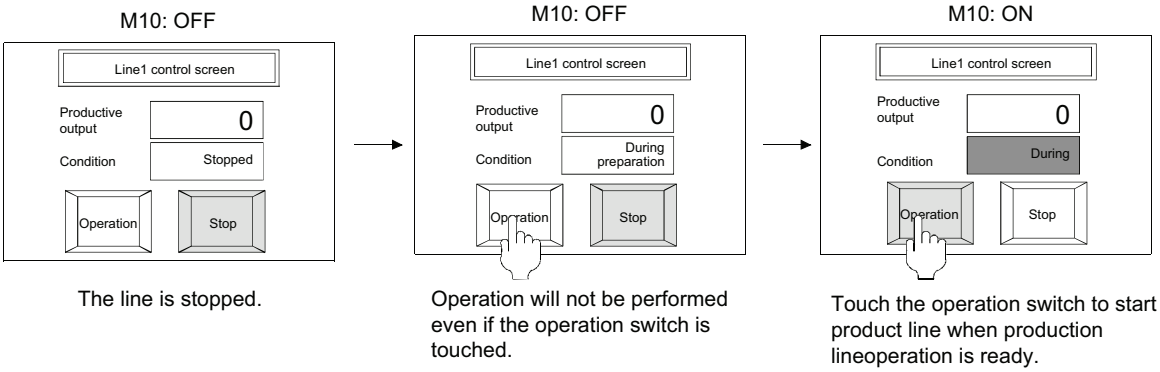
(2) Trigger (for write)
Set for the object that writes to device.
When the trigger is not satisfied, the object operation will be disabled and/or the display will be held.

(3) Trigger (for script execution)
Set for the script function.
When the trigger is not satisfied, the script is not executed.

Example 1: Only the numerical display functions that are monitoring the production line are displayed.
Production start signal (line1: M11, line2: M12, line3: M13)




Example 2: Set an interlock device for a touch switch
Line operation ready signal: M10



## 1 About triggers

Triggers and actions that can be set are shown below.

### (1) Triggers (for display and action)

| Trigger type | Execution trigger | Actions when condition is satisfied |
|---|---|---|
| Ordinary | None | <Display condition><br>• The device is monitored at the monitor sampling of the GOT.<br><Action condition><br>• The action set to the object can be executed at the monitor sampling of the GOT. |
| ON | ON<br>OFF | <Display condition><br>• When trigger is satisfied : The device is monitored at the monitor sampling of the GOT.<br>• When trigger is not satisfied : Select to check or not "Hold Display" as the display condition setting.<br>Checked :The previous object display is retained *2.<br>Not checked:The object display is erased *3.<br><Action condition><br>• When trigger is satisfied : The action set to the object can be executed.<br>• When trigger is not satisfied : The previous object display is retained.<br>To erase the object display, set "Action when condition fail" in the Auxiliary setting.*3 |
| OFF | ON<br>OFF | |
| Rise | ON<br>OFF | <Display condition><br>• When trigger is satisfied : The device is monitored only once.<br>• When trigger is not satisfied : The previous object display is retained.<br>To monitor the device and display the object at screen switching, set "Initial display" in the display condition. |
| Fall | ON<br>OFF | |
| Sampling | Sampling | <Display condition><br>• When trigger is satisfied : The device is monitored at each preset sampling.<br>Setting range: 0.1 to 3600 seconds (every 100ms), 1 to 3600 seconds (every one second)<br>• When trigger is not satisfied : The previous object display is retained. |
| Range | Word device value | <Display condition><br>• When trigger is satisfied : The device is monitored at the monitor sampling of the GOT.<br>• When trigger is not satisfied : The previous object display is retained *2.<br><Action condition><br>• When trigger is satisfied : The action set to the object can be executed.<br>• When trigger is not satisfied : The previous object display is retained *2.<br>To erase the object display, set "Action when condition fail" in the Auxiliary setting *3. |
| Multi bit trigger*1 | Logical operation result of ON/OFF condition of the set multi bit device*1 | |
| ON Sampling | Cycle<br>ON<br>OFF | <Display condition><br>• The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling.<br>• When trigger is satisfied : The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling.<br>Setting range: 0.1 to 3600 seconds (every 100ms), 1 to 3600 seconds (every one second)<br>• When trigger is not satisfied : The previous object display is retained. |
| OFF Sampling | Cycle<br>ON<br>OFF | |

For details of *1 to *3, refer to next page.

*1 Multi bit trigger

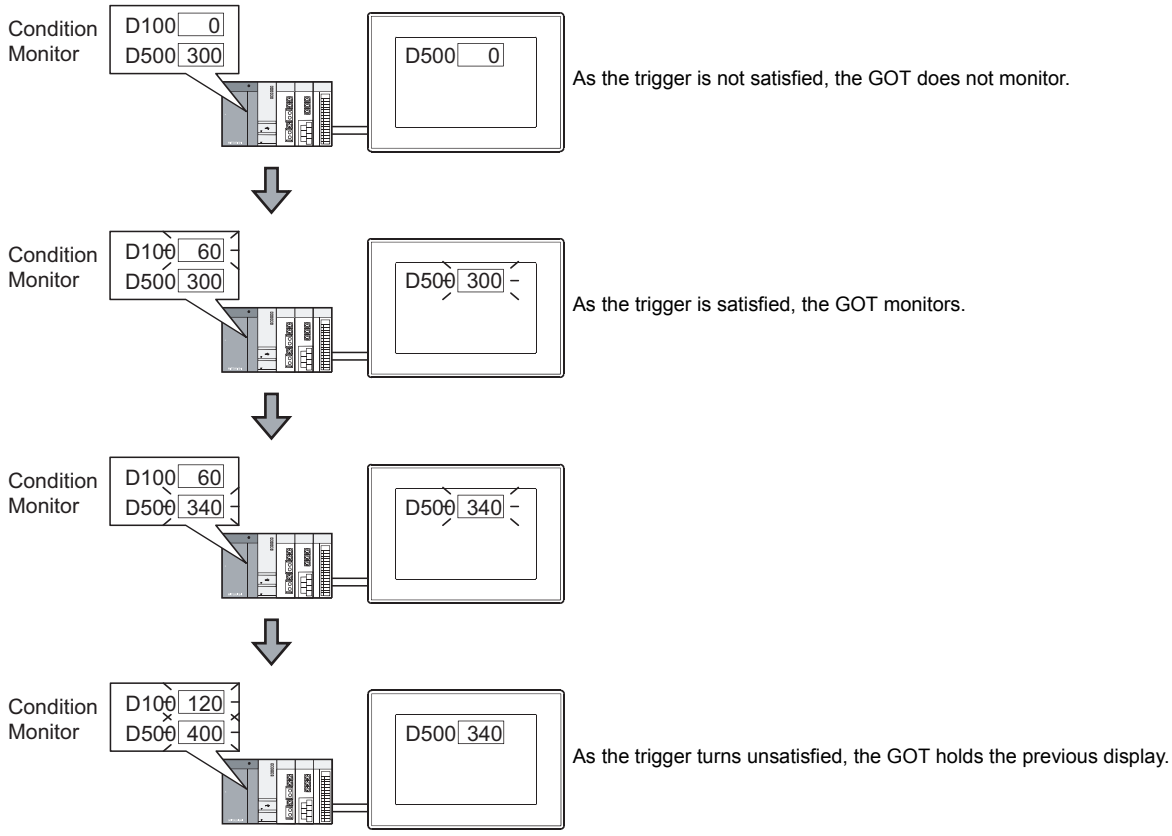
As trigger, 2 to 8 bit devices and its ON/OFF statuses.
Operate logical AND or logical OR based on the preset ON/OFF status of the multi bit device.
Example: When M10, M11 and M12 are used as the display condition

Area where trigger is satisfied ○ : Trigger satisfied × : Trigger not satisfied

| Display condition | M10 is ON | M11 is OFF | M12 is ON | Operation result | |
|---|---|---|---|---|---|
| | | | | Logical AND | Logical OR |
| Upper: ON/OFF status<br>Lower: Satisfied/<br>Not satisfied | OFF<br>× | OFF<br>○ | OFF<br>× | × | ○ |
| | ON<br>○ | OFF<br>○ | OFF<br>× | × | ○ |
| | OFF<br>× | ON<br>× | OFF<br>× | × | × |
| | ON<br>○ | ON<br>× | OFF<br>× | × | ○ |
| | OFF<br>× | OFF<br>○ | ON<br>○ | × | ○ |
| | ON<br>○ | OFF<br>○ | ON<br>○ | ○ | ○ |
| | OFF<br>× | ON<br>× | ON<br>○ | × | ○ |
| | ON<br>○ | ON<br>× | ON<br>○ | × | ○ |

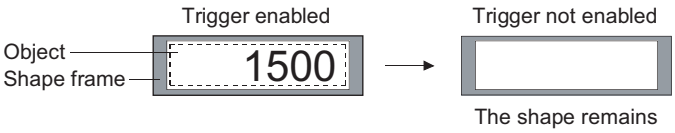
*2 Trigger and display on GOT

When the trigger is not satisfied, GOT does not monitor.
If the trigger is satisfied once and then unsatisfied, the previous display is held.
Example: • Condition: range (D100: 50 to 100) • Display: D500 is numerically displayed




*3 Object placed into shape

The object shape will remain when the object is erased.



### (2) Triggers for script execution

| Trigger type | Execution trigger | Actions when trigger is satisfied |
|---|---|---|
| Ordinary | Executed always | <Trigger for executing script><br>• When the trigger is satisfied : The script is executed.<br>• When the trigger is not satisfied : The script is not executed. |
| ON | ON<br>OFF | |
| OFF | ON<br>OFF | |
| Rise | ON<br>OFF | |
| Fall | ON<br>OFF | |
| Sampling | Sampling | |
| ON sampling | Sampling<br>ON<br>OFF | |
| OFF sampling | Sampling<br>ON<br>OFF | |
| View change | When the object display changes. | |
| Synchronized display trigger | The same trigger for display as set for object | |
| Key code input | When the key code below is input.<br>• 0008H (the least significant digit is cleared and entire data is shifted right by 1 digit.)<br>• 0088H (the contents being input are cleared.)<br>• 002DH (the code is inverted.)<br>• 002EH (".")<br>• ASCII code, shift JIS, Kanji code | |
| At the establishment of input | When the input data is written to a device by key code 000DH. | |
| Device writing | When the bit SET / word SET is executed by a touch switch. | |

## 2 Objects that support trigger condition

The object types that can be set by a trigger are listed below.
The trigger type varies according to object types.

### (1) Trigger (for display)

○ : Applicable × : N/A

| Object type | Trigger type | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | Range | Multi Bit trigger | ON Sampling/ OFF Sampling |
| • Numerical display<br>• Data list display*1<br>• ASCII display<br>• Comment display<br>• Alarm (User alarm display)<br>• Parts display*2<br>• Parts movement*3<br>• Level display<br>• Line graph<br>• Bar graph<br>• Statistics graph | ○ (Default) | ○ | ○ | ○ | ○ | ○ | × |
| • Trend graph<br>• Line graph*4<br>• Scatter graph | × | × | ○ | ○ (Default) | × | × | ○ |
| • Alarm (User alarm display)*5 | × | × | × | ○ (Default) | × | × | × |
| • Alarm (Advanced alarm display) | ○ (Default) | ○ | × | × | × | × | × |
| • Historical trend graph | ○ (Default) | × | × | × | × | × | × |

*1 When conditions are not met in the data list, the comment and data are deleted while the frame and title are displayed.
*2 The displaying condition of the fixed parts display is rise/fall only.
When conditions are not met in the parts display, the object is deleted only when the display mode is set to "replace" (hold display is not specified). In other cases, the fixed parts are displayed.
*3 When conditions are not met in the parts movement display, the object is displayed if either (or both) of the locus and hold display settings is specified.
*4 [Locus] function has been set.
*5 [Store Memory] function has been set using alarm (user alarm display).

### (2) Trigger (for write)

○ : Applicable × : N/A

| Object type | Trigger type | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | Range | Multi bit trigger | ON Sampling/ OFF Sampling |
| • Touch switch<br>• Numerical input<br>• ASCII input | ○ (Default) | ○ | × | × | ○ | ○ | × |
| • Logging function | × | × | ○ (Default) | ○ | × | × | ○ |

(3) Triggers for script execution

○ : Applicable × : N/A

(a) Project script and screen script

| Object type | Trigger type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | ON sampling/ OFF sampling | View change | Synchronize display trigger | Key code input | Input fixation | Device writing |
| Project script and screen script | ○ | ○ | ○ | ○ | ○ | × | × | × | × | × |

(b) Object script

• Input object script

| Object type | Trigger type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | ON sampling/ OFF sampling | View change | Synchronize display trigger | Key code input | Input fixation | Device writing |
| • Numerical input<br>• ASCII input | ○ | ○ | ○ | ○ | ○ | × | × | ○ | ○ | × |

• Display object script

| Object type | Trigger type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | ON sampling/ OFF sampling | View change | Synchronize display trigger | Key code input | Input fixation | Device writing |
| • Numerical display<br>• Numerical input<br>• ASCII display<br>• ASCII input<br>• Comment display<br>• Parts display<br>• Parts movement<br>• Level display<br>• Trend graph<br>• Line graph<br>• Bar graph<br>• Statistics graph<br>• Scatter graph | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | × | × |
| • Lamp display<br>• Clock display (date display and time display)<br>• Panel meter | ○ | ○ | ○ | ○ | ○ | ○ | × | × | × | × |

• Switch object script

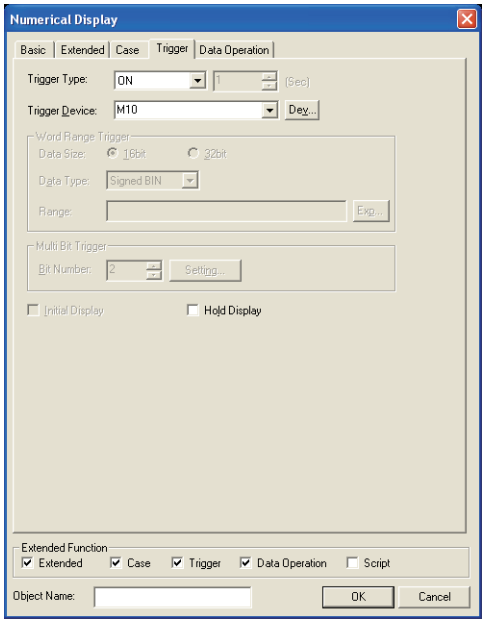
| Object type | Trigger type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Ordinary | ON/OFF | Rise/Fall | Sampling | ON sampling/ OFF sampling | View change | Synchronize display trigger | Key code input | Input fixation | Device writing |
| • Touch switch (multi action switch) | ○ | ○ | ○ | ○ | ○ | × | × | × | × | ○ |

## 5.5.1 Arrangement and settings

Set the trigger for each object function.
Refer to the arrangement and setting of the object.

## 5.5.2 Setting items

This section explains the setting items of trigger with the example of numerical display.

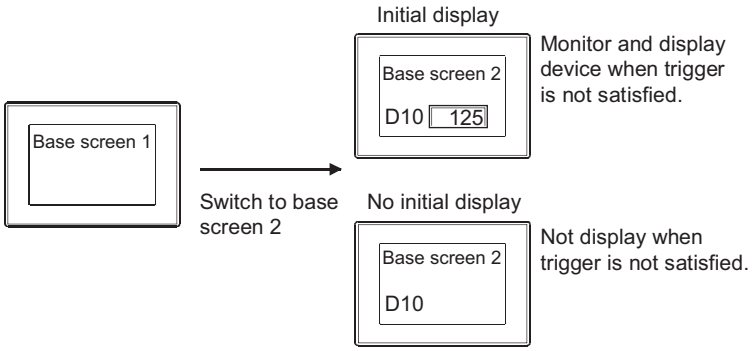
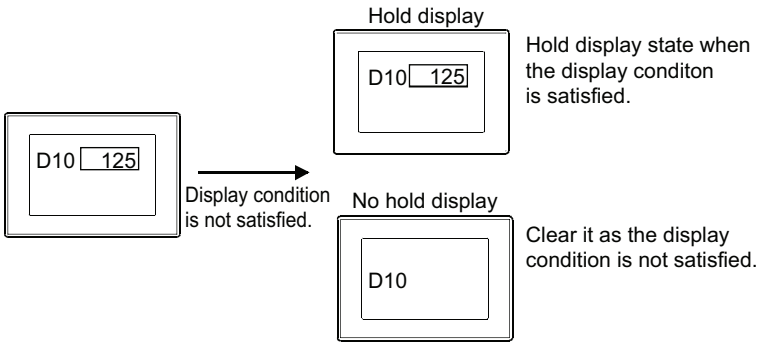



Basic | Extended | Case | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying/operating the object.<br>When [Sampling] is selected, the cycle is set in second unit (1 to 3600s).<br>• Ordinary • Sampling • Range • ON<br>• OFF • Rise • Fall • Bit trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | When [ON], [OFF], [Rise], [Fall] or [Range] is selected in [Trigger Type], click on the Device button to set the bit/word device range for the trigger. (This is only valid when selecting the range for word device.)<br>(☞ Section 5.1 Device Setting) | |
| Word Range Trigger | | Set the type of word device that has been set when [Range] is selected in [Trigger Type]. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device.<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>Real : Treats the word device value as a floating point type real number.<br>(Only when [32bit] is selected for [Data Size].) | |
| | Range*1 | Click Range button to set the conditional expression of word device range. | |

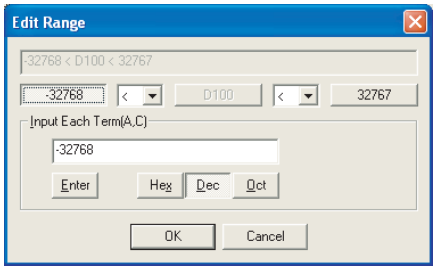
(Continued to next page)

Basic | Extended | Case | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Multi Bit Trigger | Bit Number*2 | Select number of bit devices (2 to 8) to be set as the trigger when [Bit trigger] has been selected in [Trigger Type].<br>After selecting, click on the [Setting] button to set the bit device and execution trigger. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Initial Display | | Check this item to monitor and display device even if the initial trigger of screen switch is not satisfied when [Rise] or [Fall] has been selected in [Trigger Type].<br>  <br> | |
| Hold Display | | Check this item to hold the object display even when the display condition is met and then not met when [Trigger Type] is set to [ON], [OFF], or [Bit Trigger].<br>With this item unchecked, the object will be cleared when the trigger is not satisfied.<br>  <br> | |

For details of *1, *2, refer to the following.

## *1 Edit range dialog box settings

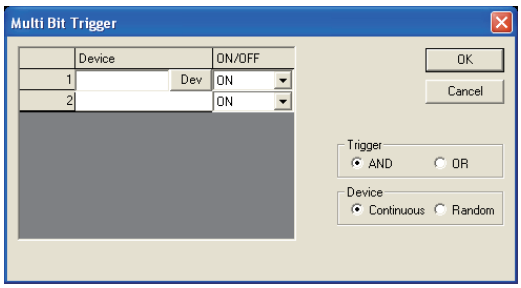



| Items | Description | Model |
|---|---|---|
| Button | Click on this button to set the fixed value for each term in [Input Each Term (A-C)] | GT16 GT15 SoftGOT1000 GT11 GT10 |
| < (Comparison operator) | Set the comparison operator of range expression.<br>< : Left value is smaller than right value<br>== : Left value is equal to right value<br><= : Left value is smaller than or equal to right value<br>!= : Left value is not equal to right value | |

(Continued to next page)

| Items | | Items | Model |
|---|---|---|---|
| Input Each Term (A-C) | Enter | Updates the input fixed value on the range expression. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Hex/Dec/Oct | Select the data type for the numeric value. | |

*2 Multi bit trigger dialogue box settings




| Items | Description | Model |
|---|---|---|
| Device | The devices preset as multi bit trigger are listed. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Dev | This button will be displayed by clicking on the device bar.<br>Click on the Dev button to set the bit device used as trigger.<br>(☞ Section 5.1 Device Setting) | |
| ON/OFF | Select whether ON or OFF status of bit device will be set as the trigger condition. | |
| Trigger | Select the definition for multi bit trigger condition.<br>AND : If all triggers that are specified based on the bit device ON/OFF statuses are satisfied, the multi bit trigger is set.<br>OR : If any of the triggers specified based on the bit device ON/OFF statuses are satisfied, the multi bit trigger is set. | |
| Device | Select the method of setting device.<br>Continuous : Set the specified number of devices continuously starting from the set device automatically.<br>Random : Randomly set the specified number of devices. | |

## 5.5.3 Precautions

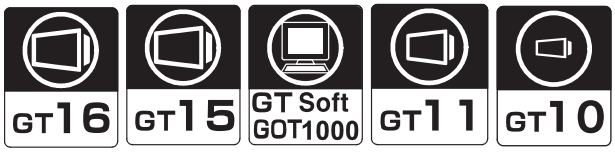
### 1 Object of which trigger has been set to sampling

Up to 100 objects can be set on one screen, of which the trigger type was been set to "Sampling". Therefore, any objects form 101 onwards will not operate on the screen.

### 2 Setting of trigger for line graph

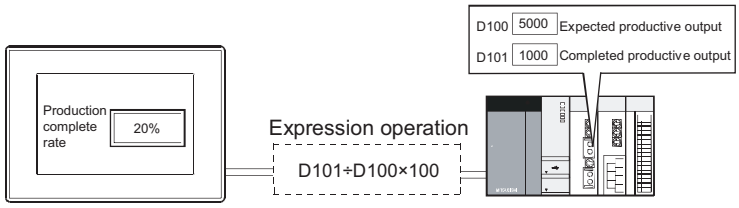
When many devices are monitored in line graph form, and the trigger is set to [Ordinary], the object processing may be delayed.
In this case, change the trigger type to [Sampling] and adjust the sampling cycle to 2 seconds or longer.

# 5.6 Data Operation Function




If data operation function has been set, each object executes the operations set in [Data operation] the preset word device values, and monitors based on the results.

Example: Data operation is used in numerical display function.
Monitored device: D101




Display the complete rate corresponding to expectation

## 1 Bit operation

This function executes operation of the word device value in bit unit.

(1) Bit mask
Executes a logical operation of the word device value by the preset pattern value.

(a) Logical AND (AND)
The operation result is "1" when the corresponding bits of both the device value and pattern value are "1".
The operation result is "0" in other cases.

(b) Logical OR (OR)
The operation result is "0" when the corresponding bits of both device value and pattern value are "0".
The operation result is "1" in other cases.

(c) Exclusive logic XOR (XOR)
The operation result is "0" when the corresponding bits of device value and pattern value are equivalent; "1" when not equivalent.

Example: When logical AND (AND) is operated

| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monitor device value | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

AND

| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pattern value (Hexadecimal) | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

⇩

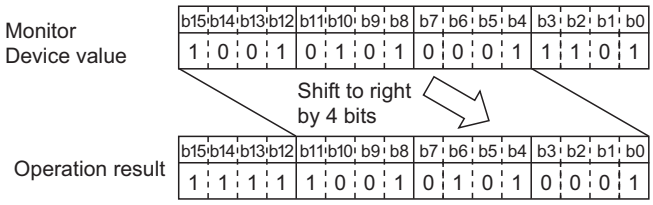
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operation result | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

(2) Bit shift

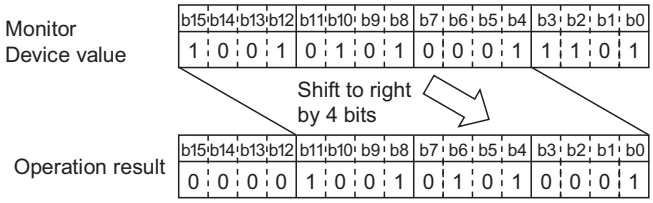
Shifts the word device value to the right or left in bit unit to execute an operation on the value.
(It becomes arithmetic shift when it comes to the signed monitor format of device.)

Example: Shift right for 4 bits

(a) Signed




(b) Unsigned

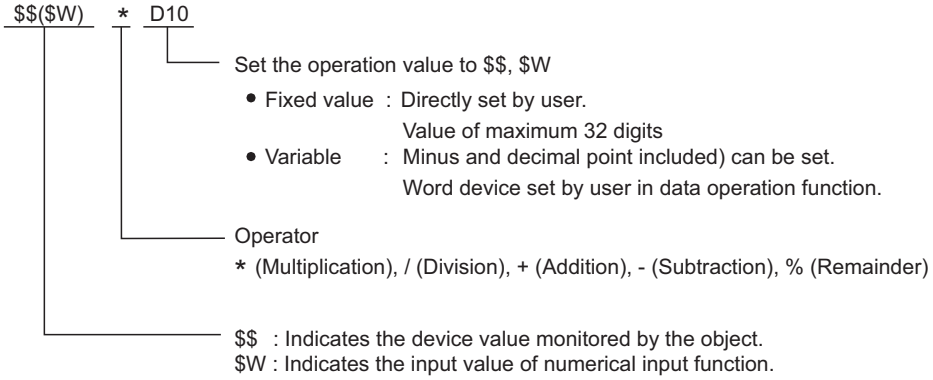



## 2 Data operation

Executes the preset data operation on the word device value.

Select and set the data operation format from the 9 types.
The operation is executed based on the following conditions:

Example:




Data operation function is applicable to the following objects.

- Numerical display
- Comment display
- Lamp
- Trend graph
- Statistics graph
- Report
- Numerical input *1
- Parts display
- Panel meter
- Line graph
- Scatter graph
- Data list display
- Parts movement
- Level
- Bar graph
- Historical trend graph

*1 If bit mask operation is used for numerical input function, only logical (AND) is applicable. Logical add (OR) and exclusive logical add (XOR) are not applicable.

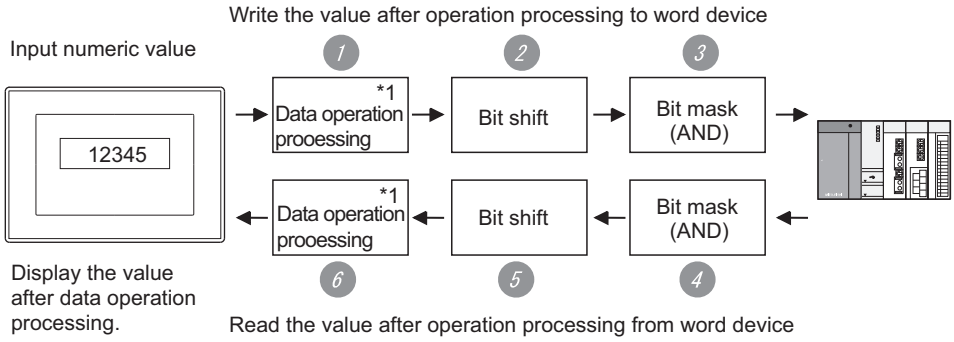
## 3 Procedure for operation processing

The operation processing for device monitoring and numerical inputting is shown as follows.

(1) When monitoring device

1. Bit mask
2. Bit shift
3. Data operation processing

(2) When using numerical input function




*1: Other data operations can be set for write destination device during monitoring and writing.

<Write the value after operation processing to word device>

1. Data operation processing
   The input value by the preset operation expression for writing device value is calculated.

2. Bit shift
   Shifts the input value in the set direction (right / left)

3. Bit mask
   Executes bit mask (logical AND) on the input value by the preset value.
   To write the bit and mask the remaining, carry out the following.

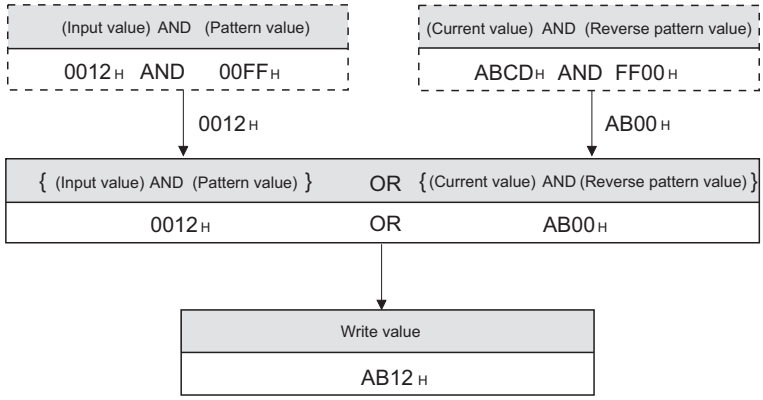
[Operation data]

(Write value) = {(Input value) AND (Pattern value)} OR {(Current value) AND (Reverse pattern value)}

User-set value — Value created for GOT operation

Example: Writing $12_H$ to the lower two digits of the current value $ABCD_H$

| | |
|---|---|
| Input value (value input by user) | : $0012_H$ |
| Current value (value before write) | : $ABCD_H$ |
| Pattern value (value set by user) | : $00FF_H$ |
| Reverse pattern value (value created for GOT operation) | : $FF00_H$ |




<Read the word device value after operation processing>

4. Bit mask
   Executes bit mask (logical (AND) of the device value by the preset pattern value.

5. Bit shift
   Shifts the device value in the reverse direction.

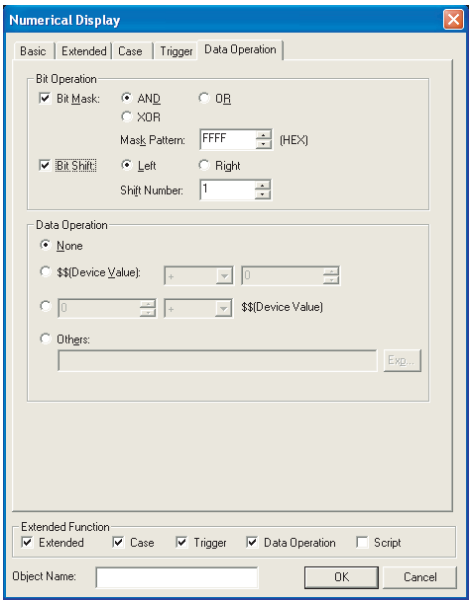
6. Data operation processing
   Calculates and displays the written device value by the preset operation expression for reading device value.

## 5.6.1 Arrangement and settings

Data operation function is set for each arranged object function.
For the details, refer to the arrangement and setting of the object.

## 5.6.2 Setting items

This section explains the setting items for data operation function with the example of numerical input function.



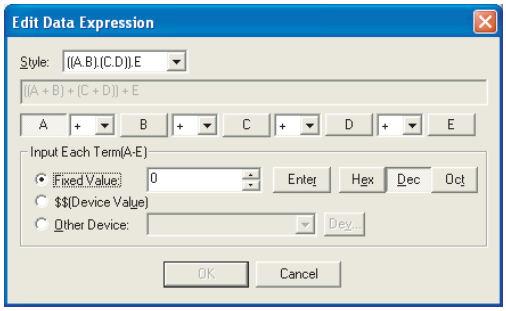

Basic | Extended | Case | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>Select the bit mask type and set the mask pattern value in hexadecimal format.<br>AND : Executes logical product.<br>OR : Executes logical add.<br>XOR : Executes exclusive logical add.<br>Mask Pattern : At data length of 16 bits (0 to FFFF), at 32 bits (0 to FFFFFFFF) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable the bit shift operation (for monitoring/writing).<br>Select the shift direction and set the number of bits to shift [Shift Number].<br>Left : Shift left<br>Right : Shift right<br>Shift Number : At data length of 16 bits (1 to 15), at 32 bits (1 to 31) | |
| Data Operation | | Set the data operation for writing to device and for monitoring each.<br>Switch by Monitor and Write buttons. | |
| | Monitor/ Write *1 | Select the data operation format from the following 4 patterns.<br>When not executing operation by data operation, check this item.<br>When executing operation by monitor device value ($$) and one type of constant, select this item.After the selection, set the constant (decimal).<br>When setting other than above expressions i.e., user-setting conditional expression.<br>Select "Others" to set the conditional expression.<br>After selecting, click on Exp button to display "Edit Data Expression " dialog box. Set the conditional expression on that dialog box. | |

For details of *1, refer to the following.

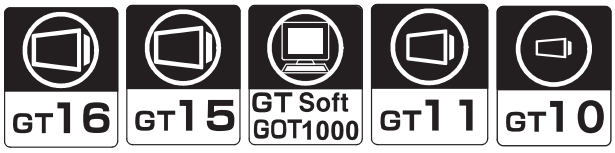
*1 Edit data expression dialog box

Set the expression for data operation.




| Items | Description | Model |
|---|---|---|
| Style | Set the operation expression format.<br>A • B<br>└ Fixed value,variable (represented as "$$", "SW" , respectively; any word device set for operation)<br>└ Operator<br>Select from the following 9 types.<br>1) A 4) (A • B) • C 7) ((A • B) • C) • (D • E)<br>2) A • B 5) A • ((B • C) • D) 8) (A • B) • ((C • D) • E)<br>3) A • (B • C) 6) A • (B • (C • D)) 9) ((A • B) • (C • D)) • E | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| [A] [B] [C] [D] [E] | Click buttons A to E to set fixed value and variable for each item in [Input f Each Term (A-E)]. | |
| Operator | Select the operator for operation expression.<br>+: Add *: Multiply %: Remainder<br>-: Subtract /: Divide<br>% (Remainder operator)<br>The left value is divided by the right value and the remainder the result.<br>Example: 100 % 3 = 1 (100 / 3 = 33 remainder is 1) | |
| Input Each Term (A-E) | Set each item for data operation.<br>Fixed value : Select this item when using fixed value to execute the operation. After selecting, input the value and click on the Input button. Select the data type for the value by Hex, Dec and Oct buttons.<br>$$, $W (Device value) : Select this item to execute the operation of the word device value that has been set as monitor and write destination. Be sure to set one.<br>Other device : Select this item to execute the operation of the word device value. (☞ Section 5.1 Device Setting) Data type is the same as the monitor device ($$ and $W). | |

# 5.7 Offset Function

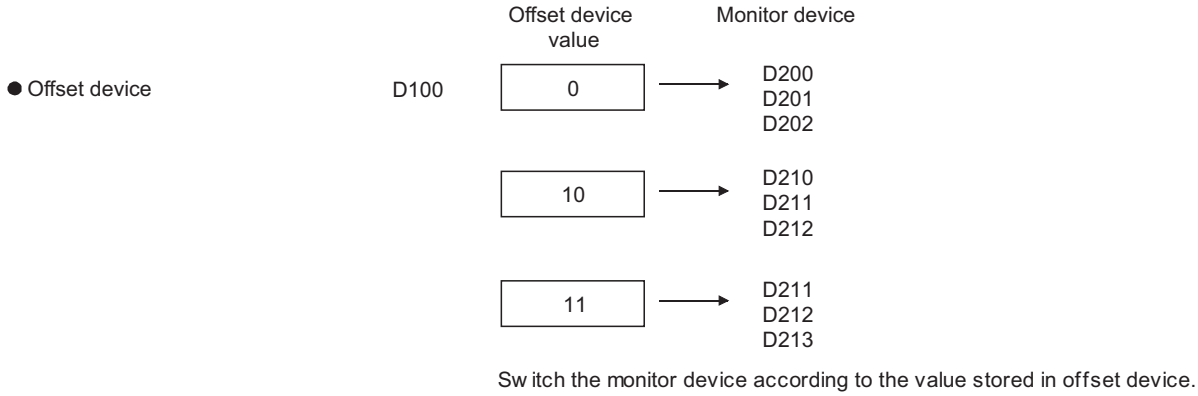



This function enables switching and monitoring plural devices by setting a single device in each object function.
(In the alarm list function, plural comments can be switched and displayed by setting a single device.)

## 1 Switching and monitoring plural device statuses by a single device

The value set in the device using the offset function (hereinafter referred to as offset device) is added to the device set in each object function.

● Device set in each object function D200, D201, D202




This function is available for the following objects.

- Numerical display
- Numerical input
- Data list
- ASCII input
- ASCII display
- Comment display
- Parts display
- Parts movement
- Lamp
- Panel meter
- Level
- Trend graph
- Line graph
- Bar graph
- Statistics graph
- Scatter graph
- Touch switch*
- Script
- Status Observation Function

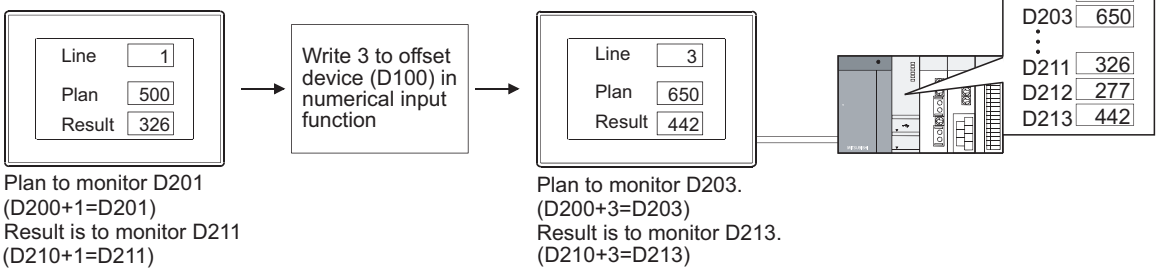
* The offset device value is added to the device set in the action setting.

Example:

Switch and monitor plural line statuses with a single numerical display function.

Section 7.1 Numerical Display/Numerical Input

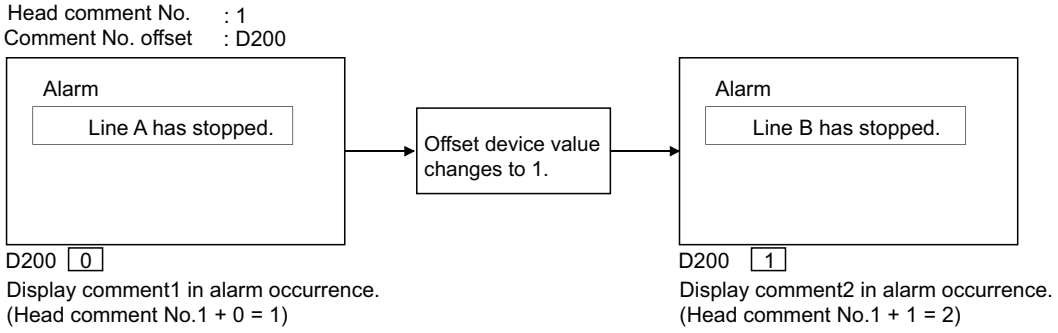
| | | | |
|---|---|---|---|
| Line: | Numerical input function | Device | D100 |
| Plan: | Numerical display function | Device | D200 |
| | | Offset device | D100 |
| Result: | Numerical display function | Device | D210 |
| | | Offset device | D100 |



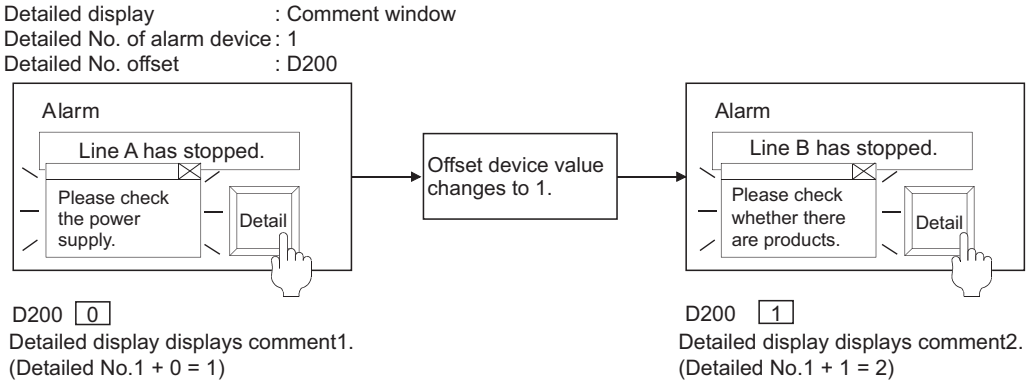
## 2 Switch and display plural comments by a single device (The alarm list function (user alarm))

The offset device value is added to the comment set in the alarm list function.
In a normal alarm list, it needs to set bit devices for the number of displayed comments. However, by using the offset function, plural comments can be switched and displayed by a single device.

(1) Offset of display setting
The offset device value is added to the number of the comment to be displayed.




(2) Offset of detailed display setting
The offset device value is added to the numbers of comment (comment window), window screen and base screen to be displayed as details.




**Hint!** When executing offset of detailed display setting

When executing offset of detailed display setting, the comment for detailed display will change. The message of alarm list is not relevant.
To relate the message to the comment, adjust comment and the message displayed by using offset of display setting.

## 5.7.1 Arrangement and settings

The offset function is to arrange and set each object function.
Refer to the arrangement and setting of the objects.

## 5.7.2 Setting items

The offset function is set in each object function.
Refer to the setting items of the corresponding objects.

## 5.7.3 Precautions

Precautions for using the offset function are as follows.

### 1 Precautions for drawing

(1) When monitoring the trigger device in sampling by the status observation function
When offsetting the trigger device in a constant sampling, set the offset sampling longer than the monitor sampling.

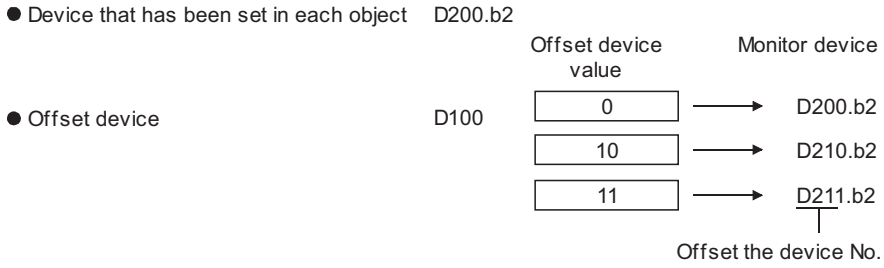
Example: Changing cycle (7 s) of offset device value > Status observation function sampling (5 s)

(2) Abnormal operation of the status observation cycle setting (e.g. uncollected data by affecting the timing shift)
The condition device for the status observation has the delays in monitor screen set an offset function-specified object. Do not set an offset function-specified object on the monitor screen at using the status observation.

(3) Device setting

(a) The offset function is not available for the bit device word specification.

(b) For the word device bit specification, the device No. is offset.
Example:




(c) The data format of offset devices is fixed to the 16-bit signed BIN.

## 2 Precautions for use

(1) Offset value change

The monitor device will be read as the offset value changes; so do not change the offset value frequently.

If the offset value is changed frequently, the monitor speed will become low.

(2) When the offset device No. exceeds the PLC word range trigger

When the offset device No. exceeds the PLC device range, monitoring and writing will not be executed. Error will be displayed in alarm list (system alarm), if it is set in advance.

When monitoring plural devices with a single graph, the display method is determined by the setting method of monitored device.

(a) Trend graph, line graph, bar graph and statistics graph

When setting the device consecutively : Holds the previous display.

When setting the device at random : Holds the previous display only when the displaying exceeds word range trigger.
For the display other than the above, the offset device will be monitored.

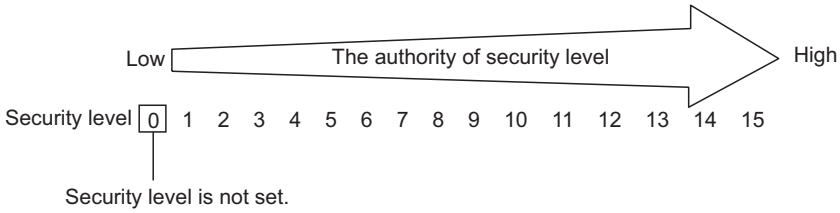
(b) Scatter graph

When setting the device consecutively : Holds the previous display.

When setting the device at random : Holds the previous display.

# 5.8 Security Function

This function determines which screen is displayed depending on the security level.
The security level can be changed by inputting the password corresponding to each level.
The security level (0 to 15) can be set for each screen and object.
The security level can be set to each object function (excluding document display), window screen and base screen.




**Point**

Authentic method

The authentic method for changing security levels includes the following types.

- Operator authentication
- Security level authentication

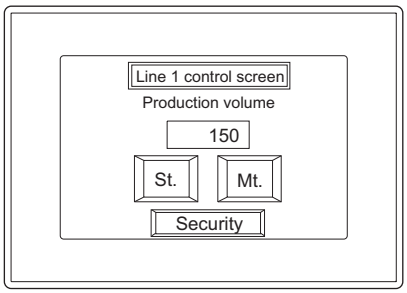
For the authentic method, refer to the following.

☞ Section 3.5 Security Setting

## 1 Example

Change the contents that can be operated by each user in the screen for setting plural objects.
The switch action set for the special function switch that is used for changing user's security level varies according to the authentic method.
For special function switches, refer to the following.

☞ Section 6.2 Touch Switch




Base secreen 1
Screen design example
Used objects and security levels

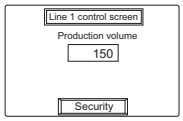
150 ••••••• Display product volume (security level: 4)

St. ••••••••• Display product volume condition(Window screen 2) (security level: 4)

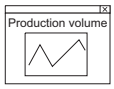
Mt. ••••••••• Switch to Mt. screen (base screen 10)(security level: 4)

Security •••• Display login/logout screen (Operator authentication), Display password input screen (Security level authentication) (Security level: 0)

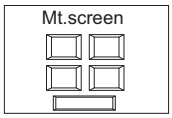
Screen example for each security level




Base secreen 1
(Security level: 0)




Window secreen 2
(Security level: 8)




Base secreen 10
(Security level: 15)

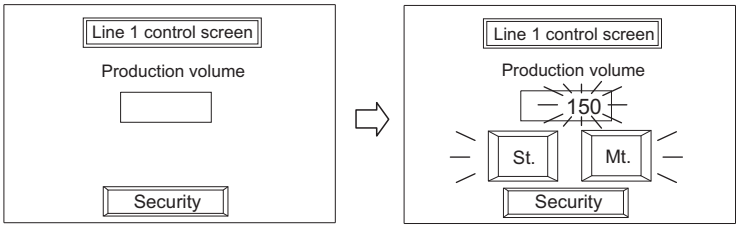
○: Enabled ×: Not enabled

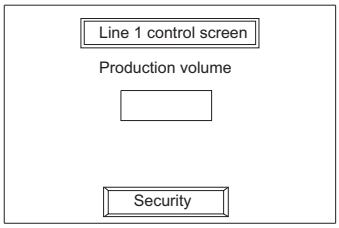
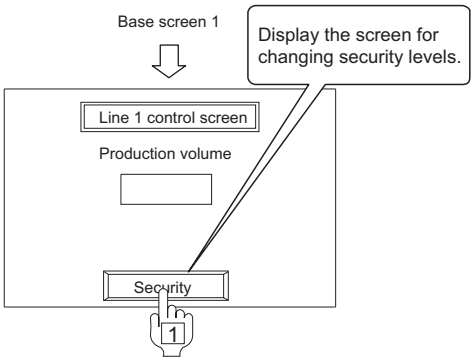
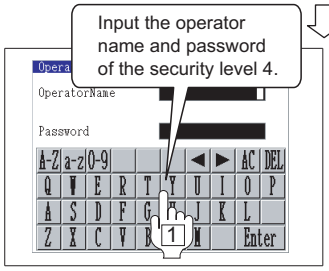
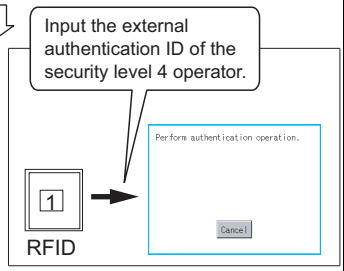
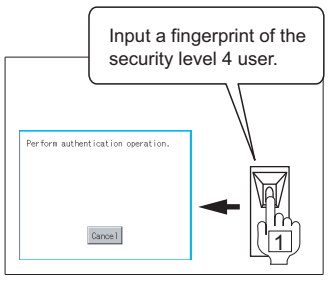
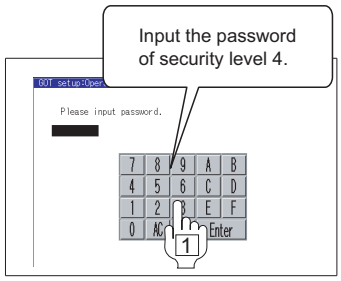
| User | User's security level | 150 | St. | Mt. | Security | Production volume | Maintenance screen |
|---|---|---|---|---|---|---|---|
| Operator | 4 | ○ | ○ | ○ | ○ | × | × |
| Supervisor | 8 | ○ | ○ | ○ | ○ | ○ | × |
| Maintenance staff | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| Others | 0 | × | × | × | ○ | × | × |

(1) Operation example

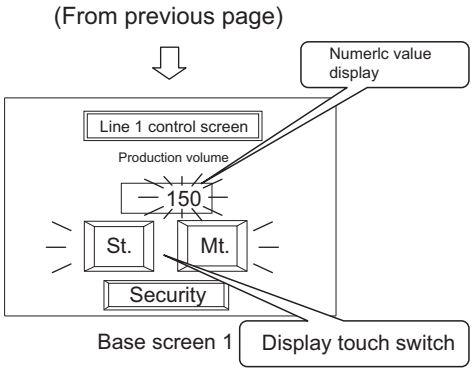
(a) Changing displays and operations of objects with changing security levels

The following example shows the object display and operation changed from 0 to 4 of the security level.



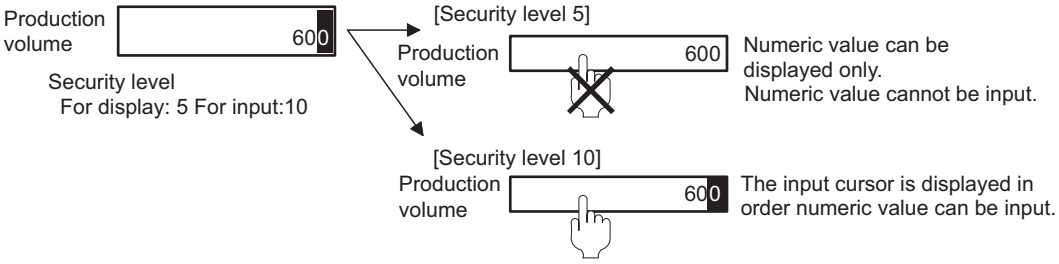

| Security level status | Screen | Operation contents |
|---|---|---|
| Level 0 |  Base screen 1 | The object function on the screen cannot be used, because the security level is in a low status<br><br>• Base screen 1 (security level 0)<br>• Each object function (security level 4) |
| Level 0 |  Base screen 1 | • Operator authentication<br>The first touch: Log out of the GOT.<br>The second touch: The screen for login is displayed.<br>• Security level authentication<br>The screen for changing security levels is displayed.<br><br>(☞ 2 Setting the security level of each screen/object in this section) |
| Level 0<br>↓<br>Level 4 |  Operator authentication (Password authentication) | • Operator authentication (Password authentication):<br>Input the operator name and password of the security level 4 to login. |
| |  Operator authentication (External authentication) | • Operator authentication (External authentication):<br>Input the external authentication ID of the security level 4 using the external authentication device to login. |
| |  Operator authentication (Fingerprint authentication) | • Operator authentication (Fingerprint authentication):<br>Input a fingerprint of the security level 4 user using the fingerprint unit to login. |
| |  Security level authentication | • Security level authentication<br>Input the password, and change the security level into 4. |

(Continued to next page)

| Security level status | Screen | Operation contents |
|---|---|---|
| Level 4 |  | Display the object function corresponding to security level 4. |

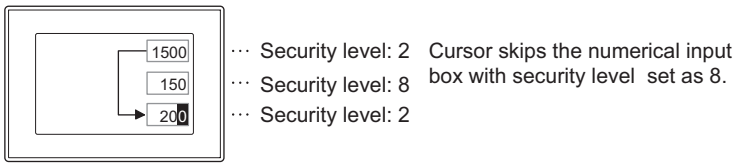
**Remark**

(1) The security level set in the numerical input, the ASCII input and the touch switch.
2 types of security levels (for input and display) can be set in the numerical input, the ASCII input and the touch switch.
Example: When the security level is set in the numerical input function.

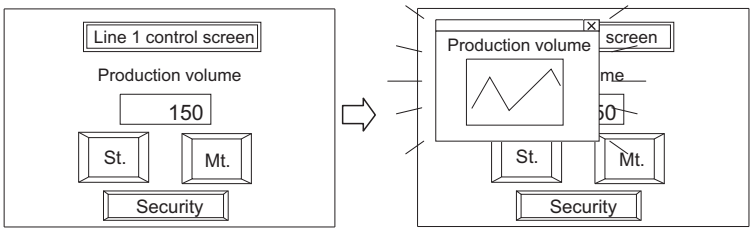



(2) The movement of the input cursor when setting the security function
The cursor will move to the currently available numerical input box or ASCII input box, when setting security level respectively in plural numerical input and ASCII input.

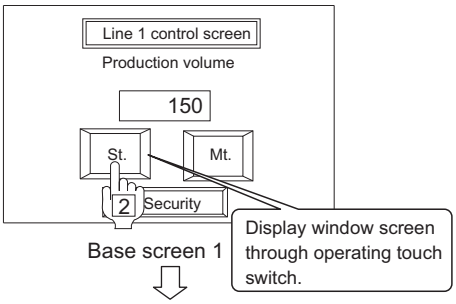
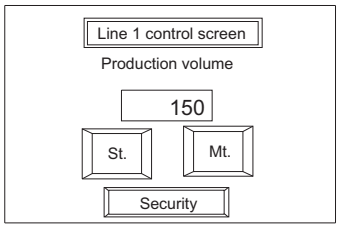
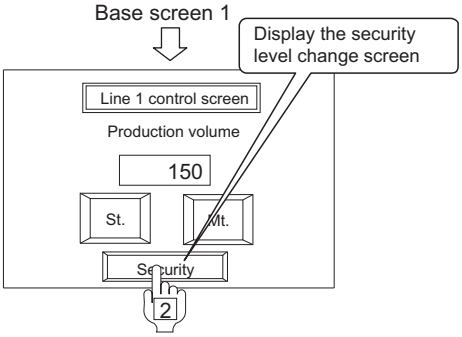
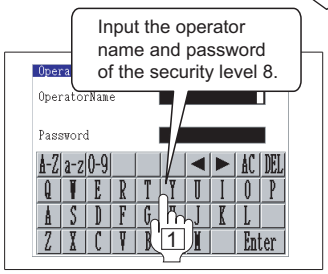
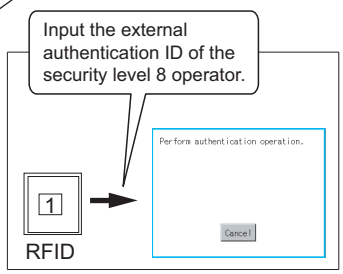
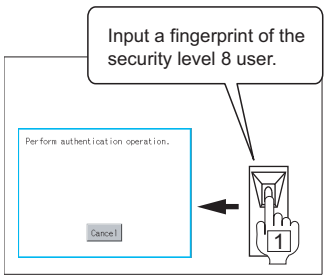
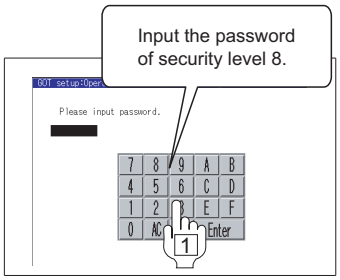
Example: Input numeric value when the base screen security level is "2".

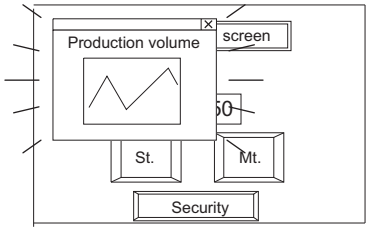



(b) Displaying window screen with changing security levels
The following example shows the object display and operation changed from 4 to 8 of the security level.



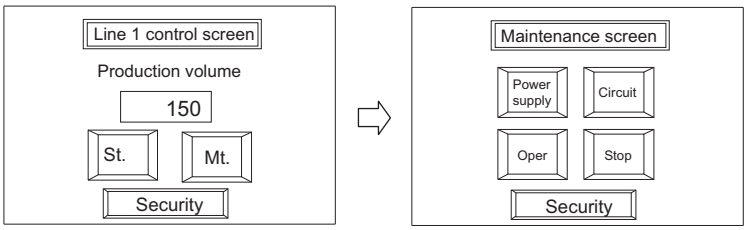

Security level: 4 Security level: 8

| Security level status | Screen | Operation contents |
|---|---|---|
| Level 4 |  <br>Base screen 1 | Base screen 1 (security level 4)<br>↓<br>Window screen 2 (security level 8) |
| Level 4 |  <br>Base screen 1 | Do not display the window screen. |
| Level 4 |  <br>Base screen 1 | Touch a touch switch, and then the screen for changing security levels is displayed.<br>• Operator authentication<br>The first touch: Log out of the GOT.<br>The second touch: The screen for login is displayed.<br>• Security level authentication<br>The screen for changing security levels is displayed.<br>(☞ 2 Change method of the security level in this section) |
| Level 4<br>↓<br>Level 8 |  <br>Operator authentication (Password authentication)<br>  <br>Operator authentication (External authentication)<br>  <br>Operator authentication (Fingerprint authentication)<br>  <br>Security level authentication<br>(Continued to next page) | • Operator authentication (Password authentication):<br>Input the operator name and password of the security level 4 to login.<br>• Operator authentication (External authentication):<br>Input the external authentication ID of the security level 4 using the external authentication device to login.<br>• Operator authentication (Fingerprint authentication):<br>Input a fingerprint of the security level 4 user using the fingerprint unit to login. |

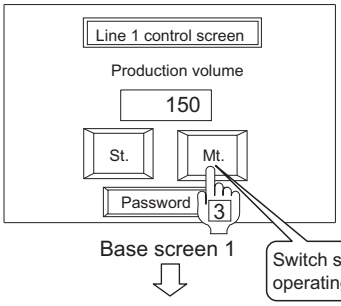
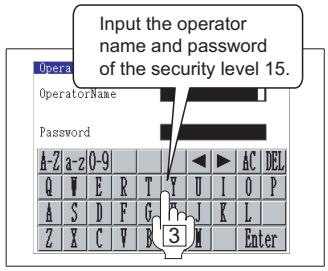
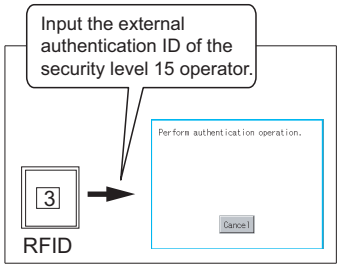
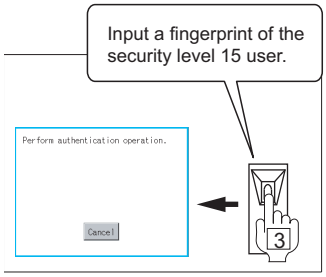
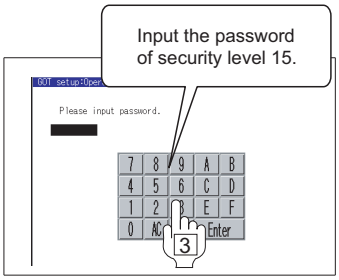
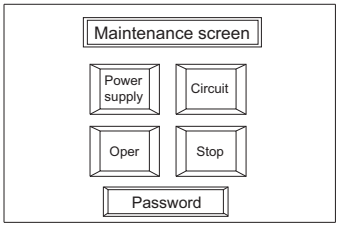
| Security level status | Screen | Operation contents |
|---|---|---|
| Level 8 | (From previous page)<br>  <br><br>Window screen 2 | Display a window screen. |

(c) Switching base screen with changing security levels

The following example shows the object display and operation changed from 8 to 15 of the security level.




Security level: 8 Security level: 15

| Security level status | Screen | Operation contents |
|---|---|---|
| Level 8 |  <br>Base screen 1 | Base screen 1 (security level 8)<br>↓<br>Base screen 10 (security level 15) |
| Level 8<br>↓<br>Level 15 |  <br>Operator authentication (Password authentication)<br>  <br>Operator authentication (External authentication)<br>  <br>Operator authentication (Fingerprint authentication)<br>  <br>Security level authentication | • Operator authentication (Password authentication):<br>Input the operator name and password of the security level 4 to login.<br>• Operator authentication (External authentication):<br>Input the external authentication ID of the security level 4 using the external authentication device to login.<br>• Operator authentication (Fingerprint authentication):<br>Input a fingerprint of the security level 4 user using the fingerprint unit to login.<br>• Security level authentication<br>Display the security level change screen automatically.<br>Input the password, and change the security level into 15. |
| Level 15 |  <br>Base screen 10 | Switch to base screen 10 |

## 2 Change method of the security level

The method for changing security levels differs depending on authentic methods.
The following shows the method for changing security levels for each authentic method.

(1) Operator authentication

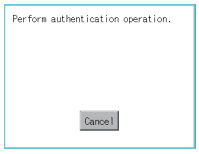
To change security levels, log out of the GOT and log in the GOT again using an operator name with a different security level.
The screens for login and logout can be displayed with the following.

- Touch a touch switch (special function switch: set [Log-in/Log-out (Operator Authentication)] ) for switching to screens for login and logout.
- Touch [Login/Logout] in the utility.

The following shows how to change security levels.

1. The screen for logout is displayed, and then touch the OK button.
2. The screen for login is displayed.
3. Log into the GOT as an operator with a different security level.
   The method for login varies according to the authentic type.
   - Password authentication
     Input the operator name and the password, and then touch Enter.
   - External authentication
     Input the external authentication ID using the external authentication device.
   - Fingerprint authentication
     Press the finger on the fingerprint reader of the fingerprint unit.
4. To close the screens for login and logout, perform the following operation.
   The operation varies according to the authentic type.
   - Password authentication
     Touch ☒ at the top-right of the screens for login and logout.
   - External authentication/fingerprint authentication
     Touch Cancel.

Screen for login (Password authentication)




Screen for login (External authentication/ fingerprint authentication)

(2) Security level authentication

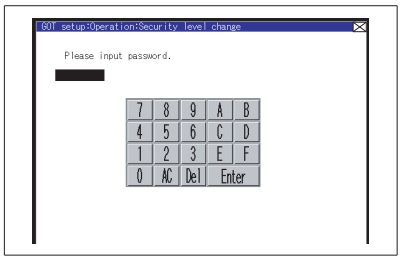
In order to change the security level, the password of each security level needs to be input on the security level change screen.

Either of the following methods is available to display the security level change screen.

- Use the touch switch for switching to the security level change screen. (Extension: Password)
- Display the GOT utility, and touch [security level change]

The following indicates how to change the security level.

1. Display the security level change screen.
2. On the security level change screen, enter the password for the target security level and touch Enter .
3. To close the security level change screen, touch ☒ at the top-right of the password display window.

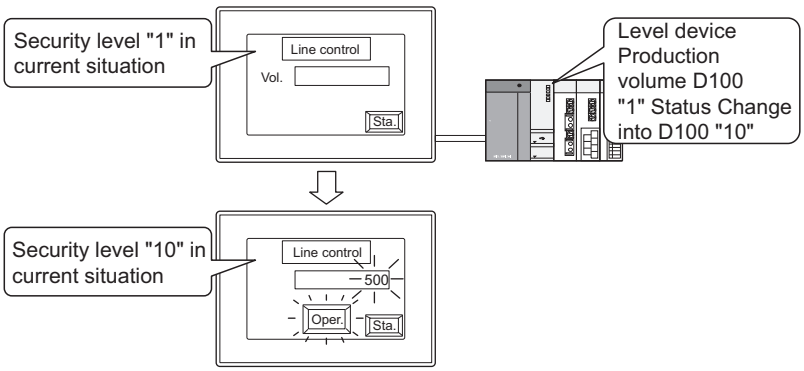



**Point**

Changing security levels with controllers (Security level authentication only)

The level of security is stored in the device storing "security level status" (Level device) ( Section 3.5 Security Setting)

Current security level can be changed by directly changing the level device value from the controller.




Change the display according to the changed security level.

When the value stored in the level device is set to below the security level for the base screen currently displayed, a screen for changing security levels is displayed. For returning to the previous screen, input the password for the set security level or higher.

**Hint!** To undo temporarily-raised security level (Security level authentication only)

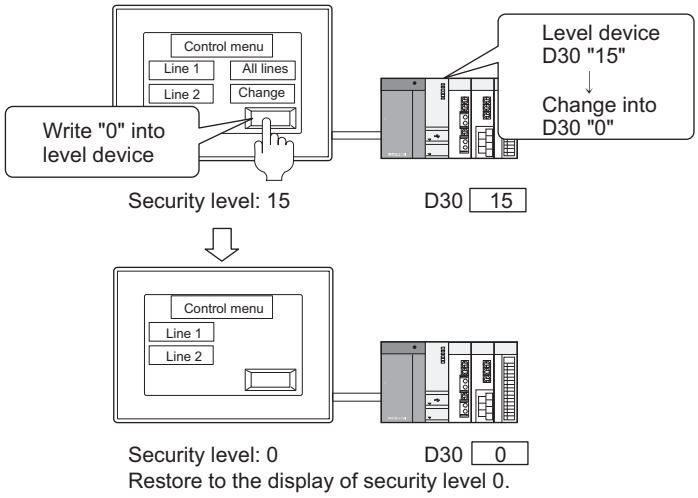
The security level that is increased temporarily for maintenance and inspection tasks can be restored back to its original state easily.

(a) Inform the users of the normal security level password to restore the security level through the normal password input operation.

(b) Create the touch switch for restoring the security level to normal level.

Example: When changing the security level to "0" with the touch switch.

- Level device: D30
- Touch switch: Write "0" into level device D30



## 5.8.1 Security function setting

The following setting is needed when using the security function.

### 1 Setting authentic method

Set the authentic method.

Select an authentic method, and then set the settings for the authentic method.

☞ Section 3.5 Security Setting

### 2 Setting the security level of each screen/object

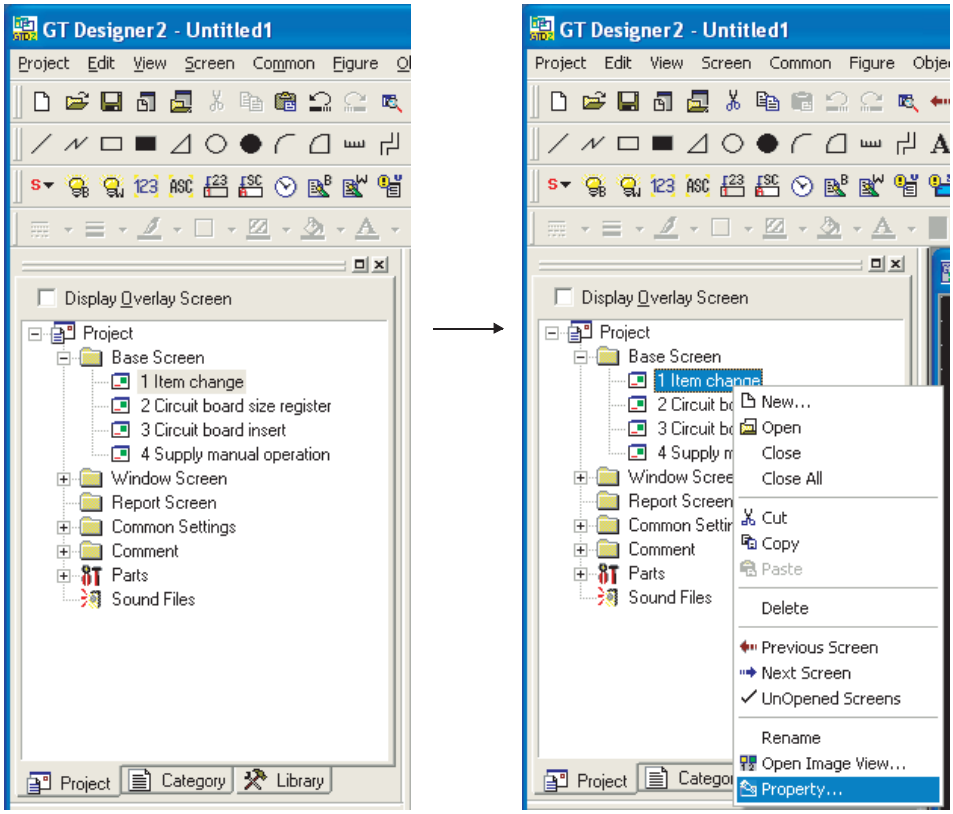
Set security level in the screen (using security function) and object function.

(1) Object function

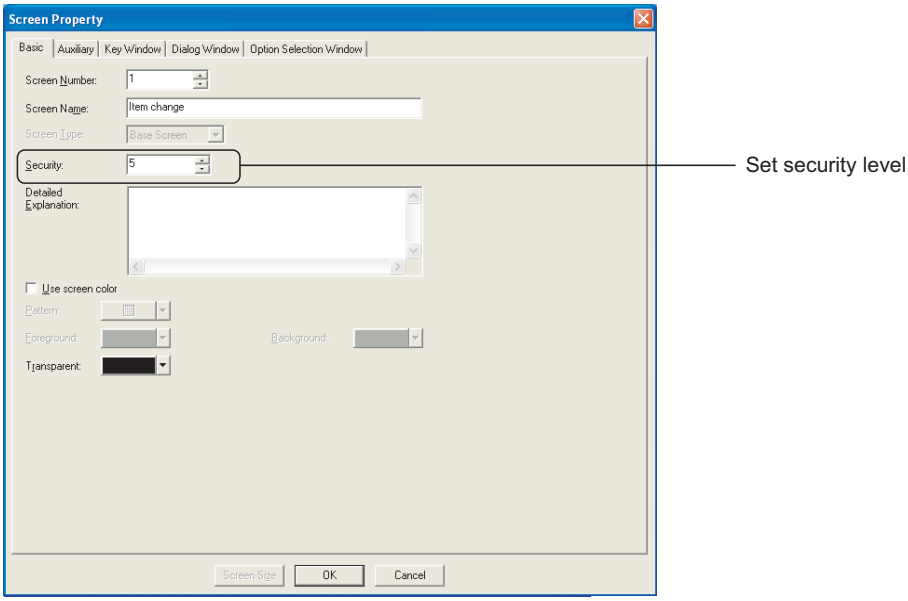
Set the security levels in the setting dialogue box for each object function.

(2) Screen

1 In the workspace (the project tab), select the screen whose security function is to be set, and right click the mouse to select [Property] in the menu.



❷ Display the Screen Property dialogue box.
Set the security level (that is set to the screen) in [Security] of the basic tab.




## 5.8.2 Precautions

### 1 Precautions for drawing

When the GOT is started up, a screen always appears regardless of the screen security settings and security level.
Make sure to design screens so that the screen without security settings will appear at GOT start up and it will be switched to the screen with security settings by performing screen switching.

### 2 Making a note of the password

The already registered password cannot be checked later. Therefore, always make a note of the password.
When passwords are forgotten, the following operations cannot be executed.

- Changing security levels on the GOT
- Deleting or changing passwords on GT Designer2
- Deleting or changing the operator information on the GOT

For solutions when forgetting passwords, refer to the following.

☞ Section 3.5.6 Precautions

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SH(NA)-080530ENG-R-1/3

Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 1/3

(For GOT1000 Series)

| | |
|---|---|
| MODEL | SW2-GT1000-R-E |
| MODEL CODE | 1D7M25 |
| SH(NA)-080530ENG-R 1/3(1209)MEE | |

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
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MITSUBISHI

MELSOFT

Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 2/3

(For GOT1000 Series)

SW2D5C-GTWK2-E
SW2D5C-GTD2-E

# ● SAFETY PRECAUTIONS ●

(Be sure to read these instructions before using the product)

Before using this product, read this manual and the relevant manuals introduced in this manual carefully and handle the product correctly with full attention to safety.
Note that these precautions apply only to this product.
In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

| | |
|---|---|
| ⚠ **WARNING** | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| ⚠ **CAUTION** | Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. |

Note that failure to observe the ⚠ CAUTION level instructions may also lead to serious results depending on the circumstances.
Be sure to observe the instructions of both levels to ensure personal safety.

Please keep this manual in accessible place and be sure to forward it to the end user.

## [Test operation precautions]

**⚠ DANGER**

- When testing the operation (e.g. turning bit devices ON/OFF or changing a current word device value, a current or set timer/counter value, or a current buffer memory value), thoroughly read the relevant manual to fully understand the operating procedures. When testing, never change the data of the devices that control the operation essential for the system.
  Faulty output and malfunction may result in an accident.

# CAUTIONS FOR USING THIS SOFTWARE

1. Required PC memory

   The processing may be terminated by Microsoft® Windows® on a personal computer of which main memory capacity is less than 64M bytes. Make sure to secure the capacity of 64 M bytes or more.

2. Free capacity of hard disk (virtual memory)

   At least 100M bytes of free capacity of virtual memory should be secured within hard disk to run this software. The processing may be terminated by Windows® , if 100M bytes or more of free space cannot be secured within hard disk while running GT Designer2.
   Secure enough free capacity of virtual memory within hard disk space in order to run the software.

   When enough free capacity cannot be secured, make sure to save projects frequently.

3. Error messages displayed while starting and editing

   "Operation will be terminated because of insufficient memory. Would you like to stop?"

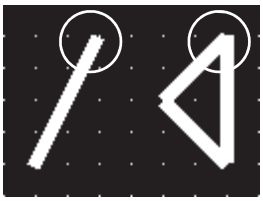
   If the above message appears, close other running application software or reboot Windows® in order to secure at least 50M bytes of free hard disk space.

4. GT Designer2 and GOT display

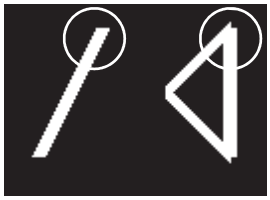
   (a) Cautions for displaying straight line other than full line (dotted line, for example) in bold.
   When straight line other than full line is drawn in bold, the line may not be displayed with its actual line width on a personal computer. However, it will be displayed correctly on GOT. This phenomenon does not mean data problem.

   (b) Display of end points of straight line/line freeform/polygon
   As shown below, the end points of straight line/line freeform/polygon are displayed differently between GT Designer2 and GOT.

   On GT Designer2

   On GOT

   (c) Start position for filling patterns
   Some filling patterns may be differently displayed. For example, the start position may be different between GT Designer2 and GOT.

   (d) Drawing of different type lines
   The length of the dots varies in different dotted lines (for example: the chain lines).

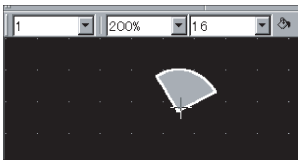
   (e) Display of object

   - The display position of the memory data display in graph function is different between GT Designer2 and GOT.
   - Even if the display-start-line of a comment has been set, the comment will be displayed from the first line on GT Designer2.

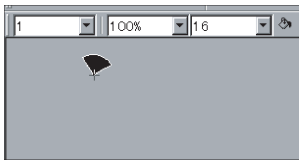
(f) Display magnification
When display magnification is changed, the connected lines or figures may be separated or the filled-paint may be out of outline of the figure.
However, if they are displayed correctly on the preview screen, they will appear correctly on GOT as well.

Example: When filled-paint is out of the outline.

Display magnification: 200%




Display magnification: 100%




Position of Paint mark may be shifted and the filled-paint may exceed the outline of the figure.

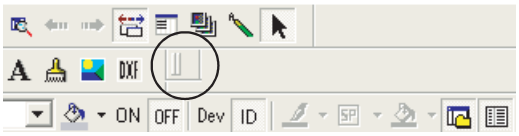
5. Restrictions when the color setting is changed to the setting of less colors in the system environment (256 colors → 2 colors)
   - The color palette for setting color will be changed according to the new settings.
   - The color on the drawing screen will be kept the same as prior to the change.
     If the color setting for a [red] rectangle-figure is changed to the 2 colors (B/W), the [red] color will remain.
   - The colors of the image data (BMP format file) will be reduced when the project is stored, the screen is closed and that image data is double-clicked.

6. Object function and device type
   The object (bit lamp or word lamp),for which bit device setting and word device setting are separated, cannot be converted between bit device and word device.

7. When device type is changed
   Confirm the device type when the set bit device is changed from bit device into word device.
   The device flag may be represented as "??", depending on the settings .
   Example: D0. b0 → D0  D0.b5 → ??

8. OS setting
   Set the font size as "Small Font" when setting OS (Windows®) screen.
   The GT designer2 dialog box cannot be displayed correctly if the font size is set as "Large font".

9. When the toolbar icon appears in smaller size after startup of GT Desinger2
   The toolbar icon may appear in smaller size right after GT Designer2 is started up.
   To correctly display the icon, initialize it as instructed below.
   (Click on [Project] → [References] from the menu, and select the toolbar tab. Click on Reset All button in that tab.)




10. When using GT Designer2 in the PC in which the OS other than applicable language version
    The text may not be displayed correctly depending on the OS versions; some version include the fonts incompatible with GT Designer2 or GOT.

REVISIONS

* The manual number is given on the left bottom of the back cover.

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| Oct., 2005 | SH(NA)-080530ENG-D | Compatible with GT Designer2 Version2.18U<br>Partial corrections<br>SAFETY PRECAUTIONS, HOW TO USE THIS MANUAL, Chapter 1, Section 2.7.3, Section 3.1, 3.2.2, 3.4, Section 5.2, Section 6.2.6, 6.2.10, Section 8.2.2, 8.2.6, 8.7.5, Section 12.3.5, Section 13.1.3, 13.1.<br>Partial additions<br>FUNCTION QUICK REFERENCE, Section 2.1.1, 2.1.2, 2.2, 2.3, 2.3.1, 2.3.2, 2.4, 2.5, 2.5.1, 2.5.3, Section 2.6.1, Section 2.7.1, 2.7.2, Section 2.8.1, 2.8.2, Section 3.1.1 to 3.1.3, 3.3.4, 3.3.5, 3.4.3, 3.5, 3.5.2, 3.6, 3.6.1, 3.6.4, 3.7.2, 3.7.3, 3.8.2, 3.9, Section 4.1.1 to 4.1.12, 4.3, 4.3.1, 4.4.1, 4.5.5, Section 5.1.2, 5.1.3, 5.3.1, 5.3.3, 5.5, 5.6, 6.1.3, 6.1.4, 6.2.3 to 6.2.5, 6.2.9, Section 7.1.3 to 7.1.5, 7.3.1, 7.3.4, 7.3.6, 7.4.3, 7.5.3, 7.5.4, Section 8.2.5, 8.3.6, 8.8.4, Section 9.1.4, 9.1.5, 9.1.7, 9.2.5 to 9.2.7, Section 10.1.4, 10.2.4, 10.3, 10.3.4, 10.4.4, 10.5.4, 10.6.4, 10.7.4, Section 12.2.3, 12.3.4, Appendix1, Appendix5<br>Additions<br>Section 2.8, 2.11, Section 3.11, Section 7.3.5, Section 10.8, Section 11.3, Section 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, Appendix4<br>Section 2.8 to 2.9 → Section 2.9 to 2.10, Section 7.3.5 → Section 7.3.6, Section 14.1 → 14.2 → Section 15.1 to 15.2, Section 14.3 → Section 14.2, Section 14.4 → Section 14.1, Section 14.5 → Section 14.3, Section 14.6 → Section 15.3, Chapter 15 → Chapter16, Appendix4 → Appendix5 |

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# INTRODUCTION

Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).
Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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# FUNCTION QUICK REFERENCE

## Edit Operation (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Preview | Shows the preview of screen image of GOT. | Page 7-51 |
| Align | Aligns objects or images | Page 11-42 |
| Property sheet | Sets same attributes to objects or images in the same screen | Page 12-1 |
| Guidelines | Displays lines to align figures and objects when arranging a placed figure or object. | Page 11-45 |
| Replace colors<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the color(s) of the objects and figures arranged on plural screens at the same time | Page 12-12 |
| Replace shapes<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the switch/lamp figures at the same time | Page 12-12 |
| Replace devices<br>M10 M11 M12 → M100 M101 M102 | Changes the preset devices at the same time | Page 12-12 |
| Replace CH No.<br>@1M10 @1M11 @1M12 → @3M10 @3M11 @3M12 | Changes channel numbers at the same time. | Page 12-12 |
| Data View<br>Select | Overlapping images or objects | Page 12-16 |
| Device list<br>Base 2 Base 3 Base 1<br>D100 Numerical display<br>D200 ASCII display<br>D300 Panel meter display | Display the set device in list | Page 12-17 |

| Image | Function | Page |
|---|---|---|
| Text list<br>Base 2 Base 3 Base 1<br>Run Bit Switch<br>Stop Bit Switch<br>Error Word Lamp | Displays the direct input texts in a list. | Page 12-19 |
| Multiple language input<br>Man. Auto → 手动 自动<br>English Chinese | Input characters or comments in other language. | Page 12-26 |
| Import BMP/JPEG/DXF file<br>BMP file JPEG file DXF file Import | Imports BMP/JPEG/DXF files | Page 11-24 |
| IGES data read<br>IGES data Read | Reads IGES data. | Page 11-34 |
| Import Project<br>Import | Utilizes other project data | Page 12-36 |
| Change object name<br>Touch switch Line A start switch<br>Touch switch Line B start switch | Changes an object name. | Page 7-38 |

# Object Functions (GT Designer2 Version□ Screen Design Manual)

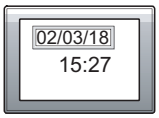
## 1 Lamp/Switch

| Image | Function | Page |
|---|---|---|
| Lamp display<br>Red RUN → Blue STOP | Displays device value via lamp color changing | Page 6-1 |
| Bit switch<br>MO:ON→OFF | Touch it to switch device ON/OFF | Page 6-32 |
| Data set switch<br>D100: 200 → 350 | Touch it to change bit device value | Page 6-61 |

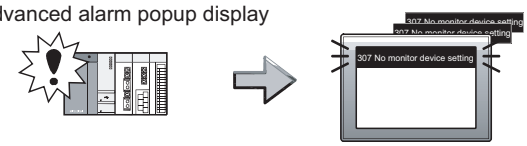
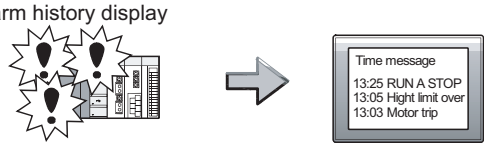
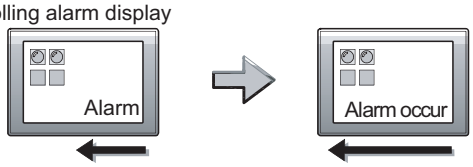
| Image | Function | Page |
|---|---|---|
| Special function switch | Touch it to switch the screen to such as the Utility screen. | Page 6-65 |
| Go to screen switch<br>Base 1 Base 2 | Touch it to switch between the base and window screen | Page 6-75 |
| Change station No. switch<br>Change monitor destination | Touch it to switch the monitored controller station No. | Page 6-87 |
| Key code switch | Used as the key for inputting numerical value/ASCII | Page 6-97 |
| Data change switch | Displays the specified key window at the specified position and displays the cursor on the corresponding object. | Page 6-93 |

## 2 Digit/font display

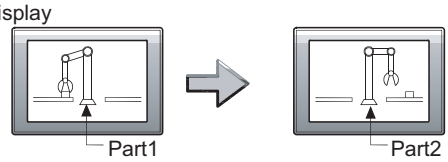
| Image | Function | Page |
|---|---|---|
| Numerical display<br>D100:334 | Displays device value in numerical value | Page 7-1 |
| Numerical input<br>D100:45 | Write value on device | Page 7-1 |
| Data list<br>D100: 55<br>D101:122<br>D102: 34 | Display multipledevice value in list | Page 7-46 |
| ASCII display<br>D10:4241H(BA)<br>D11:4443H(DC)<br>ABCD | Displays device value in text | Page 7-62 |
| ASCII input<br>D10:4241H(BA)<br>D11:4443H(DC) | Inputs text code device | Page 7-62 |

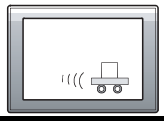
| Image | Function | Page |
|---|---|---|
| Clock display   | Displays hour/minutes, year/month/date | Page 7-86 |
| Comment display | Displays command | Page 7-96 |

## 3 Alarm

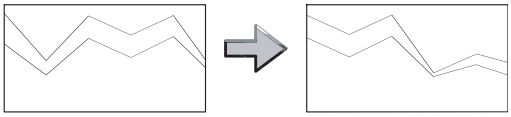
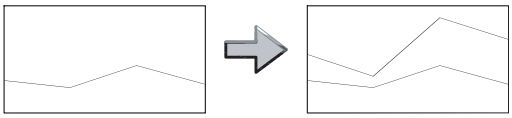
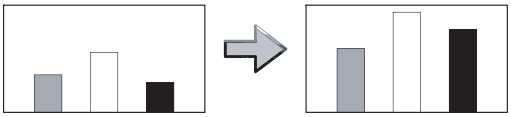
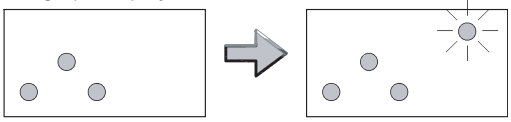
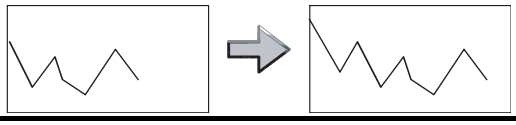
| Image | Function | Page |
|---|---|---|
| Advanced alarm display | Displays a history of GOT errors, communication errors or user-created messages at alarm occurrence.<br>Also displays alarms hierarchically. | Page 8-101 |
| Advanced alarm popup display   | Pops up a GOT error, communication error or user-created message at alarm occurrence. Also displays alarms hierarchically. | Page 8-150 |
| User alarm display | Displays a user-created message at alarm occurrence. | Page 8-186 |
| System alarm display | Displays a GOT error or communication error at alarm occurrence. | Page 8-210 |
| Alarm history display   | Displays a history of user-created messages at alarm occurrence. | Page 8-218 |
| Scrolling alarm display   | Displays alarm in floating. | Page 8-256 |

## 4 Parts

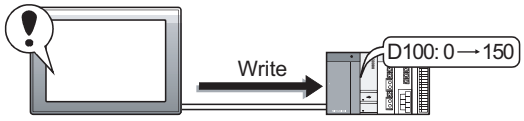
| Image | Function | Page |
|---|---|---|
| Parts display   | Display entered device | Page 9-1 |

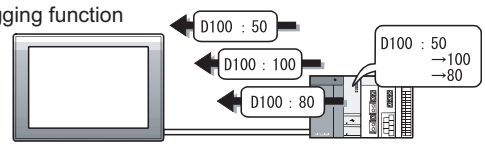
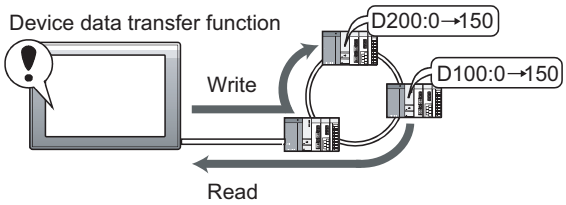
| Image | Function | Page |
|---|---|---|
| Parts movement display  | Displays moving parts | Page 9-39 |

## 5 Graph/Meter

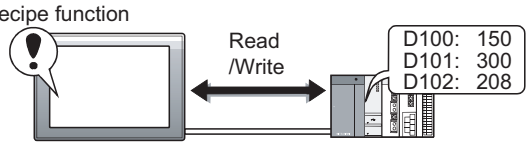
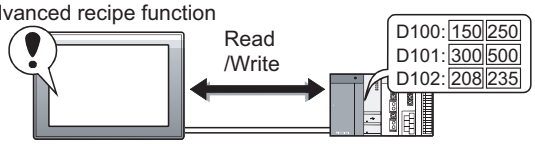
| Image | Function | Page |
|---|---|---|
| Panel meter display | Displays device data on panel meter | Page 10-1 |
| Level display | Displays device data in proportional level | Page 10-16 |
| Trend graph display  | Displays device data in trend graph | Page 10-33 |
| Line graph display  | Displays device data in line graph | Page 10-50 |
| Bar graph display  | Displays device data in bar graph | Page 10-70 |
| Statistics graph display Circle graph Bar graph | Displays device data in statistics graph | Page 10-85 |
| Scatter graph display  | Displays device data in scatter graph | Page 10-99 |
| Historical trend graph display  | Displays the past data having been collected by the logging function in trend graph, starting from the present. | Page 10-125 |

## 6 Trigger → action

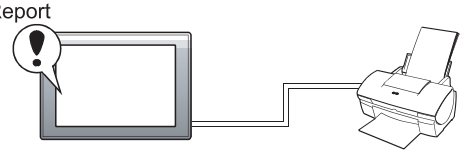
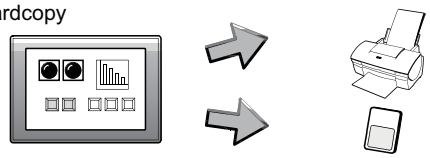
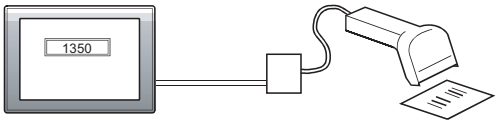
| Image | Function | Page |
|---|---|---|
| Status observation function   | Monitors status of device and write value to device or operates GOT when condition meets | Page 11-1 |

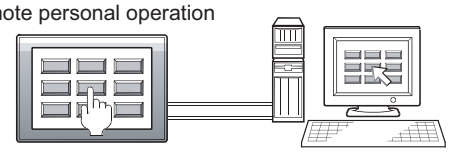
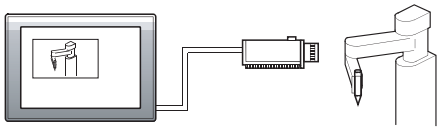
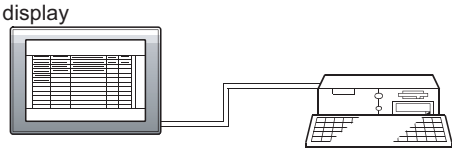
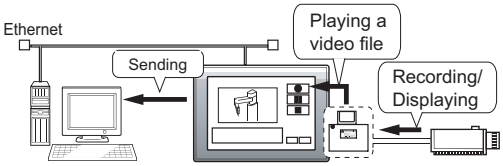
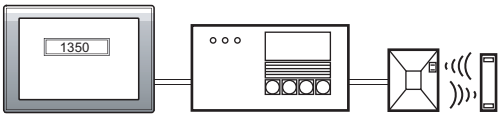
| Image | Function | Page |
|---|---|---|
| Time action function | Outputs the device writing and sound at specified time. | Page 11-11 |
| Logging function   | Collects and stores the device values. | Page 11-20 |
| Device data transfer function   | Reads the device values and writes to the other device when the trigger condition is satisfied. | Page 11-61 |

## 7 Recipe

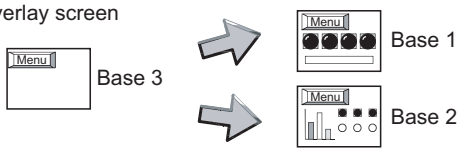
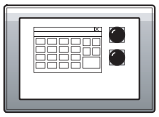
| Image | Function | Page |
|---|---|---|
| Recipe function   | Monitors status of device and read/write device data when condition meets.<br>One value can be set to a device. | Page 12-12 |
| Advanced recipe function   | Monitors status of device and read/write device data when condition meets.<br>Multiple values can be set to a device.<br>The device value can be read/written by the utility. | Page 12-25 |

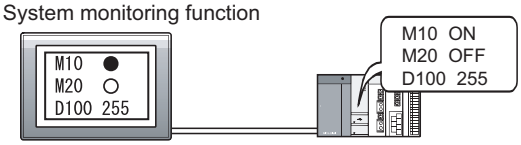
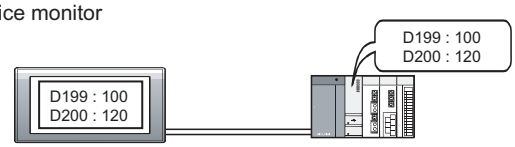
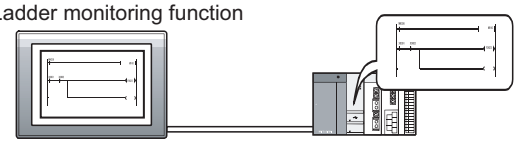
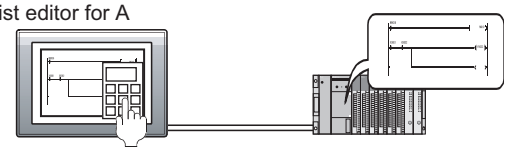
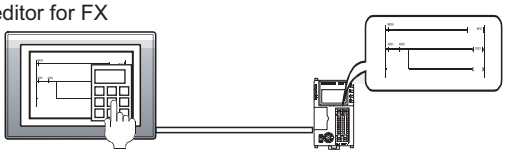
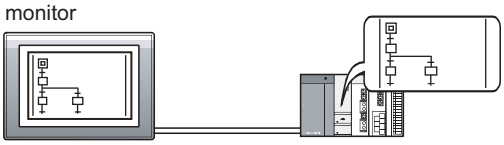
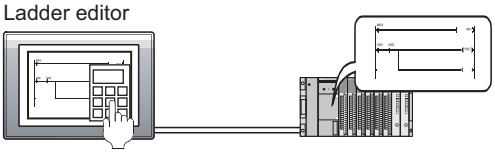
## 8 External input/output

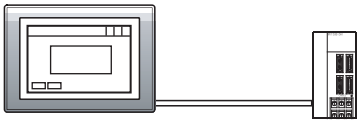
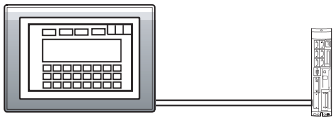
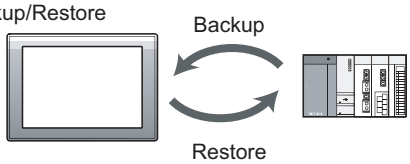
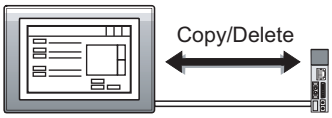
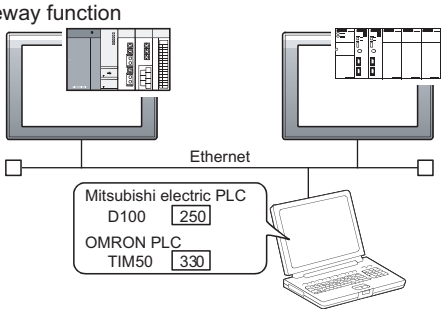
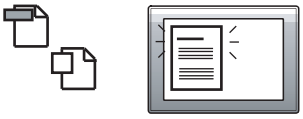
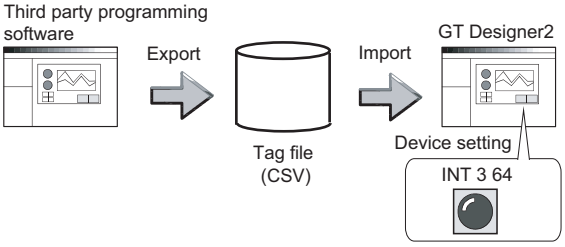
| Image | Function | Page |
|---|---|---|
| Report  | Collects data such as production management and production status and prints the collected data. | Page 13-1 |
| Hardcopy  | Outputs the GOT monitor screen to printer or memory card | Page 13-1 |
| Bar code   | Writes data read by bar code reader to device | Page 13-35 |

| Image | Function | Page |
|---|---|---|
| Remote personal operation  | Operates the mouse pointer on the personal computer by touching the personal computer screen displayed on the GOT using the RGB display. | Page 13-74 |
| Video  | Displays video | Page 13-44 |
| RGB display  | Displays PC screens | Page 13-64 |
| Multimedia function   | Displays or records a video image.<br>Plays a video file.<br>Sends a video file to a personal computer. | Page 13-118 |
| Operation panel | Writes data to a device with the operation panel. | Page 13-82 |
| Sound output | Outputs sounds | Page 13-94 |
| RFID   | Reads and writes IC tag data with RFID readers/writers. | Page 13-99 |

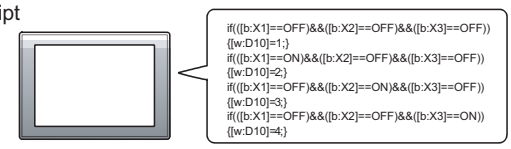
## 9 Others

| Image | Function | Page |
|---|---|---|
| Set overlay screen   | Set overlay screen from other screens | Page 15-1 |
| Test function  | Changes device values on a test window while displaying a monitor screen. | Page 15-59 |

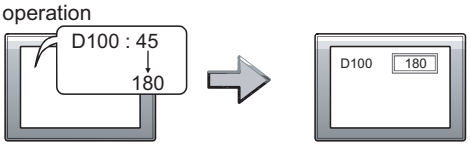
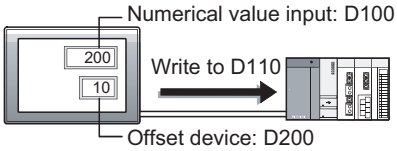
| Image | Function | Page |
|---|---|---|
| System monitoring function   | Displays the operation status of a sequence program. | Page 14-2 |
| Device monitor   | Monitors the device states of the PLC. | Page 14-3 |
| Ladder monitoring function  | Monitors the status of ACPU devices. | Page 14-4 |
| List editor for A  | Reads a sequence program from ACPU and display in list to change instructions. | Page 14-6 |
| List editor for FX  | Reads a sequence program from FXCPU and displays in list to change instructions. | Page 14-7 |
| SFC monitor  | Displays the operation status of a SFC program. | Page 14-16 |
| Ladder editor  | Monitors and edits a sequence program, or changes current device values in the controller by using the GOT without the dedicated software. | Page 14-18 |
| Intelligent module monitor | Monitors the buffer memory of the intelligent function module on the dedicated screen to change the data. | Page 14-8 |
| Network monitor | Monitors the network status of MELSECNET/H, MELSECNET/10 and MELSECNET(II). | Page 14-9 |
| Motion monitor | Performs servo monitoring and parameter setting for motion controller CPU (Q series). | Page 14-10 |

| Image | Function | Page |
|---|---|---|
| Servo amplifier monitor  | Performs various monitoring functions, parameter changes and test run for the servo amplifier where a GOT is connected. | Page 14-11 |
| CNC monitor  | Executes the position display monitor and others of the CNC that is connected to the GOT. The position display monitor and others of the CNC are equivalent to those of the MELDAS dedicated display. | Page 14-12 |
| Backup/Restore   | Backs up and restores data for controllers with the GOT. | Page 14-13 |
| CNC data I/O   | Copies or deletes machining programs, parameters, and others of the CNC that is connected to the GOT. | Page 14-15 |
| Gateway function   | Performs remote monitoring and remote maintenance of production site from the office. | Page 15-62 |
| Document display  | Displays document data on the GOT. | Page 15-39 |
| MES interface | Enables data communications between the controllers and databases in the information system (manufacturing execution system) without a communication gateway. | Page 15-63 |
| Tag import function   | Import a CSV tag file created by the third party programming software to GT Designer2, and set a tag as a device. | Page 15-64 |

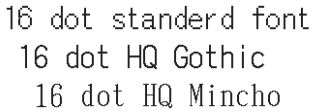
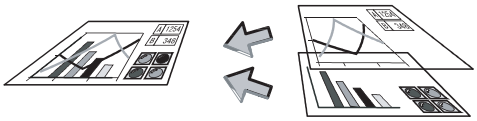
## 10 Script function

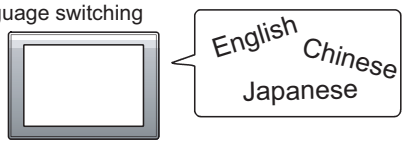
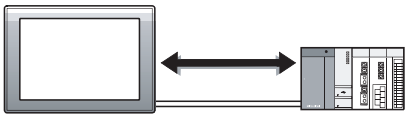
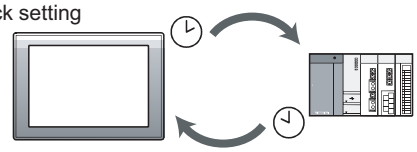
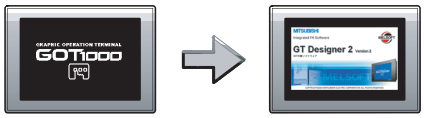
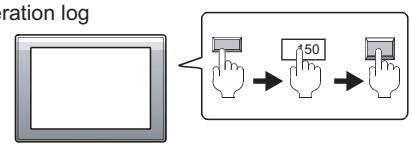
| Image | Function | Page |
|---|---|---|
| Script   | Controls GOT display by scripts | Page 16-1 |

## 11 Object setting

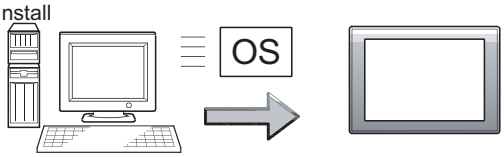
| Image | Function | Page |
|---|---|---|
| Data operation   | Operates device values by expression and enables objects using the operated value | Page 5-74 |
| Offset   | Accumulates the offset device value in monitor device address and monitor. | Page 5-80 |
| Security | Restricts the password users | Page 5-84 |

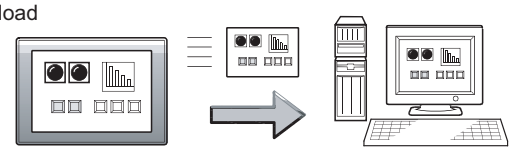
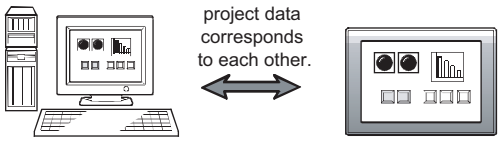
# Other Functions (GT Designer2 Version□ Screen Design Manual)

| Image | Function | Page |
|---|---|---|
| Font   | Displays a text in various fonts. | Page 2-20 |
| Superimposition  | Superimposes figures and objects. | Page 2-80 |
| Multi-channel function | Monitors multiple controllers. | Page 2-194 |

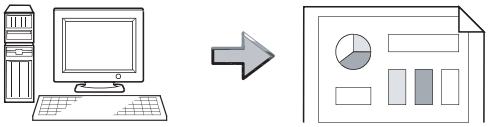
| Image | Function | Page |
|---|---|---|
| Language switching   | Switches between multiple languages. | Page 3-27 |
| Communication settings  | Makes the communication settings of the controller. | Page 3-100 |
| GOT Setup | Makes the settings relevant to GOT display and operation. | Page 3-159 |
| Clock setting  | Sets the clock used by the GOT. | Page 3-168 |
| Startup logo   | Sets the screen (BMP file) to be displayed at GOT startup. | Page 3-169 |
| Dialog window | Customizes the GOT system messages. | Page 3-175 |
| Operation log   | Saves the user's operation performed at the GOT as an operation history. | Page 15-13 |

## Data Transmission (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Install   | Transfers OS from PC to the GOT. | Page 8-73 |
| Download | Transimits monitor screen data from PC to GOT | Page 8-80 |

| Image | Function | Page |
|---|---|---|
| Upload  | Transmits monitor screen data from GOT to PC | Page 8-93 |
| Verify   | Check the project data displayed on the GT Designer2 against the project data stored in the GOT. | Page 8-87 |

## Print (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Print  | Prints the project information (screen image, title list, etc.). | Page 9-1 |

# MANUALS

The following table lists the manual relevant to this product.
You can order it as necessary.
Stored in the GT Works2/GT Designer2 in PDF format.

Related Manuals

| Manual Name | Manual Number (Type code) |
|---|---|
| GT16 User's Manual (Hardware)<br>Describes the GT16 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>(Sold separately) | SH-080928ENG<br>(1D7MD3) |
| GT16 User's Manual (Basic Utility)<br>Describes the GT16 utility-relevant contents, including the screen settings, operation method settings, program/data management, and self check function.<br>(Sold separately) | SH-080929ENG<br>(1D7MD4) |
| GT15 User's Manual<br>-Describes the GT15 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT15 functions, including the utility.<br>(Sold separately) | SH-080528ENG<br>(1D7M23) |
| GT11 User's Manual<br>-Describes the GT11 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT11 functions, including the utility.<br>(Sold separately) | JY997D17501<br>(09R815) |
| GT11 Handy GOT User's Manual<br>-Describes the Handy GOT hardware-relevant contents, including the system configurations, specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the Handy GOT functions, including the utility, and how to make cables.<br>(Sold separately) | JY997D20101<br>JY997D20102<br>(09R817) |
| GT10 User's Manual<br>-Describes the GT10 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT10 functions, including the utility.<br>(Sold separately) | JY997D24701<br>(09R819) |
| GT SoftGOT1000 Operating Manual<br>Describes the screen configuration, functions and using method of GT SoftGOT1000.<br>(Sold separately) | SH-080602ENG<br>(1D7M48) |
| GT Designer2 Version2 Basic Operation/Data Transfer Manual<br>Describes methods of the GOT1000 series installation operation, basic operation for drawing and transmitting data to GOT1000 series<br>(Sold separately) | SH-080529ENG<br>(1D7M24) |

(Continued to next page)

| Manual Name | Manual Number (Type code) |
|---|---|
| GOT1000 Series Connection Manual (1/3, 2/3, 3/3)<br>Describes system configurations of the connection method applicable to GOT1000 series and cable creation<br>(Sold separately) | SH-080532ENG<br>(1D7M26) |
| GOT1000 Series Extended / Option Functions Manual<br>Describes extended functions and option functions applicable to GOT series.<br>(Sold separately) | SH-080544ENG<br>(1D7M32) |
| GOT1000 Series Gateway Functions Manual<br>Describes specifications, system configurations and setting methods of the gateway functions.<br>(Sold separately) | SH-080545ENG<br>(1D7M33) |
| GOT1000 Series MES Interface Function Manual<br>Describes the specifications, system configurations, and setting method of GT MES interface function.<br>(Sold separately) | SH-080654ENG<br>(1D7M63) |

# ABBREVIATIONS AND GENERIC TERMS

Abbreviations and generic terms used in this manual are as follows:

## ■ GOT

| Abbreviations and generic terms | | | Description |
|---|---|---|---|
| GOT1000 Series | GT SoftGOT1000 | | Abbreviation of GT SoftGOT1000 |
| | GT1695 | GT1695M-X | Abbreviation of GT1695M-XTBA, GT1695M-XTBD |
| | GT1685 | GT1685M-S | Abbreviation of GT1685M-STBA, GT1685M-STBD |
| | GT1675 | GT1675M-S | Abbreviation of GT1675M-STBA, GT1675M-STBD |
| | | GT1675M-V | Abbreviation of GT1675M-VTBA, GT1675M-VTBD |
| | GT1665 | GT1665M-S | Abbreviation of GT1665M-STBA, GT1665M-STBD |
| | | GT1665M-V | Abbreviation of GT1665M-VTBA, GT1665M-VTBD |
| | GT16□□, GT16 | | Abbreviation of GT1695,GT1685, GT1675, GT1665 |
| | GT1595 | GT1595-X | Abbreviation of GT1595-XTBA, GT1595-XTBD |
| | GT1585 | GT1585V-S | Abbreviation of GT1585V-STBA, GT1585V-STBD |
| | | GT1585-S | Abbreviation of GT1585-STBA, GT1585-STBD |
| | GT157□ | GT1575V-S | Abbreviation of GT1575V-STBA, GT1575V-STBD |
| | | GT1575-S | Abbreviation of GT1575-STBA, GT1575-STBD |
| | | GT1575-V | Abbreviation of GT1575-VTBA, GT1575-VTBD |
| | | GT1575-VN | Abbreviation of GT1575-VNBA, GT1575-VNBD |
| | | GT1572-VN | Abbreviation of GT1572-VNBA, GT1572-VNBD |
| | GT156□ | GT1565-V | Abbreviation of GT1565-VTBA, GT1565-VTBD |
| | | GT1562-VN | Abbreviation of GT1562-VNBA, GT1562-VNBD |
| | GT155□ | GT1555-V | Abbreviation of GT1555-VTBD |
| | | GT1555-Q | Abbreviation of GT1555-QTBD, GT1555-QSBD |
| | | GT1550-Q | Abbreviation of GT1550-QLBD |
| | GT15□□, GT15 | | Abbreviation of GT1595, GT1585, GT157□, GT156□, GT155□ |
| | GT115□ | GT1155-Q | Abbreviation of GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA, GT1155-QTBD, GT1155-QSBD |
| | | GT1150-Q | Abbreviation of GT1150-QLBDQ, GT1150-QLBDA, GT1150-QLBD |
| | Handy GOT | GT1155HS-Q | Abbreviation of GT1155HS-QSBD |
| | | GT1150HS-Q | Abbreviation of GT1150HS-QLBD |
| | GT11□□, GT11 | | Abbreviation of GT1155-Q, GT1150-Q, GT11 Handy GOT |
| | GT105□ | GT1055-Q | Abbreviation of GT1055-QSBD |
| | | GT1050-Q | Abbreviation of GT1050-QBBD |
| | GT104□ | GT1045-Q | Abbreviation of GT1045-QSBD |
| | | GT1040-Q | Abbreviation of GT1040-QBBD |
| | GT1030 | | Abbreviation of GT1030-LBD, GT1030-LBD2, GT1030-LBDW, GT1030-LBDW2 |
| | GT1020 | | Abbreviation of GT1020-LBD, GT1020-LBD2, GT1020-LBL, GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW |
| | GT10□□, GT10 | | Abbreviation of GT105□, GT104□, GT1030, GT1020 |
| GOT900 Series | | | Abbreviation of GOT-A900 series, GOT-F900 series |
| GOT800 Series | | | Abbreviation of GOT-800 series |

## ■ Communication unit

| Abbreviations and generic terms | Description |
|---|---|
| Bus connection unit | GT15-QBUS, GT15-QBUS2, GT15-ABUS, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L |
| Serial communication unit | GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE |
| RS-422 conversion unit | GT15-RS2T4-9P, GT15-RS2T4-25P |
| Ethernet communication unit | GT15-J71E71-100 |
| MELSECNET/H communication unit | GT15-J71LP23-25, GT15-J71BR13 |
| MELSECNET/10 communication unit | GT15-75J71LP23-Z*1, GT15-75J71BR13-Z*2 |
| CC-Link IE controller network communication unit | GT15-J71GP23-SX |
| CC-Link communication unit | GT15-J61BT13, GT15-75J61BT13-Z*3 |
| Interface converter unit | GT15-75IF900 |
| Serial multi-drop connection unit | GT01-RS4-M |
| Connection Conversion Adapter | GT10-9PT5S |

*1 A9GT-QJ71LP23 + GT15-75IF900 set
*2 A9GT-QJ71BR13 + GT15-75IF900 set
*3 A8GT-J61BT13 + GT15-75IF900 set

## ■ Option unit

| Abbreviations and generic terms | | Description |
|---|---|---|
| Printer unit | | GT15-PRN |
| Video/RGB unit | Video input unit | GT16M-V4, GT15V-75V4 |
| | RGB input unit | GT16M-R2, GT15V-75R1 |
| | Video/RGB input unit | GT16M-V4R1, GT15V-75V4R1 |
| | RGB output unit | GT16M-ROUT, GT15V-75ROUT |
| Multimedia unit | | GT16M-MMR |
| CF card unit | | GT15-CFCD |
| CF card extension unit*1 | | GT15-CFEX-C08SET |
| External I/O unit | | GT15-DIO, GT15-DIOR |
| Sound output unit | | GT15-SOUT |
| Fingerprint unit | | GT15-80FPA |

*1 GT15-CFEX + GT15-CFEXIF + GT15-C08CF set.

## ■ Option

| Abbreviations and generic terms | | Description | | | | |
|---|---|---|---|---|---|---|
| Memory card | CF card | GT05-MEM-16MC, GT05-MEM-256MC, | GT05-MEM-32MC, GT05-MEM-512MC, | GT05-MEM-64MC, GT05-MEM-1GC, | GT05-MEM-128MC, GT05-MEM-2GC | |
| Memory card adaptor | | GT05-MEM-ADPC | | | | |
| Option function board | | GT16-MESB, GT15-QFNB32M, | GT15-FNB, GT15-QFNB48M, | GT15-QFNB, GT15-MESB48M, | GT15-QFNB16M, GT11-50FNB | |
| Battery | | GT15-BAT, | GT11-50BAT | | | |
| Protective Sheet | For GT16 | GT16-90PSCB, GT16-80PSCB, GT16-70PSCB, GT16-60PSCB, | GT16-90PSGB, GT16-80PSGB, GT16-70PSGB, GT16-60PSGB, | GT16-90PSCW, GT16-80PSCW, GT16-70PSCW, GT16-60PSCW, | GT16-90PSGW, GT16-80PSGW, GT16-70PSGW, GT16-60PSGW | |
| | For GT15 | GT15-90PSCB, GT15-80PSCB, GT15-70PSCB, GT15-60PSCB, GT15-50PSCB, | GT15-90PSGB, GT15-80PSGB, GT15-70PSGB, GT15-60PSGB, GT15-50PSGB, | GT15-90PSCW, GT15-80PSCW, GT15-70PSCW, GT15-60PSCW, GT15-50PSCW, | GT15-90PSGW, GT15-80PSGW, GT15-70PSGW, GT15-60PSGW, GT15-50PSGW | |
| | For GT11 | GT11-50PSCB, GT11H-50PSC | GT11-50PSGB, | GT11-50PSCW, | GT11-50PSGW, | |
| | For GT10 | GT10-50PSCB, GT10-40PSCB, GT10-30PSCB, GT10-20PSCB, | GT10-50PSGB, GT10-40PSGB, GT10-30PSGB, GT10-20PSGB, | GT10-50PSCW, GT10-40PSCW, GT10-30PSCW, GT10-20PSCW, | GT10-50PSGW, GT10-40PSGW, GT10-30PSGW, GT10-20PSGW | |
| Protective cover for oil | | GT05-90PCO, GT05-50PCO | GT05-80PCO, | GT05-70PCO, | GT05-60PCO, | |
| USB environmental protection cover | | GT16-UCOV, | GT15-UCOV, | GT11-50UCOV | | |
| Stand | | GT15-90STAND, GT05-50STAND | GT15-80STAND, | GT15-70STAND, | A9GT-50STAND, | |
| Attachment | | GT15-70ATT-98, GT15-60ATT-87, | GT15-70ATT-87, GT15-60ATT-77, | GT15-60ATT-97, GT15-50ATT-95W, | GT15-60ATT-96, GT15-50ATT-85 | |
| Backlight | | GT16-90XLTT, GT16-70SLTT, GT15-70SLTT, GT15-60VLTN | GT16-80SLTT, GT16-70VLTT, GT15-70VLTT, | GT15-90XLTT, GT16-60SLTT, GT15-70VLTN, | GT15-80SLTT, GT16-60VLTT, GT15-60VLTT, | |
| Multi-color display board | | GT15-XHNB, | GT15-VHNB | | | |
| Connector conversion box | | GT11H-CNB-37S | | | | |
| Emergency stop sw guard cover | | GT11H-50ESCOV | | | | |
| Memory loader | | GT10-LDR | | | | |
| Memory board | | GT10-50FMB | | | | |

## ■ Software

| Abbreviations and generic terms | Description |
|---|---|
| GT Works2 Version□ | SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV |
| GT Designer2 Version□ | SW□D5C-GTD2-E, SW□D5C-GTD2-EV |
| GT Designer2 | Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series |
| GT Converter2 | Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series |
| GT Simulator2 | Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series |
| GT SoftGOT1000 | Abbreviation of monitoring software GT SoftGOT1000 |
| GT SoftGOT2 | Abbreviation of monitoring software GT SoftGOT2 |
| GX Developer | Abbreviation of SW□D5C-GPPW-E(-EV)/SW□D5F-GPPW-E type software package |
| GX Simulator | Abbreviation of SW□D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions) |
| Document Converter | Abbreviation of document data conversion software Document Converter for GOT1000 series |
| PX Developer | Abbreviation of SW□D5C-FBDQ-E type FBD software package for process control |

## License key (for GT SoftGOT1000)

| Abbreviations and generic terms | Description |
|---|---|
| License | GT15-SGTKEY-U, GT15-SGTKEY-P |

## License key (for GT SoftGOT2)

| Abbreviations and generic terms | Description |
|---|---|
| License key | A9GTSOFT-LKEY-P (For DOS/V PC) |
| License key FD | SW5D5F-SGLKEY-J (For PC CPU module) |

## Others

| Abbreviations and generic terms | | Description |
|---|---|---|
| OMRON PLC | | Abbreviation of PLC manufactured by OMRON Corporation |
| KEYENCE PLC | | Abbreviation of PLC manufactured by KEYENCE CORPORATION |
| KOYO EI PLC | | Abbreviation of PLC manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD. |
| SHARP PLC | | Abbreviation of PLC manufactured by Sharp Manufacturing Systems Corporation |
| JTEKT PLC | | Abbreviation of PLC manufactured by JTEKT Corporation |
| TOSHIBA PLC | | Abbreviation of PLC manufactured by TOSHIBA CORPORATION |
| TOSHIBA MACHINE PLC | | Abbreviation of PLC manufactured by TOSHIBA MACHINE CO., LTD. |
| HITACHI IES PLC | | Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd. |
| HITACHI PLC | | Abbreviation of PLC manufactured by Hitachi, Ltd. |
| FUJI FA PLC | | Abbreviation of PLC manufactured by Fuji Electric FA Components & Systems Co., Ltd. |
| PANASONIC PLC | | Abbreviation of PLC manufactured by Panasonic Electric Works Co., Ltd. |
| YASKAWA PLC | | Abbreviation of PLC manufactured by YASKAWA Electric Corporation |
| YOKOGAWA PLC | | Abbreviation of PLC manufactured by Yokogawa Electric Corporation |
| ALLEN-BRADLEY PLC | | Abbreviation of Allen-Bradley PLC manufactured by Rockwell Automation, Inc. |
| GE FANUC PLC | | Abbreviation of PLC manufactured by GE Fanuc Automation Corporation |
| LS IS PLC | | Abbreviation of PLC manufactured by LS Industrial Systems Co., Ltd. |
| SCHNEIDER PLC | | Abbreviation of PLC manufactured by Schneider Electric SA |
| SIEMENS PLC | | Abbreviation of PLC manufactured by Siemens AG |
| Temperature controller | OMRON temperature controller | Abbreviation of temperature controller manufactured by OMRON Corporation |
| | SHINKO indicating controller | Abbreviation of temperature controller manufactured by Shinko Technos Co., Ltd. |
| | CHINO controller | Abbreviation of temperature controller manufactured by CHINO CORPORATION |
| | FUJI SYS temperature controller | Abbreviation of temperature controller manufactured by Fuji Electric Systems Co., Ltd. |
| | YAMATAKE temperature controller | Abbreviation of temperature controller manufactured by Yamatake Corporation |
| | YOKOGAWA temperature controller | Abbreviation of temperature controller manufactured by Yokogawa Electric Corporation |
| | RKC temperature controller | Abbreviation of temperature controller manufactured by RKC INSTRUMENT INC. |
| PC CPU module | | Abbreviation of PC CPU Unit manufactured by CONTEC CO., LTD |
| GOT (server) | | Abbreviation of GOTs that use the server function |
| GOT (client) | | Abbreviation of GOTs that use the client function |
| Windows® font | | Abbreviation of TrueType font and OpenType font available for Windows®<br>(Differs from the True Type fonts settable with GT Designer2) |
| Intelligent function module | | Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit. |
| MODBUS® /TCP | | Generic term for the protocol designed to use MODBUS® protocol messages on a TCP/IP network. |

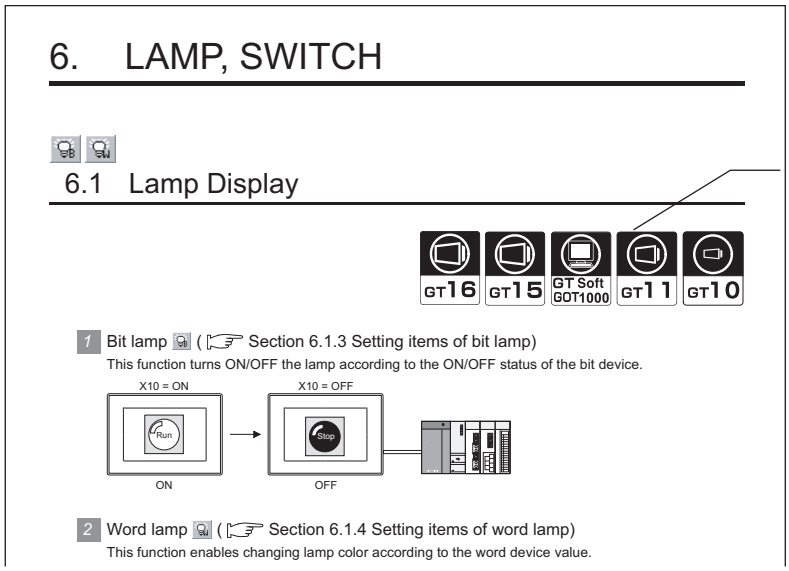
# HOW TO USE THIS MANUAL

## 1 Functions

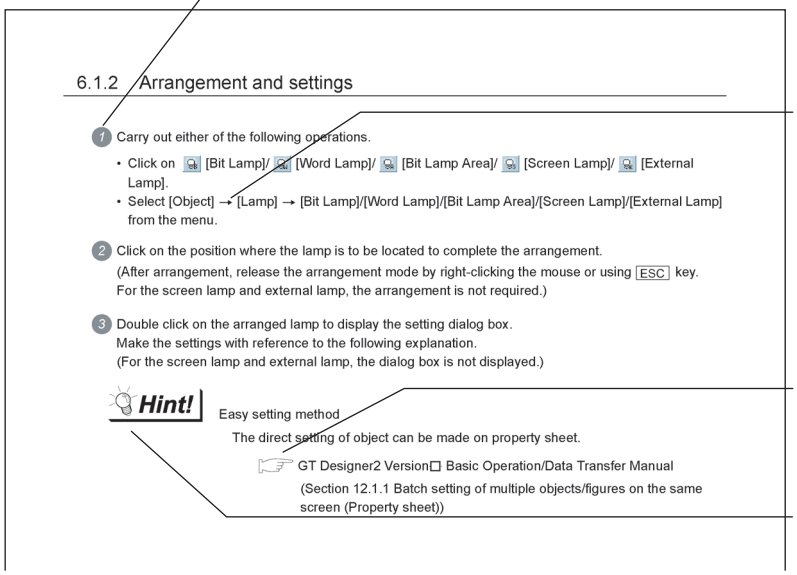
This manual describes functions available for the GT Designer2 Version2.96A.
For the added functions by the product version upgrade, refer to the list of functions added by GT Desiger2 version upgrade in Appendices.
In addition, GT Designer2 Version2.98C supports the multimedia function of recording and playing video files with sound, and GT Works3 Version1.14Q supports the multidrop connection on GT16 and GT15.

## 2 Symbols

Following symbols are used in this manual




Shows functions applicable to GT16, GT15, GT SoftGOT1000, GT11, GT10.
" ○ ", Applicable
" × ", N / A




1 → 2 → 3 · · · ·
Indicates the operation steps.

Brackets used for the menu and items differ.

[ ] :Refers to an item displayed on the computer screen or the GOT screen.
□ :Refers to a button displayed on the computer screen or the GOT screen, or a key of the computer keyboard.

Show the items including detailed explanation (manual and the chapter, section, item).

**Point** Refers to information required for operation.

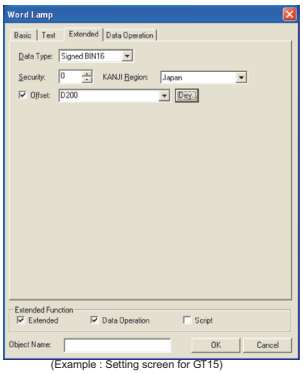
**Hint!** Refers to information useful for operation.

**Remark** Refers to supplementary explanations.

* The above is different from the actual page, as it is provided for explanation only.

3 Extended tab

Set the data type, security level and offset value of the monitor device.
Check [Extended] at the bottom of this dialog box to display this tab.




(Example : Setting screen for GT15)

Basic | Text | **Extended** | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN16 : Lamp display is executed by a signed 16-bit binary value of a word device.<br>Unsigned BIN16 : Lamp display is executed by an unsigned 16-bit binary value of a word device.<br>BCD16 : Lamp display is executed by a 16-bit BCD (Binary-Coded Decimal) value of a word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot standard • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Check this item when executing monitor by switching between multiple devices. | — — |

Shows functions applicable to each GOT.
Each icon shows each GOT model below. The colors of the icons show if the functions are enabled or disabled for each model.

Icon types
16: GT16
15: GT15
SG: GT SoftGOT1000
11: GT11
10: GT10

Icon colors
Black: Enabled
Gray: Disabled

* The above is different from the actual page, as it is provided for explanation only.

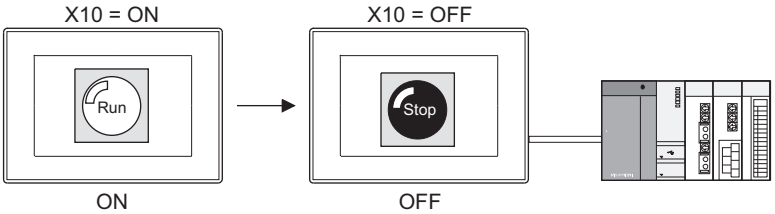
# Memo

# 6. LAMP, SWITCH

## 6.1 Lamp Display

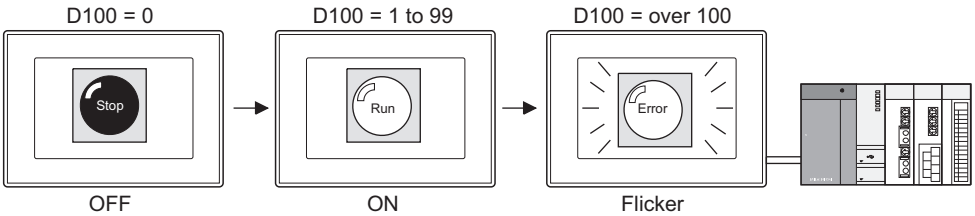
### 1 Bit lamp ( Section 6.1.3 Setting items of bit lamp)

This function turns ON/OFF the lamp according to the ON/OFF status of the bit device.




### 2 Word lamp ( Section 6.1.4 Setting items of word lamp)

This function enables changing lamp color according to the word device value.




**Hint!**

(1) To control a figure in the similar manner as a lamp display
It is possible to change the color of a figure in response to turning ON of the bit device, like a lamp, by setting the lamp attribute to the figure.
For details, refer to the following manual.

GT Designer2 Version ☐ Basic Operation/Data Transfer Manual
(Section 11.1.1 Drawing figures)

(2) Differences between a lamp display and a figure for which lamp attribute is set
With the figure for which lamp attribute is set, only changing of the color is possible in response to turning ON of a bit device.
To set a layer, text, etc. to an object, it is necessary to use a lamp display.

## 6.1.1 Relevant settings

For Lamp display, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

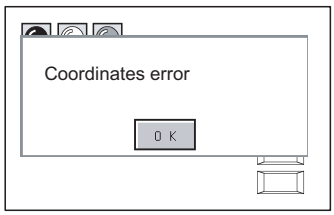
(1) Functions relevant to Lamp display and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to Lamp display and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project

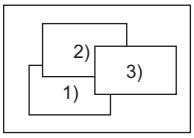
Setting for each screen

Setting items
• [Carry out check for overlapping objects within GOT]

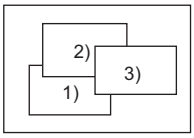
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

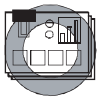
<Order of overlapped objects on GT Designer2>




<Order of displaying objects on the GOT>




Setting for each project



Setting for each screen

Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 6.1.2 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Bit Lamp]/ [Word Lamp]/ [Bit Lamp Area]/ [Screen Lamp]/ [External Lamp].
   - Select [Object] → [Lamp] → [Bit Lamp]/[Word Lamp]/[Bit Lamp Area]/[Screen Lamp]/[External Lamp] from the menu.

2. Click on the position where the lamp is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.
   For the screen lamp and external lamp, the arrangement is not required.)

3. Double click on the arranged lamp to display the setting dialog box.
   Make the settings with reference to the following explanation.
   (For the screen lamp and external lamp, the dialog box is not displayed.)

**Hint!**

Easy setting method

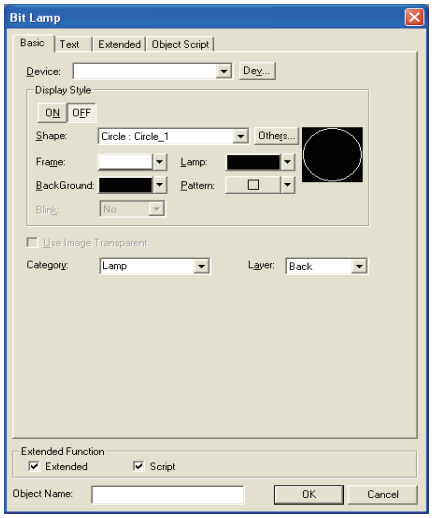
The direct setting of object can be made on property sheet.

GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

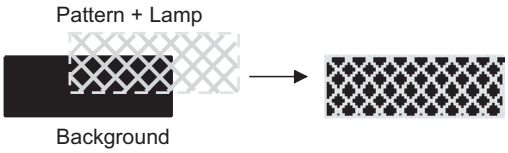
## 6.1.3 Setting items of bit lamp

### 1 Basic tab

Set the device to be monitored and the lamp figure (shape/color) to be displayed when the device is ON/OFF.




**Basic** | Text | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display Style | ON | Click on this item to set the display attributes when the device turns ON. | |
| | OFF | Click on this item to set the display attributes when the device turns OFF. | |
| | Shape | Set a Lamp Figure.<br>By clicking on the Others button, shapes other than those in the list box or library shapes can be selected.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the color of the lamp shape. | |
| | Lamp | Select the color of the lamp figure.<br>When a figure in the library (except my favorites) is set for [Shape], the set figure can be changed to a figure in a different color registered in the library with changing the lamp color. | |
| | BackGround | Select the pattern and background color of the lamp figure.<br>The selected pattern in the lamp color is displayed on the background color.<br>Example: Background : ■<br>Pattern : ▩<br>Lamp : □<br>  <br> | |
| | Pattern | | |
| | Blink | Select the blinking pattern of the Lamp.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Use Image Transparent *1 | | Check the item for enabling the transparent setting of the image data set as a lamp figure.<br>If the item is not checked, the transparent setting is disabled.<br>The item can be checked only when the figure for the parts or library is set to the lamp figure. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | Text | Extended | Object Script

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 How to enable transparent setting of figures

GT16 GT15 SoftGOT1000 GT11 GT10

When the transparent color is set to the image data set as [Shape], the transparent setting of [Shape] is enabled.
The following shows how to enable the transparent setting of figures.

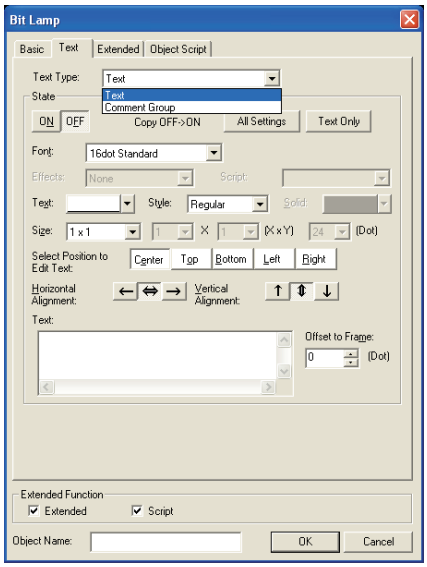
1. Set the transparent color to the image data.
   (The transparent color can be set to image data in the BMP format only.)
2. Register the image data that the transparent color is set in the parts or library.
3. Set the registered figure for the parts or library to [Shape].

For how to set the transparent color to the image data, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 11.1 Drawing Figures)

## 2 Text tab

For bit lamp, any text directly input or the comment set for [Comment Group] can be used as the text displayed on the object by making selection for [Text Type].
The text types are described below.




Basic | **Text** | Extended | Object Script

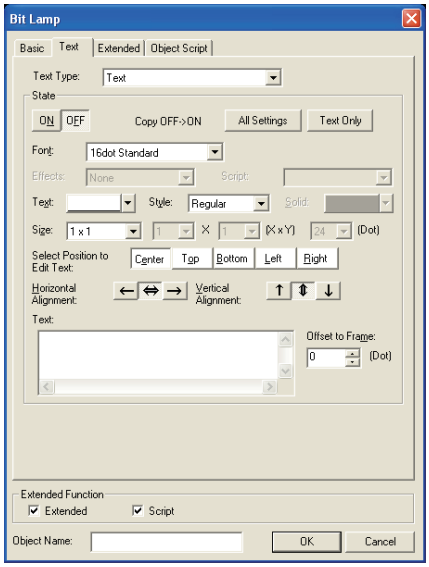
| Items | Description | Model |
|---|---|---|
| Text type | Set a text to be displayed by directly imputting it. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Comment Group | Set a comment that has been set for comment group. | |

For comment group, refer to the following.

☞ Section 4.1 Comment Registration

The setting items differ depending on text type.
Setting items of each text type are shown on the following pages.

(1) Text

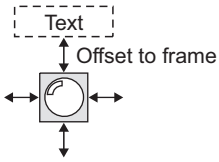



Basic | **Text** | Extended | Object Script

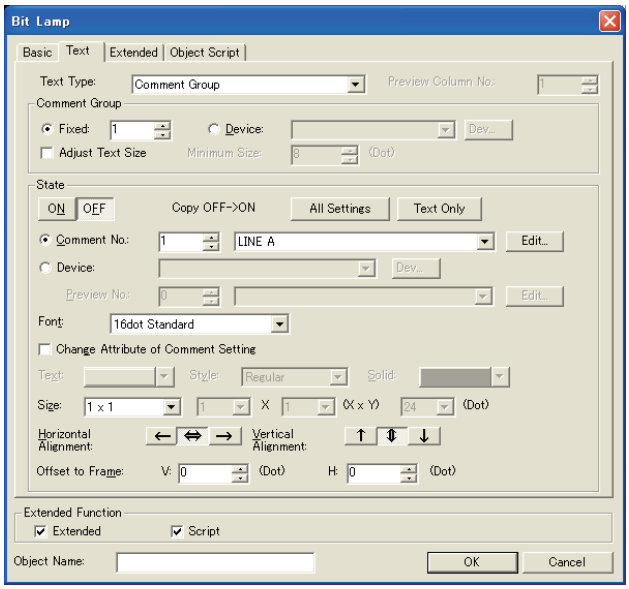
| Items | | Description | Model |
|---|---|---|---|
| State | ON | Click on this item to set the text to be displayed when the device turns ON. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | OFF | Click on this item to set the text to be displayed when the device turns OFF. | |
| | Copy OFF → ON / Copy ON → OFF | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item. | |
| | Font | Select a font.<br>• 6 × 8dot font • 12-dot standard font • 16-dot standard font<br>• 12-dot high quality Mincho • 12-dot high quality Gothic • 16-dot high quality Mincho<br>• 16-dot high quality Gothic • TrueType Mincho • TrueType Gothic<br>• Stroke • Windows® font<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Size | | |
| | Effects | Select an effect (Italic/Underline/Both).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Standard Italic Under-line Both | |
| | Script | Select a character set available for the specified font.<br>(☞ Section 2.2 1 Selectable attributes) | |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |

(Continued to next page)

Basic | **Text** | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State | Select Position to Edit Text | Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Horizontal Alignment | Select a horizontal position for the text. | |
| | Vertical Alignment | Select a vertical position for the text. | |
| | Text Input Area | Input the text to be displayed. (Up to 32 characters)<br>Press the Enter key to input a new line of the end of the first line.<br>(A line feed is counted as two characters.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.   | GT16 GT15 SoftGOT1000 GT11 GT10 |

(2) Comment group




Basic | **Text** | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Preview Column No. | | Set the comment column No. to be displayed on GT Designer2.<br>(Use the language switching device for specifying the comment column No. to be displayed on the GOT.)<br>This item can be set only when the setting for language switching is valid.<br>(☞ Section 3.4 Setting Language Switching Device) | |
| Commoent Group | Fixed | Set the number of the comment group to be used by directly inputting it. (1 to 255) | |
| | Device | Select this item when displaying the comment of the number same with the device value.<br>After selecting, set a device. | |
| | Adjust Text Size*1 | Adjusts the character size automatically along with the object area size.<br>The character size after adjustment is the maximm size for fitting the text string in the object area. | |
| | Minimum Size | Specify a minimum character size for the automatic text size adjustment. | |
| State | ON | Click on this item to set the text to be displayed when the device turns ON. | |
| | OFF | Click on this item to set the text to be displayed when the device turns OFF. | |
| | Copy OFF → ON / Copy ON → OFF | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item.<br>Clicking [All Settings] button copies all the text settings.<br>Clicking the [Text Only] button copies the comment No. only. (Use only when selecting [Comment No.] with ON and OFF.) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Comment No. | Select this item to display the registered comment data.<br>After selecting the item, set the comment No. corresponding to the comment to be displayed.<br>(0 to 32767)<br>Clicking the [Edit] button to edit the comment to be displayed.<br>Clicking the button displays the Edit dialog box*2 to edit the comment. | |
| | Device | Select the item to display the comment corresponding to the comment No. that is the same as the value stored in the device to be set. After selecting the item, set the device. | |
| | Preview No. | Displays the comment of the specified comment No. on the screen of GT Designer 2. | |

(Continued to next page)

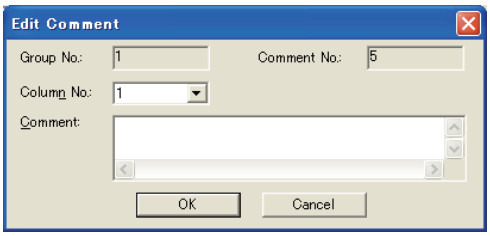
Basic | **Text** | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State | Font | Select a font for the text to be displayed.<br>• 12-dot high quality Mincho • 16-dot high quality Gothic • 12-dot standard font<br>• 12-dot high quality Gothic • 16-dot standard font • 16-dot high quality Mincho<br>• Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Size | | |
| | Change Attribute of Comment Setting | Check this item to select [Text], [Style], and [Solid] of the comment. | |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Horizontal Alignment | Select a horizontal position for the text. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Vertical Alignment | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.<br>Text<br>Offset to frame | |

For details of *1, refer to Section 5.3.3 Object size change.
*2 For settings of the Edit comment dialog box, refer to the following.

## *2 Settings for Edit Comment dialog box

Edit the displayed comments for the comment group.
Create a new comment when an unregistered comment group No. and comment No. are displayed.




| Item | Description | Model |
|---|---|---|
| Group No. | Display the comment group No. to edit the comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment No. | Display the comment No. to edit the comment. | |
| Column No. | Select the row No. to edit the comment. | |
| Comment | Edit the comment for the comment group.<br>Create a new comment when an unregistered comment group No. and comment No. are displayed.<br>The comment text can be input within 512 characters regardless of whether the character size is one-byte or two-byte. | |

## 3 Extended tab

Set the security level and offset value.
Check [Extended] at the bottom of the dialog box to display this tab.

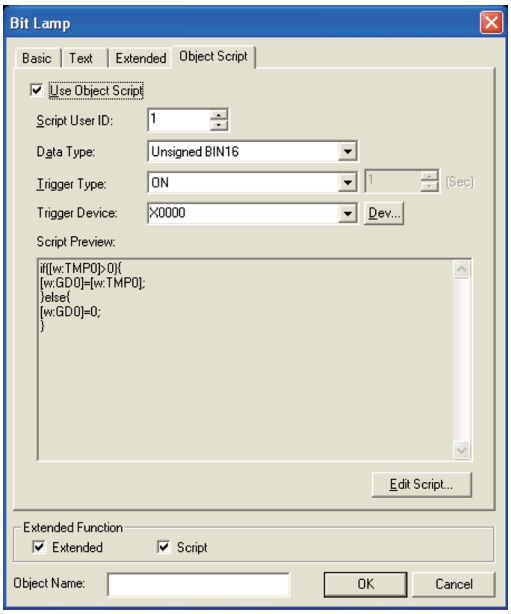
Basic | Text | **Extended** | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot standard • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 4 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 3 Option | Security | security | ○ | 4) |

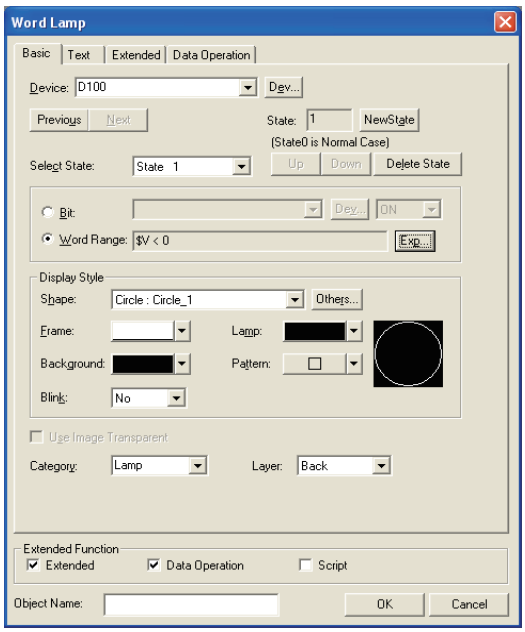
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Secton16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 6.1.4 Setting items of word lamp

### 1 Basic tab

Set the lamp figure (shape/color) corresponding to the device to be monitored or monitor device value.




Basic | Text | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| State *1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Bit | Set the condition by which the display attribute is changed.<br>When a word device value is taken as a condition, click on Exp. to enter the conditional expression in the dialog box for editing the display range.<br>(☞ Section 5.4 State Setting) | |
| | Word Range | | |
| | Display Style | Set the display attribute for the lamp. | |
| | Shape | Set a lamp figure.<br>By clicking on the Others button, shapes other than those in the list box or library shapes can be selected.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the frame color of the lamp figure. | |

(Continued to next page)

Basic | Text | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State *1 | Lamp | Select the color of the lamp figure.<br>When a figure in the library (except my favorites) is set for [Shape], the set figure can be changed to a figure in a different color registered in the library with changing the lamp color. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Background | Select the pattern and background color of the lamp figure.<br>The selected pattern in the lamp color is displayed on the background color.<br>Example: Background : ■<br>Pattern : ▩<br>Lamp : □<br>Pattern + Lamp<br>Background | |
| | Pattern | | |
| | Blink | Select the blinking pattern of the Lamp.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Use Image Transparent *2 | | Check the item for enabling the transparent setting of the image data set as a lamp figure.<br>If the item is not checked, the transparent setting is disabled.<br>The item can be checked only when the figure for the parts or library is set to the lamp figure. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 For details, refer to the following page.

For details of *2, refer to the following.

☞ Section 6.1.3 Setting items of bit lamp

*1 State

For details of states, refer to the following.

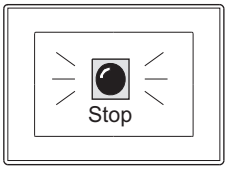
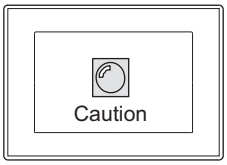
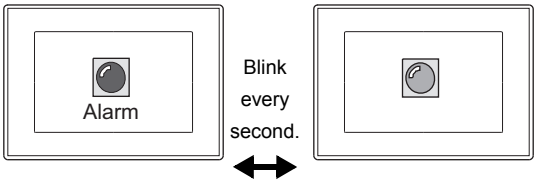
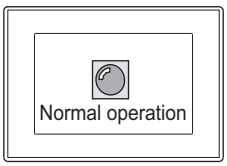
☞ Section 5.4 State Setting

(1) When conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.
Example: Monitor device : D100
Data view format : Signed decimal, 16-bit signed decimal

The operation priority for setting overlap conditions
High
↓
Low

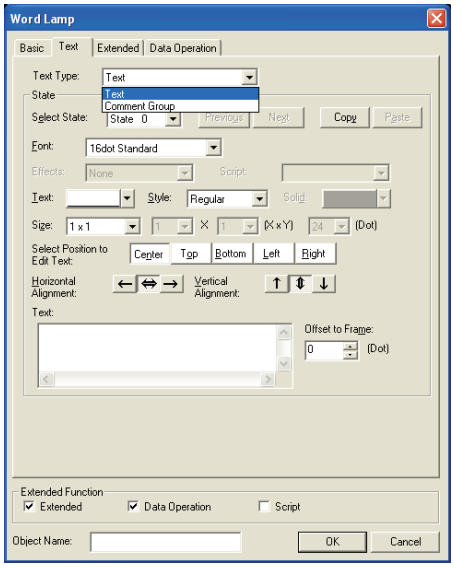
| State No. | Display range | Lamp | Display text | Blink |
|---|---|---|---|---|
| 1 | M10 ON | Red | Stop | No |
| 2 | 60<=$V<=80 | Yellow | Caution | No |
| 3 | 81<=$V | Red | Alarm | Low |
| Normal case (State 0) | - | Blue | Normal operation | - |

* $V is the monitor device value.

| | | |
|---|---|---|
| State 1 | When M10 is ON, the lamp will be red and the displayed text will be "Stop". |   |
| State 2 | When the device value is between 60 and 80 (60≦$V≦ 80), the lamp will be yellow and the displayed text will be "Caution". |   |
| State 3 | When the monitor device value is 81 or more (81≦$V), the display (lamp color and displayed text) on state 3 and the lamp color on state 0 will blink alternately. The text set on state 0 is not displayed. |   |
| Normal case (State 0) | When condition is other than state 1, 2 and 3, the lamp will be blue and the displayed text will be "Normal operation". |   |

## 2 Text tab

For word lamp, texts directly input or the comment set for [Comment Group] can be used as the texts displayed on the object by making selection for [Text Type].
The text types are described below.




Basic | **Text** | Extended | Data Operation | Object Script

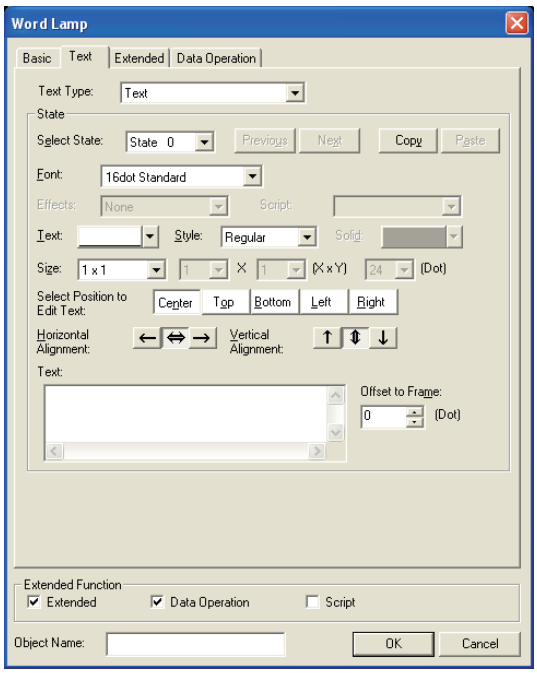
| Items | Description | Model |
|---|---|---|
| Text Type | Set a text to be displayed by directly imputting it. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment Group | Set a comment that has been set for comment group. | |

For comment group, refer to the following.

☞ Section 4.1 Comment Registration

The setting items differ depending on text type.
Setting items of each text type are shown on the following pages.

(1) Text

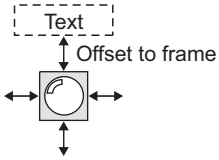



Basic | **Text** | Extended | Data Operation | Object Script

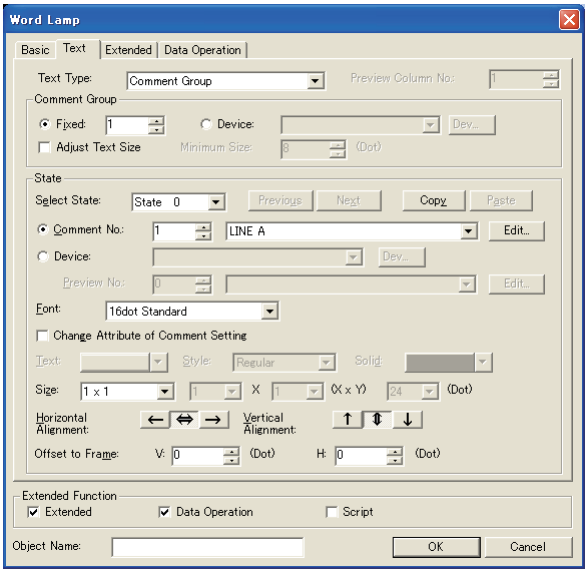
| Items | Description | Model |
|---|---|---|
| Select State<br>Previous/Next | When changing the lamp text setting of the preset state, select the state No. and then change the setting. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Copy<br>Paste | Copy the set text attribute.<br>Clicking on the [Paste] button in other state completes the copy of the text attribute. | |
| Font<br>Size | Select a font.<br>• 6 × 8dot font • 12-dot standard font • 16-dot standard font<br>• 12-dot high quality Mincho • 12-dot high quality Gothic • 16-dot high quality Mincho<br>• 16-dot high quality Gothic • TrueType Mincho • TrueType Gothic<br>• Stroke • Windows® font<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| Effects | Select an effect (Italic/Underline/Both).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Standard Italic Under-line Both | |
| Script | Select a character set available for the specified font.<br>(☞ Section 2.2 1 Figures and Data Capacity) | |
| Text | Select a color for the text to be displayed. | |
| Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |

(Continued to next page)

Basic | **Text** | Extended | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Select Position to Edit Text | Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Horizontal Alignment | Select a horizontal position for the text. | |
| Vertical Alignment | Select a vertical position for the text. | |
| Text Input Area | Input the text to be displayed. (Up to 32 characters)<br>Press the Enter key to input a new line of the end of the first line.<br>(A line feed is counted as two characters.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.   | GT16 GT15 SoftGOT1000 GT11 GT10 |

(2) Comment group

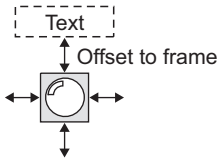



Basic | **Text** | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Preview Column No. | | Set the comment column No. to be displayed on GT Designer2.<br>(Use the language switching device for specifying the comment column No. to be displayed on the GOT.)<br>This item can be set only when the setting for language switching is valid.<br>(☞ Section 3.4 Setting Language Switching Device) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Commoent Group | Fixed | Set the number of the comment group to be used by directly inputting it. (1 to 255) | |
| | Device | Select this item when displaying the comment of the number same with the device value.<br>After selecting, set a device. | |
| | Adjust Text Size*1 | Adjusts the character size automatically along with the object area size.<br>The character size after adjustment is the maximm size for fitting the text string in the object area. | |
| | Minimum Size | Specify a minimum character size for the automatic text size adjustment. | |
| State | Select State | When changing the text setting for a lamp of the set state, display the state No. and change the next setting. | |
| | Previous/Next | | |
| | Copy | Copies the set text attributes. | |
| | Paste | Clicking on the Paste buton reflects the copied text attributes to another state. | |
| | Comment No. | Select this item to display the registered comment.<br>After selecting the item, set the comment No. corresponding to the comment to be displayed.<br>(0 to 32767)<br>Clicking the Edit button to edit the comment to be displayed.<br>Clicking the button displays the Edit dialog box*2 to edit the comment. | |
| | Device | Select the item to display the comment corresponding to the comment No. that is the same as the value stored in the device to be set. After selecting the item, set the device. | |
| | Preview No. | Displays the comment of the specified comment No. on the screen of GT Designer 2. | |
| | Font | Select a font for the text to be displayed.<br>• 12-dot high quality Mincho • 16-dot high quality Gothic • 12-dot standard font<br>• 12-dot high quality Gothic • 16-dot standard font • 16-dot high quality Mincho<br>• Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Size | | |

(Continued to next page)

Basic | **Text** | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State | Change Attribute of Comment Setting | Check this item to select [Text], [Style], and [Solid] of the comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br> <br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when [Style] is set to [Solid] or [Raised]. | |
| | Horizontal Alignment | Select a horizontal position for the text. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Vertical Alignment | Select a vertical position for the text. | |
| | Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.<br>  | |

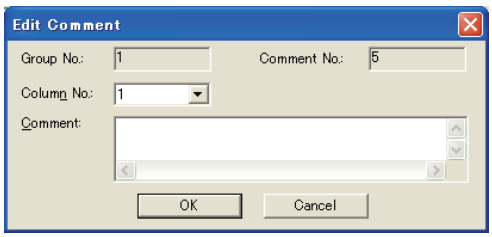
For details of *1, refer to Section 5.3.3 Object size change.

*2 For settings of the Edit comment dialog box, refer to the following.

## *2 Settings for Edit Comment dialog box

Edit the displayed comments for the comment group.

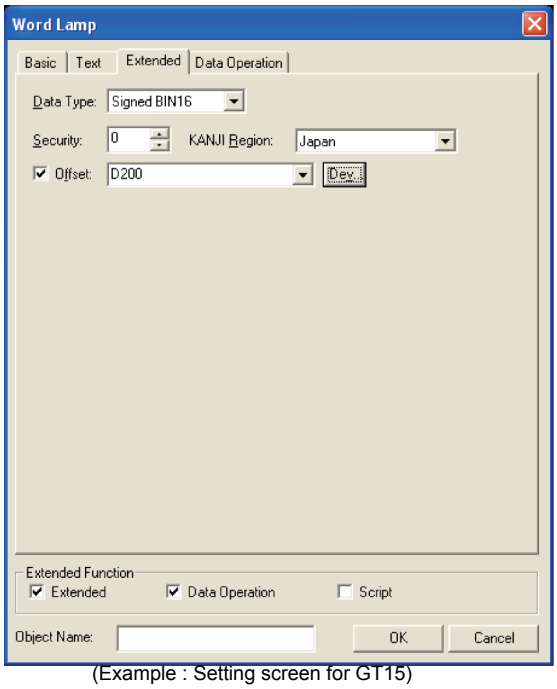
Create a new comment when an unregistered comment group No. and comment No are displayed.




| Item | Description | Model |
|---|---|---|
| Group No. | Display the comment group No. to edit the comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment No. | Display the comment No. to edit the comment. | |
| Column No. | Select the row No. to edit the comment. | |
| Comment | Edit the comment for the comment group.<br>Create a new comment when an unregistered comment group No. and comment No. are displayed.<br>The comment text can be input within 512 characters regardless of whether the character size is one-byte or two-byte. | |

## 3 Extended tab

Set the data type, security level and offset value of the monitor device.
Check [Extended] at the bottom of this dialog box to display this tab.




(Example : Setting screen for GT15)

Basic | Text | **Extended** | Data Operation | Object Script

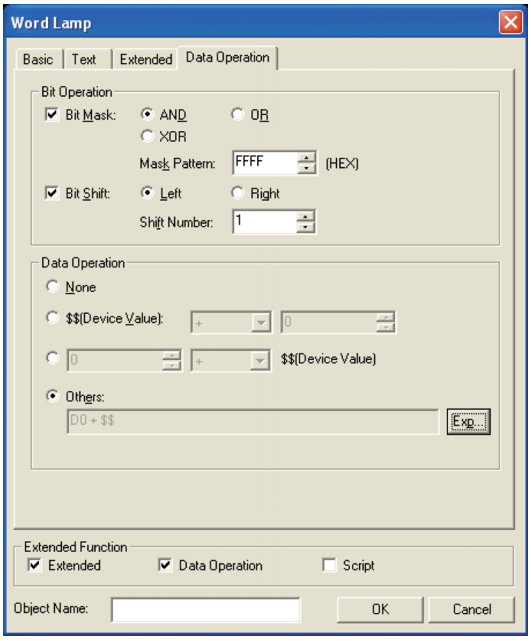
| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN16 : Lamp display is executed by a signed 16-bit binary value of a word device.<br>Unsigned BIN16 : Lamp display is executed by an unsigned 16-bit binary value of a word device.<br>BCD16 : Lamp display is executed by a 16-bit BCD (Binary-Coded Decimal) value of a word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot standard • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 4 Data Operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



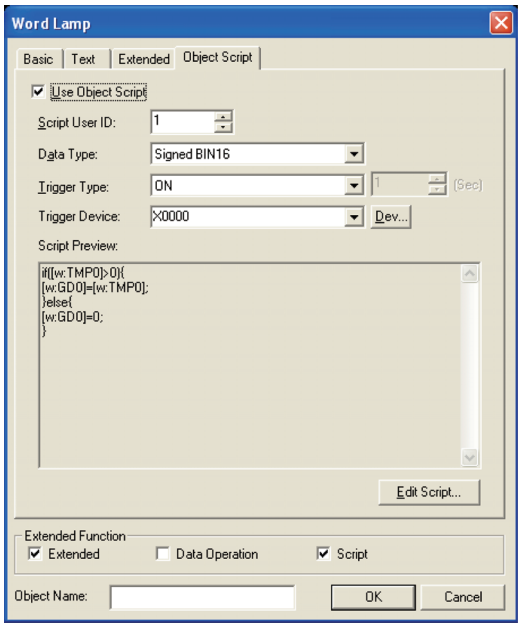

Basic | Text | Extended | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 5 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 3 Option | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Secton16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 6.1.5 Precautions

The following is the precautions for using the lamp function.

### 1 Precautions for drawing

(1) Maximum number of objects settable on one screen
Up to 1000 lamp objects can be placed (set).
If a figure for which lamp attribute is set is placed with lamps on the same screen, the settable number of lamps decreases. Placing one point of such a figure causes the settable number of lamps to decrease by one point.

(2) Display on GT Designer2 and GOT
With GT Designer2, only figures for which bit devices are ON are displayed. However, with GOT, a figure corresponding to bit device ON may be displayed overlaying a figure that corresponds to bit device OFF state. (When a bit device is ON, bit lamp display may differ between GT Designer2 and GOT.)
In such a case, take appropriate measures so that the figure corresponding to bit device OFF will not be displayed. Setting a lamp color or background color can be effective.

Example of a bit lamp displayed differently between GT Designer2 and GOT

| Item | Display | |
|---|---|---|
| | Bit device ON | Bit device OFF |
| Setting at GT Designer2 | ON | OFF |
| Display on GOT | ON | OFF |

* The representation above is given only for the purpose of explanation and it differs from actual display.

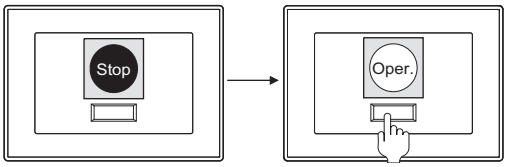
(3) When using a part as a lamp figure
(a) In the state the project data has already been downloaded to the GOT, if only a part is modified and downloaded to the GOT or if the part downloaded to the GOT is deleted, it is necessary to check the setting for the lamp figure again.
The lamp may not be displayed correctly if the part size is modified.
The lamp is not displayed if the part is deleted.
(b) When a part data is updated, the data of all switches and lamps that use the updated part must be updated. Accordingly, it may take a longer time than usual when storing the project data or opening the communication dialog.

# 6.2 Touch Switch

GT16 GT15 GT Soft GOT1000 GT11 GT10

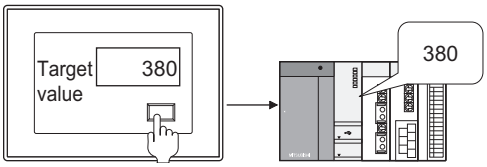
**1** Bit switch (☞ Section 6.2.3 Setting items of bit switch)

Turns ON/OFF a bit device.



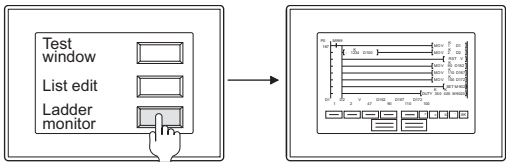

**2** Data set switch (☞ Section 6.2.4 Setting items of data set switch)

Changes the value of a word device.



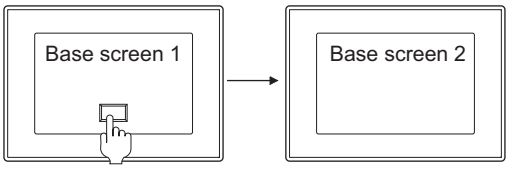

**3** Special function switch (☞ Section 6.2.5 Setting items of special function switch)

Switches to a screen such as the utility or a screen of the extended function or option function.



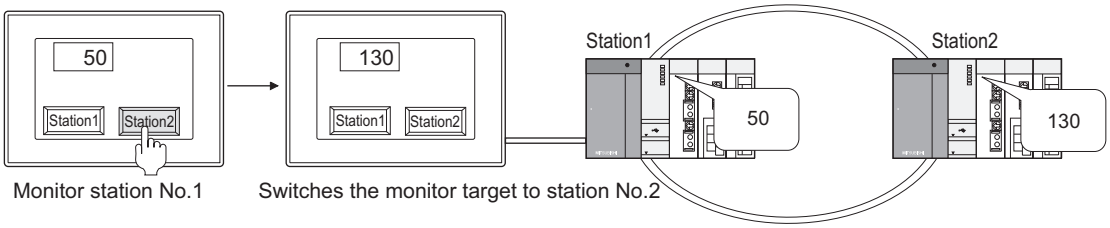

**4** Go to screen switch (☞ Section 6.2.6 Setting items of go to screen switch)

Switches base screen/window screen.



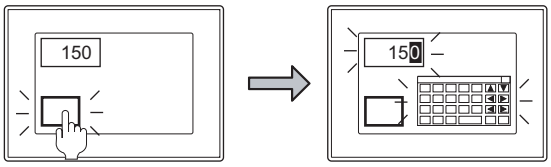
## 5 Change station No. switch (☞ Section 6.2.7 Setting items of change station No. switch)

Switches the object device being monitored to the same device of other station No.



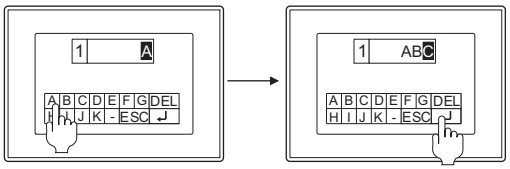

## 6 Data change switch (☞ Section 6.2.8 Setting items of data change switch)

Displays the key window that has been specified at the specified position when the switch is touched. Also, displays the cursor in the corresponding object.




## 7 Key code switch (☞ Section 6.2.9 Setting items of key code switch)

Operates as preset key code.




## 8 Multi action switch (☞ Section 6.2.10 Setting items of multi action switch)

Performs multiple actions of 1 to 7 (GT16 and GT SoftGOT1000: Max. 135 actions, GT15: 129 actions, GT11: 123 actions, GT10: 122 actions).

Touch switch extended function

| Switch type | Description | Model |
|---|---|---|
| Bit Switch | • Turns ON the specified bit device. (SET)<br>• Turns OFF the specified bit device. (RESET)<br>• Reverses (ON ← → OFF) the current status of specified bit device. (ALT)<br>• Turns ON the specified bit device. (Momentary) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Data Set Switch | • Writes the set value to specified word device. (Fixed)<br>• Writes the set word device value to specified word device. (Indirect)<br>• Writes the set word device value + fixed value to specified word device. (Fixed + indirect) | |

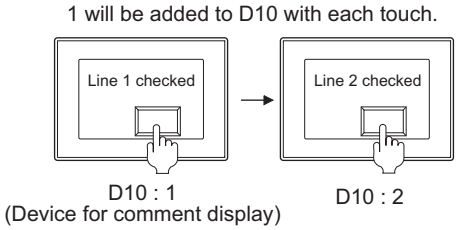
(Continued to next page)

| Switch type | Description | Model |
|---|---|---|
| Go to Screen Switch | • Switches to the screen of which base screen No. that was displayed previously.<br>• Switches to the screen of which screen No. that is specified.<br>• Switches to the screen of which screen No. that is specified according to specified bit device ON/OFF.<br>• When the current value of specified word device corresponds to the specified comparison expression, switches to the specified station No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Special Function Switch | Switches to a screen such as the utility or a screen of the extended function or option function. | |
| Change Station No. Switch | • Switches to the station No. specified as monitor target.<br>• Switches to the specified station No. when the bit device (of which monitor target is specified) turns ON/OFF.<br>• When the current value of specified word device corresponds to the specified comparison expression, switches to the specified station No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Data Change Switch | Displays the specified key window at the specified position.<br>Displays the cursor on the specified object. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Key Code Switch | Controls numerical input, key input of ASCII input, alarm list, data list and alarm history. | |
| Multi Action Switch | The above operation can be set to this switch. | |

## Application Example

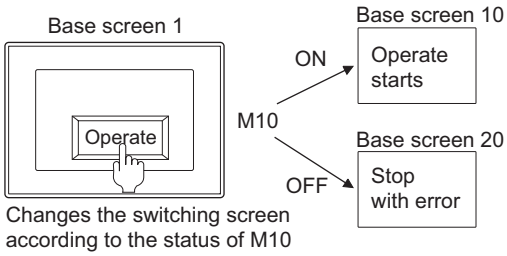
### Comment display changes with each touch

Section 6.2.4 Setting items of data set switch



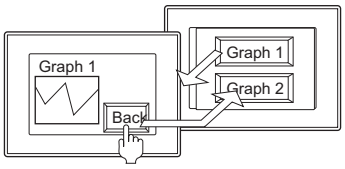

### Change the switching screen according to device status

Section 6.2.6 Setting items of go to screen switch




### Return to the previously displayed screen

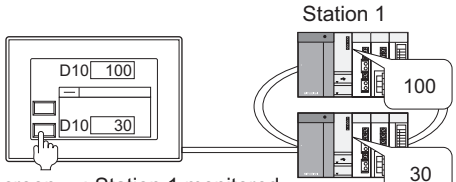
Section 6.2.6 Setting items of go to screen switch




The screen displayed previously appears

### Switches different station No. among different screen types

Section 6.2.7 Setting items of change station No. switch




Base screen : Station 1 monitored
Window screen: Station 2 monitored

## 6.2.1 Relevant settings

For Touch switch, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to Touch switch only
…Relevant to Touch switch only.

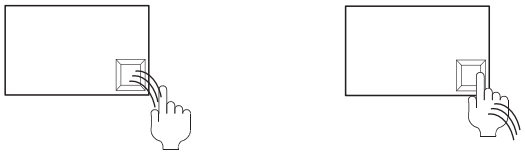
(2) Functions relevant to Touch switch and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to touch switches only

• Switching timing of the go to screen switch

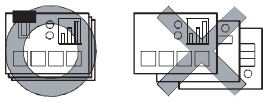
The switching timing when switching the screen by touching the go to screen switch can be set.



The screen is switched at a timing when the finger is released from the switch. (OFF)

The screen is switched at a timing when the finger touches the switch. (ON)

Setting for each project | Setting for each screen

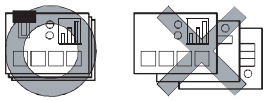


Setting items
• [Screen Switching Switch Synchronous Mode]

• Using sound file for touch key sound

A sound when touching a touch switch can be set. (A sound file is required.)

Setting for each project | Setting for each screen



Setting item
• [The Sound File is used for the touch key sound]

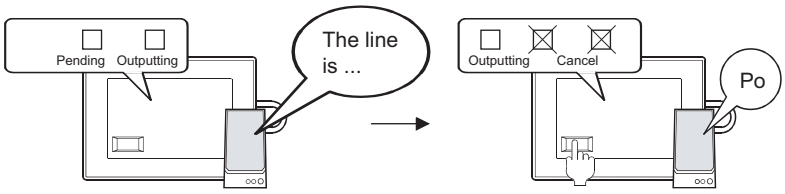
**Remark** Changing touch key sound

For changing the touch key sound, a sound file must be registered in advance.

☞Section 13.8 Sound output

• Giving top priority to sound output for switches

All running sound outputs are cancelled, and then a touch key sound is output when a touch switch is touched.




Setting for each project

Setting for each screen

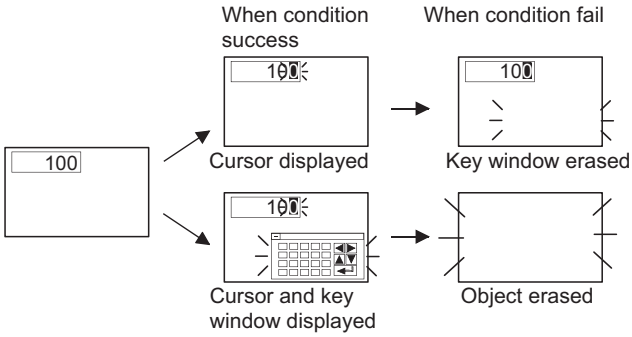
Setting item

• [Prioritize the sound output of a switch]

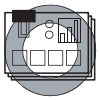
## (2) Functions relevant to Touch switch and others

• Action of cursor and key window when condition success/switching screen/condition fail

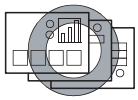
When condition success/switching screen, cursor and key window are displayed.
When condition fail, cursor and key window are erased.




Setting for each project



Setting for each screen

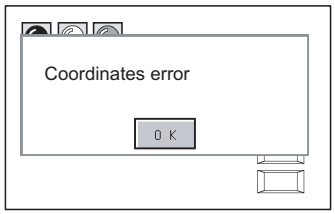


Setting items

• [Action when condition success]
• [Switching screen option]
• [Action when condition fail]
• [Cursor position]

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project

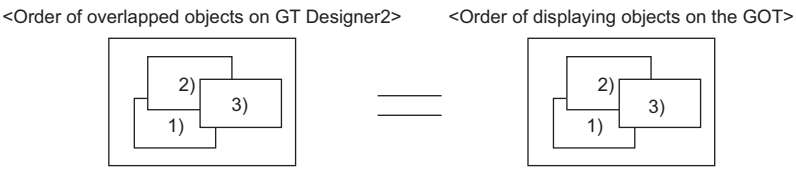
Setting for each screen

Setting items

• [Carry out check for overlapping objects within GOT]

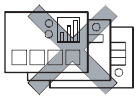
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.




Setting for each project

Setting for each screen



Setting items

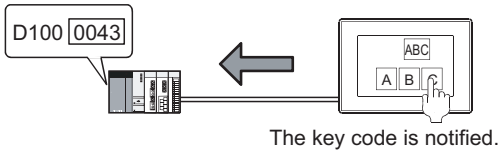
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information (☞ Section 3.6 System Information Setting)

(1) Function relevant to Touch switch and others.

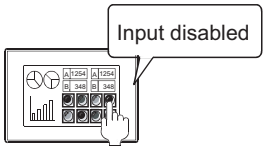
• Key Code Input
(Write device)

Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.



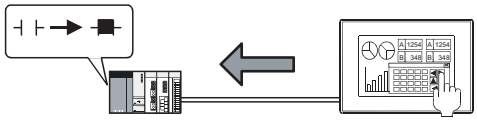

• Key-In Disable Signal
(Read device: System Signal 1-1.b9)

Disables all key inputs.




• Key Input Signal
(Write device: System Signal 2-1.b3)

Notifies the key input.

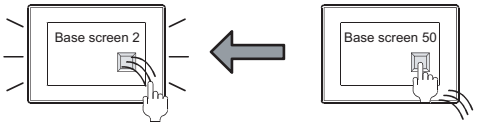


## 3 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Function relevant to Touch switch only.

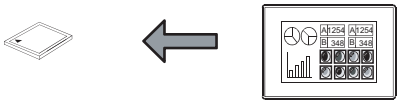
• Touch Switch Operation Timing (Screen/Station No. Switch) Setting Signal (GS450.b12)

Controls the switching timing when bits SET/RST/ALT and screen/station No. switching are set on the touch switch.



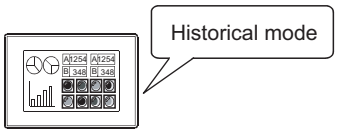

• Screen Switch Memory Card Save Function Setting Signal (GS450.b13)

Saves the history of screen transition in the memory card when screen switching to the previous screen of the touch switch is performed in the historical mode.



• Touch Switch Upper Hierarchy Operation Mode Setting Signal (GS450.b14)

Changes the operation of switching to the previous screen of the touch switch to the historical mode.



## 6.2.2 Arrangement and settings

1. Carry out either of the following operations.

   - Click on each touch switch iron.

| | |
|---|---|
| Bit switch | Go to screen switch |
| Data set switch | Key code switch |
| Special function switch | Change station No. switch |
| Data change switch | Multi action switch |

   - Select a touch switch from the menu.

     [Object] → [Switch] → [Bit Switch]
     [Data Set Switch]
     [Special Function Switch]
     [Go to Screen Switch]
     [Change Station No. Switch]
     [Data change switch]
     [Key Code Switch]
     [Multi Action Switch]

2. Click on the position where the touch switch is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)

3. Double click on the arranged touch switch to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

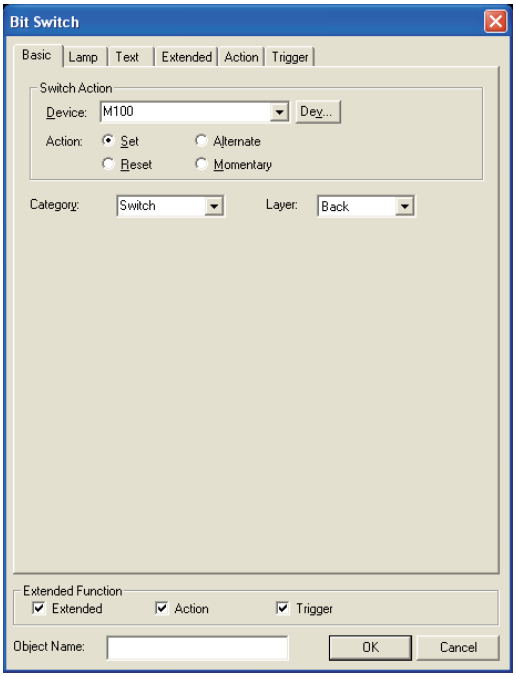
The direct setting of object can be made on property sheet.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Hint!**

## 6.2.3 Setting items of bit switch

### 1 Basic tab




Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Switch Action | Device | Set bit device as write destination.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Action | Select the function corresponding to the bit device as write destination.<br>Set : Turns ON bit when touched.<br>Alternate : Switches bit ON/OFF with each touch.<br>Reset : Turns OFF bit when touched.<br>Momentary : Turns on bit only when being touched. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the Operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

**Point**

Touch switch operation when bit momentary is set

(1) If the following cases occur while the touch switch with bit momentary setting is being touched, bit device may remain ON even when the operator's finger is released off the switch.
- GOT hardware error
- GOT power-off
- Communication error with a controller

Set timeout time of consecutive ON time to the relevant device as appropriate and turn the bit device off forcibly by controller at the occurrence of timeout.

(2) When base screen switching request is performed while the touch switch is touched, the screen switches to a window screen after the operator's finger is released off the switch.

(3) When touching the touch switch while the targeted bit device is ON, the OFF timing of the device depends on whether the execution condition is satisfied or not.

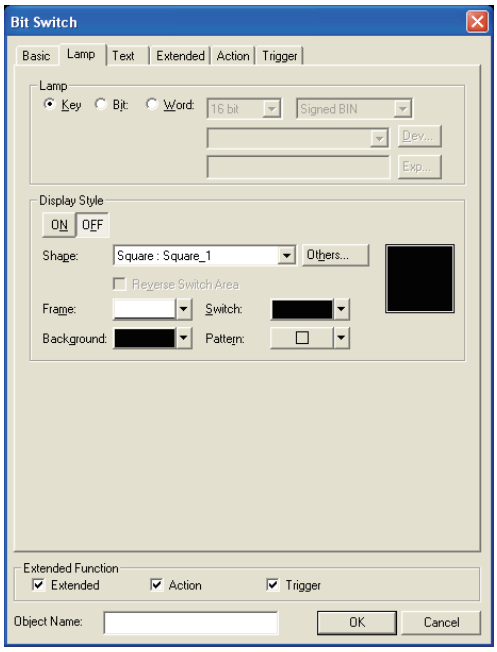
(a) When the execution condition is satisfied

Bit device turns off when the finger is released.

(b) When the execution condition is not satisfied.

Bit device turns off when the finger is touched.

## 2 Lamp tab

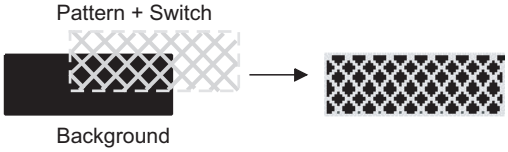



Basic | **Lamp** | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Lamp | | Select the method of switching touch switch image (ON shape, OFF shape). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Key | ON shape is displayed when the touch switch is touched.<br>OFF shape is displayed when the touch switch is released. | |
| | Bit | When the bit device set in [Device] is ON, OFF shape will be switched to ON shape.<br>After selecting, set the device (☞ Section 5.1 Device Setting). | |
| | Word | When the range of specified word device is set to [Range] in [Device], OFF shape will be switched to ON shape.<br>After selecting, make the settings as follows:<br>Device : Sets the word device. (☞ Section 5.1 Device Setting)<br>Data size<br>16 bit/32 bit : Selects data size for word device.<br>Data type<br>Signed BIN : Treats the word device value as signed binary value.<br>Unsigned BIN : Treats the word device value as unsigned binary value.<br>BCD : Treats the word device value as BCD (binary coded decimal).<br>Real : Treats the word device value as floating point type real. (Only when [32bit] is selected for [Data Size].)<br>Display range<br>Range : After setting the specified word device, click on [Range] button to set the switch range for ON/OFF shape.<br>(☞ Section 5.5 Trigger Setting) | |

(Continued to next page)

Basic | **Lamp** | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Display Style | ON | Click on this item to set the display attributes when the device turns ON. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | OFF | Click on this item to set the display attributes when the device turns OFF. | |
| | Shape | Select the shape for touch switch.<br>When [None] is selected, no frame will be displayed.<br>By clicking on the [Others] button, shapes other than those in the list box or library shapes can be selected.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Reverse Switch Area | Check this item to XOR-reverse the touch switch area in which shape is not set, according to the background color. | |
| | Frame | Select the frame color of the touch switch. | |
| | Switch | Set the switch color.<br>When a figure in the library (except my favorites) is set for [Shape], the set figure can be changed to a figure in a different color registered in the library with changing the switch color. | |
| | Background | Select the pattern, background color and switch color for the touch switch.<br>The selected pattern in the switch color is displayed on the background color. | |
| | Pattern | Example: Background : ■<br>Pattern : ▩<br>Switch : □<br>  | |

For details of *1, refer to the following.

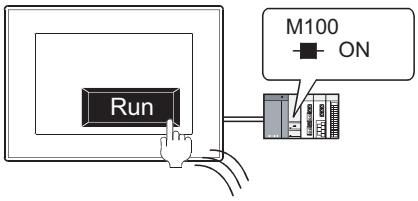
☞ Section 6.1.3 Setting items of bit lamp

**Hint!** Lamp

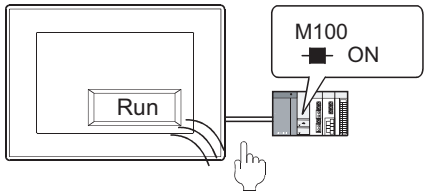
Select the item according to the application of ON/OFF shape set for a touch switch.

(1) When [Key] is selected

Select this item to switch only the image when the touch switch is touched. With the setting, OFF shape appears when the touch switch is released, regardless of the device status. Therefore, select "Bit" or "Word" to show the device status.




ON shape appears when the touch switch is touched.



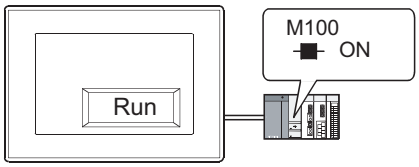

OFF shape appears when the touch switch is released regardless of the device status.

(2) When [Bit] or [Word] is selected

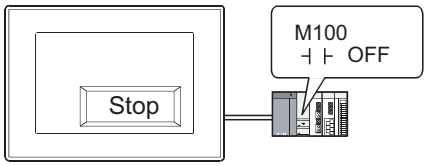
Select this item to switch the image according to the device status.

By setting the same device set in the basic tab, the device status can be shown by touch switch (lamp function).

Example: Bit: M100 Setting



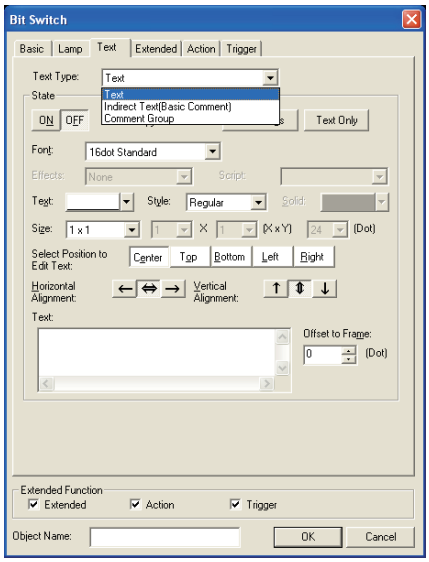

ON shape appears when M100 is ON




OFF shape appears when M100 is OFF.

## 3 Text tab

For touch switches, the comment set for basic comment or comment group can be used as the texs displayed on the object by selecting a text type.
The text types are described below.




Basic | Lamp | **Text** | Extended | Action | Trigger

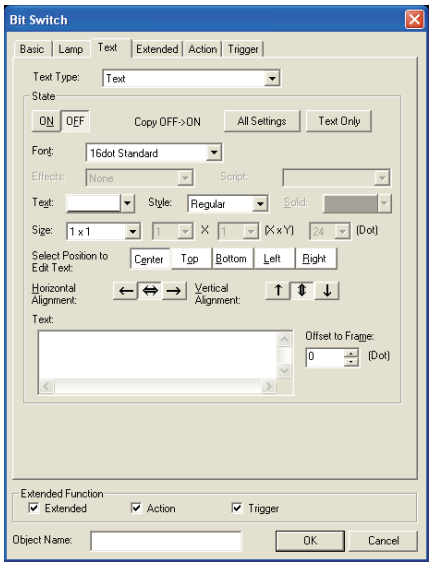
| Items | Description | Model |
|---|---|---|
| Text Type | Set a text to be displayed by directly imputting it. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Indirect Text (Basic Comment) | Set a comment of basic comment. | |
| Comment Group | Set a comment that has been set for comment group. | |

For basic comment and comment group, refer to the following.

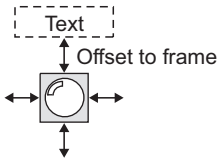
☞ Section 4.1 Comment Registration

The setting items differ depending on text type.
Setting items of each text type are shown on the following pages.

(1) Text




Basic | Lamp | **Text** | Extended | Action | Trigger

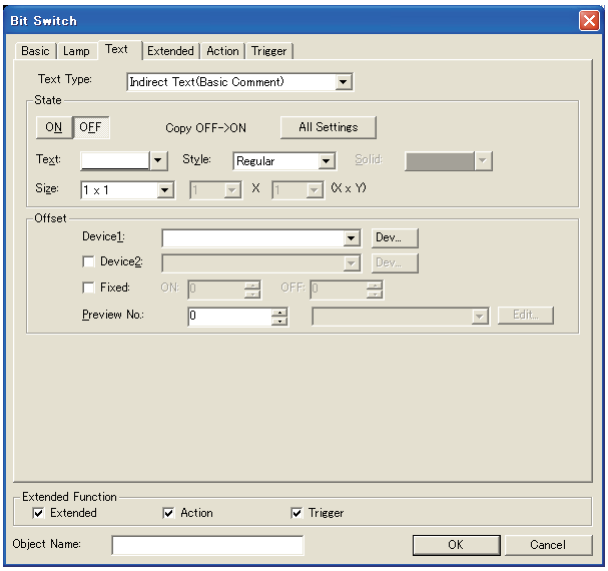
| Items | | Description | Model |
|---|---|---|---|
| State | ON | Click on this item to set the text to be displayed when the device is ON, positioning point, and display position. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | OFF | Click on this item to set the text to be displayed when the device is OFF, positioning point, and display position. | |
| | Copy OFF → ON / Copy ON → OFF | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item.<br>Clicking [All Settings] button copies all the text settings.<br>Clicking the [Text Only] button copies texts only. | |
| | Text input area | Input the text to be displayed. (Up to 32 characters)<br>Press the [Enter] key to input a new line of the end of the first line.<br>(A line feed is counted as two characters.) | |
| | Font | Select a font for the text to be displayed.<br>• 6 × 8dot font • 12-dot high quality Mincho • 16-dot high quality Gothic<br>• 12-dot standard font • 12-dot high quality Gothic • TrueType Mincho<br>• 16-dot standard font • 16-dot high quality Mincho • TrueType Gothic<br>• Stroke • Windows® font<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Size | | |
| | Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | Lamp | **Text** | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| State | Effects | Select an effect (Italic/Underline/Both).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Standard Italic Under-line Both | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Script | Select a character set available for the specified font.<br>(☞ Section 2.2 1 Selectable attributes) | |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Horizontal Alignment | Select a horizontal position for the text. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Vertical Alignment | Select a vertical position for the text. | |
| | Select Position to Edit Text | Select the position where the text is to be displayed on the object.<br>(Center/Top/Bottom/Left/Right)<br>T L C R B | |

(2) Indirect text (Basic comment)




Basic | Lamp | **Text** | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| State | ON | Click on this item to set the text to be displayed when the device turns ON. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | OFF | Click on this item to set the text to be displayed when the device turns OFF. | |
| | Copy OFF → ON / Copy ON → OFF | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item.<br>Clicking the [All Settings] button copies all the text settings. | |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Size | Select the size of the character to be displayed (vertical/horizontal magnification). | |
| Offset*1 | Device 1 | Check this item when adding another device's value to the value of [Device1].<br>After checking, click the [Device] button to set the device to store an addition value.<br>(☞ Section 5.1 Device Setting)<br>The comment (basic comment) of the same number as the value stored in the set device is displayed. | |
| | Device 2 | Check this item when adding another device's value to the value of [Device1].<br>After checking, click the [Device] button to set the device to store an addition value.<br>(☞ Section 5.1 Device Setting) | |
| | Fixed | Check this item when adding another value to the value of [Device1] depending on the display status (ON/OFF) of the touch switch.<br>After checking, set values to be added when the device is ON and OFF. | |
| | Preview No. | Set a comment No. for the text of the touch switch displayed on the screen of GT Designer 2.<br>Clicking the [Edit] button to edit the comment to be displayed.<br>Clicking the button displays the Edit dialog box*2 to edit the comment. | |

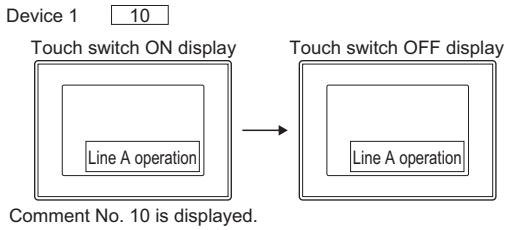
For details of *1, refer to the following.

*2 For settings of the Edit comment dialog box, refer to the next page.

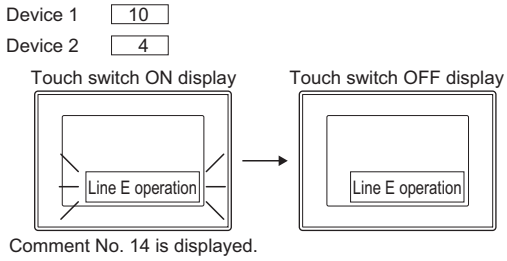
*1 Offset

Make the setting when changing the text displayed on the touch switch by a device value.

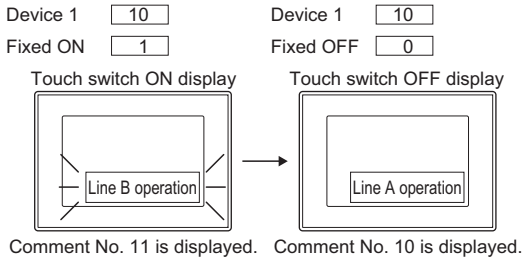
(1) When only [Device 1] is set
The comment (basic comment) of the same number as the value of [Device 1] is displayed regardless of ON/OFF status of the touch switch.



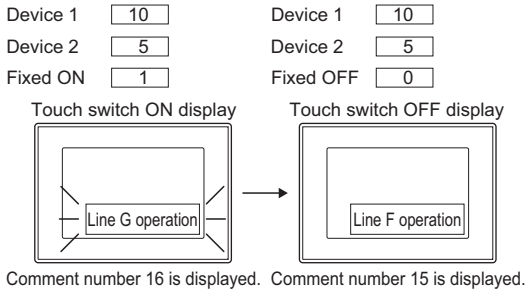

(2) When [Cevice 1] and [Cevice 2] are set
The comment (basic comment) of the same number as the addition value of [Device 1] and [Device 2] is displayed regardless of ON/OFF status of the touch switch.




(3) When [Device 1] and [Fixed] are set
The comment (basdic comment) of the same number as the addition value of [Device 1] and [Fixed] (ON) is displayed when the touch switch is ON.
When the touch switch is OFF, the comment (basic comment) of the same number as the addition value of [Device 1] and [Fixed] (OFF) is displayed.

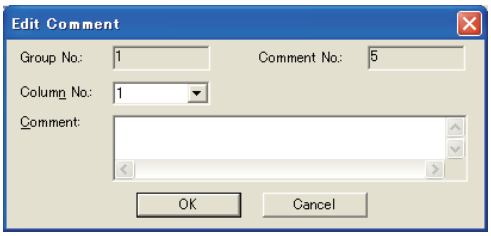



(4) When [Device 1], [Device 2], and [Fixed] are set
The comment (basic comment) of the same number as the addition value of [Device 1], [Device 2], and [Fixed] (ON) is displayed when the touch switch is ON.
When the touch switch is OFF, the comment (basic comment) of the same number as the addition value of [Device 1], [Device 2], and [Fixed] (OFF) is displayed.



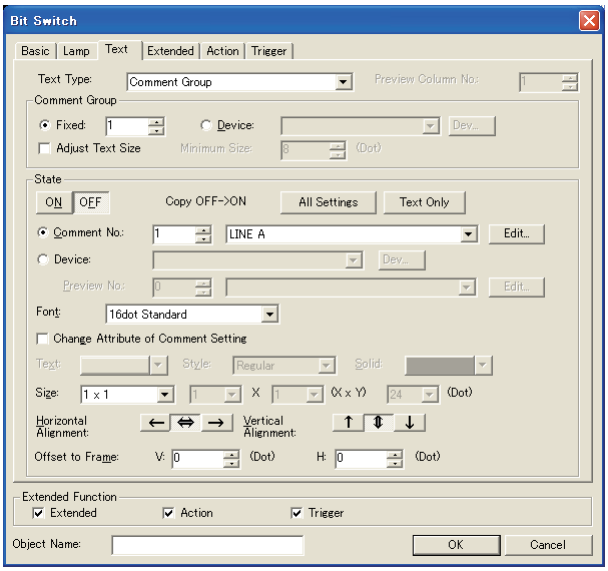
*2 Settings for Edit Comment dialog box

Edit the displayed comments for the comment group.
Create a new comment when an unregistered comment group No. and comment No. are displayed.




| Item | Description | Model |
|---|---|---|
| Group No. | Display the comment group No. to edit the comment. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Comment No. | Display the comment No. to edit the comment. | |
| Column No. | Select the row No. to edit the comment. | |
| Comment | Edit the comment for the comment group.<br>Create a new comment when an unregistered comment group No. and comment No. are displayed.<br>The comment text can be input within 512 characters regardless of whether the character size is one-byte or two-byte. | |

(3) Comment group

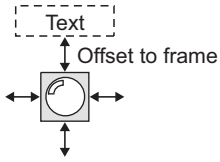
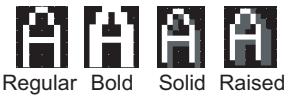



Basic | Lamp | **Text** | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Preview Column No. | | Set the comment column No. to be displayed on GT Designer2.<br>(Use the language switching device for specifying the comment column No. to be displayed on the GOT.)<br>This item can be set only when the setting for language switching is valid.<br>(☞ Section 3.4 Setting Language Switching Device) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Comment Group | | Set the number of the comment group to be used.<br>When a nonexistent comment group number is set, no comment is displayed. | |
| | Fixed | Select this item when displaying a specified comment group.<br>After selecting, set the number of the comment group to be used by directly inputting it. | |
| | Device | Select this item when displaying the comment of the number same with the device value.<br>After selecting, set a device.<br>(☞ Section 5.1 Device Setting) | |
| | Adjust Text Size*1 | Check this item to perform Adjust Text Size.<br>When this item is not checked, line feed is automatically performed for text strings.<br>After checking, set the minimum text size for Adjust Text Size.<br>(8 to 128 dots, default : 8) | |
| State | ON | Click on this item to set the text to be displayed when the device turns ON. | |
| | OFF | Click on this item to set the text to be displayed when the device turns OFF. | |
| | Copy OFF → ON / Copy ON → OFF | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item.<br>Clicking the [All Settings] button copies all the text settings.<br>Clicking the [Text Only] button copies the comment No. only. (For both ON and OFF states, the Text Only button is available only when [Comment No.] is selected.) | |

(Continued to next page)

Basic | Lamp | **Text** | Extended | Action | Trigger

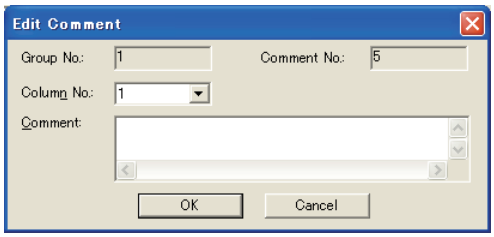
| Items | | Description | Model |
|---|---|---|---|
| State | Comment No. | Set the number of the comment to be used.<br>Clicking the [Edit] button to edit the comment to be displayed.<br>Clicking the button displays the Edit dialog box*2 to edit the comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Device | Select this item when displaying the comment of the number same with the device value.<br>After selecting, set a device and preview No.<br>Preview No. : Set a comment No. for the text of the touch switch displayed on the screen of GT Designer 2. | |
| | Font<br>Size | Select a font for the text to be displayed.<br>• 12-dot high quality Mincho • 16-dot high quality Gothic • 12-dot standard font<br>• 12-dot high quality Gothic • 16-dot standard font • 16-dot high quality Mincho<br>• Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Horizontal Alignment | Select a horizontal position for the text. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Vertical Alignment | Select a vertical position for the text. | |
| | Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.<br>V : Set the numberr of dots for the vertical distance between the text and object frame.<br>H : Set the number of dots for the horizontal distance between the text and ovject frame.<br>  | |
| | Change Attribute of Comment Setting | Select this item when displaying texts with the display attributes different from the ones set at comment registration.<br>Text : Select a color for the text to be displayed.<br>Style : Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>  <br>Solid : Select a color of the shadow when the [Style] item is set to [Solid] or [Raised].<br>Horizontal Alignment<br>: Select a horizontal position for the text.<br>Vertical Alignment<br>: Select a vertical position for the text. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 For details, refer to Section 5.3.3 Object size change.

*2 For settings of the Edit comment dialog box, refer to the following.

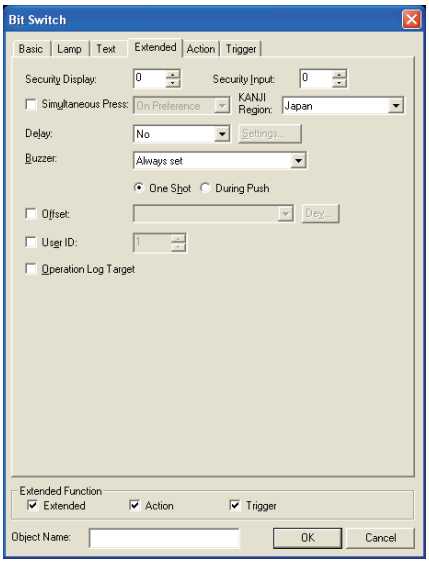
*2 Settings for Edit Comment dialog box

Edit the displayed comments for the comment group.
Create a new comment when an unregistered comment group No. and comment No. are displayed.




| Item | Description | Model |
|---|---|---|
| Group No. | Display the comment group No. to edit the comment. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Comment No. | Display the comment No. to edit the comment. | |
| Column No. | Select the row No. to edit the comment. | |
| Comment | Edit the comment for the comment group.<br>Create a new comment when an unregistered comment group No. and comment No. are displayed.<br>The comment text can be input within 512 characters regardless of whether the character size is one-byte or two-byte. | |

## 4 Extended tab




(Example : Setting screen for GT15)

Basic | Lamp | Text | **Extended** | Action | Trigger

| Items | Description | Model |
|---|---|---|
| Security Display/<br>Security Input | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function)<br>The number for security input must be larger than that for security display. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Simultaneous Press *1 | Check this item to disable simultaneous press of touch switch. (Excluding GT1595-X and GT1020)<br>Then, select the touch switch operation when the simultaneous press is disabled (On Preference/OFF Preference). | |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot high quality Gothic • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Delay *2 | Set details for delay.<br>After setting the delay mode, set the delay time or the attributes for middle of two presses by clicking the Setting button.<br>None : No delay time will occur.<br>ON : Select the item to turn on the device after pressing the touch switch for the set time. This setting can prevent an incorrect operation from occurring.<br>OFF : Select the item to turn off the device in the set time after operating the touch switch. The device is on during the set time.<br>Press Twice : Select this item to carry out the operation when the touch switch is touched once and then touched for the second time within the set time. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

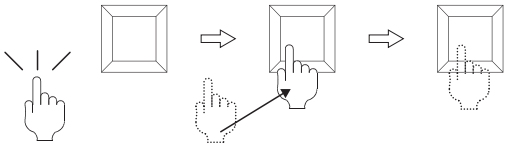
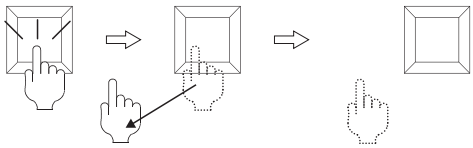
Basic | Lamp | Text | **Extended** | Action | Trigger

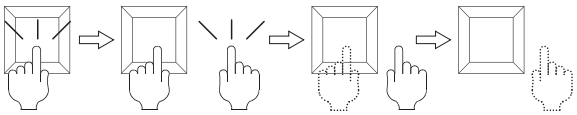
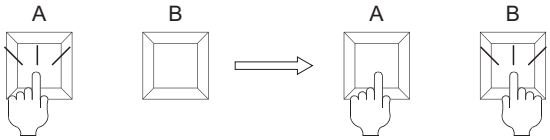
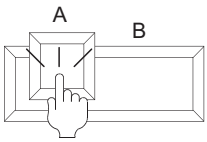
| Items | Description | Model |
|---|---|---|
| Buzzer | Select the time the buzzer is on when the touch switch is touched.<br>Always Set : The buzzer sound is on whenever the touch switch is touched.<br>Set Only Fill Requirement : The sound is on only when the touch switch is touched and the trigger has been satisfied.<br>Always Not Set : The buzzer sound is not on even when the touch switch is touched. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| One Shot | Check this item to output volume at the moment the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set. | |
| During Push | Check this item to keep buzzer beeping while the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set. | |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |
| User ID | Check this item when setting a user ID (1 to 65535).<br>When the user ID is set, the following operation is enabled.<br>• To specify the used object in the operation log.<br>(☞ Section 15.2 Operation Log Function) | |
| Operation Log Target | Check this item to set the object being set as the target for logging the operation.<br>(☞ Section 15.2 Operation Log Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, *2, refer to the following.

## *1 Simultaneous Press (Prohibition)

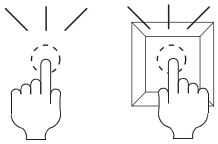
The actions of the touch switch when Simultaneous Press is set are shown in the list below.

| Touch switch operation | Touch switch action | |
|---|---|---|
| | On Preference | Off Preference |
| 1 Press the touch key invalid area of the touch switch.<br>2 Slide the finger to the touch key valid area of the touch switch.<br>3 Release the touch switch.<br>  | At operation 1 : Remains OFF.<br>At operation 2 : Turns ON.<br>At operation 3 : Turns OFF. | At operation 1 : Remains OFF.<br>At operation 2 : Remains OFF.<br>At operation 3 : Remains OFF. |
| 1 Press the effective touch key area of the touch switch.<br>2 Slide to the invalid touch key area of the touch switch.<br>3 Release the GOT screen.<br>  | At operation 1 : Turns ON.<br>At operation 2 : Remains ON.<br>At operation 3 : Turns OFF. | At operation 1 : Turns ON.<br>At operation 2 : Turns OFF.<br>At operation 3 : Remains OFF. |

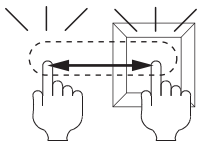
| Touch switch operation | Touch switch action | |
|---|---|---|
| | On Preference | Off Preference |
| 1 Press the touch switch.<br>2 Press an are where no object is located.<br>3 Release the touch switch.<br>4 Release the area where no object is located.<br>  | At operation 1 : Turns ON.<br>At operation 2 : Remains ON.<br>At operation 3 : Remains ON.<br>At operation 4 : Turns OFF. | At operation 1 : Turns ON.<br>At operation 2 : Turns OFF.<br>At operation 3 : Remains OFF.<br>At operation 4 : Remains OFF. |
| 1 Press touch switch A where Simultaneous Press is set.<br>2 Press the touch switch B.<br>(The switch action when the simultaneous press prohibition is set is the same as that when the simultaneous press prohibition is not set.)<br>  <br> | <Action of A><br>At operation 1 : Turns ON.<br>At operation 2 : Remains ON.<br><Action of B><br>At operation 1 : Remains OFF.<br>At operation 2 : Remains OFF. | <Action A><br>At operation 1 : Turns ON.<br>At operation 2 : Turns OFF.<br><Action B><br>At operation 1 : Remains OFF.<br>At operation 2 : Remains OFF. |
| 1 Arrange touch switch A (simultaneous press prohibition is set) on the front layer and arrange touch switch B (simultaneous press prohibition is not set) on the back layer.<br>And press the part where the touch switches overlap each other.<br>  <br> | <Action of A><br>At operation 1 : Remains OFF.<br><Action of B><br>At operation 1 : Turns ON. | |

**Remark**

When sliding the finger from the touch key invalid area to the touch key valid area across the screen, the GOT recognizes the operation as touching multiple areas simultaneously.
The GOT cannot distinguish between sliding the finger across the areas and touching different areas simultaneously.
Therefore, the GOT recognizes sliding the finger across the areas as touching multiple areas simultaneously.
When sliding the finger from the touch key valid area to the touch key invalid area, the GOT also recognizes the operation as touching multiple areas simultaneously.



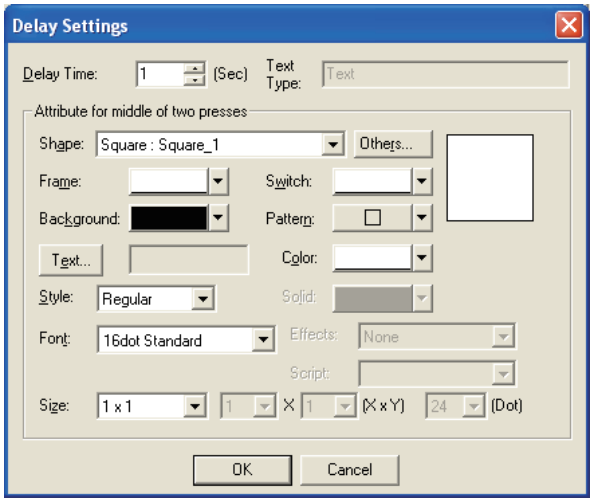
Touch the touch key valid area and the touch key invalid area simultaneously.



Slide the finger across the touch key valid area and the touch key invalid area.

*2 Delay Settings

Set the delay time or the attribates for middle of two presses.
The setting items differ depending on the selected text type.



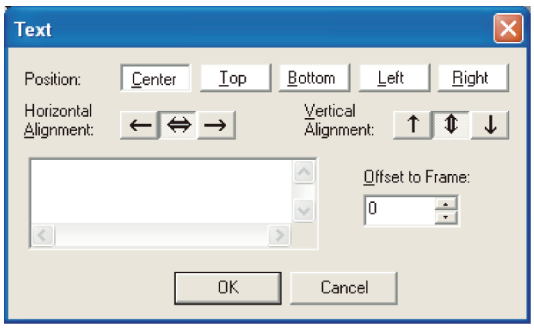

(Example : When [Text] is sselected for [Text Type])

| Items | | Description | Model |
|---|---|---|---|
| Delay Time | | Set the time for the item set for [Delay]. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Text Type | | Displays the selected text type. | |
| Attribute for middle of two presses | | Set the display attribute (attribute for middle of two presses) for the switch shape after touching once when [Press Twice] is set in [Delay].<br>For details of each display attribute, refer to the following.<br>(☞ Section 6.2.3 Setting items of bit switch) | |
| | Text*3 | When displaying a text on the touch switch, click on the Text button, and set the text to be displayed, positioning point and display position.<br>The item is displayed only when [Text] or [Indirect Text (Basic Comment)] is selected for [Text Type]. | |

For details of *3, refer to the following.

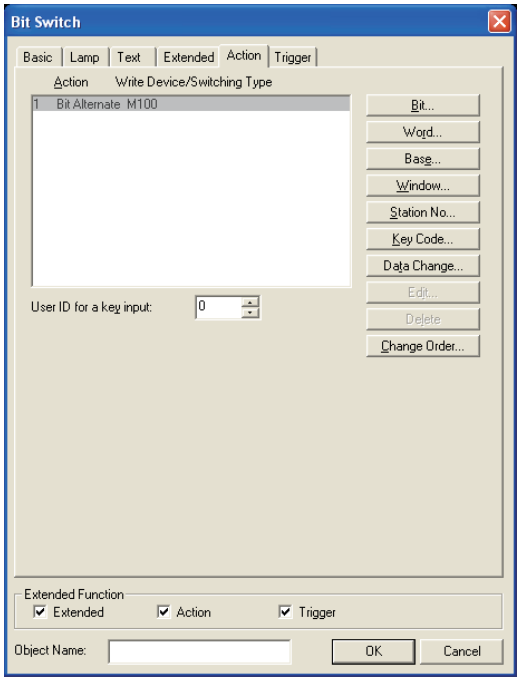
*3 Set the text to be displayed on touch switch

When text is displayed on the touch switch when [Attribute for middle of two presses] is set, the settings must be made as follows.




| Items | Description | Model |
|---|---|---|
| Position | Select the position where the text is to be displayed on the object.<br>(Center/Top/Bottom/Left/Right) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Horizontal Alignment | Select a horizontal position for the text. | |
| Vertical Alignment | Select a vertical position for the text. | |
| Text | Input the text to be displayed. (Up to 32 characters)<br>Press the Enter key to input a new line of the end of the first line.<br>(A line feed is counted as two characters.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset to Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 5 Action tab




(Example : Setting screen for GT15)

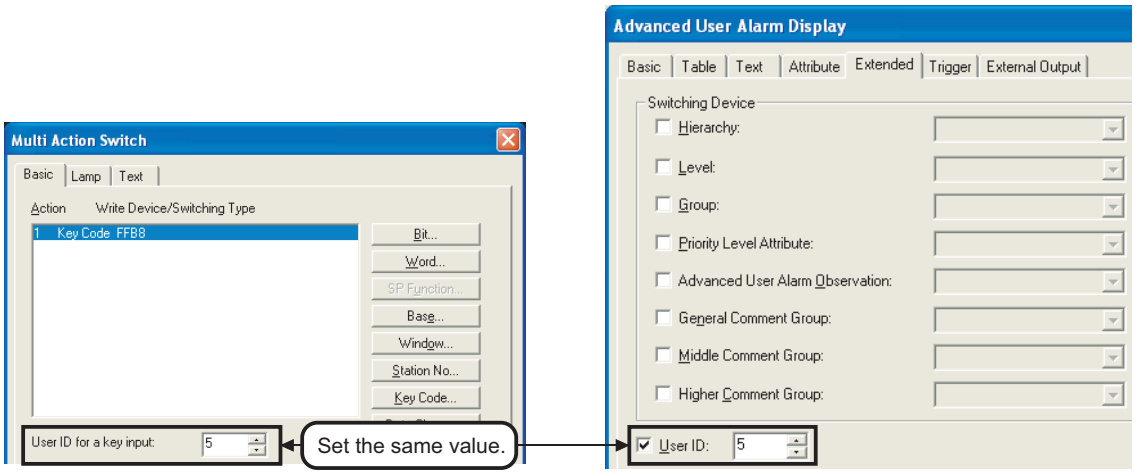
Basic | Lamp | Text | Extended | **Action** | Trigger

| Items | Description | Model |
|---|---|---|
| Action | The set actions will be displayed in list format. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| User ID for a key input*1 | Specify the ID (0 to 65535) for designating an object for which the key code is input or data is changed. | |
| Bit*2 | Click on this item to set the bit device ON/OFF operation for touch switch. | |
| Word*3 | Click on this item to set the word device value change for touch switch. | |
| Base*4 | Click on this item to make the settings in order the base screen will be switched by using touch switch. | |
| Window*5 | Click on this item to make the settings in order the window screen will be switched by using touch switch. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Station No.*6 | Click on this item to make the settings in order the station No. will be switched by using touch switch. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Key Code*7 | Set the key code of the key for object input. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Data Change*8 | Click on this item when setting the data change switch to a touch switch. | |
| Edit | When intending to edit a preset action, select the action from [Action] and then click on Edit button.<br>As the corresponding setting dialog box will appear, edit the action on that dialog box. | |
| Delete | When intending to delete a preset action, select the action from [Action] and then click on Delete button.<br>As the corresponding setting dialog box will appear, delete the action on that dialog box. | |
| Change Order*9 | Click to change the order of the action. | |

For details of *1 to *9, refer to the following.

*1 User ID for a key input

This user ID specifies the object to be operated when operating advanced alarm, historical trend graph or others with the key code.
Specify the same value for the "User ID for a key input" of the touch switch and the "User ID" of each object.
Example: Setting of touch switch and advanced alarm

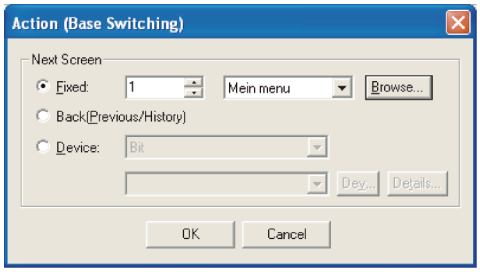



Touch switch setting dialog box　　Advanced alarm setting dialog box

*2 Bit

The followings can be set as the touch switch actions taken when the bit device turns ON/OFF.

■ Setting of [Action (Bit)] dialog box

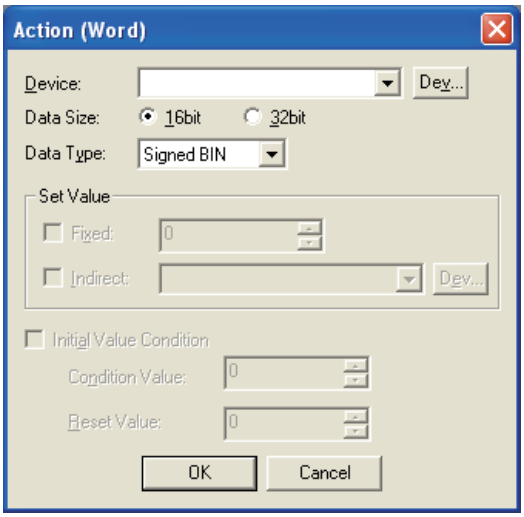



| Items | Description | Model |
|---|---|---|
| Device | Click on Device button to set the bit device of write destination.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Action | Select the corresponding function to the bit device as write destination when touched.<br>Set : Turns ON bit when touched.<br>Alternate : Switches bit ON/OFF when touched.<br>Reset : Turns OFF bit when touched.<br>Momentary : Turns ON bit when touched only. | |

*3 Word

When changing the word device value with touch switch, set as show below.

■ Setting of [Action (Word)] dialog box



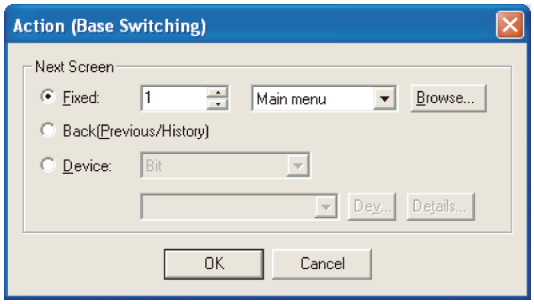

| Items | Description | Model |
|---|---|---|
| Device | Set the device of write destination.<br>(☞ Section 5.1 Device Setting) | |
| Data Size | Select a data size (16bit/32bit) for the word device. | |
| Data Type | Select the data type of the value to be set in [Type] and [Initial Value Condition].<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>Real : Treats word device value as floating point type real number. (Only when [32bit] is selected for [Data Size].)<br>BCD : Treats word device value as BCD (binary decimal) value. | |
| Set Value | Select the type of value (Fixed / Indirect) to be written to the set device (Always select either type.)<br>Fixed : Check this item to write a fixed value into the word device set as write destination, and then set the value.<br>Indirect : Check this item to write the specified value into a word device, and then set the word device.<br>(☞ Section 5.1 Device Setting)<br>When [Fixed] and [Indirect] are both checked, the value (fixed value + indirect value) will be written into the word device. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Initial Value Condition | If the value becomes the condition value when [Fixed] and [Indirect] are both set in [Type], the reset value will be written into the specified word device.<br>Condition Value : Set the value as condition for writing the reset value into the specified word device.<br>Reset Value : Set the value written into the word device when the condition value is satisfied | |

*4 Base

When switching base screen with touch switch, set as shown below.
For the details of the base screen switching function, refer to the following.

☞ Section 6.2.6 Setting items of go to screen switch (Basic tab)

■ Setting of [Action (Base Switching)] dialog box



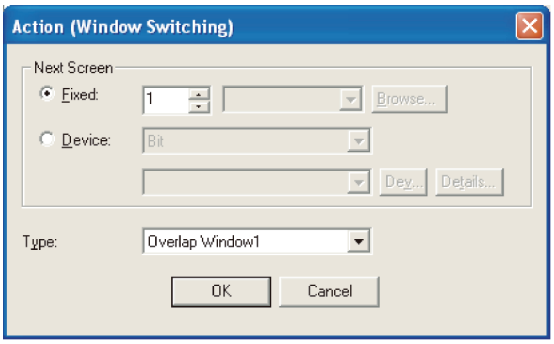

| Items | | Description | Model |
|---|---|---|---|
| Next Screen | | Select the action of switching screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Fixed | Select this item to switch to the base screen of the specified No.<br>Set the base screen No. as switching destination. | |
| | Back (Previous/ History) | Select this item to switch to the base screen of which screen No. was displayed previously. | |
| | Device | Select this item to switch to the base screen specified by the No. based on the ON/OFF status or current value of the specified device.<br>Select the data type of the device to be monitored.<br>Bit : Switches base screen when the bit device turns ON/OFF.<br>Signed (BIN16) : Switches base screen based on the word device (BIN16) binary value.<br>BCD16 : Switches base screen based on the word device (BCD16) binary decimal value.<br>After setting the device, click on Details button.<br>As the corresponding dialog box will appear, set the action on that dialog box. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*5 Window

Make the settings in order that window screen will be displayed or switched by using the touch switch, as shown below.
For the details of the window screen switching function, refer to the following.

☞ Section 6.2.6 Setting items of go to screen switch (Basic tab)

■ Setting of [Action (Window)] dialog box




| Items | | Description | Model |
|---|---|---|---|
| Next Screen | | Select the action of switching screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Fixed | Select this item to switch to the window screen of the specified No.<br>Set the window screen No. as switching destination. | |
| | Device | Select this item to switch to the window screen specified by the No. based on the ON/OFF status or current value of the specified device.<br>Select the data type of the device to be monitored.<br>Bit : Switches window screen when the bit device turns ON/OFF.<br>Signed (BIN16) : Switches window screen based on the word device (BIN16) binary value.<br>BCD16 : Switches window screen based on the word device (BCD16) binary decimal value.<br>After setting the device, click on Details button.<br>As the corresponding dialog box will appear, set the action on that dialog box. | |
| Type | | Select the window screen type to be switched to when the touch switch is touched.<br>[Overlap Window 3], [Overlap Window 4], and [Overlap Window 5] can be selected for GT16 and GT SoftGOT1000 only.<br>For GT10, [Dialog Window] cannot be selected.<br>Overlap window 1:<br>Overlap window 1 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen)<br>Overlap window 2:<br>Overlap window 2 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen)<br>Overlap window 3:<br>Overlap window 1 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen)<br>Overlap window 4:<br>Overlap window 2 is displayed when the touch switch is touched.<br>( ☞ Section 2.1.2 2 Display position of window screen)<br>Overlap window 5:<br>Overlap window 2 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen) | |

(Continued to next page)

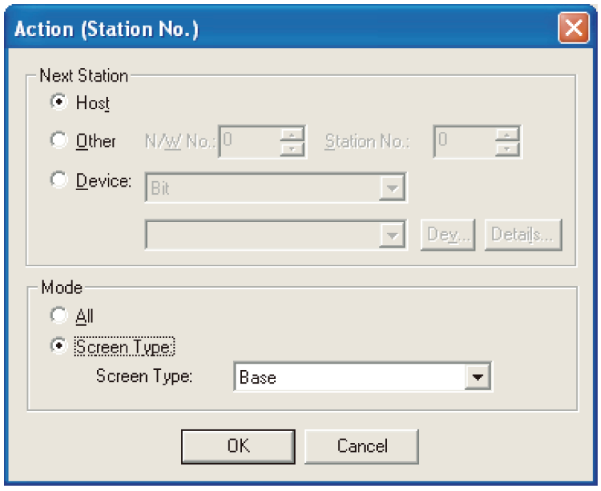
| Items | Description | Model |
|---|---|---|
| Type | Superimpose window 1:<br>Superimpose window 1 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen)<br>Superimpose window 2:<br>Superimpose window 2 is displayed when the touch switch is touched.<br>(☞ Section 2.1.2 2 Display position of window screen)<br>Dialog window:<br>Dialog window is displayed when the touch switch is touched. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*6 Station No.

When setting the station No. switching function with the touch switch, set the following actions. For the details of the station No. switching function, refer to the following.

☞ Section 6.2.7 Setting items of change station No. switch (Basic tab)

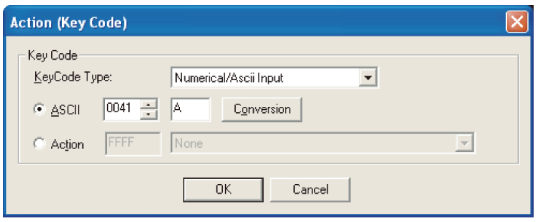
■ Setting of [Action (Station No.)] dialog box




| Items | | Description | Model |
|---|---|---|---|
| Next Station | | Select the action of switching station No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select this item to monitor the station No. connected with GOT. | |
| | Other | Select this item to switch the monitor target to other station.<br>Set the network No. and station No. that will be switched to in decimal. | |
| | Device | Select this item to switch to the station, specified by the No., based on the ON/OFF status of current value of the specified device.<br>Select the data type of the device to be monitored.<br>Bit : Switches base screen when the bit device turns ON/OFF.<br>Signed (BIN16) : Switches base screen based on the word device (BIN16) binary value.<br>BCD16 : Switches base screen based on the word device (BCD16) binary decimal value.<br>After setting the device, click on Details button.<br>As the corresponding dialog box will appear, set the action on that dialog box. | |
| Mode | | All : Select this item to switch the whole project by station No.<br>Screen Type : Select this item to switch the specified screen by station No. | |

*7 Key Code

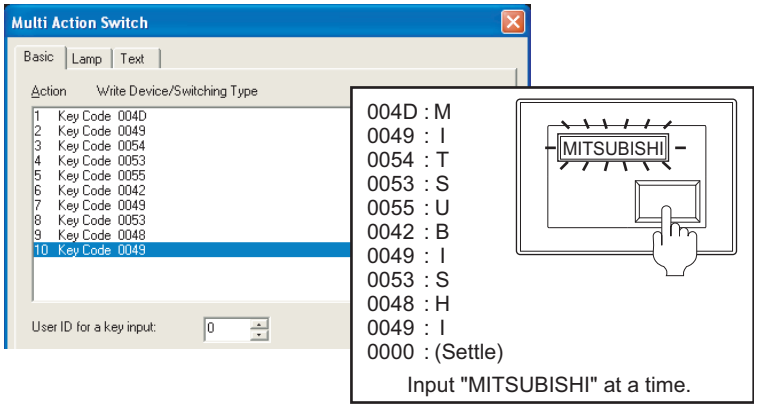
When setting key code to touch switch, specify the following action.




| Items | | Description | Model |
|---|---|---|---|
| Key Code | | Specify the key code.<br>(☞ Appendix1 Key Code List) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | KeyCode Type | Specify the key code type.<br>Numerical/Ascii Input : Select to input the key code for numeric value/ASCII input.<br>Alarm/Data List : Select to input the key code for data list, alarm list, alarm history or advanced alarm.<br>Historical Trend Graph : Select to input a key code to the historical trend graph.<br>Document Display : Select to input a key code in document display.<br>For a single touch switch, only one of the key codes above can be set. | |
| | ASCII | Check this item to input the numeric value or character using key code.After checking this item, input the numeric value/character and press Conversion to convert automatically into the key code. | |
| | Action | Check this item to set an action by a key code.<br>After checking the item, select and set the action. (☞ Appendix1 Key Code List) | |

**Point**

(1) Specifying multiple key codes
Multiple key codes can be registered to each touch switch.
By register multiple key codes, the touch switch for inputting a character string at a time can be created.



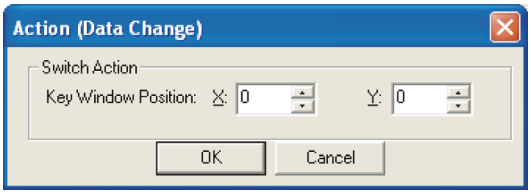

If arrange a touch switch to which multiple key codes are registered on a user-created key window, only the first key code can be executed.
When input key code in advanced alarm, only the first key code can be executed.

(2) Character code reading/writing order
The reading/writing order of the character code set to the touch switch can be selected according to the specification of the controller to be monitored.

☞ Section 7.3.2 Before setting ASCII display/ASCII input

*8 Data Change

When setting the data change switch to a touch switch, specify the following action.




| Item | Description | Model |
|---|---|---|
| Key Window Position | Specify the position (coordinate values) where the key window is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |

**Point**

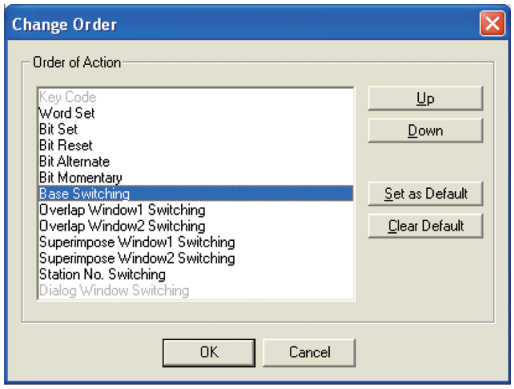
Setting the data change target object and the key window

The object that has the same user ID as the one specified at [User ID for a key input] in the Action tab is taken as the target object.
The key window that is set in the key window setting in project or screen units is displayed.

(☞ Section 4.5 Key Window)

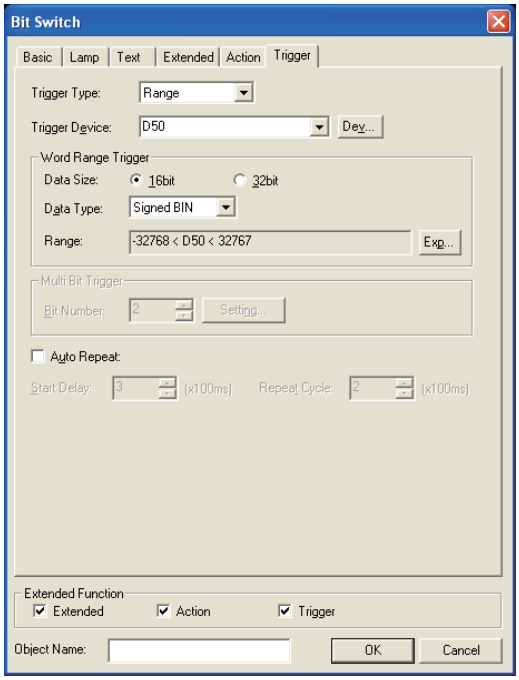
*9 Change Order

To change the order of action, specify as shown below.




| Items | | Description | Model |
|---|---|---|---|
| Order of Action | | Executes in the order from the action displayed at the top first.<br>Since the key code is executed first, the order of action may not be changed.<br>The second and later actions can be changed by the user. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Up | Click to change the order of the selected action to one upper. | |
| | Down | Click to change the order of the selected action to one lower. | |
| | Set as Default | Click when set the order created by Up / Down operation as the new default.<br>(The item cannot be used with the operation panel.) | |
| | Clear Default | Click when clear the order created by Up / Down operation to the initial default.<br>(The item cannot be used with the operation panel.) | |

## 6 Trigger tab




Basic | Lamp | Text | Extended | Action | **Trigger**

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>(For GT10, [Range] and [Bit Trigger] cannot be selected.)<br>(☞ Section 5.5 Trigger Setting)<br>• Ordinary • Range • ON/OFF • Bit Trigger | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Trigger Device | | When [ON], [OFF] or [Range] is selected in [Trigger Type], click on [Device] button to set bit device and word device (only when [Range] is selected).<br>(☞ Section 5.1 Device Setting) | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items for the word device set as trigger. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device.<br>Signed BIN : Treats the word device value as signed binary value.<br>Unsigned BIN : Treats the word device value as unsigned binary value.<br>Real : Treats the word device value as floating point type real number.<br>(Only when [32bit] is selected for [Data Size].) | |
| | Range | Click on the [Range] button and set conditional expression for the word device range.<br>(☞ Section 5.5 Trigger Setting) | |
| Multi Bit Trigger | Bit Number | When selecting [Bit Trigger] in [Trigger Type], set the set bit device number (2 to 8) as multi bit trigger.<br>After the setting, click on [Setting] button to set bit device and trigger conditions.<br>(☞ Section 5.5 Trigger Setting) | |
| Auto Repeat | | Check this item when repeating the set operation while the touch switch is touched. | |
| | Start Delay | Set time from when the touch switch is touched until when the operation repeat starts.<br>This can be set in the range of 0.1 to 2 seconds (0.1 second units). (Default : 0.3) | |
| | Repeat Cycle | Set a cycle for repeating the operation.<br>This can be set in the range of 0.1 to 1 secondes (0.1 second units). (Default : 0.2) | |

**Point**

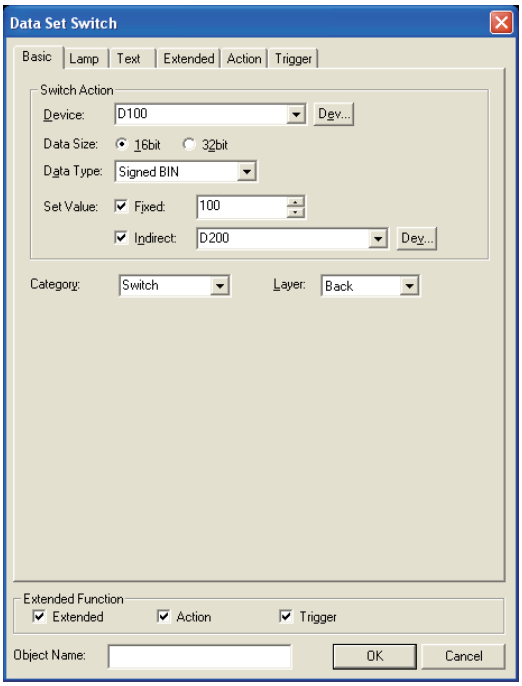
Operations for which auto repeat can be set

For operations for which auto repeaat can be set, refer to the following.

(☞ Section 6.2.11 Precautions)

## 6.2.4 Setting items of data set switch

### 1 Basic tab




Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Switch Action | Device | Set the device of write destination.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of the value to be set in [Set Value].<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats the word device value as BCD (binary coded decimal).<br>Real : Treats the word device value as floating point type real.<br>(Only when [32bit] is selected for [Data Size].) | |
| | Set Value | Fixed : Check this item to write a fixed value into the word device set as write destination, and then set the value.<br>Indirect : Check this item to write the specified value into a word device, and then set the word device.<br>(☞ Section 5.1 Device Setting)<br>When [Fixed] and [Indirect] are both checked, the value (fixed value + indirect value) will be written into the word device. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

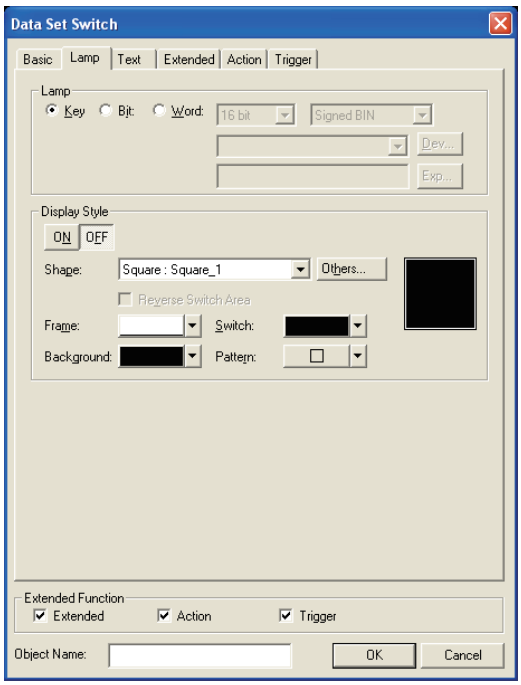
Basic | Lamp | Text | Extended | Action | Trigger

| Items | Description | Model |
|---|---|---|
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Lamp tab

The setting items of lamp tab are the same with those of bit switch.
For the details of the set data, refer to the following.

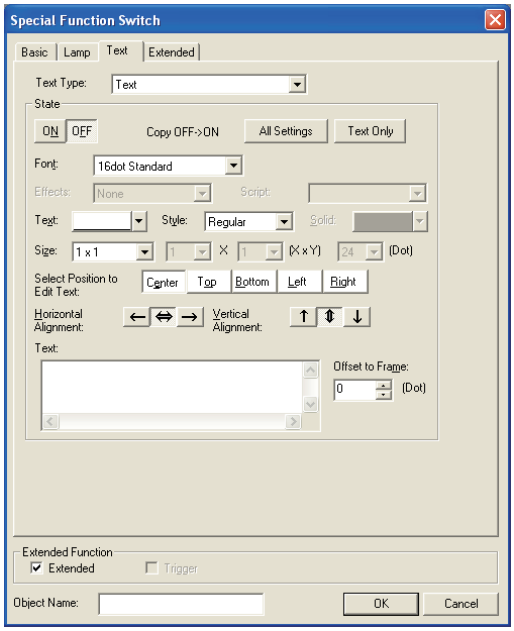
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)



## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

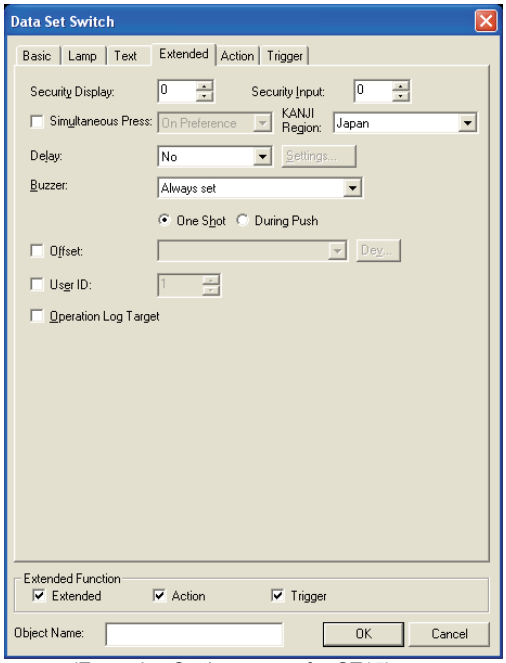



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of extended tab are the same with those of bit switch.
For the details of the set data, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Extended tab)

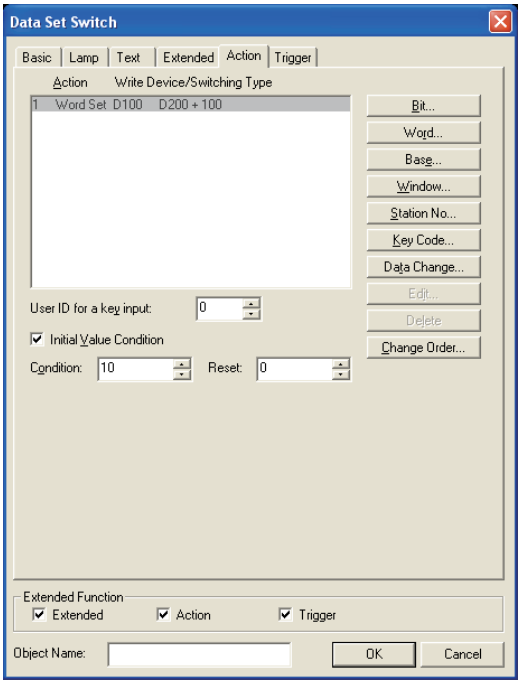



(Example : Setting screen for GT15)

## 5 Action tab

The setting items of action tab are the same with those of bit switch.
For the details of the set data, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Action tab)

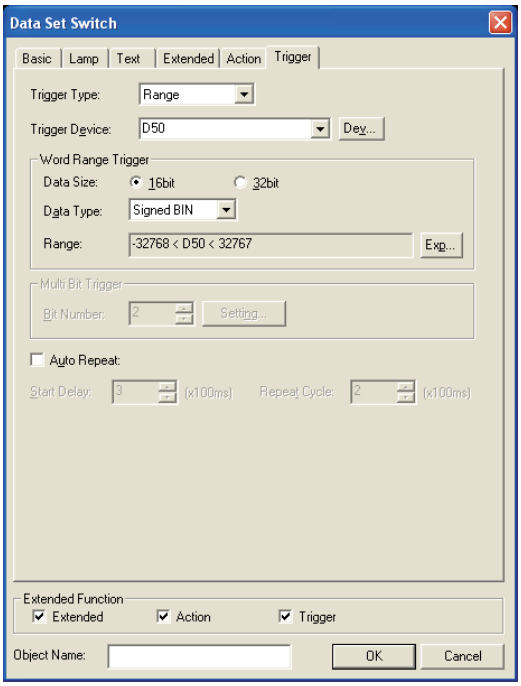



(Example : Setting screen for GT15)

## 6 Trigger tab

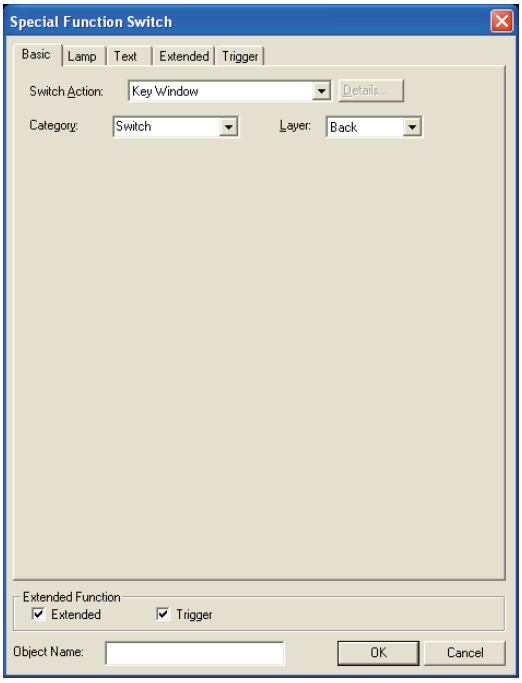
The setting items of the Trigger tab are the same with those of bit switch.
For the details of the set data, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.5 Setting items of special function switch

### 1 Basic tab



Basic | Lamp | Text | Extended | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Switch Action | | Select the extended function to be displayed.<br>For GT SoftGOT1000, some functions do not operate even though the functions are set.<br>For the details, refer to the following manual.<br>(☞ GT SoftGOT1000 Version□ Operating Manual) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Utility | Displays the utility. | |
| | Communication Settings | Displays communication settings screen | |
| | Key Window | Displays the key window for numerical/ASCII input function. | |
| | Start HardCopy | Starts hard copy function. (Starts to collect screen data) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Abort HardCopy | Aborts the hard copy function presently processed (Aborts to collect screen data). | |
| | Setup | Displays setup screen | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Change Brightness | Displays the change brightness screen. | |
| | Password (Security Level) | Displays the screen for changing security levels.<br>The item is enabled when the security level authentication is selected in the system environment.<br>(☞ Section 3.5 Security Setting) | |
| | Clock Setting | Displays clock setting screen. | |
| | Data Maintenance | Displays data maintenance screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Advanced Recipe | Displays the advanced recipe Information screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Logging | Displays the logging information. | |
| | Preservation Function | Displays the debug screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Operation Log | Displays the operation log information. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | System Monitor | Displays the screen of system monitor function. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Device Monitor | Displays the screen for the device monitor function. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Network Monitor | Displays the network monitor screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Ladder Monitor*1 | Displays the screen of ladder monitor function.<br>Clicking the Details button displays the Ladder Monitor Detail Settings dialog box. | |
| | Ladder Editor | Displays the ladder editor screen. | |
| | Intelligent Module monitor | Displays the intelligent unit monitor screen. | |
| | Servo Amplifier Monitor | Displays the servo amplifier monitor screen. | |
| | Q Motion Monitor | Displays the Q motion monitor screen. | |
| | CNC Monitor | Displays the CNC monitor screen. | |
| | Network Unit Display | Displays the network unit status display screen. | |

(Continued to next page)

| Items | Description | Model |
|---|---|---|
| System Alarm Display | Displays system alarm and resets GOT error. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| A List Editor | Displays the screen of A list editor function. | |
| FX List Editor | Displays the screen of FX list editor function.<br>This item is not available for the GT1030 and GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| GOT Start Time | Displays the day/time the GOT has started, total run hour, and present time. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Test Window | Displays the window for test function.<br>(☞ Section 15.4 Test Function) | |
| Self Check | Displays self check screen. | |
| Batch Self Check | Displays the self check results menu screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Maintenance Report | Displays maintenance report screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Clean / Disable Screen | Displays the screen for screen clear. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| PX Developer Function call *2 | Starts PX Developer.<br>Click the Browse button, and then the PX Developer Function Call Setting dialog box is displayed.<br>The number for the function set in the PX Developer Function Call Setting dialog box is set for [No]. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| CNC Data Input/Output | Displays the CNC data I/O screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| FX List Monitor | Displays the screen for the FX list monitor.<br>This item is not available for the GT1030 and GT1020. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operator Information Management | Displays the operator setting menu screen.<br>The item is enabled only when the operator authentication is selected.<br>(☞ Section 3.5 Security Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operator Management | Displays the operator management screen.<br>The item is enabled only when the operator authentication is selected.<br>(☞ Section 3.5 Security Setting) | |
| Log-in/Log-out (Operator Authentication) | Displays the screens for login and logout.<br>The item is enabled only when the operator authentication is selected.<br>(☞ Section 3.5 Security Setting) | |
| Password Change (Operator Authentication) | Displays the screen for changing passwords.<br>The item is enabled only when the operator authentication is selected.<br>(☞ Section 3.5 Security Setting) | |
| Fingerprint Authentication | Displays the Fingerprint information management screen.<br>The item is enabled for the operator authentication only.<br>(☞ Section 3.5 Security Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Backup/Restore | Displays the screens for backups and restorations. | GT16 GT15 SoftGOT1000 GT11 GT10 |

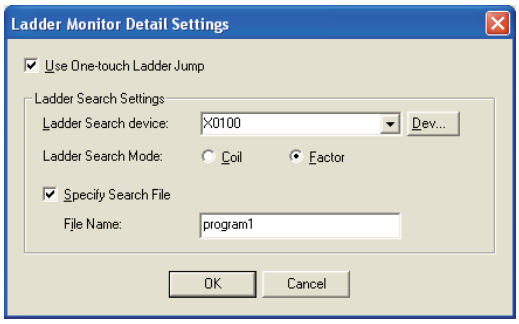
(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| | SFC Monitor*3 | Displays the SFC monitor screen.<br>Clicking the Details button displays the SFC Monitor Detail Settings dialog box. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | USB Device Display | Displays the USB device status display screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Multimedia*4 | Displays the multimedia screen.<br>Clicking the Details button displays the Multimedia Detail Settings dialog box. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1 to *4, refer to the following.

*1 Ladder monitor detail settings

By setting the following items, the set device can be searched for automatically when the ladder monitor is started from the special function switch. (One-touch ladder jump function)




| Items | | Description | Model |
|---|---|---|---|
| Use One-touch Ladder Jump | | Check this item to search the set device at ladder monitor start. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Ladder Search device | Set a device to be searched for. (☞ Section 5.1 Device Setting) | |
| | Ladder Search Mode | Select a search method from coil-search or defect search. | |
| | Specify Search File | Check this item to specify a program file to be searched.<br>This setting is valid only for the QCPU and QnACPU.<br>After the check, specify a file name.<br>(Up to eight characters can be set.) | |

**Point**

When using ladder search settings

When using ladder search settings, check [Sequence Program Automatic Readout when starting Ladder Monitor] of [GOT Setup] displayed by selecting [Common] → [System Environment].

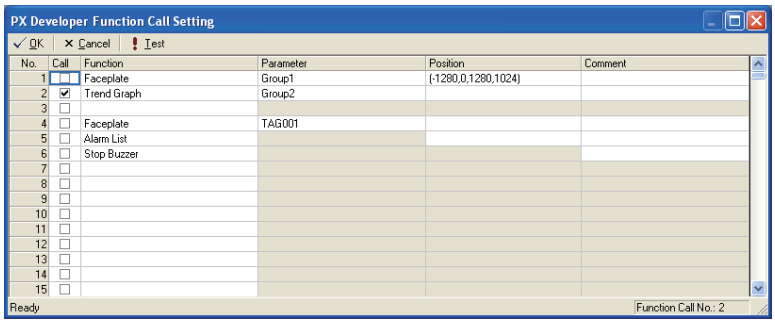
☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)

For the ladder monitor function, refer to the following.

☞ GOT1000 Series Extended/Option Functions Manual

*2 PX Developer Function Call Setting

Set the PX Developer function to be called.

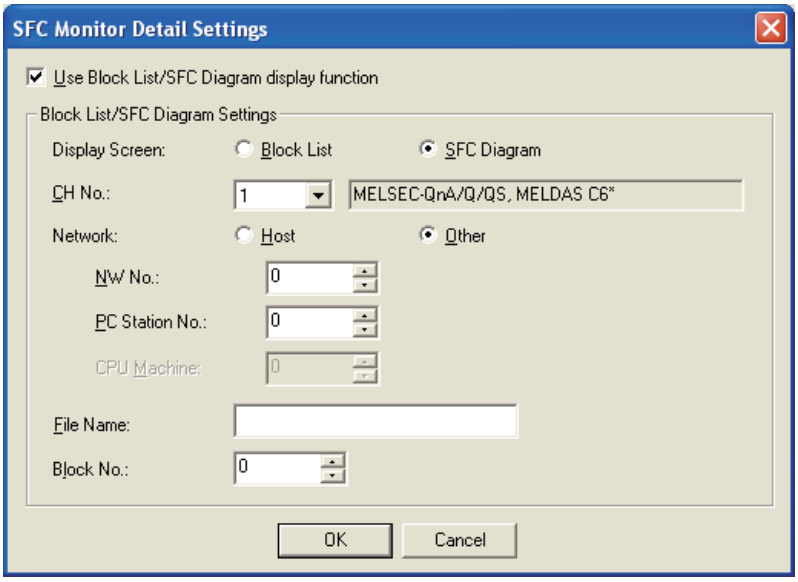



For the settings in the PX Developer Function Call Setting dialog box, refer to the following manual.

☞ GT SoftGOT1000 Version2 Operating Manual (Section 6.16 Interaction with PX Developer)

*3 SFC monitor detail settings

By setting the following items, the GOT can display the set SFC program on the block list screen or SFC diagram monitor screen when the SFC monitor is started using the special function switch.




| Items | | Description | Model |
|---|---|---|---|
| Use Block List/SFC Diagram display function | | Check this item to display the set SFC program on the block list screen or SFC diagram monitor screen when starting the SFC monitor. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Display Screen | Select a screen to be displayed when starting the SFC monitor.<br>• Block List : The block list screen is displayed.<br>• SFC Diagram : The SFC diagram monitor screen is displayed. | |
| | CH No. | Select the channel No. of the controller to be monitored. (1 to 4)<br>Only the channel numbers with the following controller types set can be selected.<br>MELSEC-QnU, Q17nD/NC/DR, CRnD-700<br>MELSEC-QnA/Q/QS, MELDAS C6*<br>MELSEC-Q(Multi)/Q-Motion | |
| | Network | Set the network for the controller to be monitored.<br>• Host : The GOT monitors the controller set as the host station.<br>• Other : The GOT monitors the controller set as the other station. | |
| | N/W No. | Set the network No. of the controller to be monitored. (0 to 255)<br>This item can be set only when [Other] is set for [Network]. | |
| | PC Station No. | Set the station No. of the controller to be monitored. (0 to 120)<br>This item can be set only when [Other] is set for [Network]. | |
| | CPU Machine | Set the CPU No. of the controller to be monitored. (0 to 4) | |
| | File Name | Specify the file name of the SFC program to be read from the controller.<br>Up to four two-byte characters or eight one-byte characters can be input. | |
| | Block No. | Set the block No. of the block to be displayed when starting the SFC monitor. (0 to 319)<br>This item can be set only when [SFC Diagram] is set for [Display Screen]. | |

**Point**

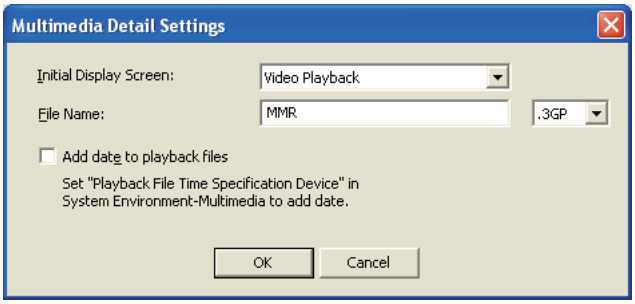
When using SFC monitor function

For the SFC monitor function, refer to the following.

☞ GOT1000 Series Extended/Option Functions Manual

*4 Multimedia detail settings

By setting the following items, the GOT can display the set multimedia screen when the multimedia function is started using the special function switch.




| Items | Description | Model |
|---|---|---|
| Initial Display Screen | Select a multimedia screen to be displayed when touching the switch.<br>• File Menu :The file menu screen is displayed.<br>• Video Image : The video image screen is displayed.<br>• Video Playback : The video playback screen is displayed. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| File Name | Set the file name and the extension (3GP or MP4) of the video file to be played.<br>Set this item only when [Video Playback] is selected for [Initial Display Screen].<br>Set the file name with up to 70 one-byte alphanumeric characters. | |
| Add date to playback files | When this item is checked, the device value, which is set for [Playback File Time Specification Device] in [Multimedia] of [System Environment], is added to the file name of the video file to be played as the recording date and time. | |

**Point**

Multimedia function

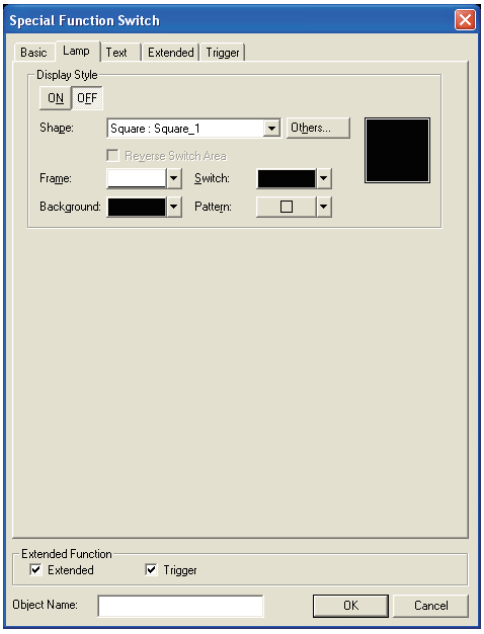
For the multimedia function, refer to the following.

☞ 13.10 Multimedia Function

## 2 Lamp tab

The setting items of lamp tab are the same with those of bit switch.
(The switch does not have the lamp function setting items.)
For the details of the set data, refer to the following.

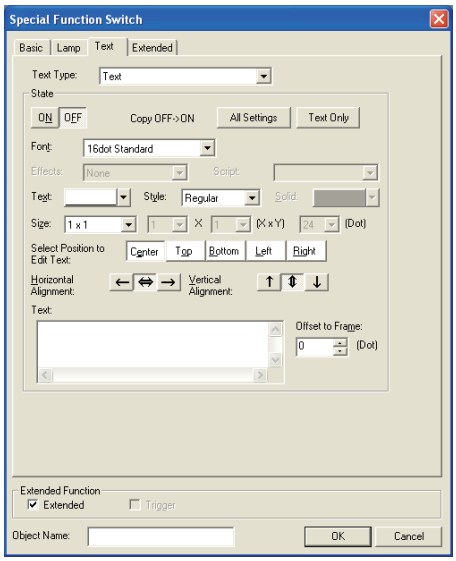
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)



## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

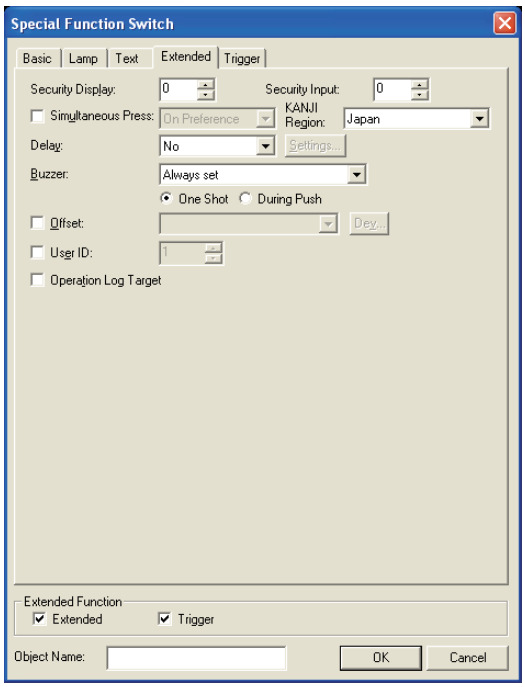



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of the Extended tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Extended tab)

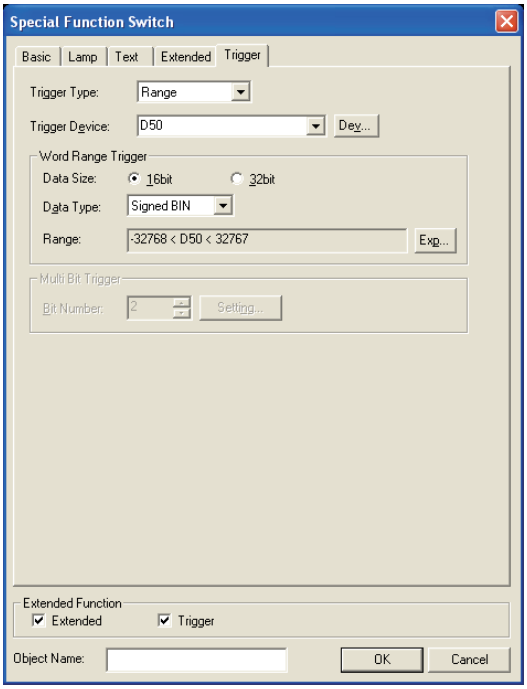



(Example : Setting screen for GT15)

## 5 Trigger tab

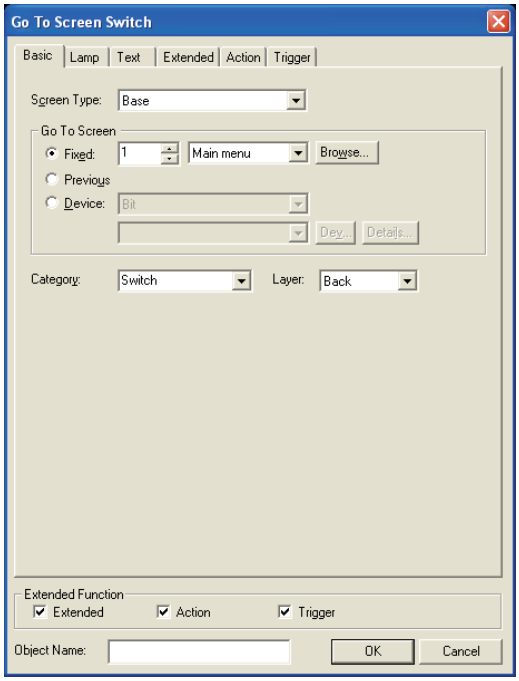
Action setting is available when [Key window] is set in [Action] on the basic tab.
The setting items of trigger tab are the same with those of bit switch.
(Auto repeat setting items are not provided for this switch.)
Refer to the following for details of the set data.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.6 Setting items of go to screen switch

### 1 Basic tab




Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Screen Type | | Select the screen type of switching destination. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Base | Switches to base screen. | |
| | Overlap Window1 | Switches to or display overlap window1 screen. | |
| | Overlap Window2 | Switches to or display overlap window2 screen. | |
| | Overlap Window3 | Switches to or display overlap window3 screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Overlap Window4 | Switches to or display overlap window4 screen. | |
| | Overlap Window5 | Switches to or display overlap window5 screen. | |
| | Superimpose Window1 | Switches to or display superimpose window1. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Superimpose Window2 | Switches to or display superimpose window2. | |
| | Dialog Window | Switches to or displays dialog window screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Go To Screen | | Select the action of switching screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Fixed | Select this item to switch to the base screen/window screen specified by the screen No..<br>After selecting, set the base/window screen of switching destination.<br>Click on Browse button to display the screen image dialog box.<br>Make the settings while checking the image of the currently edited screen on that dialog box. | |
| | Previous *1 | Select this item to switch to the screen of base screen No. that was displayed previously.<br>This item is available only when switching base screen.<br>As GOT can store the displayed screen No. including the current base screen, up to 10 base screens can be switched based on the history. | |

(Continued to next page)

Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Go To Screen | Device *2 | Select this item to switch to the base/window screen specified by screen No., according to ON/OFF status/current value of the specified device.<br>Before setting device, select data type of monitor device.<br>Bit : Switch screens according to ON/OFF status of bit device.<br>Word (BIN16) : Switch screens according to 16-bit binary value of word device.<br>Word (BCD16) : Switch screens according to 16-bit BCD (binary coded decimal)value to switch screen.<br>After setting device, click on Details button to set action. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, *2, refer to the following.

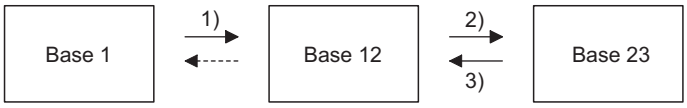
*1 Previous

Select the hierarchy mode or history mode using the specific touching switch.
This is fixed to history mode for GT10. (History preservation mode cannot be used.)

Hierarchy mode (Upper tier switch mode)

Pressing the touch switch display, i.e., switches to the base screen set as the upper tier.
This cycle can be repeated up to 10 times.

Example:

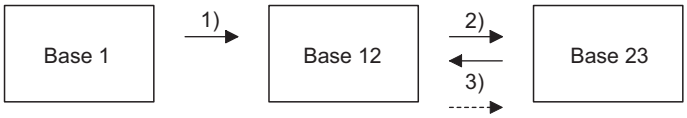



When the screens are switched as shown above, 1) → 2) → 3), and then the touch switch on the base screen 12 is pressed, the base screen1, that is set as the upper tier, will be displayed.

History mode (Previous screen switch mode)

Pressing the touch switch returns to the base screen that was previously displayed.
This cycle can be repeated up to 10 times.

Example:




When the screens are switched as shown above, 1) → 2) → 3), and then the touch switch on the base screen12 is pressed, the base screen23, that was previously displayed, will be displayed again. (After this, whenever the touch switch is pressed, the screen will return to base screen12 → base screen1.)

**Point**

Hierarchy/history mode information

If GOT is powered off, the hierarchy/history information become invalid.
Therefore, once GOT is powered off, and then on again, the screen will not be switched based on the previous hierarchy/history.
(The history information can be stored in a Memory card as instructed in (2).)

(1) Method of switching between the hierarchy mode and history mode

GT16 GT15 Soft GOT 1000 GT11 GT10

The hierarchy mode is set as default.
When using the "Previous" touch switch as history mode, carry out either of the following operations.

(a) Set the history mode on GT Designer2.

1. Select [System Environment] from [Common] on the menu bar.
2. Click [Screen Switching] on the System Environment dialog box.
3. Set [Operation mode] to [History].

☞ Section 3.2 Switching Screen Device Setting

(b) Switching to history mode using the GOT internal device (GS450.b14)
Turn on the GOT internal device GS450.b14.
Use the status observation function to turn on the above device.
For application example, refer to (2) (c).

(2) Storing the history information in a Memory card

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

When history mode is used, up to 10 screens of history information can be stored into a Memory card.
(Mount a Memory card to GOT in advance.)
By using the stored history information can return to the screen before GOT is powered off.

(a) How to store the history information

- Enabling the history information to be stored in a memory card on GT Designer

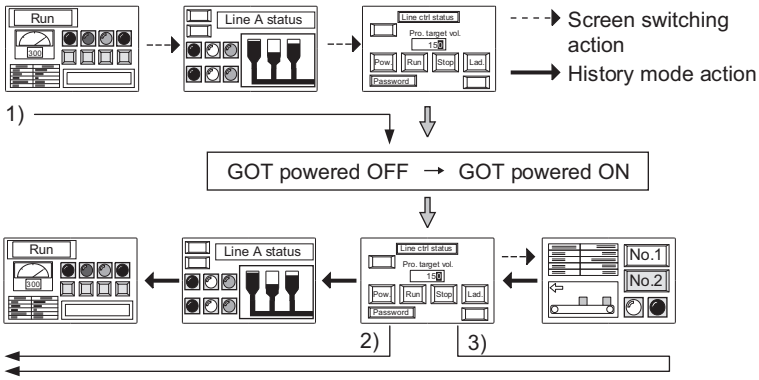
1. Select [System Environment] from [Common] on the menu bar.
2. Click [Screen Switching] on the System Environment dialog box.
3. Set [Operation mode] to [History], and check [History Preservation].

☞ Section 3.2 Switching Screen Device Setting

- Enabling the history information to be stored in a memory card using the GOT internal device (GS450.b13)
  When the history mode is set (GS450.b14 is ON), turn on the GOT internal device GS450.b13 to enable the history information to be stored in a memory card.
  Use the status observation function to turn on the above device.
  For application example, refer to (2) (c).

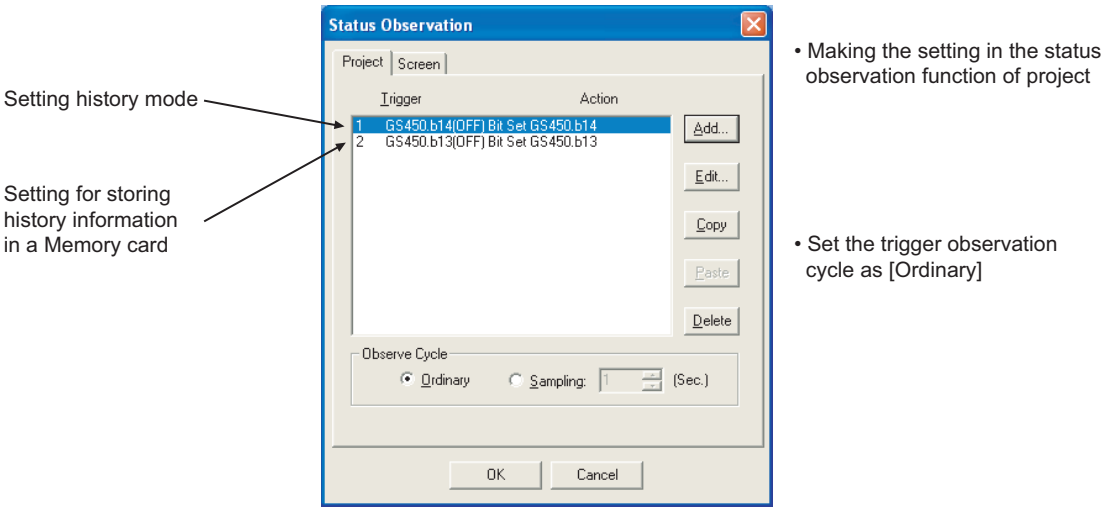
(b) Operation overview

Store the history information into a memory card when switching screen.
After powering on GOT, read the historical information stored in the memory card when switching the initial screen.




1) After switching the screen, turn power OFF.
2) After turning power ON, touch the Previous switch of history mode to return to the screen before power-OFF.
3) After turning power ON, screen can be switched to the 10th screen before power-OFF.

(c) Setting example for switching the mode using the GOT internal device
Set the history mode at the first line of status observation function.
(After GOT is powered ON, it switches to the history mode instantly.)
When switching from the hierarchy mode to the history mode during monitoring, if screen change has been done, the screen information within GOT might be lost.
In this case, it is impossible to return to the previous screens as the history.
When the history mode is used, it is recommended to switch to the history mode instantly after powering GOT on.




(3) Cautions

(a) If the history information has been stored into a Memory card, do not change the screen switching device value in controller while GOT is off.
As the history information while GOT is off is not saved, it is impossible to switch back to the screen as controlled in controller.

(b) Once changed from the hierarchy mode to the history mode, the mode cannot be returned to the hierarchy mode even by turning GS450.b14 off.
To return to the hierarchy mode, power off the GOT.
This also applies to GS450.b13.

(c) When switch from the Previous mode to the History mode using the GOT internal device (GS450.b14), set the Previous mode for the GT Designer2.
If the History mode is set for the GT Designer2, the ON/OFF of GS450.b14 is invalid.

*2 Device (Switch base/window screen according to ON/OFF status/current value of specified device.)

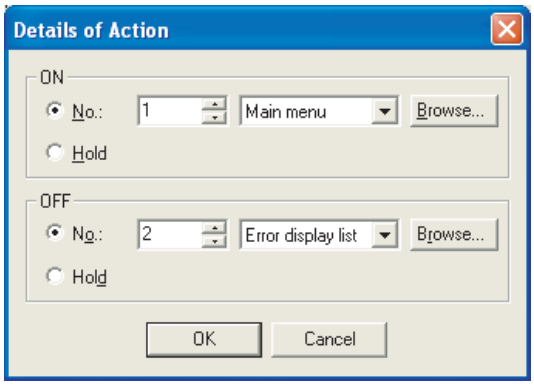
Set the following actions.

- Switch to the base/window screen specified by screen No. according to ON/OFF status of the specified device.
- When the current value of specified device corresponds to the set comparison expressions, switch to the base/window screen specified by screen No.
  (Up to 64 comparison expressions can be set.)

(1) When specifying bit device

After setting bit device, click on Details button, and set the action when switching screen on the following dialog box.

Setting of "Details of Action" dialog box

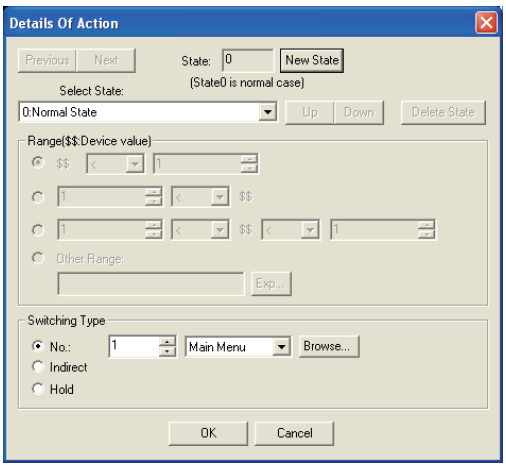



| Items | | Description |
|---|---|---|
| ON/OFF | No. | Select this item when switching to base/window screen specified by screen No. when the specified devices turns ON/OFF.<br>Set the screen No. of the switching destination screen. |
| | Hold | Select this item when making the settings in order the screen will not be switched when the specified device turns ON/OFF. |

(2) When specifying word device

After setting word device, click on Details button, and set the action when switching screen on the following dialog box.

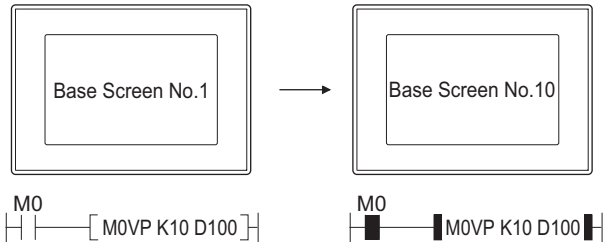
Setting of Details of Action dialog box




| Items | | Description |
|---|---|---|
| State | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) |
| | New State | Creates a new state. |
| | Delete State | Deletes a specified state. |
| | Previous/Next | Switches the currently editing state to the previous or next state. |
| | Up/Down | Changes the priority of the current state. |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. |
| | Range | Set the range of word device values for operation change using a conditional expression. |
| | Switching Type | No. : Switch to base/window screen specified by screen No. when the specified device value corresponds to the set condition.<br>Set the screen No. of the target screen on the Spin box.<br>Click on Browse button to display the screen image dialog box.<br>Set the screen, while checking the image of the currently edited screen on that dialog box.<br>Indirect : Switch to the screen No. corresponding to specified word device when specified device value corresponds to the set conditional expression.<br>Hold : Do not switch screen when specified device value corresponds to the set conditional expression. |

**Hint!** Methods of Switching Screen

Sequence program also can be used to switch screen.
Create the sequence program that writes value of the device for switching each screen No. by using the value of the screen No. to be switched.
By using this sequence program, the base/window screen can be switched without touch switch function.




No sequence program can be used to switch base/window screen when GOT internal devices (GB, GD, GS) are used as base/window screen switching device

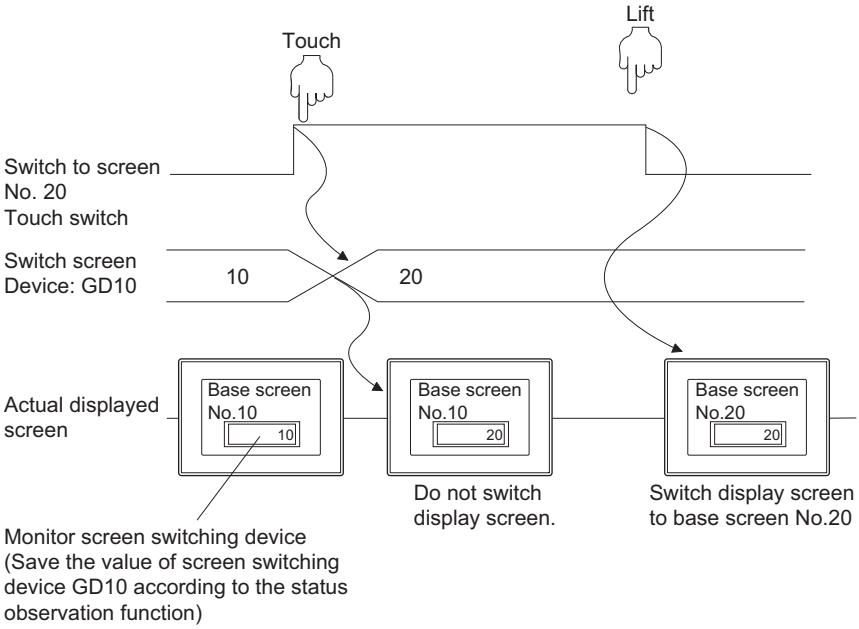
**Remark**

(1) Methods of erasing window screen
When erasing window screen, touch the Close button, or set the switching screen device value to "0" by using touch switch or sequence program. (Fixed: 0)

(2) Timing to switch screen
The switching timing for base/window screens can be selected with ON or OFF (synchronization mode).
For how to set this item, refer to the following.

☞ Section 4.4 Auxiliary Settings

If the touch switch is kept touched for a long time, this will delay the timing when the actual screen is displayed, and the screen may not appear as specified with the device value.
When using status observation function to monitor switching screen device, the value different from actually displayed screen No. may be stored, depending on the timing of scanning.



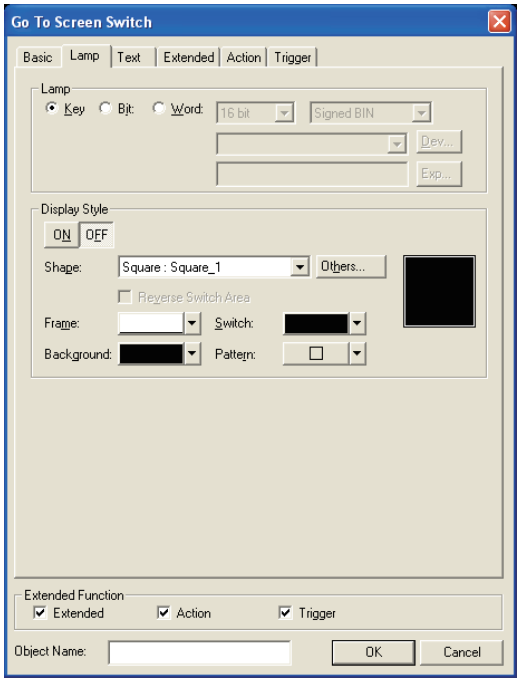

In this case, set the script function for each screen as shown below, in order that the screen will be displayed as specified by screen No..

Screen script
• Trigger : GB100 (Ordinary ON, Rise)
• Script : [w: GD87] = [w: GD10];
Make sure to set GOT special register GS386 (screen script initial action) to "0" to execute script function after switching screen.

## 2 Lamp tab

The setting items of Lamp tab are the same as the bit switch.
Refer to the following for the details of setting items.

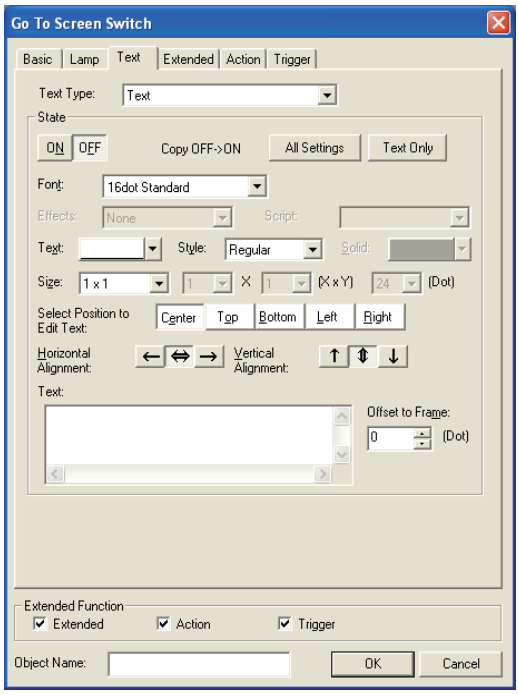
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)




## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

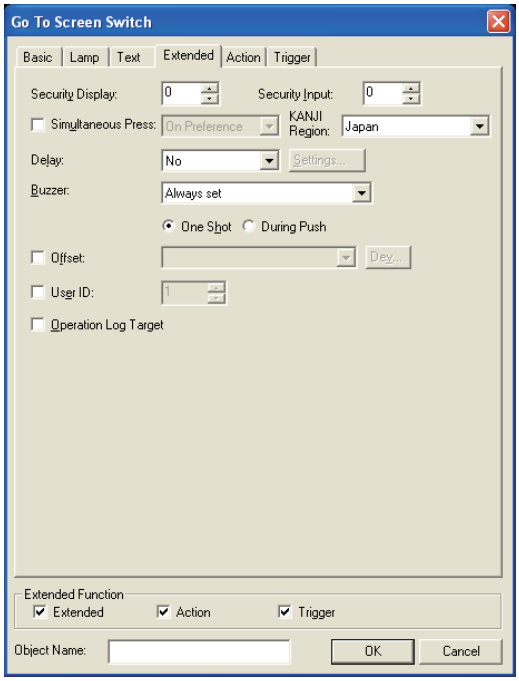



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details of setting items.

☞ Section 6.2.3 Setting items of bit switch (Extended tab)

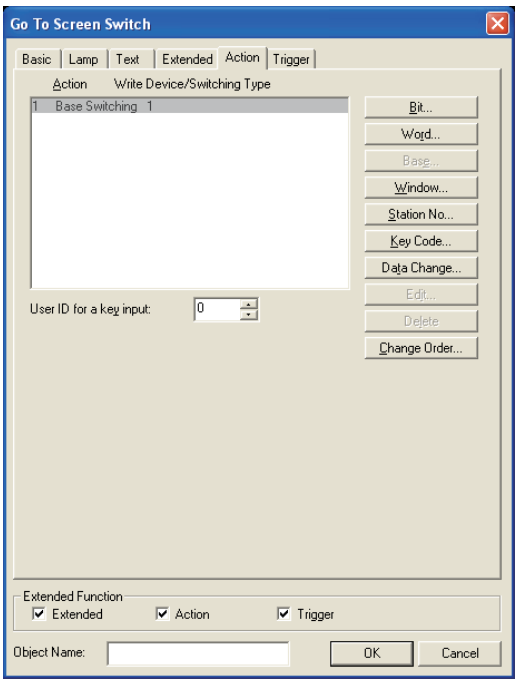



(Example : Setting screen for GT15)

## 5 Action tab

The setting items of Action tab are the same as the bit switch.
Refer to the following for the details of setting items.

☞ Section 6.2.3 Setting items of bit switch (Action tab)

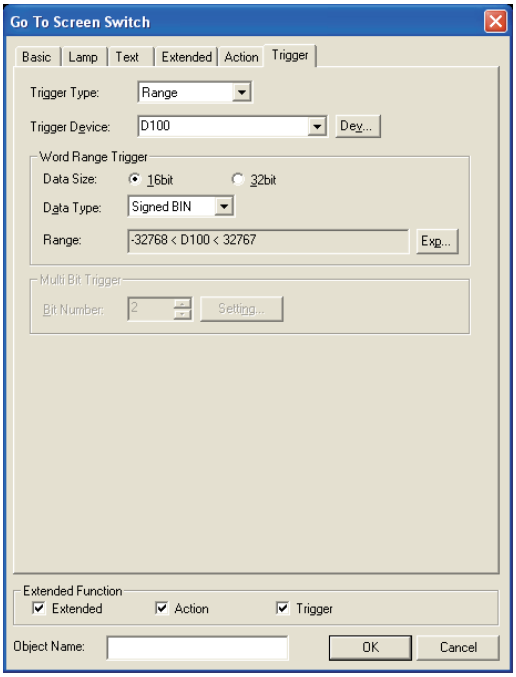



(Example : Setting screen for GT15)

## 6 Trigger tab

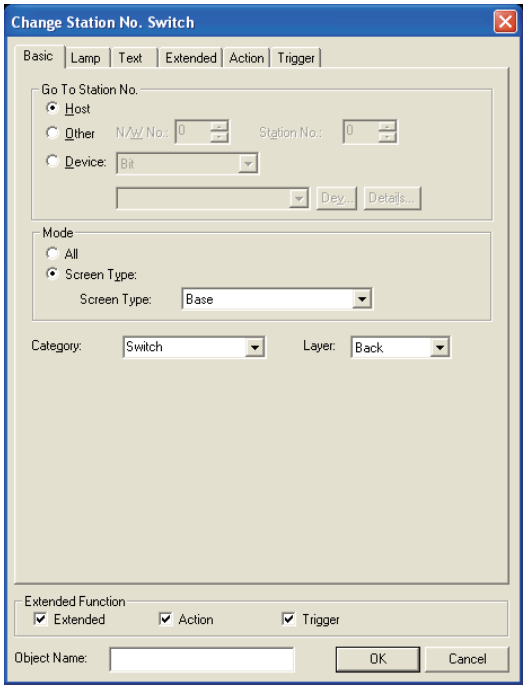
The setting items of Trigger tab are the same as the bit switch.
(Auto repeat setting items are not provided for this switch.)
Refer to the following for the details of setting items.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.7 Setting items of change station No. switch

### 1 Basic tab




Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Go to Station No. | | Select the action of switching station No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Host | Select this item to monitor the station No. connected with GOT. | |
| | Other | Select this item to switch the monitor target to other station.<br>Set the network No. ( in [N/W No.]) and station No. ( in [Station No.])of the PLC CPU as switch destination in decimal. | |
| | Device *1 | Select this item to switch to the station specified by the No. based on the ON/OFF status or current value of the specified device.<br>Select the data type of the device to be monitored.<br>Bit : Switches station No. when the bit device turns ON/OFF.<br>Signed BIN16 : Switches station No. based on the word device (BIN16) binary value.<br>BCD16 (BCD16) : Switches station No. based on the word device (BCD16) binary decimal value.<br>After setting the device, click on Details button.<br>As the corresponding dialog box will appear, set the action on that dialog box. | |
| Mode | | All : Select this item to switch the whole project by station No.<br>Screen Type : Select this item to switch the specified screen by station No. | |

(Continued to next page)

Basic | Lamp | Text | Extended | Action | Trigger

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

For details of *1, refer to the following.

**Point**

The required settings for switching station No.

- Enabling/Disabling station No.switching for each screen
  Select [Screen] → [Properties] from the menu.
  As the corresponding dialog box appears, set whether station No. will be changed on the screen dialog box (Auxiliary tab).
- Setting the station No.switching device
  ☞ Section 3.3 Switching Station No. Device Setting

*1 Device (Switch station No. to be monitored according to the ON/OFF status/current value of the specified device.)

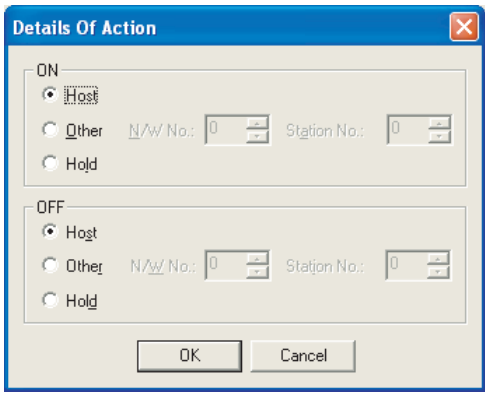
Set the following actions.

- Switch station No. according to the ON/OFF status of the specified bit device.
- Switch to the screen specified by station No. when current value of specified word device corresponds to the set condition. (Up to 64 conditions can be set.)

(1) When specifying bit device

After setting bit device, click on Details button to set action for switching station No. on the following dialog box.

Setting of "Details Of Action" dialog box




| Items | | Description |
|---|---|---|
| ON/OFF | Host | Select this item to monitor the controller connected with GOT. |
| | Other | Select this item to switch monitoring destination to other station.<br>Set the network No. (in [N/W No.]) and station No. (in [Station No.]) of the PLC CPU as switch destination in decimal. |
| | Hold | Select this item when making the settings in order that the screen will not be switched when the specified device turns ON/OFF. |

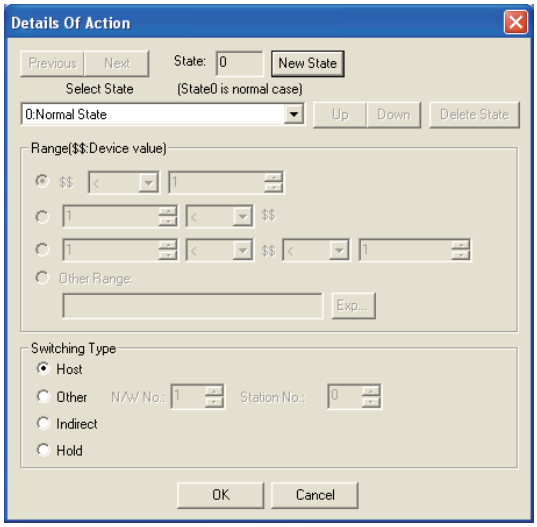
(2) When specifying word device

After setting word device, click on Details button to set action on switching screen according to device status.

Refer to the following for the details about setting method.

☞ Section 5.4 State Setting

Setting of action (word) dialog box

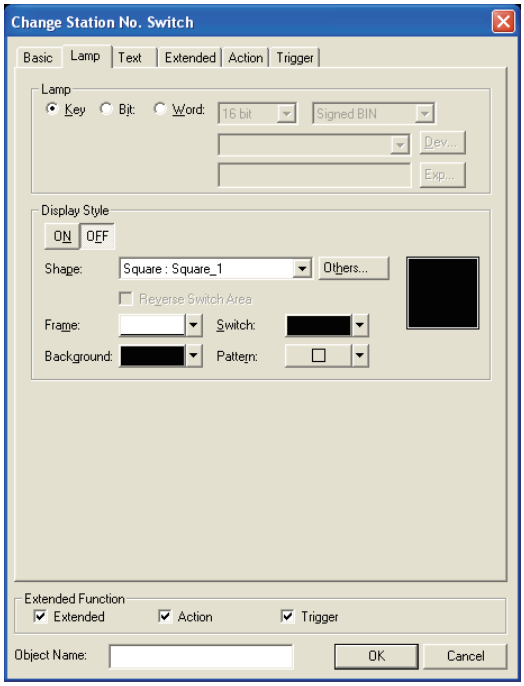



| Items | | Description |
|---|---|---|
| State | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) |
| | New State | Creates a new state. |
| | Delete State | Deletes a specified state. |
| | Previous/Next | Switches the currently editing state to the previous or next state. |
| | Up/Down | Changes the priority of the current state. |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. |
| | Range | Set the range of word device values for display change using a conditional expression. |
| Switching Type | | Select the displaying method for switching station No. when the specified word device value corresponds to the condition set in "Range". (☞ Section 3.3 Switching Station No. Device Setting)<br>Host : Monitor the controller connected with GOT when the specified device value corresponds to the set condition.<br>Other : Switch the monitor destination to other station when the device value corresponds to the set condition.Set the network No. (in [N/W No.]) and station No. (in [Station No.]) of the PLC CPU as switch destination in decimal.<br>Indirect : Switch to monitoring destination corresponding to the specified device when the specified device value corresponds to the set condition.<br>Hold : Do not switch monitoring destination when the specified device value corresponds to the set condition. |

## 2 Lamp tab

The setting items of Lamp tab are the same as the bit switch.
Refer to the following for the details about setting items.

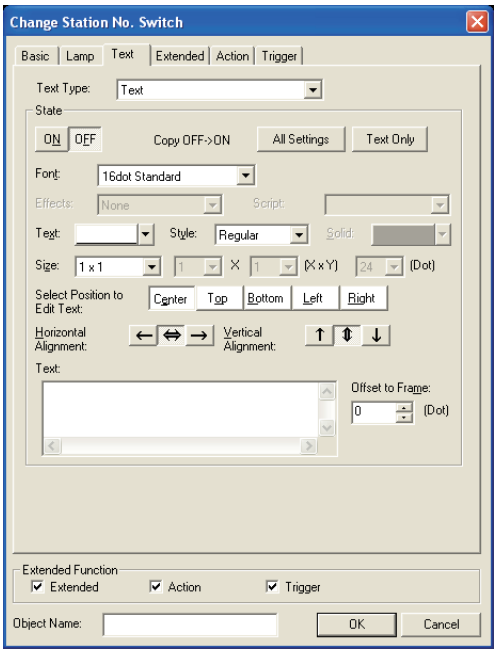
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)




## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

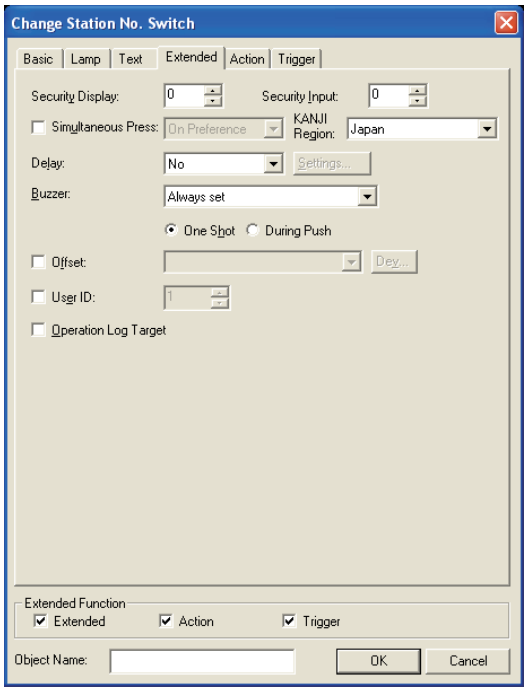



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details about setting items.

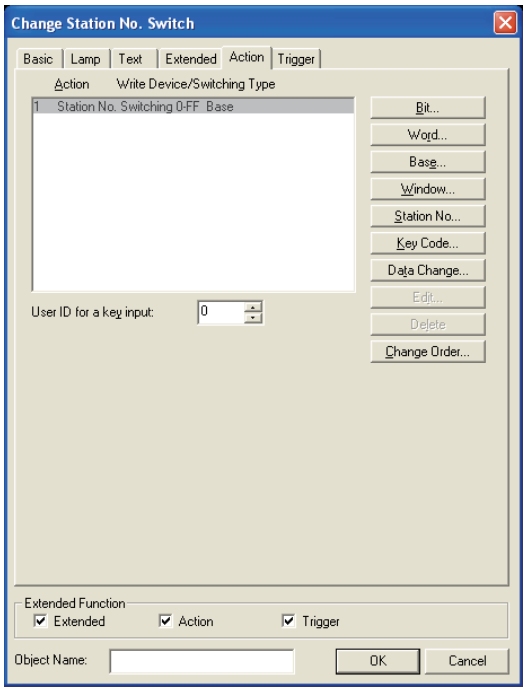
☞ Section 6.2.3 Setting items of bit switch (Extended tab)




## 5 Action tab

The setting items of Action tab are the same as the bit switch.
Refer to the following for the details about setting items.

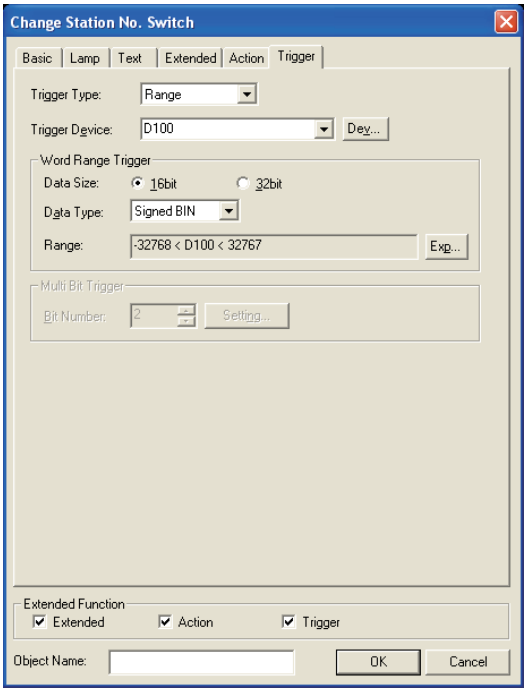
☞ Section 6.2.3 Setting items of bit switch (Action tab)



## 6 Trigger tab

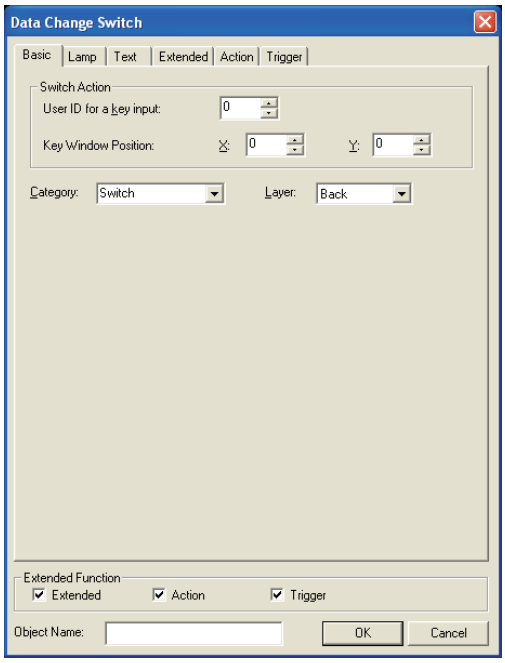
The setting items of Trigger tab are the same as the bit switch.
(Auto repeat setting items are not provided for this switch.)
Refer to the following for the details about setting items.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.8 Setting items of data change switch

### 1 Basic tab



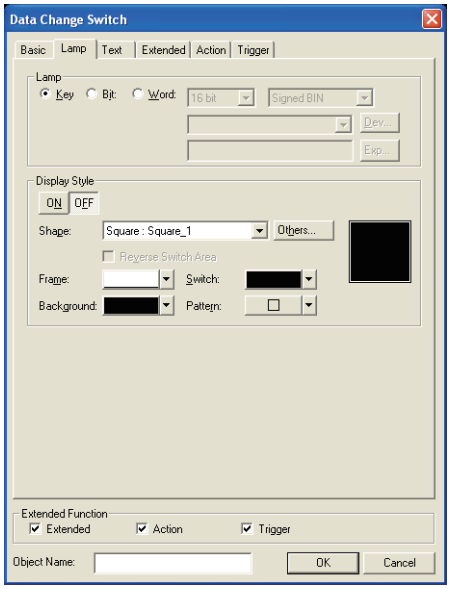

Basic | Lamp | Text | Extended | Action | Trigger

| Item | | Description | Model |
|---|---|---|---|
| Switch Action | User ID for a key input | Set the user ID of the object where the cursor is displayed when the data change switch is touched. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Key Window Position | Specify the position (coordinate values) where the key window is displayed. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Lamp tab

The setting items of the Lamp tab are the same with those of bit switch.
For details of the settings, refer to the following.

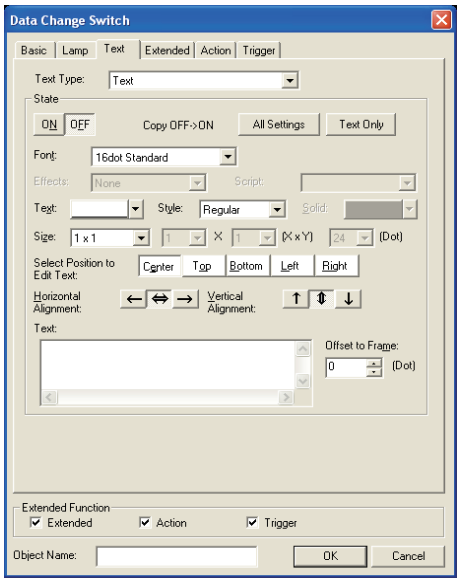
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)




## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

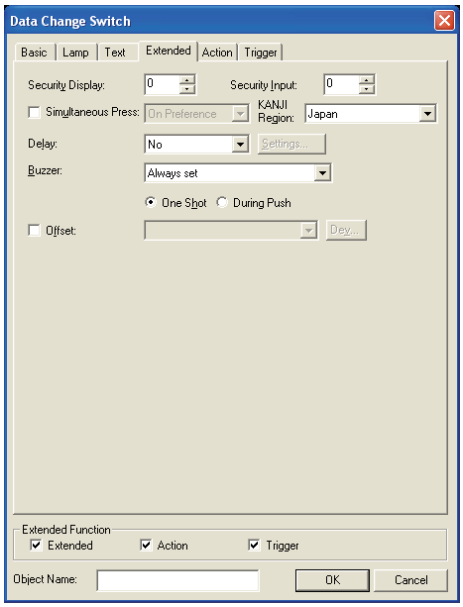



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of the Extend tab are the same as those of bit switch.
(The switch does not have the User ID and the Operation Log Target setting items.)
For details of the settings, refer to the following.

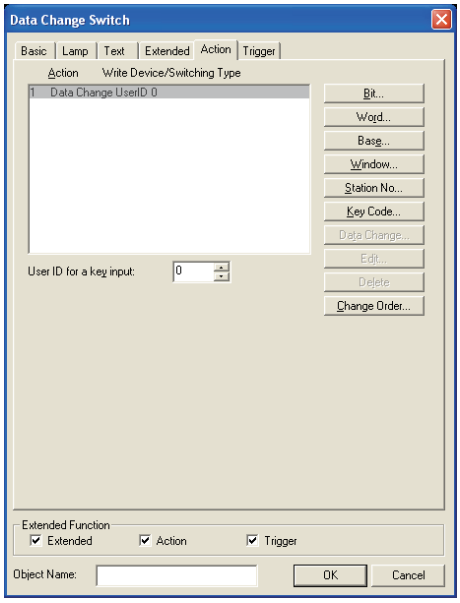
☞ Section 6.2.3 Setting items of bit switch (Extended tab)




## 5 Action tab

The setting items of the Action tab are the same as those of bit switch.
For details of the settings, refer to the following.

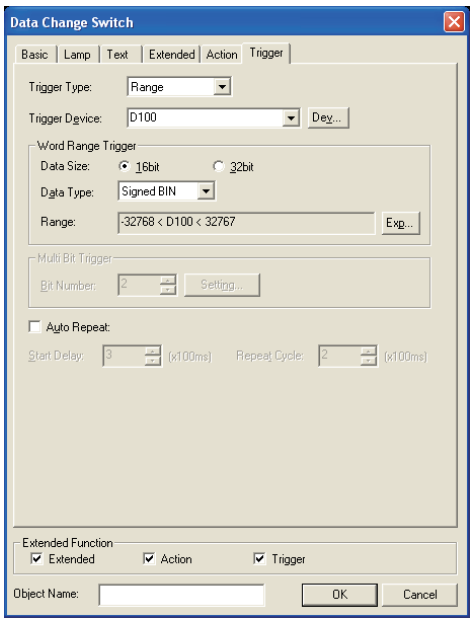
☞ Section 6.2.3 Setting items of bit switch (Action tab)



## 6 Trigger tab

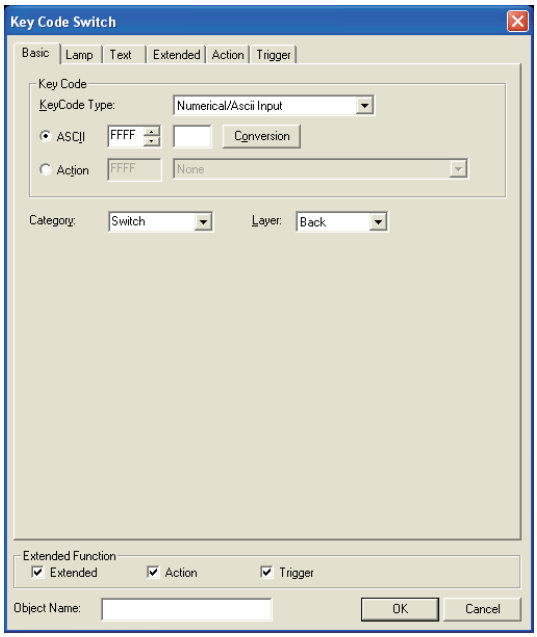
The setting items of the Trigger tab are the same as those of bit switch.
For details of the settings, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.9 Setting items of key code switch

### 1 Basic tab



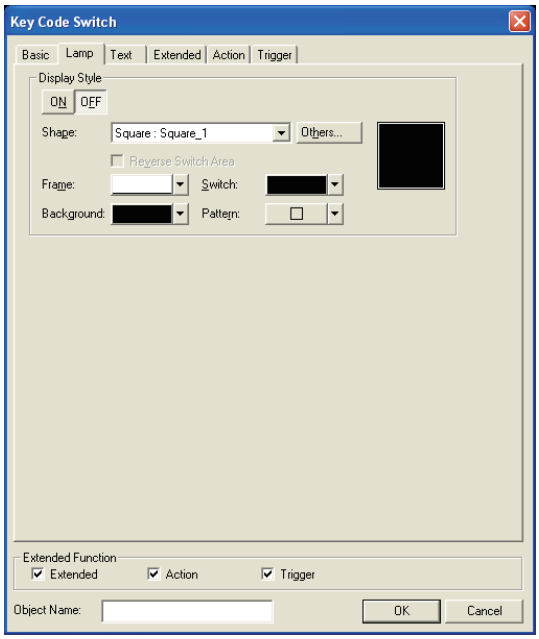

Basic | Lamp | Text | Extended | Action | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Key Code | | Set the key code.<br>(☞ Appendix1 Key Code List) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | KeyCode Type | Specify the key code type.<br>Numerical/Ascii Input : Select to input the key code for numeric value/ASCII input.<br>Alarm/Data List Control : Select to input the key code for data list, alarm list, alarm history or advanced alarm.<br>Historical trend graph : Select to input a key code to the historical trend graph.<br>Document Display : Select to input a key code in document display.<br>For a single touch switch, only one of the key codes above can be set. | |
| | ASCII | Check this item to input the numeric value or character using key code.<br>After checking this item, input the numeric value/character and press [Conversion] to convert automatically into the key code. | |
| | Action | Check this item to set an action by a key code.<br>After checking the item, select and set the action. (☞ Appendix1 Key Code List) | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Lamp tab

The setting items of Lamp tab are the same as the bit switch.
(The switch does not have the lamp function setting items.)
Refer to the following for the details about setting items.

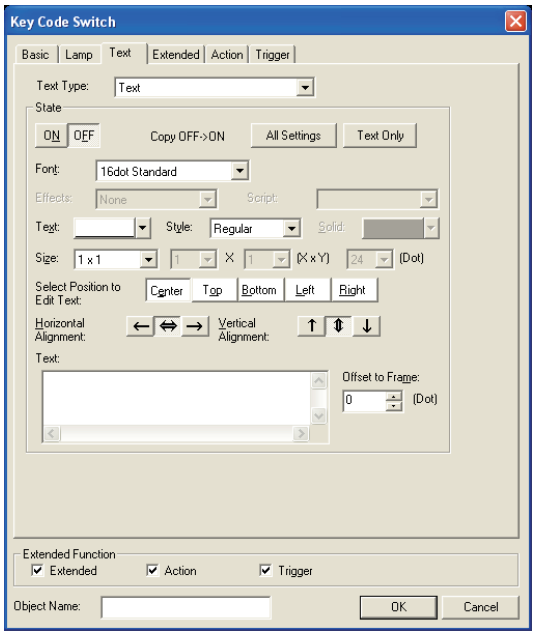
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)




## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Text tab)

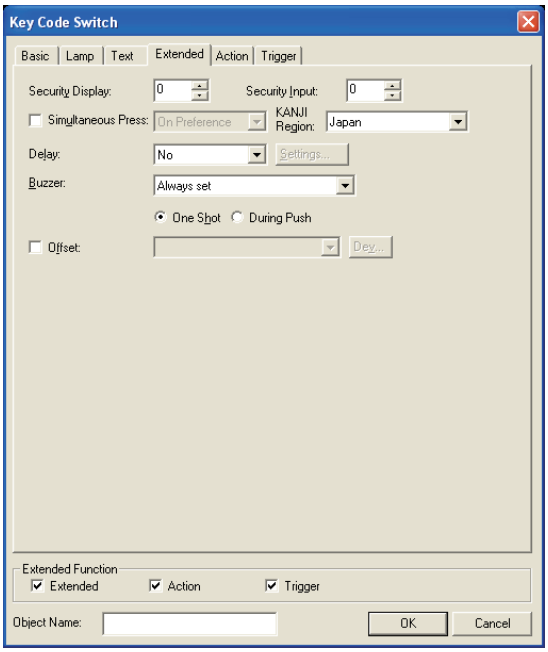



(Example : When [Text] is selected for [Text Type])

## 4 Extended tab

The setting items of Extended tab are the same as the bit switch.
(The switch does not have the User ID and the Operation Log Target setting items.)
Refer to the following for the details about setting items.

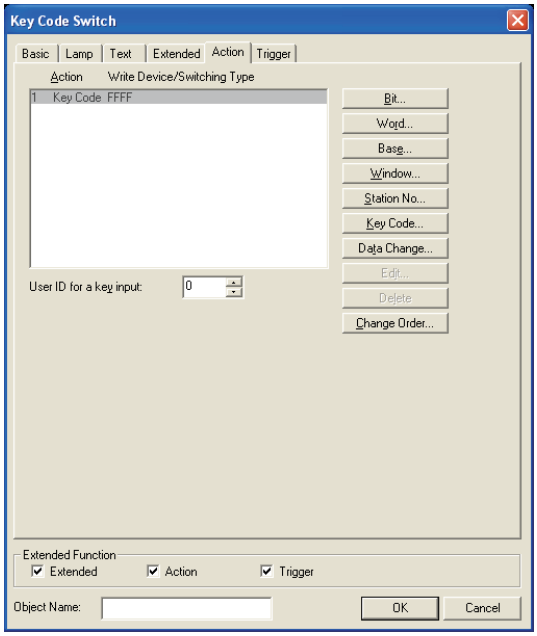
☞ Section 6.2.3 Setting items of bit switch (Extended tab)




## 5 Action tab

The setting items of Action tab are the same as the bit switch.
Refer to the following for the details about setting items.

☞ Section 6.2.3 Setting items of bit switch (Action tab)

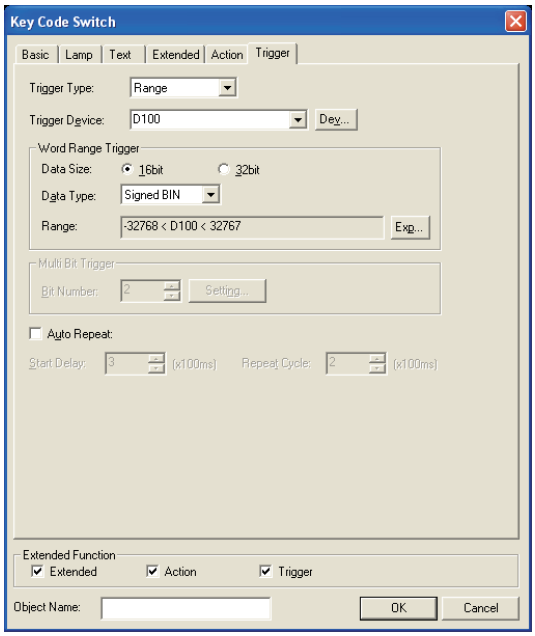



(Example : Setting screen for GT15)

## 6 Trigger tab

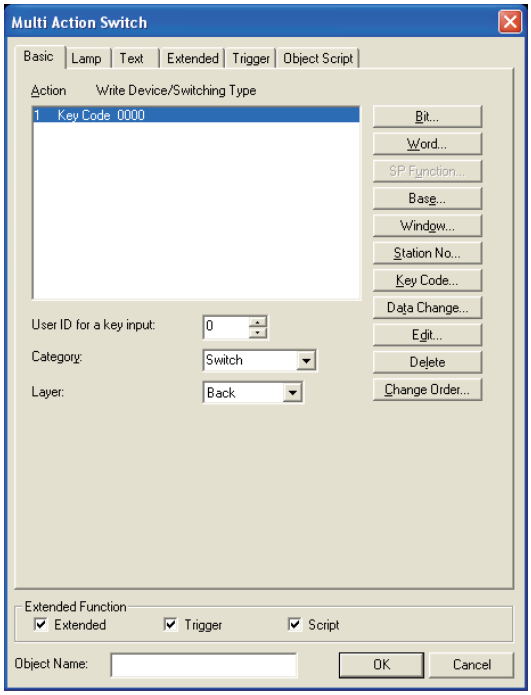
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6.2.10 Setting items of multi action switch

### 1 Basic tab




(Example : Setting screen for GT15)

Basic | Lamp | Text | Extended | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Action | The set actions will be displayed in list format. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| User ID for a key input*1 | Specify the ID (0 to 65535) for designating an object for which the key code is input. | |
| Bit*2 | Click on this item to set the bit device ON/OFF operation for touch switch. | |
| Word*3 | Click on this item to set the word device value change for touch switch. | |
| SP Function*9 | Click on this item to make the settings in order that a screen such as the utility or a screen of the extended function or option function will be switched by using a touch switch. | |
| Base*4 | Click on this item to make the settings in order that the base screen will be switched by using touch switch. | |
| Window*5 | Click on this item to make the settings in order that the window screen will be switched by using touch switch. | |
| Station No.*6 | Click on this item to make the settings in order that the station No. will be switched by using touch switch. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Key Code*7 | Set the key code of the key for object input. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Data Change | Click on this item when setting the data change switch to a touch switch. | |
| Edit | When intending to edit a preset action, select the action from [Action] and then click on [Edit] button. As the corresponding setting dialog box will appear, edit the action on that dialog box | |

(Continued to next page)

Basic | Lamp | Text | Extended | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Delete | When intending to delete a preset action, select the action from [Action] and then click on Delete button.<br>As the corresponding setting dialog box will appear, delete the action in that dialog box | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Change Order*8 | Click to change the order of the action. | |
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1 to *8, refer to the following.

☞ The explanations of *1 to *8 in Section 6.2.3 5 Action tab.

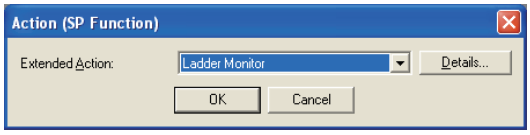
For details of *9, refer to the following.

## *9 Extented action

Clicking the SP Function button displays the following dialog box.

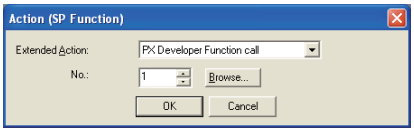
Set a function for [Extended Action] in the Action (SP Function) dialog box.
The following shows the settings for each function.

(1) For [Ladder Monitor]




| Items | Description | Model |
|---|---|---|
| Details | Click the button, and then the Ladder Monitor Detail Settings dialog box is displayed.<br>The button can be clicked only when [Ladder Monitor] is set for [Extended Action].<br>For the settings in the Ladder Monitor Detail Settings dialog box, refer to the following.<br>☞ Section 6.2.5 Setting items of special function switch | GT16 GT15 SoftGOT1000 GT11 GT10 |

(2) For [PX Developer Function call]




| Items | Description | Model |
|---|---|---|
| No. | Set the number for the PX Developer function to be called.<br>The number for the function set in the PX Developer Function Call Setting dialog box is set for [No]. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Browse | Click the button, and then the PX Developer Function Call Setting dialog box is displayed.<br>The button can be clicked only when [PX Developer Function call] is set for [Extended Action].<br>For the settings in the PX Developer Function Call Setting dialog box, refer to the following manual.<br>☞ GT SoftGOT1000 Version2 Operating Manual (Section 6.16.1 Setting method) | |

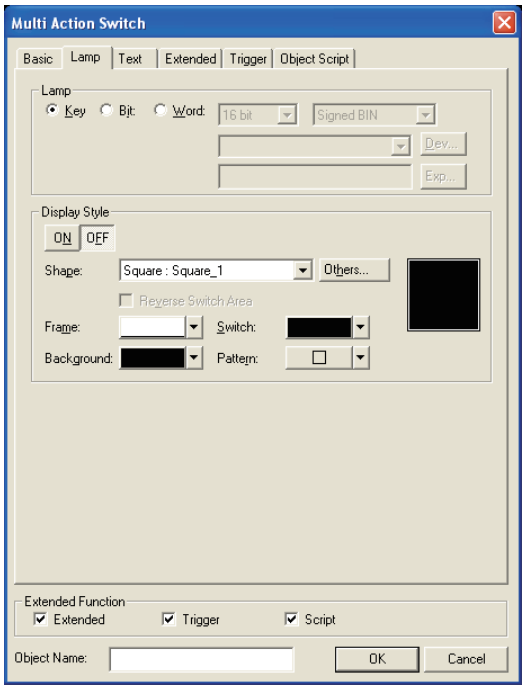
(3) For the other functions

Set a function for [Extended Action], and click the OK button.

## 2 Lamp tab

The setting items of Lamp tab are the same as the bit switch.
Refer to the following for the details about setting items.

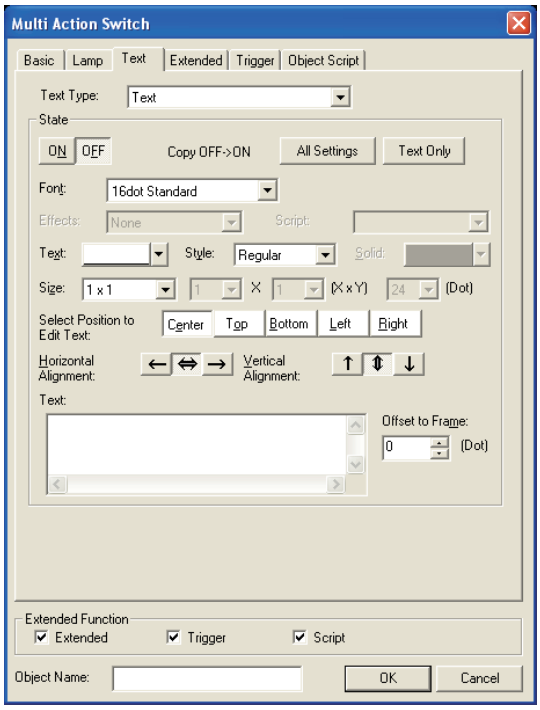
☞ Section 6.2.3 Setting items of bit switch (Lamp tab)




## 3 Text tab

The setting items of the Text tab are the same with those of bit switch.
For details of the setting items, refer to the following.

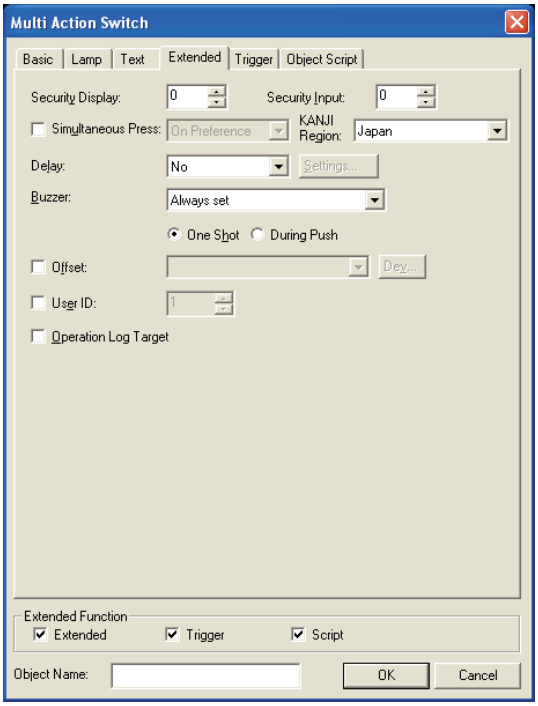
☞ Section 6.2.3 Setting items of bit switch (Text tab)



## 4 Extended tab

The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details about setting items.

☞ Section 6.2.3 Setting items of bit switch (Extended tab)

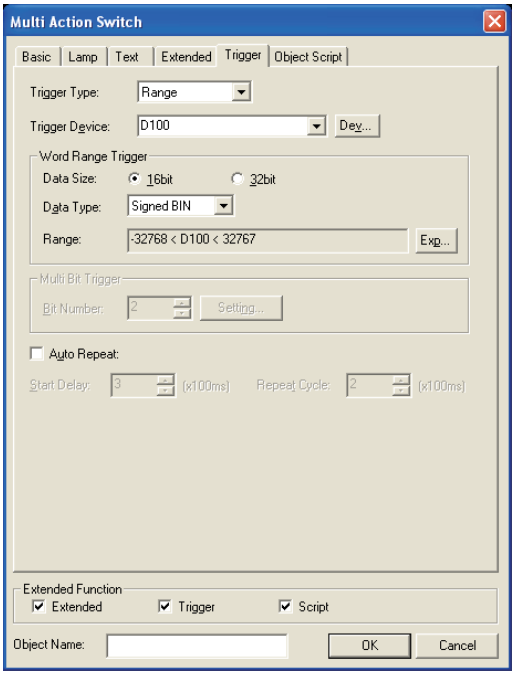



(Example : Setting screen for GT15)

## 5 Trigger tab

The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

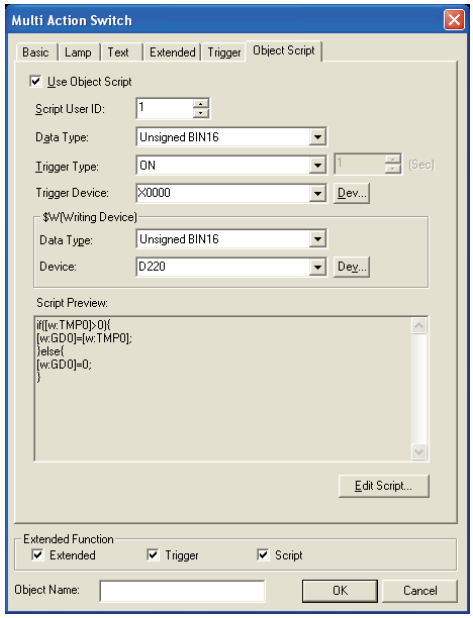
☞ Section 6.2.3 Setting items of bit switch (Trigger tab)



## 6 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 3 Option | Security (display) | security | ○ | 4) |
| | Security (input) | input_security | ○ | 2) |
| | Delay | delay | ○ | 2) |
| | Beep, one shot/while a key is pressed | beep | ○ | 2) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 6.2.11 Precautions

This section provides the precautions for using touch switch.

### 1 Precautions for drawing

(1) Maximum number of objects that can be set on one screen.
Up to 1000 touch switch objects can be set.
(Up to 50 touch switch objects can be set for GT10.)

(2) Action of touch switch

(a) Multiple functions can be set for one touch switch.
(Multiple functions cannot be set if special function switch is set.)

| GT16,GT SoftGOT1000 | | GT15 | | GT11 | | GT10 | | Action sequence for multi setting *1 |
|---|---|---|---|---|---|---|---|---|
| Data change | : 1 | Data change | : 1 | Data change | : 1 | Data change | : 1 | High |
| Key code | : 16 | Key code | : 16 | Key code | : 16 | Key code | : 16 | |
| Word Set | : 20 | Word Set | : 20 | Word Set | : 20 | Word Set | : 20 | |
| Set | : 20 | Set | : 20 | Set | : 20 | Set | : 20 | |
| Reset | : 20 | Reset | : 20 | Reset | : 20 | Reset | : 20 | |
| Alternate | : 20 | Alternate | : 20 | Alternate | : 20 | Alternate | : 20 | |
| Momentary | : 20 | Momentary | : 20 | Momentary | : 20 | Momentary | : 20 | |
| Base | : 1 | Base | : 1 | Base | : 1 | Base | : 1 | |
| Overlap Window1 | : 1 | Overlap Window1 | : 1 | Overlap Window1 | : 1 | Overlap Window1 | : 1 | ↓ |
| Overlap Window2 | : 1 | Overlap Window2 | : 1 | Overlap Window2 | : 1 | Overlap Window2 | : 1 | |
| Overlap Window3 | : 1 | Superimpose1 | : 1 | Superimpose1 | : 1 | Superimpose1 | : 1 | |
| Overlap Window4 | : 1 | Superimpose2 | : 1 | Superimpose2 | : 1 | Superimpose2 | : 1 | |
| Overlap Window5 | : 1 | Station No. switching | : 6 | Dialog window switching | : 1 | | | |
| Superimpose1 | : 1 | Dialog window switching | : 1 | | | | | |
| Superimpose2 | : 1 | | | | | | | |
| Station No. switching | : 9 | | | | | | | |
| Dialog window switching | : 1 | | | | | | | Low |
| Total | : 135 | Total | : 129 | Total | : 123 | Total | : 122 | |

*1 The action sequence (except data change, key code, and dialog window) can be changed on the Action tab.

(3) Minimum size of touch switches
The minimum size of touch switches differs depending on the GOT used.

| GOT | Minimum size of touch switches |
|---|---|
| GT16, GT1595-X, GT SoftGOT1000, GT1020 | 2 dots (vertical) × 2 dots (horizontal) |
| Other than the above | 16 dots (vertical) × 16 dots (horizontal) |

(4) Valid range of touch switch

The setting unit for touch switch valid area differs depending on the GOT used.

| GOT | Minimum size of touch switches |
|---|---|
| GT16, GT1595-X,<br>GT SoftGOT1000, GT1020 | 1-dot unis |
| Other than the above | 16-dot unis |

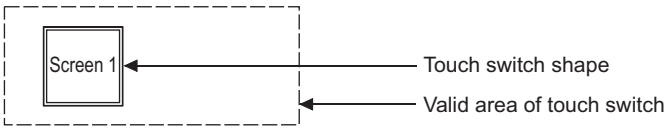
By right-clicking the mouse on an object and setting [Edit Touch Area/Frame Region], the valid area of the touch switch shape and touch switch can be set individually.

For setting [Edit Touch Area/Frame Region] with GT10, enable [Specify the touch area.] of the auxiliary setting.

☞ Section 4.4 Auxiliary Settings

The valid area of a touch switch can be fit in an object frame with [Fit in Touch Area].

☞ Section 5.3.3 Object size change




(5) Precautions when using indirect text setting

(a) When the indirect text (basic comment) is used, only the first line of the comment is displayed on the touch switch.
For the indirect text (basic comment), create a comment in one line.

(b) When the character size is greater than the frame of the touch switch, no character is displayed.
Also, any comment part overflowing from the frame cannot be displayed.

(6) Precautions when setting multiple key codes

The following key codes must be set last, as the other key codes will not be executed, if set after them.

| Key Code*1 | Description | Key Code Type |
|---|---|---|
| 000DH | Write to the destination device (Execute)/Move the cursor | Numerical/ Ascii Input |
| 001BH | Delete cursor | Numerical/ Ascii Input |
| 0080H | Move cursor to the right | Numerical/ Ascii Input |
| 0081H | Move cursor to the left | Numerical/ Ascii Input |
| 0082H | Move cursor upward | Numerical/ Ascii Input |
| 0083H | Move cursor downward | Numerical/ Ascii Input |
| 0084H | Kanji Conversion | Numerical/ Ascii Input |
| 0085H | The former candidate | Numerical/ Ascii Input |
| 0086H | The next candidate | Numerical/ Ascii Input |
| 0087H | Select/No Conversion | Numerical/ Ascii Input |
| 0092H | User ID ascending order movement of cursor | Numerical/ Ascii Input |
| 0093H | User ID descending order movement of cursor | Numerical/ Ascii Input |
| FFB0H*2 | Show cursor | Alarm/ Data List Control |
| FFB1H*2 | Hide cursor | Alarm/ Data List Control |
| FFB2H*2 | Move cursor upward | Alarm/ Data List Control |
| FFB3H*2 | Move cursor downward | Alarm/ Data List Control |
| FFB4H | Display date/time of selected data | Alarm/ Data List Control |
| FFB5H | Display data/time of all data | Alarm/ Data List Control |
| FFB6H | Clear the selected alarm data | Alarm/ Data List Control |
| FFB7H | Clear all alarm data | Alarm/ Data List Control |
| FFB8H | Display detail/ Move to the lower hierarchy | Alarm/ Data List Control |
| FFB9H | Reset the selected alarm data | Alarm/ Data List Control |
| FFBBH | Save alarm contents to Memory Card | Alarm/ Data List Control |
| FFC2H | Move to the upper hierarchy. | Alarm/ Data List Control |

*1 For the obFor key codes applicable to each object, refer to the following.

☞ Appendix1 Key Code List

*2 The alarm history allows setting of multiple key codes.
Only the advanced alarm does not allow setting of multiple key codes.

(7) Precautions when superimposing switches

(a) Switches that cannot be superimposed

Make sure that the following switches will not overlap with other ones.

If "Simultaneous Press" is not set, the simultaneous press (On Preference) settings are applied to them.

Therefore, they will not function when superimposed with other switches or objects that can be touched.

| Key Code*1 | Description | Key Code Type |
|---|---|---|
| FFBCH | Display ladder | Alarm/ Data List Control |
| ---- | Special Function Switch | ---- |

*1 For key codes applicable to each object, refer to the following.

☞ Appendix1 Key Code List

(b) When superimposing the data change switch with another switch

In the following cases, another switch superimposed with the data change switch does not operate.

- When a touch switch is set behind the data change switch using the superimpose window or set overlay screen function.
- When the object ID of the superimposed switch is larger than that of the data change switch.

If the switch fails to operate, set the other switch over the data change switch using the superimpose window or set overlay screen function.

For details of superimposing using the superimpose window or set overlay screen function, refer to the following.

☞ Section 6.2.3 Setting items of bit switch (Trigger tab)

(c) When a part data is updated, the data of all switches and lamps that use the updated part must be updated. Accordingly, it may take a longer time than usual when storing the project data or opening the communication dialog.

(8) Precautions when setting auto repeat

The following shows precautions when auto repeat is set for each touch switch.

(a) Precautions for each touch switch when auto repeat is set

| Switch type | Precaution |
|---|---|
| Bit switch | When [Momentary] is set for [Action], auto repeat setting is invalid. |
| Data set switch | None |
| Data change switch | If any key window, dialog window, popup window, or comment window is displayed while auto repeat is performed, the auto repeat operation is aborted. |
| Key code switch | If any dialog window is displayed while auto repeat is performed, the auto repeat operation is aborted. |
| Multi action switch | When auto repeat is set for the multi action switch, [SP Function], [Base], {Window], or [Station No.] must not be set for [Action].<br>If [SP Function], [Base], [Window], or [Station No.] is set, anto repeat setting is invalid. |

(b) Precautions when multiple touch switches with auto repeat set are touched simultaneously

When multiple touch swiches with auto repeat set are touched simultaneously, auto repeat setting is valid only for the touch switch touched last.

## 2 Precautions for use

(1) Simultaneously press is disabled.

The following shows precautions for the simultaneous press on the GOT screen.

| GOT | Precautions |
|---|---|
| GT16, GT1595-X | Do not touch the GOT screen at two or more points simultaneously.<br>Simultaneous touch of two or more points may cause a point that is not touched to respond.<br>To reduce mulfunctions that occurs when more than two points are touched simultaneously, select [False Input Reduction] for [Touch Detection Mode] of [GOT Setup].<br>For touch detection mode, refer to the following.<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup) |
| GT1585V-S, GT1585-S, GT1575V-S, GT1575-S, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V, GT1562-VN, GT1555-Q, GT1550-Q | Simultaneous touch of touch switches is allowed at up to two points.<br>This feature can be used, for example, to press two points on the GOT screen by both hands to ensure safe operation.<br>If three points are touched simultaneously, touching of the third switch is disregarded. |

(2) When setting delay for the touch switch

(a) When two-presses is set

If operate the monitor screen while the touch switch is set to [Attribute for middle of two presses] when two presses is set to touch switch, the two press does not operate normally.

(b) When [Two presses] and [Auto Repeat] are set

When two-presses and auto repeat are set for the touch switch, auto repeat is disabled at the first touch.

Auto repeat is enabled with the second touch.

(3) When two actions (either of bit Set/Reset/Alternate and either of screen switching/station No. switching) are set for a touch switch

When two actions (either of bit Set/Reset/Alternate and either of screen switching/station No. switching) are set for a touch switch, the screen or station No. is switched according to touch switch operation and the ON/OFF of GS450.b12, as shown below.

Make sure to set GS450.b12 before first operation of the touch switch.

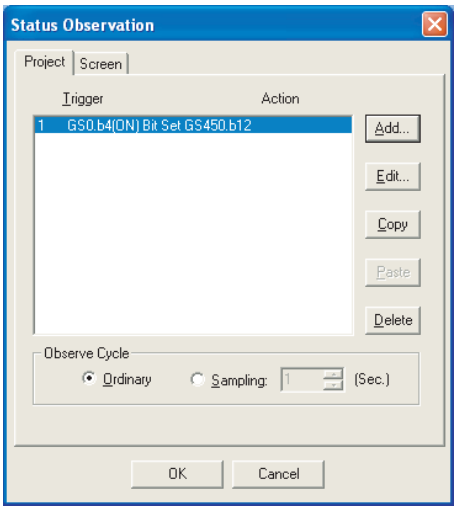
This can change the device status after screen switching.

| Setting item | GS450.b12 | |
|---|---|---|
| | ON | OFF |
| Screen switching/Station No. Switching + Set | When the touch switch is released | When the touch switch is touched |
| Screen switching/Station No. Switching + Reset | When the touch switch is released | When the touch switch is touched |
| Screen switching/Station No. Switching + Alternate | When the touch switch is released | When the touch switch is touched |
| Screen switching/Station No. Switching + Momentary | When the touch switch is released | |
| Screen switching/Station No. Switching + Word | When the touch switch is touched | When the touch switch is touched |

The following example shows how to make the settings so that the status observation function will work to automatically turn GS450.b12 ON after the GOT is powered ON.

<Example of setting the status observation function>
Make the following settings in the Status Observation screen.
The GOT internal device (device that is always ON: GS0.b4) functions as a trigger.
GS450.b12 turns ON when the trigger is ON.
With this settings, the status observation function works and GS450.b12 turns ON after the GOT is powered ON.
For details of observation function, refer to the following.

☞ Section 11.1 Status Observation Function




- Make the settings in the Project tab within the Status Observation screen
- Put the settings in the first line (GS450.b12 turns ON righit after the GOT is powerd ON)
- Set [Observe Cycle] to "Ordinary"

Example: When multiple actions including followings are set for a touch switch.

Bit Alternate : M100

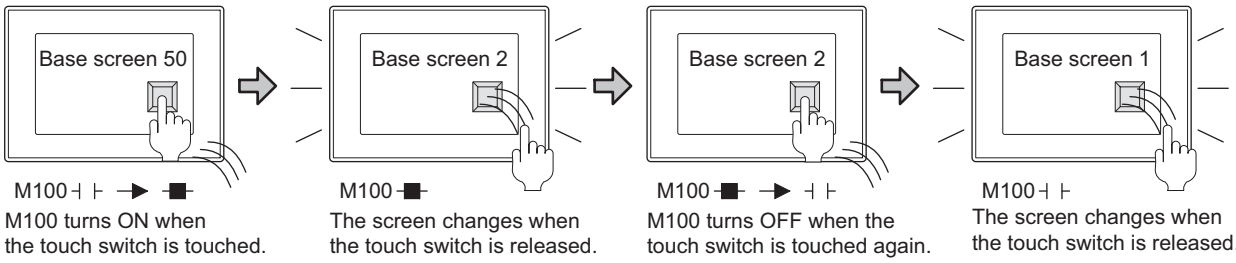
Screen switching : Screen changes to base screen 2 when M100 turns ON.

Screen switching : Screen changes to base screen 1 when M100 turns OFF.

(a) Action when GS450.b12 is ON.

The screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON OFF.

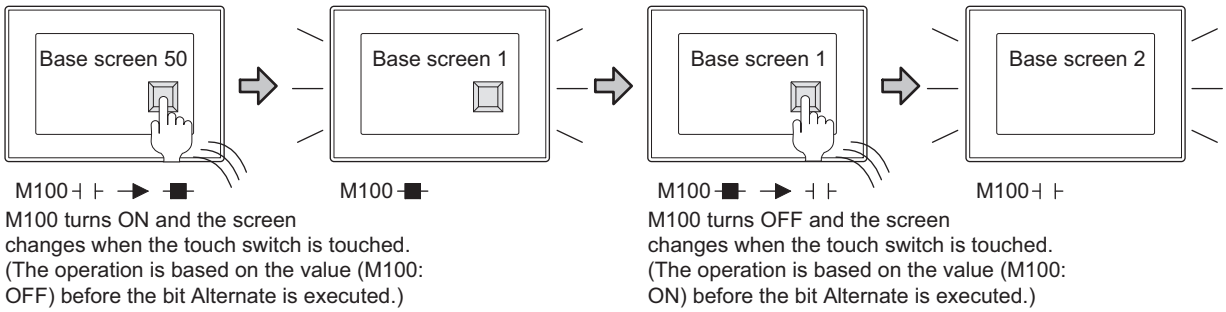
The GOT operates based on the value after the bit Set/Reset/Alternate is executed.




(b) Action when GS450.b12 is OFF.

The screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON OFF.

The GOT operates based on the value before the bit Set/Reset/Alternate is executed.



(4) When auto repeat is set

(a) Auto repeat cycle disturbance

When communication time is longer than the set repeat cycle, the auto repeat cycle may be disturbed.

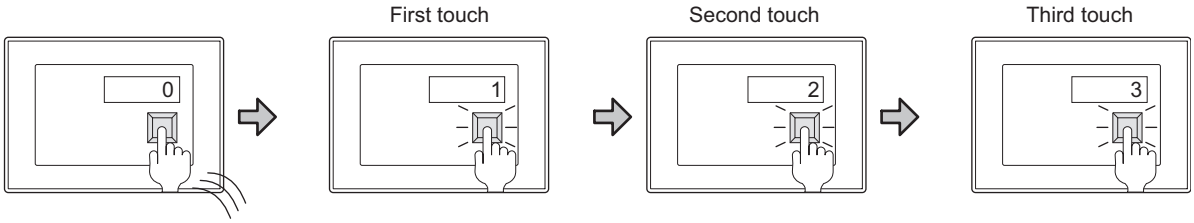
In such a case, take measures as setting a longer time for delay time and repeat cycle, or reducing monitor target devices.

Example: When auto repeat is used for the switch adding “1” to a device value

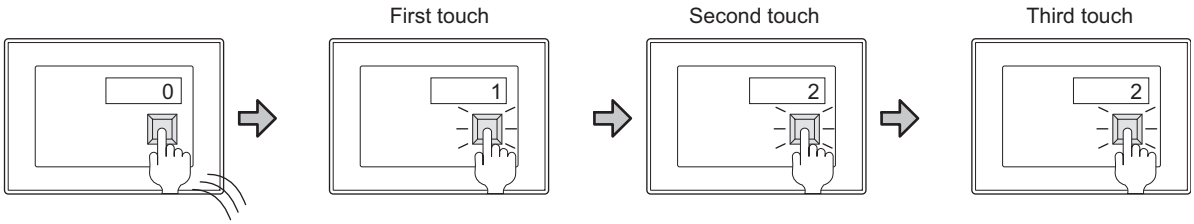
Object used : Data set switch

| Setting item | Setting |
|---|---|
| Device | D100 |
| Fixed | 0 |
| Indirect | D100 |

- When auto repeat is normally performed
  The device value is added with “1” every time the touch switch operates.




- When the auto repeat cycle is disturbed
  The device value may not be added with the value even when the touch switch operates.




(b) Auto repeat abort

If any key window, dialog window, popup window, or comment window is displayed while auto repeat is performed, the auto repeat operation is aborted.

(c) Touch switch pressing time and device write time

While a value is written to the device, the touch switch is recognized as being touched.

If writing to the device is not finished even when the finger is released from the touch switch within the time set for [Start Delay], therefore, the touch switch may be recognized as being touched for more than the set start delay time, activating auto repeat.

In such a case, set a longer time for start delay.

(d) Switching operations while the touch switch is touched

While the touch switch is touched, security switching, language switching, and station No. switching are performed.

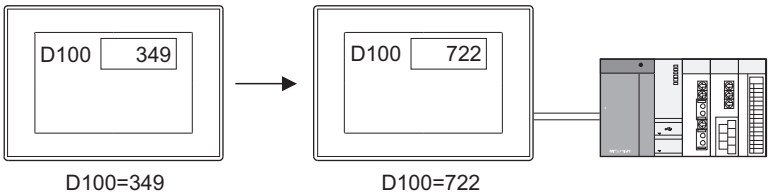
When the trigger device value of security switching, language switching, or station No. switching is changed while the touch switch is touched, the switching is performed when the finger is released from the touch switch.

# 7. NUMERICAL/CHARACTER DISPLAY

## 7.1 Numerical Display/Numerical Input

### 1 Numerical display (☞ Section 7.1.3 Setting items of numerical display)

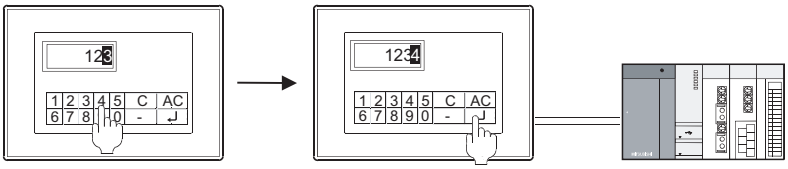
This function allows the data saved in PLC CPU devices to be displayed as numeric values on GOT.



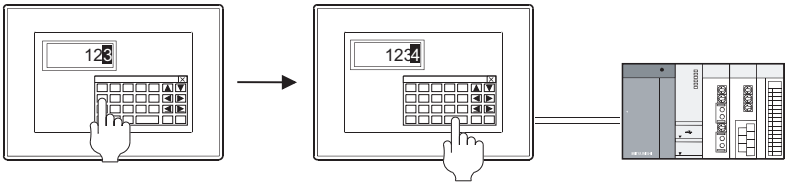

### 2 Numerical input (☞ Section 7.1.4 Setting items of numerical input)

This function enables writing any value from GOT to controller device.
Use input keys provided in the default key window or touch switches assigned with key codes.

Using touch switches on screen to input value




Using a key window to input value



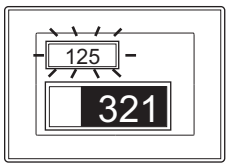

*1 For key window types and operation, refer to the following.

☞ Section 4.5 Key Window

Example

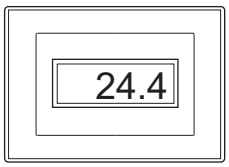
Displays numeric values in various patterns

☞ Basic tab



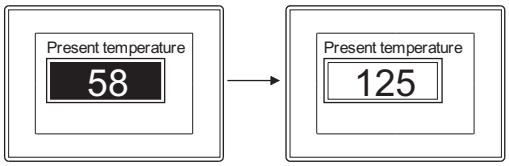

Displays/Inputs numeric value with decimal points

☞ Basic tab



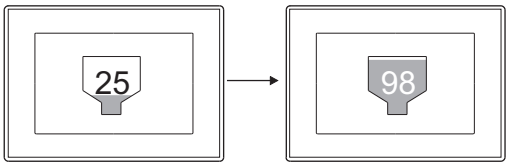

Changes display /background color depending on the value

☞ Setting on Case tab

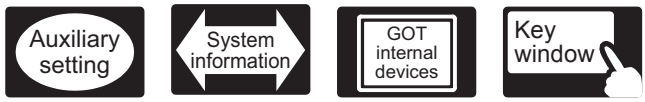



Uses numerical display/numerical input in combination with the lever display function

☞ Section 10.2 Level



## 7.1.1 Relevant settings




For numerical display/numerical input, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to numerical display/numerical input only
…Relevant to numerical display/numerical input only.

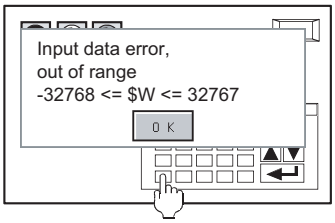
(2) Functions relevant to numerical display/numerical input and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

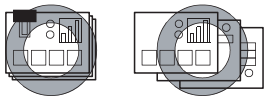
(1) Functions relevant to numerical display/numerical input only

• Input range check during numerical value input

The input range can be checked when a numerical value is input.



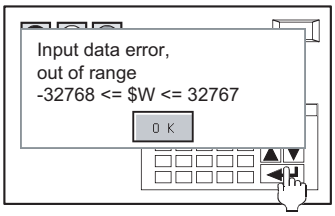

Setting for each project | Setting for each screen



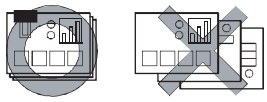
Setting items
• [Check the input range while inputting the numerical value]

• Displaying input range for numeric value Input

When a numeric value out of input range is input, a message appears showing the input range.




Setting for each project | Setting for each screen

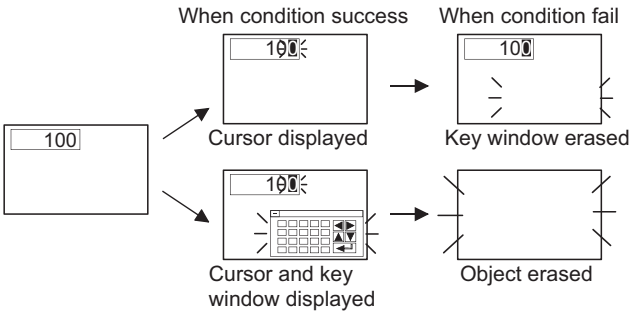


Setting items
• [Display the input range when inputs the out of range in numerical input]

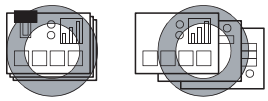
## (2) Functions relevant to numerical display/numerical input and others

• Action of cursor and key window when condition success/switching screen/condition fail

When condition success/switching screen, cursor and key window are displayed.
When condition fail, cursor and key window are erased.



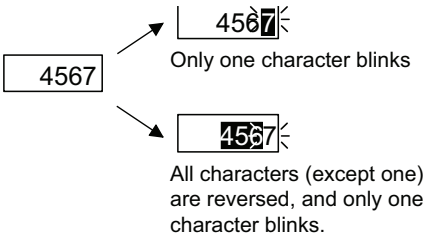

Setting for each project | Setting for each screen



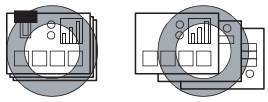
Setting items
- [Action when condition success]
- [Switching screen option]
- [Action when condition fail]
- [Cursor position]

• Methods of displaying cursor input area

For numeric input and ASCII input, cursor display method is selectable.



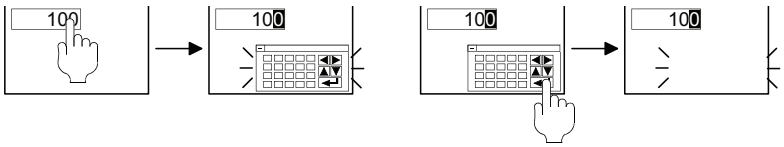

Setting for each project | Setting for each screen



Setting items
- [Cursor input area]

• Methods of displaying/erasing key window

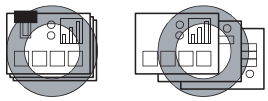
Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.




Display key window with input touch

Press the RET key (input definition), key window is erased.

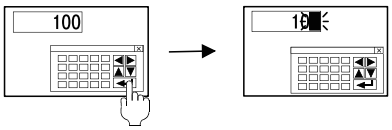
Setting for each project | Setting for each screen



Setting items
- [Close cursor and key window when RET key is pressed.]
- [When touch input is detected, open key window at the same time]

• Displaying/Hiding the cursor key

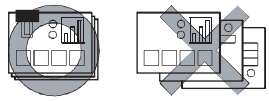
It is possible to set whether the cursor is displayed or remains hidden when the RET key or an arrow key is pressed while the cursor is hidden.




Press the RET key

The cursor is displayed.

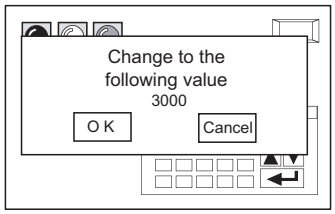
Setting for each project | Setting for each screen



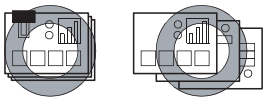
Setting items
- [Do not display the cursor when RET key is pressed]

• Displaying/Hiding the input check dialog box during numerical/ASCII input

When numerical/ASCII characters are input, the input confirmation dialog can be displayed by pressing the RTN key.




Setting for each project | Setting for each screen

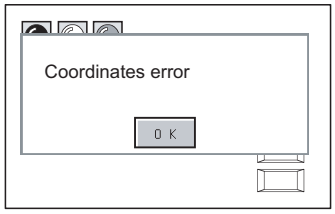


Setting items

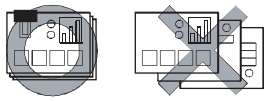
• [When numerical/ASCII input is detected, display input confirmation dialog]

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen



Setting items

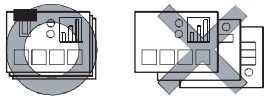
• [Carry out check for overlapping objects within GOT]

• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>

Setting for each project | Setting for each screen

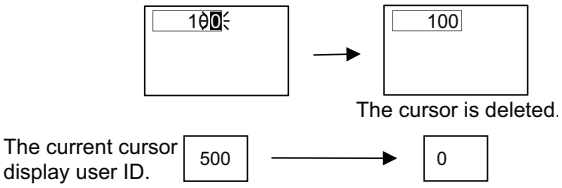


Setting items

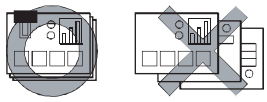
• [Adjust object display order in GOT to the one in GT Designer2]

• Clearing the system information when the cursor is deleted

When the cursor is deleted, the system information such as cursor display object ID and cursor display user ID can be cleared.




Setting for each project | Setting for each screen

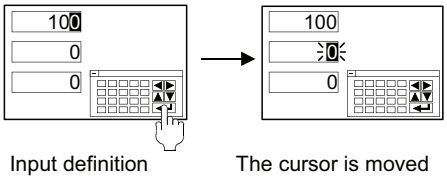


Setting items

• [When the cursor deleted, system information is cleared]

• Action of cursor key

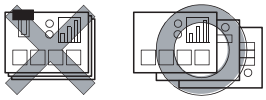
If multiple areas for numerical input and ASCII input are provided, the input order can be set.
After input definition, the cursor is moved to the next input area automatically.




Input definition

The cursor is moved
to the next input area.

Setting for each project | Setting for each screen



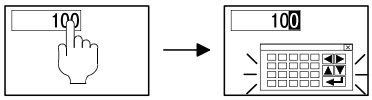
Setting items

• [Defined key action]

• [Position to specify area]

• Enabling/Disabling the key window movement

The key window movement is enabled or disabled for each screen.




The key window appears on the screen without hiding the input cursor.

Setting for each project

Setting for each screen

Setting items

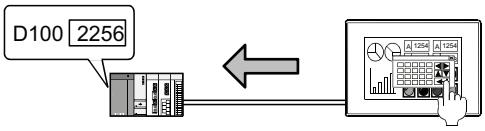
• [Move key window]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to numerical display/numerical input only

• Previous Numeric Value Input (32 bit)
(Write device)

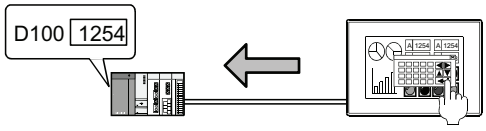
Notifies the value before changed by the numeric value input function (32 bits).




The value before changed is notified.

• Current Numeric Value Input (32 bit)
(Write device)

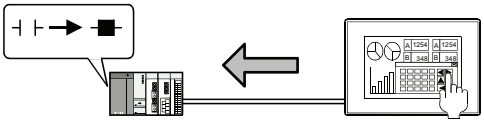
Notifies the value determined by the numeric value input function (32 bits).




The changed value is notified.

• Numeric Value Error Detection Signal
(Write device: System Signal 2-1.b14)

Notifies that the value out of range is stored.

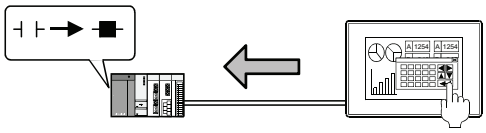


The value out of range is input.

## (2) Functions relevant to numerical display/numerical input and others

• Numeric Value Input Signal
(Write device: System Signal 2-1.b4)

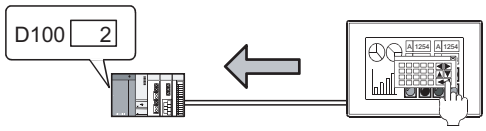
The determined numerical value input can be notified.



The numerical value input is determined.

• Numeric Value Input Number
(Write device)

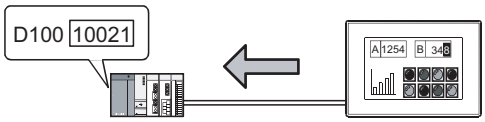
Notifies the user ID of the determined numeric value input.




Numeric value input (user ID: 2) determined

• The object ID on which the cursor was positioned at the previous time
(Write device)

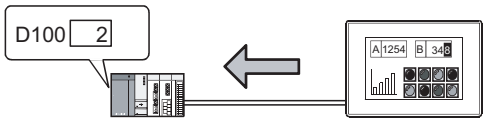
Notifies the object ID of the object on which the cursor was positioned at the previous time.




Object ID on which the cursor was positioned at the previous time

• The user ID on which the cursor was positioned at the previous time
(Write device)

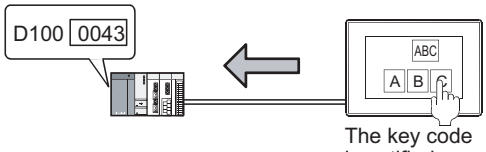
Notifies the user ID of the object on which the cursor was positioned at the previous time.




User ID on which the cursor was positioned at the previous time

• Key Code Input
(Write device)

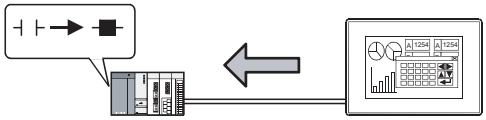
Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.




The key code is notified

• Key window Output Signal
(Write device: System Signal 2-1.b11)

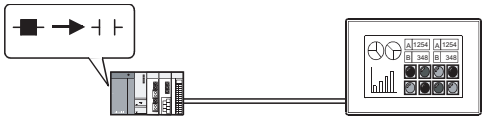
Notifies that the key window is on the screen.



Key window on the screen

• Key Code Read Complete Signal
(Read device: System Signal 1-1.b3)

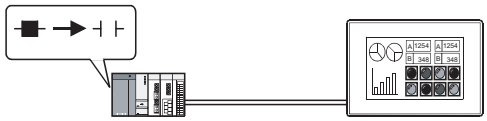
Turns off the key input signal.



Key input signal OFF

• Numeric Value Input Read Complete Signal
(Read device: System Signal 1-1.b4)

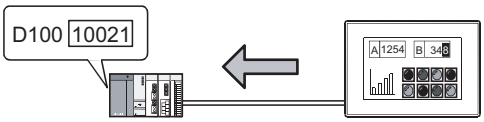
Turns off the numeric value input signal can be turned off.



Numeric input signal OFF

• The object ID on which the cursor is positioned currently (Write device)

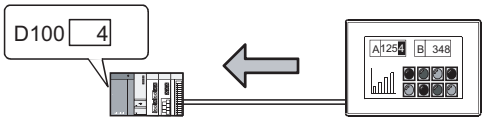
The ID of the object on which the cursor is positioned currently can be notified.




Object ID on which the cursor is positioned currently

• The user ID on which the cursor is positioned currently (Write device)

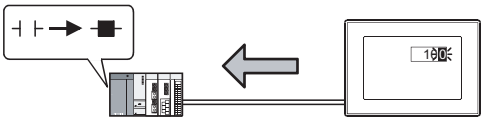
Notifies the user ID of the object on which the cursor is positioned currently.




User ID on which the cursor is positioned currently

• Cursor Displaying Signal (Write device: System Signal 2-2.b11)

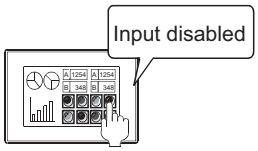
Notifies that the cursor is being displayed by the numeric/ASCII value input.



The cursor is on the screen

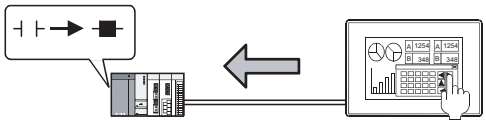
• Key-In Disable Signal (Read device: System Signal 1-1.b9)

Disables all key inputs.




• Key Input Signal (Write device: System Signal 2-1.b3)

Notifies the key input.

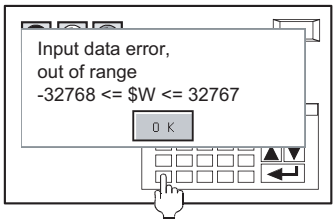


## 3 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

### (1) Functions relevant to numerical display/numerical input only

• Numeric Input Range Check Setting Signal (Write device: GS450.b1)

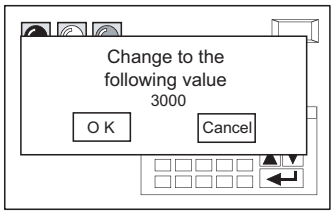
Checks the input range during numerical value input.



(2) Functions relevant to numerical display/numerical input and others

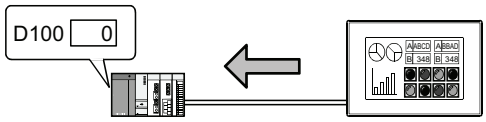
• Numerical/ASCII Value Input Confirmation Dialog Setting Signal
(Write device: GS450.b0)

Displays the dialog for confirming input data when the RTN key is pressed. (Specific to numeric value input or ASCII input)




• Cursor Deleted System Information Clear Setting
(Write device: GS450.b3)

When the cursor disappears, "0" is stored at the "Current cursor position" of the system information even during ASCII input.



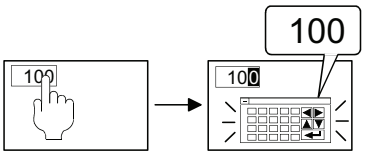

When the cursor disappears during ASCII input, "0" is stored.

## 4 Key window (☞ Section 4.5 Key Window)

(1) Functions relevant to numerical display/numerical input only

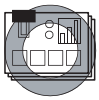
• Display value during input

Check this option when displaying the value being input on the key window.

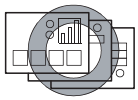



The value being input is displayed during key input.

Setting for each project

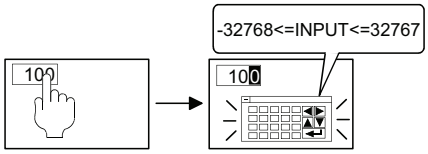


Setting for each screen



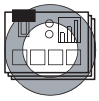
• Display input function range

Check this option when displaying the applicable data input range on the key window.




The value of the appicable data input range is displayed during key input.

Setting for each project

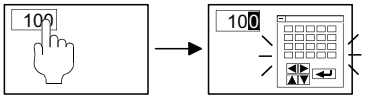


Setting for each screen

(2) Functions relevant to numerical display/numerical input and others

• Using User-created Window

Set the window screen to be used for numeric value input (decimal/hex) and ASCII input.




The user-created key window is displayed during key input.

Setting for each project

Setting for each screen

## 7.1.2 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Numerical Display]/ [Numerical Input]
   - Select [Object] → [Numerical Display]/[Numerical Input] from the menu.
2. Clicking at a desired position completes the numerical display/numerical input setting.
   (After the arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double-clicking on the setting area of the numerical display/numerical input displays the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

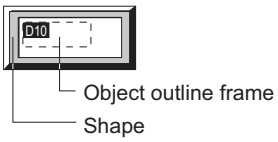
The direct setting of object can be made on property sheet.

GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

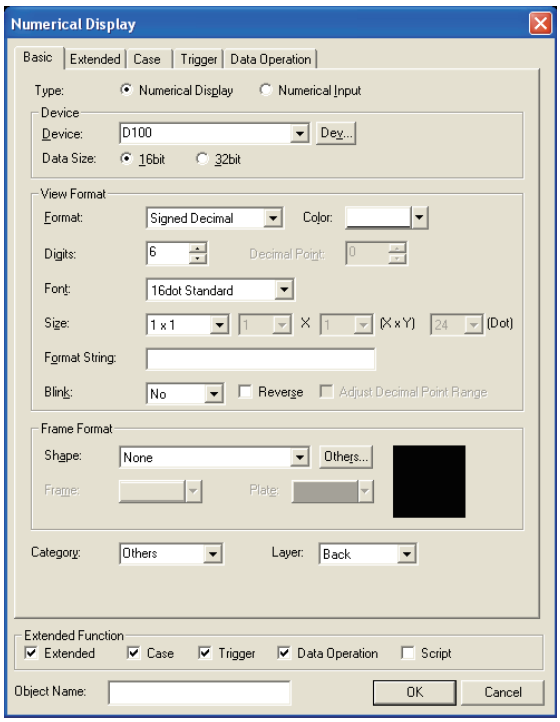



Section 5.3.3 Object size change

## 7.1.3 Setting items of numerical display

### 1 Basic tab

Specify the device, view format and frame format.

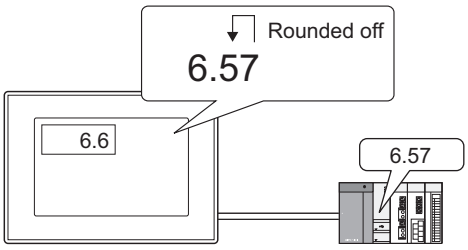



Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Type | | Select the function to be used (Numerical display/Numerical input). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device | Device | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| View Format | Format | Select the displayed data format of a monitored device.<br>Signed (Unsigned) Decimal : The value is displayed in decimal.<br>Hexadecimal :The value is displayed in hexadecimal.<br>Octal :The value is displayed in octal.<br>Binary :The value is displayed in binary.<br>Real :The value is displayed in real number.<br>Example:GOT display examples<br>Signed decimal : -12623 Binary : 0011000101001111<br>Unsigned decimal : 12623 Octal : 30517<br>Real : 1262.3 Hexadecimal : 314F<br>The default of a handled data format is signed BIN. To monitor by the other data format (unsigned decimal, BCD, real), change the setting in "Data Form" on the Extended tab. | |
| | Color | Select the color of the numeric character to be displayed. | |

(Continued to next page)

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Digits | Set the number of digits for the numeric value to be displayed.<br>Available number of digits is different depending on the [Format] setting.<br>Signed (Unsigned) decimal : 1 to 13 digits (including minus (-))<br>Hexadecimal : 1 to 8 digits<br>Octal : 1 to 6 digits<br>Binary : 1 to 32 digits<br>Real : 1 to 32 digits (including minus (-), decimal point and decimal part) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Decimal Point | When REAL is selected in [Format], set the number of digits after the decimal points (1 to 32).<br>The lower digits of the set digit are rounded off.<br>At the setting "0", the lower digits of the decimal point are rounded off.<br>Example: Device value: 6.57<br>Number of digits after decimal point: 1<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Font<br>Size | Select a font for the numerical value.<br>• 6 × 8dot • 12-dot HQ Gothic • 12-dot Standard<br>• 16-dot HQ Gothic • 16-dot Standard • TrueType Gothic<br>• TrueType Numerical • Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Format String*1 | Set this item when displaying characters (such as alphanumeric characters and symbols) with device values.<br>• Input "#" for the part where a numeric is displayed.<br>The "#" signs set with the format string setting are replaced by a device value when displayed.<br>• Numerics displayed are assigned from the ones place.<br>• The sign included in the device value is displayed same as numerics.<br>The following shows display examples where format string settings are used. | GT16 GT15 SoftGOT1000 GT11 GT10 |

Example1: When [Format] is set to other than [Real]

| Format string | Decimal place | Device value | Display |
|---|---|---|---|
| ##m##cm | - | 1234 | 12m34cm |
| | | 123 | 1m23cm |
| | | 12345 | 23m45cm |
| | | -123 | -1m23cm |

Example2: When [Format] is set to [Real]

| Format string | Decimal place | Device value | Display |
|---|---|---|---|
| ##m##cm | 0 | 12.345 | m12cm |
| | 2 | | 12m35cm |
| ####cm | | | 1235cm |
| ##.##cm | | | 12.35cm |

(Continued to next page)

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Blink | Select the blinking pattern of the numeric value/figure frame<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Reverse | Check this item when reversing the numeric character. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Adjust Decimal Point Range | Check this item to display the device value of integer (data format other than real number) as a value with decimal point.<br>The device value is displayed at the number of digits set in "Decimal Point".<br>Example: Number of digits after decimal point: 2, controller device value: 20 — 0.20 is displayed on GOT.<br>Number of digits after decimal point: 3, controller device value: 20 — 0.020 is displayed on GOT.<br>The automatic adjustment is also available for the following:<br>Display range : $V (Value of monitor device/Value of data operation result), the specified device value<br>Data operation : $$ (Value of monitor device), the specified device value | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape*2 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Frame<br>Plate | Select the frame color/plate color.<br>Frame<br>Plate | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For *1 and *2, refer to the next page.

*1 Precautions for format strings

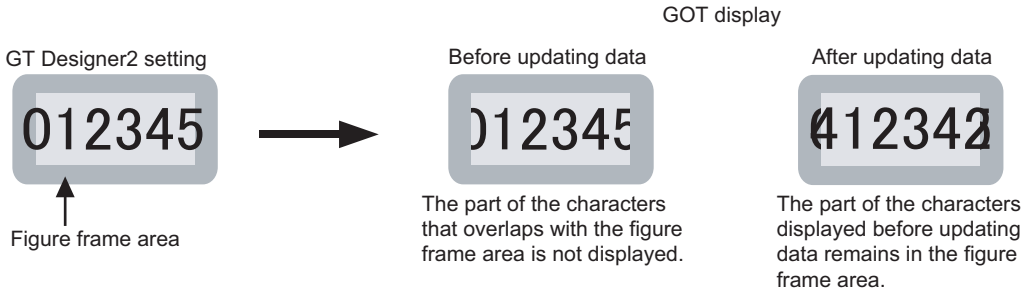
The following shows precautions for using format strings.

(1) Setting items disabled when format strings are used
- When TrueType font is set, format strings cannot be used.
- Setting of [Digits] on the Basic tab is disabled.
- Setting of [Alignment] on the Extended tab is disabled and light alignment is set.

(2) Characters that cannot be displayed for format string
If any character of other than ASCII code (0x20 to 0x7E) is included in the format string when [6x8 dot] is set for font, this character and the following characters are not displayed.
(☞Appendix4 ASCII Code List)

*2 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

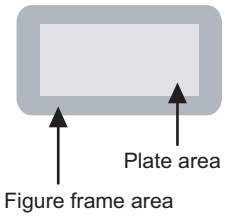
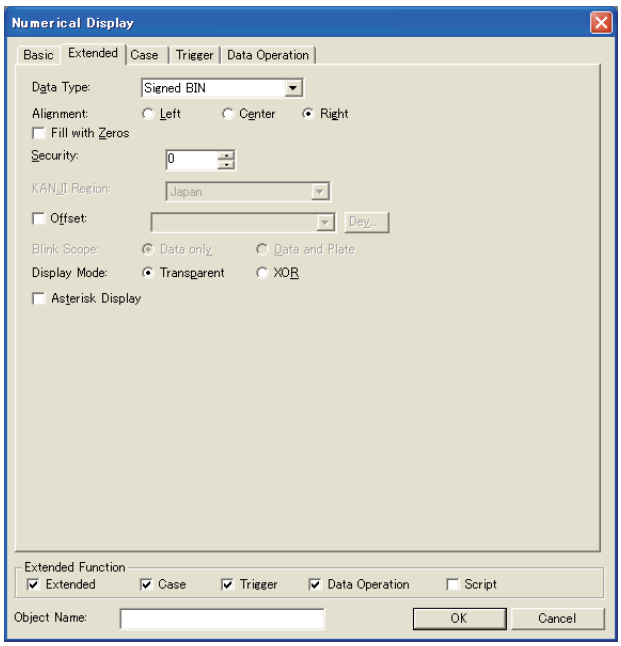



Figure frame area : Area excluding the plate area in the specified figure frame

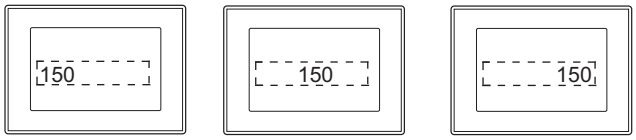
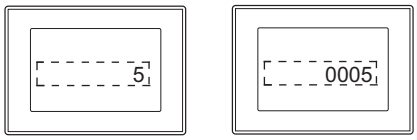
Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Extended tab

Specify the data type, alignment, security, offset, blink scope and display mode.




Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the device to be displayed.<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>BCD : Treats the word device value as a BCD (binary decimal) value.<br>Real : Treats the word device value as a real number.<br>(Only when selecting [32bit] for [Data Size].) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Alignment | Select the position to display the numeric value.<br>Left Center Right<br>  <br> | |
| Fill with Zeros | When [Right] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.<br>Example (In the case of five digits)<br>Zero not suppressed Zero suppressed<br>  <br> | |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |

(Continued to next page)

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Kanji Region | Set a kanji region for the characters to be displayed when having set format string on the Basic tab.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 Japan　置 China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Gothic<br>• 16-dot high quality Gothic • Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Blink Scope | Select a blink area.<br>Data only : Makes the numerical area blink.<br>Data and Plate : Makes the numerical area and plate blink. | |
| Display Mode | Select a desired display mode when displaying a numeric value with the level display overlapped.<br>Transparent : Displays the numeric value on the level display.<br>XOR : In order to identify the level and numeric easily, the numeric character is displayed in color different from the level color based on XOR. This is valid when GOT is Monochrome type.<br>(☞ Appendix3 Synthesized Colors Available for XOR)<br>[Transparent] 98<br>[XOR] 20 → 50 | |
| Asterisk Display*1 | Check this item when displaying values as "*" on the screen.<br>When [Font] is set for [TrueType Numerical], this item is not available. | |

For details of *1, refer to the following.

## *1 Precautions for asterisk display

The following shows precautions for using the asterisk display.

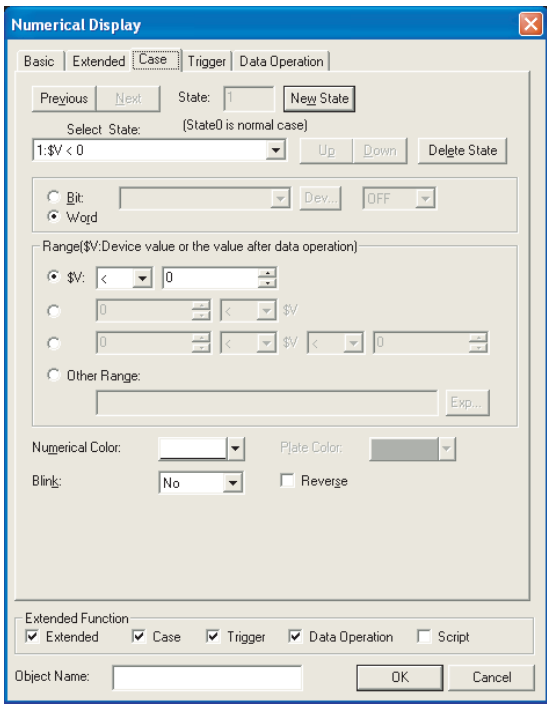
(1) Values that are displayed as asterisks
Numeric values, signs, and decimal points are displayed as asterisks.
When character strings (other than "#") are set for the format string, the character strings are not displayed as asterisks.

| Example of format string settings | Without asterisk display | With asterisk display |
|---|---|---|
| ##m##cm | 12m34cm | **m**cm |

## 3 Case tab

The attribute can be changed on this setting tab depending on the device status.
Place a check mark in "Extended Functions" at the bottom of the dialog box to display this tab.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Device | Select a condition for display change depending on the state.<br>Bit : Select this to change the display based on ON/OFF status of a bit device.Then, set the bit device and the device status (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>Word : Select this to change the display based on a word device value.Then, set a conditional expression for the word device value in [Range]. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Numerical Color | Select a numerical color for the case that conditions for the state display are satisfied. | |
| | Plate Color | Select a plate color for the case that conditions for the state display are satisfied. | |

(Continued to next page)

Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | Blink | Select the blinking pattern of the numeric value.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Reverse | Check this item to reverse numeric display. | |

For details of *1, refer to the following.

*1 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.
Example: Monitor device : D100
Data view format : Signed decimal with 16-bit data size

| Priority level for overlapped setting | State No. | Range | Color |
|---|---|---|---|
| High | 1 | M10 ON | Red (Blink) |
| | 2 | 200<=$V<=300 | Blue |
| ↓ | 3 | 1000<=$V | Yellow (Reverse) |
| Low | Normal case (State 0) | ——— | Green |

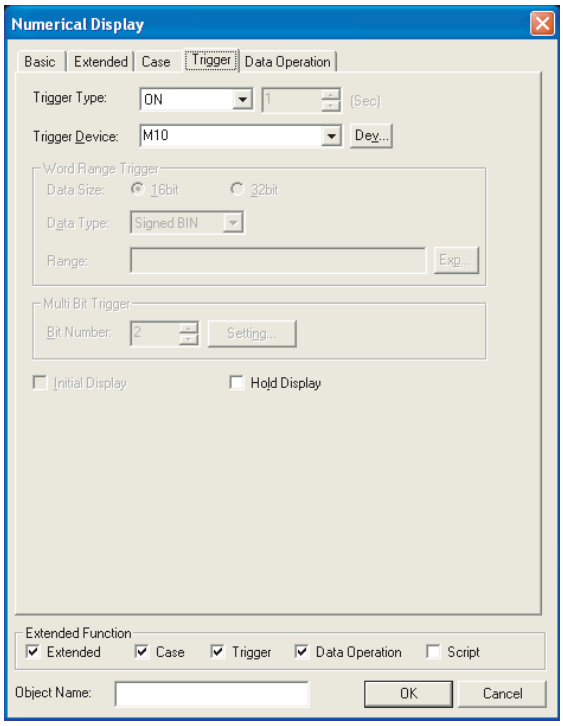
* $V represents the monitor device value.

| | | |
|---|---|---|
| State 1 | When M10 is ON, the numeric value will be displayed in red (Blink). | 150 |
| State 2 | When the device value is within a range of 200 to 300 (200<=$V<= 300), the numeric value will be displayed in blue. | 200 |
| State 3 | When the device value is 1000 or more (1000<=$V), the numeric value will be displayed in yellow (Reverse). | 3000 |
| Normal Case (State 0) | When the condition is out of the range of State 1 to 3, the numeric value will be displayed in green. | 150 |

## 4 Trigger tab

Set conditions for displaying the object.
Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Extended | Case | **Trigger** | Data Operation | Object Script

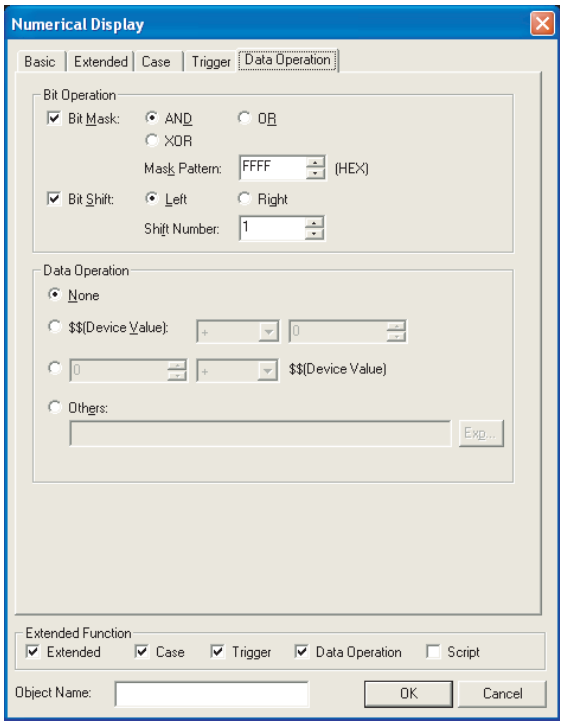
| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select trigger by which the object is displayed.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type (Signed BIN/ Unsigned BIN/Real) of the word device.<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Exp.] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their conditions. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied. | |
| Hold Display | | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied.<br>If not checked, the object will be deleted when the conditions become invalid. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function




Basic | Extended | Case | Trigger | **Data Operation** | Object Script

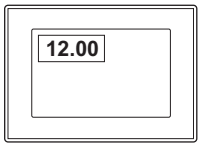
| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation*1 | | Select an operational expression format for data operation. | |

*1 With GT10, the decimal point is rounded down with the operation including the division or decimals when [Format] on the Extended tab is set to other than the real number.

**Hint!** Division with adjusting decimal point range

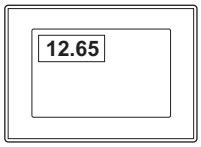
The device values in the GT10 are divided by $10^n$ only when [Adjust Decimal Point Range] and [Decimal Point] are set on the Basic tab. (Numbers of decimal place are not rounded down.)

Example) When using the data operation for GT10
Device: 1265
Decimal point: 0
Adjust decimal point range: No
Data operation: $$ (Device value) /100




The GOT displays 12.00.

When using the adjust decimal point range for GT10
Device: 1265
Decimal point: 2
Adjust decimal point range: Yes
Data operation: No

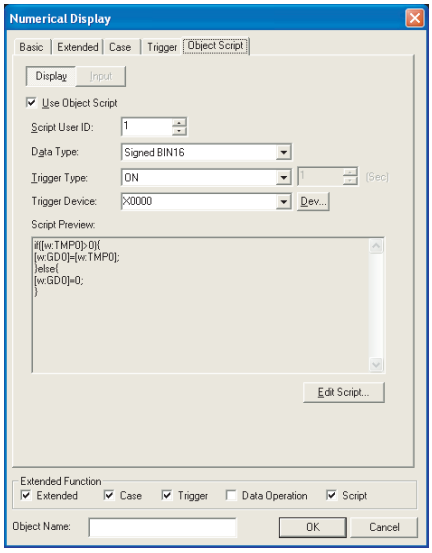



The GOT displays 12.65.

## 6 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

Section 16.3.6 1 (2) Object Script tab of display object scripts



(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ :Execution is possible for the object property.

× :Execution is not possible for the object property.

- :Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| | | decimal_point | ○ | 3) |
| 1 Basic | Color | text_color | ○ | 3) |
| | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Blink | blink | ○ | 5) |
| | Reverse | highlight | ○ | 5) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Alignment | arrange | ○ | 3) |
| | Security | security | ○ | 4) |
| | Blink Scope | blink | ○ | 5) |
| | Display Mode | draw_mode | ○ | 3) |

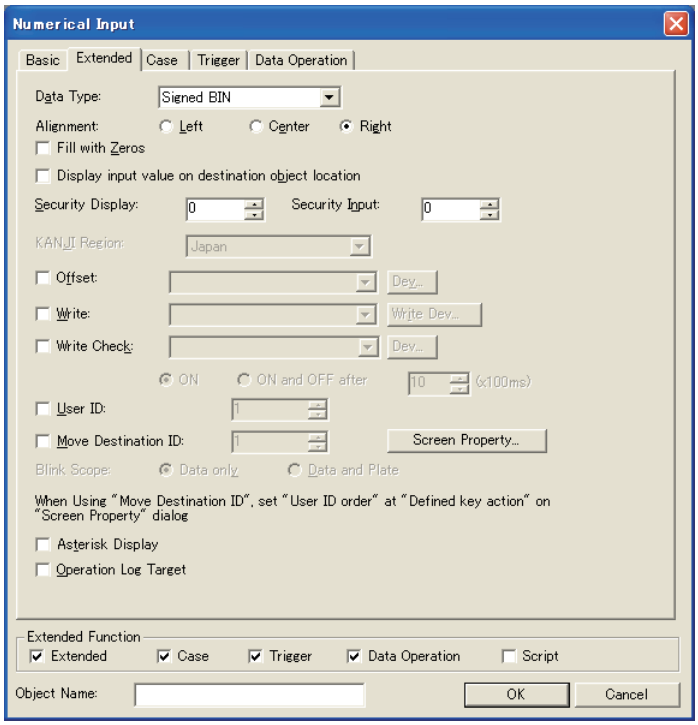
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 7.1.4 Setting items of numerical input

### 1 Basic tab

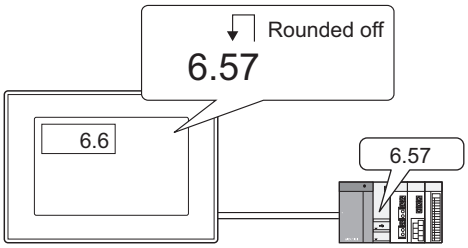
Specify the device, view format and frame format.




Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Type | | Select the function to be used (Numerical Display/Numerical Input) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device | Device | Set a word device to which the value is written. (☞ Section 5.1 Device Setting) | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| View Format | Format | Select the displayed format of a write device value.<br>Signed (Unsigned) decimal : The value is displayed in decimal.<br>Hexadecimal : The value is displayed in hexadecimal.<br>Octal : The value is displayed in octal.<br>Binary : The value is displayed in binary.<br>Real : The value is displayed in real number.<br><br>Example: Example of GOT display<br>Signed decimal : -12623 Binary : 0011000101001111<br>Unsigned decimal : 12623 Octal : 30517<br>Real : 1262.3 Hexadecimal : 314F<br><br>The default of a written data format is signed BIN. To write by the other data format (unsigned decimal, BCD, real), change the setting in "Data Form" on the Extended tab. | |
| | Color | Select the color of the numeric character to be displayed. | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Digits | Set the number of digits for the numeric value to be displayed.<br>Available number of digits is different depending on the Format setting.<br>Signed/ Unsigned decimal : 1 to 13 digits (including minus (-))<br>Hexadecimal : 1 to 8 digits<br>Octal : 1 to 6 digits<br>Binary : 1 to 32 digits<br>Real : 1 to 32 digits (including minus (-), decimal point and decimal part) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Decimal Point | When REAL is selected in [Format], set the number of digits after the decimal points (1 to 32).<br>The lower digits of the set digit are rounded off.<br>At the setting "0", the lower digits of the decimal point are rounded off.<br>Example: Device value: 6.57<br>Number of digits after decimal point: 1<br>  <br> | |
| View Format | Font<br>Size | Select a font for the numerical value.<br>• 6 × 8dot • 12-dot HQ Gothic • 12-dot Standard<br>• 16-dot HQ Gothic • 16-dot Standard • TrueType Gothic<br>• TrueType Numerical • Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| View Format | Format String*1 | Set this item when displaying characters (such as alphanumeric characters and symbols) with device values.<br>• Input "#" for the part where a numeric is displayed.<br>The "#" signs set with the format string setting are replaced by a device value when displayed.<br>• Numerics displayed are assigned from the ones place.<br>• The sign included in the device value is displayed same as numerics.<br>The following shows display examples where format string settings are used.<br><br>Example1: When [Format] is set to other than [Real] | |

| Format string | Decimal place | Device value | Display |
|---|---|---|---|
| ##m##cm | - | 1234 | 12m34cm |
| | | 123 | 1m23cm |
| | | 12345 | 23m45cm |
| | | -123 | -1m23cm |

Example2: When [Format] is set to [Real]

| Format string | Decimal place | Device value | Display |
|---|---|---|---|
| ##m##cm | 0 | 12.345 | m12cm |
| | 2 | | 12m35cm |
| ####cm | | | 1235cm |
| ##.##cm | | | 12.35cm |

(Continued to next page)

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Blink | Select the blink pattern of the numeric value/figure frame<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Reverse | Check this item when reversing the numeric character. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Adjust Decimal Point Range | Check this item to display the device value of integer (data format other than real number) as a value with decimal point.<br>The device value is displayed at the number of digits set in "Decimal Point".<br>Example: Number of digits after decimal point: 2, controller device value: 20 — 0.20 is displayed on GOT.<br>Number of digits after decimal point: 3, controller device value: 20 — 0.020 is displayed on GOT.<br>The automatic adjustment is also available for the following:<br>Input range :$W (Input value), value of the specified device<br>Data operation :<Monitor expression> $$ (Value of monitor device), value of specified value<br><Write operation expression> $W (Input value) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape*2 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Frame<br>Plate | Select the frame color/plate color.<br>012345 — Frame / Plate | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For *1 and *2, refer to the next page.

*1 Precautions for format strings

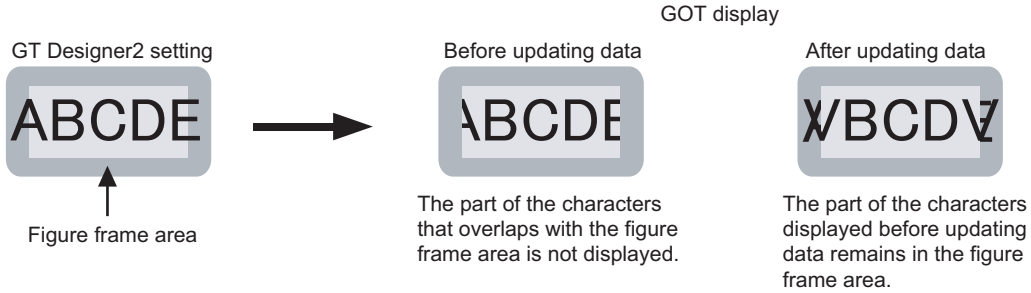
The following shows precautions for using format strings.

(1) Setting items disabled when format strings are used
- When TrueType font is set, format strings cannot be used.
- Setting of [Digits] on the Basic tab is disabled.
- Setting of [Alignment] on the Extended tab is disabled and light alignment is set.

(2) Characters that cannot be displayed for format string
If any character of other than ASCII code (0x20 to 0x7E) is included in the format string when [6x8 dot] is set for font, the character and the following characters are not displayed.
(☞Appendix4 ASCII Code List)

*2 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

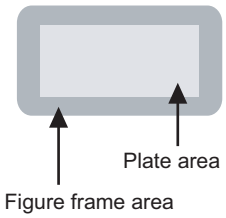
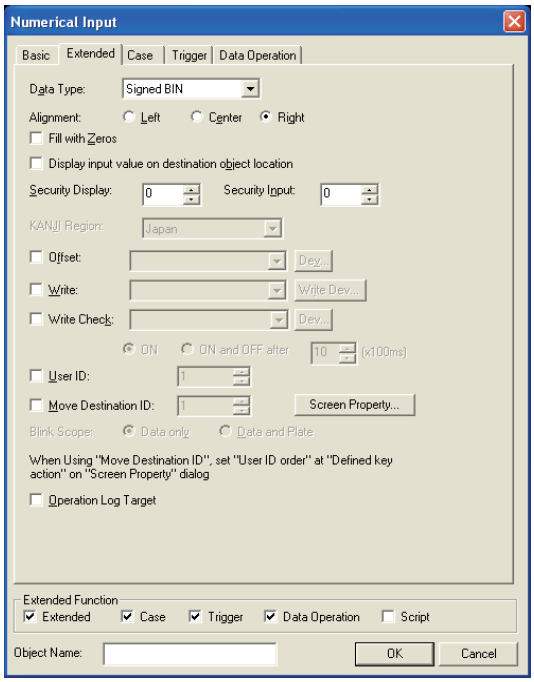



Figure frame area : Area excluding the plate area in the specified figure frame

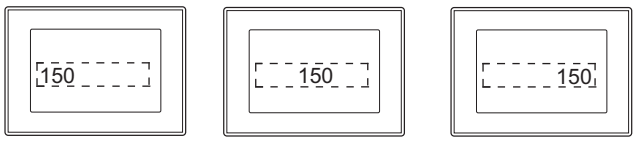
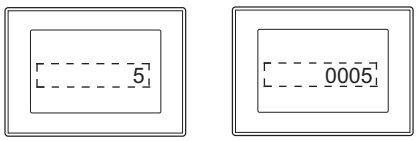
Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Extended tab

Specify the data type, alignment, security, offset, write, write check, user ID, move destination ID and blink scope.




Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the device to be displayed or input.<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>BCD : Treats the word device value as a BCD (binary decimal) value.<br>Real : Treats the word device value as a real number.<br>(Only when selecting [32bit] for [Data Size].) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Alignment | Select the position to display the numeric value.<br>Left Center Right<br>  <br> | |
| Fill with Zeros | When [Right] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.<br>Example (In the case of five digits)<br>Zero not suppressed Zero suppressed<br>  <br> | |
| Display input value on destination object location | When this item is checked, the numeric value input using such as the key window is immediately reflected to the object on the screen.<br>(The input value is written to the device when the RET key is touched.) | |

(Continued to next page)

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>Be sure to set a larger value to "Security (Input)" than "Security (Display)".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Kanji Region | Set a kanji region for the characters to be displayed when having set format string on the Basic tab.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot Standard • 16-dot Standard • 12-dot HQ Gothic<br>• 16-dot HQ Gothic • Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data length is fixed to 16 bits. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Blink Scope | Select a blink area.<br>Data only : Makes the numerical area blink.<br>Data and Plate : Makes the numerical area and plate blink. | |
| Write | Check this item when writing the value input in [Numerical Input] to devices.<br>When the data operation has been set, the data before operation can be saved.<br>Then, click on the [Device] button to set the device. | |
| Write Check | After completion of numerical input, check this item when turning ON a bit device.<br>After checking, click on the [Device] button and set the device.<br>When setting is completed, set the device operation.<br>ON : When numerical input is completed, the set bit device is turned on.<br>ON to OFF : When numerical input is completed, the set bit device is turned on, and it will be turned off after a certain period of time has elapsed.<br>It is very convenient for the case that handshake on the controller side is difficult.<br>After selecting, set the time for which the bit device is on (0.5 to 3 seconds). | |
| User ID*1 *2 *3 | Check this item when setting user ID No. (1 to 65535).<br>Setting a user ID allows the following functions.<br>• The cursor position at screen switching can be determined.<br>(☞ Section 4.4 Auxiliary Settings)<br>• The numerical input function while the cursor is shown can be checked.<br>(☞ Section 3.6 System Information Setting)<br>• To specify the used object in the operation log.<br>(☞ Section 15.2 Operation Log Function) | |

(Continued to next page)

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Move Destination ID *2 | When numerical input is completed, check this item to move the cursor for the numerical input of the specified user ID No.<br>After checking, set the user ID No. to move the cursor for the next numerical input.<br>• In addition to the setting above, set the following items.<br>• Click the [Screen Properties] button and set [Defined key action] to [User ID order (Cursor doesn't move when it can't move)].<br>• Uncheck the [Close cursor and key window when RET key is pressed] on the [Auxiliary Setting] selected by [Common] → [System Environment]. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Asterisk Display*4 | Check this item when displaying values as "*" on the screen.<br>When [Font] is set for [TrueType Numerical], this item is not available.<br>When this item is checked, values on the screen, the input confirmation dialog, and the input value area of the key window are displayed as "*". | |
| Operation Log Target | Check this item to set the object being set as the target for logging the operation.<br>(☞ Section 15.2 Operation Log Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |

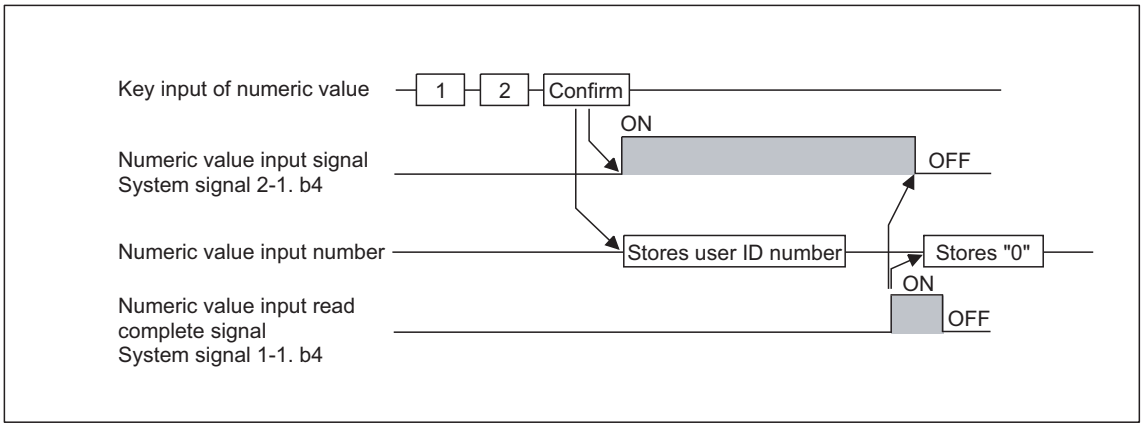
For details of *1 to *4, refer to the following.

*1 User ID

Setting for the [User ID] enables operations as indicated below.

- Setting of the cursor position for switching the screens (☞ Section 4.4 Auxiliary Settings).
- Storing the numerical input confirmation timing to a device (☞ (1) below)
- Moving the cursor according to the ascending/descending order of user IDs (☞ (2) below)

(1) Confirm timing of numerical input (System Information)
When a input value is entered using the numerical input function, the user ID is written to "Numeric Value Input Number" in "System Information" and "Numeric Value Input Signal" turns on.
When clearing the user ID written to "Numeric Value Input Number" or turning off "Numeric Value Input Signal", turn on "Numeric Value Input Read Complete Signal".
(After clearing, turn off the numeric value input read complete signal. If the signal remains ON, storing the user ID or turning on the bit device cannot be done even if the numerical value has been input.)




System signal 2-1.b4 Numeric value input signal : Turn on when a value is entered using the numerical input function.

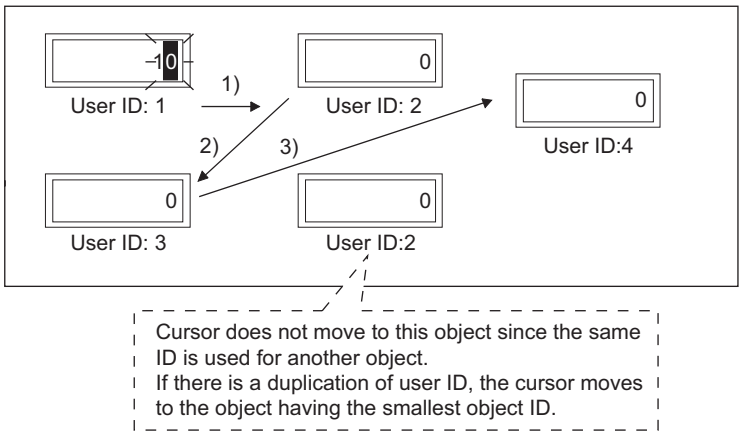
System signal 1-1.b4 Numeric value read complete signal : When this signal turns on, the numeric value input signal (System signal 2-1.b4) turns off.

For the setting method of the "System Information", refer to the following.

☞ Section 3.6 System Information Setting

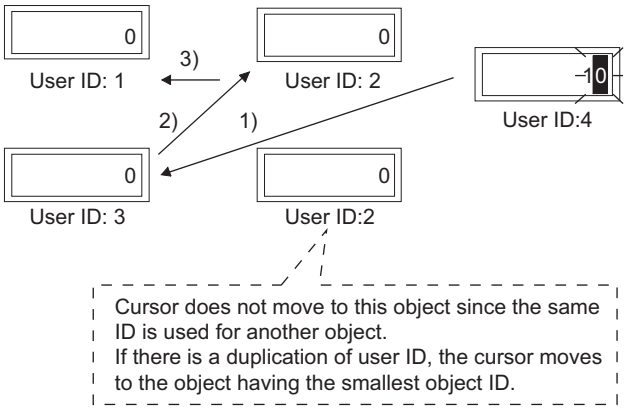
(2) Moving the cursor according to the ascending/descending order of user IDs
It is possible to move the cursor in the ascending/descending order of user IDs by using the key code switches indicated below.

(a) Cursor movement in the ascending order of user IDs (key code: 0092H)




The cursor moves in the order of (1) → (2) → (3).
After movement (3), the cursor does not move any more since there are no further user IDs.

(b) Cursor movement in the descending order of user IDs (key code: 0093H)

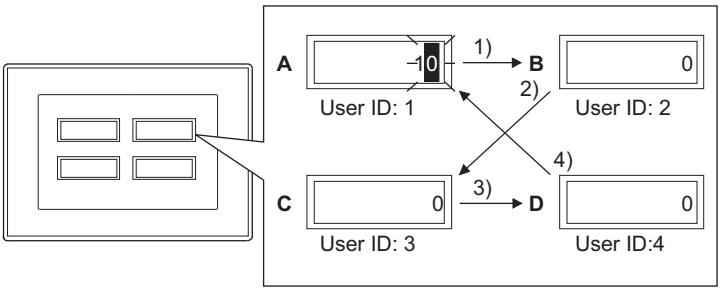



The cursor moves in the order of (1) → (2) → (3).
After movement (3), the cursor does not move any more since there are no further user IDs.

*2 Relationship between user ID and move destination ID

The move destination ID number indicates the user ID number of the numerical input function to which the cursor moves next.

Example: Cursor movement by move destination ID

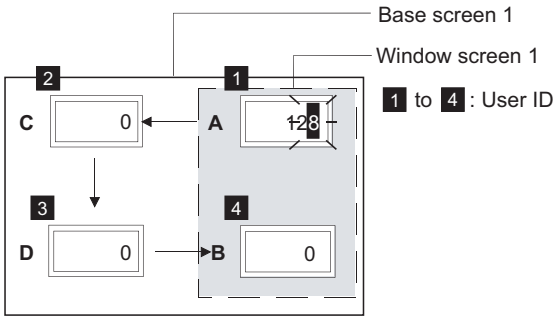



| Numerical input | User ID | Move destination ID |
|---|---|---|
| A | 1 | 2 |
| B | 2 | 3 |
| C | 3 | 4 |
| D | 4 | 1 |

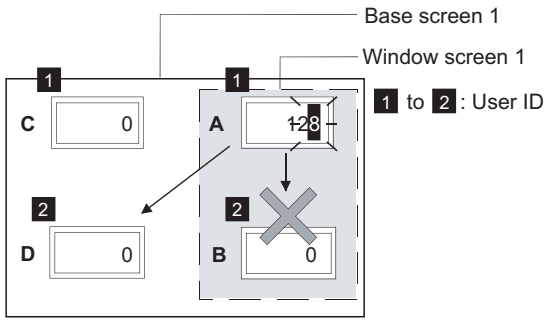
*3 Setting the user ID

To control the cursor with the user ID, set different user ID numbers for each object.
Also, when using the Set Overlay Screen function or superimpose windows, design the screen carefully so that the user ID of the displayed object will be unique.

- When different user IDs are set for each object
  The cursor moves properly with the user ID when the Set Overlay Screen function or superimposed window is used.




- When the same user ID are set for all
  If more than one object having the same user ID are identified on the screen (including the Set Overlay Screen or Superimpose Window), the cursor may not move correctly with the user ID.




*4 Precautions for asterisk display

The following shows precautions for using the asterisk display.

(1) Values that are displayed as asterisks
Numeric values, signs, and decimal points are displayed as asterisks.
When character strings (other than "#") are set for the format string, the character strings are not displayed as asterisks.

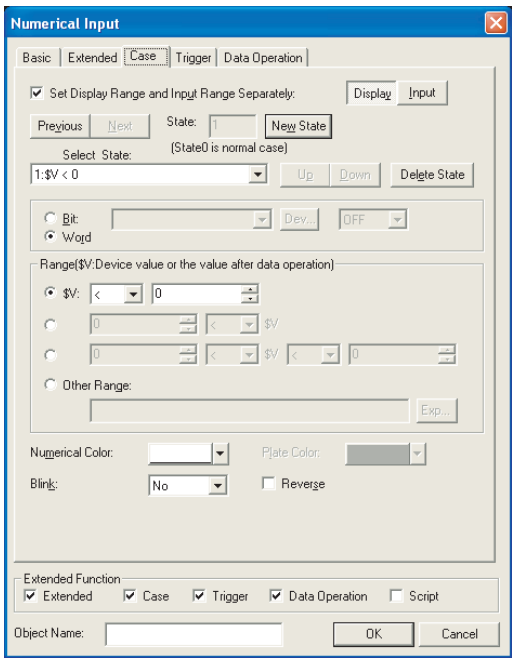
| Example of format string settings | Without asterisk display | With asterisk display |
|---|---|---|
| ##m##cm | 12m34cm | **m**cm |

(2) Stored values for operation log function
Even when the asterisk display is set, actual values (not asterisks) are stored for the operation log.

## 3 Case tab

The attribute can be changed on this setting depending on the device status.
Place a check mark in "Extended Functions" at the bottom of the dialog box to display this tab.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Set Display Range and Input Range Separately*1 | | Check this item when setting the display range and the input range separately.<br>After checking, click on the Display or Input button to set each range.<br>Display : Set condition and attribute for the numerical display.<br>Input : Set input range for the numerical input function. | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| State*2 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Device | Select a condition for display change depending on the state.<br>Bit : Select this to change the display based on ON/OFF status of a bit device.<br>Then, set the bit device and the device status (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>Word : Select this to change the display based on a word device value.<br>Then, set a conditional expression for the word device value in [Range]. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Numerical Color | Select a numerical color for the case that conditions for the state display are satisfied. | |
| | Plate Color | Select a plate color for the case that conditions for the state display are satisfied. | |

(Continued to next page)

Basic | Extended | **Case** | Trigger | Data Operation | Object Script

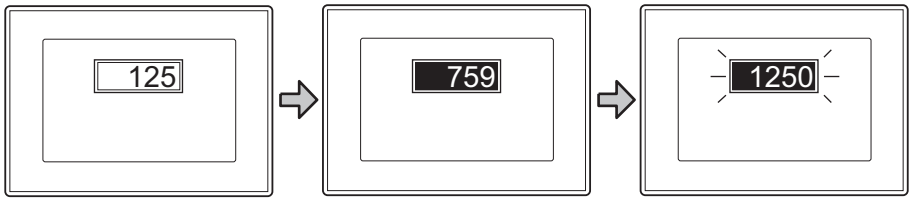
| Items | | Description | Model |
|---|---|---|---|
| State | Blink | Select the blinking pattern of the numeric display.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Reverse | Check this item to reverse numeric display. | |

For details of *1, *2, refer to the following.

*1 Set Display Range and Input Range Separately

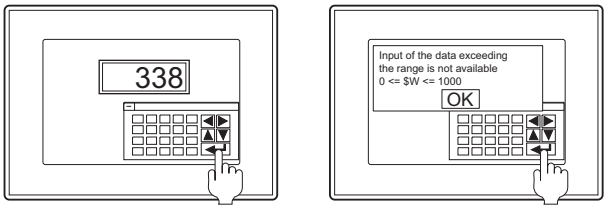
By setting display range and input range separately, the attribute can be changed depending on the displayed value and the input exceeding the set range can be restricted.

(1) When displaying
The attributes (Numerical color/Background color/Reverse display/Blink) can be changed depending on the display value.




| | | |
|---|---|---|
| Range : 0<=$W<=500 | Range : 510<=$W<=1000 | Range : 1000<=$W |
| Numerical color : Blue | Numerical color : Green | Numerical color : Green |
| Plate color : White | Plate color : Red | Plate color : Red |
| Blink : None | Blink : None | Blink : Set |

(2) When inputting
When an input exceeds the set range, a message will be displayed and the numerical input will be restricted.




Range : 0<=$W<=1000
Value from 0 to 1000 can be input.

Input of a value exceeding the range (0 to 1000) is not available.

*2 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.
Example: Monitor device : D100
Data view format: Signed decimal with 16-bit data size

| Priority level for overlapped setting | State No. | Range | Color |
|---|---|---|---|
| High | 1 | 200<=$W<=300 | Blue |
| | 2 | 1000<=$W | Yellow (Reverse) |
| ↓ | 3 | $W<=0 | Red (Blink) |
| Low | Normal case (State 0) | --- | Green |

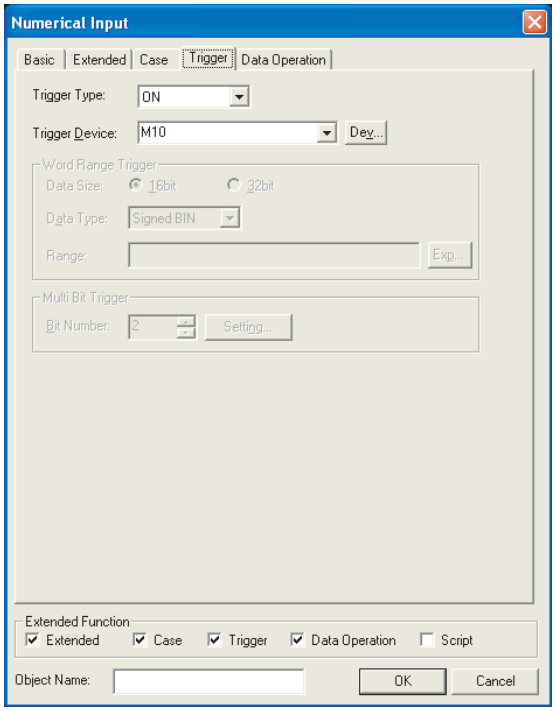
* $V represents the monitor device value.

| | | |
|---|---|---|
| State 1 | When the device value is 200 to 300 (200<=$W<= 300), numeric value will be displayed in blue. | 200 |
| State 2 | When the device value is 1000 or more (1000<=$W), the numeric value will be displayed in yellow (reverse). | 3000 |
| State 3 | When the device value is 0 or less ($W<= 0), the numeric value will be displayed in red (blink). | -200 |
| Normal case (State 0) | When the condition is out of the range of State 1 to 3, the numeric value will be displayed in green. | 150 |

## 4 Trigger tab

Set conditions for displaying the object.
Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Extended | Case | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type*1 | | Select the trigger type for displaying the object.<br>(For GT10, [Range] and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type (Signed BIN/ Unsigned BIN/Real) of the word device.<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Exp.] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their conditions. | |

For details of *1, refer to the following.

### *1 Cursor display when condition fails in numerical input

For cursor display when the condition fails in numerical input, refer to the following.

☞ Section 4.4 Auxiliary Settings

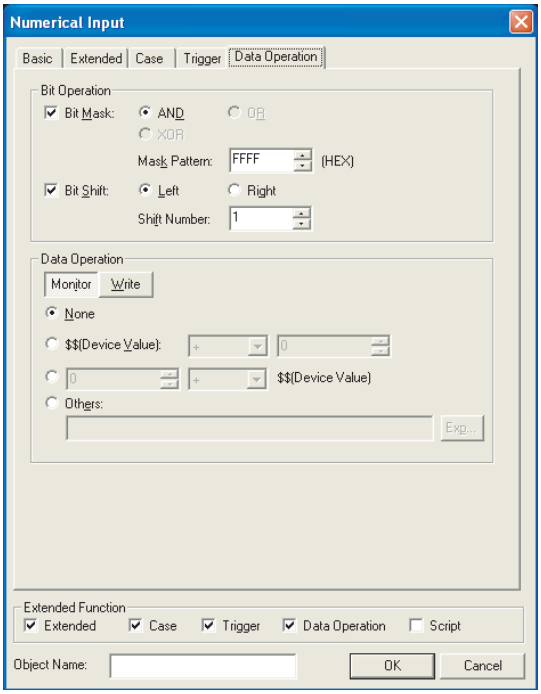
## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values.

Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function




Basic | Extended | Case | Trigger | **Data Operation** | Object Script

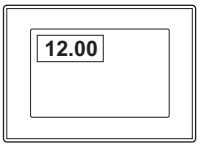
| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation*1 | | Select an operational expression format for data operation. | |
| | Monitor | Click on this and set the operational expression for monitoring device. | |
| | Write | Click on this and set the operational expression for writing to device. | |

*1 With GT10, the decimal point is rounded down with the operation including the division or decimals when [Format] on the Extended tab is set to other than the real number.

**Hint!** Division with adjusting decimal point range

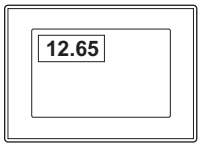
The device values in the GT10 are divided by $10^n$ only when [Adjust Decimal Point Range] and [Decimal Point] are set on the Basic tab. (Numbers of decimal place are not rounded down.)

Example) When using the data operation for GT10
Device: 1265
Decimal point: 0
Adjust decimal point range: No
Data operation: $$ (Device value) /100




The GOT displays 12.00.

When using the adjust decimal point range for GT10
Device: 1265
Decimal point: 2
Adjust decimal point range: Yes
Data operation: No



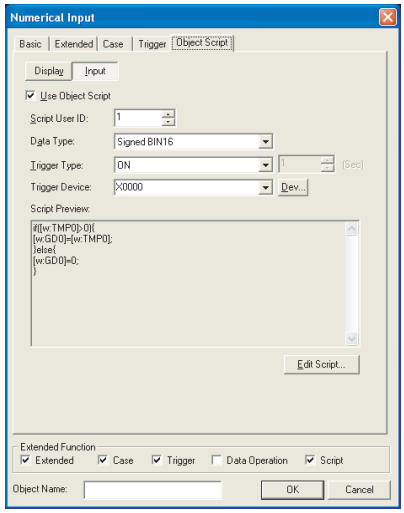

The GOT displays 12.65.

## 6 Object script tab

(1) Input object script

For details of settings made on the input object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts



(a) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ :Execution is possible for the object property.

× :Execution is not possible for the object property.

- :Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| | | decimal_point | ○ | 3) |
| 1 Basic | Color | text_color | ○ | 3) |
| | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Blink | blink | ○ | 5) |
| | Reverse | highlight | ○ | 5) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Alignment | arrange | ○ | 3) |
| | Security Display | security | ○ | 4) |
| | Security Input | input_security | ○ | 2) |
| | Blink Scope | blink | ○ | 5) |

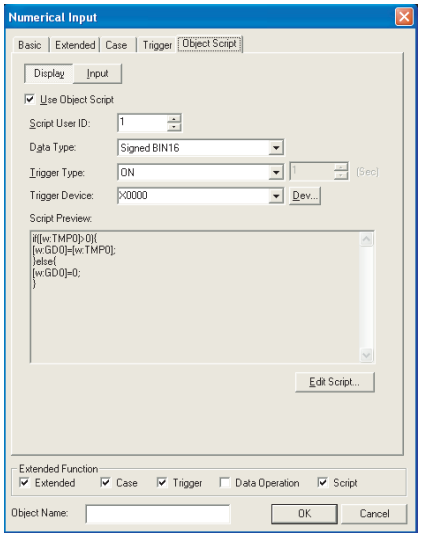
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

(2) Display object script

For details of settings made on the display object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(a) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| | | decimal_point | ○ | 3) |
| 1 Basic | Color | text_color | ○ | 3) |
| | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Blink | blink | ○ | 5) |
| | Reverse | highlight | ○ | 5) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Alignment | arrange | ○ | 3) |
| | Security Display | security | ○ | 4) |
| | Blink Scope | blink | ○ | 5) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 7.1.5 Precautions

This section explains the precautions for using the numerical display/numerical input function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be set on 1 screen
- Number of numerical display objects: 1000
- Number of numerical input objects : 1000

(2) When overlaying numerical display with level display
- Arrange the numerical display on the same layer as the level display.
- When displaying numerical values with the level display overlapped, refer to the level cautions.

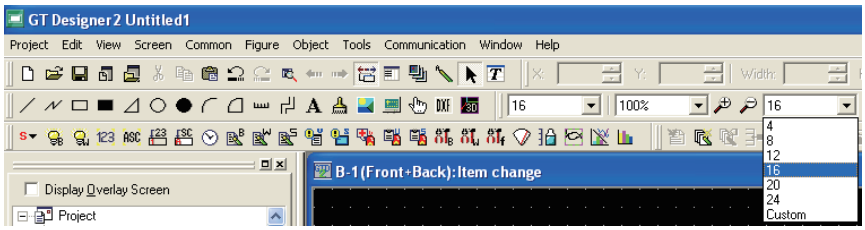
☞ Section 10.2 Level

(3) Numerical input arrange position (Other than GT16, GT1595-X, GT SoftGOT1000, and GT1020)
Depending on the arranged position of the numerical input, there are cases the input operation is not possible.
Before downloading the created project data to a GOT, check the arranged position of the numerical input by the data check function of GT Designer2.
For using the data check function, refer to the following manual.

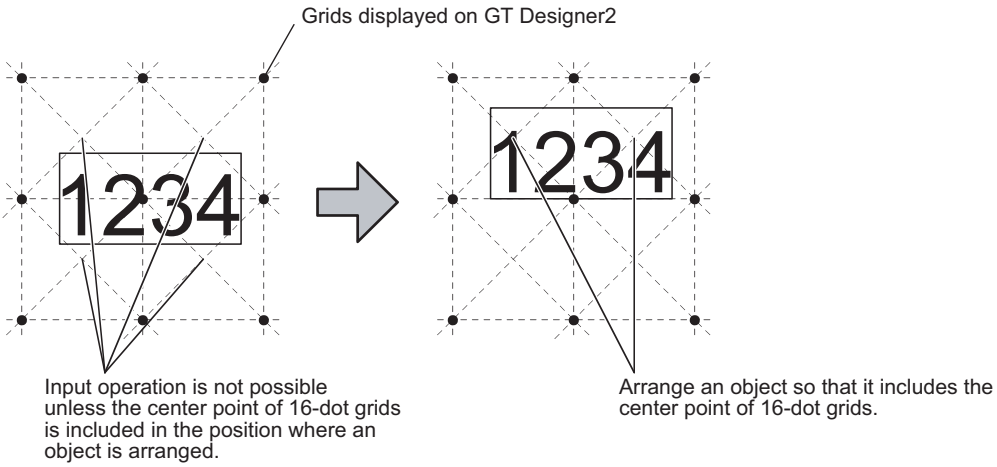
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.3 Checking Project Data for Errors)

If an error is detected in data check, take the corrective action as below.

1 Change the grid of 16 dots pitch in the scneen of GT Designer2.



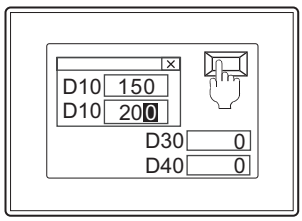

2 Change the arrangement of object so that a center point of 16-dot grid is included in the object.



## 2 Precautions for use

(1) When numerical input is set on window screen

When the numeric input objects are simultaneously displayed on the base screen and overlap window, the input cursor that is displayed by other than touch operation (key window display by special function switch, etc.) will appear on the overlap window.




To display the cursor on the numerical input of the base screen, touch the numerical input of the base screen.

(2) When special function switch (key window) is set

If a key window is displayed using a special function switch when an input cursor is not displayed at a numerical input, the key window will be displayed as follows;

(a) For default key window

A default key window for hexadecimal input will be displayed.

(b) For user-created key window

The screen set at [DEC key sheet No.] will be displayed.

When [DEC key sheet No.] is not set (or set to "0"), a default key window for hexadecimal input will be displayed.

(3) When blink is set

The input cursor will stop blinking temporarily when it is displayed.

(4) When [ON and OFF after] is set in write check

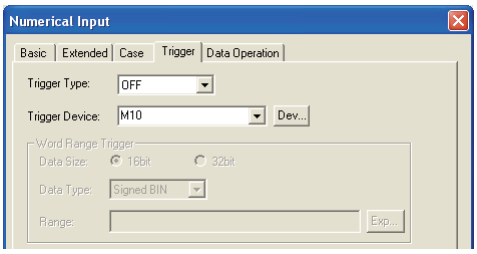
(a) Don't turn on twenty-one devices above simultaneously.

Or not, the 22nd device or later cannot be turned off automatically.

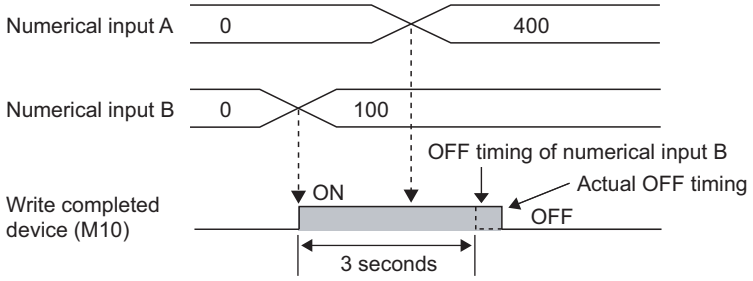
(b) At using the same write completed device for multiple numerical inputs, set the numerical input to not be able to input the value while the write completed device is ON.

Setting example: Set the operation condition to trigger type "OFF" and the device "M10"

At inputting before turning OFF, the write completed device will not turn OFF at normal timing.



Example: Write completed device: M10 (which turns OFF in 3 seconds after it turned ON)




(c) The write completed device will not turn OFF if screen switching (including switching to the utility) occurs while the write completed device is ON. It keeps ON for the specified period of time.

## 3 When executing the range check during numerical value input

The precautions when executing the range check during numerical value input are provided below.

(☞ Section 4.4 Auxiliary Settings)

(1) Precautions for screen design

(a) When more than two state types are set, the range check will be disabled during numerical value input. The check will be executed when the input is determined.

(b) Use any of the following patterns to set the range formula for state.
If the pattern other than below is used to set the range formula, the range check will be executed when the input is determined.

- $W<A, $W<=A
  - $W : The device set for the numeric value input
  - A : Fixed value or other device (positive value (+) only)
- A<$W<B, A<=$W<B, A<$W<=B, A<=$W<=B
  - $W : The device set for the numeric value input
  - A : Fixed value or other device
  - B : Fixed value or other device (positive value (+) only)

(c) When input range and display range are set separately
Only the input range will be checked.

(2) Precautions for operation

(a) When inputting negative value (-)
Enter the minus sign (-), and then the numerical value.

(b) The lower limit value check
The lower limit value check is executed when the input is determined.

(c) Comparison with device
When the value of the comparison target device cannot be read, a message will appear.

(d) Cursor movement
When cursor is moved within the object during numerical value input, the range check will not be executed during input.
The range check will be executed when the input is determined.
To enable the range check during input, hide the cursor (after the numerical input mode is released) and input a numerical value again.

## 4 Precautions for input confirmation message display

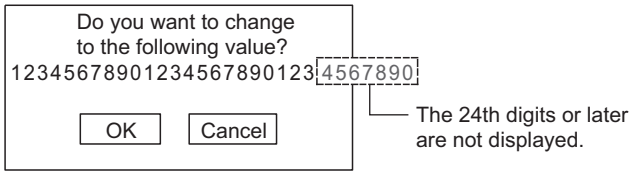
(1) Number of digits for numeric value available for message

Depending on GOT types, the numeric value digits available for display is different.

The digits after the following will not be displayed on the message. Make sure that the digits of the input value are within the following.

- GT16, GT15 (excluding GT1555-Q and GT1550-Q), GT SoftGOT1000 : 35 digits
- GT15 (GT1555-Q and GT1550-Q only), GT11 : 23 digits

Example) GT11




* Any input confirmation message is displayed for GT10.

(2) Message position

The message position will be different depending on the key window type.

(a) When using default key window

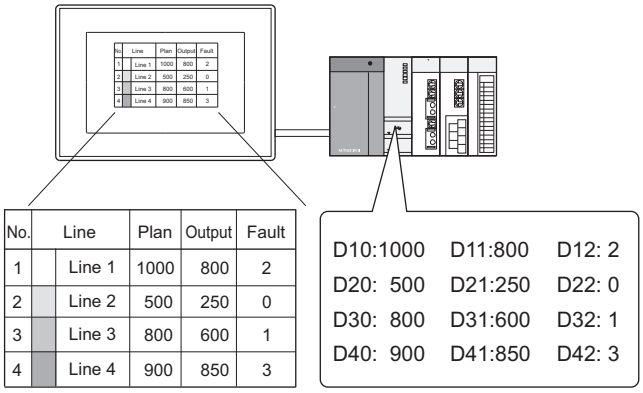
The message is displayed on the key window.

(b) When using user-created key window or no key window

The message is displayed on the center of the screen.

# 7.2 Data List

This section explains the data list function that displays multiple word device values in list form.
With this function, line No. and ruled lines of the list are displayed automatically.




Example:

Sort lines according to the values of the prior setting item.

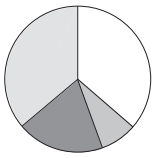
Set on Basic tab

| No. | | Line | Plan | Output | Fault |
|---|---|---|---|---|---|
| 2 | | Line 2 | 500 | 250 | 0 |
| 3 | | Line 3 | 800 | 600 | 1 |
| 1 | | Line 1 | 1000 | 800 | 2 |
| 4 | | Line 4 | 900 | 850 | 3 |

The lines will be displayed in ascending order of "Output" values.

Display the list with statistics graph on the same screen

Section 10.6 Statistics Graph



| No. | | Line | Plan | Output | Fault |
|---|---|---|---|---|---|
| 1 | | Line 1 | 1000 | 800 | 2 |
| 2 | | Line 2 | 500 | 250 | 0 |
| 3 | | Line 3 | 800 | 600 | 1 |
| 4 | | Line 4 | 900 | 850 | 3 |

Device status can be displayed effectively.

**Remark**

Comments displayed by using data list

Comments must be registered in advance for displaying in data list.

Section 4.1 Comment Registration

## 7.2.1 Relevant settings

For data list, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

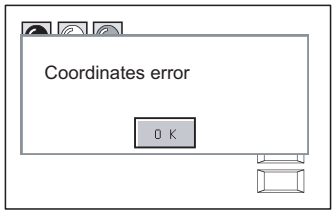
(1) Functions relevant to data list and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

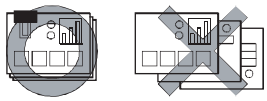
(1) Functions relevant to Data List and others.

**• Check for overlapping objects**

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

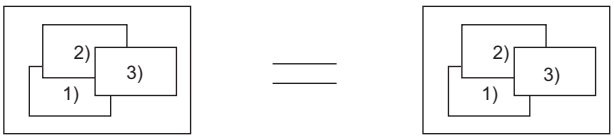


Setting items
• [Carry out check for overlapping objects within GOT]

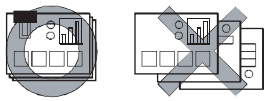
**• Setting the order of displaying objects on the GOT**

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



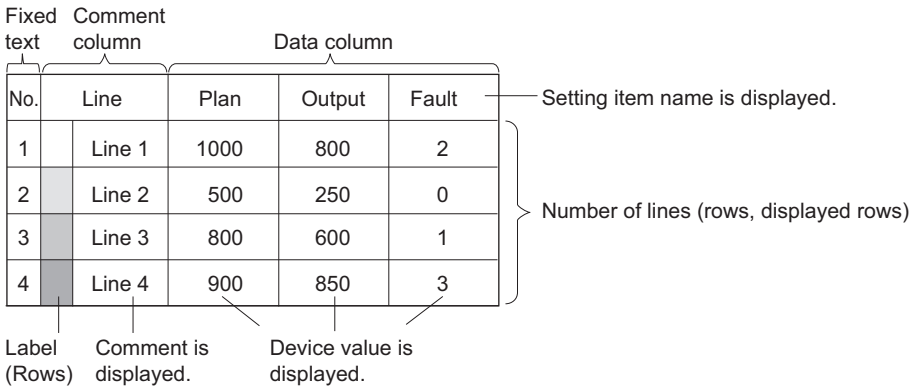
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 1 Methods of setting data list

The basic function of data list can be set on the following 1 to 2 tab screen in order.

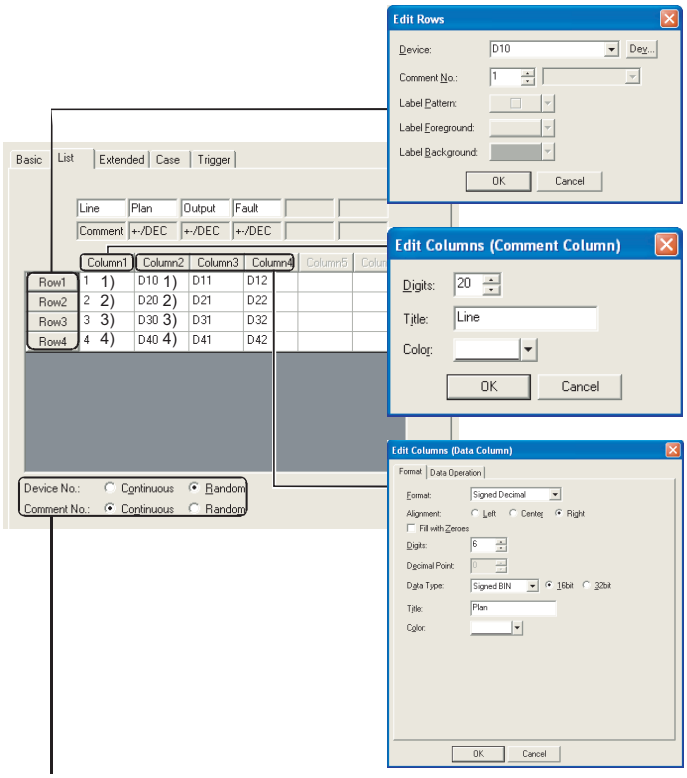
### 1 Basic tab

Set the number of columns and lines for data list.




### 2 List tab

Set devices, comments, label color or similar on each dialog box.




Set devices, comments, label color to be displayed in lines.

Set the view format of comment columns.

Set the view format of data columns.

Continuous : Set continuous comments and devices.
Set the head comment and device in 1).

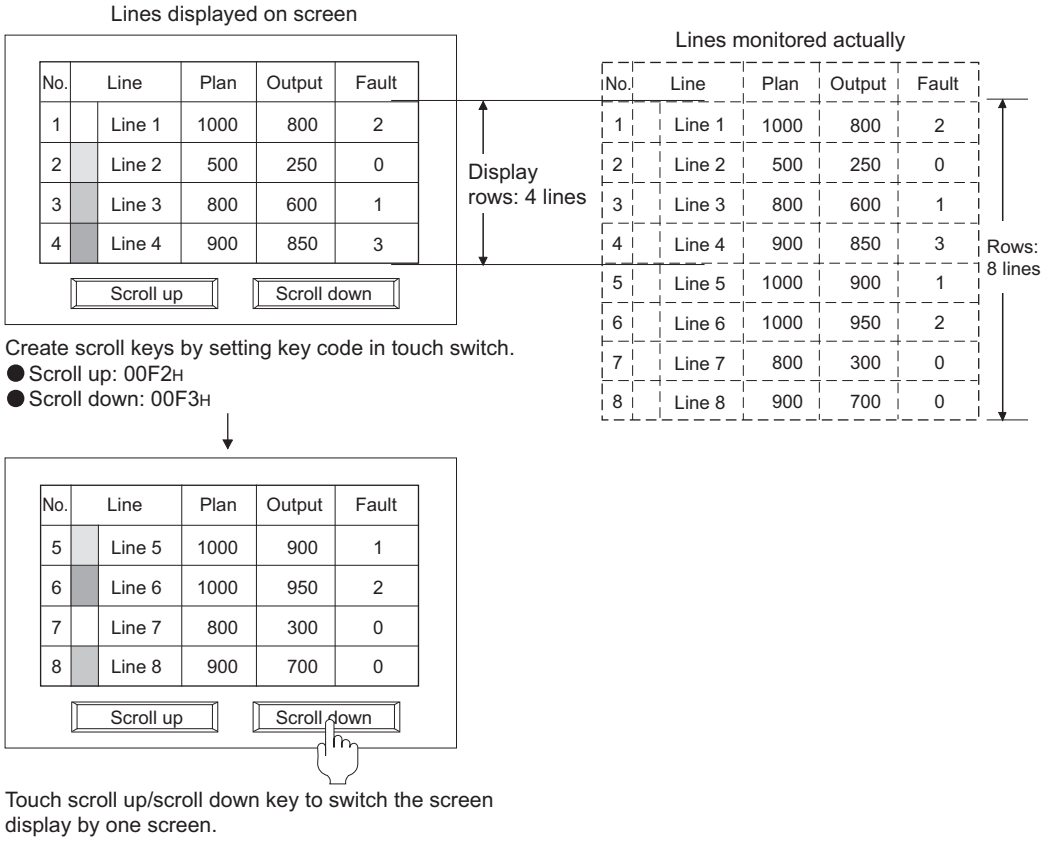
Random : Set comments and continuous devices for each line.
Set comments and the head device in 1) to 4).

## 2 Data list function

(1) Scroll function

In data list, the number of screen display lines (display rows) can be set separately from the number of corresponding set lines (rows).

When scroll up/scroll down key is set, data list can be scrolled up and down



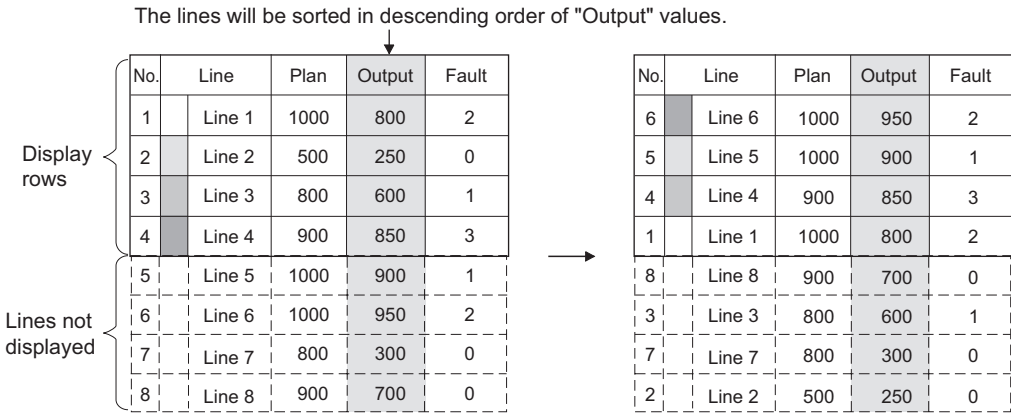

(2) Sort function

Lines can be sorted based on device status of specified columns (ascending/descending order of device value).

Example: Sort the lines in descending order of device values of the third column.

Make the settings on basic tab as follows:

| | | | |
|---|---|---|---|
| Rows | : 8 lines | Sort | : Desending |
| Display rows | : 4 lines | Sort/Attribute column | : 3 columns |



## 7.2.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Data List]
   - Select [Object] → [Data List] from the menu.
2. Click on the data list display position to complete the data list arrangement.
3. Double click on the arranged data list to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

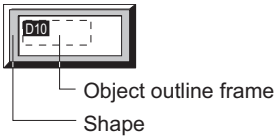
GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

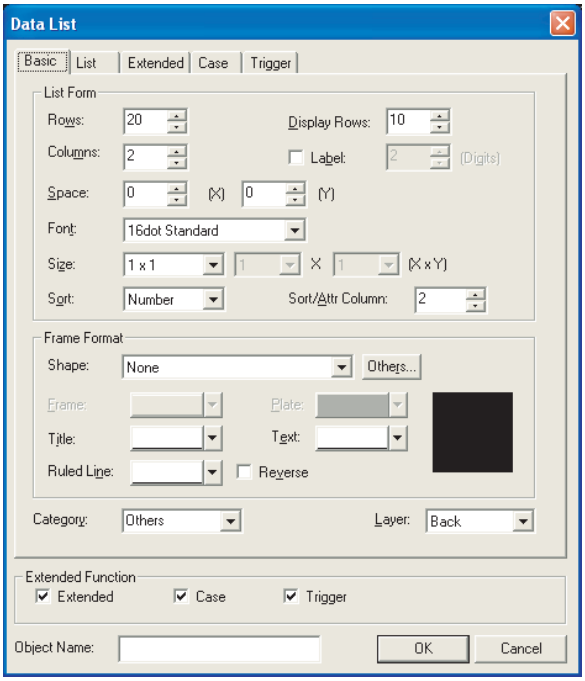
Section 5.3.3 Object size change



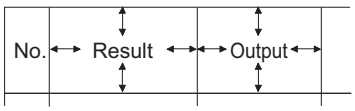
## 7.2.4 Setting items

### 1 Basic tab

This tab screen is used to set the device value to be monitored and the list form to display a comment.

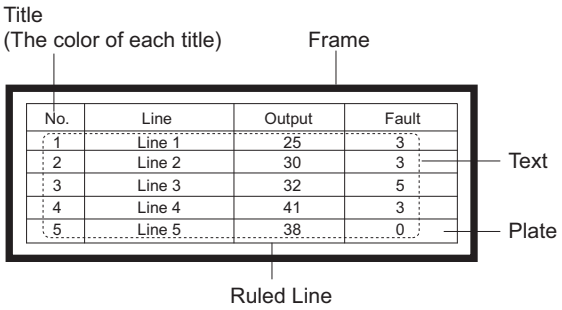



Basic | List | Extended | Case | Trigger

| Items | | Description | Model |
|---|---|---|---|
| List Form | Rows | Set the number of lines for monitoring devices using data list (1 to 128). | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| | Display Rows | Set the number of lines to be displayed on screen (1 to 27).<br>The lines out of the screen can be displayed with scroll up/scroll down key.<br>(☞ Section 7.2.2 Required knowledge for data list setting) | |
| | Columns | Set the number of columns to be displayed (2 to 6). | |
| | Label | Check this item to display a label.<br>After check, set number of label digits (2 to 6). (one digit for one character) | |
| | Space | Set the text (title, comment, numeric value) to be displayed and ruled line space of the list (0 to 32 dots).<br>  | |
| | Font | Select a font.<br>• 16 dot standard font • 12 dot high quality Mincho<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| | Size | | |
| | Sort | Set the method of arranging (sort) lines.<br>No. order : Display in line number column order.<br>Ascending : Arrange from small value to large value.<br>Descending : Arrange from large value to small value.<br>Without sort : Not sort. | |

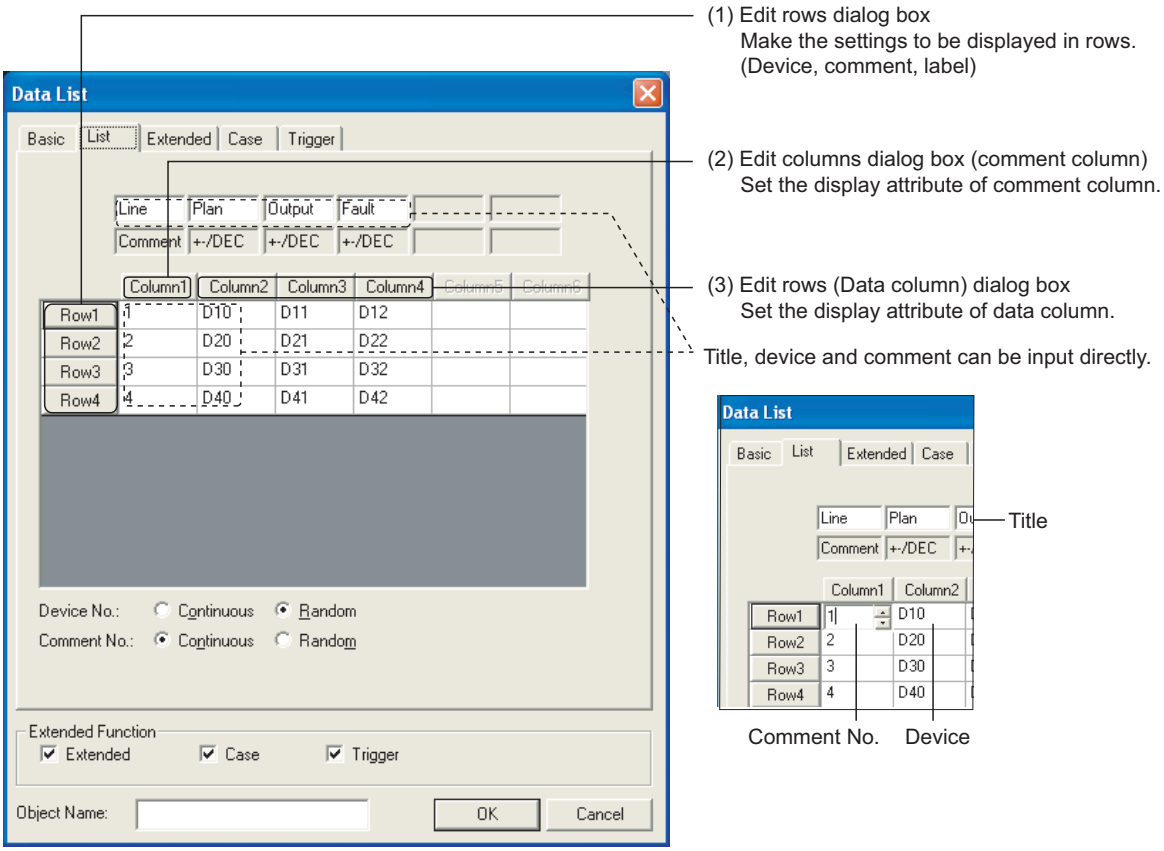
(Continued to next page)

Basic | List | Extended | Case | Trigger

| Items | | Description | Model |
|---|---|---|---|
| List Form | Sort/Attr Column | Set the sort basis column. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Set the color for each part of the list.<br>  <br> | |
| | Plate | | |
| | Title | | |
| | Text | | |
| | Ruled Line | | |
| | Reverse | Check this item to reverse text. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 List tab

Click on Column button and Row button on this dialog box to display the corresponding setting dialog box. Then set devices and comments on the dialog box.
For the settings on each setting dialog box, refer to the following explanation (1) to (3).

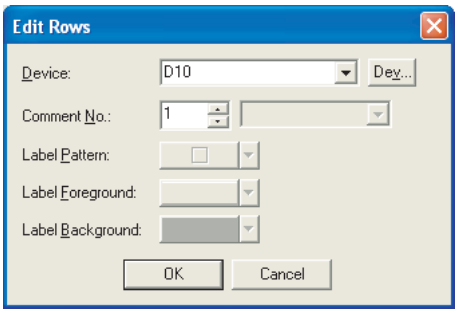



Basic | **List** | Extended | Case | Trigger

| Items | Description | Model |
|---|---|---|
| Device No. | Select a device setting method.<br>Continuous : Set devices of continuous No. through all rows.<br>Random : Set devices of continuous No. in each row.<br>Example: When "Continuous" is set<br>Set initial device<br>Column 1 / Column 2 / Column 3 / Column 4<br>Line 1: 1 / D10 / D11 / D12<br>Line 2: 2 / D13 / D14 / D15<br>Line 3: 3 / D16 / D17 / D18<br>When "Random" is set<br>Set initial device in each row<br>Column 1 / Column 2 / Column 3 / Column 4<br>Line 1: 1 / D10 / D11 / D12<br>Line 2: 2 / D20 / D21 / D22<br>Line 3: 3 / D30 / D31 / D32 | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Comment No. | Select a comment setting method.<br>Continuous : Set comments of continuous No. through all rows.<br>Random : Set comments of continuous No. in each row. | |

(1) Edit Rows dialog box

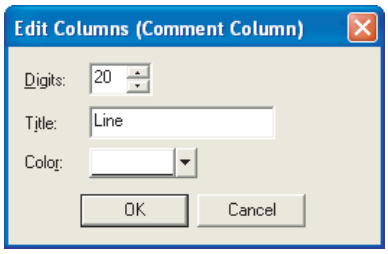
This dialog box is used to set the device to be monitored, comment to be displayed and label (display attribute).




| Items | Description | Model |
|---|---|---|
| Device | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment No. | Set the comment No. to be displayed in the selected line. | |
| Label Pattern | Select label pattern/label foreground/label background.<br>The pattern is displayed in color of the label foreground on the label background.<br>Example:<br>Label Pattern :<br>Label Foreground :<br>Label Background :<br>Label Pattern + Label Foreground<br>Label Background | |
| Label Foreground | | |
| Label Background | | |

(2) Edit columns (comment column) dialog box

This dialog box is used to set the number of comment characters, the title and title color of the column.

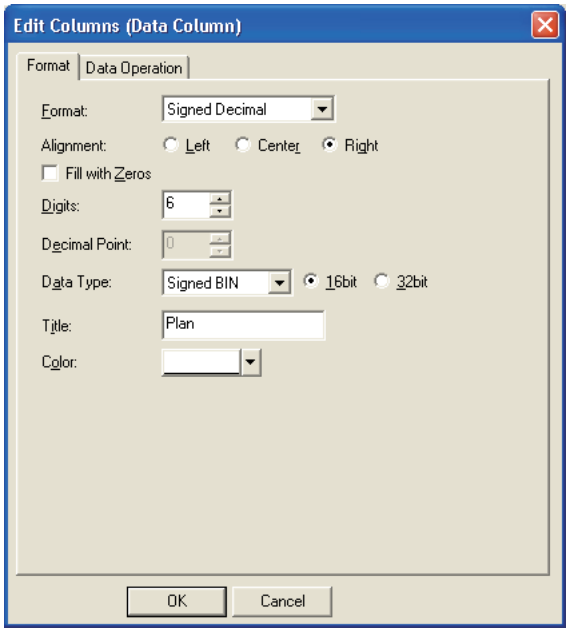



| Items | Description | Model |
|---|---|---|
| Digits | Set number of comment characters from 1 to 80 (80 characters). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Title | Input the title of comment column. | |
| Color | Select the title color. | |

(3) Edit Columns (Data Column) dialog box

(a) Format tab

This tab is used to set the number of digits for device value, view format/ data type of the device to be monitored, title and title color of the column.




Format | Data Operation

| Items | Description | Model |
|---|---|---|
| Format | Select the view format of the monitor device value.<br>Signed decimal : Displays the value in signed decimal.<br>Unsigned decimal : Displays the value in unsigned decimal.<br>Hexadecimal : Displays value in hexadecimal.<br>Octal : Displays value in octal.<br>Binary : Displays value in binary.<br>Real : Displays the value in floating point type real number. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Alignment | Select the position based on the width of data column.<br>Left : Align left.<br>Center : Align center.<br>Right : Align right. | |
| Fill with Zeros | When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item. | |
| Digits | Set the number of digits for the device value to be displayed in data column.<br>Available number of digits is different depending on the [Format] setting.<br>Signed (Unsigned) decimal : 1 to 13 digits (includes minus (-))<br>Hexadecimal : 1 to 8 digits<br>Octal : 1 to 6 digits<br>Binary : 1 to 32 digits<br>Real : 1 to 32 digits (includes minus (-), decimal point and decimal part) | |
| Decimal Point | When REAL is selected in [Format], set the number of digits (1 to 32) for the decimal part. | |

(Contenued to next page)

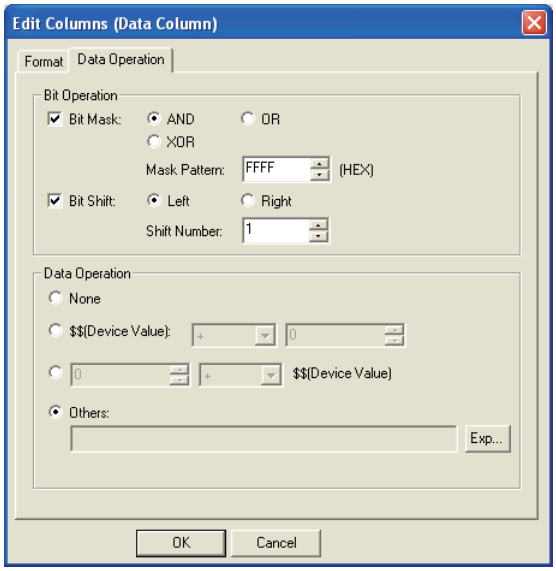
## Format Data Operation

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of word device to be monitored.<br>After selecting, set the data size (16 bit, 32 bit).<br>Signed BIN : Treats word device value as signed binary value.<br>Unsigned BIN : Treats word device value as unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Title | Input the title of data column. | |
| Color | Select the title color. | |

(b) Data Operation tab

This tab is used to set the expression to operate the device value and display the results.
For details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



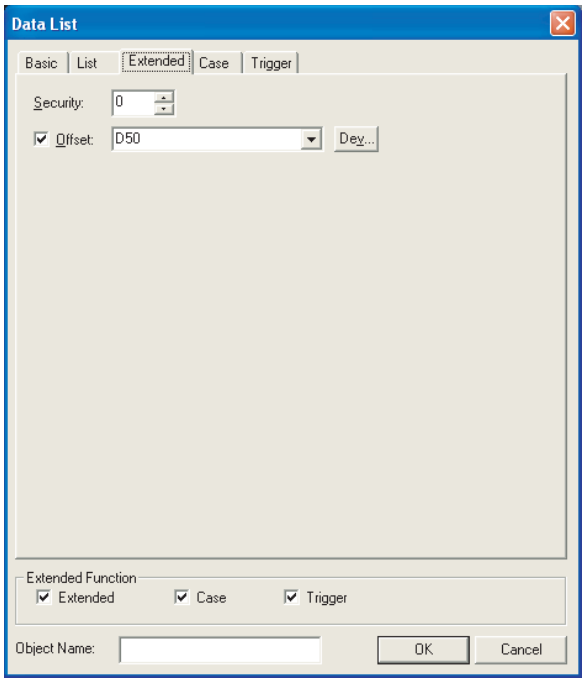

## Format Data Operation

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 3 Extended tab

Set the security and offset.

This tab is displayed by checking "Extended" at the bottom of dialog box.



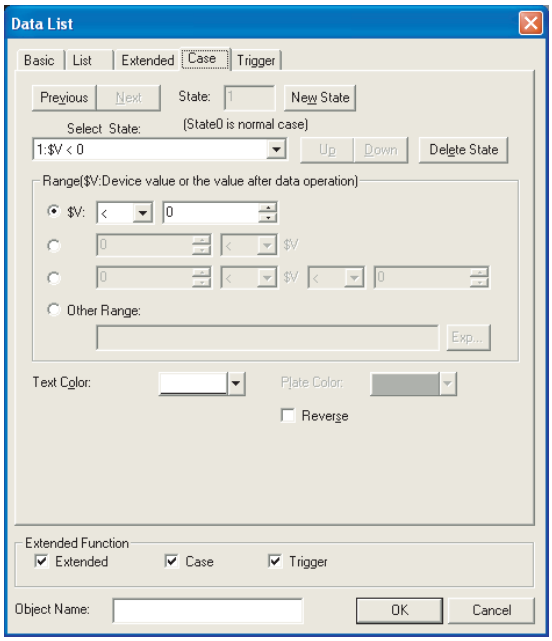

Basic | List | **Extended** | Case | Trigger

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

## 4 Case tab

Operational expression is set on this tab when monitoring the device by computing the device values. This tab is displayed by checking the corresponding extended function at the bottom of the dialog box. For details of state, refer to the following.

☞ Section 5.4 State Setting




Basic | List | Extended | **Case** | Trigger

| Items | | Description | Model |
|---|---|---|---|
| State *1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Text Color | Select a text color for the case that conditions for the state display are satisfied. | |
| | Plate Color | Select a plate color for the case that conditions for the state display are satisfied. | |
| | Reverse | Check this item to revers text. | |

For details of *1, refer to the following.

### *1 State

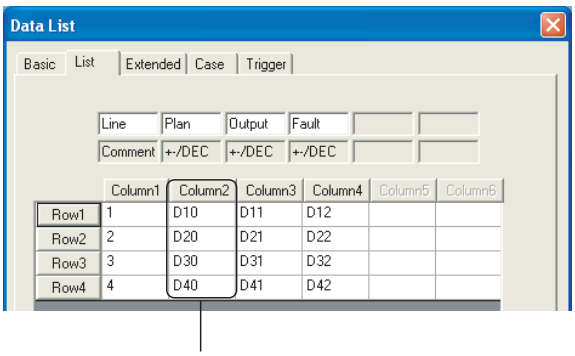
(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

(3) State conditions of data list

In data list, $V value of a state condition (monitor device) is the device value set in the 2nd column.

Example:




D10, D20, D30 and D40 are treated as $V value.

Example: Device : D10, D20, D30, D40

Data view format : Signed decimal, with size of 16 bits

| No. | Line | Output | Fault |
|---|---|---|---|
| 1 | Line 1 | D10 | D11 |
| 2 | Line 2 | D20 | D21 |
| 3 | Line 3 | D30 | D31 |
| 4 | Line 4 | D40 | D41 |

Action priority when setting overlaps

High

↓

Low

| State No. | Range | Text color | Plate color |
|---|---|---|---|
| 1 | 1000<= $V | White | Green |
| 2 | 900<=$V<=999 | Yellow | White |
| Normal case (State 0) | — | Black | White |

**State 1**

When monitor device value is over 1000 (1000 ≦ $V), the plate color will be changed to green.

| No. | Line | Output | Fault |
|---|---|---|---|
| 1 | Line 1 | 1000 | 2 |
| 2 | Line 2 | 1000 | 0 |
| 3 | Line 3 | 950 | 1 |
| 4 | Line 4 | 980 | 3 |

**State 2**

When monitor device value is 900 to 999 (900 ≦ $V ≦ 999), the text color will be changed to yellow.

| No. | Line | Output | Fault |
|---|---|---|---|
| 1 | Line 1 | 890 | 2 |
| 2 | Line 2 | 880 | 0 |
| 3 | Line 3 | 920 | 1 |
| 4 | Line 4 | 910 | 3 |

**Normal case (State 0)**

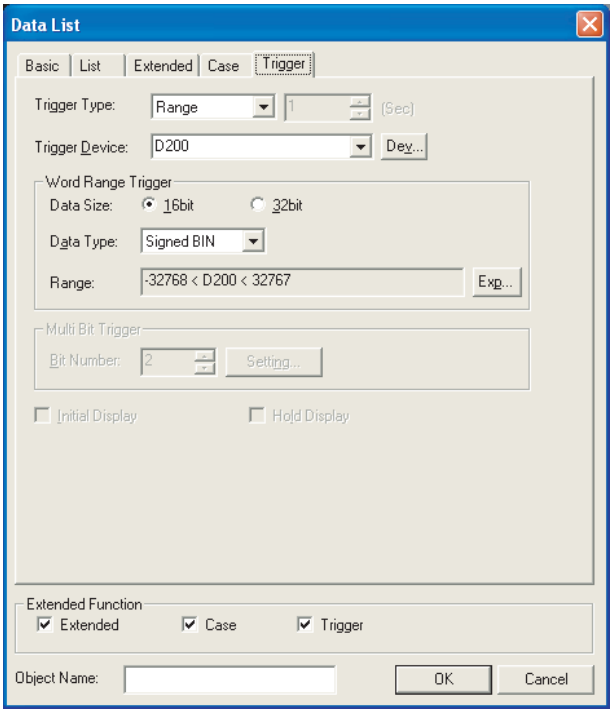
When monitor device value is out of the range (below 899), the text color will be black and the plate color will be white.

| No. | Line | Output | Fault |
|---|---|---|---|
| 1 | Line 1 | 890 | 2 |
| 2 | Line 2 | 880 | 0 |
| 3 | Line 3 | 820 | 1 |
| 4 | Line 4 | 810 | 3 |

## 5 Trigger tab

Set conditions to display an object.
This tab is displayed by checking the extended function at the bottom of dialog box.
For details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | List | Extended | Case | **Trigger**

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger type for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Click on button Dev to specify the device used for the trigger. | |
| Word Range Trigger | | When Range is selected in Trigger Type , set the following items. | |
| | Date Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type (Signed BIN/ Unsigned BIN/Real) of word device.<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the Exp button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click the Setting button to set the bit device and operation condition. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied. | |
| Hold Display | | Check this item to hold the object data when the display condition is not met in the case [Trigger Type] is set to [ON], [OFF], or [Bit Trigger].<br>If not checked, the object will be deleted when the conditions become invalid. | |

## 7.2.5 Precautions

This section provides the precautions for using data list function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
Up to 1 data list objects can be placed (set).

(2) Applicable screen
Only base screen can be set.

(3) Precautions for using together with other object

(a) The object that cannot be set on the same screen
Alarm history cannot be set on the same screen.

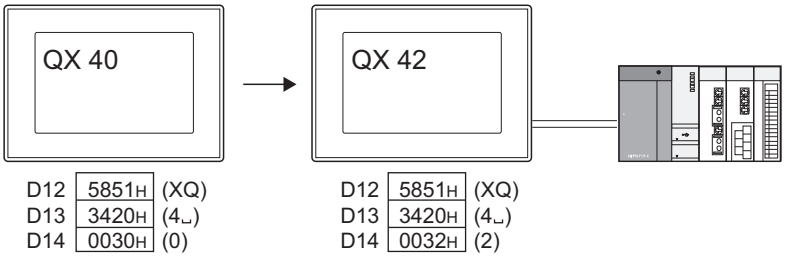
(b) The object restricted on the applicable function
For restrictions when using the alarm list on the same screen, refer to the following.

☞ Section 8.6.6 Precautions

# 7.3 ASCII Display/ASCII Input

## 1 ASCII display

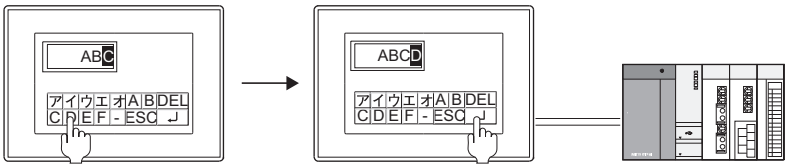
ASCII display is the function that treats the data stored in word device as text code (ASCII code) to display the text column.



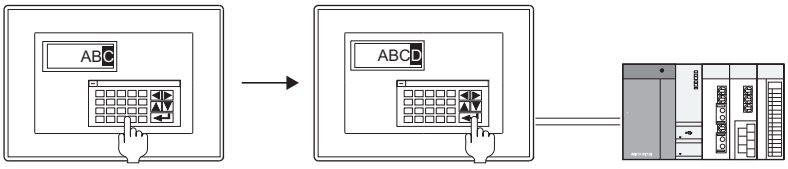

## 2 ASCII input

ASCII input is the function that writes the input text into word device in text code (ASCII code).
The keys for input are created by assigning key codes to touch switch.

Input from the touch switches arranged on the screen




Input from the key window




Input a text

D10 0000H
D11 0000H

Using the Write key (key code: 000DH), write the input text in text code

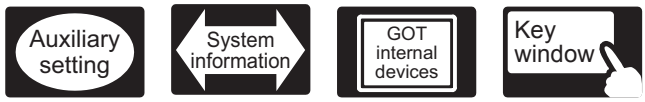
D10 4241H (BA)
D11 4443H (DC)

*1 The key window must be created by the user.

Refer to the following section for the creating method, types and operation method of the key window.

☞ Section 4.5 Key Window

## 7.3.1 Relevant settings




For ASCII display/ASCII input, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to ASCII display/ASCII input only
…Relevant to ASCII display/ASCII input only.

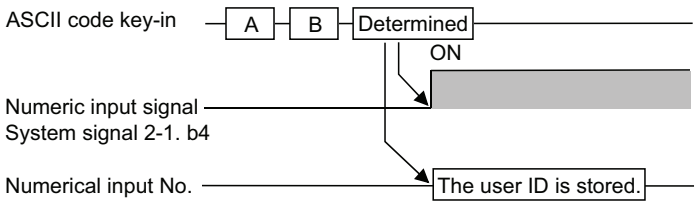
(2) Functions relevant to ASCII display/ASCII input and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

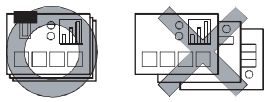
(1) Functions relevant to ASCII display/ASCII input only

• Outputting ASCII input to the system information

When ASCII characters are input, the input signal/No. can be output to the system information.




Setting for each project | Setting for each screen

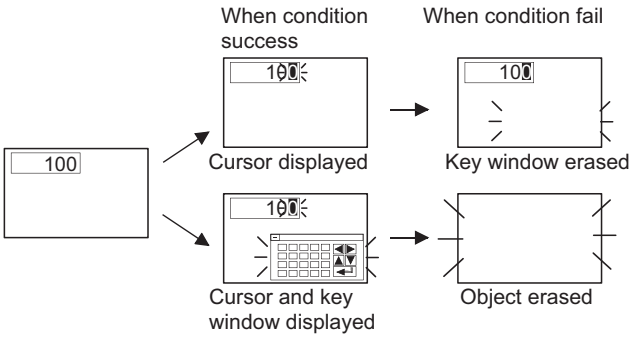


Setting items
• [Ascii input is targeted in the system information output]

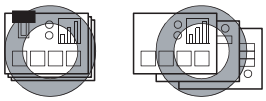
(2) Functions relevant to ASCII display/ASCII input and other

• Action of cursor and key window when condition success/switching screen/condition fail

When condition success/switching screen, cursor and key window are displayed.
When condition fail, cursor and key window are erased.



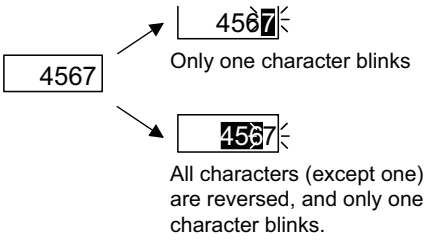

Setting for each project | Setting for each screen



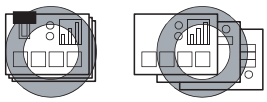
Setting items
• [Action when condition success]
• [Switching screen option]
• [Action when condition fail]
• [Cursor position]

• Methods of displaying cursor input area

For numeric input and ASCII input, cursor display method is selectable.



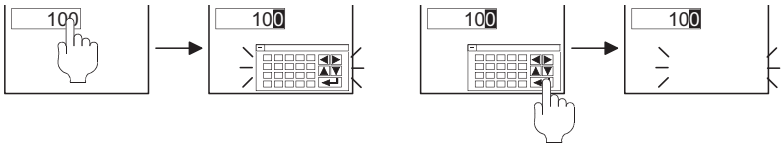

Setting for each project | Setting for each screen



Setting items
• [Cursor input area]

• Methods of displaying/erasing key window

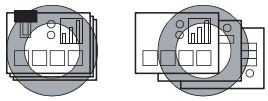
Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.




Display key window with input touch

Press the RET key (input definition), key window is erased.

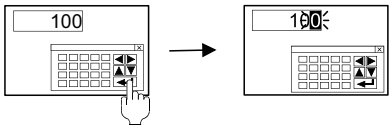
Setting for each project | Setting for each screen



Setting items
• [Close cursor and key window when RET key is pressed.]
• [When touch input is detected, open key window at the same time]

• Displaying/Hiding the cursor key

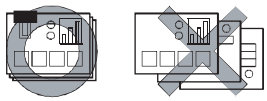
It is possible to set whether the cursor is displayed or remains hidden when the RET key or an arrow key is pressed while the cursor is hidden.




Press the RET key

The cursor is displayed.

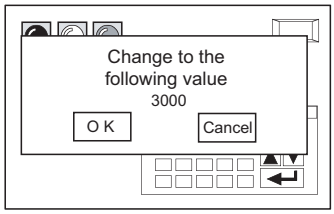
Setting for each project | Setting for each screen



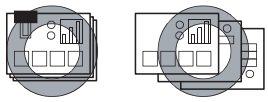
Setting items
• [Do not display the cursor when RET key is pressed]

• Displaying/Hiding the input check dialog box during numerical/ASCII input

When numerical/ASCII characters are input, the input confirmation dialog can be displayed by pressing the RTN key.



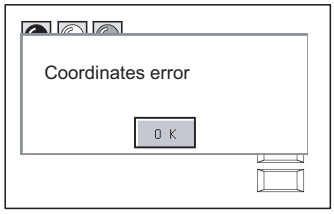

Setting for each project | Setting for each screen



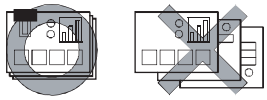
Setting items
• [When numerical/ASCII input is detected, display input confirmation dialog]

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

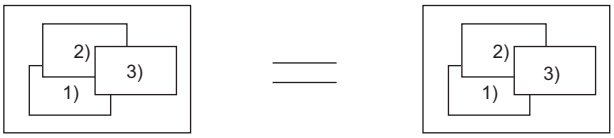


Setting items
• Carry out check for overlapping objects within GOT]

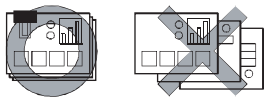
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen

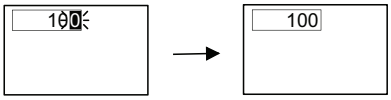


Setting items

• [Adjust object display order in GOT to the one in GT Designer2]

• Clearing the system information when the cursor is deleted

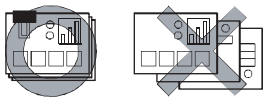
When the cursor is deleted, the system information such as cursor display object ID and cursor display user ID can be cleared.




The cursor is deleted.

The current cursor display user ID 500 → 0

Setting for each project | Setting for each screen

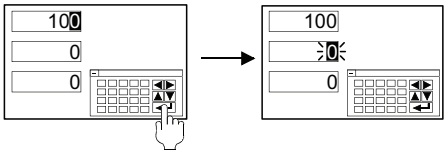


Setting items

• [When the cursor deleted, system information is cleared]

• Action of cursor key

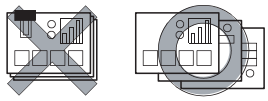
If multiple areas for numerical input and ASCII input are provided, the input order can be set. After input definition, the cursor is moved to the next input area automatically.




Input definition

The cursor is moved to the next input area.

Setting for each project | Setting for each screen



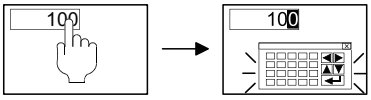
Setting items

• [Defined key action]

• [Position to specify area]

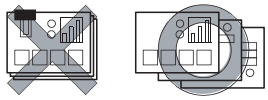
• Enabling/Disabling the key window movement

The key window movement is enabled or disabled for each screen.




The key window appears on the screen without hiding the input cursor.

Setting for each project | Setting for each screen



Setting items

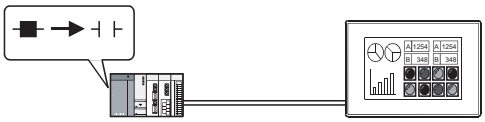
• [Move key window]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to ASCII display/ASCII input and other

• Key Code Read Complete Signal
(Read device: System Signal 1-1.b3)

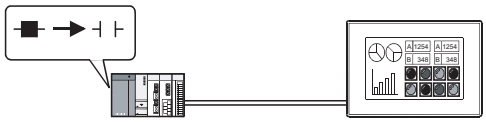
Turns off the key input signal.



Key input signal OFF

• Numeric Value Input Read Complete Signal
(Read device: System Signal 1-1.b4)

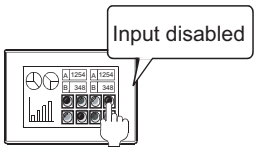
Turns off the numeric value input signal can be turned off.



Numeric input signal OFF

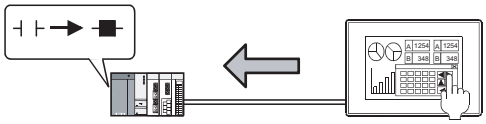
• Key-In Disable Signal
(Read device: System Signal 1-1.b9)

Disables all key inputs.



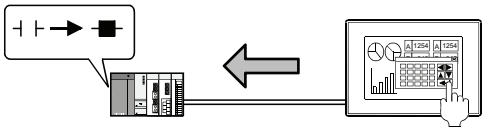

• Key Input Signal
(Write device: System Signal 2-1.b3)

Notifies the key input.



• Numeric Value Input Signal
(Write device: System Signal 2-1.b4)

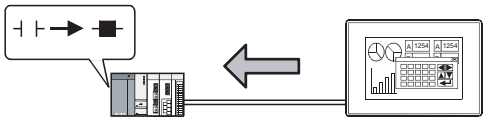
The determined numerical value input can be notified.



The numerical value input is determined.

• Key window Output Signal
(Write device: System Signal 2-1.b11)

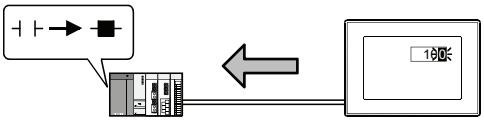
Notifies that the key window is on the screen.



Key window on the screen

• Cursor Displaying Signal
(Write device: System Signal 2-2.b11)

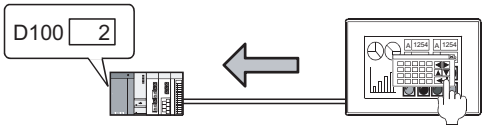
Notifies that the cursor is being displayed by the numeric/ASCII value input.



The cursor is on the screen.

• Numeric Value Input Number
(Write device)

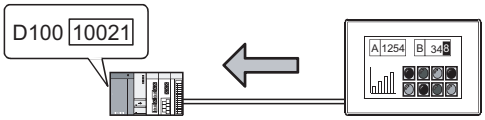
Notifies the user ID of the determined numeric value input.




Numeric value input (user ID: 2) determined

• The object ID on which the cursor is positioned currently
(Write device)

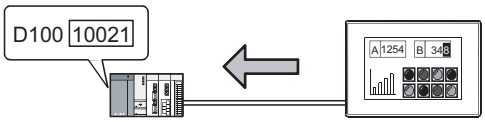
The ID of the object on which the cursor is positioned currently can be notified.




Object ID on which the cursor is positioned currently

• The object ID on which the cursor was positioned at the previous time
(Write device)

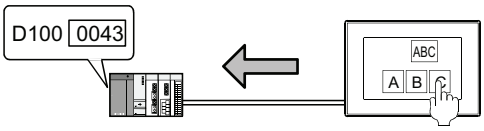
Notifies the object ID of the object on which the cursor was positioned at the previous time.




Object ID on which the cursor was positioned at the previous time

• Key Code Input
(Write device)

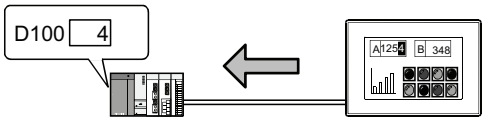
Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.




The key code is notified.

• The user ID on which the cursor is positioned currently
(Write device)

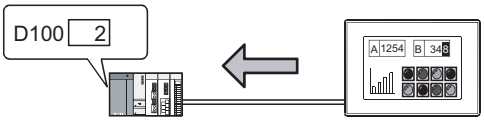
Notifies the user ID of the object on which the cursor is positioned currently.




User ID on which the cursor is positioned currently

• The user ID on which the cursor was positioned at the previous time
(Write device)

Notifies the user ID of the object on which the cursor was positioned at the previous time.




User ID on which the cursor was positioned at the previous time

## 3 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to ASCII display/ASCII input only

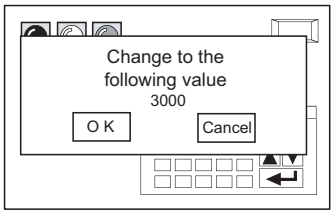
• Setting for the Kana-Kanji conversion function
(Write device: GS450.b4)

Kana text input in ASCII input can be converted in Kanji.

(2) Functions relevant to ASCII display/ASCII input and other

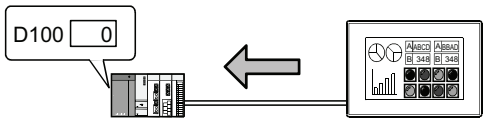
• Numerical/ASCII Value Input Confirmation Dialog Setting Signal
(Write device: GS450.b0)

Displays the dialog for confirming input data when the RTN key is pressed. (Specific to numeric value input or ASCII input)




• Cursor Deleted System Information Clear Setting
(Write device: GS450.b3)

When the cursor disappears, "0" is stored at the "Current cursor position" of the system information even during ASCII input.



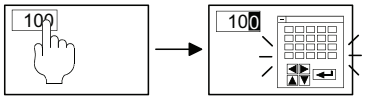

When the cursor disappears during ASCII input, "0" is stored.

## 4 Key window (☞ Section 4.5 Key Window)

(1) Functions relevant to ASCII display/ASCII input and other

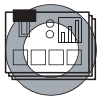
• Using User-created Window

Set the window screen to be used for numeric value input (decimal/hex) and ASCII input.

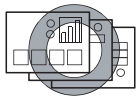



The user-created key window is displayed during key input.

Setting for each project



Setting for each screen



## 7.3.2 Before setting ASCII display/ASCII input

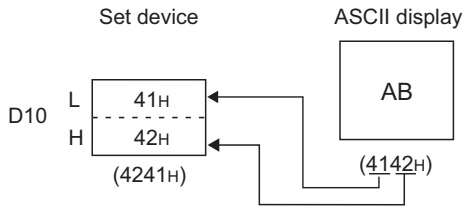
### 1 Text code reading/writing order

The text code reading/writing order can be selected according to the specifications of the controller to be monitored.

(1) Reading/writing in order from lower byte to higher byte

Text codes are read/written in reverse order of every 8 bits.
(Default setting)

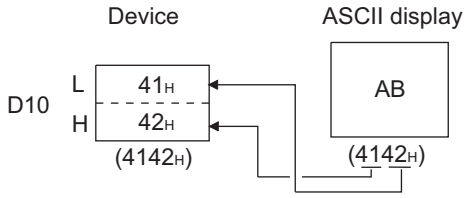
Example: In the case of ASCII display (ASCII codes "41 (A)", "42 (B)" are displayed)




L: Lower byte H: Higher byte

(2) Reading/writing in order from higher byte to lower byte

Text codes are read or written in the order from the higher byte to the lower byte.
(Place a check mark at "Display in the order of High → Low" on the Extended tab.)
Example: In the case of ASCII display (ASCII code "41(A)","42(b)" are displayed)




L: Lower byte H: Higher byte

### 2 Number of display digits and available devices

One word device is used for ASCII display/ASCII input every two display digits.

Example: Set device (head device) : D1
Number of display digits : 3

↓

Two word devices D1 and D2 are used.

## 7.3.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [ASCII Display]/ [ASCII Input]
   - Select [Object] → [ASCII Display] / [ASCII Input] from the menu.
2. Click on the position where ASCII Display/ASCII Input to be located to complete the arrangement. (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged ASCII Display/ASCII Input to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

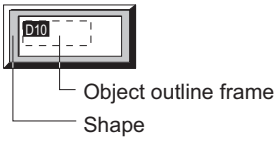
GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

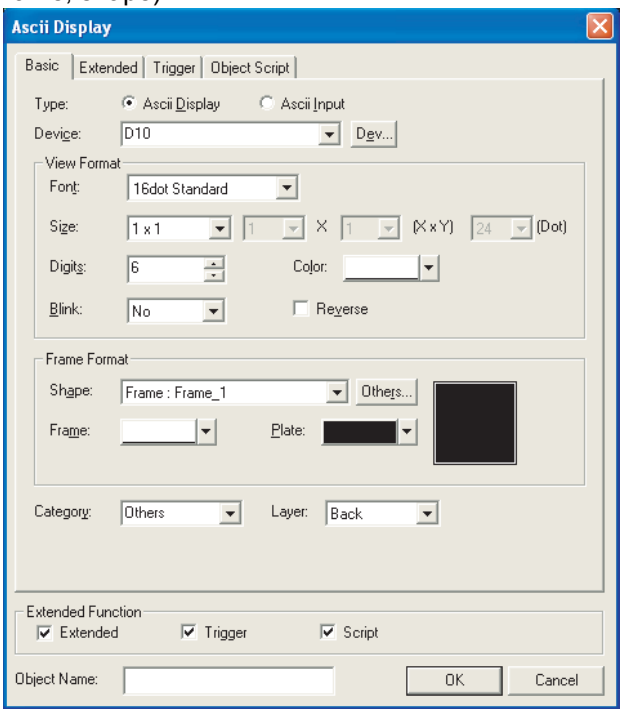
Section 5.3.3 Object size change



## 7.3.4 Setting items

### 1 Basic tab

This tab is used to select ASCII display or ASCII input, and set the device and view format (font, text size, digits, display frame, shape)




In the case of ASCII display function

Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Type | | Select the function to be used (ASCII display/ASCII input). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device | | Set the head bit device where text code is stored | |
| View Format | Font | Select a font.<br>(When [16 dot standard] is selected, [Size] can not be set to [0.5].)<br>• 6 × 8dot font • 12 dot standard font •16 dot standard font<br>• Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Size | | |
| | Digits | Set the number of digits (1 to 100) for the text to be displayed/input.<br>The applicable number of digits differ according to text type:<br>Text (ASCII code) : 1 digit<br>Text (ASCII code) : 1 digit | |
| | Color | Select the color of text to be displayed. | |
| | Blink | Select the blinking pattern of the text/figure frame<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds.<br>If blink setting is made, it will not blink while the input cursor is displayed. | |
| | Reverse | Check this item to reverse text. | |

(Continued to next page)

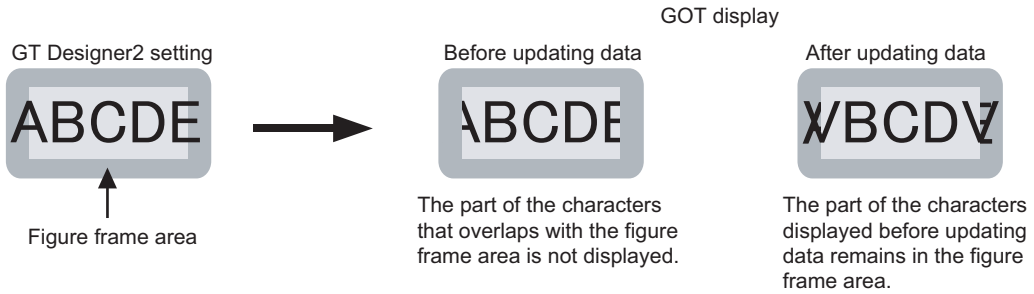
Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Frame Format | Shape*1 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Frame | Select the frame color/plate color.<br>ABCDEFG — Frame color<br>ABCDEFG — Plate color | |
| | Plate | | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

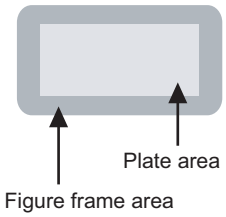
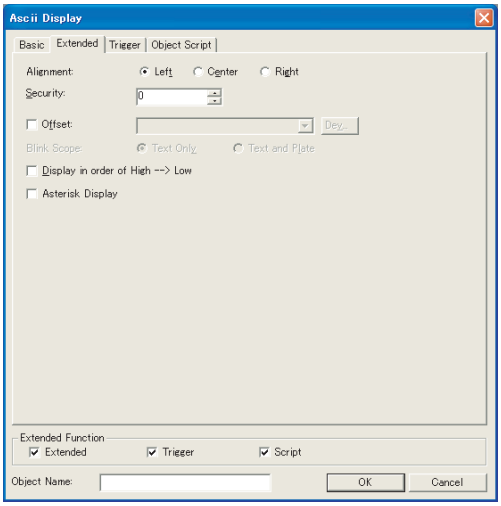



Figure frame area : Area excluding the plate area in the specified figure frame

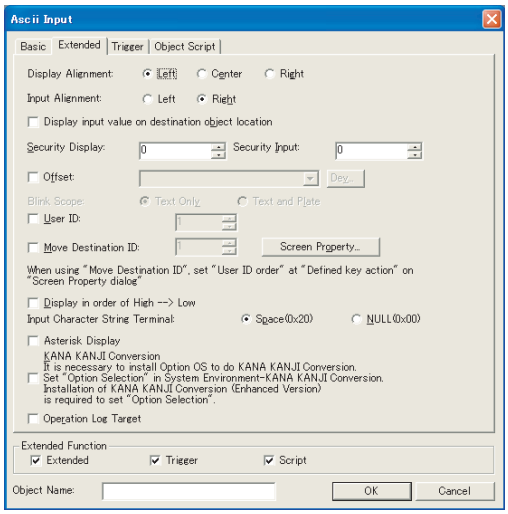
Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Extended tab

This tab is used to set security, offset, blink scope, user ID and move destination ID.
Setting of this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

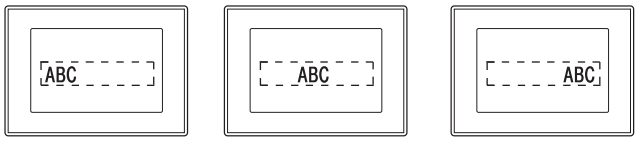



(When setting ASCII display function)




(When setting ASCII input function)

Basic | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Alignment<br>(Only when setting ASCII display function)<br><br>Display Alignment<br>(Only when setting ASCII input function) | Select the text display position.<br>When [Center] or [Right] is selected, [Input Character String Terminal] is fixed to [NULL(0×00)].<br>Left Center Right<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Input Alignment<br>(Only when setting ASCII input function) | Select a text position during input.<br>In the object display area, the text position can be set to [Left] or [Right]. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display input value on destination object location<br>(Only when setting ASCII input function) | When this item is checked, the numeric value input using such as the key window is immediately reflected to the object on the screen.<br>(The input value is written to a device after the RET key is touched.) | |
| Security<br>(Only when setting ASCII display function)<br><br>Security Display<br>(Only when setting ASCII input function)<br><br>Security Input<br>(Only when setting ASCII input function) | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>The number for security input must be larger than that for security display.<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Blink Scope | Select a blink area.<br>Text only : Makes the text area blink.<br>Text and Plate : Makes the text area and plate blink. | |
| User ID *1, *2<br>(Only when setting ASCII input function) | Check this item when setting the user ID No. (1 to 65535).<br>By setting the user ID, the following operations are available.<br>• Decides the cursor display position when switching screen.<br>(☞ Section 4.4 Auxiliary Settings)<br>• Confirms the ASCII input definition timing using PLC CPU.<br>(☞ Section 3.6 System Information Setting)<br>• To specify the used object in the operation log.<br>(☞ Section 15.2 Operation Log Function) | |
| Move Destination ID *1, *3<br>(Only when setting ASCII input function) | Check this item when moving the cursor to the ASCII input specified by the user ID No. after an ASCII input is defined.<br>After checking, set the user ID No. for the ASCII input to which the cursor is moved.<br>• In addition to the setting above, set the following items.<br>• Click the [Screen Properties] button and set [Defined key action] to [User ID order (Cursor doesn't move when it can't move)].<br>• Uncheck the [Close cursor and key window when RET key is pressed] on the [Auxiliary Setting] selected by [Common] → [System Environment]. | |
| Display in order of High → Low | • When setting the ASCII display function:<br>Check this item when display text codes of the device in the order from higher to lower byte.<br>• When setting the ASCII input function:<br>Check this item when store text codes of the device in the order from higher to lower byte. | |
| Input Character String Terminal | For the input of character string, if the number of input characters is less than the number specified for [Digits] in the Basic tab, it is possible to select the ASCII code that fill the blank area from those indicated below.<br>Space (0x20) : Secures the blank area as space.<br>If this option is selected, [Center] or [Right] cannot be selected for [Alignment].<br>Example: When 3 characters were input while the setting for "Digits" is "7"<br>NULL (0x00) : Stores NULL (0x00) at the first digit place following the input character string.<br>The character string preceding the NULL is taken as valid data and characters that follow NULL are indefinite and thus disregarded.<br>Example: When 3 characters were input while the setting for "Digits" is "7" | |
| Asterisk Display*4 | Check this item when displaying values as "*" on the screen.<br>When [KANA KANJI Conversion] is checked, this item is not available.<br>When this item is checked, values on the screen, the input confirmation dialog, and the input value area of the key window are displayed as "*".<br>A one-byte character is displayed as one asterisk. A two-byte character is displayed as two asterisks. | |

| Character string | A | B | C | (SP) | (SP) | (SP) | (SP) |
|---|---|---|---|---|---|---|---|
| ASCII code | (0x41) | (0x42) | (0x43) | (0x20) | (0x20) | (0x20) | (0x20) |

| Character string | A | B | C | (NULL) | - | - | - |
|---|---|---|---|---|---|---|---|
| ASCII code | (0x41) | (0x42) | (0x43) | (0x00) | - | - | - |

(Continued to next page)

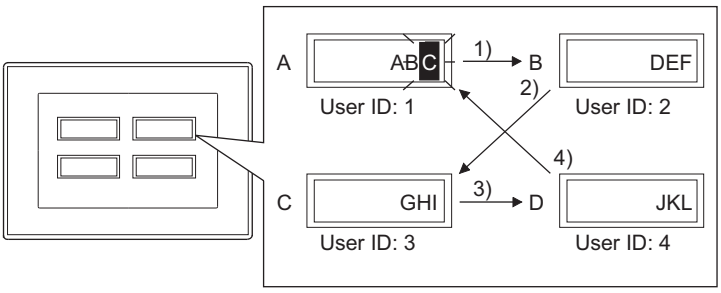
Basic | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Kana Kanji Conversion<br>(Only when the ASCII input function) | Check this item to use the Kanji conversion function.<br>When [Asterisk Display] is checked, this item is not available. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operation Log Target<br>(Only when the ASCII input function) | Check this item to set the object being set as the target for logging the operation.<br>(☞ Section 15.2 Operation Log Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1 to *4, refer to the following.

*1 Relation between User ID and Move Destination ID

The destination ID No. indicates the user ID No. of ASCII input function to which the cursor will move.
Example: Cursor movement to the destination ID

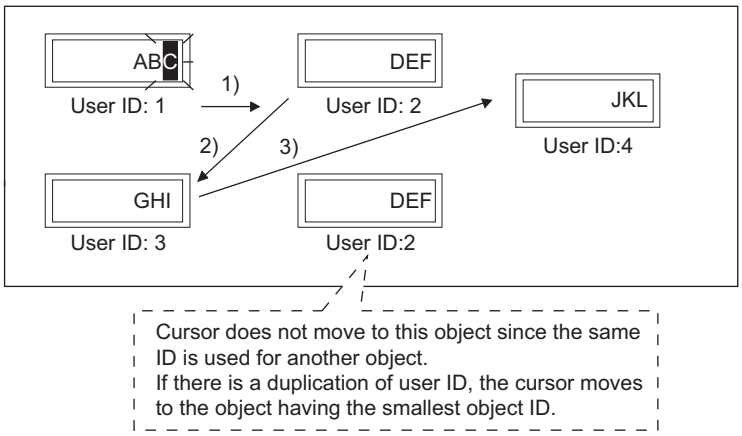



| ASCII input | User ID | Move Destination ID |
|---|---|---|
| A | 1 | 2 |
| B | 2 | 3 |
| C | 3 | 4 |
| D | 4 | 1 |

*2 Moving the cursor in the ascending/descending order of user IDs

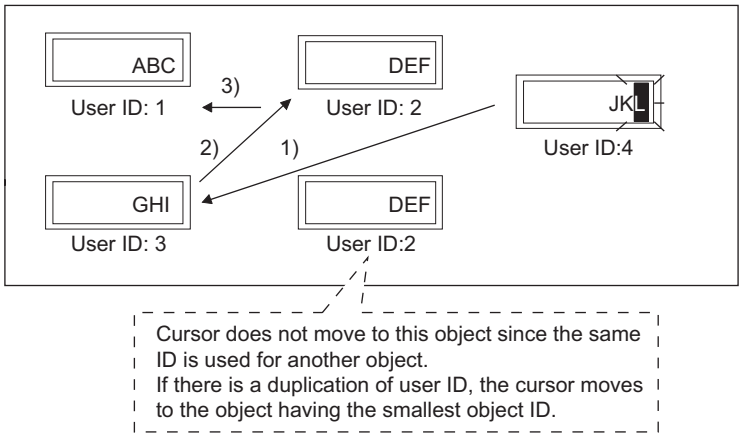
It is possible to move the cursor in the ascending/descending order of user IDs by using the key code switches indicated below.

(a) Cursor movement in the ascending order of user IDs (key code: 0092H)




The cursor moves in the order of (1) → (2) → (3).
After movement (3), the cursor does not move any more since there are no further user IDs.

(b) Cursor movement in the descending order of user IDs (key code: 0093H)

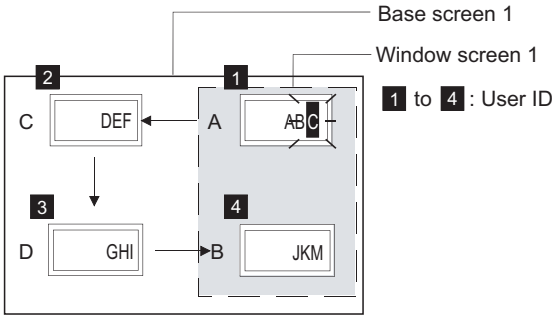



The cursor moves in the order of (1) → (2) → (3).
After movement (3), the cursor does not move any more since there are no further user IDs.

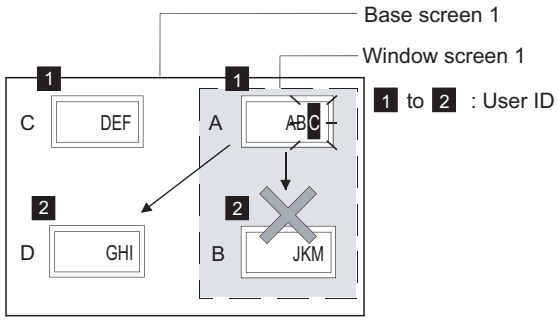
*3 Setting the user ID

To control the cursor with the user ID, set different user ID numbers for each object.
Also, when using the Set Overlay Screen function or superimpose windows, design the screen carefully so that the user ID of the displayed object will be unique.

- When different user IDs are set for each object
  The cursor moves properly with the user ID when the Set Overlay Screen function or superimposed window is used.




- When the same user ID are set for all
  If more than one object having the same user ID are identified on the screen (including the Set Overlay Screen or Superimpose Window), the cursor may not move correctly with the user ID.




*4 Precautions for asterisk display

The following shows precautions for using the asterisk display.

(1) Values that are displayed as asterisks
String characters and control characters (other than "NULL") are displayed as asterisks.
Because control characters are displayed as asterisks, the number of displayed asterisks differs according to the input character string terminal settings.
Example: When the number of digits is set to six for [Digits] and the left alignment is set for [Display Alignment] in the ascii input

| Input character string terminal settings | Without asterisk display | With asterisk display |
|---|---|---|
| Space (0x20) | ABCD␣␣ | ****** |
| NULL (0x00) | ABCD | **** |

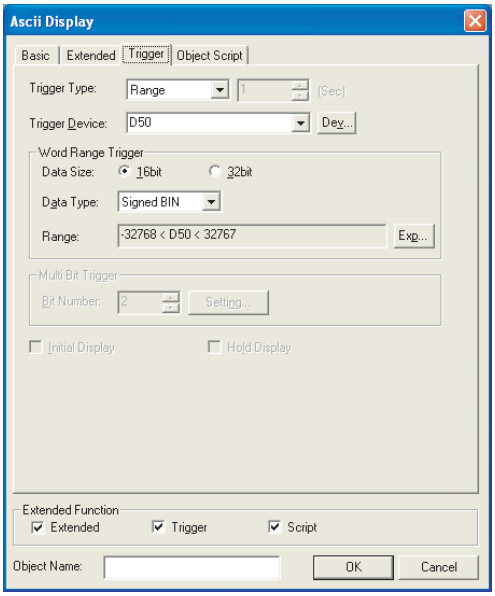
(2) Stored character strings for operation log function
Even when the asterisk display is set, actual character strings (not asterisks) are stored for the operation log.

(3) Kana-kanji conversion function
When the asterisk display is used, the Kana-kanji conversion function is not available.
Even when GS450.b4 turns on, the function is not available.
(☞ Section 2.9.1 GOT internal devices)

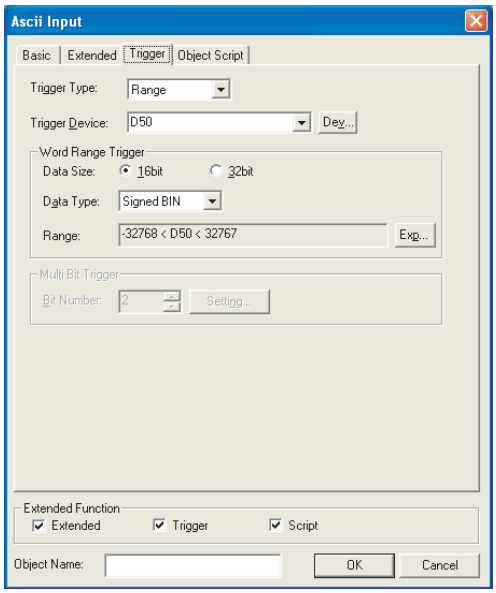
## 3 Trigger tab

This tab is used to set the display and operation condition of object.
Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding [Extended Function] at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




(When setting ASCII display function)




(When setting ASCII input function)

Basic | Extended | **Trigger** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type*2 | | • When setting ASCII display function:<br>Select the trigger by which data is displayed in ASCII.<br>When [Sampling] is selected, sampling (1 to 3600 s) is set with 1 s as unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger<br>• When setting ASCII input function<br>Select the trigger to operate ASCII input<br>(For GT10, [Range] and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used as trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Exp.] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger.<br>After setting, click on the [Setting] button and set the bit devices and their conditions. | |
| Initial Display<br>(Only when setting ASCII display function) | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied. | |

(Continued to next page)

Basic | Extended | **Trigger** | Object Script

| Items | Description | Model |
|---|---|---|
| Hold Display<br>(Only when setting ASCII display function) | When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied.<br>If not checked, the object will be deleted when the conditions become invalid. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 The cursor display when trigger is enabled during ASCII input

Refer to the following for the cursor display when trigger is enabled during ASCII input.

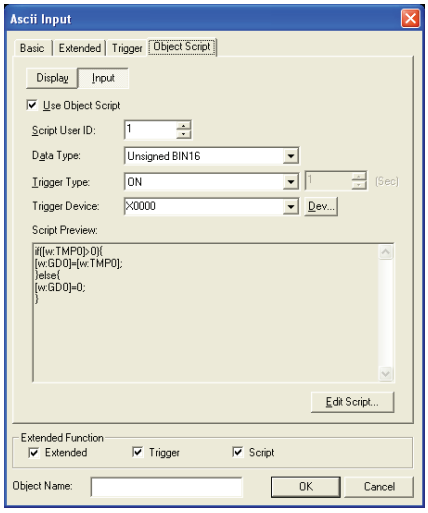
☞ Section 4.4 Auxiliary Settings

## 4 Object Script tab

(1) Input object script (ASCII input only)

For details of settings made on the input object script tab, refer to the following.

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts



(a) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ :Execution is possible for the object property.

× :Execution is not possible for the object property.

- :Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Color | text_color | ○ | 3) |
| | Blink | blink | ○ | 5) |
| | Reverse | highlight | ○ | 5) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Alignment | arrange | ○ | 3) |
| | Security Display | security | ○ | 4) |
| | Security Input | input_security | ○ | 2) |
| | Blink Scope | blink | ○ | 5) |

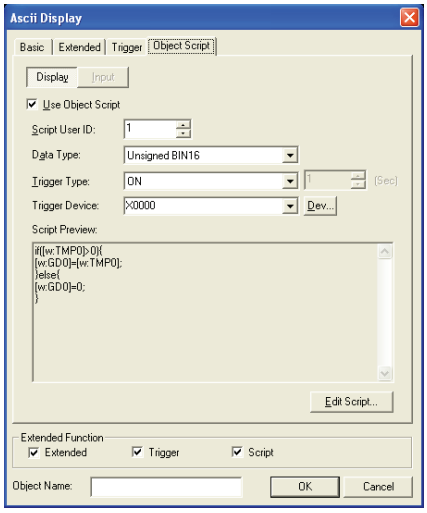
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

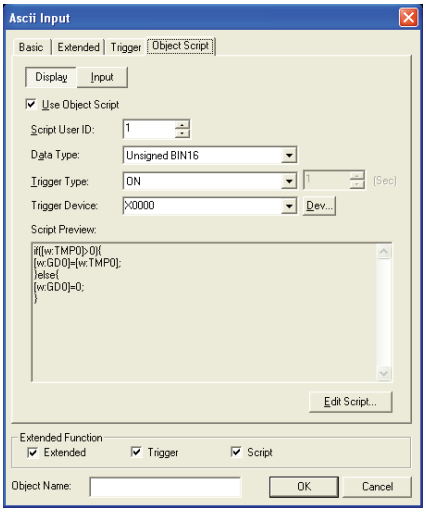
(2) Display object script (ASCII display / ASCII input)

For details of settings made on the display object script tab, refer to the following

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts




(When setting ASCII display)




(When setting ASCII input)

(a) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.
× : Execution is not possible for the object property.
- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Color | text_color | ○ | 3) |
| | Blink | blink | ○ | 5) |
| | Reverse | highlight | ○ | 5) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Alignment | arrange | ○ | 3) |
| | Security *2,<br>Security Display *3 | security | ○ | 4) |
| | Blink Scope | blink | ○ | 5) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

*2 [Security] is for the ASCII display.
*3 [Security Display] is for the ASCII input.

## 7.3.5 Precautions

This section provides the precautions when using ASCII display/ASCII input function.

### 1 Precautions for drawing

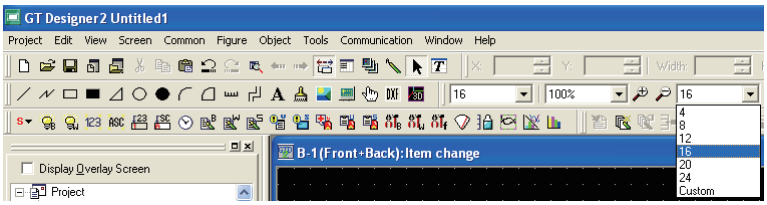
(1) Maximum Number of ASCII display/input objects that can be set in one screen
1000

(2) ASCII input arrange position (Other than GT16, GT1595-X, GT SoftGOT1000, and GT1020)
Depending on the arranged position of the ASCII input, there are cases the input operation is not possible.
Before downloading the created project data to a GOT, check the arranged position of the numerical input by the data check function of GT Designer2.
For using the data check function, refer to the following manual.

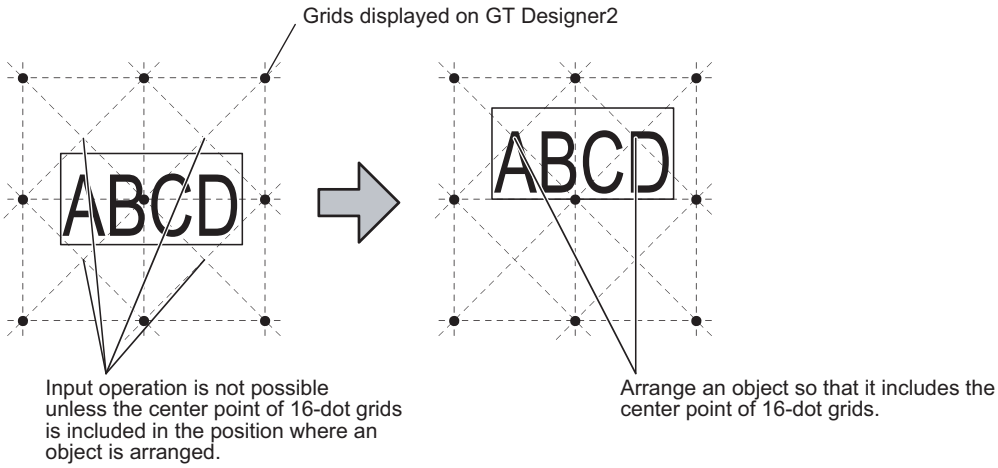
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 12.3 Checking Project Data for Errors)

If an error is detected in data check, take the corrective action as below.

1. Change the grid of 16 dots pitch in the scneen of GT Designer2.




2. Change the arrangement of object so that a center point of 16-dot grid is included in the object.



## 2 Precautions for OS

To use the Kana-kanji conversion function, install the option OS on the GOT.
The following shows the option OS required according to the type of the Kana-kanji conversion function to be used.

| Function | Option OS |
|---|---|
| Kana-kanji conversion (enhanced version) | KANA KANJI(JPN)(Enhanced Version) |
| Kana-kanji conversion | KANA KANJI(JPN) |

## 3 Precautions for hardware

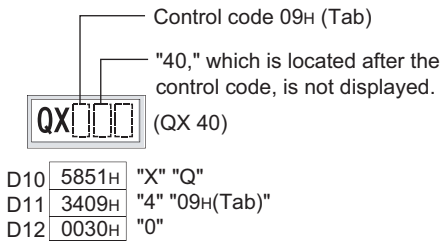
To use the Kana-kanji conversion function with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.

☞ 2.13 Precautions for Option Function Board

## 4 Precautions for use

(1) When unavailable ASCII codes are stored
If any of the following text codes are included in data for the ASCII display, characters after the text code are not displayed.
- 0000H to 001FH
- 0080H
- 00F0H to 00FFH

Example: If a control code 09H (tab) is included

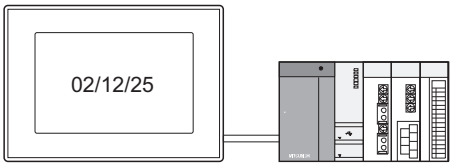



(2) System message and ASCII input/display
The character code to be displayed differs depending on the language that is set for the system message (utility or [Language] in [GOT setup]).
- Other than English: Treated as the Shift JIS code.
- English: Treated as the ASCII code (Characters such as Kana are not displayed.)

# 7.4 Clock Display

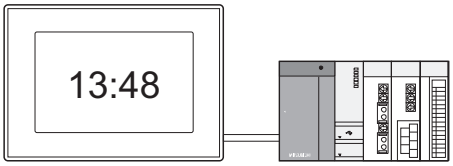
## 1 Date display

Date display is the function for displaying a date on GOT.
Year display is the function for displaying the last 2 digits of the year.




## 2 Time display

Time display is the function for displaying the time on GOT.
The hour is displayed in 24-hour display format.




**Point**

Displayed clock data

The GOT's clock data are used as the clock time.
For details of the GOT clock, refer to the following.

☞ Section 2.5 Clock Function

## 7.4.1 Relevant settings

For clock display, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

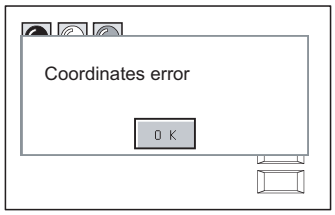
(1) Functions relevant to clock display and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

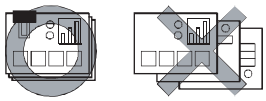
(1) Functions relevant to clock display and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

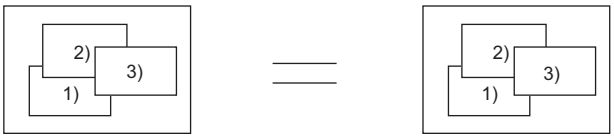


Setting items
• [Carry out check for overlapping objects within GOT]

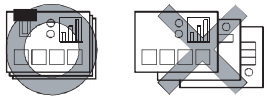
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 7.4.2 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Clock Display]
   - Select [Object] → [Date Display]/[Time Display] from the menu.
2. Click on the position where Clock Display to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged Clock Display to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

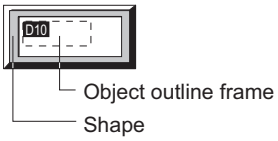
GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

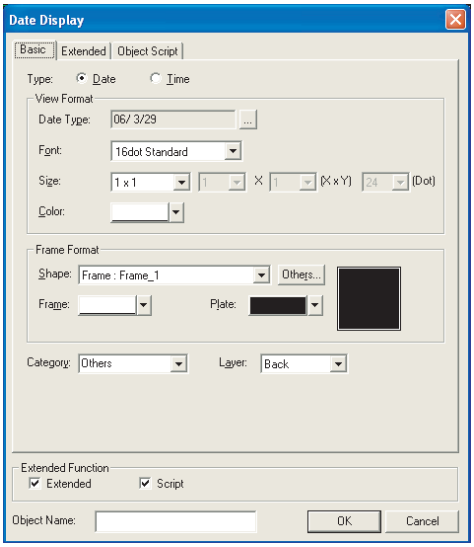
Section 5.3.3 Object size change



## 7.4.3 Setting items

### 1 Basic tab

Set the view items (date/time) and the displaying format.

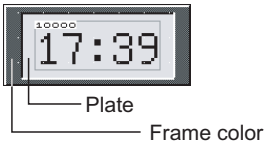



Basic | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Type | | Select whether to display the date or time<br>Date: Displays the Year/Month/Day<br>Time: Displays the time | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| View Format | Date Type *1 | Set the date format by clicking ... . | |
| | Time Type *2 | Set the time format by clicking ... . | |
| | Font | Select a numeric font.<br>• 6 × 8dot font • 12 dot high quality Gothic • 12 dot standard font<br>• 16 dot high quality Gothic • 16 dot standard font • TrueType Gothic<br>• TrueType Numerical • Stroke<br>For details of fonts and text size, refer to the following.<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| | Size | | |
| | Color | Select the color for displaying the date and time. | |

(Continued to next page)

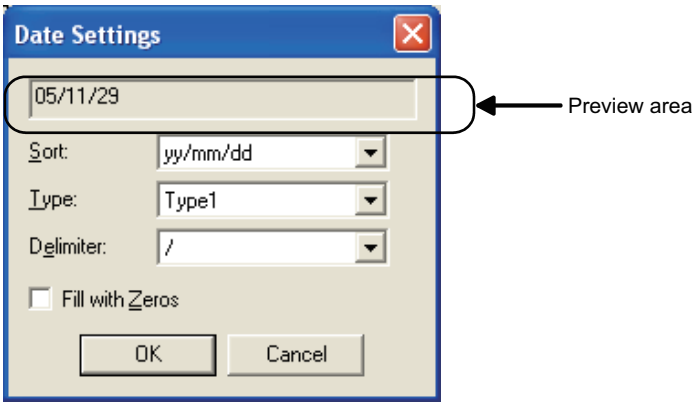
Basic | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Frame Format | Shape*3 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Frame<br>Plate | Select the frame color/plate color.<br>  | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1 to *3, refer to the following.

## *1 Date settings

Set the display type of date.
The display type of set date can be confirmed in the preview area.



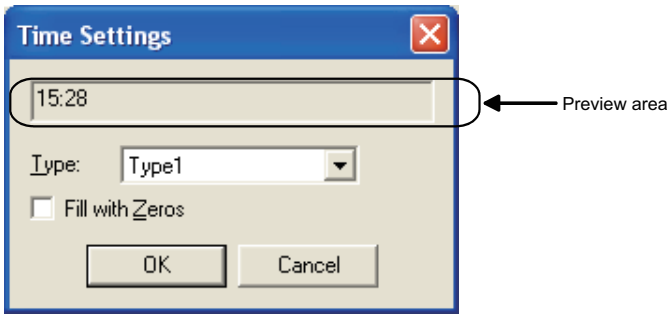

| Item | Description |
|---|---|
| 04/ 1/24 (Preview area) | The result of date setting is displayed as a display example. |
| Sort | Select a sorting order of year, month and day.<br>• yy/mm/dd: 04/01/24<br>• dd/mm/yy: 24/01/04<br>• mm/dd/yy: 01/24/04 |

(Continued to next page)

| Item | Description |
|---|---|
| Type | Select the display type of date.<br>Select a display type depending on whether to use upper/lower case for English/alphabetic expression, presence/absence of day display and a type of Japanese expression.<br>The display example below shows the case that "Sort" is set to "yy/mm/dd."<br>• Type 1 :04/01/24 • Type 11 :2004/JAN/24<br>• Type 2 :Jan/24 • Type 12 :2004/Jan/24 (FRI)<br>• Type 3 :JAN/24 • Type 13 :2004/JAN/24 (FRI)<br>• Type 4 :Jan/24 (FRI) • Type 14 :2004/1/24<br>• Type 5 :JAN/24 (FRI) • Type 1 (Japanese) :1月24日<br>• Type 6 :04/Jan/24 • Type 2 (Japanese) :1月24日(金)<br>• Type 7 :04/JAN/24 • Type 3 (Japanese) :04年1月24日<br>• Type 8 :04/Jan/24 (FRI) • Type 4 (Japanese) :04年1月24日(金)<br>• Type 9 :04/JAN/24 (FRI) • Type 5 (Japanese) :2004年1月24日<br>• Type 10 :2004/jan/24 • Type 6 (Japanese) :2004年1月24日(金)<br>"Type 1 (Japanese)" to "Type 6 (Japanese)" can be selected only when setting "Sort" to "yy/mm/dd."<br>If [True Type Gothic] is selected for [Font], only selection of [Type 1] is possible. |
| Delimiter | Select a delimiter for year, month, and day.<br>• "/" : 04/01/24 • "." : 04.01.24<br>• "-" : 04-01-24 |
| Fill with Zeros | Check when displaying "0" before month and day.<br>Example: Jan. 24, 2004<br>When checked : 04/01/24<br>When not checked : 04/1/24 |

## *2 Time settings

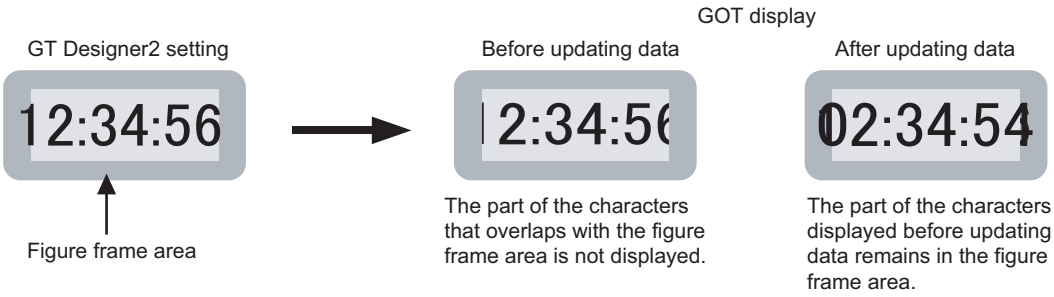
Set the display type of time.
The display type of set time can be confirmed in the preview area.




| Item | Description |
|---|---|
| 04/ 1/24 (Preview area) | The result of time setting is displayed as a display example. |
| Type | Select the display type of time.<br>Select a display type depending on whether to use English expression, presence/absence of am and pm and a type of Japanese expression.<br>• Type 1 :16:28 • Type 1 (Japanese) :16時28分<br>• Type 2 :16:28:28 • Type 2 (Japanese) :16時28分28秒<br>• Type 3 :04:28 (PM) • Type 3 (Japanese) :午後4時28分<br>If [True Type Gothic] is selected for [Font], only selection of [Type 1] is possible. |
| Fill with Zeros | Check when displaying "0" before hour, minute, and second.<br>Example: 5 past 6<br>When checked : 06:05<br>When not checked : 6:5 |

*3 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

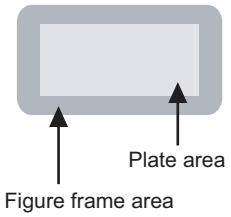
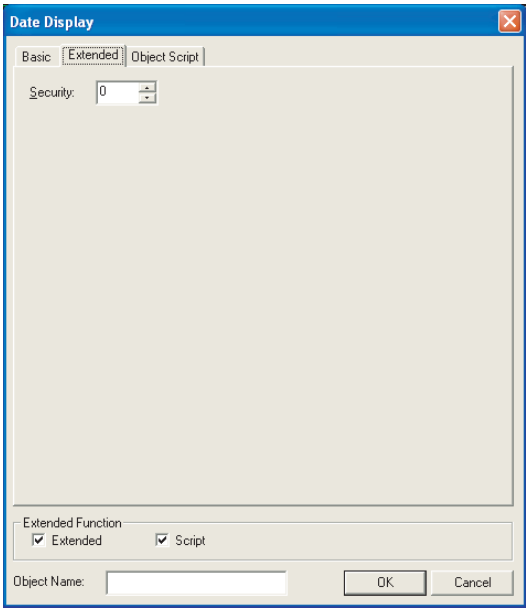



Figure frame area : Area excluding the plate area in the specified figure frame

Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Extended tab

Make the security setting on this tab.
This tab will be displayed by checking the corresponding "Extended Function" at the bottom of this dialog box.



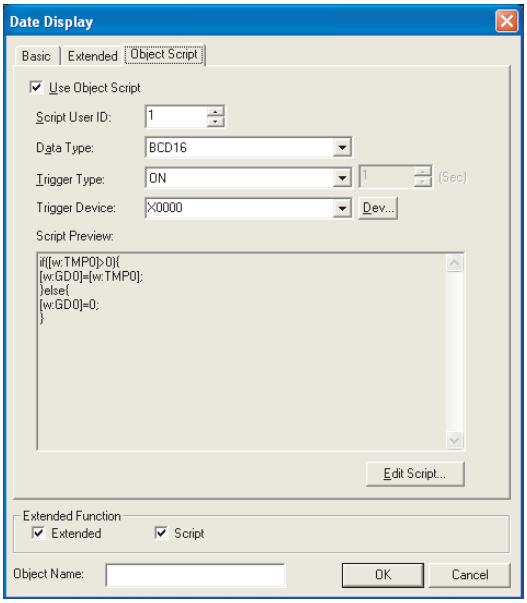

Basic | **Extended** | Object Script

| Item | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT 1000 GT11 GT10 |

## 3 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Size (X) | text_width | ○ | 4) |
| | Size (Y) | text_height | ○ | 4) |
| | Color | text_color | ○ | 3) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 5) |
| 2 Option | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 7.4.4 Precautions

This section provides the precautions for using the clock display function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
Two objects can be set for the clock display.

### 2 Precautions for use

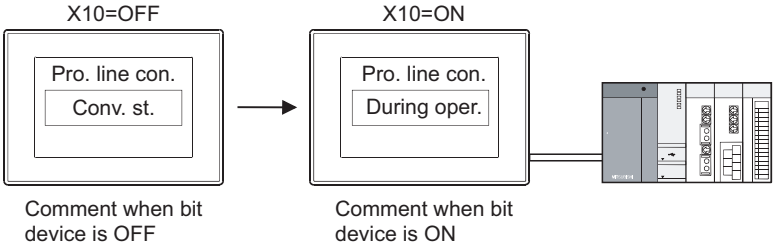
(1) GOT clock
For precautions and restrictions on the GOT clock used for clock display, refer to the following.

☞ Section 2.5 Clock Function

# 7.5 Comment Display

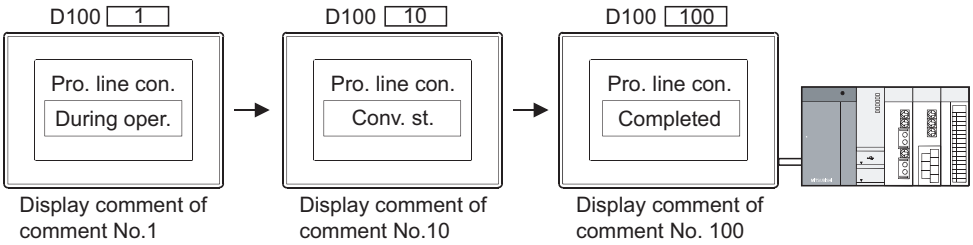
## 1 Bit comment (☞ Section 7.5.3 Setting items of bit comment)

It is the function to display the comment corresponding to the ON/OFF status of bit device.



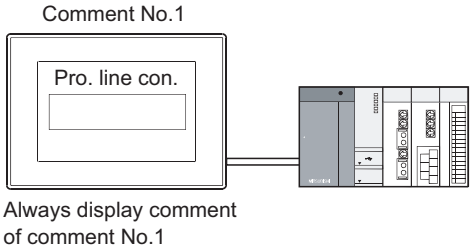

## 2 Word comment (☞ Section 7.5.4 Setting items of word comment)

It is the function to display the comment corresponding to word device value.




## 3 Simple comment (☞ Section 7.5.5 Setting items of simple comment)

The function enables the GOT to display the comment without setting the device.



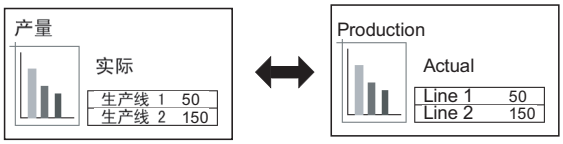

**Remark** Comment displayed by comment display

The comment to be displayed by comment display needs to be registered in advance.

☞ Section 4.1 Comment Registration

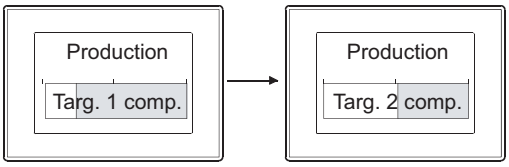
Switch all the comment on the screen
(Comment display (bit/word))

☞ Comment tab setting




Used with level function
(Comment display (bit/word))

☞ Set in Extended tab



## 7.5.1 Relevant settings

For comment display, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

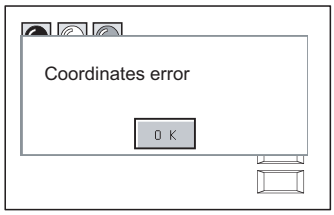
(1) Functions relevant to comment display and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

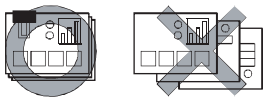
(1) Functions relevant to comment display and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

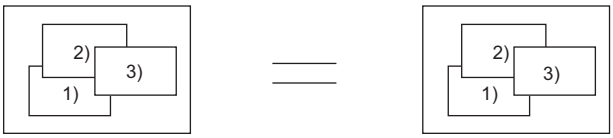


Setting items
• [Carry out check for overlapping objects within GOT]

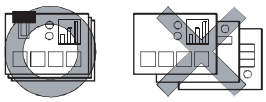
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 7.5.2 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Bit Comment]/ [Word Comment]
   - Select [Object] → [Comment Display] → [Bit Comment] / [Word Comment] from the menu.
2. Click on the position where Comment Display to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged Comment Display to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

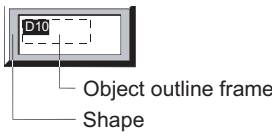
Easy setting method

The direct setting of object can be made on property sheet.

GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

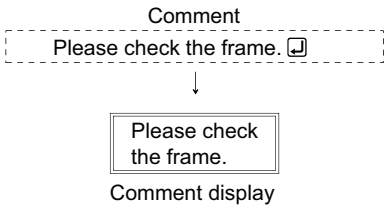
**Remark**

(1) Method of adjusting objects in which shape is set
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

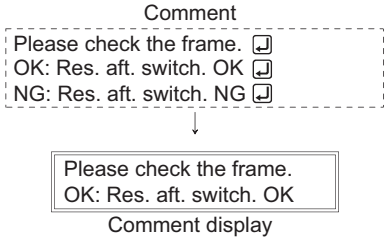



Section 5.3.3 Object size change

(2) When displaying the comment out of the display range
When the comment is out of the horizontal display range, display the remaining part in the next line.



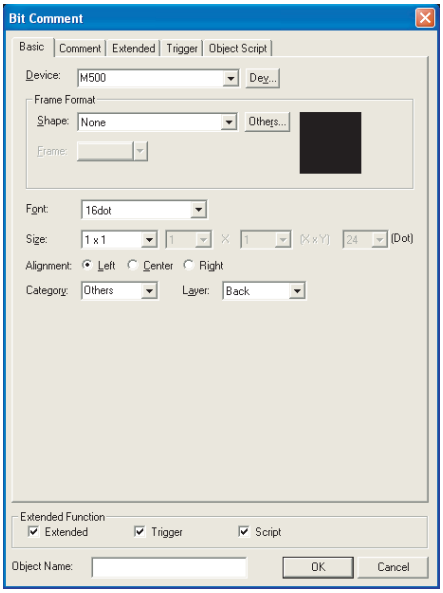

When the comment is out of the vertical display range, only the part within the display range is displayed.



## 7.5.3 Setting items of bit comment

### 1 Basic tab

Set the view format of device to be monitored and comment (Shape/Size/Alignment).




(Example:Setting screen for GT15)

Basic | Comment | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape*2 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the shape color. | |
| Font *1 | | Select a font.<br>• 12-dot • 16-dot • Stroke<br>(For GT1020, [12dot] cannot be selected.)<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| Size | | | |
| Alignment | | Select the position to display the text value.<br>Left: AAAA BB CCCC Center: AAAA BB CCCC Right: AAAA BB CCCC | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | Comment | Extended | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT-1000 GT11 GT10 |

For details of *1, *2 refer to the following.

*1 Fonts used for comment display

This section explains the fonts used for comment display and the setting method.

(1) In the case of direct comment
The following fonts can be used to display direct comments.
- 12-dot Standard
- 16-dot Standard
- 12-dot HQ Mincho
- 16-dot HQ Mincho
- 12-dot HQ Gothic
- 16-dot HQ Gothic

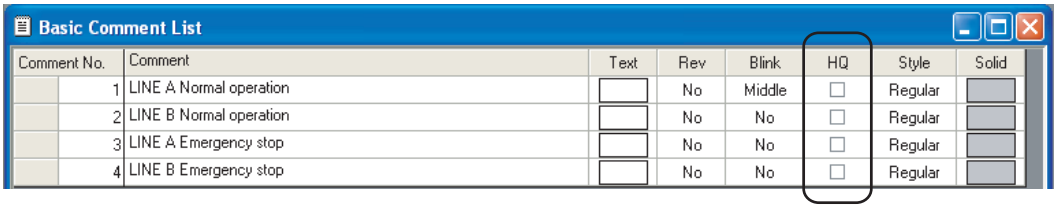
(a) HQ font setting method

1. Select "Font" (12dot or 16dot) in the Basic tab.
2. Set a multiple of 2 (2x2, 4x4, 6x6 or 8x8) in "Size" on the Basic tab.
3. Place a check mark at "Use High Quality Font ("Direct Comment Only")" on the Comment tab.
4. Select "High Quality Font" (Gothic or Mincho) on the Comment tab.

(2) In the case of basic comment
The following fonts can be used to display basic comments.
- 16-dot Standard
- 16-dot HQ Mincho

(a) HQ font setting method

1. In the Basic Comment List dialog box, check the boxes in the "HQ" column so that the checked items will be displayed in the Comment Display.




Basic Comment List dialog box

2. Set a multiple of 2 (2x2, 4x4, 6x6 or 8x8) in "Size" on the Basic tab.

(3) In the case of comment group

The following fonts can be used to display comment groups.

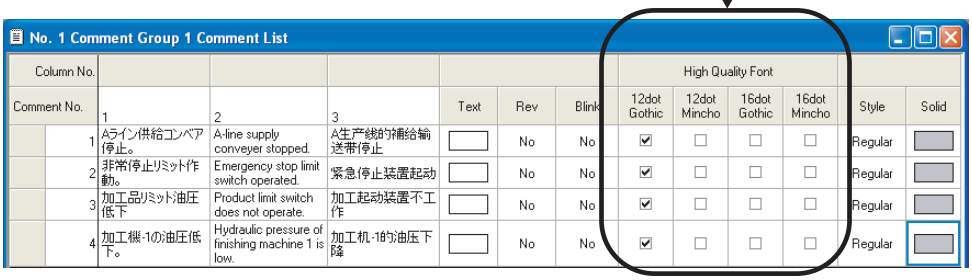
- 12-dot Standard
- 16-dot Standard
- 12-dot HQ Mincho
- 16-dot HQ Mincho
- 12-dot HQ Gothic
- 16-dot HQ Gothic
- Stroke

(a) HQ font setting method

1. Select "Font" (12dot or 16dot) on the Basic tab.
2. Set a multiple of 2 (2x2, 4x4, 6x6 or 8x8) in "Size" on the Basic tab.
3. Select "High Quality Font (Gothic or Mincho)" on the Comment tab.
4. In the Comment List dialog box, check any boxes for "HQ font (12-dot Gothic, 12-dot Mincho, 16-dot Gothic or 16-dot Mincho)" for each comment displayed in the Comment Display.

   Note that this setting must be consistent with the font type selected in steps 1 and 3.
   Example: If "12dot" is selected in "Font" of the Basic tab and "Gothic" is selected in "High Quality Font" of the Comment tab

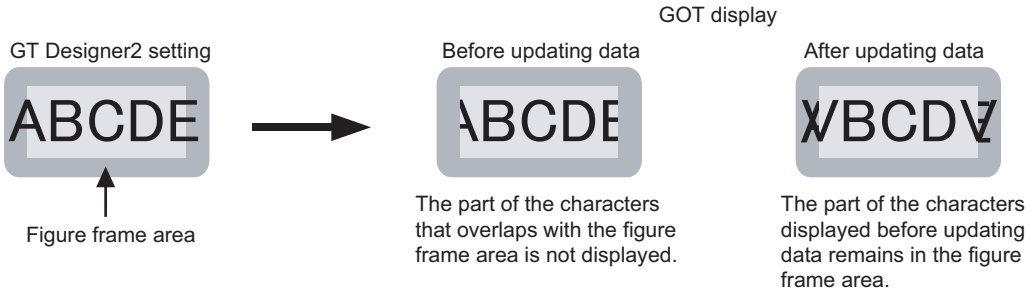
Check the "12-dot Gothic" boxes according to the comment setting.




Comment List dialog box

*2 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

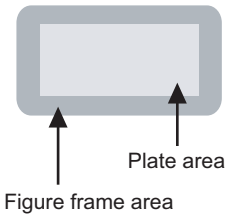
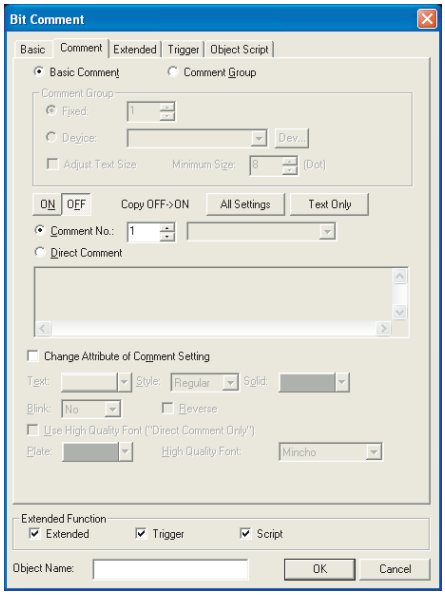



Figure frame area : Area excluding the plate area in the specified figure frame

Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Comment tab

Set the device ON/OFF comment and display attributes.



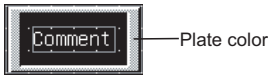

(Example:Setting screen for GT15)

Basic | **Comment** | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Basic Comment/<br>Comment Group | | Select the type of the comment (Basic Comment or Comment Group) used to display the comment.<br>When selecting Comment Group, select a comment group number.<br>When a Comment Group No. that does not exist is set, comment is not displayed.<br>Fixed :Enter the comment group number directly.<br>Device :Select this to display the same comment group number as the device value to be set. After selecting it, set the device.<br>(☞ Section 5.1 Device Setting)<br>Adjust Text Size*1 : Check this item to perform Adjust Text Size. When not checking this item, character string automatically starts a new line where appropriate for adjustment. After the check, set the minimum character size for Adjust Text Size. (8 to 128 1dots, default: 8) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| ON | | Click on this item to set the text to be displayed when the device turns ON. | |
| OFF | | Click on this item to set the text to be displayed when the device turns OFF. | |
| Copy OFF → ON/<br>Copy ON → OFF | | Used to copy the set attribute.<br>Copy OFF → ON : The "OFF" attribute is copied to the "ON" attribute.<br>Copy ON → OFF : The "ON" attribute is copied to the "OFF" attribute.<br>The contents to be copied differ depending on the selected item. | |
| | All Settings | Copies all comment attributes. | |
| | Text Only | • When selecting [Direct Comment] for both ON and OFF :Copies only the direct comment.<br>• When selecting [Comment No.] for both ON and OFF :Copies only the comment No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Direct Comment Only | • When selecting [Direct Comment] for both ON and OFF :Copies only the direct comment.<br>• When selecting [Comment No.] for both ON and OFF :Not applicable. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

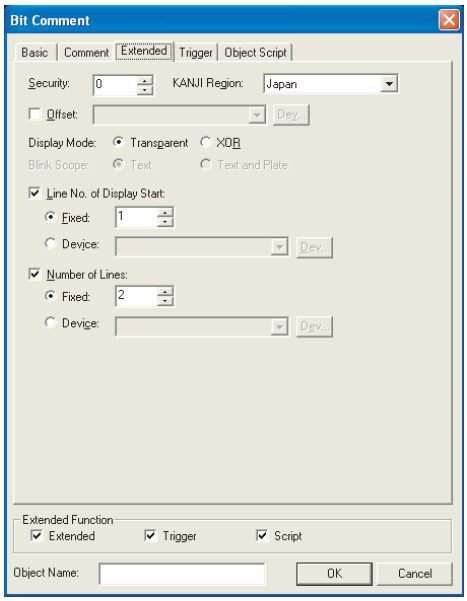
Basic | **Comment** | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Comment No. | | Select this item to display the registered comment data.<br>After selecting , set the comment No. to be displayed .<br>Comment will not be displayed if its No. (Basic Comment or Comment Group) is set to 0.<br>(Set the comment No. to 0 during OFF if the comment is to be displayed only ON.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Direct Comment | | Select this item to directly input the displayed comment.<br>After selecting, enter comment.<br>Up to 512 characters can be entered.<br>(Two characters corresponding to the line feed are occupied.) | |
| Change Attribute of Comment Setting | | Check this item to display the display attribute which is different from the one set in comment registration. | |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br> <br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Blink | Select the blinking pattern of the Comment.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| | Reverse | Check this item to reverse comment.<br>This item can be set at "Regular" in "Style" category. | |
| | Use High Quality Font ("Direct Comment Only") | Check this item when displaying the comment using the high quality font setting.<br>(Only setting at both of the height and width to 2, 4, 6 or 8 times in "Size" on the Basic tab)<br>Only the display comment which is input directly by keyboard can use this font. | |
| | Plate | Select the background color for the inside display area of the comment.<br>  <br> | |
| | High Quality Font | Select a high quality font (Gothic/Mincho). | |

For details of *1, refer to Section 5.3.3 Object size change.

## 3 Extended tab

Set the method of displaying security, offset and comment (Display Mode/Line No. of Display Start, etc.)
This tab is displayed when Extended is checked at the bottom of the dialog box.



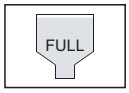
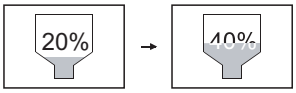
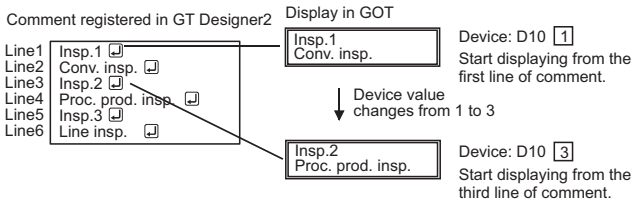
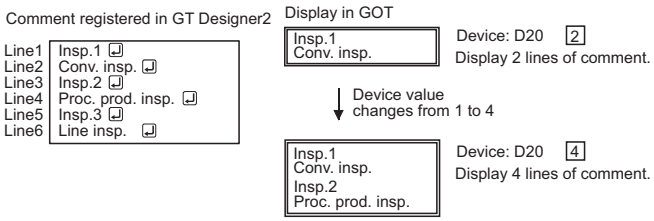

(Example:Setting screen for GT15)

Basic | Comment | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When using the security function, set the security level (1 to 15).<br>When not using the function, set it to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Display the characters in Japanese kanji.<br>China(GB)-Mincho : Display the characters in China(GB) kanji.<br>China(Big5)-Gothic : Display the characters in China(Big5) kanji.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data length is fixed to 16 bits. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

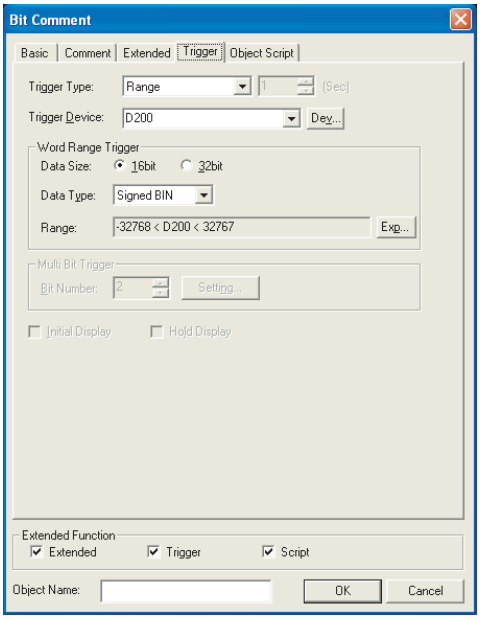
Basic | Comment | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Display Mode | Select a desired display mode when displaying a comment with the level display overlapped.<br>Transparent : Displays the comment on the level display.<br>  <br><br>XOR : In order to identify the level and comment, the comment is displayed in color different from the level color based on XOR.<br>  <br><br>(☞ Appendix3 Synthesized Colors Available for XOR) | |
| Blink Scope | Select a blink area.<br>Text : Makes the comment blink.<br>Text and Plate : Makes the comment and plate blink. | |
| Line No. of Display Start | Check this item to change the line No. of display start when multiple comments have been set.<br>Fixed : Select this item to set the line No. of display start by direct input.<br>Device : Select this item to display comments of which line No. is the same as the device value to be set. After selecting, set the device. (☞ Section 5.1 Device Setting)<br>  <br><br>The created comment will not be displayed if the line No. out of the range is specified for it.<br>In this case, confirm the line No. specified for that comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Number of Lines | Check this item to change the line No. of display start when multiple comments have been set.<br>Fixed :Select this item to set the line No. of display start by direct input.<br>Device :Select this item to display comments from which line No. is the same as the device value to be set.<br>After selecting, set the device. (☞ Section 5.1 Device Setting)<br>  <br><br>If the fixed/device value is "0", the comment will not be displayed. | |

## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting



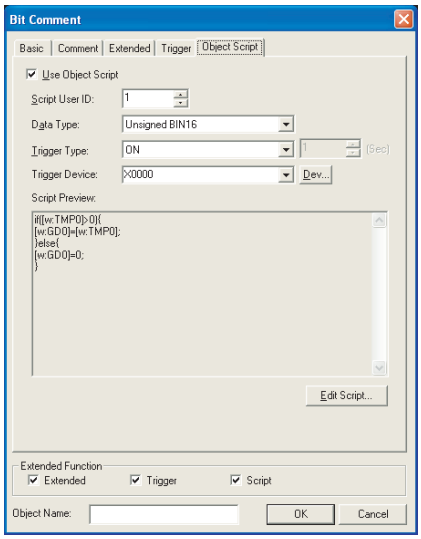

Basic | Extended | **Trigger** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |
| Hold Display | | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>If not checked, the object will be deleted when the trigger is not satisfied. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 5 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts



(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

-: Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame | frame_color | ○ | × |
| | Size (X) | text_width | ○ | 3) |
| | Size (Y) | text_height | ○ | 3) |
| | Alignment | arrange | ○ | 3) |
| 2 Comment | Text | text_color | ○ | 3) |
| | Blink | blink | ○ | 3) |
| | Reverse | highlight | ○ | 3) |
| | Plate | plate_color | ○ | 5) |
| 3 Option | Security | Security | ○ | 4) |
| | Display Mode | draw_mode | ○ | 3) |
| | Blink Scope | blink | ○ | 3) |

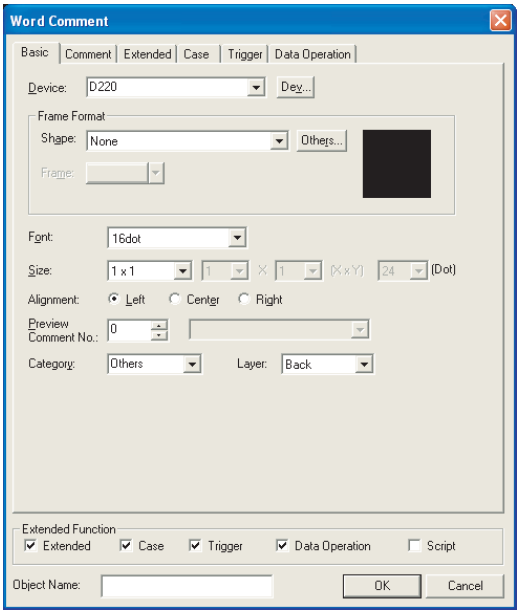
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 7.5.4 Setting items of word comment

### 1 Basic tab

Set a view format of the device to be monitored and comment (Shape/Size/Alignment).




Basic | Comment | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape*2 | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the shape color. | |
| Font *1 | | Select a font.<br>(For GT1020, [12dot] cannot be selected.)<br>• 12-dot • 16-dot • Stroke<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| Size | | | |
| Alignment | | Select the position to display the text string.<br>Left : AAAA BB CCCC Center : AAAA BB CCCC Right : AAAA BB CCCC | |
| Preview Comment No. | | Displays the comment with specified comment No. on the GT Designer2 screen. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | Comment | Extended | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

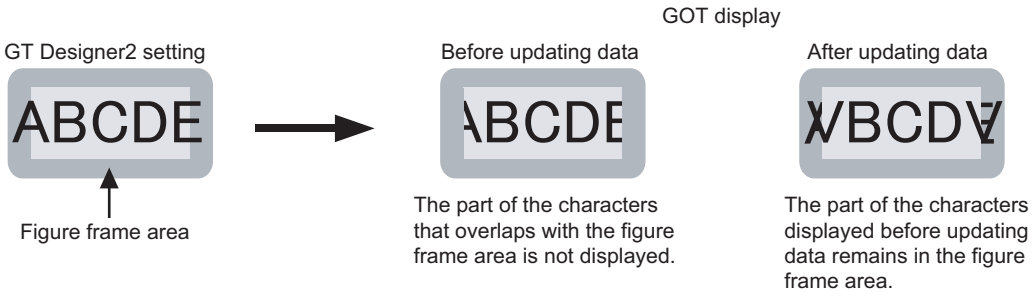
For details of *1, refer to the following.

Section 7.5.3 1 Basic tab *1 (2) to (3)

For details of *2, refer to the following.

*2 Precautions for setting figure frame

When the characters to be displayed overlap with the figure frame area, the GOT cannot correctly display the overlapped characters when updating data.
Set the characters and the figure frame area so that the characters and the area do not overlap each other.




**Remark** Figure frame area

The figure frame area is the area excluding the plate area in the specified figure frame.
For details of the figure frame area and the plate area, refer to the following.

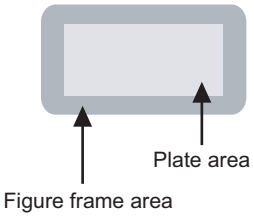
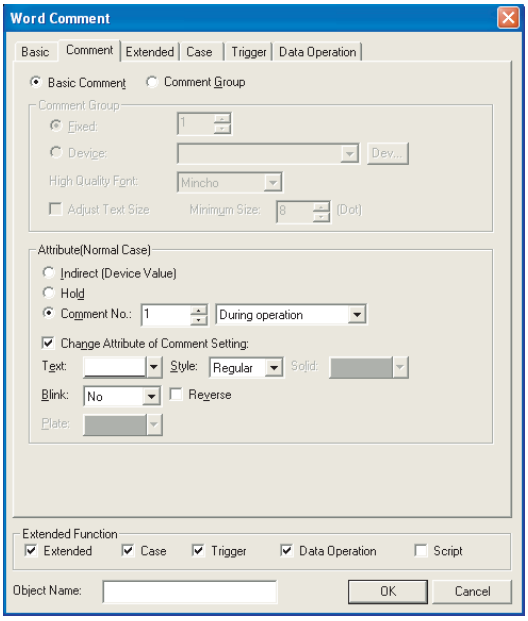



Figure frame area : Area excluding the plate area in the specified figure frame

Plate area : Area that displays the color set for [Plate] in the figure frame

## 2 Comment tab

Set the comment to be displayed and its attributes.




(Example: Setting screen for GT15)

Basic | **Comment** | Extended | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Basic Comment/<br>Comment Group | Select the type of the comment (Basic Comment or Comment Group) used to display the comment.<br>When selecting Comment Group, select a comment group number.<br>When a Comment Group No. that does not exist is set, comment is not displayed.<br>Fixed :Enter the comment group number directly.<br>Device :Select this to display the same comment group number as the device value to be set. After selecting it, set the device.<br>(☞ Section 5.1 Device Setting)<br>HQ Font :Select a font (Gothic or Mincho) for the comment that is registered to comment group and set with HQ font.<br>Adjust Text Size*1 : Check this item to perform Adjust Text Size.<br>When not checking this item, character string automatically starts a new line where appropriate for adjustment.<br>After the check, set the minimum character size for Adjust Text Size.<br>(8 to 128 1dots, default: 8) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Attribute (Normal case) | Sets display attribute of comment.<br>To change the display attribute in this setting, it is necessary to set state in the case tab.<br>Indirect (Device Value) :Check this item to display comment No. corresponding to monitor device value.<br>Hold :Check this item to hold currently displayed comment.<br>Comment No. :Check this item to display the registered comment data.<br>After this, set the displayed comment No. The comment is not displayed when comment No. is set as 0. | |

(Continued to next page)

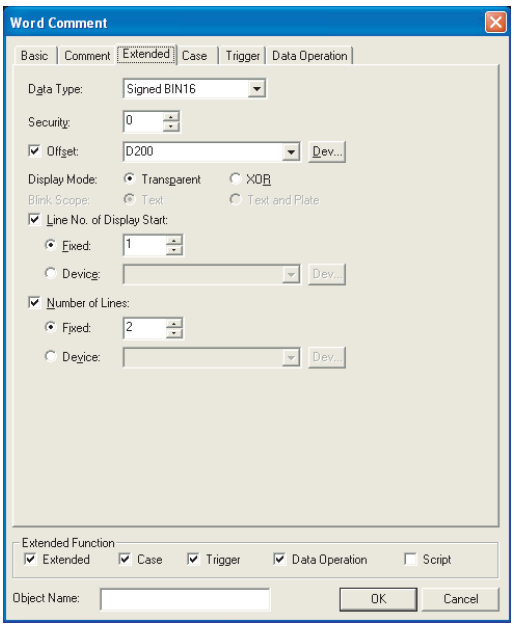
Basic | **Comment** | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Change Attribute of Comment Setting | | Check this item to display with the display attribute different from the one set during comment registration. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Blink | Select the blinking pattern of the Comment.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| | Reverse | Check this item to reverse comment.<br>This item can be set at "Regular" in "Style" category. | |
| | Plate | Select the background color for the inside display area of the comment.<br>Comment — Plate color | |

For details of *1, refer to Section 5.3.3 Object size change.

## 3 Extended tab

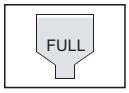
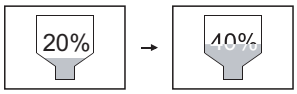
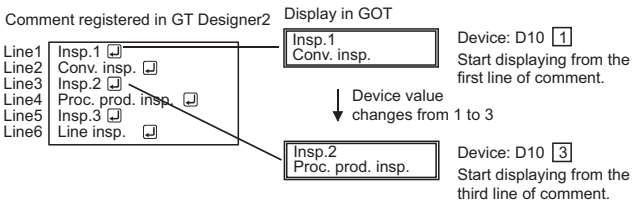
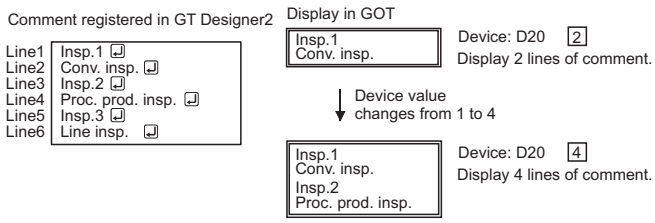
Set the data type, security, and offset of monitor device and the method of displaying comment (Display Mode/Line No. of Display Start).
This tab will be displayed when Extended is checked at the bottom of this dialog box.




Basic | Comment | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Word (BIN16) :Comments will be displayed based on the word device (BIN16) binary value.<br>Word (BCD16) :Comments will be displayed based on the word device (BCD16) binary coded decimal value. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Security | When using the security function, set the security level (1 to 15).<br>When not using the function, set it to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data lenght is fixed to 16 bits. | |

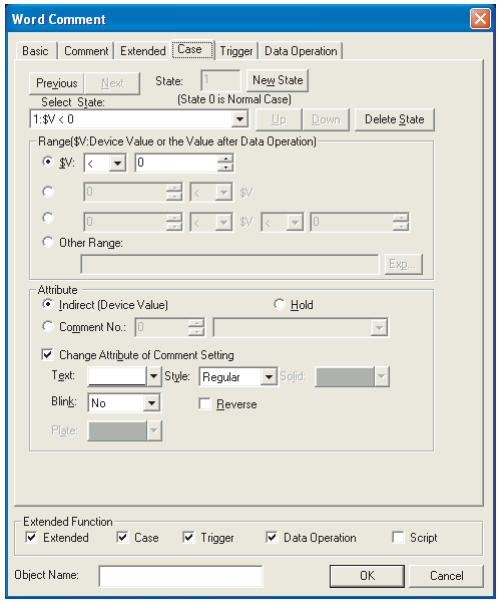
(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Display Mode | Select a desired display mode when displaying a comment with the level display overlapped.<br>Transparent : Displays the comment on the level display.<br>  <br><br>XOR : Displays the comment in XOR-combined color.<br>  <br><br>Level can be distinguished from the comment.<br>This is effective when GOT is Monochrome type/EL type.<br>(☞ Appendix 3 Synthesized Colors Available for XOR) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Blink Scope | Select a blink area.<br>Text :Makes the comment blink.<br>Text and Plate :Makes the comment and plate blink. | |
| Line No. of Display Start | Check this item to change the line No. of display start when multiple comments have been set.<br>Fixed :Select this item to set the line No. of display start by direct input.<br>Device :Select this item to display comments of which line No. is the same as the device value to be set.<br>After selecting, set the device. (☞ Section 5.1 Device Setting)<br>  <br><br>The created comment will not be displayed if the line No. out of the range is specified for it.<br>In this case, confirm the line No. specified for that comment. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Number of Lines | Check this item to change the line No. of display start when multiple comments have been set.<br>Fixed :Select this item to set the line No. of display start by direct input.<br>Device :Select this item to display comments of which line No. is the same as the device value to be set.<br>After selecting, set the device. (☞ Section 5.1 Device Setting)<br>  <br><br>If the fixed/device value is "0", the comment will not be displayed. | |

## 4 Case tab

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Comment | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State *1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Attribute | Select the method of displaying comment.<br>Indirect [Device value] :Display the comment corresponding to the word device value.<br>Hold :After it is selected, the comment display is held even if state condition is satisfied.<br>Comment No. :Specify the comment to be displayed.<br>After this, set the parts/screen to be displayed.<br>Parts/screen will not be displayed when parts No. is set to 0. | |

(Continued to next page)

Basic | Comment | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Change Attribute of Comment Setting | | Check this item to display the display attribute which is different from the one set in comment registration. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Text | Select a color for the text to be displayed. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | Blink | Select the blinking pattern of the Comment.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| | Reverse | Check this item to reverse comment.<br>This item can be set at "Regular" in "Style" category. | |
| | Plate | Select the plate color when the condition to display state is satisfied.<br>Comment — Plate color | |

For details of *1, refer to the following.

*1 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

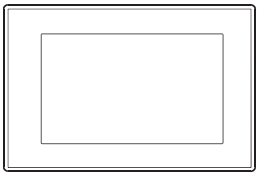
Example: Monitored device : 100
Data view format : Signed decimal, 16bit length
Registered comment : Comment No.1..... The production volume is 1 set
Comment No.100 ..... Over 100 sets
Comment No.101 ..... Production completed

| Operation priority for repeated setting | State No. | Display range | Display comment |
|---|---|---|---|
| High | 1 | $V<=0 | No.0 |
| ↓ | 2 | 1<=$V<=100 | Indirect |
| | 3 | 101<=$V<=199 | Hold |
| Low | Ordinary (State0) | --- | No.101 |

* $V represents the monitor device value.

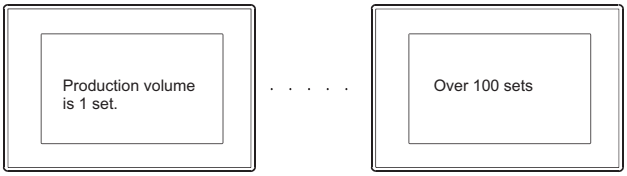
State1

Comment is not displayed when the monitor device value is 0 or lower. ($V ≦ 0)



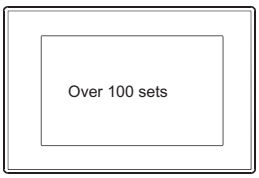
State2

Comment corresponding to the monitor device value is displayed when monitor device value is between 1 and 100 (1 ≦ $V ≦ 100).




State3

Comment display will not be switched when monitor device value is between 101 and 199 (101 ≦ $V ≦ 199).



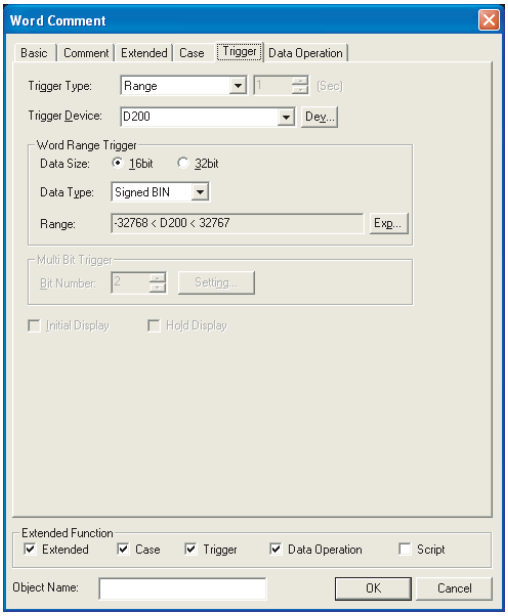

Normal case (State 0)

Comment No.101 is displayed when condition is other than state 1 to 3.

## 5 Trigger tab

The setting items of trigger tab are the same with bit comment.
Refer to the following for the details of setting items.

☞ Section 7.5.3 Setting items of bit comment

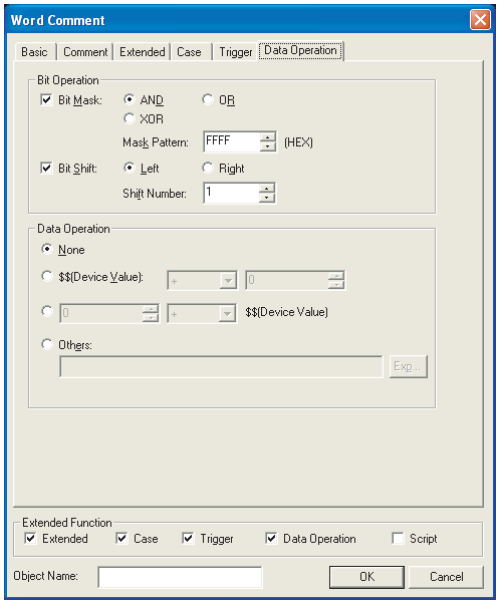


## 6 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



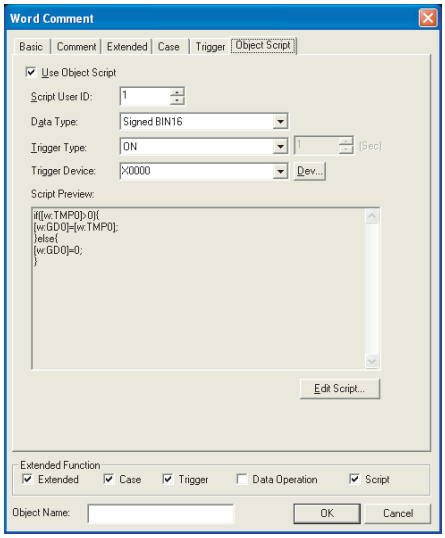

Basic | Comment | Extended | Case | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 7 Object Script tab

For details of settings made on the Object Script tab, refer to the following.

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts



(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

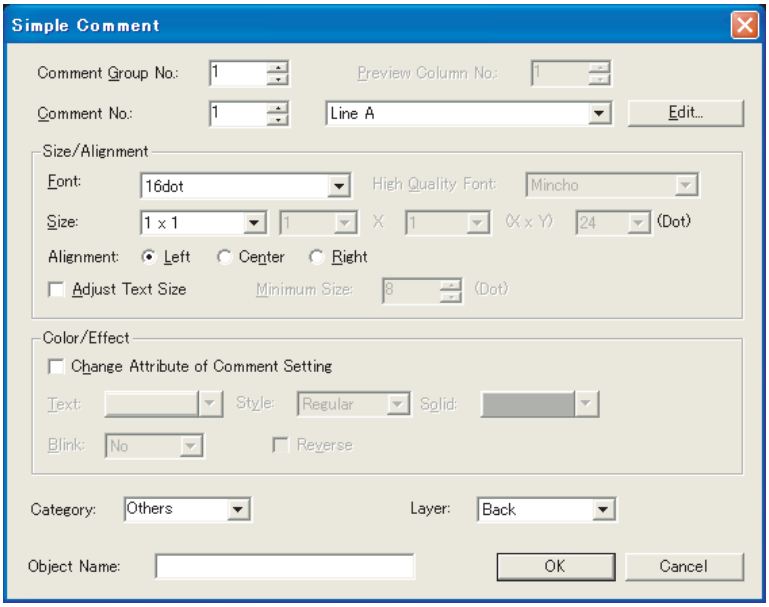
| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame | frame_color | ○ | × |
| | Size (X) | text_width | ○ | 3) |
| | Size (Y) | text_height | ○ | 3) |
| | Alignment | arrange | ○ | 3) |
| 2 Comment | Text | text_color | ○ | 3) |
| | Blink | blink | ○ | 3) |
| | Reverse | highlight | ○ | 3) |
| | Plate | plate_color | ○ | 5) |
| 3 Option | Security | Security | ○ | 4) |
| | Display Mode | draw_mode | ○ | 3) |
| | Blink Scope | blink | ○ | 3) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

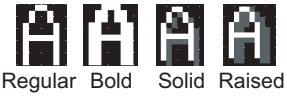
## 7.5.5 Setting items of simple comment

Set a view format of the comment No. and comment to be displayed.




| Item | | Description | Model |
|---|---|---|---|
| Comment Group No. | | Set the comment group No. to be used.<br>When a nonexistent comment group No. is set, no comment is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Preview Column No. | | Display the comment of specified column No. on GT Designer2. | |
| Comment No. | | Set the comment No. to be displayed.<br>When the comment No. is set to [0], no comment is displayed. | |
| Size/Alignment | | Set the font and displayed position of the comment. | |
| | Font | Select the font to be displayed.<br>• 12-dot • 16-dot*1 • Stroke*2<br>The high quality font is displayed when [12dot] or [16dot] is selected for the font and the text size is in multiples of 2.<br>The following high quality fonts can be selected.<br>• Mincho • Gothic<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.3 Specifications of Applicable Characters) | |
| | High Quality Font | | |
| | Size | | |
| | Alignment | Select the position to display the text string.<br>Left : AAAA BB CCCC Center : AAAA BB CCCC Right : AAAA BB CCCC | |
| | Adjust Text Size | Adjusts the character size automatically along with the object area size.<br>The character size after adjustment is the maximm size for fitting the text string in the object area. | |
| | Minimum Size | Specify a minimum character size for the automatic text size adjustment. | |

(Continued to next page)

| Item | | Description | Model | Item |
|---|---|---|---|---|
| Color/Effect | | Set the display attributes of the comment. | | |
| | Change Attribute of Comment Setting | Select this item when displaying texts with the display attributes different from the ones set at comment registration. | | |
| | Text | Select a color for the text to be displayed. | | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>  <br>Regular Bold Solid Raised | | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the Comment.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | | |
| | Reverse | Check this item to reverse comment.<br>This item can be set at "Regular" in "Style" category. | | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace))) | | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 These object functions cannot be set for GT1020.
*2 These object functions cannot be set for GT10.

## 7.5.6 Precautions

This section provides the precautions for using comment display function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
256 objects can be set for the comment display.

(2) Comment to be used
For comment display, the comment that is created by Basic Comment or Comment Group is used.

(3) Object arrangement precautions
When switching language, some comments registered may not be displayed within the comment display range.
Examine the number of characters of the comments registered before setting the object display range.
The comment display range can be confirmed on the GT Designer2 screen by changing the Preview Column No.

☞ Section 3.4.2 Setting items

(4) Precautions for using comment group
When a value (column No.) that does not exist is set at the language switching device, a comment is not displayed.

(5) Precautions for using cascading level display
When overlapping comment and level on the same layer or overlapping them using Front/Back Layer, there are the following restrictions, respectively.

(a) Restrictions on overlapping comment and level on the same layer
- Only one comment can be cascaded to one level function.
  At arranging two or more comments, the second or later comments are not displayed.
- Comment cannot be set to blink (flickering display).
- Comment cannot be reversed.
- A comment extended off the display frame of a level is not XOR-combined.
- At setting a frame figure to a comment, the level is displayed only inside the frame figure.
- The display is updated only at changing the monitor device value of the level display.
  The display is not updated at changing the monitor device value set to the comment display.
- When the [Style] of the comment is set to [Text], [Solid] or [Raised], the comment character may be dropped or the character color may not be displayed normally.

(b) Restrictions on overlapping comment and level by separating them for front of back layer
- Comment display will not be XOR-displayed.

(6) Precautions for comment registration
Make sure to follow the basic cautions before registering comments for comment display.

☞ Section 4.1 Comment Registration

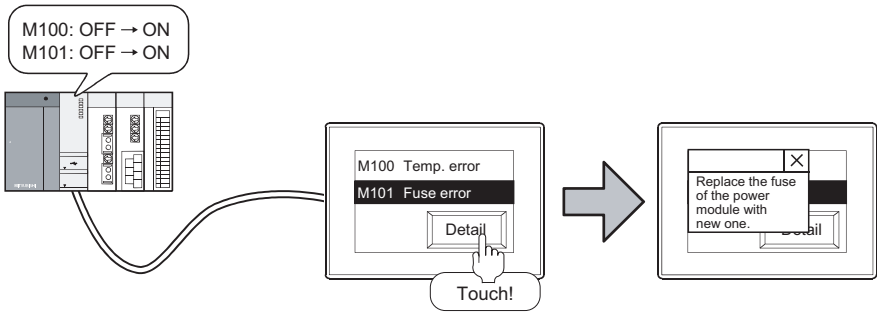
# 8. ALARM

This chapter explains the functions that display following alarms.

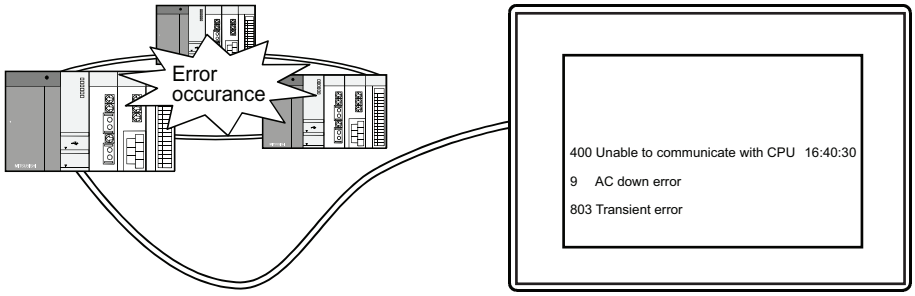
## 1 Alarm types

The GOT can detect the alarms as shown below.

(1) Displaying the user-created comment as an alarm message
It is possible to display the user-created comments as alarm messages when an alarm occurs.
This feature is specific to user alarm and advanced user alarm, and suitable for the case in which the alarm, which is created by the user, needs to be displayed.




(2) Displaying an error of GOT, controller or network as an alarm
It is possible to display the error code and error message when an error occurs on the GOT, controller or network.
This feature is specific to system alarm and advanced system alarm, and suitable for the case in which the GOT, controller or network error needs to be displayed.



## 2 Functions for displaying alarms

The functions for displaying alarms are as shown below.

- Alarm function ☞ Section 8.1.1 Alarm function
- Advanced alarm function ☞ Section 8.1.2 Advanced alarm function

**Point**

(1) When using GT11 or GT10
The advanced alarm function is applicable to GT16, GT15, and GT SoftGOT1000 only.
When using GT11 or GT10, use the alarm function.

☞ Section 8.1.1 Alarm function

(2) Comment displayed when an alarm occurs
To display the user-created comments as alarm messages, it is necessary to register the comments in advance.
(☞ Section 4.1 Comment Registration)

| Function | | Display comment |
|---|---|---|
| Alarm function | Alarm list display | Register to the basic comment. |
| | Alarm history display | Register to the basic comment or the comment group |
| | Scrolling alarm display | Register to the comment group. |
| Advanced alarm function | Advanced user alarm<br>Advanced system alarm<br>Advanced alarm popup display | |

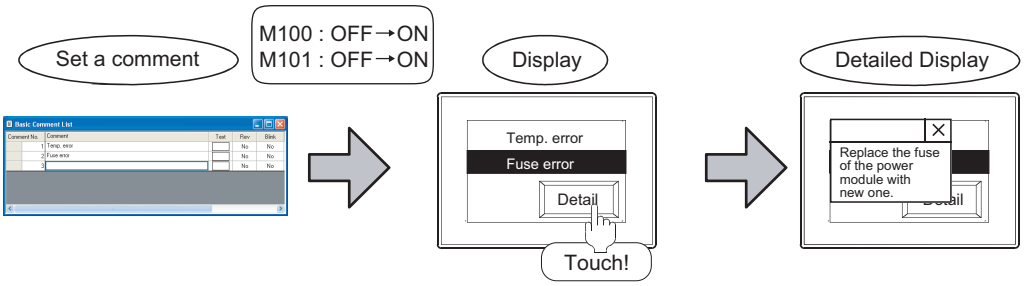
# 8.1 Preparatory Operations for Using Alarms

This section explains the alarm-relevant functions, and differences between the alarm function and advanced alarm function.
Select the alarm by referring this section.

Description with Specific to Advanced Alarm Function applies to the advanced alarm function only.
Description without icon is common to the alarm function and advanced alarm function.

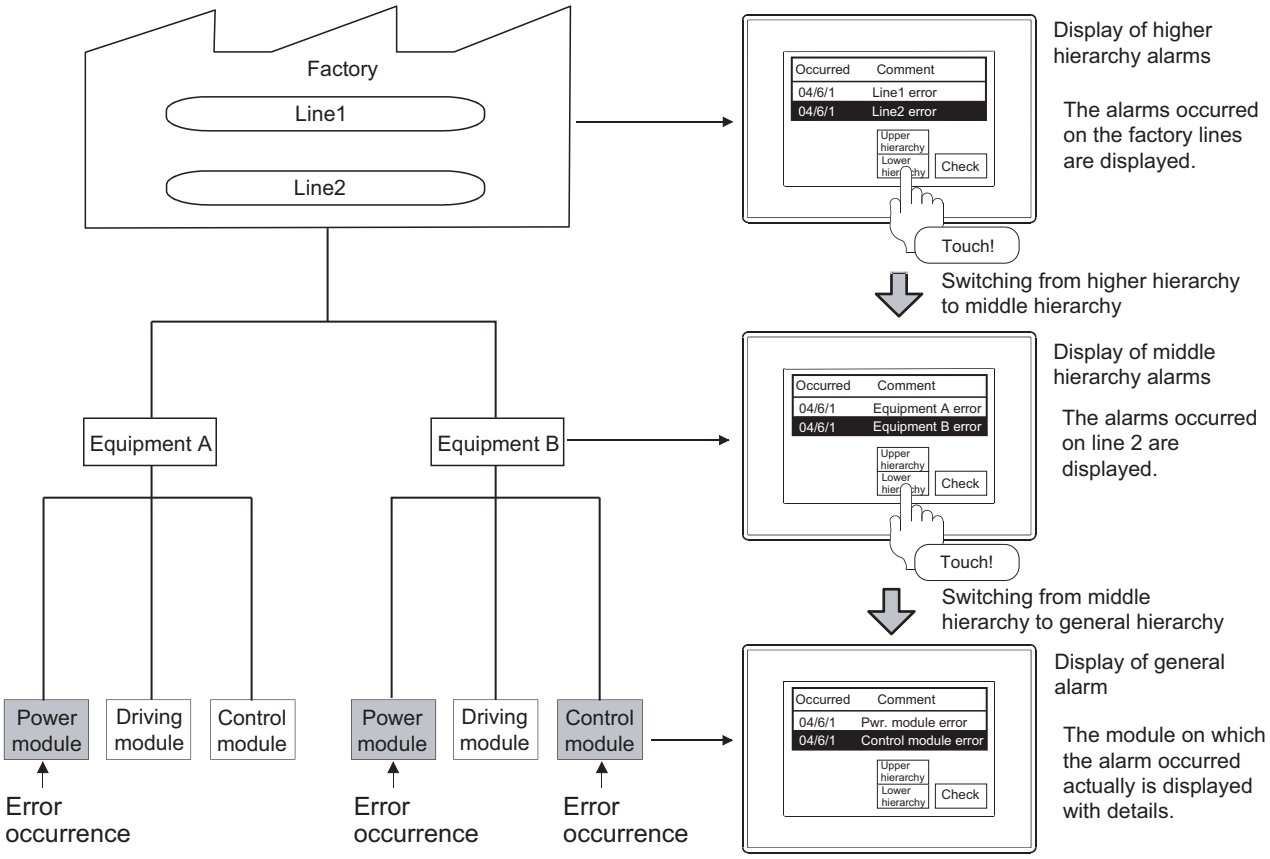
## 1 Displaying preset comments at alarm occurrence

Any comment can be registered for displaying as a user alarm.




Specific to Advanced Alarm Function

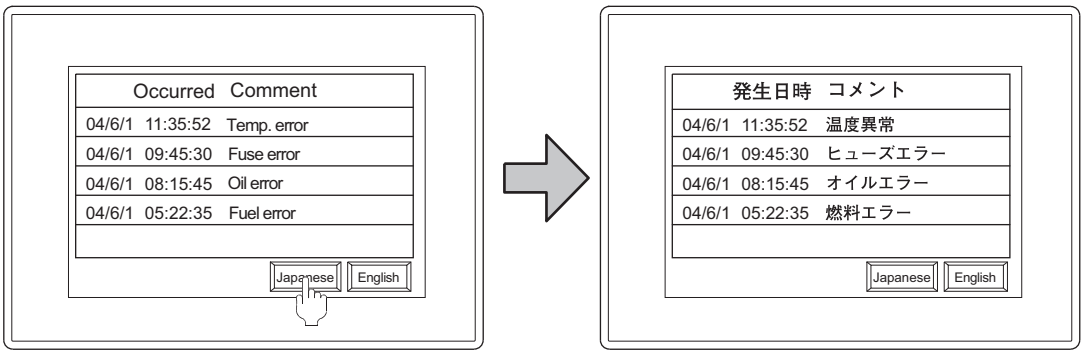
(a) Displaying the comments for each hierarchy
The different comments for an alarm can be displayed on the three hierarchies (higher, middle and general), respectively.
(☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm))
Therefore, it is possible to provide the alarm information ranging from simple to details, in the hierarchical order.


Factory
Line1
Line2
Equipment A
Equipment B
Power module
Driving module
Control module
Power module
Driving module
Control module
Error occurrence
Error occurrence
Error occurrence
Occurred Comment
04/6/1 Line1 error
04/6/1 Line2 error
Upper hierarchy
Lower hierarchy
Check
Touch!
Display of higher hierarchy alarms
The alarms occurred on the factory lines are displayed.
Switching from higher hierarchy to middle hierarchy
Occurred Comment
04/6/1 Equipment A error
04/6/1 Equipment B error
Upper hierarchy
Lower hierarchy
Check
Touch!
Display of middle hierarchy alarms
The alarms occurred on line 2 are displayed.
Switching from middle hierarchy to general hierarchy
Occurred Comment
04/6/1 Pwr. module error
04/6/1 Control module error
Upper hierarchy
Lower hierarchy
Check
Display of general alarm
The module on which the alarm occurred actually is displayed with details.

(b) Switching the language

The language of the comment displayed on the screen can be switched by the device value (language switching device).

Comment group settings




Language Switching Device : 1 2

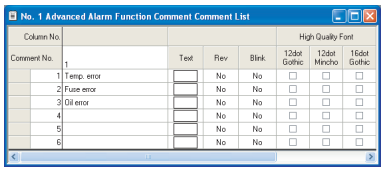
**Remark** Language switching

For details, refer to the following.

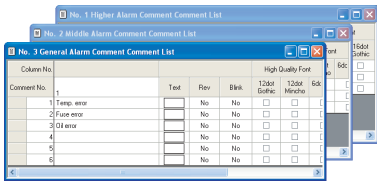
☞ Section 3.4 Setting Language Switching Device

**Point**

(1) Settings for displaying the comment on each of three hierarchies.
The comments can be set in a single group or divided into multiple groups.
Therefore, it is possible to classify the comments for each hierarchy by dividing into multiple comment groups.




Setting the comments of higher, middle and general hierarchies in a comment group.




Setting and dividing the comments of higher, middle and general hierarchies into multiple comment groups.

(2) Hierarchy displayed when an alarm occurs
The hierarchy of the comments displayed at alarm occurrence (initial display hierarchy) can be set.
Use the touch switch or similar to move to upper or lower hierarchy.

## 2 Confirming device status by displaying information on alarms occurred (occurrence time and so on)

The alarm function can display the following items (6 types).

- Occurred time
- Comment
- Restored time
- Checked time
- Cumulative time*1
- Occurred frequency

The above information help to confirm the device statuses and determine the cause of productivity deterioration.

Specific to Advanced Alarm Function

In addition, the following items are available.

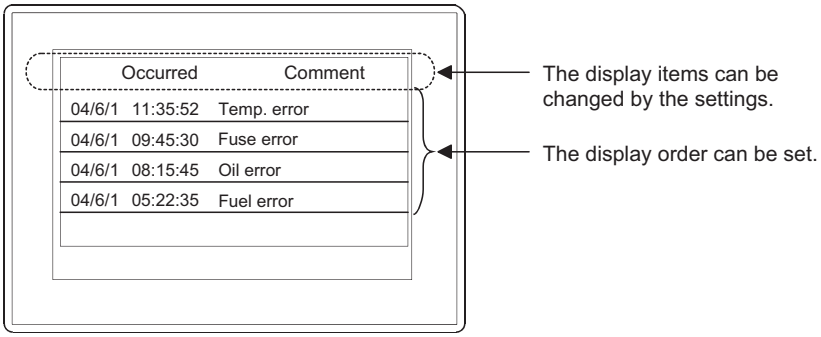
- Alarm status
- Down time*2
- Level*3
- Group*3

*1 Total alarm occurrence time (including the time when alarms occurred in the past)
*2 Time from alarm occurrence to restoration
*3 It is possible to decide the contents to be displayed for each level and group by setting these items for each alarm.

## 3 Alarm display operation

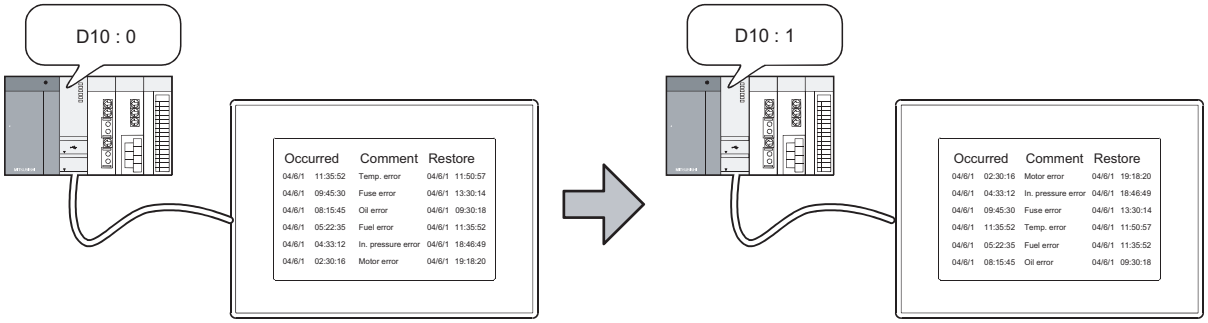
(1) Change the display order by the settings
Set the order in which alarms will be displayed.
It can be set in the ascending/descending order of the occurrence date or device.

When displaying alarms in the descending order of occurrence date




Specific to Advanced Alarm Function

The display content can be sorted in the ascending/descending order of occurred date, comment, alarm status, restored date, checked date, occurred frequency, cumulative time, down time, level, or group.




Displaying alarms in the order of occurrence date

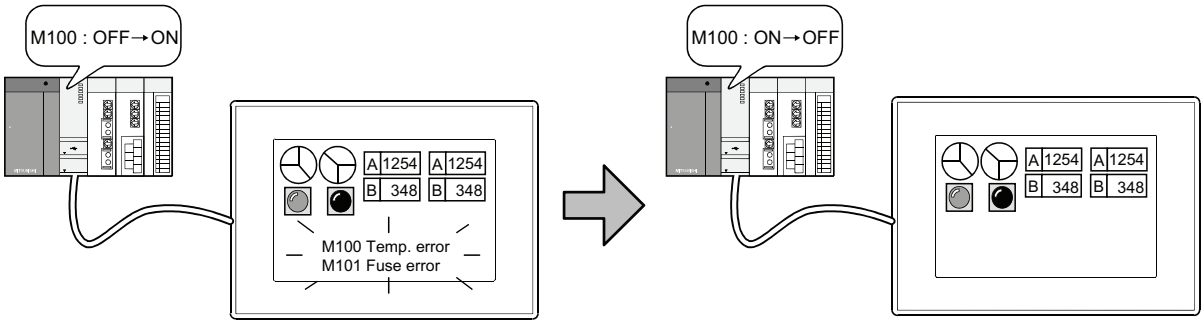
Displaying alarms in the order of recovery date

**Remark**

The display order can be changed by using the device value as well.
(☞ The following Section (2) Using the device to operate the alarm display)

(2) Using the device to operate the alarm display

(a) Displaying/Hiding an alarm
An alarm can be displayed or hidden using the device.

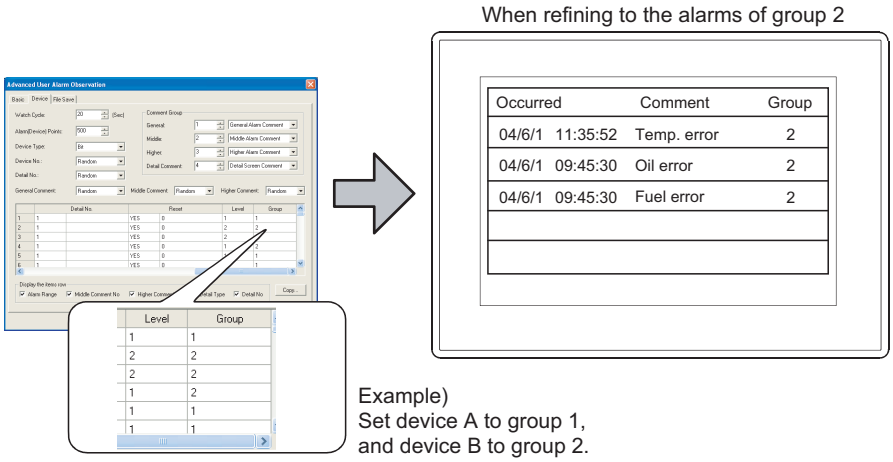



Alarms are displayed.

Alarms are hidden.

(b) Refining the display content

It is possible to refine and decide the display content using the device.
(Display content can be refined according to the hierarchy, level, group, display order and the alarm ID and comment group set in the advanced user alarm.)



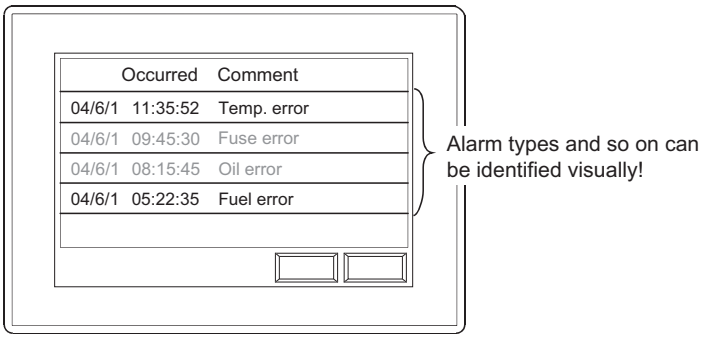

As level or group can be set for alarms, the display content can be refined for each level or group. (Also, two or more items can be specified as refinement conditions.)

(3) Setting the display color according to alarm types

The alarm types and others can be identified visually when different font colors are displayed on each alarm comment.
Font color settings for the each alarm function are shown below.

○ : Applicable ×: Not applicable

| Function | | Alarm Status (Occur, Check, Restored), Level, Group | Group comment |
|---|---|---|---|
| Alarm function | Alarm list display<br>Alarm history display | × | × |
| | Scrolling alarm display | × | ○ |
| Advanced alarm function | Advanced user alarm<br>Advanced system alarm | ○ | × |
| | Advanced alarm popup display | ○ | ○ |

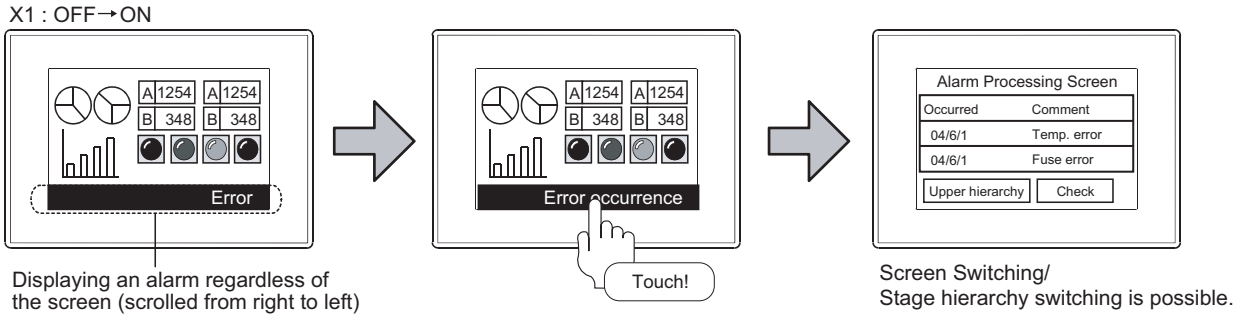


## 4 Display alarm only when alarm occurs

By using the advanced alarm popup display function and the scrolling alarm display function, the GOT can display an alarm without alarm display objects. (only when the alarm occurs.)
The GOT displays alarms even some objects are placed on the alarm display position on the screen.

Specific to Advanced Alarm Function

For the advanced alarm function, the screen switching, stage hierarchy switching, and detailed display are possible when touching the advanced alarm popup display that is displayed on the screen.




**Point**

(1) Availability of this function

(a) For GT16, GT15, and GT SoftGOT1000

Only the advanced alarm popup display function can display alarms regardless of the screen displayed.
To display alarms regardless of the screen displayed, use the advanced alarm popup display function.

(b) For GT11 and GT10

Only the scrolling alarm display function can display alarms regardless of the screen displayed.
To display alarms regardless of the screen displayed, use the scrolling alarm display function.

(2) Scrolling alarm display function of the GOT900 series

(a) For GT16, GT15, and GT SoftGOT1000

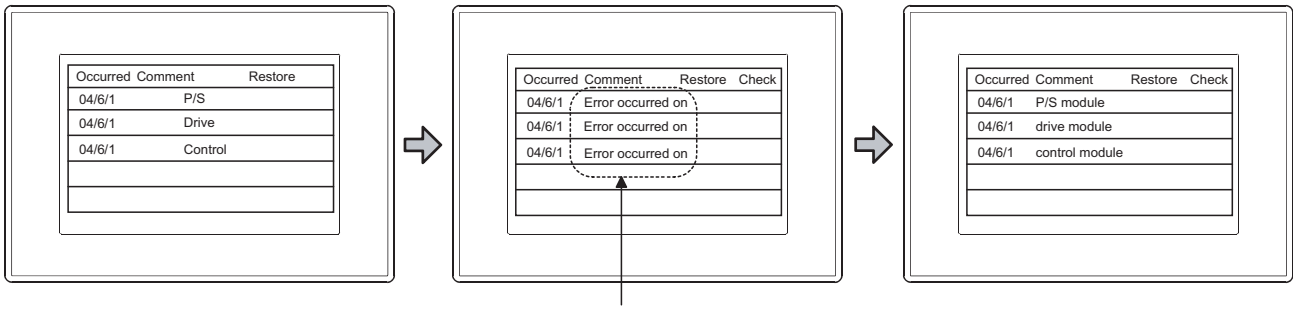
GT15 and SoftGOT1000 do not support the scrolling alarm display function that is supported by the GOT900 series. Therefore, use the advanced alarm popup display function instead of it.
(☞ Section 8.5 Advanced Alarm Popup Display)

(b) For GT11 and GT10

Use the scrolling alarm display function of the GOT 900 series.
(☞ Section 8.9 Scrolling Alarm Display)

## 5 Scrolling comments on screen

Comments can be scrolled across the screen from right to left when an alarm occurs.
This floating alarm display is suitable when displaying an alarm in small area, as all the parts of the comment can be scrolled and completely displayed on the screen.




Scrolling comments across the screen from left to right.

For each alarm function, whether or not to set the scrolling alarm display is shown below.

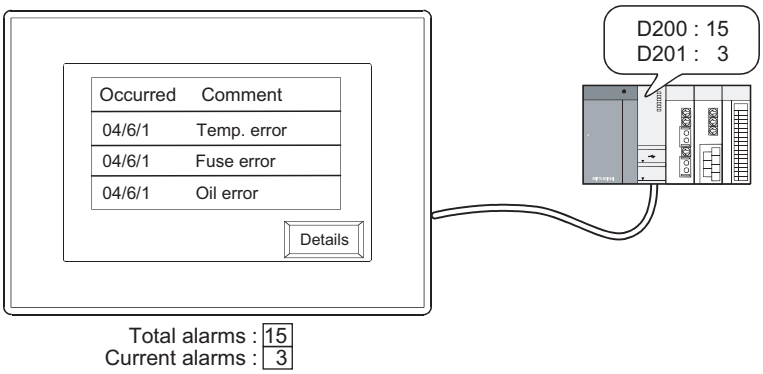
○ : Applicable ×: Not applicable

| Function | | Scrolling alarm display |
|---|---|---|
| Alarm function | Alarm list display | × |
| | Alarm history display *1,<br>Scrolling alarm display | ○ |
| Advanced alarm function | Advanced user alarm,<br>Advanced system alarm,<br>Advanced alarm popup display | ○ |

*1 GT10 is available only.

## 6 Writing alarm information to device

The total No. of alarms which occurred so far and which are currently occurring can be output to the device.

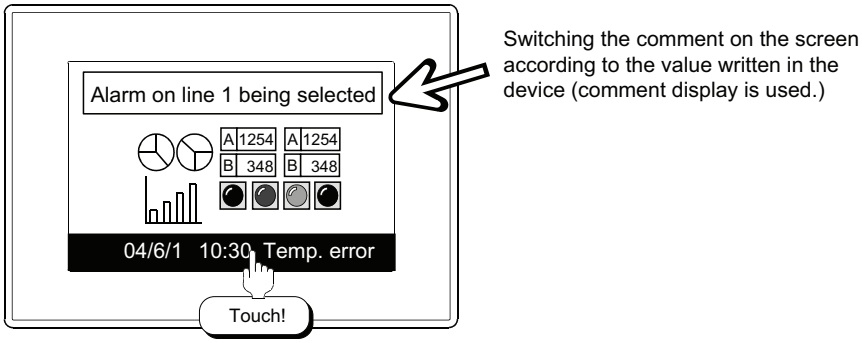



Specific to Advanced Alarm Function

The alarm information can be written to the device by touching the corresponding part.
The following shows the information (15 types) that can be written.

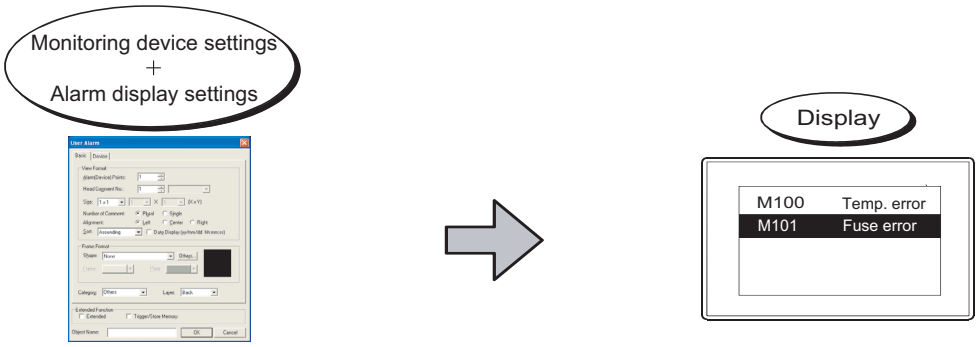
| | | |
|---|---|---|
| · Alarm ID | · Occurred Time | · Level |
| · Comment Group No. | · Restored Date | · Group |
| · Comment No. | · RestoredTime | · Occurred Frequency |
| · Alarm Status | · Checked Date | · Cumulative Time |
| · Occurred Date | · Checked Time | · Down Time |

This enables the detailed message on the selected alarm to appear as a comment.
The data, which cannot be displayed due to insufficient screen area, can be written in the device.



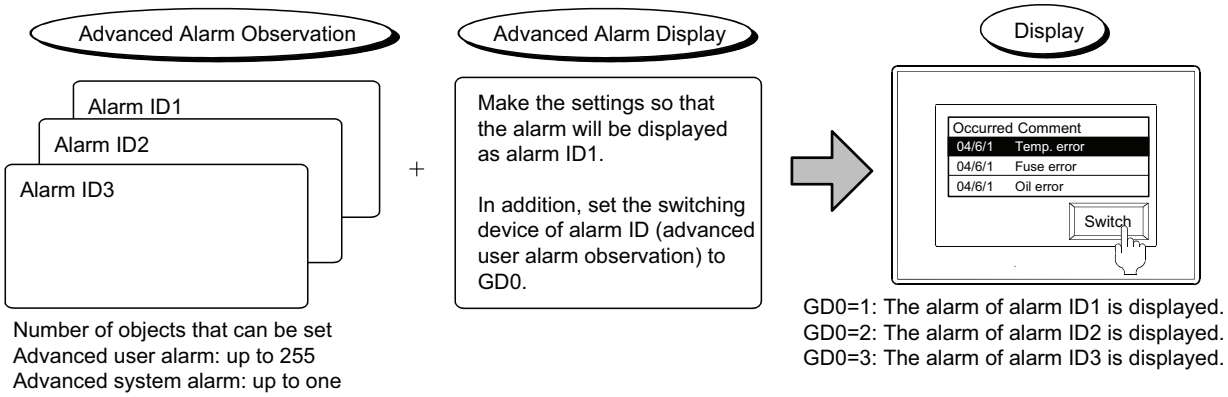
## 7 User-Setting of alarm monitoring device

The alarm monitoring device can be set freely by the user.
In the alarm function, the monitoring device and alarm display can be set on a single setting screen.
(The monitoring device can be set for each object placed.)



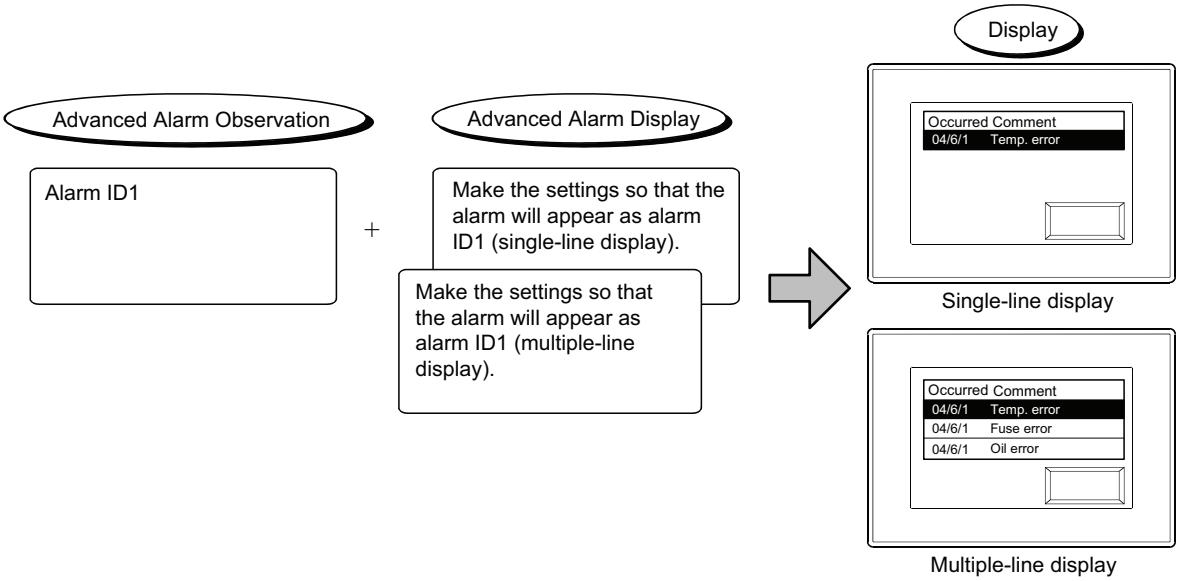

Specific to Advanced Alarm Function

The monitoring device (advanced alarm observation) and alarm display (advanced alarm display) are set on the respective screens.
This enables the following settings to be made.




Number of objects that can be set
Advanced user alarm: up to 255
Advanced system alarm: up to one

Make multiple monitoring device settings (advanced alarm observation), and switch the alarms on the screen.



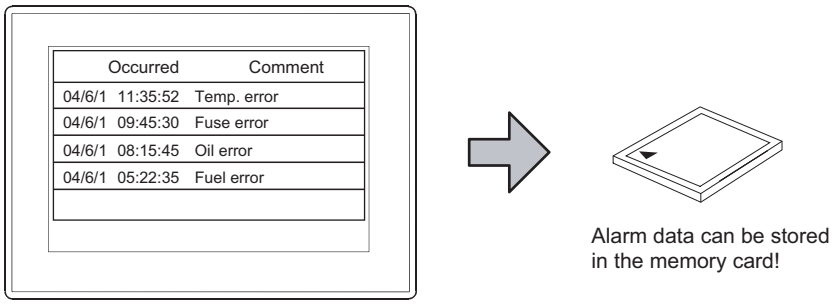

Providing different displays based on the same monitoring device settings (advanced alarm observation).

## 8 Storing alarm data (data retention under power failure) and utilization of stored data

(1) Storing alarm data (data retention under power failure)

By storing alarm data in the memory card as an alarm log file, alarm history can be retained when GOT is powered off.

The history of user alarms can be stored in the memory card.




Specific to Advanced Alarm Function

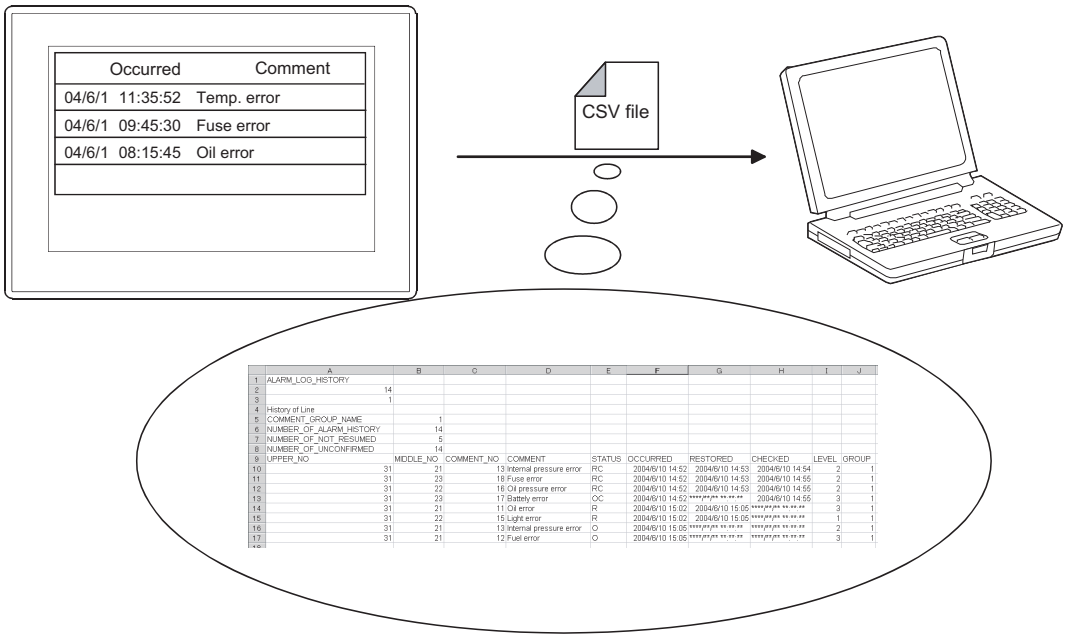
The advanced alarm function supports the following operations.

- Storing system alarm history in a memory card.
- Selecting whether to store alarm data or not for each monitoring device setting (advanced alarm observation).
- Setting a folder to store alarm data and the file name for each monitoring device setting (advanced alarm observation).
- Storing alarm data at an arbitrary timing using the device (rise, fall, Sampling, ON Sampling, and OFF Sampling).
- Automatically reading alarm data from the memory card that includes an alarm log file when the GOT is power off and on.

(2) Output to a CSV file

Alarm data can be output to a CSV file.

The alarm data output to a CSV file can be displayed by on PC and so on.




| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ALARM_LOG_HISTORY | | | | | | | | | |
| 2 | 14 | | | | | | | | | |
| 3 | 1 | | | | | | | | | |
| 4 | History of Line | | | | | | | | | |
| 5 | COMMENT_GROUP_NAME | 1 | | | | | | | | |
| 6 | NUMBER_OF_ALARM_HISTORY | 14 | | | | | | | | |
| 7 | NUMBER_OF_NOT_RESUMED | 5 | | | | | | | | |
| 8 | NUMBER_OF_UNCONFIRMED | 14 | | | | | | | | |
| 9 | UPPER_NO | MIDDLE_NO | COMMENT_NO | COMMENT | STATUS | OCCURRED | RESTORED | CHECKED | LEVEL | GROUP |
| 10 | 31 | 21 | 13 | Internal pressure error | RC | 2004/6/10 14:52 | 2004/6/10 14:53 | 2004/6/10 14:54 | 2 | 1 |
| 11 | 31 | 23 | 18 | Fuse error | RC | 2004/6/10 14:52 | 2004/6/10 14:53 | 2004/6/10 14:55 | 2 | 1 |
| 12 | 31 | 22 | 16 | Oil pressure error | RC | 2004/6/10 14:52 | 2004/6/10 14:53 | 2004/6/10 14:55 | 2 | 1 |
| 13 | 31 | 23 | 17 | Battely error | OC | 2004/6/10 14:52 | ****/**/** **:**:** | 2004/6/10 14:55 | 3 | 1 |
| 14 | 31 | 21 | 11 | Oil error | R | 2004/6/10 15:02 | 2004/6/10 15:05 | ****/**/** **:**:** | 3 | 1 |
| 15 | 31 | 22 | 15 | Light error | R | 2004/6/10 15:02 | 2004/6/10 15:05 | ****/**/** **:**:** | 1 | 1 |
| 16 | 31 | 21 | 13 | Internal pressure error | O | 2004/6/10 15:05 | ****/**/** **:**:** | ****/**/** **:**:** | 2 | 1 |
| 17 | 31 | 21 | 12 | Fuel error | O | 2004/6/10 15:05 | ****/**/** **:**:** | ****/**/** **:**:** | 3 | 1 |

Store the output data within a PC in either of the following methods.

- Uploading resource data by GT Designer2.

  ☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 8.8 Uploading Resource Data [GOT to PC])

- Reading out the CSV file stored in a memory card using a PC.

Specific to Advanced Alarm Function

Alarm data can be converted into a text file as well.

(3) Converting alarm log file

Alarm log files can be converted to CSV files or Unicode text files.

The following methods are available.

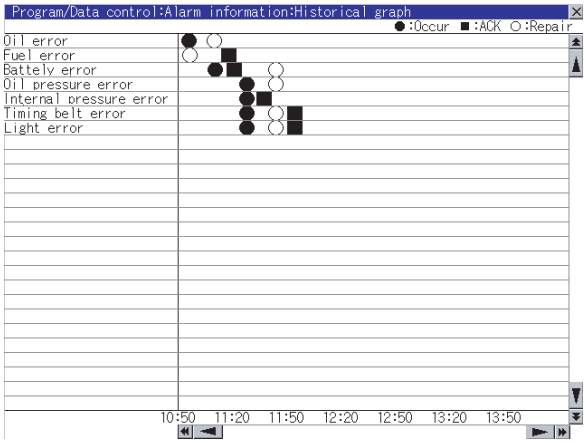
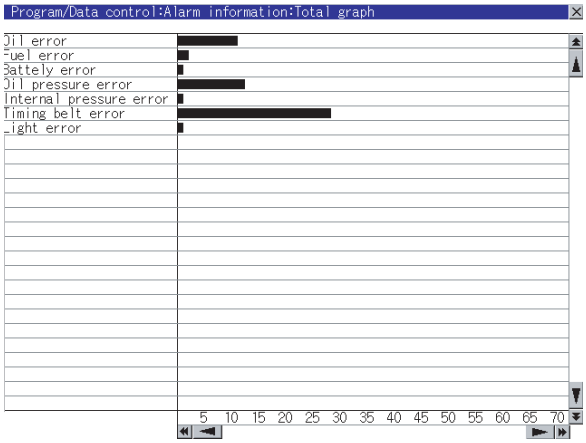
- Converting with GOT utility

  ☞ GT16 User's Manual (Basic Utility)
  GT15 User's Manual

- Converting with Convert Trigger

  ☞ 8.2.5 Setting items

(4) Utilization of the alarm data stored in the memory card
The stored alarm data can be displayed in graph form on the GOT.

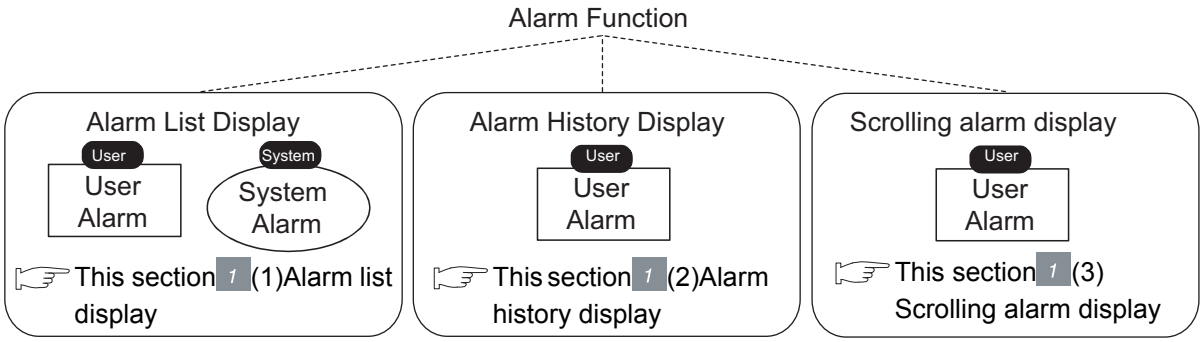
| Historical graph | Total graph |
|---|---|
| The history of alarm occurrence is displayed in a historical graph.<br>Alarm history is displayed as the symbols below.<br>● : Occurred time<br>■ : Checked time<br>○ : Restored time<br>  | The number of alarm occurrence times is displayed in a total graph.<br>  |

## 8.1.1 Alarm function

This section explains alarm functions by the type and differences among the functions.

### 1 Alarm function types

The alarm functions are classified as shown below.




Select an alarm function from the display alarms, the display items, and the features.

| Function | Display alarm | Display item | Feature | Reference |
|---|---|---|---|---|
| Alarm list display (User alarm) | User alarm | Comment, Occurred | Display each object that is monitored by each device. | This section 1 (1) Alarm list display |
| Alarm list display (System alarm) | System alarm | Error code, Error message, Occurred Time | | |
| Alarm history display | User alarm | Comment, Occurred, Restored, Checked, Cumulative Time, Occurred Frequency | Displaying an alarm history and storing data into a memory card are available. | This section 1 (2) Alarm history display |
| Scrolling alarm display | User alarm | Comment, Occurred | With or without objects, alarms can be displayed on the screen. | This section 1 (3) Scrolling alarm display |

(1) Alarm list display

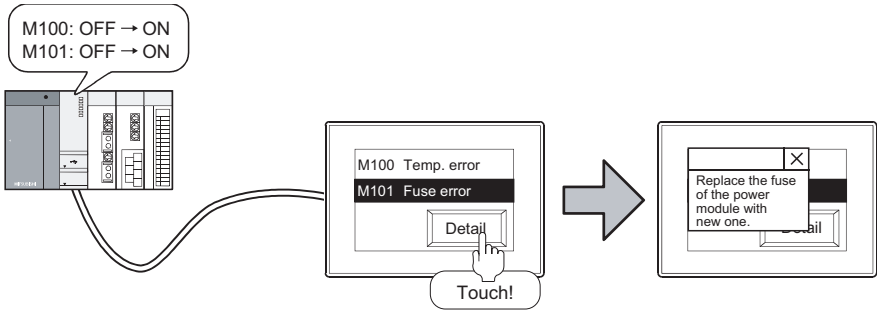
The function that displays the alarms created by the user (user alarms) and system errors (system alarms).

Use this function when displaying alarms that are currently occurring.

(a) User alarm display

The function that displays the user-created comments as alarm messages when an alarm occurs.

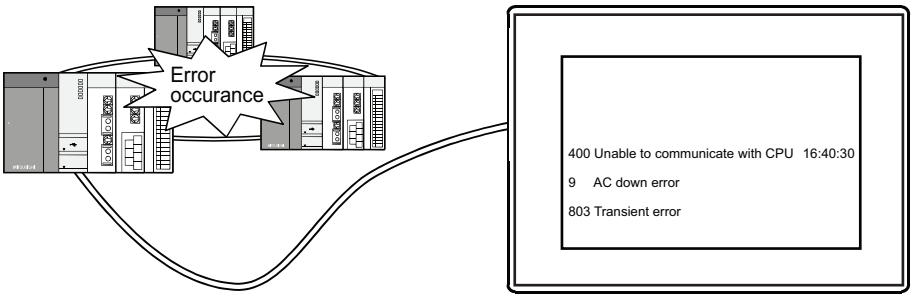
Suitable for the case in which the alarm, which is created by the user, needs to be displayed.




(b) System alarm display

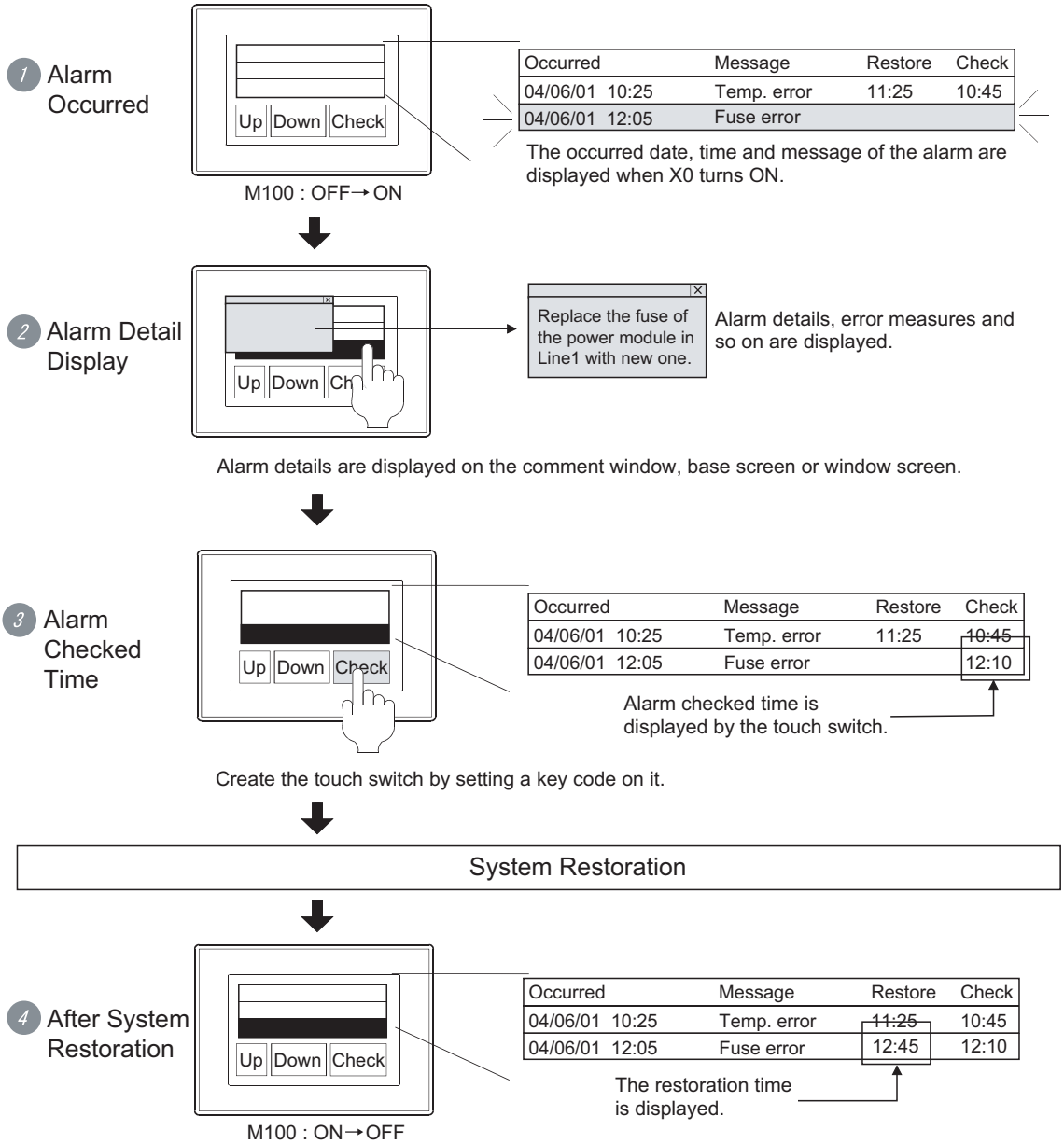
The function that displays the error code and error message when an error occurs on the controller, GOT or network.

Use this function when displaying an error on the controller, GOT or network.



(2) Alarm history display

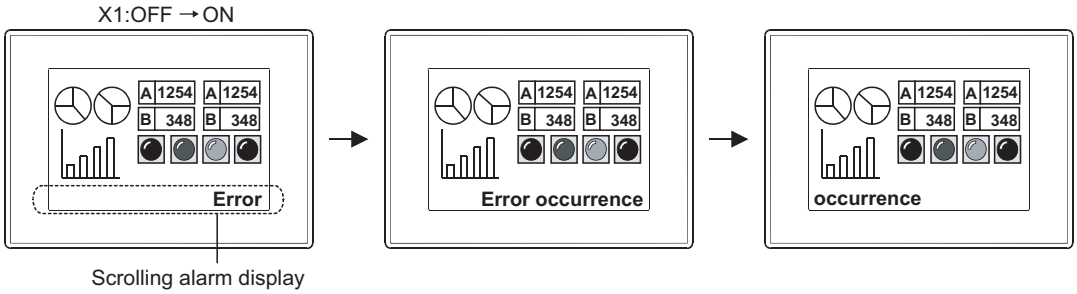
When a user alarm occurs, this function stores the user-created comments, occurred time, restored time, checked time, cumulative time (time from alarm occurrence to fixing), and occurred frequency and displays the alarm history in list.



(3) Scrolling alarm display

This function displays the user-created comments and the occurred time when a user alarm occurs.

Even if the alarm display object is not allocated on the screen, the GOT can display long comments that extend the alarm display area.




**Point**

(1) Comments need to be set

The comments to be displayed must be registered in advance.

☞ Section 4.1 Comment Registration

| Function | | Display comment |
|---|---|---|
| Alarm function | Alarm list display | Register to the basic comment. |
| | Alarm history display | Register to the basic comment or the comment group |
| | Scrolling alarm display | Register to the comment group. |

(2) Alarms that can be stored in a memory card

Alarms can be stored by the alarm history display function only.

However, the system alarm history cannot be stored in a memory card, as the system alarm history settings cannot be made using the alarm history display.

Use the advanced alarm function when storing the system alarm history.

(3) Using alarm list display and alarm history display together

The alarm list display and alarm history display can be used together.

**Remark**

(1) Details and usage of each function

For the details and usage, refer to the following.

☞ Section 8.6 User Alarm Display

☞ Section 8.7 System Alarm Display

☞ Section 8.8 Alarm History Display

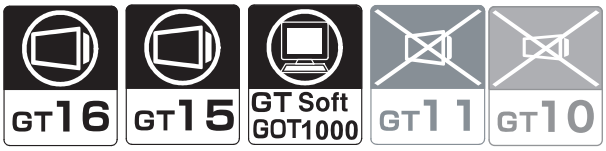
☞ Section 8.9 Scrolling Alarm Display

(2) Differences between the alarm function and advanced alarm function

For the differences, refer to the following.

☞ Section 8.1 Preparatory Operations for Using Alarms

## 8.1.2 Advanced alarm function




The advanced alarm functions are more advanced than the alarm functions

**Point**

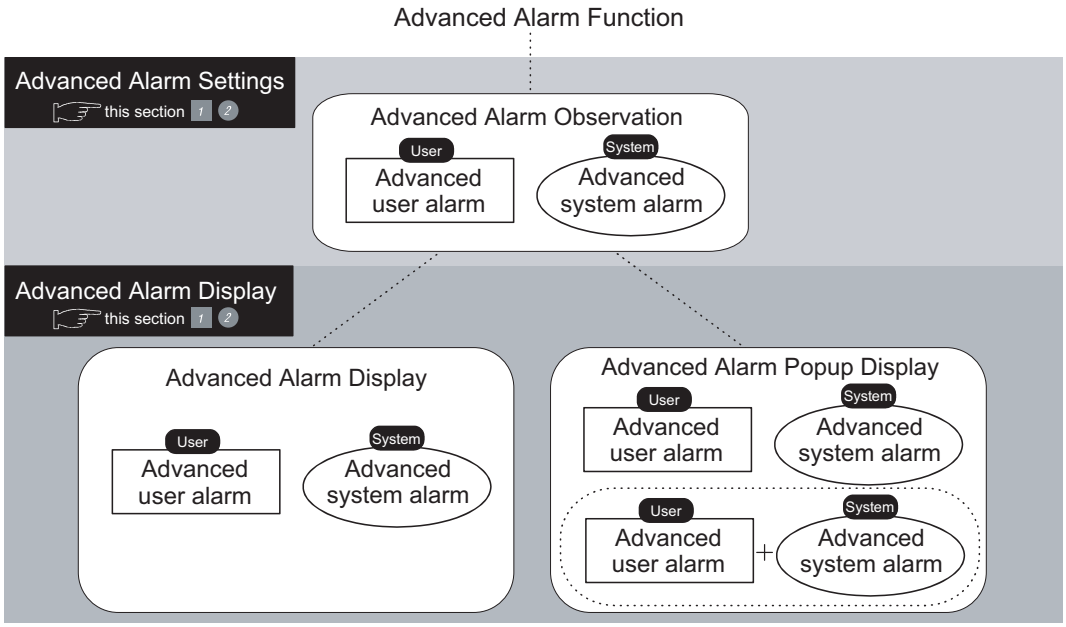
When using GT11 or GT10

The advanced alarm function is applicable to GT16, GT15, and GT SoftGOT1000 only.
When using GT11 or GT10, use the alarm function.

☞ Section 8.1.1 Alarm function

### 1 Advanced alarm function types

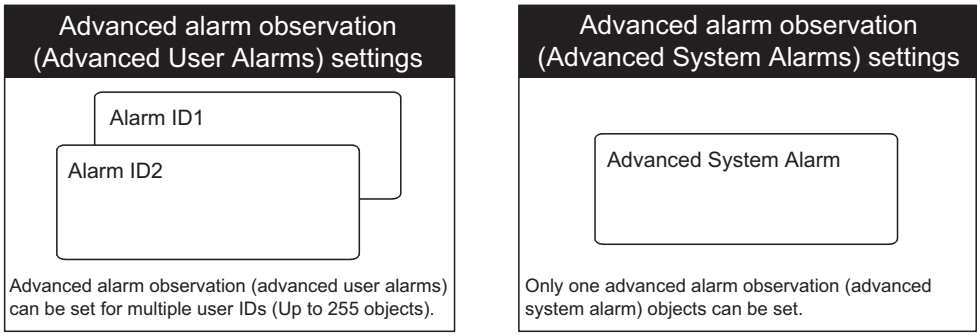
Make the settings of the advanced alarm function in the advanced alarm observation.
The set alarms are displayed as the advanced alarm display or advanced alarm popup display.




A series of operations from advanced alarm settings to display is shown below.

1 Settings in the advanced alarm observation

Make the settings in advance in the [Common] → [Advanced Alarm Observation] of GT Designer2.

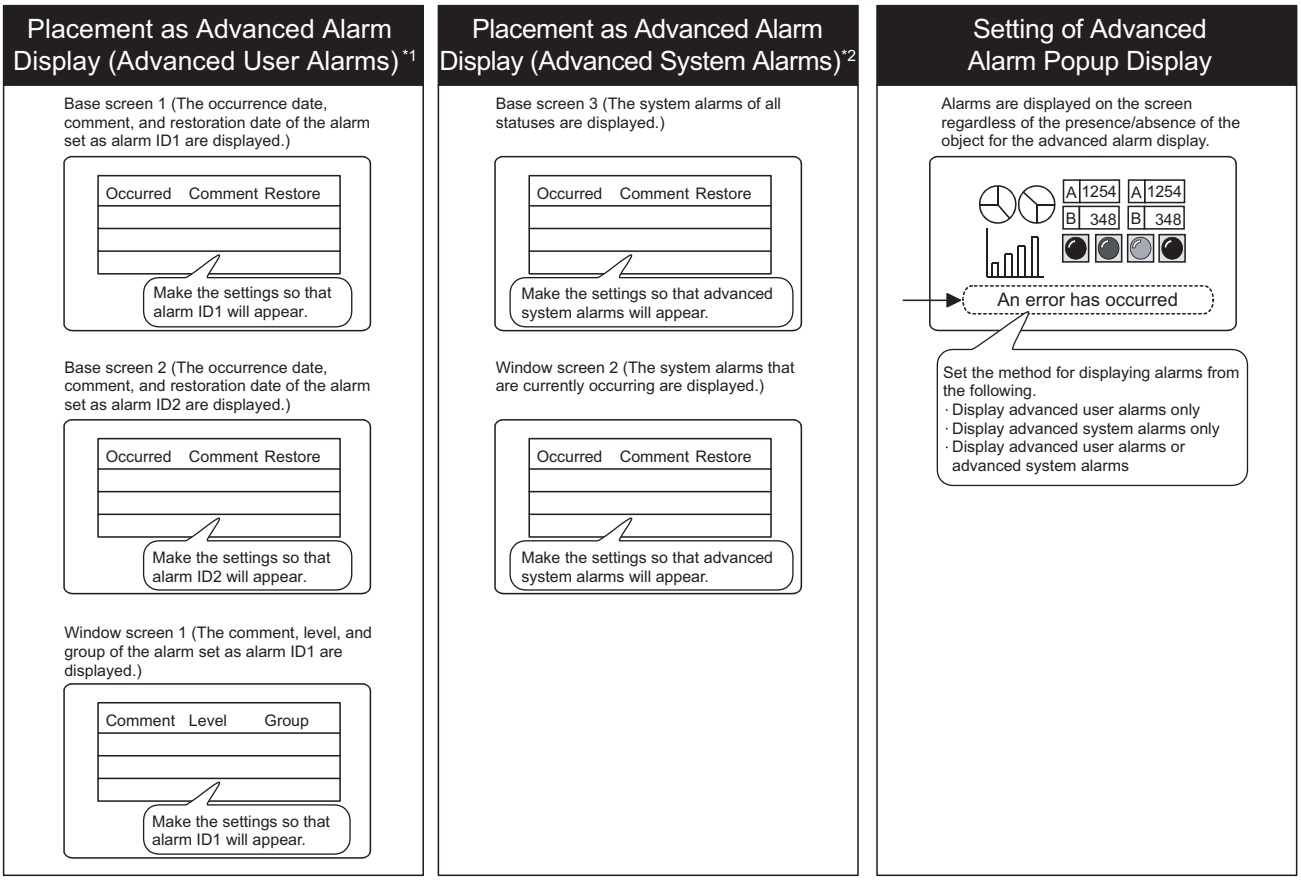



(Continued to the next page)

## 2 Object Placement

Place objects of the alarms that are set in section 1 on the previous page.
Perform placement in the [Object] → [Advanced Alarm Display] of GT Designer2.
Set the touch mode, display items, display conditions and so forth on the placed objects.

In addition, to display alarms regardless of the presence/absence of the object (regardless of the display screen), make the settings in the [Common] → [Advanced Alarm Popup Display] of GT Designer2.




| Placement as Advanced Alarm Display (Advanced User Alarms)*1 | Placement as Advanced Alarm Display (Advanced System Alarms)*2 | Setting of Advanced Alarm Popup Display |
|---|---|---|
| Multiple objects, which are based on the settings made in the advanced alarm observation, can be placed. Different settings such as display content can be set for each object. | Multiple objects, which are based on the settings made in the advanced alarm observation, can be placed. Different settings such as display content can be set for each object. | To display advanced alarms on the screen regardless of the presence/absence of display objects for advanced alarms, make the settings of advanced alarm popup display. |

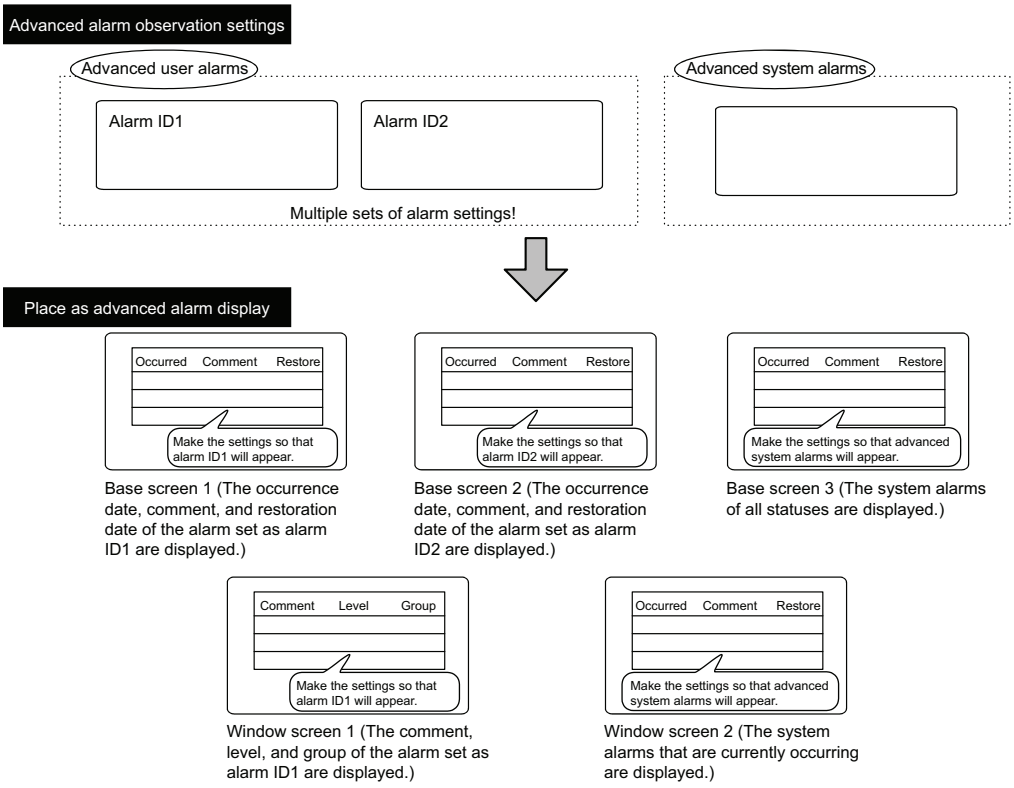
*1 Select the advanced alarm display (advanced user alarms) when displaying the alarms set in the advanced alarm observation (advanced user alarms).

*2 Select the advanced alarm display (advanced system alarms) when displaying the alarms set in the advanced alarm observation (advanced system alarms).

**Point**

Alarm ID

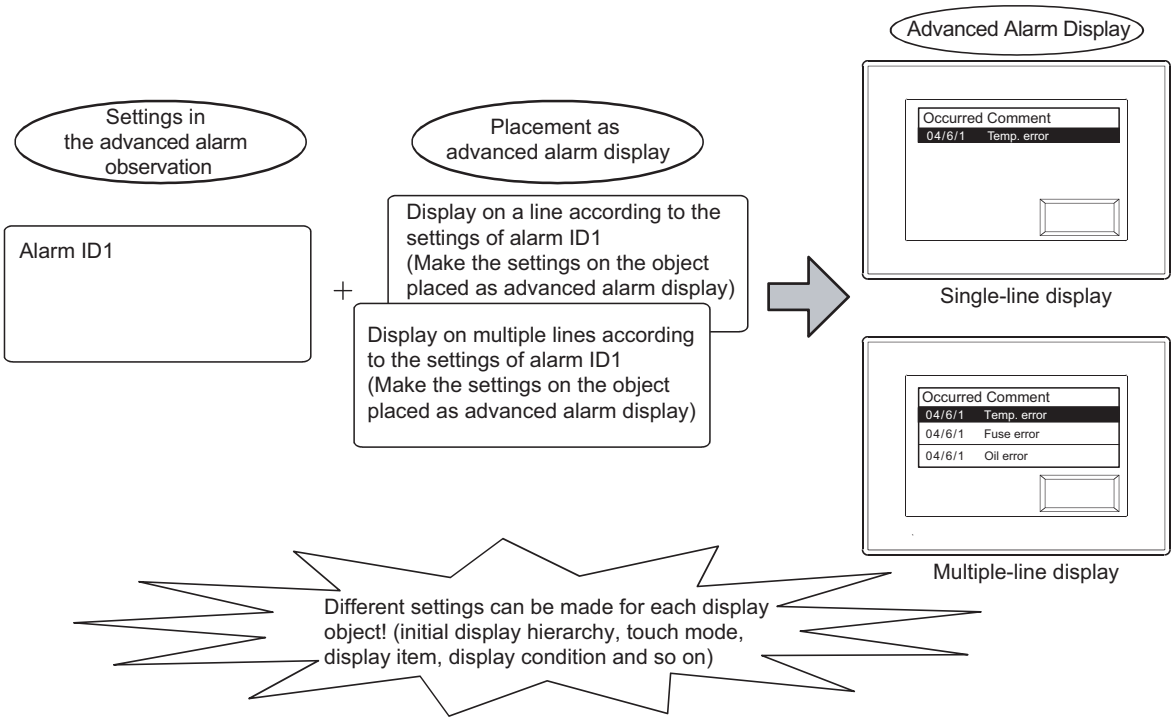
As the multiple sets of alarm settings can be made on the advanced alarm observation (advanced user alarm), each of the sets should be identified by the alarm ID.
Specify the alarm ID for each set when placing the object as the advanced alarm display (advanced user alarm); the alarms will appear based on specified alarm IDs.



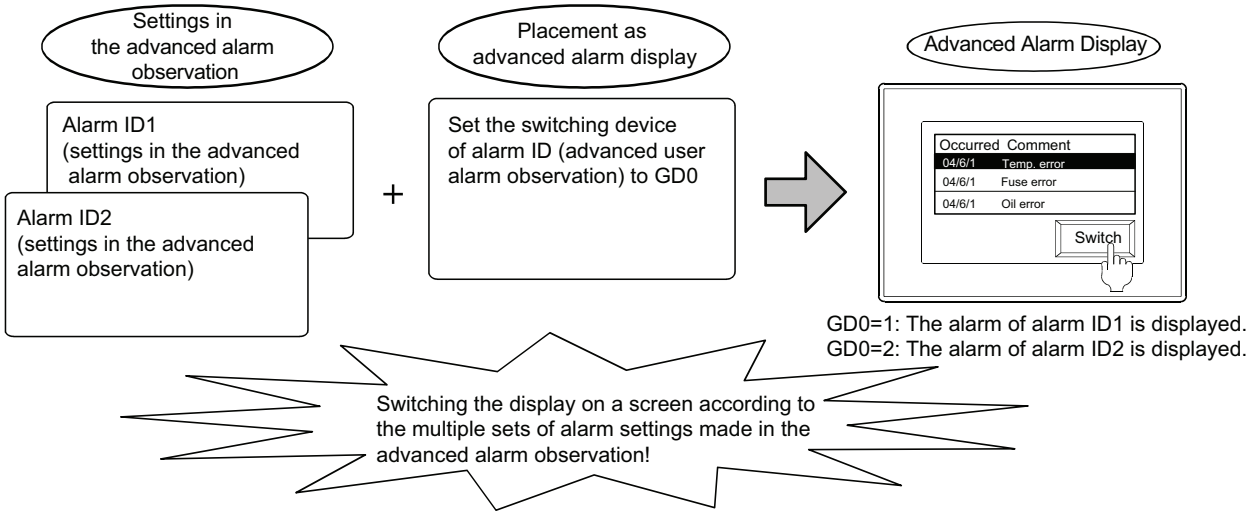
## 2 Relation between advanced alarm observation and advanced alarm display (advanced alarm popup display)

Advanced alarm observation and advanced alarm display (advanced alarm popup display) can be set separately.
The following setting patterns are available.

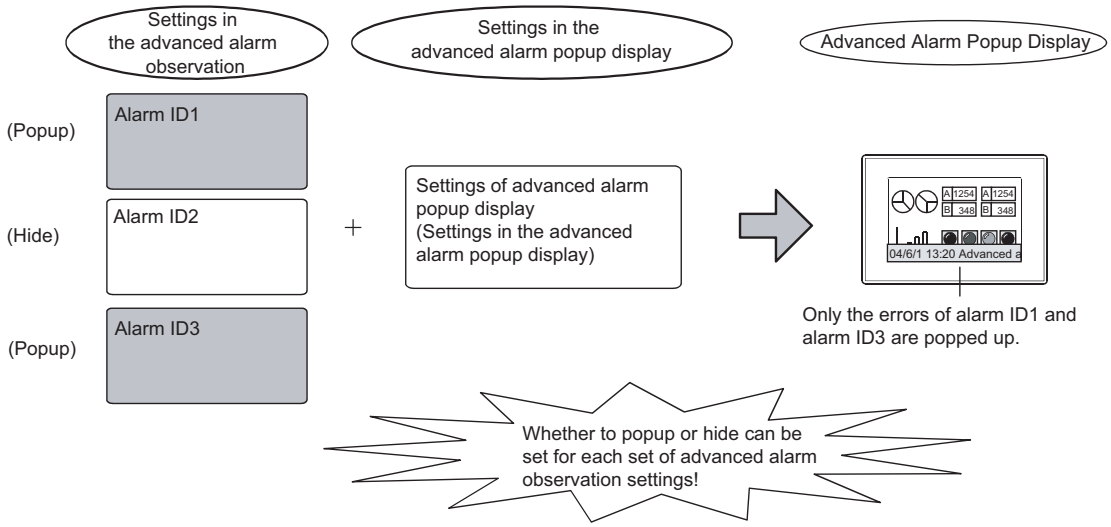
(1) Placing different display contents based on a set of advanced alarm observation settings




(2) Switching the display on the object according to the multiple sets of alarm settings made in the advanced alarm observation.



(3) Settings for whether to popup or hide advanced alarms

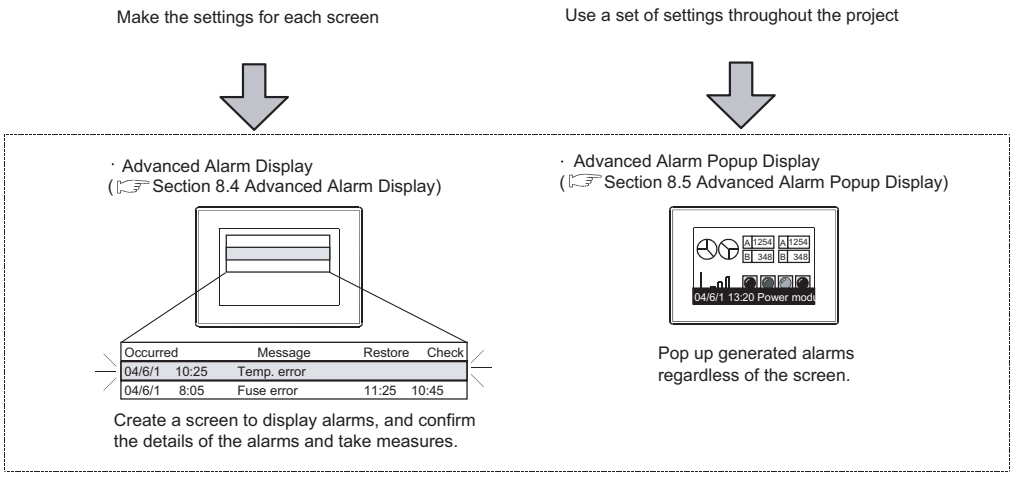



**Point**

(1) When only advanced alarm observation settings are made

When only advanced alarm observation settings are made, no alarm is displayed. However, the device is monitored and saved based on the advanced alarm observation settings.

To display alarms, select either advanced alarm display or advanced alarm popup display.




(2) Comments displayed on the advanced user alarm observation object

The comments that will be displayed on the advanced user alarm observation object must be registered in advance.

(Register the comments as a comment group.)

☞ Section 4.1 Comment Registration

**Remark** Details and usage of advanced alarm observation and advanced alarm display

For details and usage, refer to the following.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

☞ Section 8.3 Advanced Alarm Observation (Advanced System Alarm)

☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)

☞ Section 8.5 Advanced Alarm Popup Display

# 8.2 Advanced Alarm Observation (Advanced User Alarm)

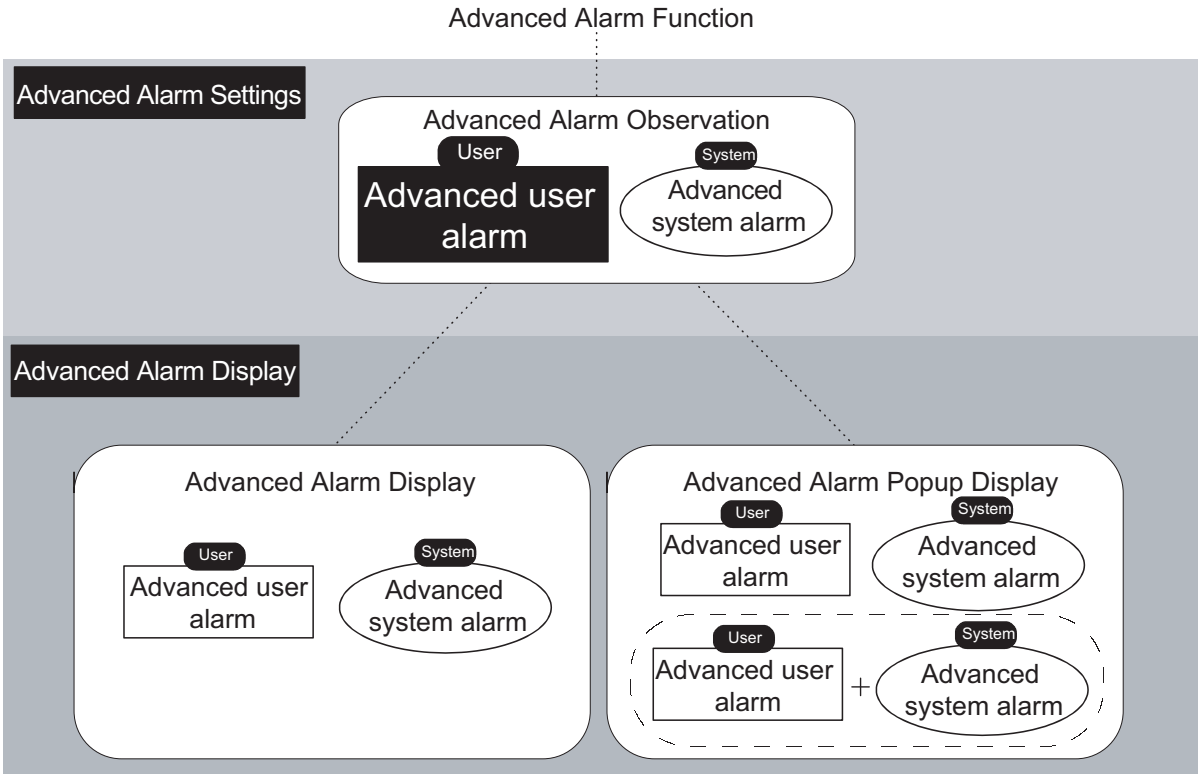
The advanced alarm observation is the function that saves the alarm occurrence time when the condition of the device set for alarm detection is met (the bit turns OFF to ON/word device range) and the comments in the GOT internal memory, and displays these information as alarm history in list format.

**Point**

Before setting advanced user alarms

This section explains the advanced user alarms of the advanced alarm function.
Read the following before setting advanced user alarms.

Section 8.1.2 Advanced alarm function



## 8.2.1 Relevant settings

For advanced user alarms, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to advanced alarm observation (advanced user alarms) only
…Relevant to advanced alarm observation (advanced user alarms) only.

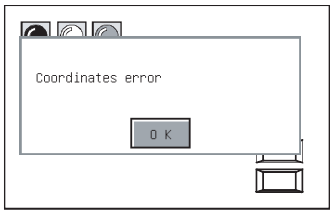
(2) Functions relevant to advanced alarm observation (advanced user alarms) and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

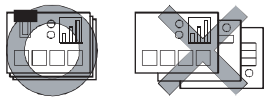
(1) Functions relevant to advanced alarm observation (advanced user alarms) and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

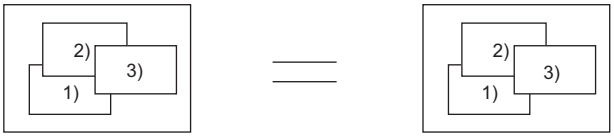


Setting items
• [Carry out check for overlapping objects within GOT]

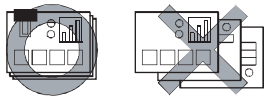
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



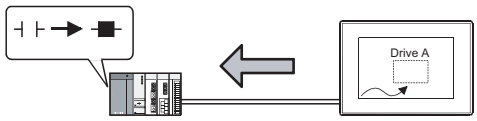
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information (☞ Section 3.6 System Information Setting)

(1) Functions relevant to advanced alarm observation (advanced user alarms) and others

• Drive A/B File Accessing Signal*1
(Write device: System signal 2-2. b0, b1)

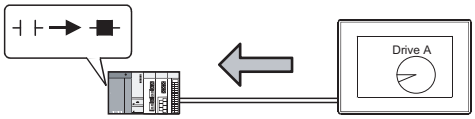
Notifies of the status of access to the drive.




The file is being accessed

• Drive A/B Full Signal*1
(Write device: System signal 2-2. b4, b5)

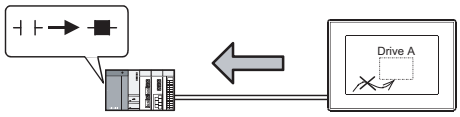
Notifies that the drive is short of capacty.




Available capacity is less than 1KB

• Drive A/B File Access Error Signal*1*2
(Write device: System signal 2-2. b7, b8)

Notifies that access to the drive has failed.




File access error

*1 The advanced user alarm observation also uses the signals that notify of the status of accessing and full, however, operate differently from the drive status notification signal. For details, refer to the following.

☞ Secton8.2.6 1 (8) Difference from the drive status notification signal (write device: system signal 2-2)

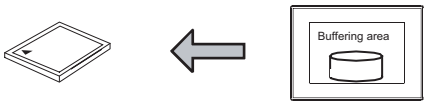
*2 The drive A/B file access error signal is reset by the file access error reset signal (read device: system signals 1-2.b0).

## 3 GOT internal devices (☞Secton2.9.1 3 GOT special register (GS))

(1) Functions relevant to advanced alarm observation (advanced user alarms) only

• Buffer Flash Forced Saving Signal (GS520.b0)

Saves the data in the buffering area to a memory card.*1




*1 Alarm data are saved only when the "Save Alarm Log File" item is checked on the File Save tab. The advanced user alarms of the unchecked alarm IDs are not saved.

(☞ Secton8.2.5 2 (3) File save tab)

## 8.2.2 Before setting

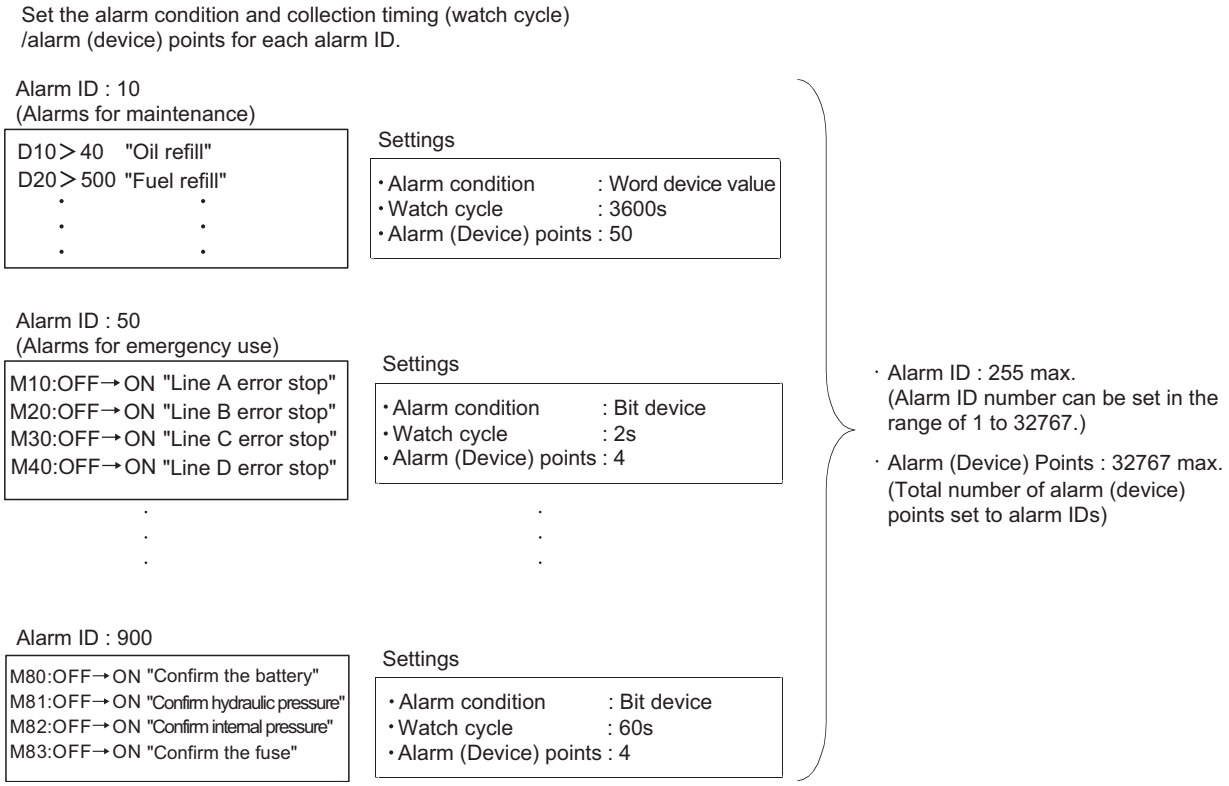
This section describes the settings and function needed for using the advanced user alarm display.

### 1 Alarm detection conditions and range

(1) Detection conditions
- Rising (OFF → ON) or falling (ON → OFF) of the bit device
- Value of the word device

(2) Collection timing (watch cycle)
Alarms are collected in the GOT buffering area and updated in the cycle set by the user (1 to 3600s), regardless of the screen displayed.

(3) Setting range
(a) Number of device points that can be monitored (alarm (device) points): 32767 max.
(b) Alarm collection pattern (alarm ID)
For advanced user alarms, multiple sets of alarm collection settings are made for each alarm purpose (255 max.).




**Point**

(1) Settings for each alarm ID
The functions set for the advanced user alarm operate for each alarm ID.
When displaying alarms and saving the history simultaneously, set them with an alarm ID.

(2) Display of advanced user alarms
Display advanced user alarms by the advanced alarm display.

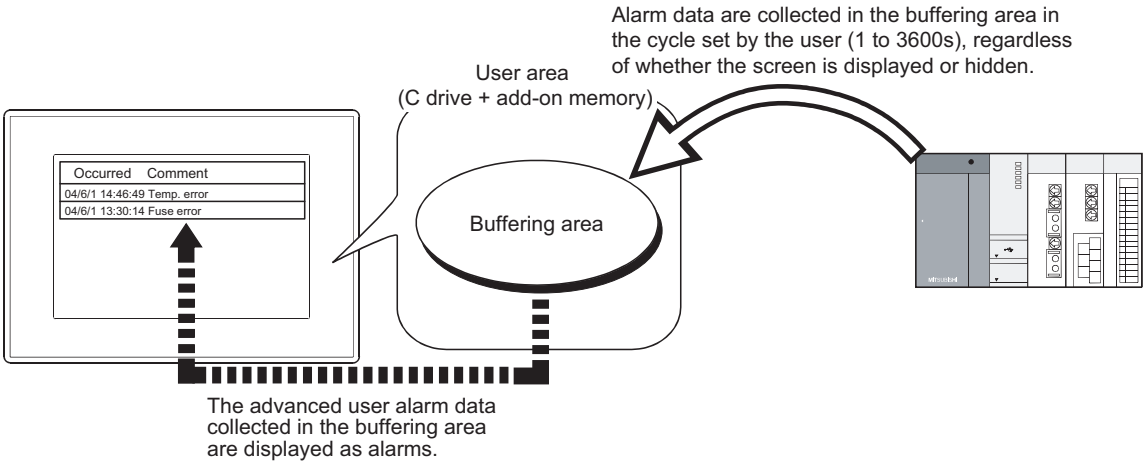
☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)

## 2 Collection flow and collection mode

(1) Collection flow

Advanced user alarms are collected in the buffering area of the user area (C drive + add-on memory) in the cycle set by the user (1 to 3600s) regardless of the screen displayed.

The collected user alarm data are temporarily saved in the buffering area, and then displayed as alarms on the GOT.




**Remark**

(1) Clearing data in the buffering area

For details, refer to the following.

☞ This section 3 Retention and clear of collected advanced alarm data

(2) Data to be collected in the buffering area of the user area (C drive + add-on memory)

Data to be collected differ depending on the collection mode.

(2) Alarm collection modes

The collection mode is selected from three options: historical mode, cumulative mode, and no alarm collection. (☞ Secton8.2.5 2 (1) Basic tab)

Information to be collected varies depending on the collection mode as follows.

Example: When displaying data by advanced alarm display

| Occurred | Comment | Status | Restore | Check | OccurFreq | DownTime | Cum.Time | Level | Group |
|---|---|---|---|---|---|---|---|---|---|
| 04/06/01 20:00 | P/S module error | — | — | — | 1 | — | — | 1 | 2 |
| 04/06/01 18:30 | Hydraulic pressure error | Chk | — | 18:50 | 2 | — | — | 1 | 1 |
| 04/06/01 16:10 | Drive module error | Chk | 16:30 | 16:20 | 2 | 00:20 | 00:40 | 2 | 1 |
| 1) | 2) | 3) | 4) | 5) | 6) | 7) | 8) | 9) | 10) |

| Info displayed | Description | | |
|---|---|---|---|
| | Historical mode | Cumulative mode | No alarm collection |
| 1) Occurred | The date/time of alarm occurrence is displayed. | | |
| 2) Comment | The comment assigned to an alarm is displayed when the alarm occurs. | | |
| 3) Status | The status of the alarm on the screen is displayed.<br>Ocr : Alarm has occurred (Not checked yet)<br>Chk : Alarm occurrence has been checked<br>Rstr : Alarm has been restored | | |
| 4) Restore | The date/time of alarm restoration is displayed. | | |
| 5) Check | The date/time when alarm occurrence was checked is displayed.<br>Alarm occurrence is checked by the corresponding touch switch.<br>(☞ Section 8.4.6 Description on touch switches for advanced alarm display)<br>Comment Restore Check / Pwr. module error → Check → Comment Restore Check / Pwr. module error 19:00<br>(Key code: FFB4H or FFB5H) | | |
| 6) Occur Freq | — | The number of alarm occurrence times is displayed. | — |
| 7) Down Time | — | Time from alarm occurrence to restoration is displayed | — |
| 8) Cum. Time | — | Total alarm occurrence time including the past alarm occurrence time (total down time) is displayed.<br>Cumulative Time<br>A/O (1st) A/O (2nd) A/O (3rd)<br>A/O status (M10) ON OFF ON OFF ON OFF<br>D/T A D/T B D/T C<br>A/O : Alarm occurrence status<br>D/T : Down time<br>time | — |
| 9) Level | The level set to the alarm is displayed.<br>Alarms can be classified according to the alarm level.<br>Alarms can be displayed in the level order from highest to lowest, or alarms at particular level only can be displayed.<br>(☞ Secton8.2.3 1 Hierarchical alarm example) | | |
| 10) Group | The group set on the alarm is displayed.<br>Alarms can be classified into some groups according to the content.<br>Alarms can be displayed in the group order, or alarms in a particular group only can be displayed.<br>(☞ Secton8.2.3 1 Hierarchical alarm example) | | |

(a) Historical mode
In this mode, the data of the alarm is added to the user area (C drive + add-on memory) every time an alarm occurs. (The data are added to the history every time an alarm occurs.)
Up to 32767 alarm logs can be saved.

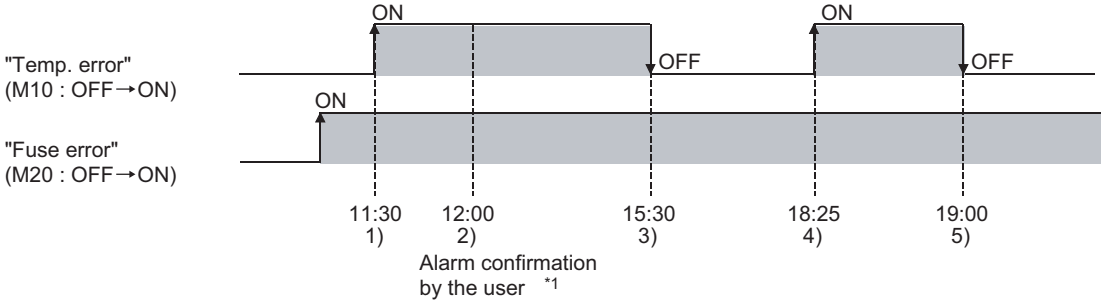
(b) Cumulative mode
In this mode, the information on the latest alarm status, the number of alarms that have occurred and the cumulative alarm occurrence time collected for each alarm type.

(c) No alarm collection
In this mode, only alarms that are currently occurring are displayed.
The display disappears when the alarm is restored.

(3) Examples of alarm display

This section shows examples of advanced alarm display for each collection mode.

(Timing of alarm occurrence)




*1 Alarms are confirmed with the touch switch for confirmation.

(☞ Section 8.4.6 Description on touch switches for advanced alarm display )

(a) Historical mode

The information on alarm occurrence status are collected as history.

Status is added to the history every time an alarm occurs.

Not collected in the historical mode.

1) "Temp. error" occurs.

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | | | | | |
| 04/06/01 | 10:25 | Fuse error | | | | | |
| | | | | | | | |

"Temp. error" occurs!

2) "Temp. error" is checked.

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | | 12:00 | | | |
| 04/06/01 | 10:25 | Fuse error | | | | | |
| | | | | | | | |

"Temp. error" is checked.

Check

(Key code: FFB4H)

3) Restored from "Temp. error"

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | 15:30 | 12:00 | | | |
| 04/06/01 | 10:25 | Fuse error | | | | | |
| | | | | | | | |

Restoration date/time is displayed.

4) The restored "Temp. error" occurred again.

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 18:25 | Temp. error | | | | | |
| 04/06/01 | 11:30 | Temp. error | 15:30 | 12:00 | | | |
| 04/06/01 | 10:25 | Fuse error | | | | | |

A new line is added and displayed.

5) "Temp. error" restored

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 18:25 | Temp. error | 19:00 | | | | |
| 04/06/01 | 11:30 | Temp. error | 15:30 | 12:00 | | | |
| 04/06/01 | 10:25 | Fuse error | | | | | |

Restoration date/time is displayed.

(b) Cumulative mode

The information on the latest alarm status, the number of alarms that have occurred and the cumulative alarm occurrence time are collected for each alarm type.

1) "Temp. error" occurs

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | | | 1 | | 00:00 |
| 04/06/01 | 10:25 | Fuse error | | | 1 | | 00:00 |

"Temp. error" occurs!

2) "Temp. error" is checked

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | | 12:00 | 1 | | 00:00 |
| 04/06/01 | 10:25 | Fuse error | | | 1 | | 00:00 |

"Temp. error" is checked

Check

(Key code: FFB4H)

3) Restored from "Temp. error"

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 11:30 | Temp. error | 15:30 | 12:00 | 1 | 04:00 | 04:00 |
| 04/06/01 | 10:25 | Fuse error | | 12:00 | 1 | | 00:00 |

Restoration date/time, down time, and cumulative time are displayed.

4) The restored "Temp. error" occurred again

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 18:25 | Temp. error | | | 2 | | 04:00 |
| 04/06/01 | 10:25 | Fuse error | | 12:00 | 1 | | 00:00 |

The occurrence time when the alarm occurred again is displayed on the same line of the alarm. Frequency is increased by one.

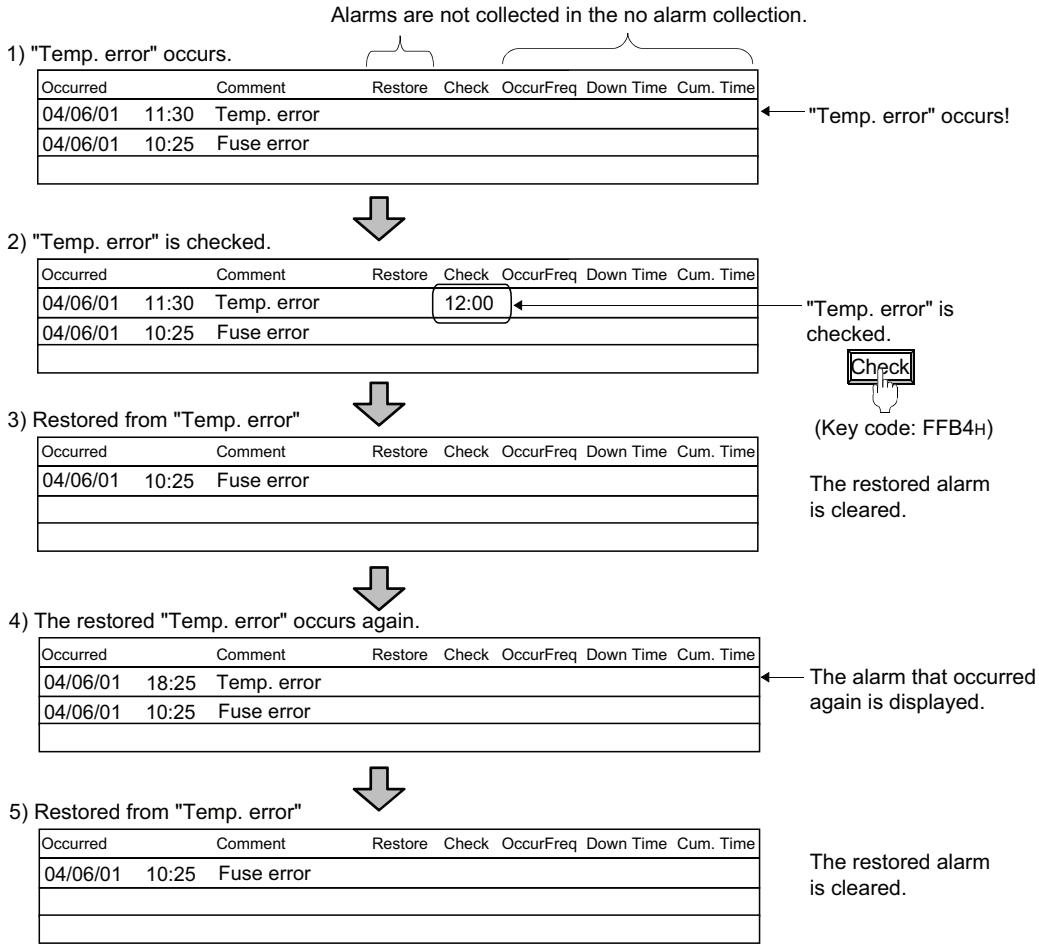
5) Restored from "Temp. error"

| Occurred | | Comment | Restore | Check | OccurFreq | Down Time | Cum. Time |
|---|---|---|---|---|---|---|---|
| 04/06/01 | 18:25 | Temp. error | 19:00 | | 2 | 00:35 | 04:35 |
| 04/06/01 | 10:25 | Fuse error | | 12:00 | 1 | | 00:00 |

Restoration date/time and down time are displayed. The time when the alarm occurred is added to the cumulative time.

(c) No alarm collection

Only the alarms that are currently occurring are collected.
The historical data of the cleared alarms are not stored.




**Point**

Display of advanced user alarms

Advanced user alarms are displayed by the advanced alarm display function.

☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)

## 3 Retention and clear of collected advanced alarm data

Advanced alarm data are saved in the buffering area of the user area (C drive + add-on memory).
Advanced alarm data are cleared at the following timings.

(1) Power-off or reset of GOT

(2) When the following settings are made within utilities

| Item | | Description |
|---|---|---|
| Communication setting | | [Channel No. (Ch No.) setting], [Communication settings], [RS232 5V power supply] |
| GOT setup | Display | [Opening screen time], [Screen save backlight], [Language] |
| | Operation | [Buzzer volume], [Window move buzzer], [Utility call key] |
| Program/data control | | OS installation, project download |
| Debug & self check | Self check | [I/O check] |
| Main menu | | Message change (Japanese/English) using the system message switch button |

(3) Project data download, OS installation, drive information delete and drive format

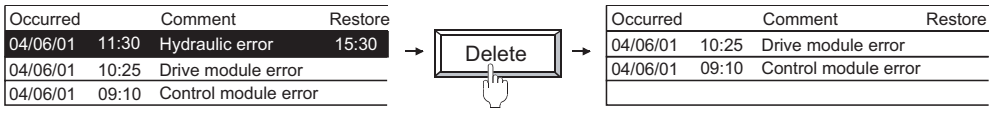
(4) Setting and operations by the user
The history of restored alarms can be freely cleared by the user.

(a) Clear by device
All restored alarm data are cleared by turning on the "buffer clear."

(☞ Secton8.2.5 2 (1) Basic tab)

(b) Clear by touch switch

One or all restored alarm logs can be cleared. (☞ Section 8.4.6 Description on touch switches for advanced alarm display)



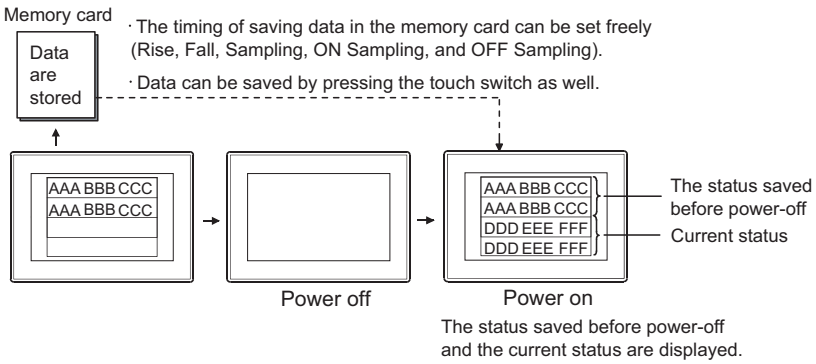

(Key code: clear one log FFB6H
clear all logs FFB7H)

## 4 Retention of advanced user alarm data under power failure

(1) Outline of data retention under power failure

By saving advanced user alarm data in the memory card as alarm log file, the data are retained even when GOT is powered off.

When GOT is turned on, if an alarm log file is saved in the memory card, the alarm log file is read out automatically, and the historical status of the advanced user alarm saved before GOT power-off is restored.




**Point**

Precautions for starting up the GOT

When restoring the advanced user alarm data by reading it out from a memory card, insert the memory card to the GOT before turning ON for the GOT.

Once the GOT is turned ON, the data by reading out the data from the memory card can not be restored.

Also when the memory card is inserted after turning ON, the advanced user alarm data in the memory card is overwritten at saving its data to memory card.

**Remark**

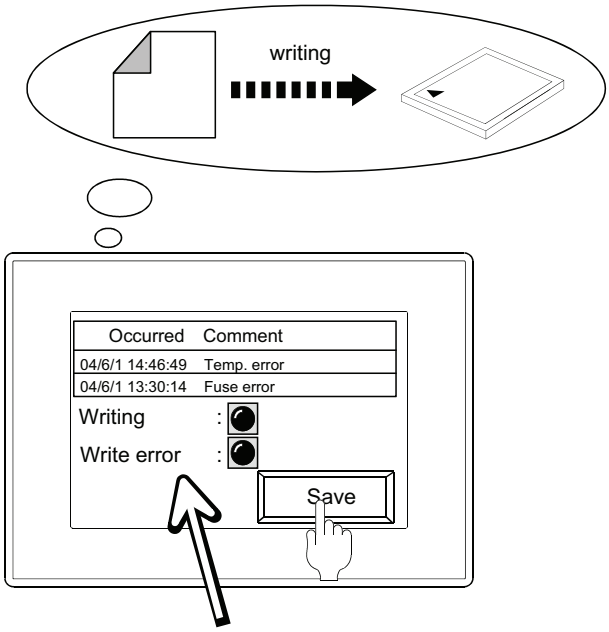
Advanced alarm data saved in the memory card

Advanced alarm data are created in the memory card for each alarm ID.

| Alarm ID | File name (can be changed freely) |
|---|---|
| Alarm ID1 | AAM00001.G1A |
| Alarm ID2 | AAM00002.G1A |
| Alarm ID3 | AAM00003.G1A |

(2) Status observation during writing

Status while advanced user alarm data are written and the presence/absence of write error can be monitored using the device.(☞ Secton8.2.5 2 (3) File save tab)




Status during writing can be monitored.

(3) File name to be saved and saving timing

A file can be named freely for each alarm ID.

(☞ Secton8.2.5 2 (3) File save tab)

In addition, trigger for saving the file (rise, fall and so on) can be set.

(4) Method of data retention under power failure

Retention of advanced user alarm data under power failure is performed by either of the following methods. The file names and so forth need to be set on the File Save tab in advance.

- Save by the store trigger device (☞ Secton8.2.5 2 (3) File save tab)
- Save by the touch switch (☞ Section 8.4.6 Description on touch switches for advanced alarm display)
- Save by buffer flash forced saving signal (GS520.b0) (☞ Secton2.9.1 3 GOT special register (GS))

(5) Required memory capacity
For the memory capacity required for retention of advanced user alarm data under power failure, refer to the following.

(☞ Section 2.4 Specifications of Available Object Functions)

**Hint!**

(1) Information to be saved

The alarm log file content to be saved in the memory card varies depending on the collection mode. (☞ Secton8.2.2 2 Collection flow and collection mode)

(2) Utilization of the alarm log file saved in the memory card

After advanced user alarm data is stored as alarm log file in the memory card, the file can be utilized as follows.

- The occurrence history of advanced user alarms can be displayed as a graph.
  In the historical mode : Displayed as a historical graph
  In the cumulative mode : Displayed as a total graph
- For a display on personal computer, the alarm log file can be converted to CSV file/Unicode text file with GOT utility or Convert Trigger.
- Data are stored in the CSV/text file in the order of alarm occurrence.

(3) Backup of the alarm log file

By checking "Auto Backup at Save" on the File Save tab, the alarm log file just before saved can be saved as a backup file.
For details, refer to the following.

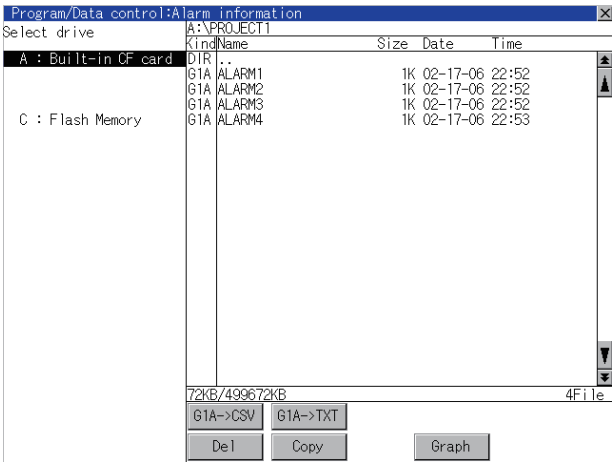
☞ Secton8.2.5 2 (3) File save tab

## 5 Converting alarm log files

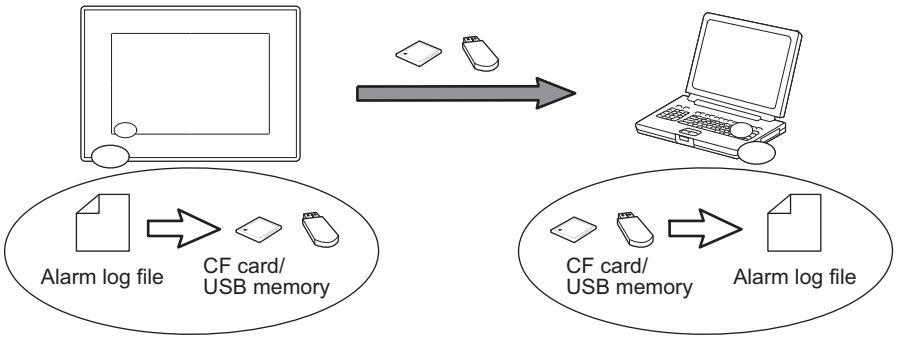
The alarm log files created with the advanced user alarm are binary files (*.G1A).
Convert alarm log files to CSV files or Unicode text files for displaying and editing the files on the personal computer.
The following explains how to convert alarm log files.

(1) How to create CSV files or Unicode text files with utility
Convert the binary files (*.G1A) saved in a CF card to CSV files or Unicode text files with the utility.

1. Select a file in the G1A format in [Alarm information] of the utility, and touch G1A->CSV or G1A->TXT button for converting the file.




2. Store the CSV file or Unicode text file on the personal computer with one of the following methods.
   - Transferring files with GT Designer2
     Select [Communication] → [To/From GOT...] from the menu, and transfer the file in the Resourse Upload -> Computer tab.
   - Storing files in CF card or USB memory
     Save alarm log files in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer.




3. Edit the converted CSV file or Unicode text file displayed on the personal computer.

**Point**

How to operate utility

Refer to the following manual for the details.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)

GT15 User's Manual (Section 13.4 Alarm Information)

(2) How to create CSV files or Unicode text files with device

Convert the binary files (*.G1A) saved in a memory card to CSV files or Unicode text files with turning on the specified device.

When converting the files to CSV files or Unicode text files, the following settings are required. After setting the following, convert the files to CSV files or Unicode text files with turning on the convert trigger device.

- Advanced alarm common setting
- File conversion (the File Save tab in the Advanced User Alarm Observation screen)

☞Section 8.2.5 Setting items

**Point**

Precautions for file conversion with external control device

Before converting an alarm log file, write the ID for the advanced user alarm observation that creates a file to be converted into the alarm ID device. (For the advanced user alarm observation: 1 to 32767)

Even though the convert trigger device is turned on before writing the ID for the advanced user alarm observation, the alarm log file cannot be converted to a CSV file or Unicode text file.

## 6 Contents of a Unicode text file or CSV file

### (1) Historical mode

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ALARM_LOG_HISTORY | | | | | | | | | |
| 2 | 3 | | | | | | | | | |
| 3 | 1 | | | | | | | | | |
| 4 | Alarm surveillance 1 | | | | | | | | | |
| 5 | COMMENT_GROUP_NAME | 4 | | | | | | | | |
| 6 | NUMBER_OF_ALARM_HISTORY | 3 | | | | | | | | |
| 7 | NUMBER_OF_NOT_RESUMED | 2 | | | | | | | | |
| 8 | NUMBER_OF_UNCONFIRMED | 1 | | | | | | | | |
| 9 | UPPER_NO | MIDDLE_NO | COMMENT_NO | COMMENT | STATUS | OCCURRED | RESTORED | CHECKED | LEVEL | GROUP |
| 10 | 1 | 1 | 1 | Alarms in general: A-1 | RC | 2011/11/29 17:44 | 2011/11/29 17:44 | 2011/11/29 17:44 | 1 | 1 |
| 11 | 1 | 1 | 2 | Alarms in general: A-2 | OC | 2011/11/29 17:44 | ****/**/** **:**:** | 2011/11/29 17:44 | 1 | 1 |
| 12 | 1 | 2 | 4 | Alarms in general: B-1 | O | 2011/11/29 17:44 | ****/**/** **:**:** | ****/**/** **:**:** | 1 | 1 |

1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) 17) 18)

| No. | Description |
|---|---|
| 1) | Collection mode |
| 2) | Number of alarms |
| 3) | Alarm ID |
| 4) | Alarm name |
| 5) | Comment group No. |
| 6) | Number of alarms |
| 7) | Number of alarms that have not been restored |
| 8) | Number of alarms that have not been checked |
| 9) | Higher hierarchy comment No. |
| 10) | Middle hierarchy comment No. |
| 11) | General comment No. |
| 12) | General alarm comment |
| 13) | Alarm status (O: Has occurred, R: Has been restored, C: Has been checked) |
| 14) | Date and time of the alarm |
| 15) | Date and time that the alarm was restored |
| 16) | Date and time that the alarm was checked |
| 17) | Level set for the alarm |
| 18) | Group set for the alarm |

## (2) Cumulative mode

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ALARM LOG CUMMULATIVE | | | | | | | | | | | | |
| 2 | 3 | | | | | | | | | | | | |
| 3 | 1 | | | | | | | | | | | | |
| 4 | Alarm surveillance 1 | | | | | | | | | | | | |
| 5 | COMMENT_GROUP_NAME | 4 | | | | | | | | | | | |
| 6 | NUMBER OF ALARM HISTORY | 3 | | | | | | | | | | | |
| 7 | NUMBER OF NOT RESUMED | 2 | | | | | | | | | | | |
| 8 | NUMBER OF UNCONFIRMED | 0 | | | | | | | | | | | |
| 9 | UPPER_NO | MIDDLE_NO | COMMENT_NO | COMMENT | STATUS | OCCURRED | RESTORED | CHECKED | LEVEL | GROUP | OCCUR_FREQ | CUM_TIME | DOWN_TIME |
| 10 | 1 | 1 | 2 | Alarms in general: A-2 | RC | 2011/11/29 18:30 | 2011/11/29 18:30 | 2011/11/29 18:30 | 1 | 1 | 3 | 00000:00:36 | 00000:00:10 |
| 11 | 1 | 2 | 4 | Alarms in general: B-1 | OC | 2011/11/29 18:29 | ****/**/** **:**:** | 2011/11/29 18:30 | 1 | 1 | 1 | 00000:00:00 | |
| 12 | 1 | 1 | 1 | Alarms in general: A-1 | OC | 2011/11/29 18:28 | ****/**/** **:**:** | 2011/11/29 18:28 | 1 | 1 | 1 | 00000:00:00 | |

1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) 17) 18) 19) 20) 21)

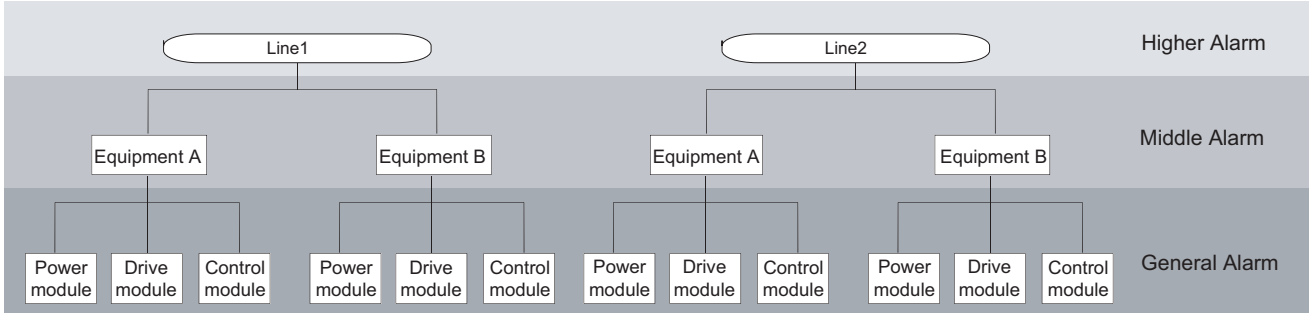
| No. | Description |
|---|---|
| 1) | Collection mode |
| 2) | Number of alarms |
| 3) | Alarm ID |
| 4) | Alarm name |
| 5) | Comment group No. |
| 6) | Number of alarms |
| 7) | Number of alarms that have not been restored |
| 8) | Number of alarms that have not been checked |
| 9) | Higher hierarchy comment No. |
| 10) | Middle hierarchy comment No. |
| 11) | General comment No. |
| 12) | General alarm comment |
| 13) | Alarm status (O: Has occurred, R: Has been restored, C: Has been checked) |
| 14) | Date and time of the alarm |
| 15) | Date and time that the alarm was restored |
| 16) | Date and time that the alarm was checked |
| 17) | Level set for the alarm |
| 18) | Group set for the alarm |
| 19) | Frequency of the alarm |
| 20) | Total alarm occurrence time including the past alarm occurrence time (Total down time) |
| 21) | Time from the alarm occurrence to the alarm restoration |

## 8.2.3 Useful information

This section explains some useful functions when using advanced user alarms.

### 1 Hierarchical alarm example

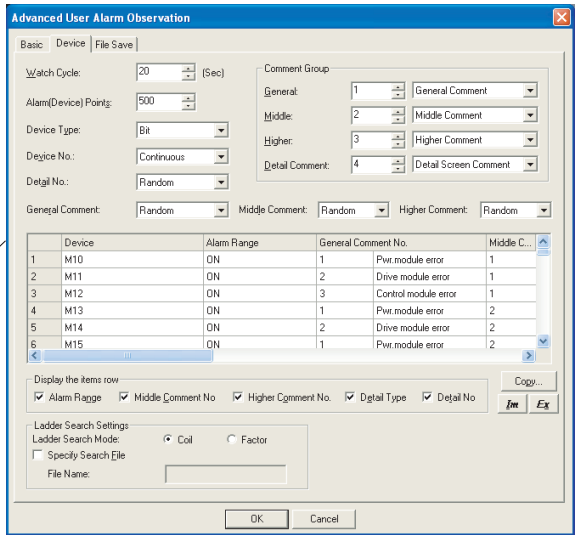
The figure below shows an example of the system in which alarms are hierarchized. The comment registration required for the system and the application example are explained in this section.




Setting example

Set comments that will be displayed at alarm occurrence for each hierarchy (Higher hierarchy, Middle hierarchy, and General hierarchy) as shown below.

Settings in the Advanced User Alarm Observation dialog box (device tab)

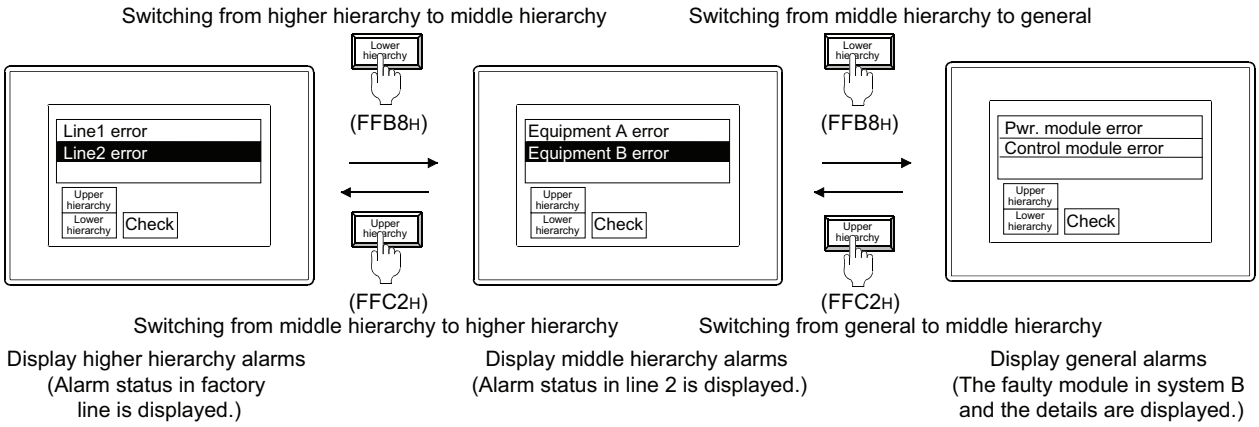



| | Device | Alarm Range | General Comment No. | | Middle Comment No. | | Higher Comment No. | |
|---|---|---|---|---|---|---|---|---|
| 1 | M10 | ON | 1 | Pwr. module error | 1 | Equipment A error | 1 | Line1 error |
| 2 | M11 | ON | 2 | Drive module error | 1 | Equipment A error | 1 | Line1 error |
| 3 | M12 | ON | 3 | Control module error | 1 | Equipment A error | 1 | Line1 error |
| 4 | M13 | ON | 1 | Pwr. module error | 2 | Equipment B error | 1 | Line1 error |
| 5 | M14 | ON | 2 | Drive module error | 2 | Equipment B error | 1 | Line1 error |

| | Detail Type | Detail No. | | Reset | | Level | Group |
|---|---|---|---|---|---|---|---|
| 1 | Comment Window | 1 | Hydraulic pressure error | YES | 0 | 1 | 1 |
| 2 | Base Screen | 0 | | YES | 0 | 1 | 2 |
| 3 | Window Screen | 0 | | YES | 0 | 1 | 2 |
| 4 | Comment Window | 4 | Low coolant water pressure | YES | 0 | 2 | 1 |
| 5 | Comment Window | 5 | Refill fuel | YES | 0 | 2 | 2 |

(1) Alarm location refinement

The alarm information can be displayed ranging from summary to details in the hierarchical order.



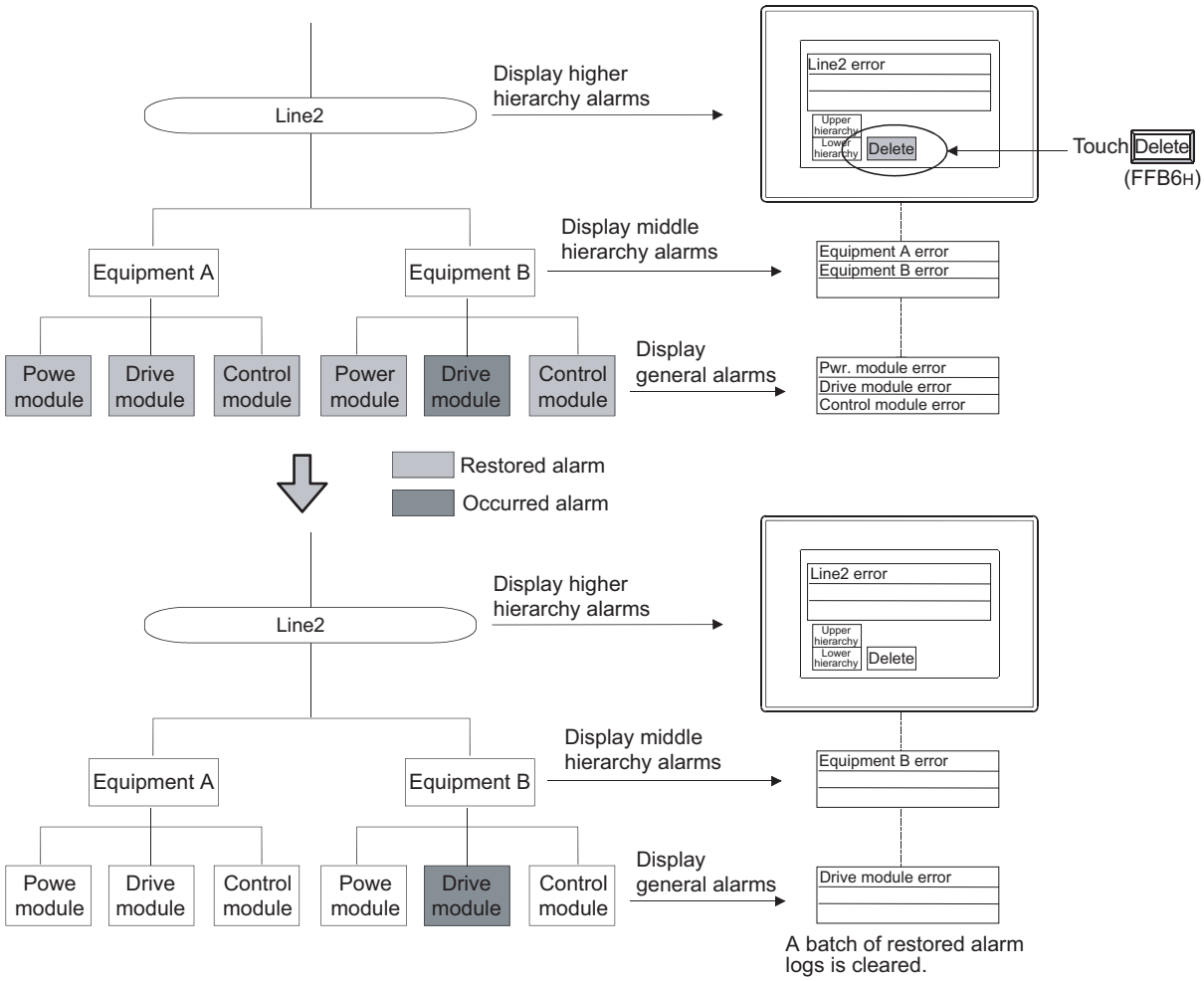

(2) Simultaneous execution of the operations of Check (FFB4H) and Delete (FFB6H) for multiple alarms

The following operations can be executed simultaneously for multiple alarms included in the lower hierarchy.

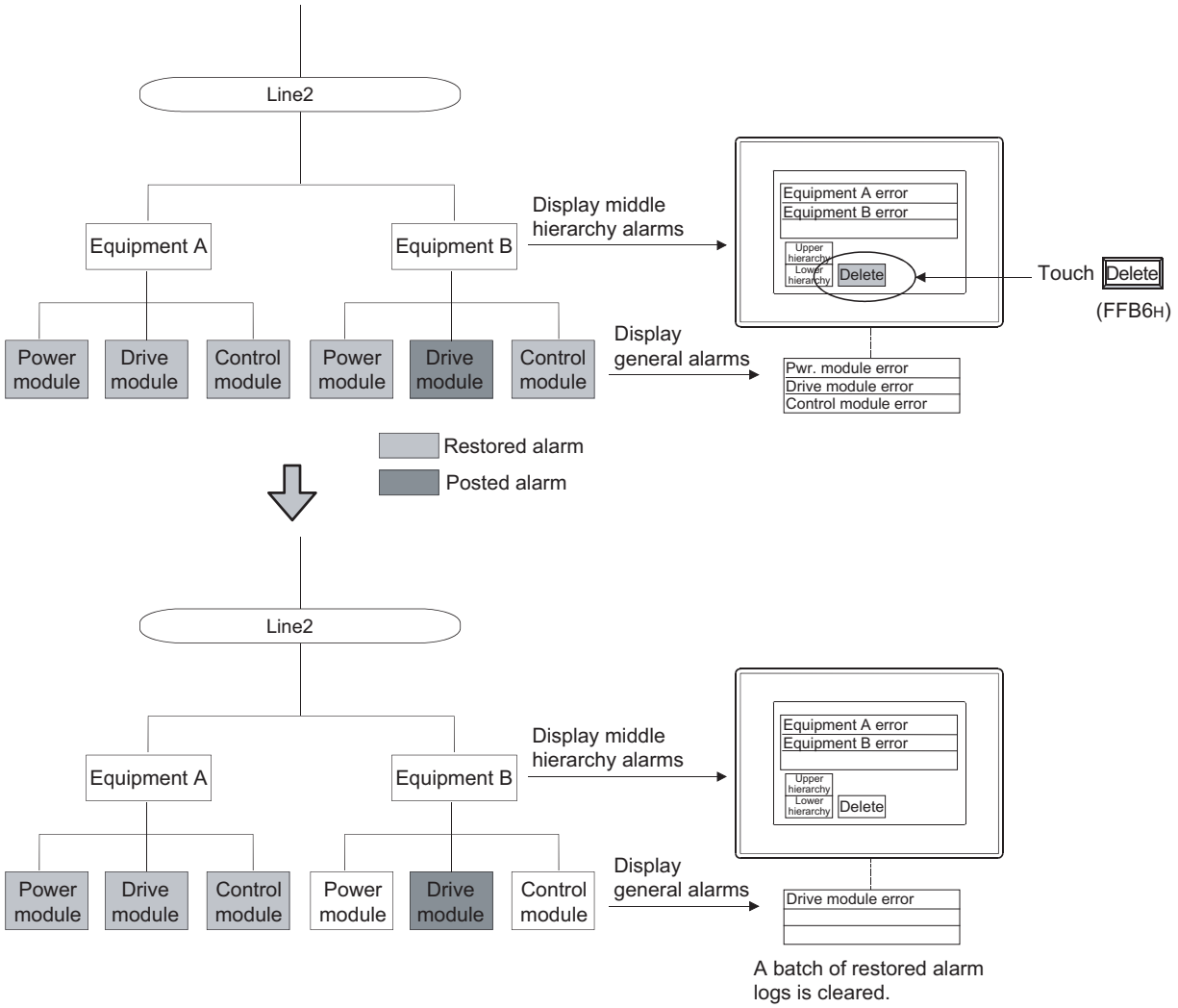
- Check : The time when the alarm occurrence was confirmed is recorded.
- Delete : The history of restored alarms is cleared.

(a) When operating Check (FFB4H) or Delete (FFB6H) for higher hierarchy alarms

A batch of alarms of the middle and general hierarchies, located below the higher hierarchy can be operated.

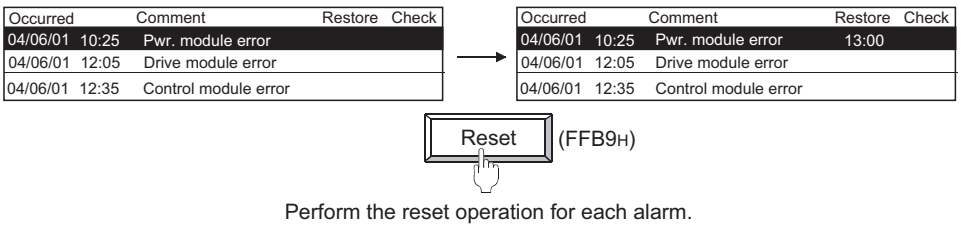


(b) When operating Check (FFB4H) or Delete (FFB6H) for middle hierarchy alarms
A batch of general alarms located below the middle hierarchy can be operated.




**Remark** Reset operation

The reset operation of restoring an alarm manually (ON → OFF/reset value) by the Reset (FFB9H) button is not usable for a batch of alarms.
Perform reset operation when general alarms are displayed.




Perform the reset operation for each alarm.

(3) Alarm Classification according to the level or group

Alarms can be classified according to the level or group.

The contents displayed at alarm occurrence can refined according to the level or type.

Example: Refine the alarms to be displayed by changing the switching device (level switching: D32, group switching: D33).

Display in order of alarm occurrence

| Occurred | | Comment | Level | Group |
|---|---|---|---|---|
| 04/06/01 | 16:51 | Hydraulic pressure error | 1 | 1 |
| 04/06/01 | 14:25 | Low coolant pressure | 2 | 1 |
| 04/06/01 | 12:25 | Oil refill | 1 | 2 |
| 04/06/01 | 09:40 | Little material remaining | 1 | 2 |
| 04/06/01 | 07:35 | Fuel refill | 2 | 2 |

Level switching device (D32) 0

Group switching device (D33) 0

Display level 1 alarms only

| Occurred | | Comment | Level | Group |
|---|---|---|---|---|
| 04/06/01 | 16:51 | Hydraulic pressure error | 1 | 1 |
| 04/06/01 | 12:25 | Oil refill | 1 | 2 |
| 04/06/01 | 09:40 | Little material remaining | 1 | 2 |
| | | | | |
| | | | | |

Level switching device (D32) 1

Group switching device (D33) 0

Display level 2 alarms only

| Occurred | | Comment | Level | Group |
|---|---|---|---|---|
| 04/06/01 | 12:25 | Oil refill | 1 | 2 |
| 04/06/01 | 09:40 | Little material remaining | 1 | 2 |
| | | | | |
| | | | | |
| | | | | |

Level switching device (D32) 1

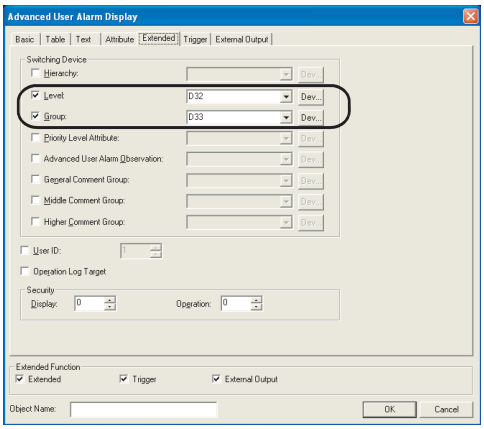
Group switching device (D33) 2

**Remark** Switching device

Set the switching device as shown below by the advanced alarm display function. For details, refer to the following.

Section 8.4.5 5 Extended tab

Example:




Extended tab of Advanced User Alarm Display dialog box

## 2 Display example of general alarms (Detailed display)

General alarm's details such as causes or corrective actions can be displayed on another screen (comment window, base screen or window screen).

Setting example

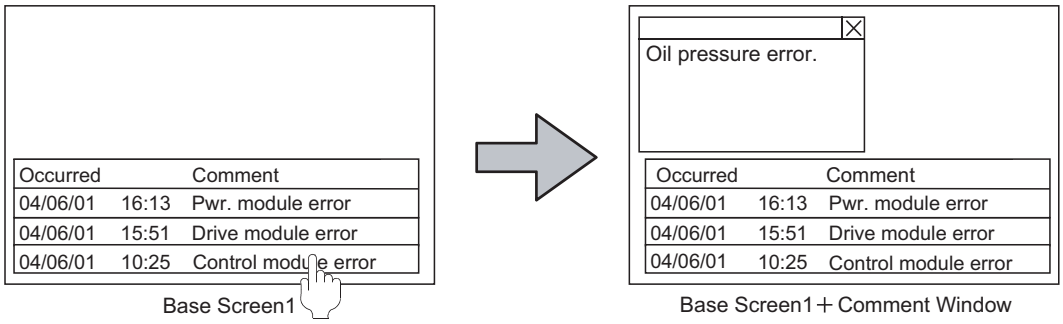
| | Detail Type | Detail No. | | Reset | | L... |
|---|---|---|---|---|---|---|
| 1 | Comment Window | 10 | Oil pressure error. | YES | 0 | 1 |
| 2 | Base Screen | 1 | | YES | 0 | 2 |
| 3 | Window Screen | 1 | | YES | 0 | 2 |
| 4 | Comment Window | 11 | A coolant water pressure... | YES | 0 | 1 |
| 5 | Comment Window | 1 | Feed material from the fe... | YES | 0 | 1 |
| 6 | Comment Window | 2 | | YES | 0 | 1 |

(1) Comment window

Comments registered by the user are displayed on the comment window.

More detailed comments such as details and corrective actions can be displayed on the comment window.

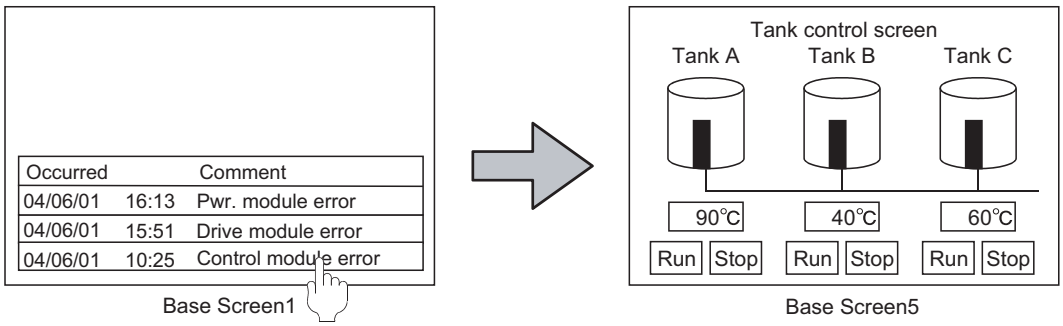
Example) Advanced alarm display




(2) Base screen

The specified base screen is displayed.

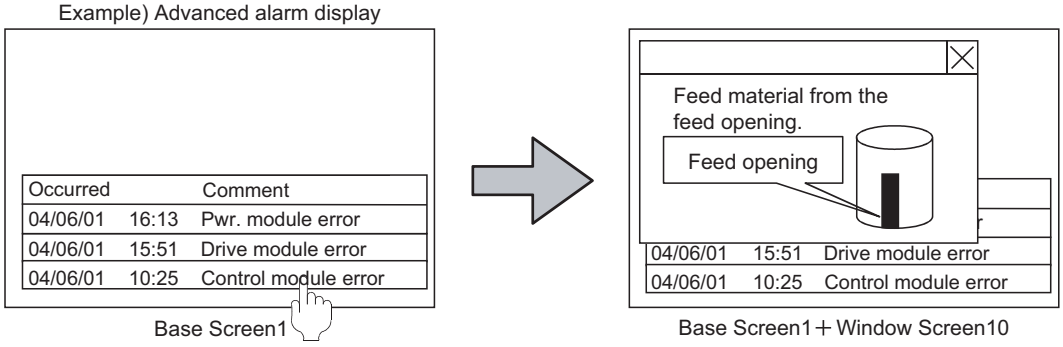
Example) Advanced alarm display




(3) Window screen

The specified window screen (overlap window 1) is displayed.

Example) Advanced alarm display



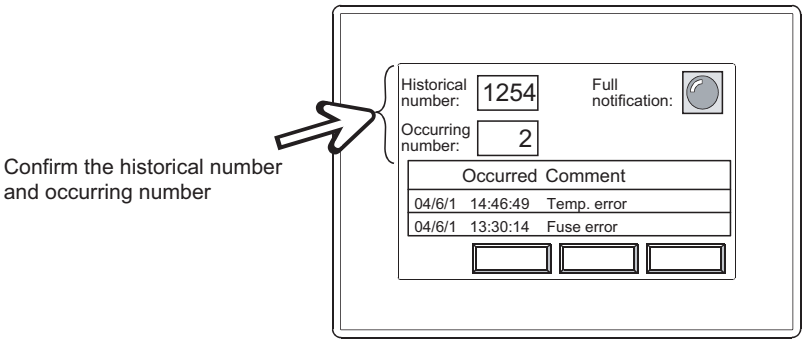
## 3 Action when buffer is full

If the number of the advanced user alarms that are temporarily saved in the buffering area reaches or almost reaches the "Stored Number", the status can be notified using a device.

(1) Confirmation of historical number and occurring number

The information on the number of total alarms temporarily saved in the buffering area can be stored and confirmed in a device.

In addition, the number of the advanced user alarms that are currently occurring can also be confirmed.

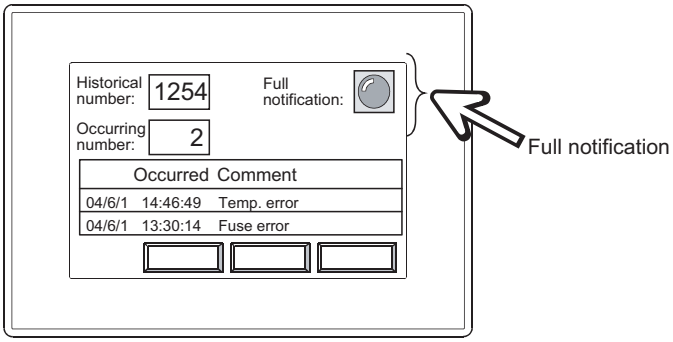



(2) When the buffering area is full

In this case, the status can be notified using a device.

In addition, the following operations are available by making the settings.

- Issue the full notification before the area is full. (Make the settings in "Buffer Full Alert Capacity" on the Basic tab.)
- Select the process under buffer full. (Make the settings in "Action When Buffer is Full" on the Basic tab.)




**Remark**

(1) Settings

For details, refer to the following.

☞ Secton8.2.5 2 (1) Basic tab

(2) Buffering area

For details, refer to the following.

☞ Secton8.2.2 2 Collection flow and collection mode

(3) Buffering size

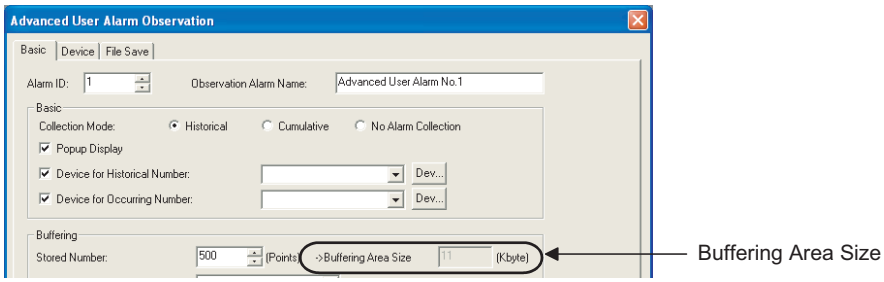
The buffering size required for advanced user alarms varies depending on the settings.
As buffering size increases, the user area (C drive + add-on memory) of the GOT, decreases.
Adjust buffering size in accordance with the capacity of the user area.

(a) Settings relevant to buffering area size

| Collection mode | Settings relevant to buffering area size |
|---|---|
| Historical | • Number of device points set for the alarm ("Alarm (Device) Points" of the Device tab)<br>• Total number of alarms saved (“Stored Number“) |
| Cumulative | • Number of device points set for the alarm ("Alarm (Device) Points" of the Device tab) |
| No alarm collection | |

(b) Confirming the buffering area size needed for advanced user alarms

The buffering area size for the alarm ID being set can be confirmed in the "Buffering Area Size" on the Basic tab.



## 8.2.4 Placement and settings

1. Register comments in advance.
   Register alarm messages in a comment group. (☞ Secton4.1.4 2 Registering comments as comment group)

2. Perform either of the following operations.
   - Select the Advanced Alarm Observation menu
     [Common] → [Advanced Alarm Observation] → [Advanced Alarm Common]
   - Click (Advanced User Alarm Observation)

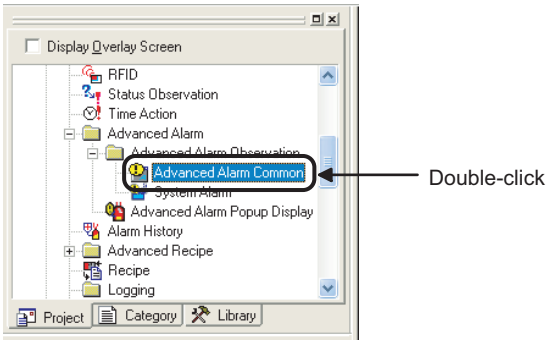
3. As the setting dialog box appears, make the settings by referring to the description below.
   (☞ Section 8.2.5 Setting items)

**Remark**

When setting from Workspace(Project)

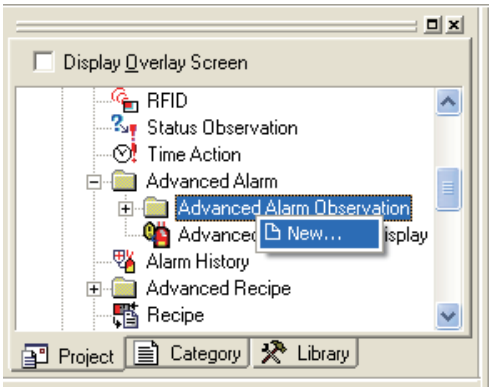
(1) Advanced Alarm Common

Double-clicking the Advanced Alarm Common in Workspace(Project) displays the setting dialog box.




(2) Advanced User Alarm Observation

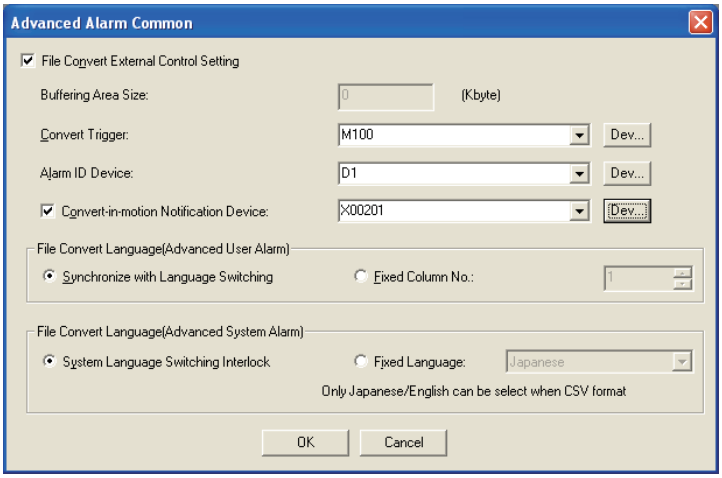
Right-clicking the Advanced Alarm Common in Workspace(Project) and selecting [New...] displays the setting dialog box.



## 8.2.5 Setting items

### 1 Advanced Alarm Common

Set this item to control alarm log file conversion with a device.




| Item | Description | Model |
|---|---|---|
| File Convert External Control Setting | Check this item to control alarm log file conversion with a device. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Buffering Area Size | Displays the memory capacity required for alarm log file conversion. | |
| Convert Trigger | Set trigger device for file conversion. | |
| Alarm ID Device | The file to be converted is created with the advanced alarm observation. Set the device that specifies the ID for the advanced alarm observation. | |
| Convert-in-motion Notification Device | Set a device to notify that a file is during conversion. | |
| File Convert Language (Advanced User Alarm) | Set a column No. for comment group used for file conversion.<br>Synchronize with Language Switching::<br>Select this item to switch the column No. using Language Switching Device.<br>Fixed Column No.:: Select this item to fix the column No. to be used.<br>After the selection, set a column No. to be used. (1 to 10) | |
| File Convert Language (Advanced System Alarm) | Set system language used for file conversion.<br>System Language Switching Interlock :<br>Select this item to convert a file in system language displayed on the GOT.<br>Fixed Language: Select this item to convert a file in specified language.<br>After the selection, specify the language. | |

**Point**

To control alarm log file conversion with a device

When using Advanced User Alarm Observation

To control alarm log file conversion with a device, setting for file conversion is required in the File Save tab of [Advanced User Alarm Observation].

☞ 1 (3) File save tab

When using Advanced System Alarm Observation

To control alarm log file conversion with a device, setting for file conversion is required in the File Save tab of [Advanced System Alarm Observation].

☞ Section 8.3.5 Setting items 2 (2) File Save tab

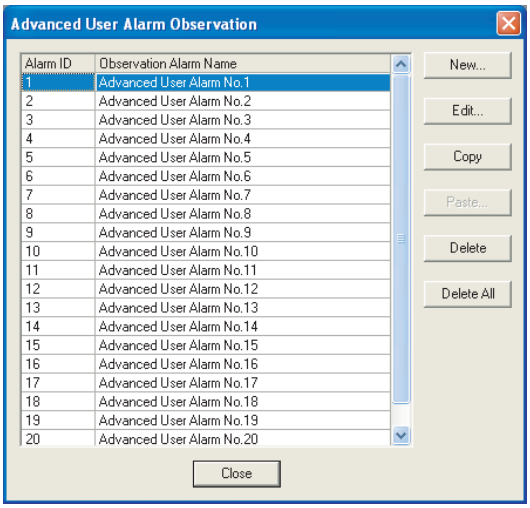
## 2 Advanced user alarm observation (Alarm ID list)

Make the settings of advanced user alarms (devices, watch cycle, and collection mode) for each alarm ID.

Up to 255 alarm IDs can be set.

This screen is displayed only when [Common] → [Advanced Alarm Observation] → [Advanced User Alarm] menu is selected.

Note that it is not displayed when setting is attempted from the project workspace.



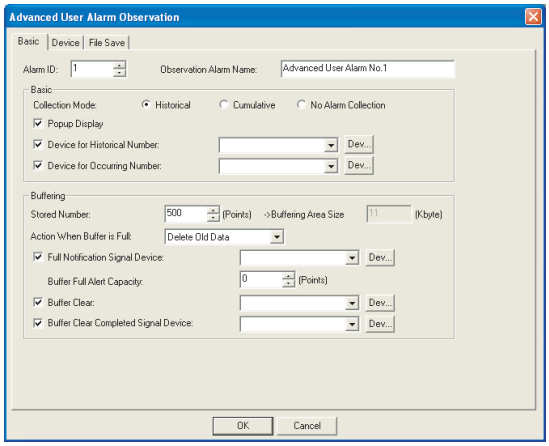

| Item | Description | Model |
|---|---|---|
| New | Click this button when setting a new alarm ID, and the setting dialog box will appear.<br>(☞ This section 2 Advanced user alarm observation) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Edit | Click this button to when editing the selected alarm ID, and the setting dialog box will appear.<br>(☞ This section 2 Advanced user alarm observation) | |
| Copy | Click this button to copy the selected alarm ID. | |
| Paste | Click this button when pasting the copied alarm ID to the alarm ID list.<br>The destination of the alarm ID can be set. | |
| Delete | Click this button to delete the selected alarm ID. | |
| Delete All | Click this button to delete all alarm IDs. | |
| Close | Click this button to close the setting dialog box of advanced user alarm observation. | |

## 3 Advanced user alarm observation

Set advanced user alarms.

(1) Basic tab

Set the collection mode and buffering for saving the alarm history.




Basic | Device | File Save

| Item | | Description | Model |
|---|---|---|---|
| Alarm ID | | Set the alarm ID No. (1 to 32767) and name of the advanced user alarm.<br>Up to 32 characters can be entered for the alarm name. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Observation Alarm Name | | | |
| Basic | Collection Mode | Select a mode to collect advanced user alarms. (☞ Secton8.2.2 2 Collection flow and collection mode)<br>Historical :Data of advanced user alarms are collected as history. Historical data is added every time an advanced user alarm occurs.<br>Cumulative :The information on the latest alarm status, the number of alarms that have occurred and the cumulative alarm occurrence time are collected for each alarm type.<br>No Alarm Collection :Only alarms that are currently occurring are displayed. The history of restored alarms is not saved. | |
| | Popup Display | Check this item when displaying collected advanced user alarms by the advanced alarm popup display function.<br>(☞ Section 8.5 Advanced Alarm Popup Display) | |
| | Device for Historical Number | Check this item when storing the total number of advanced user alarm logs in the word device.<br>The number of total alarm logs corresponds to the number of the alarms in all the status of occurrence, check, and restoration.<br>This item is available only when "Collection Mode" is "Historical."<br>After checking this item, click the Dev... button to set the device for storing that number.<br>(☞ Section 5.1 Device Setting) | |
| | Device for Occurring Number | Check this item when storing the number of advanced user alarms that are currently occurring in the word device.<br>After checking this item, click the Dev... button to set the device for storing that number.<br>(☞ Section 5.1 Device Setting) | |

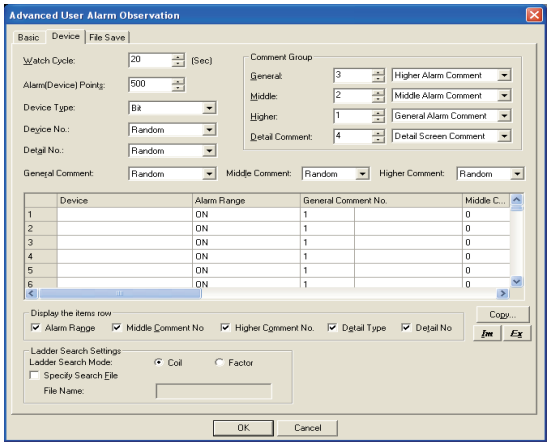
(Continued to the next page)

Basic | Device | File Save

| Item | | Description | Model |
|---|---|---|---|
| Buffering | | Set the buffering for saving the history of collected advanced user alarms.<br>This item is available only when "Historical" or "Cumulative" is selected as the collection mode.<br>☞ Secton8.2.2 2 Collection flow and collection mode<br>☞ Secton8.2.3 3 Action when buffer is full | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Stored Number | Set the number of advanced user alarms to be saved as history (32767 max.).<br>This item is available only when the collection mode is "Historical."<br>Set the number greater than or equal to the "Alarm (Device) Points" on the Device tab.<br>Buffering size increases according to the number of alarms stored. | |
| | Action When Buffer is Full | Select the operation to be performed when the number of the advanced user alarms stored in the buffering area reaches the "Stored Number"<br>This item is available only when the collection mode is "Historical."<br>Delete Old Data :The oldest one is deleted from the restored advanced user alarms and the data of the new advanced user alarm are added.<br>Stop New Addition :The collection of advanced user alarms is interrupted. Even if a new advanced user alarm occurs, it is not collected. | |
| | Full Notification Signal Device | Check this item to turn on the device to alert buffer full outside when the number of storable advanced user alarms reaches below the number set in "Buffer Full Alert Capacity."<br>This item is available only when the collection mode is "Historical."<br>After checking this item, click the Dev... button to set the full alert signal device.<br>(☞ Section 5.1 Device Setting) | |
| | Buffer Full Alert Capacity | Set the timing for issuing an alert outside when the free space of the buffering area has decreased (storable advanced user alarms: 0 to 255).<br>This item can be set only when the collection mode is "Historical" and a check mark is placed for "Full Notification Signal Device" is checked.<br>When the number of storable advanced user alarms is equal to or less than the number set here, the "Full Notification Signal Device" turns on.<br>Example :Setting "Stored Number" to 1000 and "Buffer Full Alert Capacity" to 10<br>The full notification signal device turns on when the number of total saved advanced user alarms is 990 or more. | |
| | Buffer Clear | Check this time to delete the restored advanced user alarms saved in the buffering area by the device.<br>After checking this item, click the Dev... button to set the “Buffer Clear”.<br>(☞ Section 5.1 Device Setting) | |
| | Buffer Clear Completed Signal Device | Check this time to set the device for notifying of the completion of buffer clear.<br>After checking this item, click the Dev... button to set the buffer clear completed signal device.<br>(☞ Section 5.1 Device Setting)<br>This item can be set only when "Buffer Clear" is check-marked. | |

(2) Device tab

Set the timing for collecting advanced user alarms and make the settings of advanced user alarms (device settings for advanced user alarms, comments displayed when advanced user alarms occur, resetting of advanced user alarms, and the level/group settings).




Basic | **Device** | File Save

| Item | Description | Model |
|---|---|---|
| Watch Cycle | Set a cycle to monitor the device (1 to 3600s). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Alarm (Device) Points | Set the number of device points (1 to 32767 points).<br>The maximum points (32767) are the total alarm (device) points set on all alarm IDs. | |
| Device Type | Select the data type of the device to be monitored.<br>Bit :Select the item when monitoring a bit device by the ON/OFF change.<br>Signed BIN16 :The word device value is handled as a signed 16-bit binary.<br>Unsigned BIN16 :The word device value is handled as an unsigned 16-bit binary.<br>Signed BIN32 :The word device value is handled as a signed 32-bit binary.<br>Unsigned BIN32 :The word device value is handled as an unsigned 32-bit binary.<br>BCD16 :The word device value is handled as a 16-bit BCD (binary-coded decimal).<br>BCD32 :The word device value is handled as a 32-bit BCD (binary-coded decimal).<br>Real :The word device value is handled as a floating-point real number. | |
| Device No. | Select a method to set the device No.<br>Continuous :Devices are numbered consecutively from the set one.<br>Random :Devices are numbered at random.<br>Fixed :In the word device setting, multiple occurrence ranges are set by the same word device. | |
| Detail No.*3 | Select a method of setting the comment No., base screen and window screen in the comment group to be displayed with details.<br>Continuous :The comments/screens are numbered consecutively from the set one.<br>Random :The comments/screens are numbered at random. | |
| General Comment | Select a method of setting the comments in the comment group to be displayed for general alarms, middle alarms, and higher alarms.<br>Continuous :The comments are numbered consecutively from the set one.<br>Random :The comments are numbered at random. | |
| Middle Comment | | |
| Higher Comment | | |

(Continued to the next page)

Basic | **Device** | File Save

| Item | | Description | Model |
|---|---|---|---|
| Comment Group*1 | | Set a group No. of the comment group displayed with the comments of general alarms, middle alarms, higher alarms, and detailed display. | |
| Alarm setup list | | Set up a device for the alarm and comments displayed when an alarm occurs. | |
| | Device | Set up a device for the alarm. (☞ Section 5.1 Device Setting) | |
| | Alarm Range | Set the device value condition for displaying an alarm.<br>• When [Device Type] is set to [Bit]<br>ON : Alarms are displayed by the rising (OFF → ON) of the bit device.<br>OFF : Alarms are displayed by the falling (ON → OFF) of the bit device.<br>• When [Device Type] is set to other than [Bit]<br>Click the Exp. button to set up the range of the values of the word device to display the alarm.<br>(☞ Section 5.5 Trigger Setting) | |
| | General Comment No.*1*2 | Set the comment to be displayed when the alarm occurs by the comment No. of the comment group.<br>For an alarm, specify the comment Nos. of the comment groups used for the higher alarm, middle alarm, and general alarm, respectively.<br>Specify "0" when not displaying the middle or higher alarm. | |
| | Middle Comment No. *1*2 | | |
| | Higher Comment No. *1*2 | | |
| | Detail Type*3*4 | Select a method of detailed display.<br>Set the comment No., base screen No., and window screen No. of the comment group displayed in "Detail No."<br>Not Display :Details are not displayed.<br>Comment Window*3 :Details are displayed on the window for detail display. Registered comments are displayed on the comment window.<br>Base Screen :The base screen is displayed as detail display. The base screen set to the detail No. of the device is displayed.<br>Window Screen :The window screen (overlap window 1) is displayed as detail display. The window screen set to the device's detail No. is displayed. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Detail No. | Set the comment No., window screen No., and base screen No. of the comment group displayed in details when an alarm occurs. | |
| | Reset | Select whether or not to enable the reset operation of alarm (turn off or reset the device specified for the alarm by the touch switch for resetting).<br>(☞ Section 8.4.6 Description on touch switches for advanced alarm display)<br>YES :The device specified for the alarm will be turned off or set to the reset value. If device is a word device, set a reset value after selecting this option.<br>NO :The device specified for the alarm will not be turned off or set to the reset value. | |
| | Level | Set a level (1 to 255) to the alarm.<br>Alarms can be displayed in the level order from highest to lowest, or only the alarms at the particular level can be displayed. | |
| | Group | Set a group (1 to 255) on the alarm.<br>Alarms can be displayed in the group order, or only the alarms of the particular group can be displayed. | |
| Im (Import)*5 | | Reads out the advanced user alarm observation settings that have been edited in a CSV file / Unicode text file to GT Designer2. | |
| Ex (Export)*5 | | Saves the advanced user alarm observation settings that have been set by GT Designer2 as a CSV file / Unicode text file. | |

(Continued to next page)

Basic | **Device** | File Save

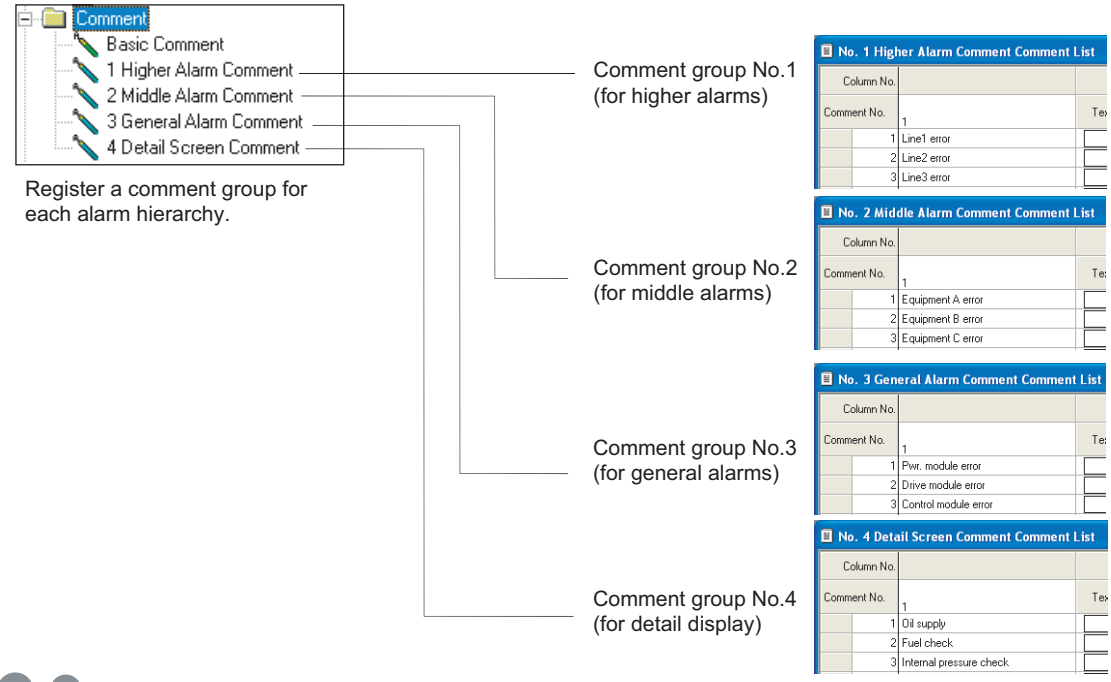
| Item | | Description | Model |
|---|---|---|---|
| Ladder Search Settings*6 | | Check this item to search selected alarm device at ladder monitor start. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Ladder Search Mode | Select a search method from coil-search or defect search. | |
| | Specify Search File | Check this item to specify a program file to be searched.<br>This setting is valid only for the QCPU and QnACPU.<br>After the check, specify a file name.<br>(Up to eight characters can be set.) | |

For details of *1 to *6, refer to the following.

*1 Method of setting the comments to be displayed when an alarm occurs

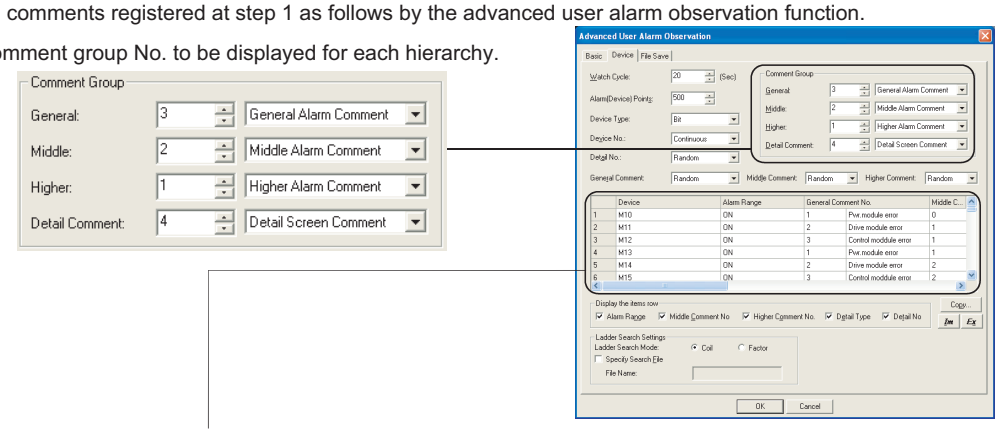
A setting example for displaying comments in comment groups as higher alarms, middle alarms, general alarms, and detail display is provided below.

1 Register the comments to be displayed when an alarm occurs as a comment group.




2 1 Set the comments registered at step 1 as follows by the advanced user alarm observation function.

1) Set the comment group No. to be displayed for each hierarchy.




2) Set the comments to be displayed for each hierarchy (general alarms, middle alarms, higher alarms, and detail display) of the alarm.

Comment displayed for alarm M10

Comment displayed for alarm M11

Comment displayed for alarm M12

| | General Comment No. | | Middle Comment No. | | Higher Comment No. | | Detail Type | Detail No. | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Pwr. module error | 1 | Equipment A error | 1 | Line1 error | Comment Window | 1 | Oil supply |
| 2 | 2 | Drive module error | 1 | Equipment A error | 1 | Line1 error | Comment Window | 2 | Fuel check |
| 3 | 3 | Control module error | 1 | Equipment A error | 1 | Line1 error | Comment Window | 3 | Internal pressure check |
| 4 | 1 | Pwr. module error | 2 | Equipment B error | 1 | Line1 error | Comment Window | 1 | Oil supply |
| 5 | 2 | Drive module error | 2 | Equipment B error | 1 | Line1 error | Comment Window | 2 | Fuel check |
| 6 | 3 | Control module error | 2 | Equipment B error | 1 | Line1 error | Comment Window | 3 | Internal pressure check |

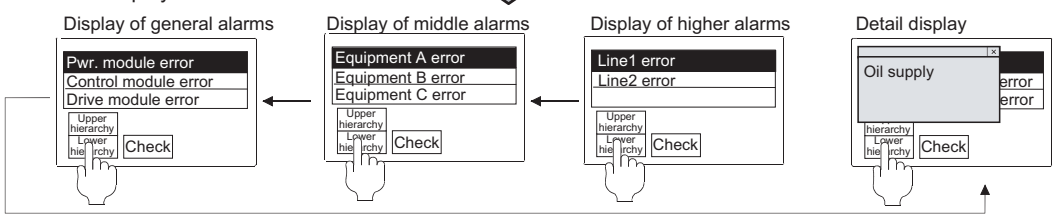
Set the comment No. of comment group No.3.

Set the comment No. of comment group No.2.

Set the comment No. of comment group No.1.

Set the comment No. of comment group No.4.

Example) Comment display when alarm M10 occurs

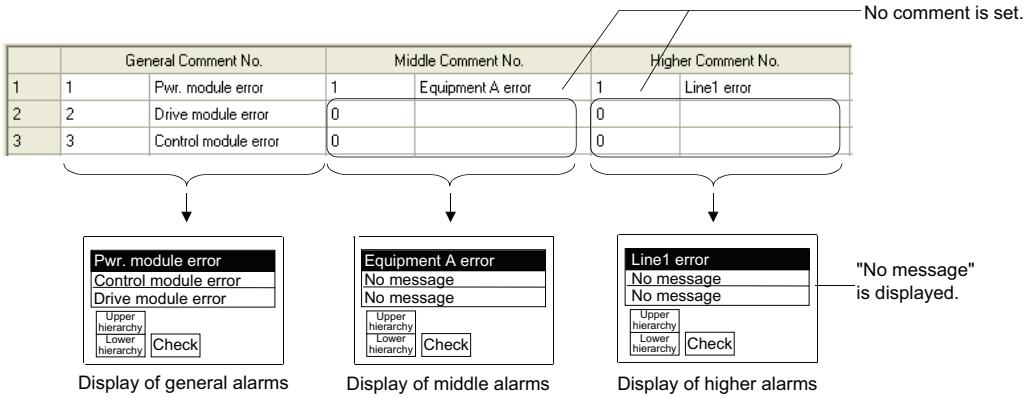


*2 When "No Message" is displayed as comment

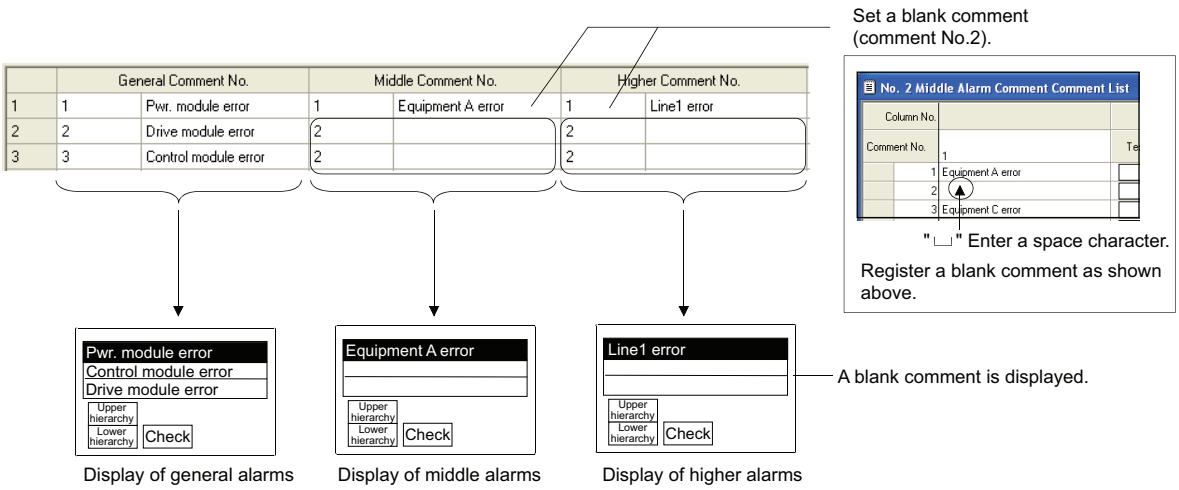
When the comment to be displayed when an alarm occurs is set as follows, "No Message" is displayed when an alarm occurs.
•Comment settings have not been performed (comment No. remains "0.")
•No comment has been registered for the comment No.

In addition, when alarms are hierarchized and comments are not set for some hierarchies, it is recommended to set blank comments (enter space only) so that "No Message" is not displayed.

Example 1: When no comment is specified



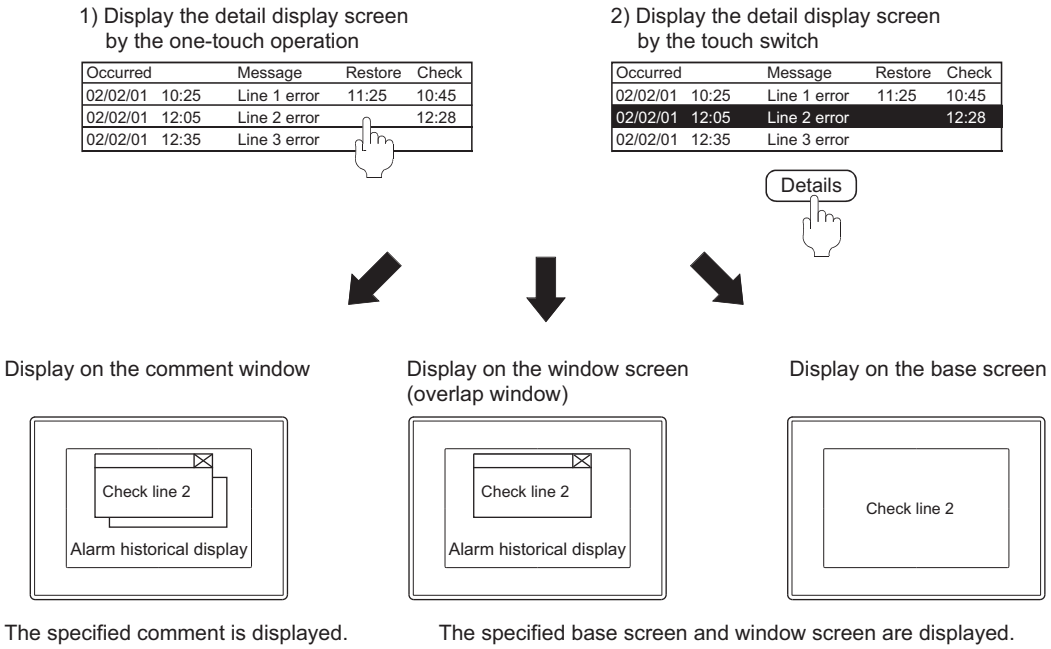

Example 2: When a blank comment is specified




*3 Detail type settings

All alarms are displayed on the same destination specified on "Detail Type" (not display, comment window, base screen, or window screen) when "Detail No." is set to "Continuous."
To change the "Detail Type" settings, set "Detail No." to "Random."
In addition, when changing the settings from "Random" to "Continuous," the destinations of all alarms set on "Detail Type" are changed to the same destination as the top alarm.

*4 Method of displaying the comment window

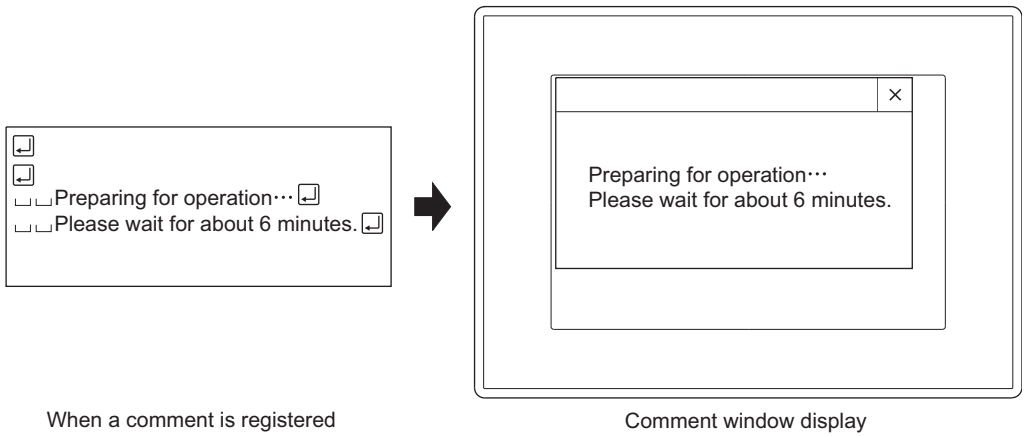



(a) Number of characters available for comment window
- 39 characters × 11 lines (429 characters)

(b) Comment window is displayed on top-left of base screen
The operation of moving and closing the window is the same as that of the window screen.

(c) Comment text is displayed as follows
- Text size: fixed to 1 × length, 1 × width
- The setting reverse, blink and HQ fonts are not supported, regardless of the comment registration settings.

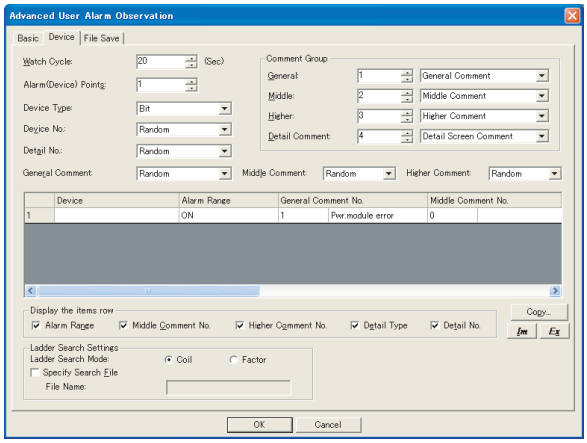
(d) The comment lines are displayed in the comment window as follows.
- Comments are displayed from top-left to right in the comment window.
- If the comment exceeds the display range of the comment window, it is continued starting a new line.
- To place the comment in the center of the comment window, make adjustment using the line feed for the comment.



*5 Import/Export

The exported CSV file can be edited using such as the spreadsheet software.
The CSV file, after editing, can be imported to and opened by GT Designer2.

Example: Importing and exporting in CSV file




Exported in CSV file

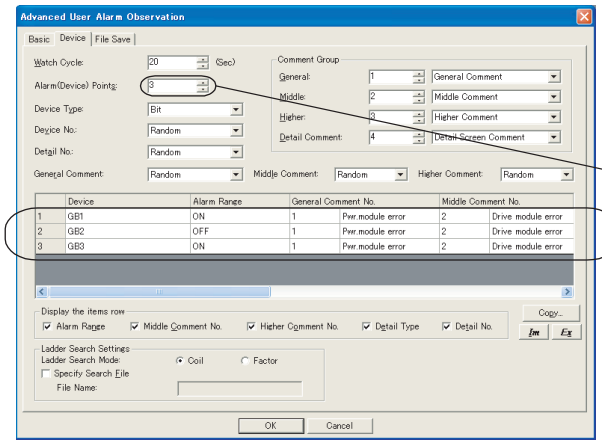
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Advanced User Alarm | | | | | | | | | | |
| Alarm Points | 1 | Device Type | Bit | | | | | | | |
| Device | Alarm Range | General Comment No. | Middle Comment No. | Higher Comment No. | Detail Type | Detail No. | Reset | Reset Value | Level | Group |
| | ON | 1 | 0 | 0 | Not Display | 1 | YES | 0 | 1 | 1 |
| Device No. | Random | Detail No. | Random | General Comment | Random | Middle Comment | Random | Higher Comment | Random | |

Editing the exported file

Add the setting using applications such as Microsoft® Excel.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Advanced User Alarm | | | | | | | | | | |
| Alarm Points | 3 | Device Type | Bit | | | | | | | |
| Device | Alarm Range | General Comment No. | Middle Comment No. | Higher Comment No. | Detail Type | Detail No. | Reset | Reset Value | Level | Group |
| GB1 | ON | 1 | 2 | 0 | Not Display | 1 | YES | 0 | 1 | 1 |
| GB2 | OFF | 1 | 2 | 0 | | 1 | YES | 0 | 1 | 1 |
| GB3 | ON | 1 | 2 | 0 | Random | 1 | YES | 0 | 1 | 1 |
| Device No. | Random | Detail No. | Random | General Comment | Random | Middle Comment | Random | Higher Comment | Random | |

Importing to GT Designer2




The added contents are displayed.

**Point**

Import/export in multilingual environment

Use a Unicode text file to import/export a file in the multilingual environment.
Characters in a file can be correctly imported/exported when a Unicode text file is used.

*6 Starting ladder monitor

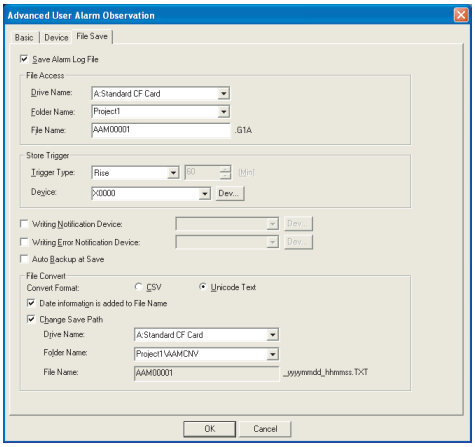
To start ladder monitor, touch switch setting is required.
For details, refer to the following.

☞Section 8.4.6 Description on touch switches for advanced alarm display

(3) File save tab

Make the settings to save the alarm history, which is saved in the buffering area, in the memory card.

(☞ Secton8.2.2 4 Retention of advanced user alarm data under power failure)




Basic | Device | **File Save**

| Item | | Description | Model |
|---|---|---|---|
| Save Alarm Log File*1 | | Check the box when writing the advanced user alarm history saved in the buffering area to the memory card as an alarm log file.<br>The data are written to the memory card as a binary format file (*.G1A).<br>This item can be checked only when "Historical" or "Cumulative" is selected for "Collection Mode." | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| File Access | Drive Name | The destination drive is displayed. | |
| | Folder Name*2 | Set the name of the folder where the file is stored.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~\) can be used.<br>By default, the "Project Folder" from [Common] → [System Environment] is preset. | |
| | File Name*2 | Set the name of the file where the data are saved.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-\) can be used.<br>By default, the file name is set to AAM□□□□□. | |
| Store Trigger | Trigger Type | Select a timing at which the advanced user alarms saved in the buffering area are stored to the memory card.<br>When "Sampling," "ON Sampling," or "OFF Sampling" is selected, set the cycle in minutes (1 to 1440 minutes).<br>• Rise • Sampling • OFF Sampling<br>• Fall • ON Sampling | |
| | Device | Specify the store trigger device.<br>(☞ Section 5.1 Device Setting) | |
| Writing Notification Device | | Set a device to notify that the alarm log file is being written.<br>(☞ Section 5.1 Device Setting) | |
| Writing Error Notification Device | | Set a device to notify of an error when data writing in the alarm log file fails.<br>(☞ Section 5.1 Device Setting)<br>This device must be turned off manually because it is not turned off automatically even after the error is restored. | |

(Continued to the next page)

Basic | Device | **File Save**

| Item | | Description | Model |
|---|---|---|---|
| Auto Backup at Save*1 | | When an alarm log file is saved, the file just before saving can be saved as a backup file.<br>For backup file name, add an extension called ".BAK" to the end of the original file name. (The BAK file is not displayed on the GOT utility.)<br>Ex.: AAM00001.G1A -> AAM00001.G1A.BAK | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| File Convert*3 | | Make setting to convert a file.<br>This can be set only when [Save Alarm Log File] is checked. | |
| | Convert Format | Select a file format after conversion. (CSV/Unicode Text) | |
| | Date Information is added to File Name | This can be set only when [Change Save Path] is checked.<br>Check this item to add date information to the converted file's name. | |
| | Change Save Path | Check this item to change save destination for the converted file.<br>After the check, select the names of the drive and folder where the file is to be stored. | |

For details of *1 to *3, refer to the following.

*1 Operations when an error occurs in the alarm log file

When the alarm log file is read out (when the GOT is powered on), if the alarm log file is in one of the following status, system alarm 525 "Unable to read/write alarm log files under different projects." occurs. In this case, reading out of the alarm log file is cancelled.

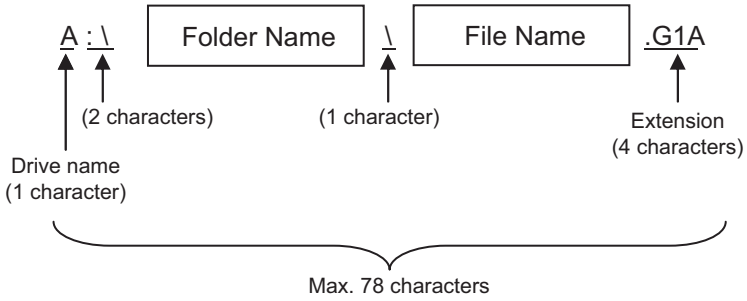
- When the alarm log file is broken
- When the alarm log file was saved in a different project

If a backup file is present (check "Auto Backup at Save"), the backup file is read out. (In this case, no system alarm occurs.)

*2 Folder name and file name

(1) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder and file name are automatically added.)

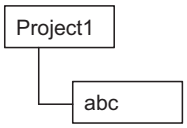
G1A file Path in memory card (for GT15)




**Remark** When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name] : Project1 \ abc




(2) Character strings that cannot be set
The following character strings cannot be used as a folder name or a file name. (They cannot be used irrespective of upper-case or lower-case characters.)
- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

Also, folder and file name as shown below cannot be used.
- Folder name starting as G1
- Folder and file name starting from . (period) or \
- Folder and file name ending at . (period) or \
- Folder and file name with only . (period) or .. (two periods)

*3 Advanced Alarm Common

To control alarm log file conversion with a device, set "Advanced Alarm Common".
For setting items of Advanced Alarm Common, refer to the following.

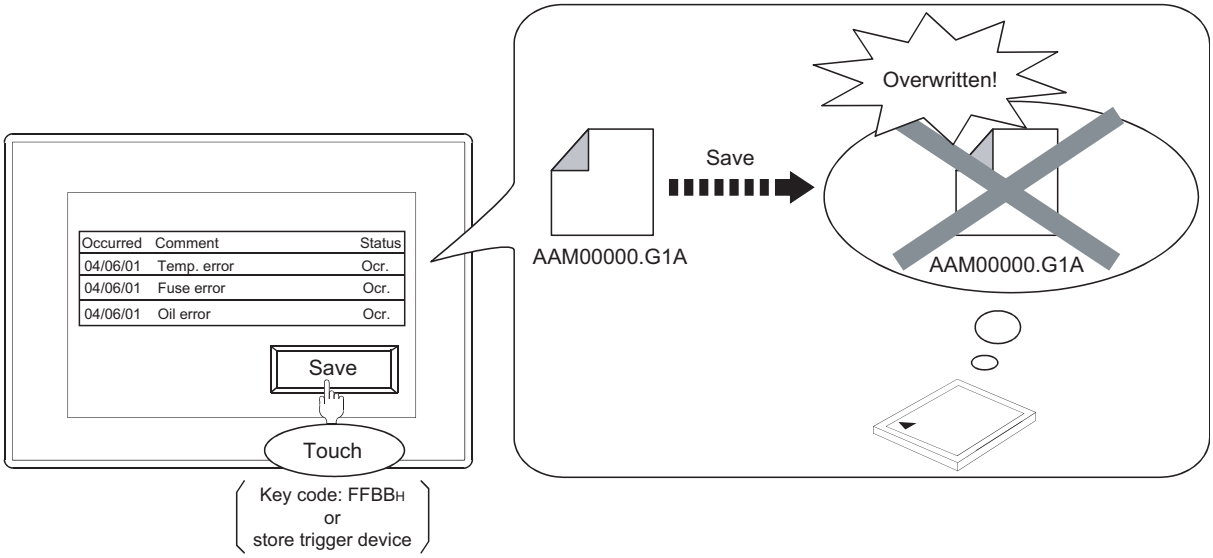
☞ Section 8.2.5 1 Setting items

## 8.2.6 Precautions

The following provides the precautions on use of advanced user alarms.

### 1 Precautions for use

(1) If the same data are in the memory card




The data in the memory card are overwritten. Therefore, if the data needs be kept unchanged, move the data from the memory card to the PC by either of the following methods.

- Upload resource data by GT Designer2.

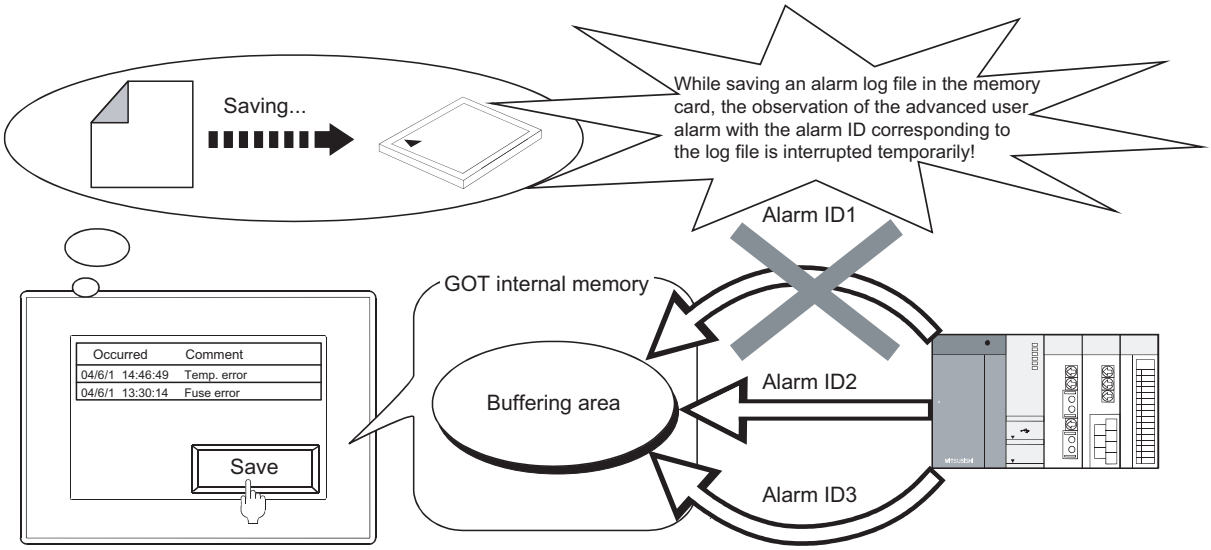
  ☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 8.8 Uploading Resource Data [GOT to PC])

- Read out the CSV file saved in the memory card by PC.

(2) Alarm observation during saving of alarm log file

While saving an alarm log file in the memory card, the observation of the advanced user alarm with the alarm ID corresponding to the log file is interrupted temporarily.
Note that the advanced user alarm occurred and restored when the file is saved is not displayed.

Example: When saving advanced user alarm data with alarm ID1




(3) Saving by the buffer flash forced saving signal (GS520.b0)

Saving processing may take several minutes because the data of all the advanced alarms (advanced user alarms and advanced system alarms) to be saved as an alarm log file (set on the File Save tab) are saved in the memory card.

If the observation interrupt time needs to be shorter, save the data for each object as follows.

- Set a trigger for each advanced alarm observation settings and save the data.
- Set a touch switch (key code: FFBBH) for each advanced alarm display and save the data.

(4) When turning off from on the CF card access switch of the used drive

When turning off from on the CF card access switch while memory card is ejected from the drive, data in the memory card are inevitably saved.
Do not eject the memory card from the drive until the following LED or signal turns off and file saving is completed.

- CF card access LED on the used drive turns off
- Drive status notification signal of the used drive (System Signal 2-2. b0, b1) is off.

(☞Section 3.6 3 (2) Write device)

Saving processing may take several minutes because the data of all advanced user alarms and advanced system alarms are saved as an alarm log file (set on the File Save tab).

(5) When restoring alarm history at the timing when the GOT is turned off and on

If the project of the alarm log file in the memory card does not match with the project in the GOT, the file cannot be read out of the memory card. (Alarm history before the GOT is powered off cannot be restored.)
In this case, the alarm below occurs or the signal below turns on.

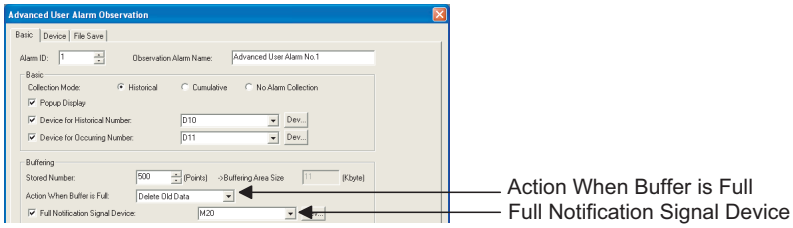
- "Writing Error Notification Device" turns on in the File Save tab.
- System alarm 525 "Unable to read/write alarm log files under different projects" occurs.

(6) Alarm collection when the buffering area is full

When the buffering area is full, one of the following operations is performed based on settings made in the "Action When Buffer is Full" on the Basic tab.

- Clear restored advanced user alarms and adding new alarms.
- Not collect advanced user alarms.

To avoid the operations above, set "Full Notification Signal Device" on the Basic tab, and clear the restored alarm when the device turns on. (☞ Secton8.2.2 3 Retention and clear of collected advanced alarm data)




(7) Error when the alarm log file is saved

If an error occurs when a file is saved, "Writing Error Notification Device" on the File Save tab turns on.

Confirm the following.

- The GOT's CF card access switch is set to "transfer prohibited".
- The memory card is full.

(8) Difference from the drive status notification signal (write device: system signal 2-2)

Although buffer full, writing, and writing error can be notified through the drive status notification signal, operation is different from that of the device set by the advanced user alarm observation function.

| Item | Operation (difference) | |
|---|---|---|
| | Advanced alarm observation | Drive status notification signal |
| Difference between "Full Notification Signal Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b4, b5) | Turns on when the number of alarms saved has reached that set in "Stored Number ".(when the buffering area reserved for advanced user alarms is full). | Turns on when the memory card is full. |
| Difference between "Writing Notification Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b0, b1) | Turns on when advanced user alarm data are being written in the memory card. | Turns on when data are being written in the memory card (also when data other than advanced user alarms are being written.) |
| Difference between "Writing Error Notification Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b7, b8) | • Turns on if an error occurs when the alarm log file in the memory card is accessed (for example, the project of the alarm log file in the memory card does not match with the project in GOT).<br>• Turns on when the memory card cannot be accessed (for example, the memory card is not set, or the CF card access switch is set to "transfer prohibited"). | Turns on when the memory card cannot be accessed (for example, the memory card is not set, or the CF card access switch is set to "transfer prohibited"). |

(9) Display of occurrence time, check time, and restoration time
For occurrence time, GOT's clock data are displayed.
For the precautions and restrictions of the clock function for managing GOT's clock data, refer to the following.

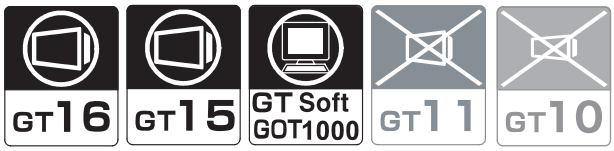
☞ Section 2.5 Clock Function

(10) Unicode text file converted with utility, etc.
For the cautions for using a Unicode text file, refer to the following.

☞ 2.11 Precautions for Using Unicode Text File

(11) Editing exported files
When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.
When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 8.3 Advanced Alarm Observation (Advanced System Alarm)



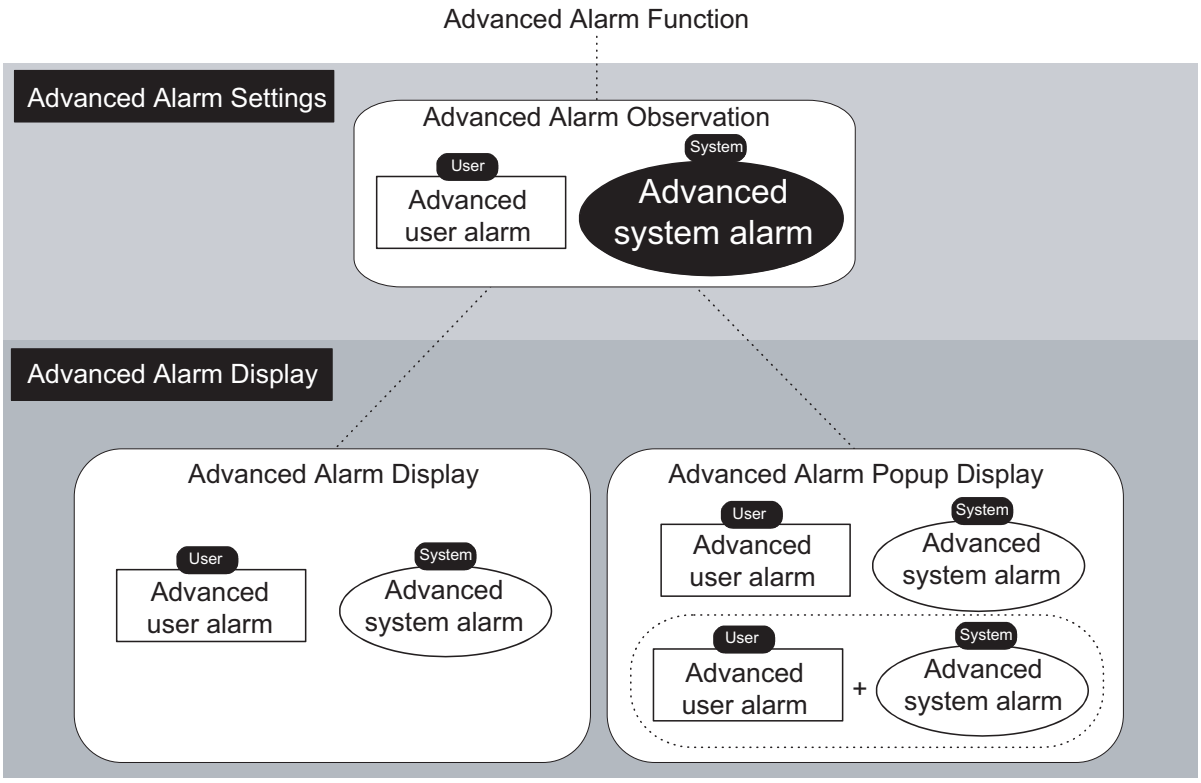

When an error occurs in the GOT, controller or network, the coadvanced system alarmsrresponding error code and message are displayed.

**Point**

Before setting advanced system alarms

This section explains the advanced system alarms of the advanced alarm function. Read the following before setting advanced system alarms.

Section 8.1.2 Advanced alarm function



## 8.3.1 Relevant settings

For advanced system alarms, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to advanced alarm observation (advanced system alarms) only
…Relevant to advance alarm observation (advanced system alarms) only.

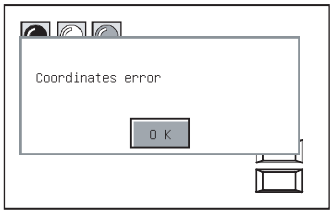
(2) Functions relevant to advanced alarm observation (advanced system alarms) and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

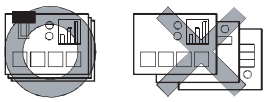
(1) Functions relevant to advanced alarm observation (advanced system alarms) and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

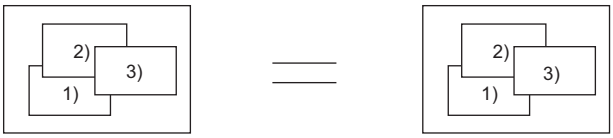


Setting items
• [Carry out check for overlapping objects within GOT]

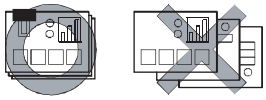
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



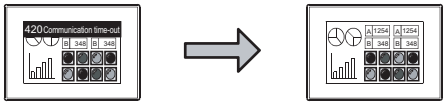
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to advanced alarm observation (advanced system alarms) only

• GOT Error Reset Signal
(Read device: System Signal 1-1. b13)

Resets the system alarm or system information (GOT error code, GOT error detecting signal).

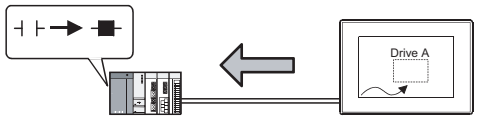



The system alarm message is cleared.

### (2) Functions relevant to advanced alarm observation (advanced system alarms) and others

• Drive A/B File Accessing Signal*1
(Write device: System signal 2-2. b0, b1)

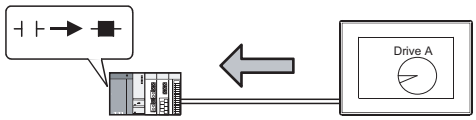
Notifies of the status of access to the drive.




The file is being accessed.

• Drive A/B Full Signal*1
(Write device: System signal 2-2. b4, b5)

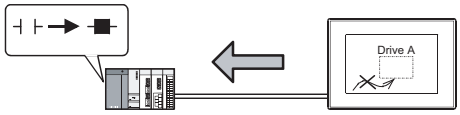
Notifies that the drive is short of capacity.




Available capacity is less than 1KB.

• Drive A/B File Access Error Signal*1*2
(Write device: System signal 2-2. b7, b8)

Notifies that access to the drive has failed.




File access error

*1 The advanced system alarm observation also uses the signals that notify of the status of accessing and full, however, operate differently from the drive status notification signal. For details, refer to the following.

☞ Section 8.3.6 1 (11) Difference from the drive status notification signal (write device: system signal 2-2)

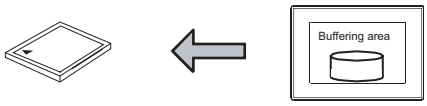
*2 The drive A/B file access error signal is reset by the file access error reset signal (read device: system signals 1-2.b0).

## 3 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

### (1) Functions relevant to advanced alarm observation (advanced system alarms) only

• Buffer Flash Forced Saving Signal (GS520.b0)*3

Saves the data in the buffering area in a memory card.*1



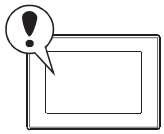

*3 Alarm data are saved only when "Save Alarm Log File" is check-marked on the File Save tab.
If not checked, the advanced system alarms are not saved.

(☞ Section 8.3.5 2 File Save tab)

### (2) Functions relevant to advanced alarm observation (advanced system alarm) and others

• System alarm GOT error channel No.
(Write device: GS262)

Stores the channel number where system alarm (GOT error) occurred.



• System alarm CPU error channel No.
(Write device: GS263)

Stores the channel number where system alarm (CPU error) occurred.

• System alarm network error channel No.
(Write device: GS264)

Stores the channel number where system alarm (network error) occurred.

## 8.3.2 Before setting

This section describes the settings and functions needed for using the advanced system alarm.

### 1 Monitored alarm types and setting

(1) Alarm types

The following alarms can be monitored in the advanced system alarm.

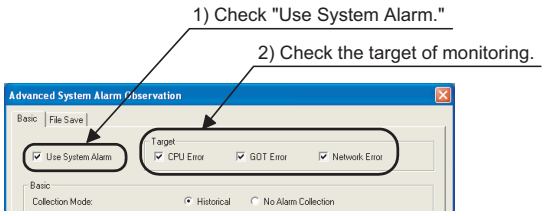
1) CPU error : A controller error is displayed as an alarm.
2) GOT error : A GOT error is displayed as an alarm.
3) Network error : A network module error is displayed as an alarm.

The types of the system alarms monitored can be selected by the setting.
Because only particular alarm types can be displayed, alarm details can be observed quickly.

(2) Settings necessary to use advanced system alarms

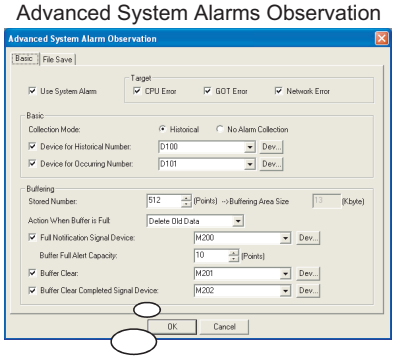
To use advanced system alarms, check "Use System Alarm" and specify the target.

(☞ Section 8.3.5 2 Advanced System Alarm Observation)




In the advanced system alarm (advanced alarm observation), set the types of the alarms collected and the collection method.

Advanced System Alarms Observation




- Types of advanced system alarms monitored
- Collection mode
- Setting for history saving (alarms collected in the User area)
- Setting for the data retention of advanced system alarms under power failure (saving on the memory card)

**Point**

Display of advanced system alarms

Advanced system alarms are displayed by the advanced alarm display function.

☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)

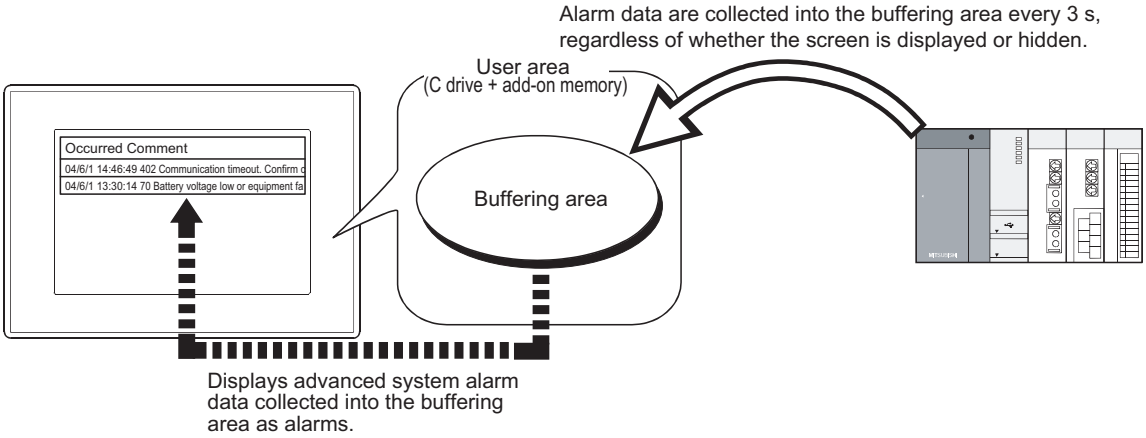
## 2 Collection flow and collection mode

(1) Collection flow

(a) CPU errors and network errors

CPU errors and network errors are collected into the buffering area of the user area (C drive + add-on memory) in cycles of 3 seconds regardless of the displayed screen. (Watch cycle cannot be changed.)

In the buffering area, collected advanced system alarm data are temporarily saved as historical data, and they are displayed on the GOT as alarms.




(b) GOT errors

GOT errors are collected into the buffering area of the user area (C drive + add-on memory) when an alarm occurs.

**Remark**

(1) Deletion of data in the buffering area

For details, refer to the following.

☞ This section 3 Alarm restoration

(2) Data to be collected in the buffering area

Data to be collected differ depending on the history collection mode.

(2) Alarm collection modes

The history collection mode is selected from two options: historical mode and no alarm collection.

(☞ Section 8.3.5 2 Advanced System Alarm Observation)

Information to be collected varies depending on the collection mode as follows.

Example: When displaying data by advanced alarm display

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 20:00 | 402 Communication timeout. Confirm | Ocr. | — | — |
| 04/06/01 18:30 | 70 Battery voltage low or equipment f | Chk. | — | 18:50 |
| 04/06/01 16:10 | 803 Transident error | Chk. | 16:30 | 16:20 |
| 1) | 2) | 3) | 4) | 5) |

| Info. displayed | Description | |
|---|---|---|
| | Historical mode | No alarm collection |
| 1) Occurred | The date/time of the alarm occurrence is displayed. | |
| 2) Comment | An error code and an alarm message are displayed when an alarm occurs.<br>For error codes and corrective actions, refer to the following.<br>☞ GT1□ User's Manual<br>Alarm messages registered in GOT in advance are displayed. | |
| 3) Alarm status | The status of the alarm is displayed.<br>Ocr. : Alarm has occurred (Not checked yet)<br>Chk. : Alarm occurrence has been checked<br>Rstr. : Alarm has been restored | |
| 4) Restore | The date/time of alarm restoration is displayed. | ---- |
| 5) Check | The date/time when alarm occurrence was checked is displayed.<br>Alarm occurrence is checked by the corresponding touch switch.<br>☞ Section 8.4.6 Description on touch switches for advanced alarm display<br>Message Restore Check → Check → Message Restore Check<br>402 Communication timeout. Confirm → 402 Communication timeout. Confirm 19:00<br>(Key code: FFB4H or FFB5H) | |

(a) Historical mode

In this mode, the data of the alarm is added to the GOT internal memory every time an alarm occurs. (The data are added to the history every time an alarm occurs.)

Up to 32767 alarm logs can be saved.

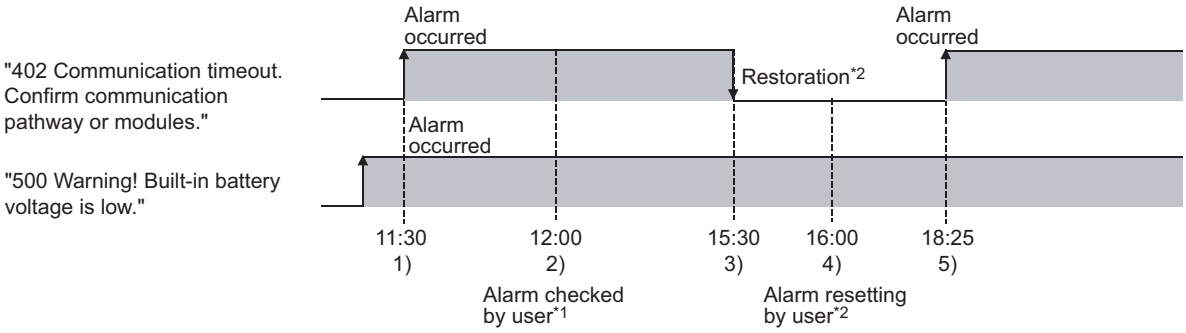
(b) No alarm collection

In this mode, the latest alarms only are displayed.

(3) Examples of alarm display

This section shows examples of advanced alarm display for each collection mode.

(Timing of alarm occurrence)




*1 Alarms are checked with the touch switch for confirmation. (☞ Section 8.4.6 Description on touch switches for advanced alarm display)

*2 For the GOT error, the alarm status is not changed to "Restored" even when the cause of the alarm is eliminated.

(☞ This section 3 Alarm restoration)

(a) Historical mode

The information on alarm occurrence status are collected as history.

Status is added to the history every time an alarm occurs.

1) "Communication timeout" occurs.

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 11:30 | 402 Communication timeout. Co | Ocr. | | |
| 04/06/01 10:25 | 500 Warning! Built-in battery volt | Ocr. | | |
| | | | | |

"Communication timeout" occurs!

2) "Communication timeout" is checked.

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 11:30 | 402 Communication timeout. Co | Chk. | | 12:00 |
| 04/06/01 10:25 | 500 Warning! Built-in battery volt | Ocr. | | |
| | | | | |

"Communication timeout" is checked.

Check

(Key code: FFB4H)

3) Restored from "Communication timeout"

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 11:30 | 402 Communication timeout. Co | Chk. | | 12:00 |
| 04/06/01 10:25 | 500 Warning! Built-in battery volt | Ocr. | | |
| | | | | |

"Restoration" is not indicated in the alarm status on the GOT.

4) The alarm is reset.

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 11:30 | 402 Communication timeout. Co | Chk. | 16:00 | 12:00 |
| 04/06/01 10:25 | 500 Warning! Built-in battery volt | Ocr. | | |
| | | | | |

"The alarm is reset".

Reset

(Key code: FFB9H)

The alarm status is changed to "Restored" on the GOT and the restored time is displayed.

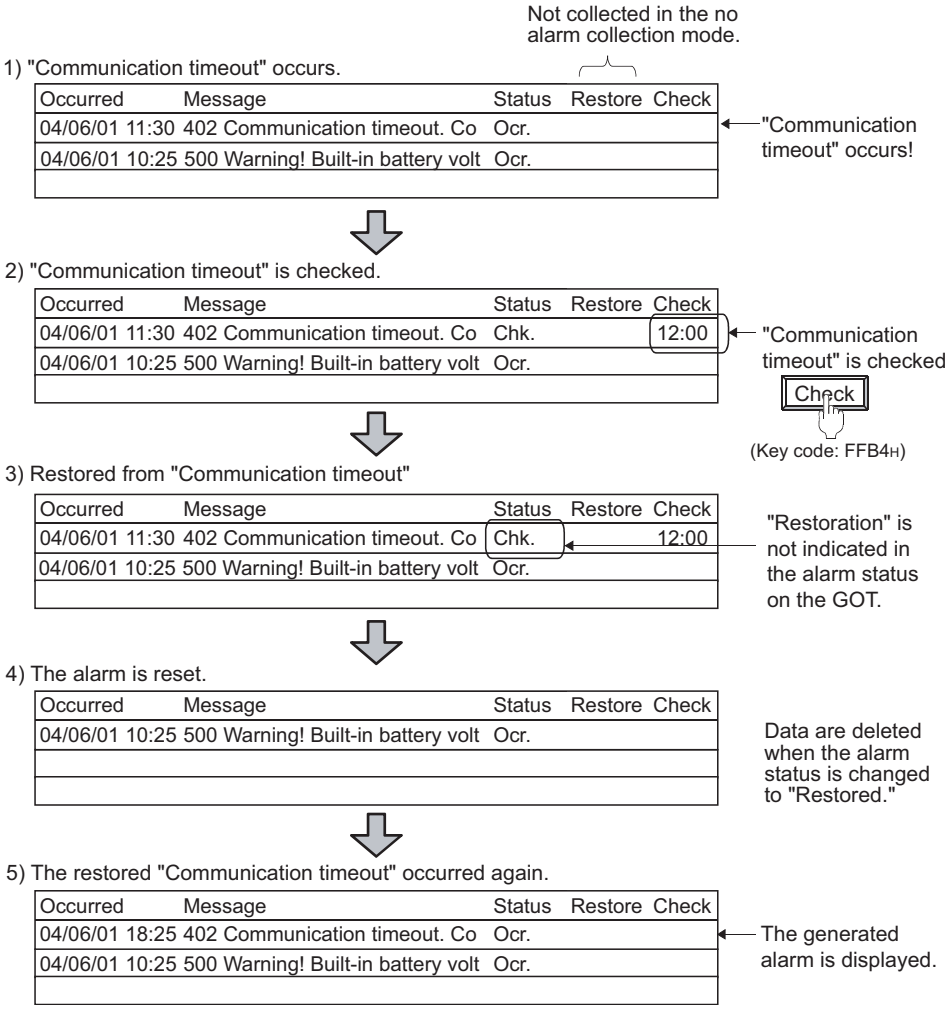
5) The restored "Communication timeout" occurred again

| Occurred | Message | Status | Restore | Check |
|---|---|---|---|---|
| 04/06/01 18:25 | 402 Communication timeout. Co | Ocr. | | |
| 04/06/01 11:30 | 402 Communication timeout. Co | Chk. | 16:00 | 12:00 |
| 04/06/01 10:25 | 500 Warning! Built-in battery volt | Ocr. | | |

A new line is added and displayed.

(b) No alarm collection mode

Only the latest alarms of GOT errors, CPU errors, and network errors are displayed.
The historical data of the cleared alarms are not stored.




**Point**

Display of advanced system alarms

Advanced system alarms are displayed by the advanced alarm display function.

☞ Section 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)

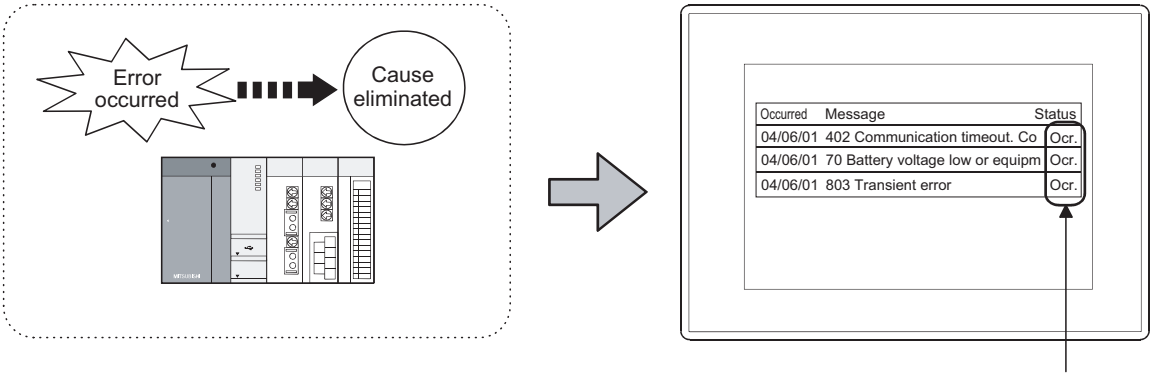
## 3 Alarm restoration

The following shows how to change the alarm status of each error to "Restored".

(1) CPU error
Eliminate all causes of the alarm of the CPU error.
By eliminating all causes of the alarm, the alarm status of the advanced system alarm by a CPU error will be changed to "Restored".
When using the multi-channel function, all alarm statuses will be changed to "Restored" by eliminating causes of alarms of all channels.

(2) Network error
Eliminate all causes of the alarm of the network error.
By eliminating all causes of the alarm, the alarm status of the advanced system alarm by a network error will be changed to "Restored".

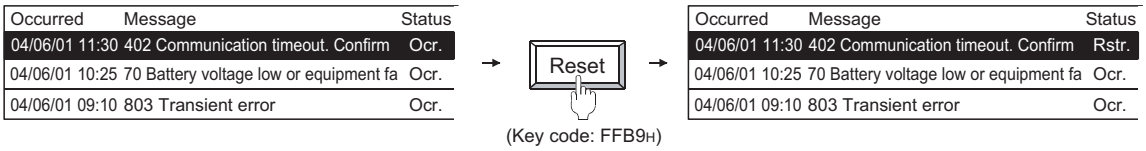
(3) GOT error
Eliminate all causes of the alarm of the GOT error.
The alarm status of a GOT error will not be changed to "Restored". Perform either of the following operations.




Alarm causes on the GOT, controller, or network are eliminated.

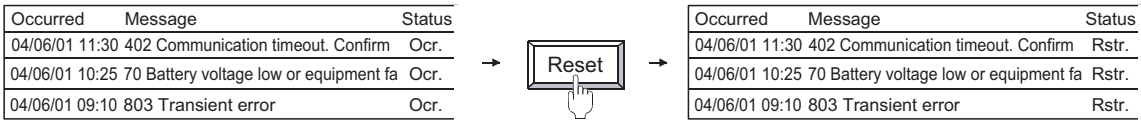
The display on the GOT shows alarm occurrences even if the alarm causes on the GOT, controller and network are eliminated.

(a) Change the selected alarm status to "Restored" (using the system information)
Change the selected alarm status from "Occurred" to "Restored" by the touch switch (key code: FFB9H). (☞ Section 8.4.6 Description on touch switches for advanced alarm display)




(Key code: FFB9H)

(b) Changing all the GOT error alarm statuses to "Restored"
Turn ON the GOT error reset signal (System Signal 1-1.b13) of the system information to change all the GOT error alarm statuses from "Occurred" to "Restored".
(☞ Section 3.6 System Information Setting)




(Turn on system signal 1-1.b13)

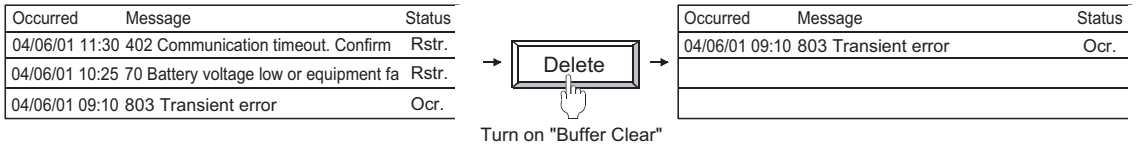
(c) Changing all the GOT error alarm statuses to "Restored" (using the utility)
At the system alarm display of the utility, change all the GOT error alarm statuses from "Occurred" to "Restored".

☞ GT16 User's Manual (Basic Utility) (Section 5.1 Diagnostic Functions)
GT15 User's Manual (Section 14.9 System Alarm Display)

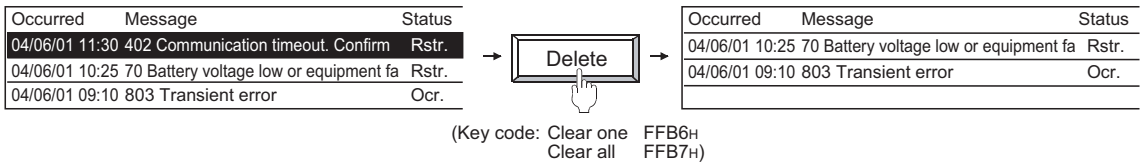
## 4 Clearing alarm data

The "Restored" status alarms can be cleared from the history.
To clear alarm data, perform either of the following operations.

(a) Clear by device
Turning on the device set for [Buffer Clear] clears all the "Restored" alarm data.
(☞ Section 8.3.5 1 Advanced System Alarm Observation)




(b) Clear by touch switch
By using a touch switch, one or all the "Restored" alarm data are cleared.
(☞ Section 8.4.6 Description on touch switches for advanced alarm display)




**Remark** Clearing alarm data

The following methods can also be used for clearing alarm data.

(1) Powering off or resetting the GOT
Powering off or resetting the GOT deletes the alarm data.
However, if the advanced system alarm data are saved on the memory card, the data can be retained even if the GOT is powered off. (☞ Section 8.3.2 5 Retention of advanced system alarm data under power failure)

(2) When the following settings are made within utilities

| Item | | Description |
|---|---|---|
| Communication setting | | [Channel No. (Ch No.) setting], [Communication settings], [RS232 5V power supply] |
| GOT setup | Display | [Opening screen time], [Screen save backlight], [Language] |
| | Operation | [Buzzer volume], [Window move buzzer], [Utility call key] |
| Program/data control | | OS installation, project download |
| Debug & self check | Self check | [I/O check] |
| Main menu | | Message change (Japanese/English) using the system message switch button |

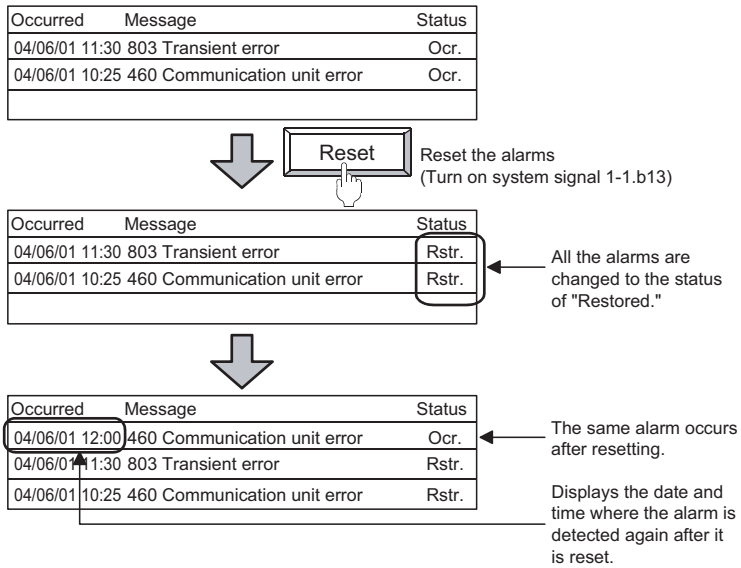
(3) Project data download, OS installation, drive information delete and drive format

**Point**

(1) Before changing the alarm status of a GOT error from "Occurred" to "Restored"

Eliminate the alarm causes of the GOT error.
If the alarm status of a GOT error is changed from "Occurred" to "Restored" without eliminating the alarm cause, the same alarm will occur again.

Example: When the alarm is reset while "460 Communication unit error" is occurring




(2) Clearable alarms on the GOT

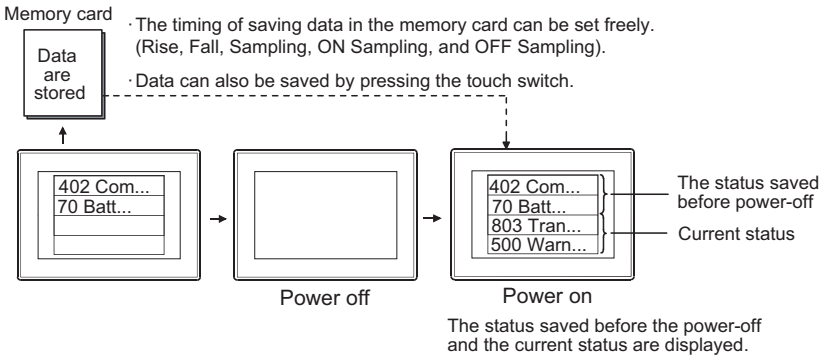
Only the "Restored" status alarms can be cleared.
When clearing an alarm, change the alarm status from "Occurred" to "Restored".

## 5 Retention of advanced system alarm data under power failure

(1) Data retention under power failure

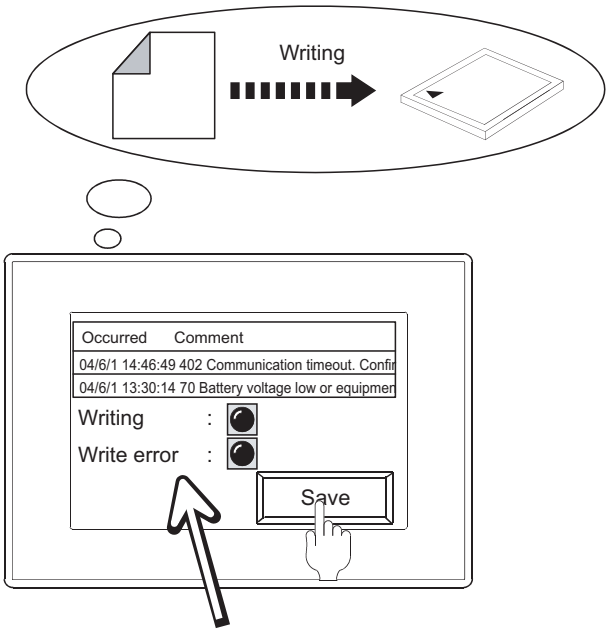
By saving advanced system alarm data in the memory card as alarm log file, the data are retained even when GOT is powered off.

When GOT is turned on, if an alarm log file is saved in the memory card, the alarm log file is read out automatically, and the historical status of the advanced system alarm saved before GOT power-off is restored.




(2) Status observation during writing

Status while advanced system alarm data are written and the presence/absence of write error can be monitored using the device. (☞ Section 8.3.5 2 File Save tab)




Status during writing can be monitored.

(3) File name and saving timing

Any file name can be given. (☞ Section 8.3.5 2 File Save tab)
In addition, trigger for saving the file (rise, fall and so on) can be set.

(4) Method of data retention under power failure

Retention of advanced system alarm data under power failure is performed by either of the following methods. The file names and so forth need to be set on the File Save tab in advance.

- Save by the store trigger device (☞ Section 8.3.5 2 File Save tab)
- Save by the touch switch (☞ Section 8.4.6 Description on touch switches for advanced alarm display)
- Save by the buffer flash forced save signal (GS520.b0) (☞ Section 2.9.1 3 GOT special register (GS))

(5) Required memory capacity

For the memory capacity required for retention of advanced system alarm data under power failure, refer to the following.

☞ Section 2.4 Specifications of Available Object Functions

**Hint!**

(1) Information to be saved

The alarm log file content to be saved in the memory card varies depending on the collection mode. (☞ Section 8.3.2 2 Collection flow and collection mode)

(2) Utilization of the alarm log file saved in the memory card

After advanced user alarm data is stored as alarm log file in the memory card, the file can be utilized as follows.

(☞ GT1□ User's Manual)

- The history of advanced system alarms can be displayed as a historical graph.
- For a display on personal computer, the alarm log file can be converted to CSV file/Unicode text file with GOT utility or Convert Trigger.
- Data are stored in the CSV/text file in the order of alarm occurrence.

(3) Backup of the alarm log file

By checking "Auto Backup at Save" on the File Save tab, the alarm log file just before saved can be saved as a backup file.
For details, refer to the following.

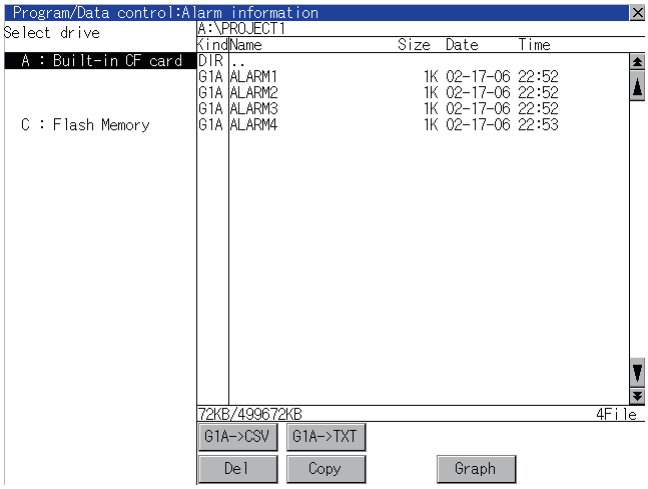
☞ Section 8.3.5 2 File Save tab

## 6 Converting alarm log files

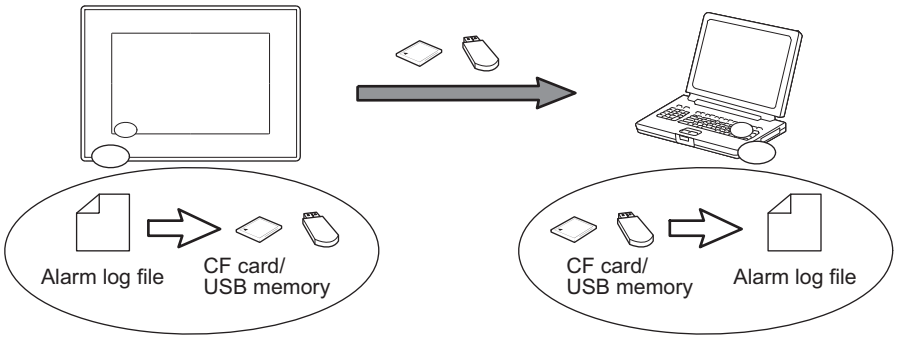
The alarm log files created with the advanced system alarm are binary files (*.G1A).
Convert alarm log files to CSV files or Unicode text files for displaying and editing the files on the personal computer.

(1) How to create CSV files or Unicode text files with utility
Convert the binary files (*.G1A) saved in a CF card to CSV files or Unicode text files with the utility.

1. Select a file in the G1A format in [Alarm information] of the utility, and touch G1A->CSV or G1A->TXT button for converting the file.




2. Store the CSV file or Unicode text file on the personal computer with one of the following methods.
   - Transferring files with GT Designer2
     Select [Communication] → [To/From GOT...] from the menu, and transfer the file in the Resourse Upload -> Computer tab.
   - Storing files in CF card or USB memory
     Save alarm log files in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer.




3. Edit the converted CSV file or Unicode text file displayed on the personal computer.

**Point**

How to operate utility

Refer to the following manual for the details.

GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)

GT15 User's Manual (Section 13.4 Alarm Information)

(2) How to create CSV files or Unicode text files with device

Convert the binary files (*.G1A) saved in a memory card to CSV files or Unicode text files with turning on the specified device.

When converting the files to CSV files or Unicode text files, the following settings are required. After setting the following, convert the files to CSV files or Unicode text files with turning on the convert trigger device.

- Advanced alarm common setting
- File conversion (the File Convert tab in the Advanced System Alarm Observation screen)

☞Section 8.3.5 Setting items

**Point**

Precautions for file conversion with external control device

Before converting an alarm log file, write the ID for the advanced system alarm observation that creates a file to be converted into the alarm ID device. (For the advanced system alarm observation: 0)

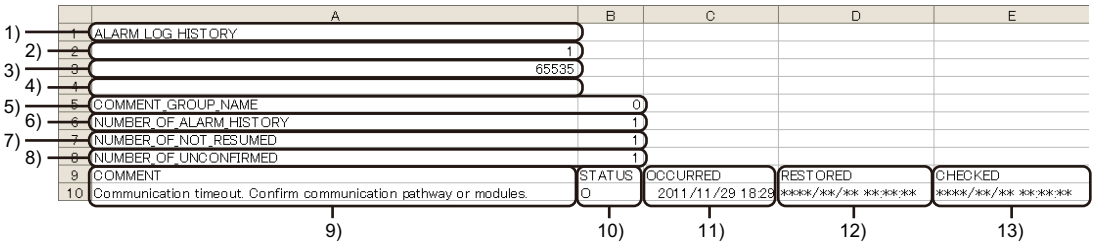
Even though the convert trigger device is turned on before writing the ID for the advanced system alarm observation, the alarm log file cannot be converted to a CSV file or Unicode text file.

## 7 Alarm causes for each alarm type and actions taken for error codes

For details, refer to the manual below.

☞GT1□ User's Manual

## 8 Contents of a Unicode text file or CSV file




| No. | Description |
|---|---|
| 1) | Collection mode |
| 2) | Number of alarms |
| 3) | Alarm ID For the advanced system alarm, this field is fixed to 65535. |
| 4) | Alarm name For the advanced system alarm, this field is blank. |
| 5) | Comment group No. For the advanced system alarm, this field is fixed to 0. |
| 6) | Number of alarms |
| 7) | Number of alarms that have not been restored |
| 8) | Number of alarms that have not been checked |
| 9) | Message of system alarm |
| 10) | Alarm status (O: Has occurred, R: Has been restored, C: Has been checked) |
| 11) | Date and time of the alarm |
| 12) | Date and time that the alarm was restored |
| 13) | Date and time that the alarm was checked |

## 9 Alarm causes for each alarm type and actions taken for error codes

Refer to the following manual for the details.

☞ User's Manual for the GOT used

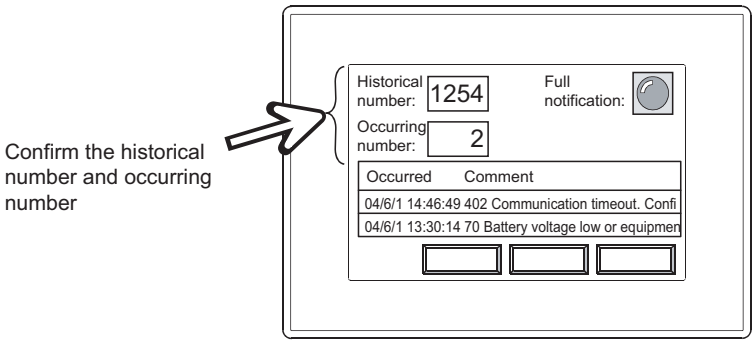
## 8.3.3 Useful information

This section describes some useful functions to know when using the advanced system alarms.

### 1 Action when buffer is full

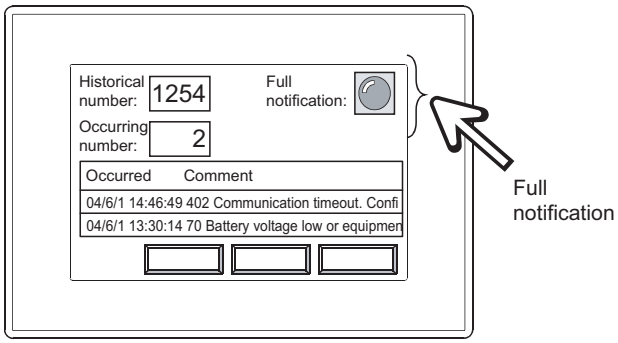
If the number of the advanced system alarms that are temporarily saved in the buffering area reaches or almost reaches the "Stored Number", the status can be notified using a device.

(1) Confirmation of historical number and occurring number
The information on the number of total alarms temporarily saved in the buffering area can be stored and confirmed in a device.
In addition, the number of the advanced system alarms that are currently occurring can also be confirmed.




(2) When the buffering area is full
In this case, the status can be notified using a device.
In addition, the following operations are available by making the settings.

- Issue the full notification before the area is full. (Make the settings in "Buffer Full Alert Capacity" on the Basic tab.)
- Select the process under buffer full. (Make the settings in "Action When Buffer is Full" on the Basic tab.)




**Remark**

(1) Settings
For details, refer to the following.

☞ Section 8.3.5 2 Advanced System Alarm Observation

(2) Buffering area
For details, refer to the following.

☞ Section 8.3.2 2 Collection flow and collection mode

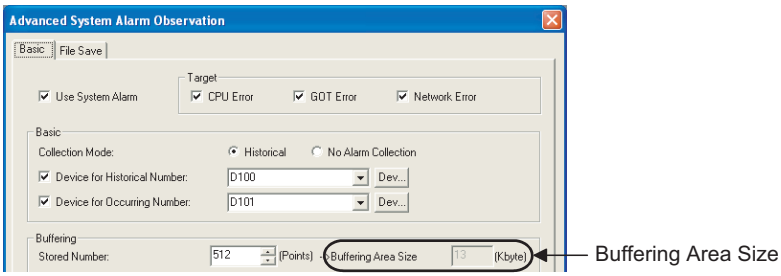
(3) Buffering size

The buffering size required for advanced system alarms varies depending on the settings.
As buffering size increases, the area in the GOT internal memory applicable for other objects, decreases. Adjust buffering size in accordance with the capacity of the internal memory.

(a) Settings relevant to buffering area size

| Collection mode | Setting related to buffering area size |
|---|---|
| Historical | Total No. of alarms saved (Stored Number) |
| No alarm collection | --- |

(b) Confirming the buffering area size needed for advanced system alarms
The size can be confirmed at [Buffering Area Size] on the Basic tab.




## 2 Alarm causes for each alarm type and actions taken for error codes

For details, refer to the manual below.

☞ GT1□ User's Manual

## 8.3.4 Placement and settings

1. Perform either of the following operations.
   - Select the Advanced Alarm Observation menu.
   - [Common] → [Advanced Alarm Observation] → [Advanced Alarm Common].
     [Advanced System Alarm]
   - Click (Advanced System Alarm Observation.)

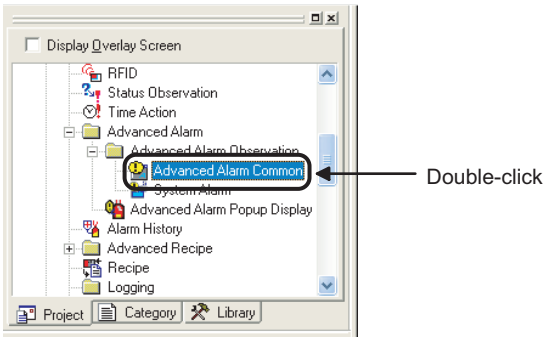
2. The setup dialog box is displayed. Refer to the later description (☞ Section 8.3.5 Setting items) to continue the setting.

**Remark**

When setting from Workspace(Project)

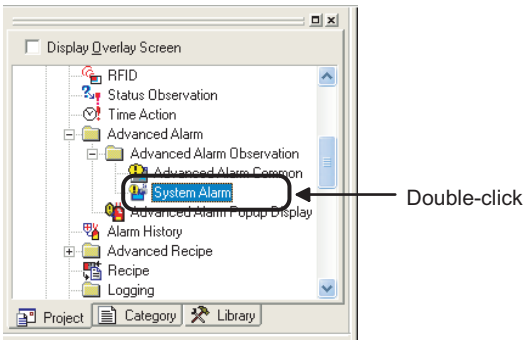
(1) Advanced Alarm Common

Double-click the Advanced Alarm Common in Workspace(Project) displays the setting dialog box.




(2) Advanced System Alarm Observation

Double-clicking the in Workspace(Project) displays the setting dialog box.

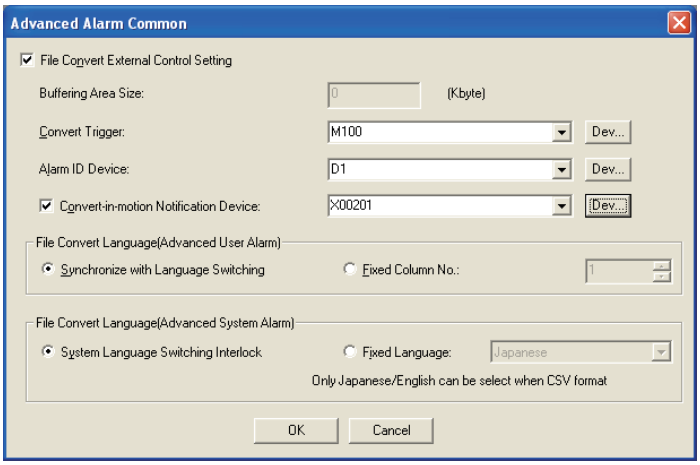


## 8.3.5 Setting items

### 1 Advanced Alarm Common

For setting items of the Advanced Alarm Common dialog box, refer to the following.

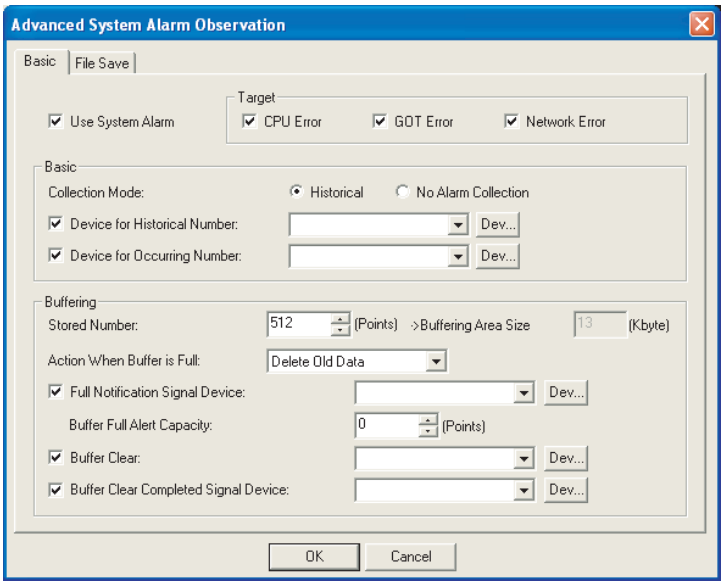
☞ Section 8.2.5 1 Setting items




### 2 Advanced System Alarm Observation

(1) Basic tab

Set the types of the advanced system alarms monitored, the collection mode, and the buffering details for saving historical data.



Basic | File Save

| Item | | Description | Model |
|---|---|---|---|
| Use System Alarm | | Set whether to enable the advanced system alarm function or not.<br>Check "Use System Alarm," and check any of the checkboxes for the target alarms (CPU error, GOT error, and network error).<br>(☞ Section 8.3.2 1 Monitored alarm types and setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Target | | | |
| Basic | Collection Mode | Select a method for handling advanced system alarms. (☞ Section 8.3.2 2 Collection flow and collection mode)<br>Historical : Data of advanced system alarms are collected as history. Historical data is added every time an advanced system alarm occurs.<br>No Alarm Collection : Only the latest alarms of GOT error, CPU error, and network error are collected. When advanced system alarm statuses are changed to "Restored" on GOT, they are deleted. | |
| | Device for Historical Number | Check this item when storing the total number of advanced system alarm logs in the word device.<br>The number of total alarm logs corresponds to the number of the alarms in all the status of occurrence, check, and restoration.<br>This item is available only when "Collection Mode" is "Historical."<br>After checking this item, click the Dev... button to set the device for storing that number.<br>(☞ Section 5.1 Device Setting) | |
| | Device for Occurring Number | Check this item to store the number of advanced system alarms whose alarm status is "Occurred" in a word device.<br>After checking the box, click the Dev... button to set up the device to which the number of the currently occurred alarms.<br>(☞ Section 5.1 Device Setting) | |

(Continued to the next page)

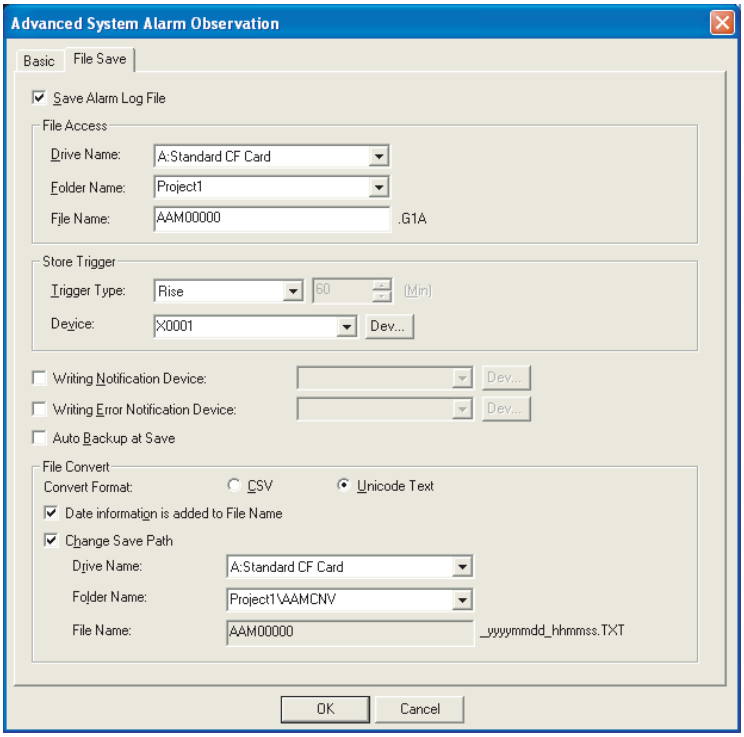
Basic | File Save

| Item | Description | Model |
|---|---|---|
| Buffering | Make buffering settings for saving the collected advanced system alarms.<br>This item can be set only when "Historical" is selected for "Collection Mode".<br>☞ Section 8.3.2 2 Collection flow and collection mode<br>☞ Section 8.3.3 1 Action when buffer is full | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Stored Number | Set the number of advanced system alarms to be saved (512 to 32767).<br>This item can be set only when the collection mode is "Historical."<br>Buffering size increases according to the number of alarms stored. | |
| Action When Buffer is Full | Select the operation performed when the number of the advanced system alarms stored in the buffering area reaches the "Stored Number."<br>This item can be set only when the collection mode is "Historical."<br>Delete Old Data : The oldest advanced system alarm is deleted from those of in the restored status, and new alarm data are added.<br>Stop New Addition : The collection of advanced system alarms is stopped. Even if a new advanced system alarm occurs, it is not collected. | |
| Full Notification Signal Device | Check this item to turn on the device to alert buffer full outside when the number of storable advanced system alarms reaches below the number set in "Buffer Full Alert Capacity."<br>This item is available only when the collection mode is "Historical."<br>After checking this item, click the Dev... button to set the full alert signal device.<br>(☞ Section 5.1 Device Setting) | |
| Buffer Full Alert Capacity | Set the timing for issuing an alert outside when the free space of the buffering area becomes small (No. of storable advanced system alarms: 0 to 255).<br>This item can be set only when the collection mode is "Historical" and a check mark is placed for "Full Notification Signal Device".<br>When the number of storable advanced system alarms is equal to or less than the number set here, the "Full Notification Signal Device" turns on.<br>Example: Setting "Stored Number" to 1000 and "Buffer Full Alert Capacity" to 10<br>The full notification signal device turns on when the number of total saved advanced system alarms is 990 or more. | |
| Buffer Clear | Check this time to delete the restored advanced system alarms saved in the buffering area by the device.<br>After checking this item, click the Dev... button to set the “Buffer Clear”.<br>(☞ Section 5.1 Device Setting) | |
| Buffer Clear Completed Signal Device | Check this time to set the device for notifying of the completion of buffer clear.<br>After checking this item, click the Dev... button to set the buffer clear completed signal device.<br>(☞ Section 5.1 Device Setting)<br>This item can be set only when "Buffer Clear" is check-marked. | |

(2) File Save tab

The alarm history saved in the buffering area can be stored on the memory card by this tab setting.

(☞ Section 8.3.2 5 Retention of advanced system alarm data under power failure)




## Basic File Save

| Item | | Description | Model |
|---|---|---|---|
| Save Alarm Log File*1 | | Check the box when writing the advanced system alarm history saved in the buffering area to the memory card as an alarm log file.<br>The data are written to the memory card as a binary format file ( *.G1A).<br>This item can be checked only when [Historical] is selected for [Collection Mode.] | GT16 GT15 SoftGOT1000 GT11 GT10 |
| File Access | Drive Name | The destination drive is displayed (fixed to [A: Standard CF Card]). | |
| | Folder Name*2 | Set the name of the folder where the file is stored.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-\) can be used.<br>By default, the [Project Folder] from [Common] → [System Environment] is preset. | |
| | File Name*2 | Set the name of the file where the data are saved.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-\) can be used.<br>By default, the file name is set to AAM00000. | |
| Store Trigger | Trigger Type | Select a timing at which the advanced system alarms saved in the buffering area are stored to the memory card.<br>When [Sampling,] [ON Sampling,] or [OFF Sampling] is selected, set the cycle in minutes (1 to 1440 minutes).<br>• Rise • Sampling • OFF Sampling<br>• Fall • ON Sampling | |
| | Device | Specify the store trigger device.<br>(☞ Section 5.1 Device Setting) | |

(Continued to the next page)

Basic **File Save**

| Item | | Description | Model |
|---|---|---|---|
| Writing Notification Device | | Set a device to notify that the alarm log file is being written.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Writing Error Notification Device | | Set a device to notify of an error when data writing in the alarm log file fails.<br>(☞ Section 5.1 Device Setting)<br>This device must be turned off manually because it is not turned off automatically even after the error is restored. | |
| Auto Backup at Save*1 | | When an alarm log file is saved, the file just before saving can be saved as a backup file.<br>For backup file name, add an extension called ".BAK" to the end of the original file name. (The BAK file is not displayed on the GOT utility.)<br>Example: AAM00000.G1A → AAM00000.G1A.BAK | |
| File Convert*3 | | Make setting to convert a file.<br>This can be set only when [Save Alarm Log File] is checked. | |
| | Convert Format | Select a file format after conversion. (CSV/Unicode Text) | |
| | Date Information is added to File Name | This can be set only when [Change Save Path] is checked.<br>Check this item to add date information to the converted file's name. | |
| | Change Save Path | Check this item to change save destination for the converted file.<br>After the check, select the names of the drive and folder where the file is to be stored. | |

For details of *1 to *3, refer to the following.

*1 Operations when an error occurs in the alarm log file

When the alarm log file is read out (when the GOT is powered on), if the alarm log file is in one of the following status, system alarm 525 "Unable to read/write alarm log files under different projects." occurs. In this case, reading out of the alarm log file is cancelled.

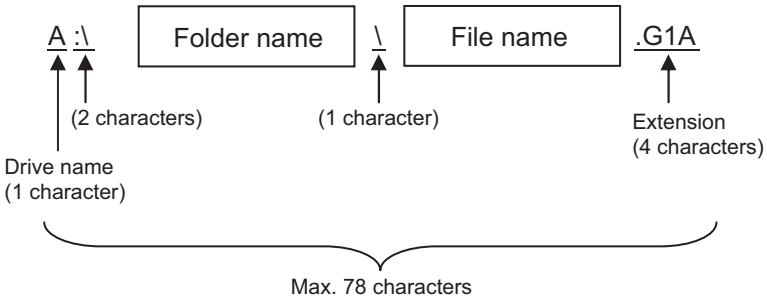
- When the alarm log file is broken
- When the alarm log file was saved in a different project

If a backup file is present (check "Auto Backup at Save"), the backup file is read out. (In this case, no system alarm occurs.)

*2 Folder name and file name

(1) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder and file name are automatically added.)

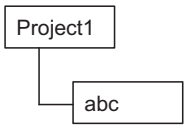
Example: G1A file Path in memory card (for GT15)




**Remark** When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name] : Project1 \ abc




(2) Character strings that cannot be set
The following character strings cannot be used as a folder name or a file name. (They cannot be used irrespective of upper-case or lower-case characters.)

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

Also, folder and file name as shown below cannot be used.

- Folder name starting as G1
- Folder and file name starting from . (period) or \
- Folder and file name ending at . (period) or \
- Folder and file name with only . (period) or .. (two periods)

*3 Advanced Alarm Common

To control alarm log file conversion, setting Advanced Alarm Common is required.
For setting items of Advanced Alarm Common, refer to the following.

Section 8.2.5 1 Setting items

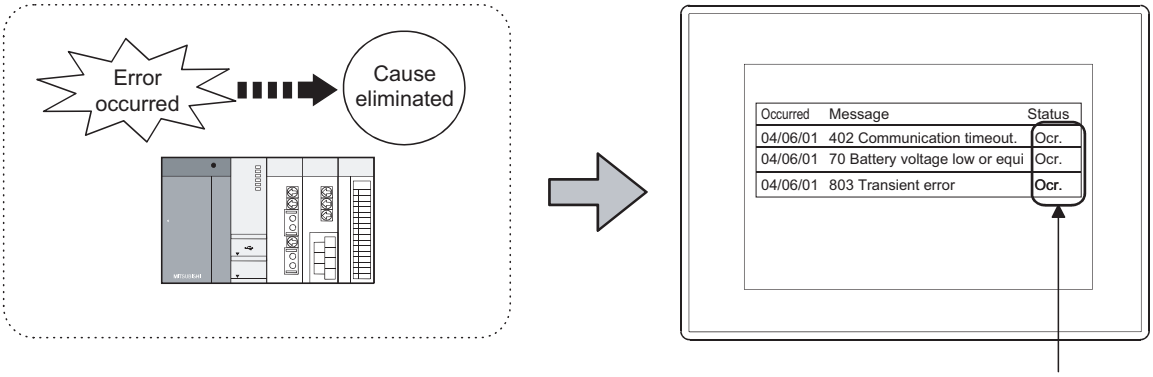
## 8.3.6 Precautions

The following are precautions for using advanced system alarms.

### 1 Precautions for use

(1) Controllers for which advanced system alarms are not displayed on GOT
CPU errors that occurred in the controllers indicated below are not displayed by the advanced system alarm of the GOT.
- SIEMENS PLC CPU
- YAMATAKE temperature controller
- RKC temperature controller
- Inverter

(2) Alarm resetting
The alarm status of a GOT error is not changed to "Restored" even if the alarm cause is eliminated.




Alarm causes on the GOT, controller, or network are eliminated.

Even if alarm causes on the GOT, controller, and network are eliminated, the status of alarm occurrence is still displayed on the GOT.

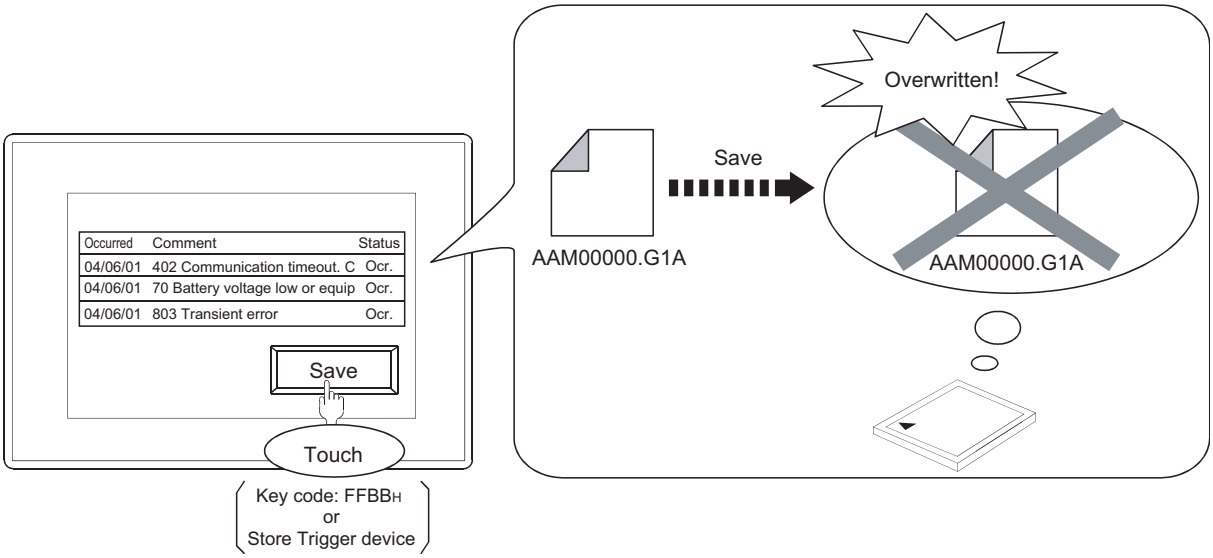
For details, refer to the following.

☞ Section 8.3.2 3 Alarm restoration

(3) Network error restoration and clear
The alarm status of a network error that occurred in the CC-Link communication unit, MELSECNET/10 communication unit, or MELSECNET/H communication unit will not be changed to "Restored" until the GOT is powered OFF or reset even after the alarm cause is eliminated.
When clearing an alarm of the "Restored" status, refer to the following.

☞ Section 8.3.2 3 Alarm restoration

(4) If the same data are in the memory card




The data in the memory card are overwritten. Therefore, if the data needs be kept unchanged, move the data from the memory card to the PC by either of the following methods.

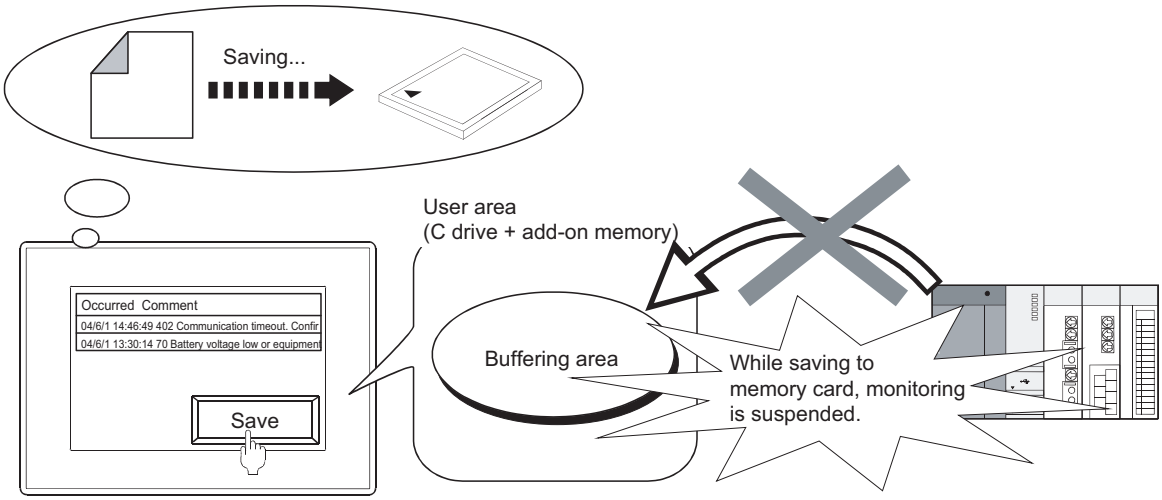
- Upload resource data by GT Designer2

  ☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 8.8 Uploading Resource Data [GOT to PC])

- Read out the CSV file saved in the memory card by PC.

(5) Alarm observation during saving of alarm log file

When an alarm log file is being saved to the memory card, monitoring is interrupted temporarily. Note that the advanced system alarm occurred and restored when the file is saved is not displayed.




(6) Saving by the buffer flash forced saving signal (GS520.b0)

Saving processing may take several minutes because the data of all the advanced alarms (advanced user alarms and advanced system alarms) to be saved as an alarm log file (set on the File Save tab) are saved in the memory card.

If the observation interrupt time needs to be shorter, save the data for each object as follows.

- Set a trigger for each advanced alarm observation settings and save the data.
- Set a touch switch (key code: FFBBH) for each advanced alarm display and save the data.

(7) When turning off from on the CF card access switch of the used drive

When turning off from on the CF card access switch while memory card is ejected from the drive, data in the memory card are inevitably saved.

Do not eject the memory card from the drive until the following LED or signal turns off and file saving is completed.

- CF card access LED on the used drive turns off
- Drive status notification signal on the used drive (System Signal 2-2. b0, b1) is off.

(☞ Section 3.6 3 (2) Write device)

Saving processing may take several minutes because the data of all advanced user alarms and advanced system alarms are saved as an alarm log file (set on the File Save tab).

(8) When restoring alarm history at the timing when the GOT is turned off and on

If the project of the alarm log file in the memory card does not match with the project in the GOT, the file cannot be read out of the memory card. (Alarm history before the GOT is powered off cannot be restored.)

In this case, the alarm below occurs or the signal below turns on.

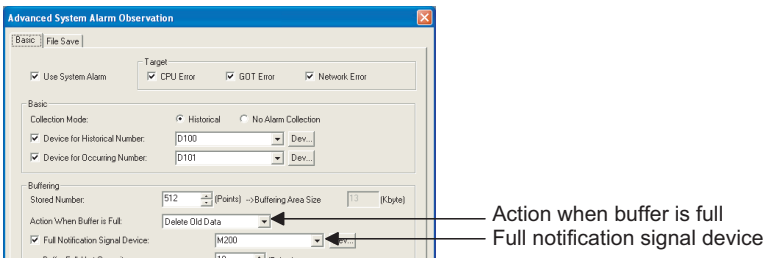
- "Writing Error Notification Device" turns on in the File Save tab.
- System alarm 525 "Unable to read/write alarm log files under different projects" occurs.

(9) Alarm collection when the buffering area is full

When the buffering area is full, one of the following operations is performed based on settings made in the "Action When Buffer is Full" on the Basic tab.

- Clear restored advanced system alarms and adding new alarms.
- Not collect advanced system alarms.

To avoid the operations above, set "Full Notification Signal Device" on the Basic tab, and clear the restored alarm when the device turns on. (☞ Section 8.3.2 3 Alarm restoration)




(10) Error when the alarm log file is saved

If an error occurs when a file is saved, "Writing Error Notification Device" on the File Save tab turns on.

Confirm the following.

- The GOT's CF card access switch is set to "transfer prohibited".
- The memory card is full.

(11) Difference from the drive status notification signal (write device: system signal 2-2)
Although buffer full, writing, and writing error can be notified through the drive status notification signal, operation is different from that of the device set by the advanced system alarm observation function.

| Item | Operation (Differences) | |
|---|---|---|
| | Advanced alarm observation | Drive status notification signal |
| Difference between "Full Notification Signal Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b4, b5) | Turns on when the number of alarms saved has reached that set in "Stored Number ".(when the buffering area reserved for advanced system alarms is full). | Turns on when the memory card is full. |
| Difference between "Writing Notification Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b0, b1) | Turns on when advanced system alarm data are being written in the memory card. | Turns on when data are being written in the memory card (also when data other than advanced system alarms are being written.) |
| Difference between "Writing Error Notification Device" set by advanced alarm observation and drive status notification signal (system signal 2-2.b7, b8) | • Turns on if an error occurs when the alarm log file in the memory card is accessed (for example, the project of the alarm log file in the memory card does not match with the project in GOT).<br>• Turns on when the memory card cannot be accessed (for example, the memory card is not set, or the CF card access switch is set to "transfer prohibited"). | Turns on when the memory card cannot be accessed (for example, the memory card is not set, or the CF card access switch is set to "transfer prohibited"). |

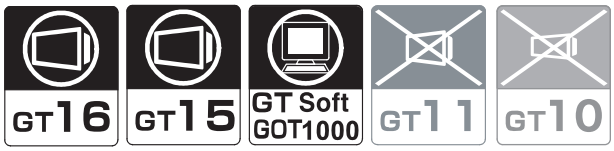
(12) Display of occurrence time, check time, and restoration time
For occurrence time, GOT's clock data are displayed.
For the precautions and restrictions of the clock function for managing GOT's clock data, refer to the following.

☞ Section 2.5 Clock Function

(13) Unicode text file converted with utility, etc.
For the cautions for using a Unicode text file, refer to the following.

☞ 2.11 Precautions for Using Unicode Text File

# 8.4 Advanced Alarm Display (Advanced User Alarm/Advanced System Alarm)



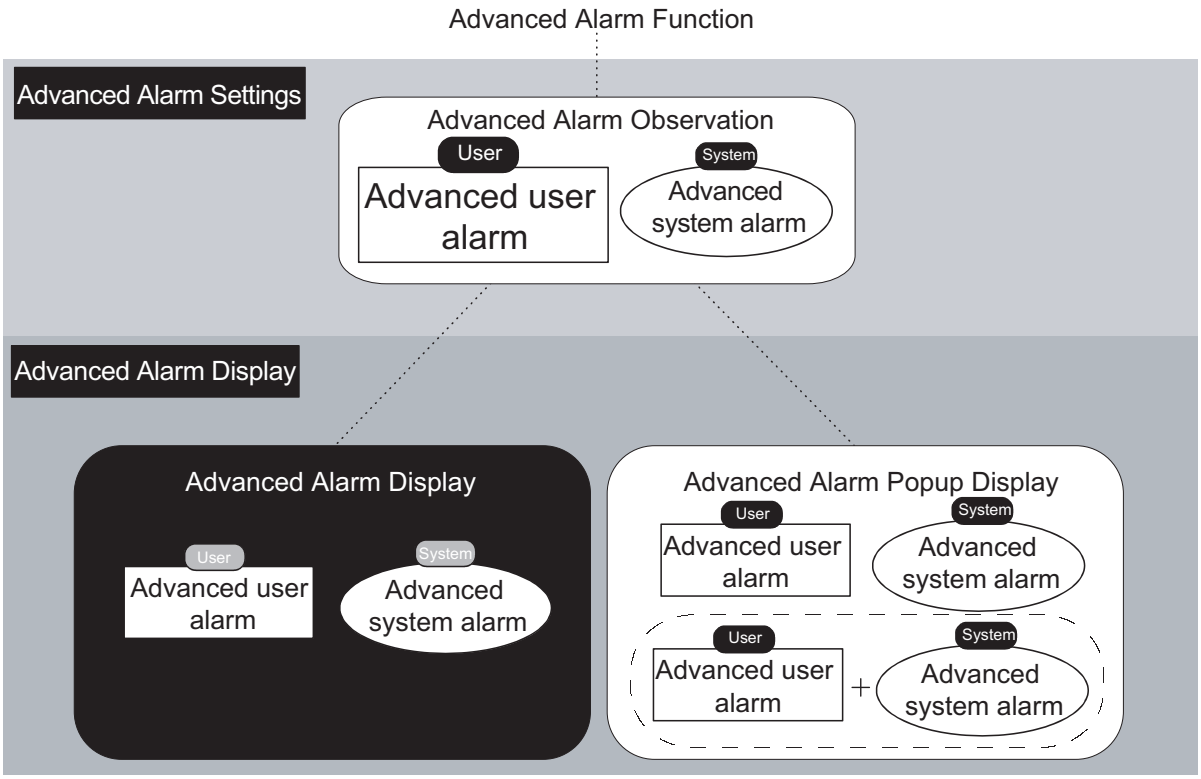

The status of occurrence of the advanced alarms (advanced user alarm/advanced system alarm), set by advanced alarm observation, is displayed in a list.

**Point**

Before setting advanced alarm display

This section explains the advanced alarm display of the advanced alarm function.
Read the section below before setting the advanced alarm display.

Section 8.1.2 Advanced alarm function

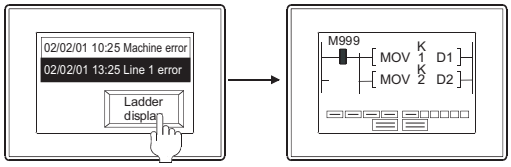


Application example

Starting the ladder monitor function on advanced user alarm display and searching a device automatically from specified program file
(One-touch ladder jump function)

Touch Switch(Section 6.2.9)

Make setting with Advanced Alarm Observation (Advanced User Alarm)(Section 8.2.5)




Display the ladder monitor function with the touch switch.

A device corresponding to a cause of an alarm is automatically searched.

## 8.4.1 Relevant settings

For advanced alarm display, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to advanced alarm display only
…Relevant to advanced alarm display only.

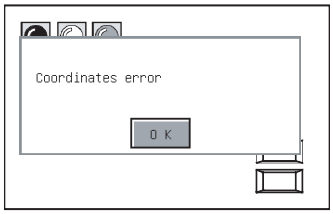
(2) Functions relevant to advanced alarm display and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to advanced alarm display and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.



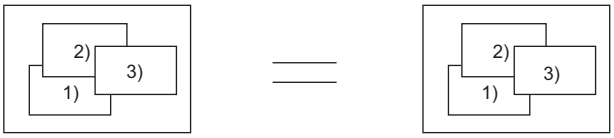

Setting for each project

Setting for each screen

Setting items
• [Carry out check for overlapping objects within GOT]

• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.




Setting for each project

Setting for each screen

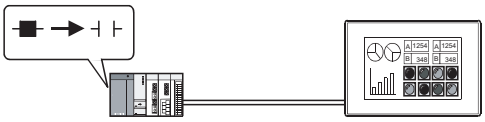
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information(☞ Section 3.6 System Information Setting)

(1) Functions relevant to other than advanced alarm display

• Key Code Read Complete Signal
(Read device: System Signal 1-1. b3)

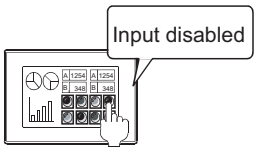
Turns off the key input signal.



Key input signal OFF

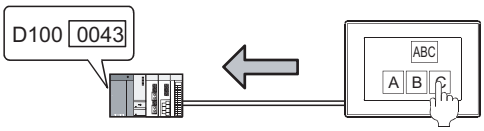
• Key-In Disable Signal
(Read device: System Signal 1-1. b9)

Disables all key inputs.




• Key Code Input
(Write device)

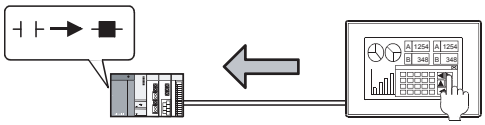
Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.




The key code is notified

• Key Input Signal
(Write device: System Signal 2-1. b3)

Notifies the key input.

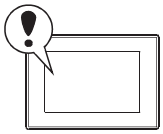


## 3 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

(1) Functions relevant to system alarm and others

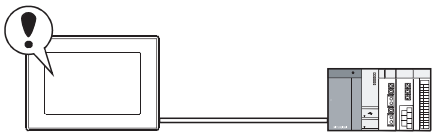
• System alarm GOT error channel No.
(Write device: GS262)

Stores the channel number where system alarm (GOT error) occurred.



• System alarm CPU error channel No.
(Write device: GS263)

Stores the channel number where system alarm (CPU error) occurred.



• System alarm network error channel No.
(Write device: GS264)

Stores the channel number where system alarm (network error) occurred.

## 8.4.2 Before setting

This section describes the settings and functions needed for using the advanced alarm display function.

### 1 Method of displaying alarm

(1) Types of alarm displayed (☞ Section 8.4.5 1 Basic tab)
Select the alarms to display from the two types of alarms below.
- All alarm: Alarm history including the alarms occurred in the past is displayed.
- Occurring alarm: Only the alarms occurring at present are displayed.

Alarm status

| (Occurred) | (Comment) | (Restored) | (Checked) |
|---|---|---|---|
| 04/06/01 12:10 | Temp. error | – | – |
| 04/06/01 11:45 | Fuse error | – | 12:25 |
| 04/06/01 11:30 | Oil error | 12:05 | 11:50 |
| 04/06/01 10:47 | Fuel error | – | 10:55 |
| 04/06/01 09:30 | Internal pressure error | 10:14 | 09:48 |
| 04/06/01 08:58 | Light error | 09:45 | 09:15 |

In case of "All alarm"

| Occurred | Comment | Restored | Checked |
|---|---|---|---|
| 04/06/01 12:10 | Temp. error | | |
| 04/06/01 11:45 | Fuse error | | 12:25 |
| 04/06/01 11:30 | Oil error | 12:05 | 11:50 |
| 04/06/01 10:47 | Fuel error | | 10:55 |
| 04/06/01 09:30 | Internal pressure error | 10:14 | 09:48 |
| 04/06/01 08:58 | Light error | 09:45 | 09:15 |

Alarm history including the alarms occurred in the past is displayed.

In case of "Occurring alarm"

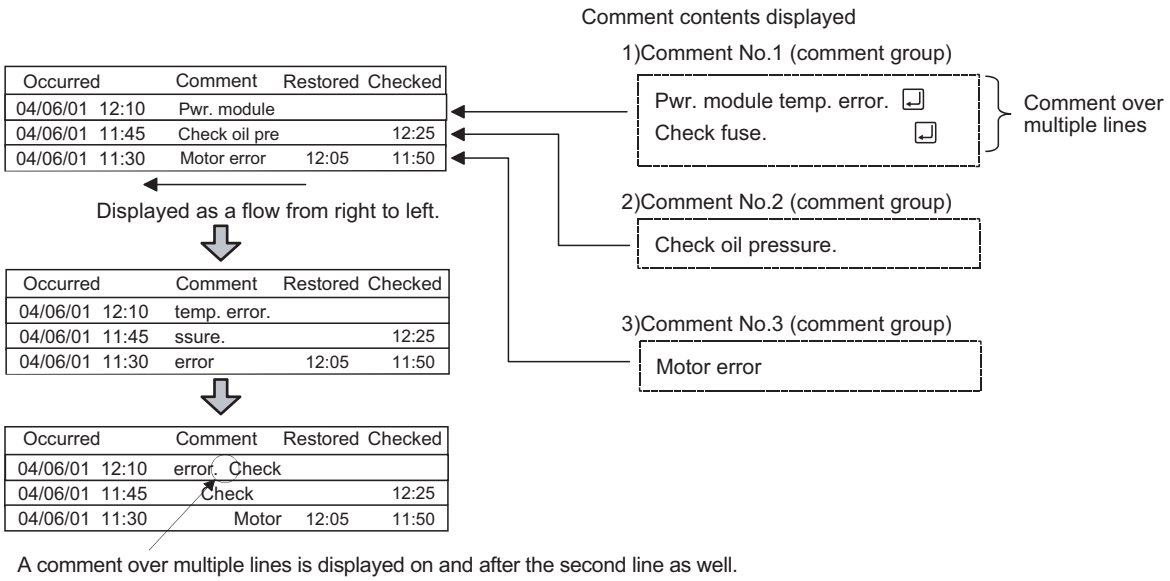
| Occurred | Comment | Restored | Checked |
|---|---|---|---|
| 04/06/01 12:10 | Temp. error | | |
| 04/06/01 11:45 | Fuse error | | 12:25 |
| 04/06/01 10:47 | Fuel error | | 10:55 |
| | | | |
| | | | |
| | | | |

The alarms of oil error, internal pressure error and light error are deleted because these alarms have been restored.

(2) Comment display methods
The display methods below can be selected.(☞ Section 8.4.5 1 Basic tab)

(a) Fixed
When an alarm occurs, the comment is displayed in a line.

(b) Float
When an alarm occurs, the comment is displayed in a flow from right to left.
If display the comment by flowing it, the whole comment which is longer than the display width or a comment in multiple lines can be displayed.



(3) Alarm display order (sort)

Set the order for displaying alarms as follows:

1 Specify an item for sorting the alarm display.

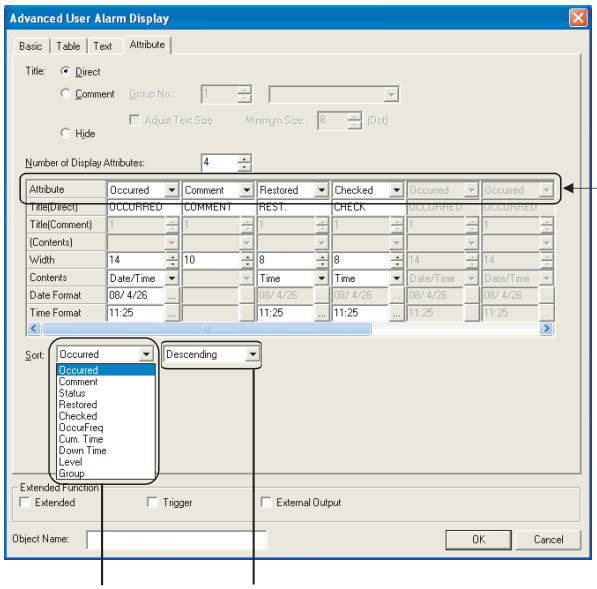
The alarm display is sorted according to the specified item.

Display example) Display alarms in the order of occurrence date/time from the latest

Sort in the descending order of occurrence date/time

| Occurred | Comment | Status | Restored | Checked | OccurFreq | Cum.Time | Down Time | Level | Group |
|---|---|---|---|---|---|---|---|---|---|
| 04/06/01 20:00 | Pwr. module error | Ocr. | – | – | 1 | – | – | 1 | 2 |
| 04/06/01 18:30 | Oil pressure error | Chk. | – | 18:50 | 2 | 00:20 | – | 1 | 1 |
| 04/06/01 16:10 | Drive module error | Chk. | 16:30 | 16:20 | 5 | 04:10 | 00:20 | 2 | 1 |
| 04/06/01 14:00 | Motor error | Chk. | 15:00 | 14:10 | 4 | 02:30 | 01:00 | 2 | 1 |
| 04/06/01 13:30 | Light error | Chk. | 14:30 | 13:50 | 1 | 01:00 | 01:00 | 2 | 1 |

Setting example) Specify the settings as follows on the attribute tab.




Items displayed by the advanced alarm display function

Select an item for sort (Occurred).

Select a display order (descending or ascending).

2 By setting the switching device, the item for sorting the alarm display can be changed.
For the details of the switching device, refer to the following.

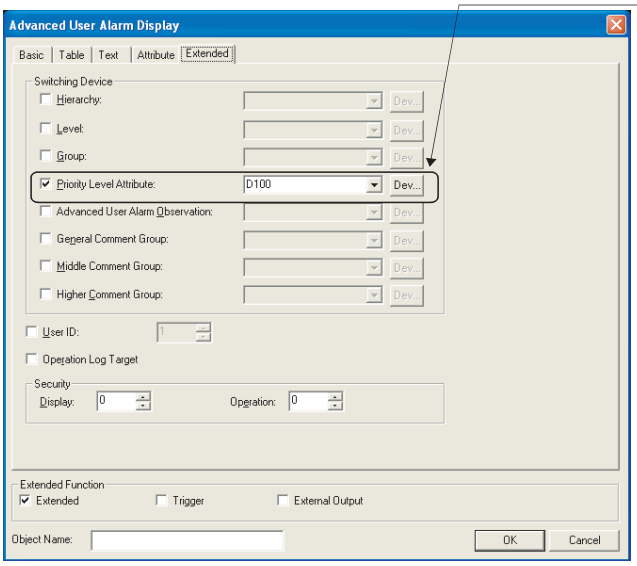
☞ Section 8.4.3 4 Display switching by device (Specify on [Switching Device] on the [Extended] tab))

Display example) Sort alarms in the descending order of occurrence frequency

Change the item for sorting to the occurrence frequency (descending order).

| Occurred | Comment | Status | Restored | Checked | OccurFreq | Cum.Time | Down Time | Level | Group |
|---|---|---|---|---|---|---|---|---|---|
| 04/06/01 16:10 | Drive module error | Chk. | 16:30 | 16:20 | 5 | 04:10 | 00:20 | 2 | 1 |
| 04/06/01 14:00 | Motor error | Chk. | 15:00 | 14:10 | 4 | 02:30 | 01:00 | 2 | 1 |
| 04/06/01 18:30 | Oil pressure error | Chk. | – | 18:50 | 2 | 00:20 | – | 1 | 1 |
| 04/06/01 20:00 | Pwr. module error | Ocr. | – | – | 1 | – | – | 1 | 2 |
| 04/06/01 13:30 | Light error | Chk. | 14:30 | 13:50 | 1 | 01:00 | 01:00 | 2 | 1 |

Setting example) Set the items as follows on the Extended tab.




Switching device

D100 | 9 |

The sort condition can be changed by the value of the switching device (Priority Level Attribute).

(☞ Section 8.4.5 5 Extended tab)

0 : Not specify (sort by occurrence date/time)
1 : Occurrence date/time
2 : Restoration date/time
3 : Check date/time
4 : Comment (displayed comment No.)
5 : Level
6 : Group
7 : Alarm Status
(Ascending:check → restore → occur)
(Descending:occur → restore → check)
9 : Occurred Frequency
10 : Cumulative Time
11 : Down Time

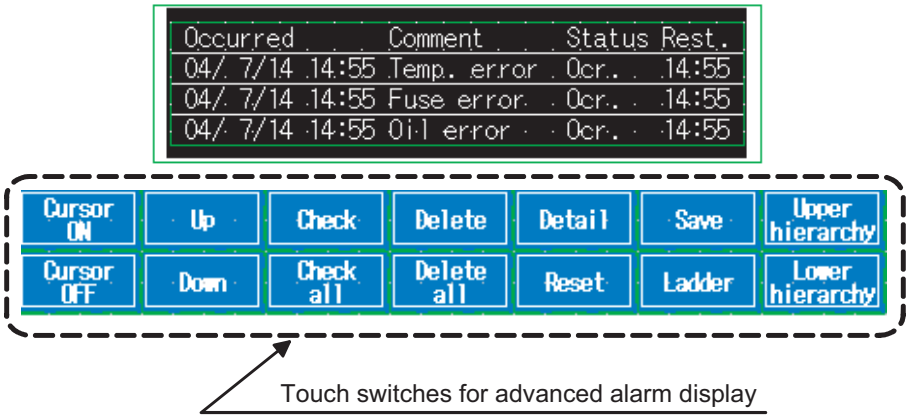
**Point**

Display order when the Sort on the Attribute tab and the switching device are specified at the same time

If both of the [Sort] item on the Attribute tab and the [Priority Level Attribute] of the [Switching Device] item on the Extended tab are specified, data are displayed in the order specified by [Priority Level Attribute.]

## 2 Operations by touch switches

Various operations are usable for displayed alarms by the touch switches for advanced alarm display. These touch switches can be arranged easily by GT Designer2.




**Remark** Details of the touch switches for advanced alarm display

For details, refer to the following.

☞ Section 8.4.6 Description on touch switches for advanced alarm display

## 8.4.3 Useful information

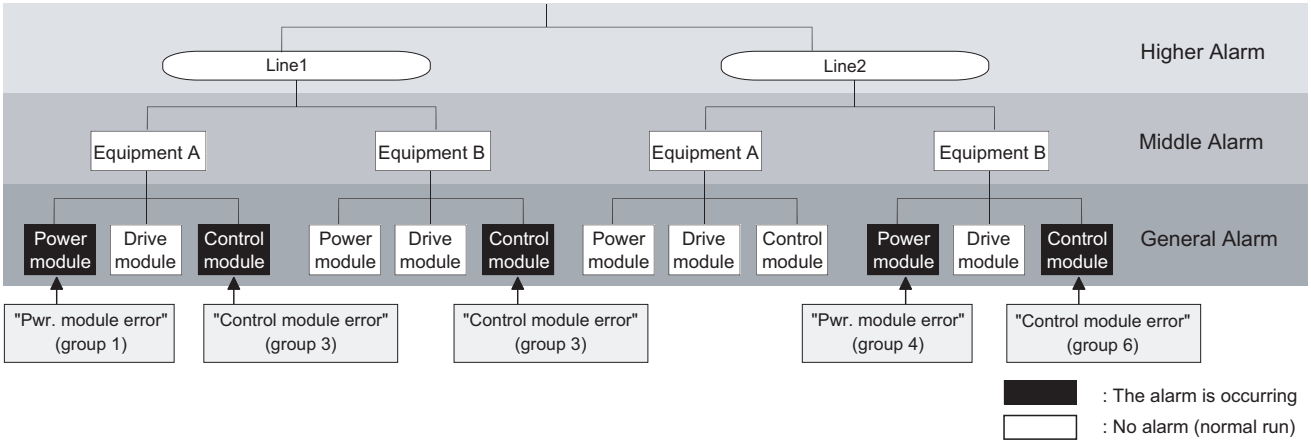
This section describes useful functions to know before using advanced alarm display.

### 1 Switching of alarm hierarchies (Only when advanced user alarms displayed)

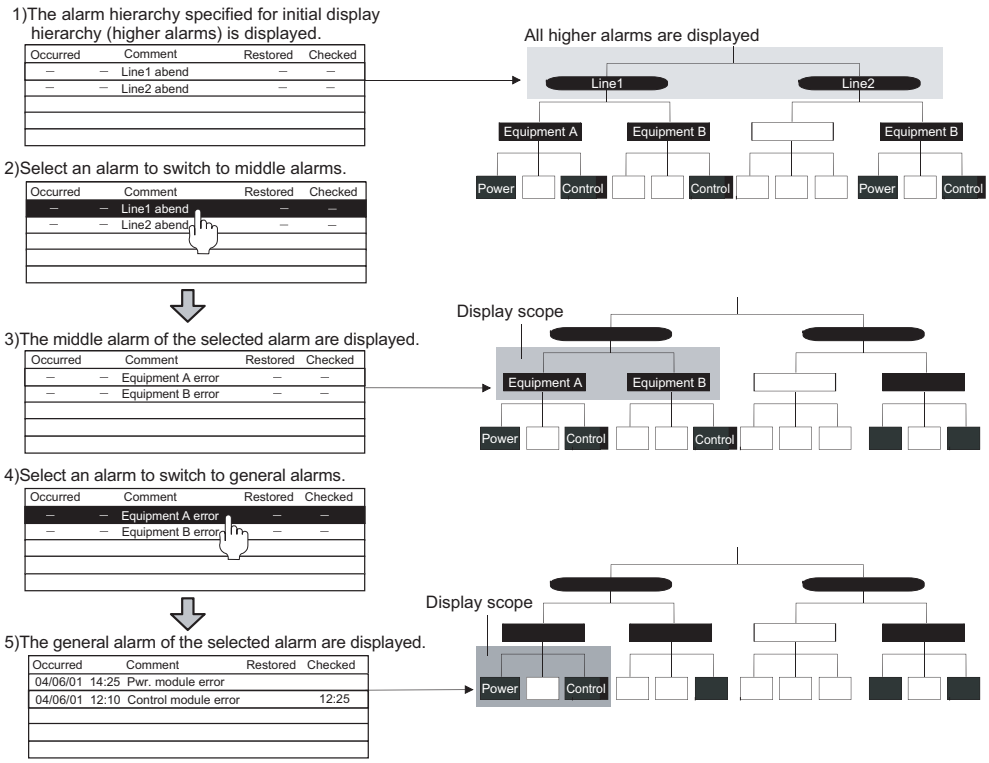
For advanced alarm display, alarm hierarchies can be switched by one of the following methods. However, the display scope differs depending on the switching method

- Touch the advanced alarm display directly or switch the hierarchy by the touch switches
- Use the device specified on[Hierarchy] of [Switching Device] on the Extended tab

The following system example describes the difference of the display scope depending on the switching method.



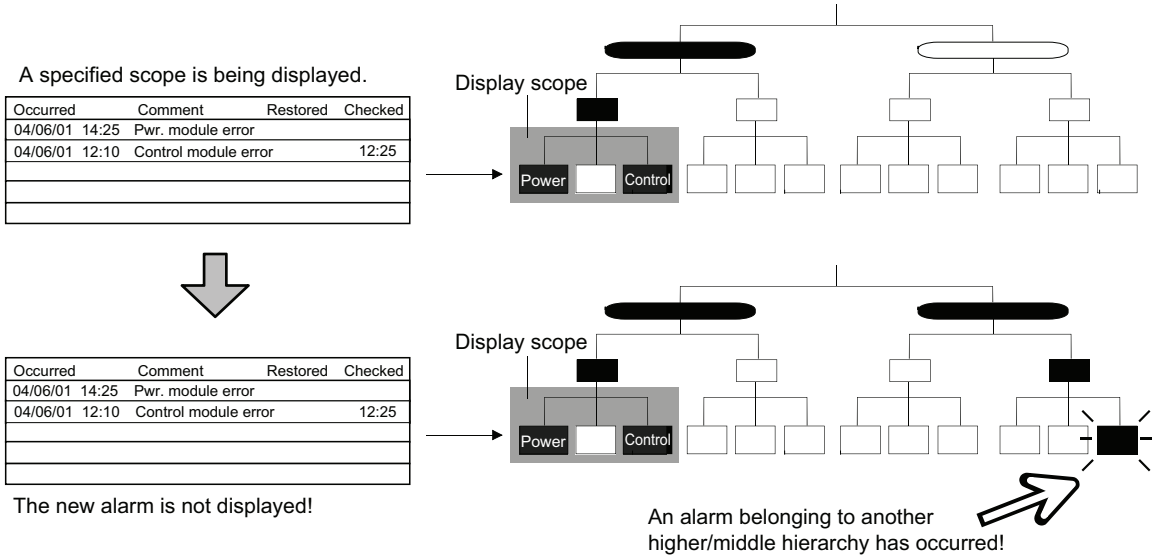

(1) Switch alarm hierarchies by touching the advanced alarm display directly or using the touch switches.
Display the hierarchies below the selected alarm.
The following is the case that [Initial Display Hierarchy] on the Basic tab is specified as the higher alarms.



**Point**

A new alarm belonging to another higher/middle hierarchy has occurred while a specified scope is being displayed

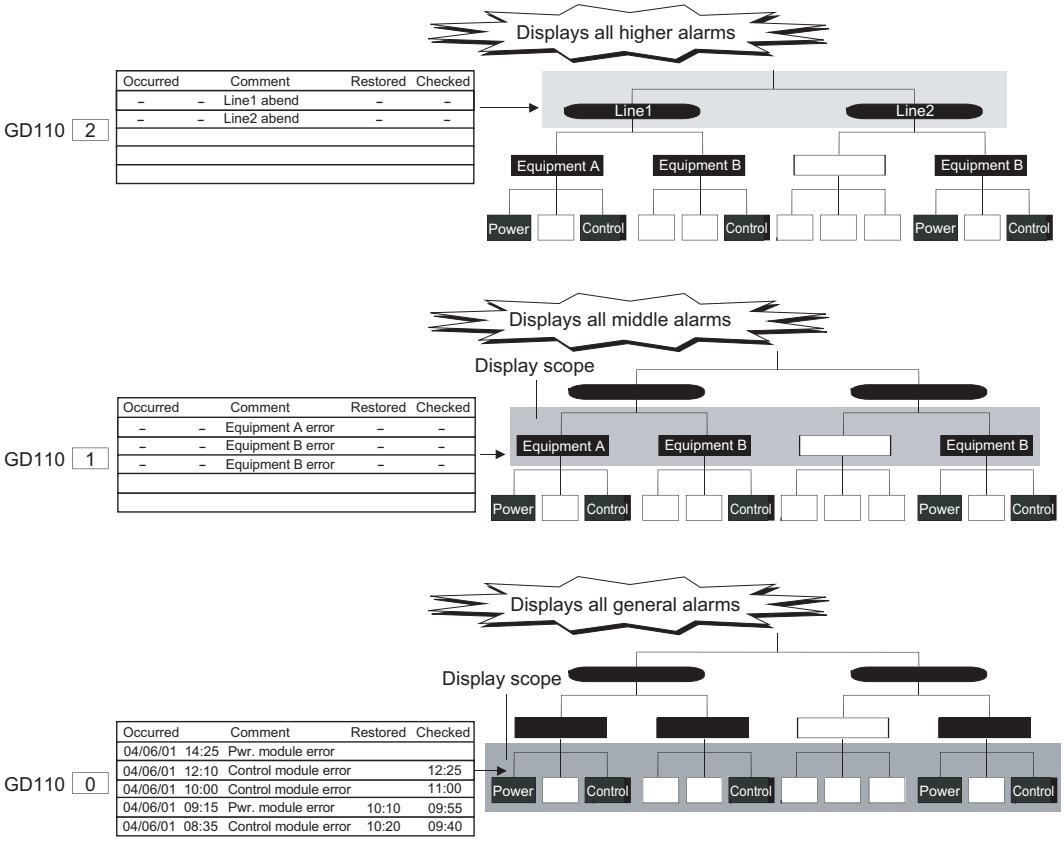
If a new alarm belonging to another higher/middle hierarchy has occurred while an alarm belonging to the higher/middle hierarchy is being displayed, the new alarm is not displayed.




Display the new alarm by one of the following methods.

- Use the hierarchy switching device to display all the alarms of the specified hierarchy.(☞ This section 1 (2) Switch the hierarchy using the device specified by "Hierarchy" of "Switching device" on the Extended tab)
- Display higher alarms and move to the hierarchy of the new alarm. (And, move to the lower hierarchy and display the new alarm.)

(2) Switch the hierarchy using the device specified by "Hierarchy" of "Switching device" on the Extended tab
Display all the alarms of the hierarchy specified by the device.
The following shows an example when the switching device of hierarchy is set to GD110.

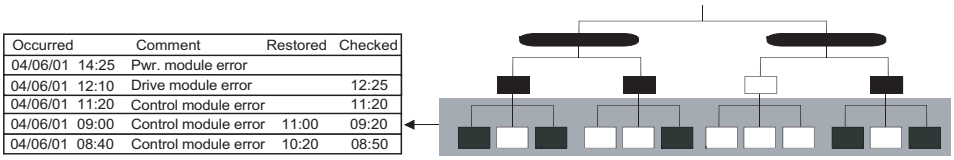



**Point**

(1) Switching method to the upper alarm hierarchy
To switch the hierarchy to the upper alarm hierarchy (general alarms → middle alarms → higher alarms), operate the touch switches for advanced alarm display.
(☞ Section 8.4.6 Description on touch switches for advanced alarm display)

(2) Alarm hierarchy specified as the initial display hierarchy
To display alarms in hierarchy, it is recommended to specify the highest alarm hierarchy as the initial display hierarchy.
If any lower alarm hierarchy is specified as the initial display hierarchy, alarms are displayed with the vertical hierarchies ignored.

Example: When the initial display hierarchy is specified to general alarms



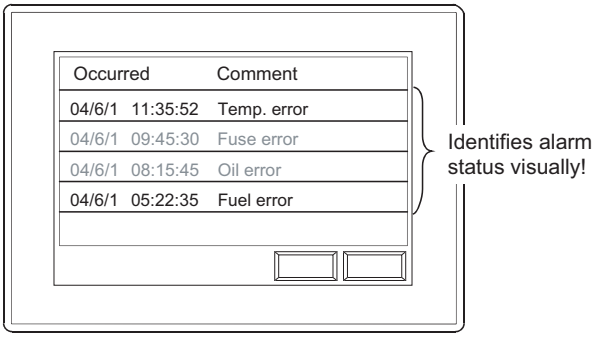

All the alarms belonging to the general hierarchy are displayed.

(3) Timing at which alarms are switched to the initial display hierarchy regardless of the hierarchy being displayed
When the advanced user alarms (alarm ID) to be displayed are switched or language switching is performed, all the alarms of the hierarchy specified as the initial display hierarchy are displayed.

## 2 Setting of display colors for each alarm status, level, and group

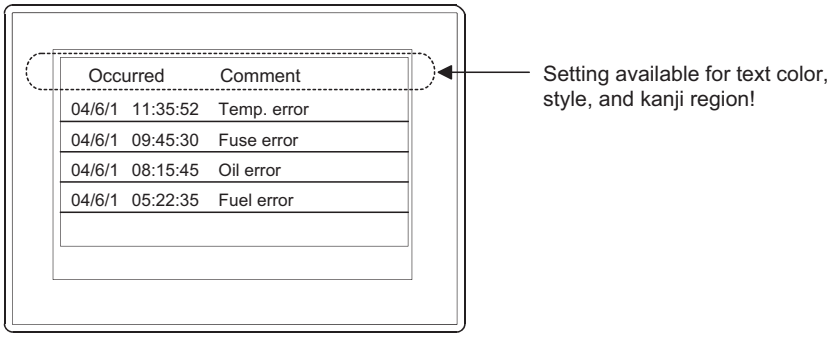
The advanced alarm display function allows visually identifying alarms by setting display colors for each items shown below.(☞ Section 8.4.5 3 Text tab)

- Alarm status (occurrence, restore, and check)
- Level
- Group



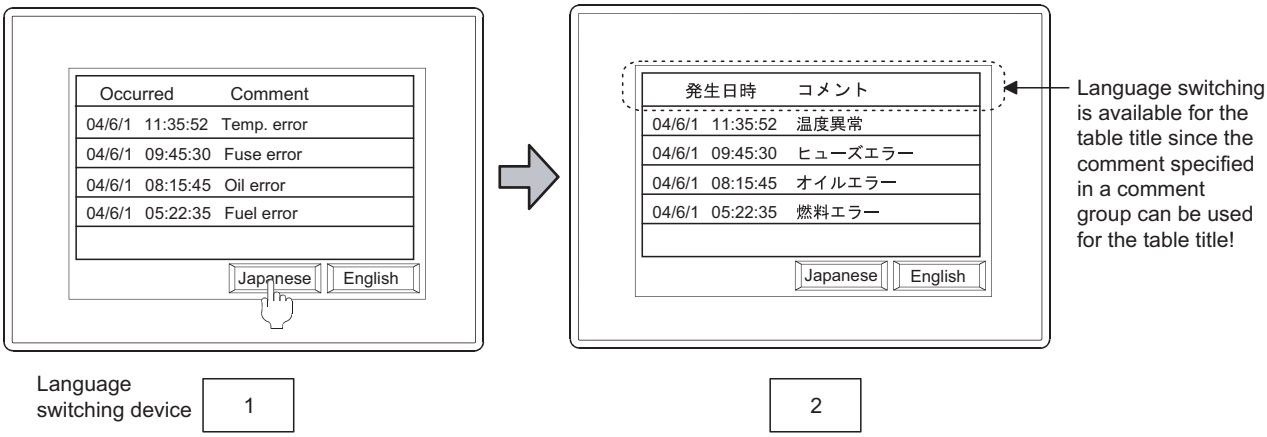
## 3 Set or change table titles and comments displayed freely

(1) Format setting of the table title (title format setting)
A style, text color, and kanji region can be set on the characters displayed as the table title.
This allows displaying alarms in a more easy-to-view table.




(2) Change the comments displayed using the language switching function
When setting comments in a comment group, the comments displayed can be changed by the language switching device by setting the comments in multiple languages.
(☞ Section 3.4 Setting Language Switching Device)

Comment group settings




**Point**

The language of the messages of advanced system alarms is set by the utility of the GOT main unit.

## 4 Display switching by device (Specify on [Switching Device] on the [Extended] tab)

Data displayed can be switched by the value of device.

The display shown below is available. (☞ Section 8.4.5 5 Extended tab)

- Refinement display of data by level, group, and alarm ID (advanced user alarms only) specified by users.
- Change the comments displayed according to the target user or purpose.
- Change the displaying order (descending, ascending and so on).

(1) Items to which a switching device can be set

| Switching device setting usable item | Display alarm | |
|---|---|---|
| | Advanced user alarm | Advanced system alarm |
| Hierarchy*1 | All the alarms generated in the specified alarm hierarchy are displayed. | - |
| Level*1 | Alarms at the specified level are displayed. | |
| Group*1 | Alarms of the specified group are displayed. | |
| Priority Level Attribute | The display order is changed between ascending order and descending order.<br>For the sort key, occurrence date/time, restoration date/time, check date/time, comment No., level, group, alarm status (occurred, checked, or restored), occurrence frequency, cumulative time, or down time can be selected. | The display order is changed between ascending order and descending order.<br>For the sort key, occurrence date/time, restoration date/time, check date/time, error code, or alarm status (occurred, checked, or restored) can be selected |
| Advanced User Alarm Observation | The setting of advanced user alarm observation (alarm ID) displayed by advanced alarm display can be changed.<br>Multiple sets of alarm data can be displayed by an advanced alarm display window. | - |
| General Comment Group | The comments displayed when an alarm occurs can be changed for each comment group.<br>The comment displayed can be changed according to the user or purpose. | |
| Middle Comment Group | | |
| Higher Comment Group | | |

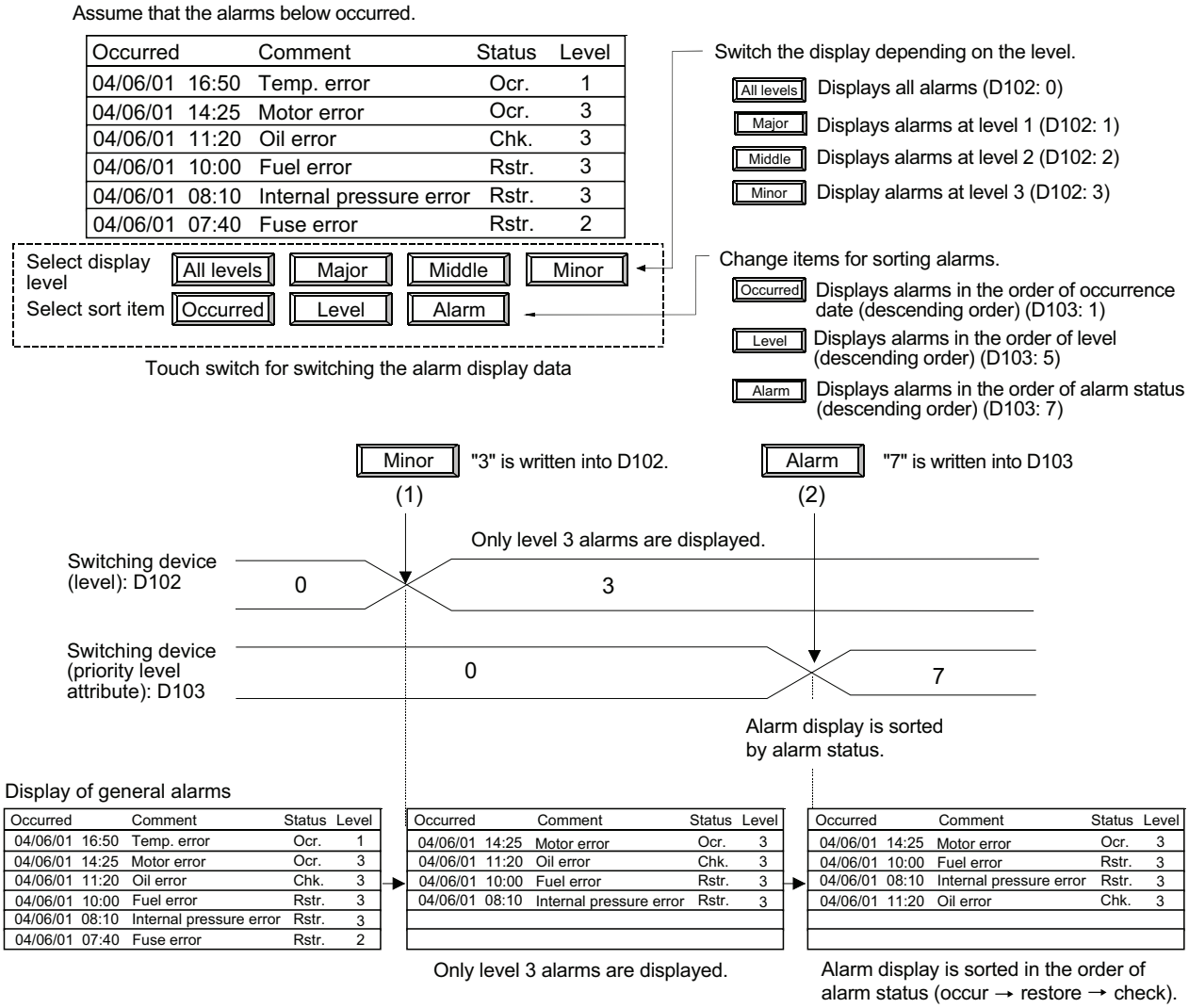
*1 The hierarchy, level, and group for alarms are set by the advanced user alarm observation function.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

(2) Display example

Alarms are refined and displayed by changing the value of the device (switching device).

This section shows an example when the switching device (level) is set to D102 and the switching device (priority level attribute) to D103.




**Point**

Changing the alarm sorting order by "Priority Level Attribute"

Sorting order can be changed only while general alarms are displayed, and cannot be changed while higher alarms or middle alarms are displayed.

## 5 Writing alarm data into device

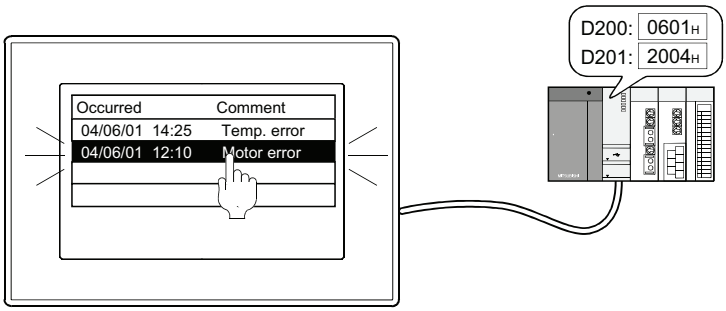
The alarm data touched on the advanced alarm display can be written into the device (word device).

(☞ Section 8.4.5 7 External output tab)

(1) Alarm data written into the device
Select the alarm data written in the device from the items below (15 types).

- Alarm ID
- Comment group No.
- Comment No.
- Alarm status
- Occurred date
- Occurred time
- Restored date
- Restored time
- Checked date
- Checked time
- Level
- Group
- Occurred frequency
- Cumulative time
- Down time

(2) Alarms to be written
The data of the alarm touched on advanced alarm display are written.




The occurred date of the selected alarm (04/06/01) is output to the device.

**Point**

Touch mode when data are written in the device

When write alarm data into the device, set "Touch mode" on the Basic tab to "Selection" or "Operation."

## 8.4.4 Placement and settings

1. Perform either of the following operations.
   - Select the [Object] → [Advanced Alarm Display] → [Advanced User Alarm] / [Advanced System Alarm] menus.
   - Click (Advanced User Alarm Display) / (Advanced System Alarm Display).
2. Click on the position where advanced alarm display to be located to complete the arrangement.
3. Double click on the arranged advanced alarm display, the setting dialog box is displayed.
   Refer to the following description (☞ Section 8.4.5 Setting items) to perform the setting.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

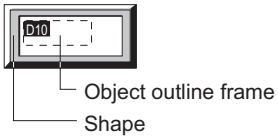
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

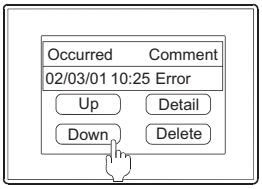
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

☞ Section 5.3.3 Object size change



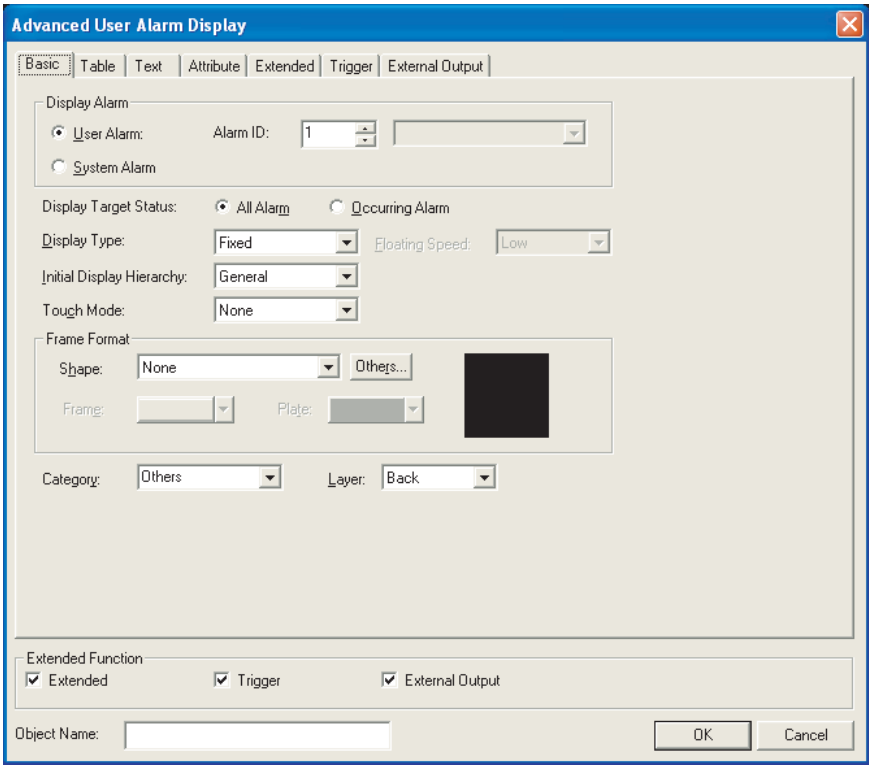

4. Set the touch switch for scrolling up and down the advanced alarm display and for displaying alarm data in detail.

   (☞ Section 8.4.6 Description on touch switches for advanced alarm display)



## 1 Basic tab

Set the types of the advanced alarm observation displayed (advanced user alarm / advanced system alarm), message display method and operations when the screen is touched.

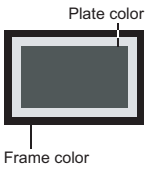



Basic | Table | Text | Attribute | Extended | Trigger | External Output

| Item | Description | Model |
|---|---|---|
| Display Alarm | Select a type of the advanced alarms displayed by the advanced alarm display function.<br>User Alarm : Displays the alarms set by the advanced user alarm observation.<br>After checking it, select an alarm ID of the advanced user alarm to display.<br>(☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm))<br>System Alarm : Displays the alarms set by the advanced system alarm observation.<br>(☞ Section 8.3 Advanced Alarm Observation (Advanced System Alarm)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display Target Status | Select how to display collected alarms.<br>(☞ Section 8.4.2 1 (1) Types of alarm displayed (Section 8.4.5 Basic tab))<br>All Alarm : Alarm history including all the alarms generated in the past is displayed.<br>Occurring Alarm : Only the alarms occurring at present are displayed. | |

(Continued to next page)

Basic | Table | Text | Attribute | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Display Type | | Select a display method of the comment displayed for the alarm<br>(☞ Section 8.4.2 1 (2) Comment display methods)<br>Fixed : Displays the comment to display when an alarm occurs in a line.<br>Any part exceeding the length of the comment displayed in a line or the second line and after of the comment is not displayed.<br>Float : Displays the comment flowing it from right to left when an alarm occurs.<br>For the comment in multiple lines, the second line and after are also displayed.<br>After selecting "Float," select a speed to display the comment as a flow by "Flowing Speed." | |
| | Floating Speed | If setting "Display Type" to "Float," select a speed for flowing display.<br>High : The comment flows at a speed of approximately 213 dots (16-dot character x 13) per second.<br>Middle : The comment flows at a speed of approximately 106 dots (16-dot character x 7) per second.<br>Low : The comment flows at a speed of approximately 53 dots (16-dot character x 3) per second. | |
| Initial Display Hierarchy | | Select the alarm hierarchy initially displayed by the advanced alarm display function.<br>(This item can be set up only when Advanced User Alarm is displayed.)<br>General : General alarms are initially displayed.<br>Middle : Middle alarms are initially displayed.<br>Higher : Higher alarms are initially displayed. | |
| Touch Mode | | Select the operation when the advanced alarm display screen is touched.<br>None : No operation even when touched.<br>Selection : The touched alarm is selected.<br>Operation : Alarm hierarchies are switched or the detailed screen is displayed for the touched alarm.<br>(This item can be selected for advanced user alarms only.)<br>Operations differ depending on the alarm hierarchy being displayed.<br>• When higher/middle alarm is displayed : The alarm hierarchy is switched to the lower one.<br>• When general alarms are displayed : The touched alarm is selected.<br>When touching the selected alarm again, the detailed screen is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the frame color/plate color.<br>  <br> | |
| | Plate | | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |

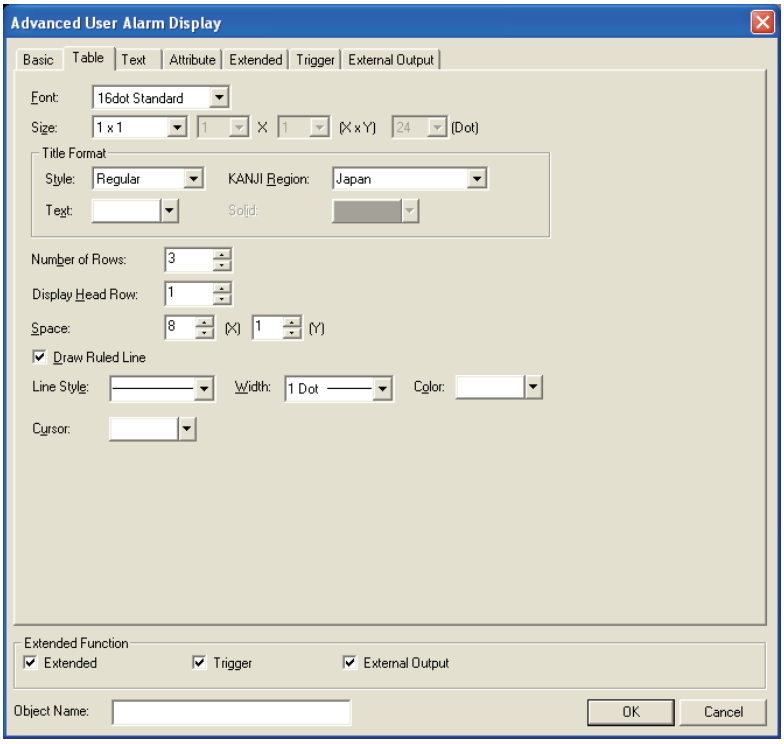
(Continued to next page)

Basic | Table | Text | Attribute | Extended | Trigger | External Output

| Item | Description | Model |
|---|---|---|
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br><br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 Table tab

Set the display format for advanced alarm display (font, Number of rows and line).

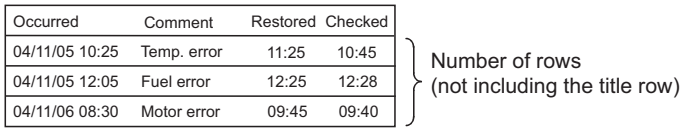
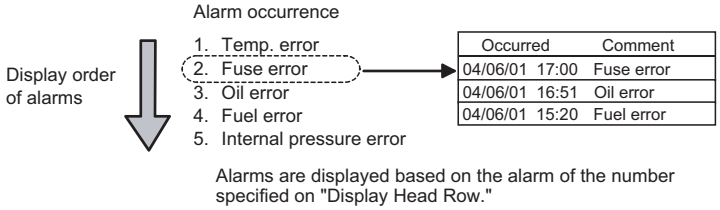
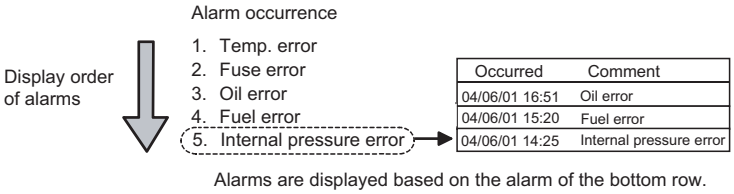
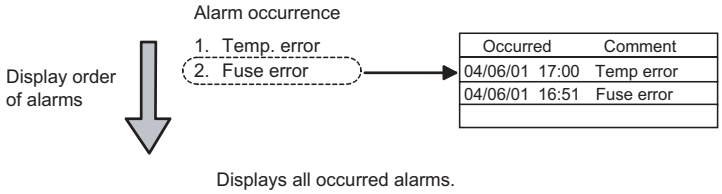
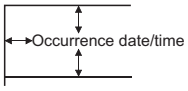
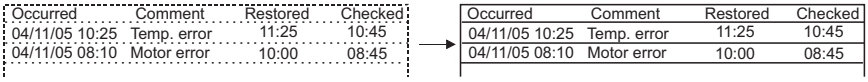



Basic | **Table** | Text | Attribute | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Font | | Select a font of the characters displayed.<br>·12dot Standard · 16dot Standard · 16dot HQ Mincho<br>· 16dot HQ Gothic · Stroke<br>If "HQ font" is set for the advanced system alarm, the text of comment will be displayed in the standard font.<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Size | | | |
| Title Format | | Set the format of the characters displayed on the title of advanced alarm display. | |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| | KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3.1 Fonts)<br>Japan : Display the characters in Japanese kanji.<br>China(GB)-Mincho : Display the characters in China(GB) kanji.<br>China(Big5)-Gothic : Display the characters in China(Big5) kanji.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho | |
| | Text | Select a color for the text to be displayed. | |

(Continued to next page)

Basic | **Table** | Text | Attribute | Extended | Trigger | External Output

| Item | Description | Model |
|---|---|---|
| Number of Rows | Set the number of rows displayed on a screen (1 to 27).<br>Example: When setting the number of rows to 3<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display Head Row*1 | Set which alarm is displayed in the top row when the number of alarms exceeds that of rows.<br>• When the number of alarms exceeds the value set for [Display Head Row]<br>The alarm corresponding to the value set for [Display Head Row] is displayed in the top row.<br>Example) When [Number of Rows] is set to 3, [Display Head Row] is set to 2, and the number of alarms is 5<br>  <br><br>• When the number of alarms is less than the value set for [Display Head Row]<br>The last alarm is displayed in the bottom row.<br>Example) When [Number of Rows] is set to 3, [Display Head Row] is set to 10, and the number of alarms is 5<br>  <br><br>• When the number of alarms is less than the value set for [Number of Rows]<br>The setting for [Display Head Row] becomes invalid, and all the alarms are displayed.<br>Example) When [Number of Rows] is set to 3, [Display Head Row] is set to 3, and the number of alarms is 2<br>  <br> | |
| Space | Set how much space is kept between the ruled line of the table and the characters such as time display.<br>X : 0 to 32 dots (Available in 1-dot units)<br>Y : 0 to 32 dots (Available in 8-dot units)<br>According to the setting of "Size" (magnification of character size), the actual horizontal space is as follows:<br>"Magnification of character size × set value in Space"<br>Example:<br>When "Size" is set to 2 and "Space" to 8, space of 16 dots is ensured.<br>  <br> | |
| Draw Ruled Line | Check this item when adding ruled lines to the advanced alarm display.<br>After checking it, select a "Line style," "Width," and "Color."<br>When not draw ruled lines<br>When draw ruled lines<br>  <br> | |

Basic | **Table** | Text | Attribute | Extended | Trigger | External Output

| Item | Description | Model |
|---|---|---|
| Line Style | Select a ruled line type for advanced alarm display. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Width | Select a ruled line width for advanced alarm display (1,2,3,4,5, or 7 dots). | |
| Color | Select a ruled line color for advanced alarm display. | |
| Cursor | Select a color of the cursor for selecting the alarm. | |

For details of *1, refer to the following.

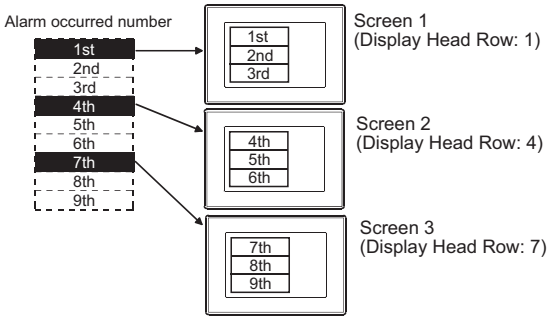
*1 Display head row

If the number of alarms becomes higher than the numbers set to [Display Head Row] while Advanced Alarm is displayed on the GOT, [Display Head Row] setting will not be valid.
To enable [Display Head Row] setting, switch the screen, and then return the screen to the Advanced Alarm display screen.

**Hint!**

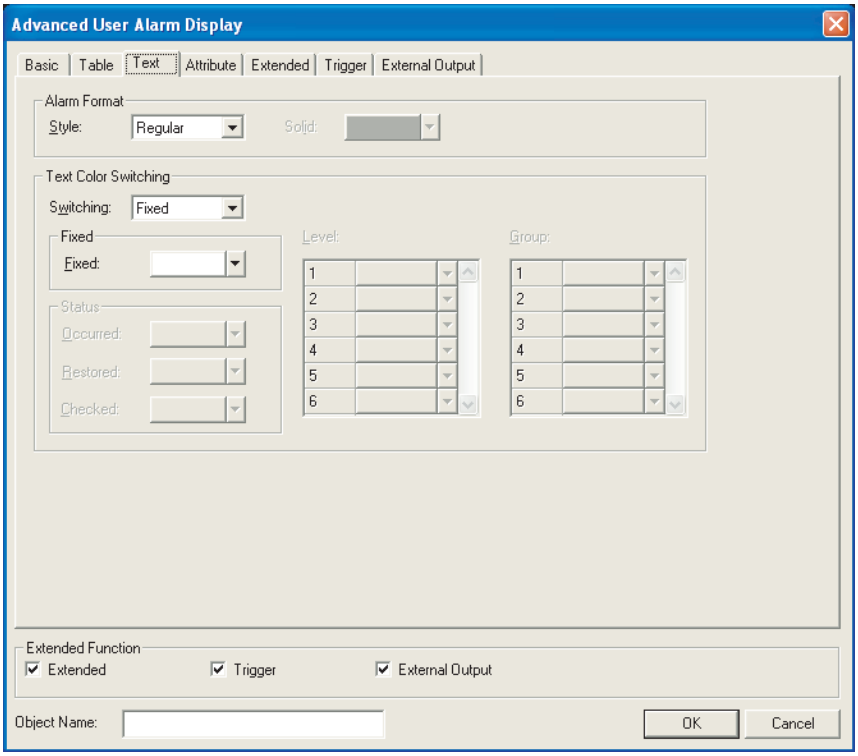
Application example of Display Head Row

If different [Display Head Row] are set on screens, different advanced alarm display can be displayed for each screen.



## 3 Text tab

Set the character format in the column for displaying alarms.




Basic | Table | **Text** | Attribute | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Alarm Format | | Set the format of the character color in the column for displaying alarms. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| Text Color Switching*1 | | Select a color for the columns to display alarms, the target for separating by color.<br>Fixed : Select this item when displaying characters in a color only. Set the color after selecting "Fixed".<br>Status : Select this item when using different colors depending on alarm status (occur, restored, or checked).<br>Level : Select this item when using different colors depending on level. This item is displayed only when Advanced User Alarm is displayed.<br>Group : Select this item when using different colors depending on group. This item is displayed only when Advanced User Alarm is displayed. | |
| | Status | Select character colors for each alarm status (occurred, restored, or checked). | |
| | Level | Select character colors for each level number. (enabled only when advanced user alarm) | |
| | Group | Select character colors for each group number. (enabled only when advanced user alarm) | |

For details of *1, refer to the following.

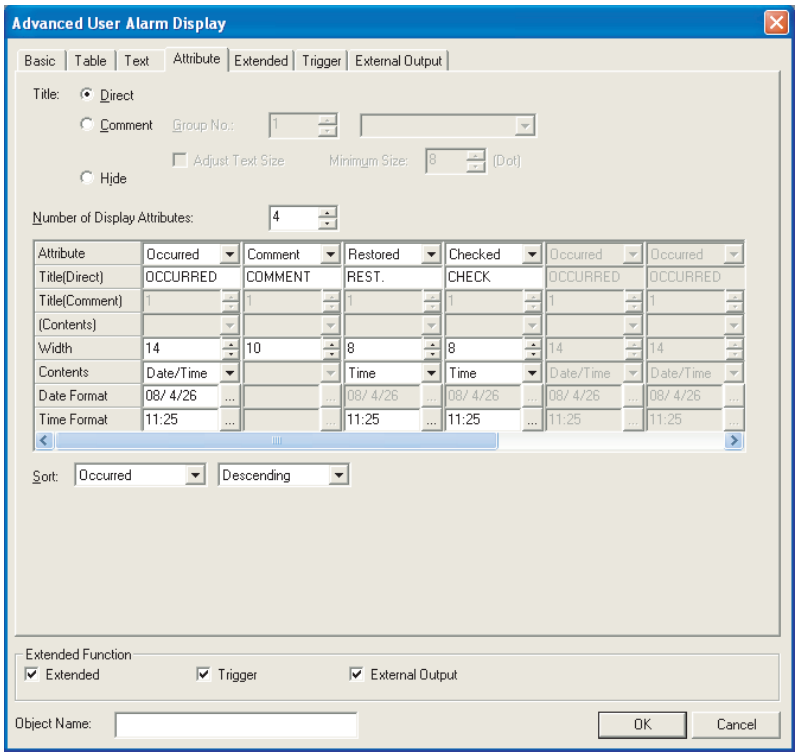
*1 Display of alarm status, level color, and group color for higher/middle alarms

For higher/middle alarm, the character colors specified on "Text Color Switching" are displayed in the following character colors regardless of alarm status or level/group.

"Fixed" : Characters are displayed in the color of "Fixed."
"Status" : Characters are displayed in the color of "Occurred."
"Level" : Characters are displayed in the color of "Level 1."
"Group" : Characters are displayed in the color of "Group 1."

## 4 Attribute tab

Set the data displayed for alarms (display items and display order).




Basic | Table | Text | **Attribute** | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Title | | Select a setting method of the characters displayed on the title. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Direct | Select this item to enter the characters displayed on the title in [Title (Direct)]. | |
| | Comment | Select this item to display characters displayed on the title in the comment of comment group.<br>After the selection, set the group No.<br>Group No. : Set the comment group where characters displayed on the title has been registered.<br>Adjust Text Size*3 :Check this item to perform Adjust Text Size.<br>When not checking this item, character string automatically starts a new line where appropriate for adjustment.<br>After the check, set the minimum character size for Adjust Text Size.<br>(8 to 128 dots, default: 8) | |
| | Hide | Select this item to hide the title. | |

(Continued to next page)

Basic | Table | Text | **Attribute** | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Number of Display Attributes | | Set the number of the items displayed for the alarm (1 to 10). | |
| | Attribute | Select the items displayed for advanced alarm display.<br><br>"Occurred" "Comment" "Status" "Restored" "Checked" "OccurFreq" "Cum.Time" "Down Time" "Level" "Group"<br><br>Occurred Comment Status Restored Checked OccurFreq Cum.Time Down Time Level Group<br>04/06/01 20:00 Oil pressure error Chk. – – 1 – – 1 2<br>04/06/01 18:30 Temp. error Chk. – 18:50 2 – – 1 1<br>04/06/01 16:10 Oil pressure error Rstr. 16:30 16:20 2 00:40 00:20 2 1<br><br>Occurred : Select when displaying the occurred date/time of the alarm.<br>Comment : Select when displaying the comment related to the alarm.<br>Status : Select when displaying alarm status.<br>The alarm status is displayed as follows.<br>Ocr. : An alarm is occurring<br>Rstr. : The alarm is restored<br>Chk. : Alarm occurrence is checked<br>Restored : Select this item when displaying the date/time at which the alarm was restored.<br>Checked : Select this item when displaying the date/time at which the occurrence of the alarm was checked.<br>The time at which the check switch was touched after the alarm occurred is displayed.<br>(☞ Section 8.4.6 Description on touch switches for advanced alarm display)<br><br>Comment Restored Checked<br>Motor error → Check → Comment Restored Checked<br>Motor error 12:00<br><br>(Key code : FFB4H)<br><br>OccurFreq : Select this item when displaying the number of alarm occurrences.<br>This item can be selected only when displaying advanced user alarm.<br>Cum.Time : Select this item when displaying the total alarm occurrences including the alarm occurrences in the past (total down time).<br>This item can be selected only when displaying advanced user alarm.<br>Down Time : Select this item when displaying the time from the alarm occurrence to restoration of it.<br>This item can be selected only when displaying advanced user alarm.<br>Leve : Select this item when displaying the level specified on the alarm.<br>This item can be selected only when displaying advanced user alarms.<br>Group : Select this item when displaying the group specified on the alarm.<br>This item can be selected only when displaying advanced user alarms. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Title (Direct) | Input the characters of the title of advanced alarm display directly.<br>Characters for the number specified by "Width" can be input.<br>The title can be input directly only when "Direct" is selected for "Title." | |
| | Title (Comment) | Set the comment No. (comment group) or content of the comment displayed on the title of advanced alarm display.<br>Set the comment group on the "Group No." of "Title." | |
| | (Contents) | | |

(Continued to next page)

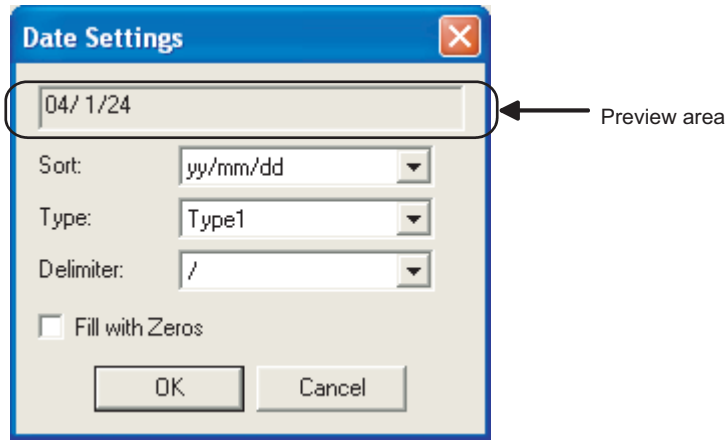
Basic | Table | Text | **Attribute** | Extended | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Number of Display Attributes | Width | Set the number of digits displayed for each Item.<br>Example: When the message width is set to 12<br>Occurred \| Comment \| Restored \| Checked<br>04/11/05 10:25 \| Motor error \| 11:25 \| 10:45<br>Displayed in a width of 12 digits<br>The number of digits set for each Item is as shown below.<br>Occurred : This item is set automatically based on the setting of "Contents" to be set up later.<br>Comment : 10 to 80 digits<br>Status : 6 to 80 digits<br>Restored : This item is set automatically based on the setting of "Contents" to be set up later.<br>Checked : This item is set automatically based on the setting of "Contents" to be set up later.<br>OccurFreq : 5 to 80 digits<br>Cum.Time : 8 to 80 digits<br>Down Time : 8 to 80 digits<br>Level : 3 to 80 digits<br>Group : 3 to 80 digits | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Contents | Select format in which the date/time of alarm occurrence (occurred/restored/checked) is set up.<br>After selecting this item, select the display formats of date and time.<br>Date/Time : Select when displaying both date and time.<br>Date : Select when displaying date only.<br>Time : Select when displaying time only. | |
| | Date Format*1 | Set the display format of date by clicking ... .<br>This item can be set when "Contents" is set to "Date/Time" or "Date." | |
| | Time Format*2 | Set the display format of time by clicking ... .<br>This item can be set when "Contents" is set to "Date/Time" or "Time." | |
| Sort | | Select an item and method to sort alarm display.<br>The same items as "Attribute" can be selected as the items sorted.<br>Select one of the following 2 methods.<br>Ascending : Each value of the item is sorted in ascending order.<br>Descending : Each value of the item is sorted in descending order.<br>When selecting "Status" for the item sorted, items are sorted as follows.<br>Ascending : Checked → Restored → Occurred<br>Descending : Occurred → Restored → Checked<br>For the details of the method for sorting alarms, refer to the following.<br>(☞ Section 8.4.2 1 Method of displaying alarm) | |

For details of *1, *2, refer to the following.
For details of *3, refer to Section 5.3.3 Object size change.

*1 Date settings

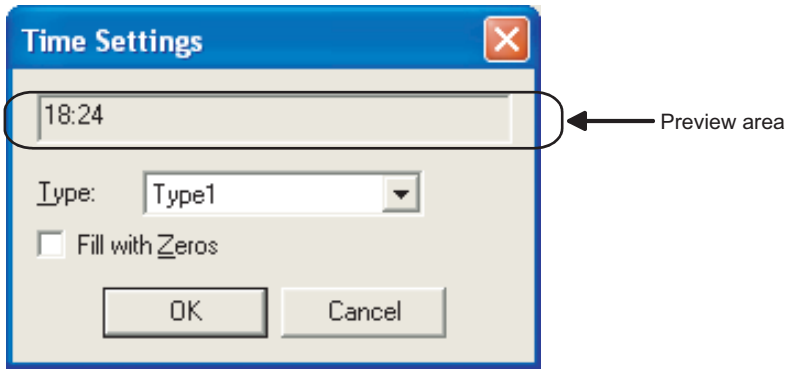
Set the display type of date.
The display type of date set can be confirmed in the preview area.




| Item | Description |
|---|---|
| 05/ 7/20 (Preview area) | The result of date setting is displayed as a display example. |
| Sort | Select a sorting order of year/month/day.<br>• yy/mm/dd: 04/01/24 • dd/mm/yy: 24/01/04<br>• mm/dd/yy: 01/24/04 |
| Type | Select a display type of date.<br>Select a display type depending on whether to use upper/lower case for English/alphabetic expression, presence/absence of day display and a type of Japanese expression.<br>The display example below shows the case that "Sort" is set to "yy/mm/dd."<br>• Type 1 : 04/01/24 • Type 11 : 2004/JAN/24<br>• Type 2 : Jan/24 • Type 12 : 2004/Jan/24(FRI)<br>• Type 3 : JAN/24 • Type 13 : 2004/JAN/24(FRI)<br>• Type 4 : Jan/24(FRI) • Type 1 (Japanese) : 1月24日<br>• Type 5 : JAN/24(FRI) • Type 2 (Japanese) : 1月24日(金)<br>• Type 6 : 04/Jan/24 • Type 3 (Japanese) : 04年1月24日<br>• Type 7 : 04/JAN/24 • Type 4 (Japanese) : 04年1月24日(金)<br>• Type 8 : 04/Jan/24(FRI) • Type 5 (Japanese) : 2004年1月24日<br>• Type 9 : 04/JAN/24(FRI) • Type 6 (Japanese) : 2004年1月24日(金)<br>• Type 10 : 2004/Jan/24<br>"Type 1 (Japanese)" to "Type 6 (Japanese)" can be selected only when setting "Sort" to "yy/mm/dd." |
| Delimiter | Select a delimiter for year, month, and day.<br>• "/" : 04/01/24 • "." : 04.01.24<br>• "-" : 04-01-24 |
| Fill with Zeros | Check when displaying "0" before month and day.<br>Example: Jan. 24, 2004<br>When checked : 04/01/24<br>When not checked : 04/1/24 |

*2 Time settings

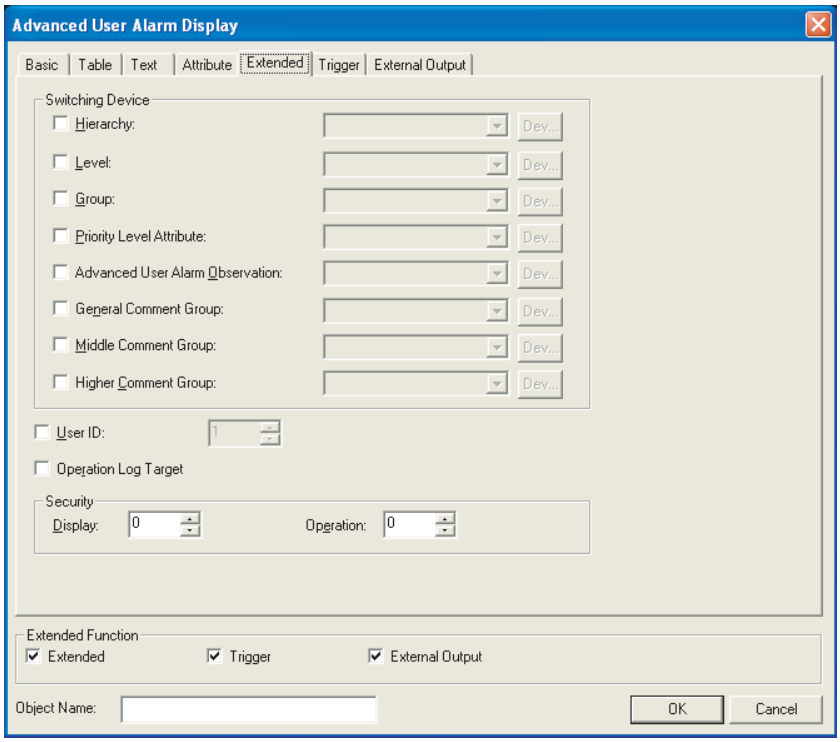
Set a display type of time.
The display type of time set can be confirmed in the preview area.




| Item | Description |
|---|---|
| 18:24 (Preview area) | The result of time setting is displayed as a display example. |
| Type | Select a display type of time.<br>Select a display type depending on whether to use English expression, presence/absence of am and pm and a type of Japanese expression.<br>• Type 1 : 16:28 • Type 1 (Japanese) : 16時28分<br>• Type 2 : 16:28:28 • Type 2 (Japanese) : 16時28分28秒<br>• Type 3 : 04:28(PM) • Type 3 (Japanese) : 午後4時28分 |
| Fill with Zeros | Check when displaying "0" before hour, minute, and second.<br>Example: 5 past 6<br>• 06:05 (When checked)<br>• 6:5 (When not checked) |

## 5 Extended tab

Set the switching of the data displayed by advanced alarm display using a device.
This tab is displayed by checking the function list at the bottom of the dialog box.




Basic | Table | Text | Attribute | **Extended** | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Switching Device | | Check the item whose display is switched by the device.<br>☞ Section 8.4.3 4 Display switching by device (Specify on [Switching Device] on the [Extended] tab) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Hierarchy*1 | Check this item when switching the alarm hierarchy displayed by the value of the device.<br>All the alarms of the specified alarm hierarchy are displayed.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>This item is enabled for advanced user alarms only. | |
| | Level | Check this item when displaying only the alarms of the specified level number.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>Store the level number of the advanced alarm displayed in the device.<br>• To display a specified level, specify a level number in the range of 1 to 255.<br>However, if any nonexistent level number is specified, advanced alarms are not displayed.<br>• To display all levels, specify 0 or 256 or more.<br>• This item is enabled only for advanced user alarms. | |
| | Group | Check this item when displaying only the alarms of the specified group number.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>Store the group number of the advanced alarm displayed in the device.<br>• To display a specified group, specify a level number in the range of 1 to 255.<br>However, if any nonexistent group number is specified, advanced alarms are not displayed.<br>• To display all groups, specify 0 or 256 or more.<br>• This item is enabled only for advanced user alarms. | |

(Continued to next page)

Basic | Table | Text | Attribute | **Extended** | Trigger | External Output

| Item | | Description | Model |
|---|---|---|---|
| Switching Device | Priority Level Attribute*2 | Check this item when switching the sort key by the value of the device.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Advanced User Alarm Observation | Check this item when displaying the specified advanced user alarm (alarm ID).<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>· Store the alarm ID for advanced user alarm observation in this device.<br>· When storing "0" in this device, the alarm with the alarm ID set on the "User Alarm" item of "Display Alarm" on the Basic tab is displayed.<br>· If any nonexistent alarm ID is specified, the alarm is not displayed.<br>· This item is enabled for advanced user alarms only. | |
| | General Comment Group / Middle Comment Group / Higher Comment Group | Check this item when switching the comment group of the comments displayed for general alarms, middle alarms, or higher alarms by the value of the device.<br>After checking the item, set the switching device. (☞ Section 5.1 Device Setting)<br>· When "0" is stored in this device, the comment group set by advanced user alarm observation is displayed.<br>If any nonexistent comment group No. is stored, "No message" is displayed.<br>· This item can be selected only when Advanced User Alarm is displayed. | |
| User ID*3 | | Set a user ID for advanced user alarm display. | |
| Operation Log Target | | Check this item to set the object being set as the target for logging the operation.<br>(☞ Section 15.2 Operation Log Function) | |
| Security | Display | To set the security function, set a security level (1 to 15).<br>· Set "0" when not setting the security function.<br>· Be sure to set a number for security (Operation) larger than the number for security (Display).<br>(☞ Section 5.8 Security Function) | |
| | Operation | | |

For details of *1 to *3, refer to the following.

*1 Hierarchies

Store values in the device to switch hierarchies.

| b15 | b14 to b2 | b1 | b0 |
|---|---|---|---|

b1 to b0 : Specifis the target hierarchy of the alarm to switch.
- 00(0) : General alarms
- 01(1) : Middle alarms
- 10(2) : Higher alarms

b14 to b2 : Not usable

b15 : Stores the switching operations for switching hierarchies (hierarchy switching control identifier).
To switch hierarchies by the hierarchy switching device, set this bit to "0."
- 0 : Switching by the switching device
- 1 : Switching by touching the display area

For precautions about switching comment display using this device, refer to the following.

☞ Section 8.4.7 1 (3) When switching comment display and others using the hierarchy switching device

*2 Priority level attribute

Stores values in the device as shown below to switch the alarm display order.

| b15 | b14 to b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|

b3 to b0 : Specifies a sort key. (□: Reserved)

| | | |
|---|---|---|
| □□□0H : Regular (Occurred) | □□□4H : Comment No. | □□□9H : OccurFreq |
| □□□1H : Occurred Date/Time | □□□5H : Level | □□□AH : Cum.Time |
| □□□2H : Restored Date/Time | □□□6H : Group | □□□BH : Down Time |
| □□□3H : Checked Date/Time | □□□7H : Alarm Status | |

b14 to b4 : Not usable

b15 : Specifies ascending order or descending order. (□: Reserved)

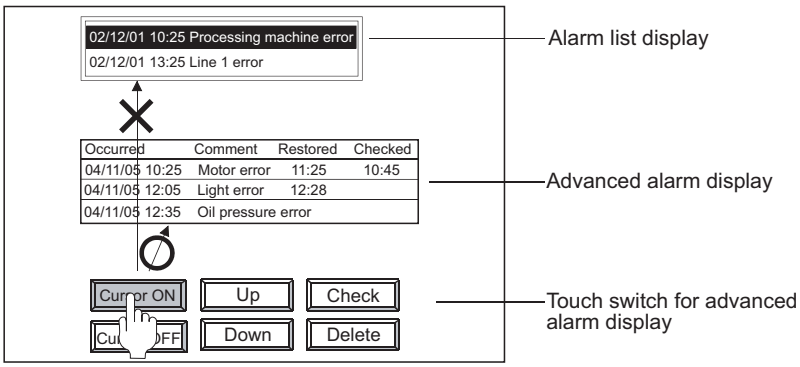
0□□□H : Descending order

8□□□H : Ascending order

Level and group are effective only for advanced user alarms.
Occur Freq, Cum. Time and Down Time are effective only when the collection mode of advanced alarm observation is "Cumulative."
If any value other than above is stored, alarms are displayed in the order of occurred.

*3 User ID

- When user ID setting is required
  If advanced alarm display and alarm history display / alarm list display are set on the same screen, the touch switches set for advanced alarm display may not operate.
  To make the touch switches for advanced alarm display to securely operate, set user ID for advanced alarm display.




If the same user ID is set for advanced alarm display and touch switches, the operations of the touch switches for advanced alarm display are effective for advanced alarm display.

- Setting method

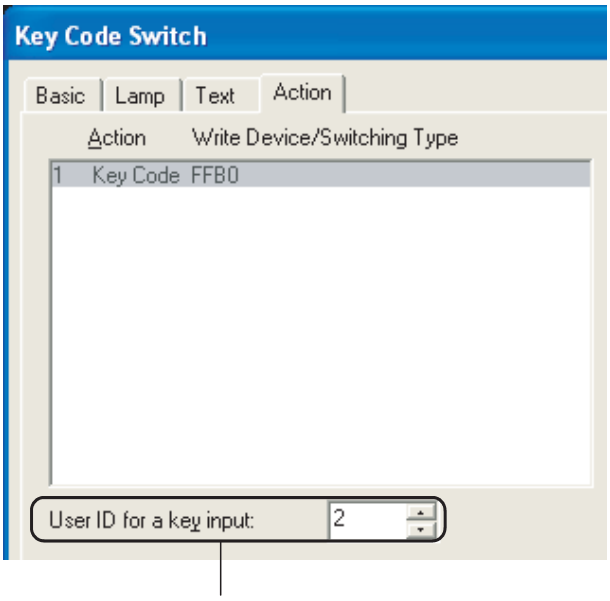
  Set a user ID for advanced alarm display.

  Set the touch switches for advanced alarm display as follows after setting the user ID.

  For the details of the touch switch setting, refer to the following.

  (☞ Section 8.4.6 Description on touch switches for advanced alarm display)

Setting of touch switch (Action tab)

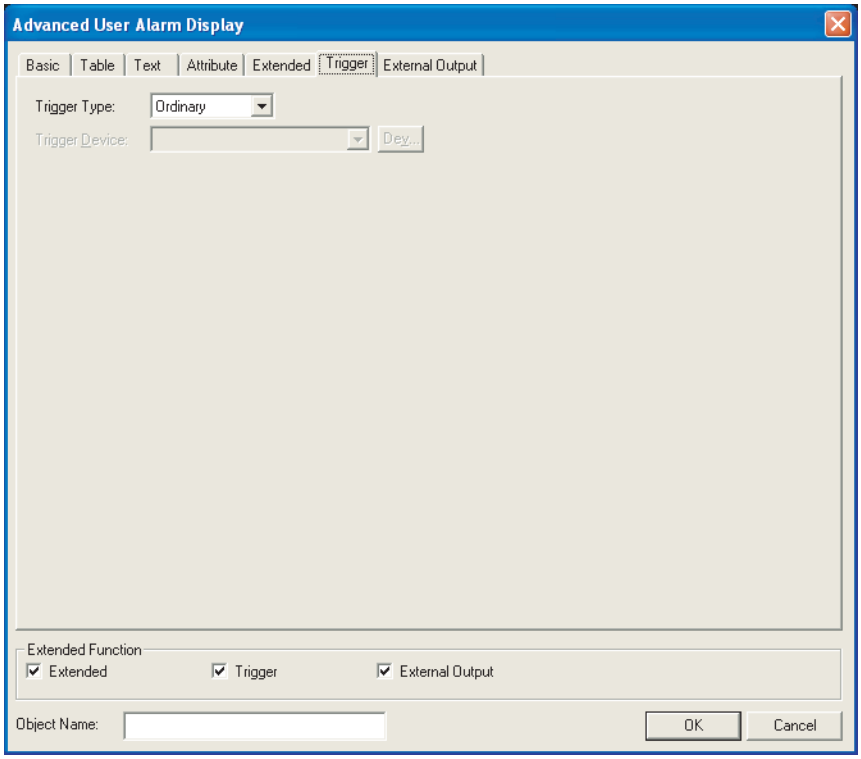



Set the same user ID as for advanced alarm display

## 6 Trigger tab

Set the condition for displaying an object.
This tab is displayed by checking the item of Extended Function at the bottom of the dialog box.
For the details of the display condition, refer to the following.

Section 5.5 Trigger Setting



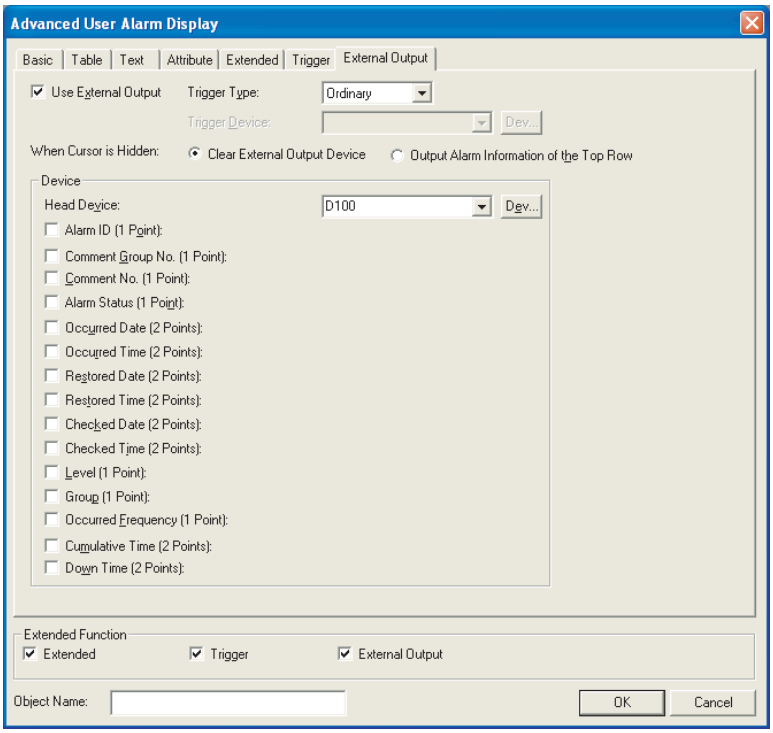

Basic | Table | Text | Attribute | Extended | **Trigger** | External Output

| Item | Description | Model |
|---|---|---|
| Trigger Type | Select a condition to display advanced alarms.<br>• Ordinary • ON • OFF | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Trigger Device | Specify the device to set on the display/operation condition. | |

## 7 External output tab

Perform setting for writing the information about the alarm selected on advanced alarm display into the device.

This tab is displayed by checking the item of Extended Function at the bottom of the dialog box.




Basic | Table | Text | Attribute | Extended | Trigger | **External Output**

| Item | | Description | Model |
|---|---|---|---|
| Use External Output | | Check this item when writing the information about the touched alarm into the device.<br>☞ Section 8.4.3 5 Writing alarm data into device | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Trigger Type<br>Trigger Device | Select a timing to write the data of the touched alarm into the device.<br>Ordinary : Alarm data are written into the device when touched.<br>ON : When the device is ON and the alarm display is touched, alarm data are written into the device.<br>OFF : When the device is OFF and the alarm display is touched, alarm data are written into the device.<br>When selecting "ON" or "OFF," set the device to be used for trigger.<br>(☞ Section 5.1 Device Setting) | |
| | When cursor is hidden | Set the external output when the cursor is hidden.<br>Clear External Output Device: The external output device value is cleared.<br>Output alarm information of the top row: The alarm information displayed in the top row is output. | |
| Device | | Set the device to which alarm data are written. | |
| | Head Device | Set the head device (word device) into which the data of the touched alarm are written.<br>As selecting the items to be written into the device, the devices following the head device are automatically set consecutively. (No device is set on any non-checked item.)<br>(☞ Section 5.1 Device Setting) | |
| | Alarm ID | Check this item when writing the alarm ID of the touched alarm into the device.<br>This item can be used only when Advanced User Alarm is displayed. | |

(Continued to next page)

Basic | Table | Text | Attribute | Extended | Trigger | **External Output**

| Item | | Description | Model |
|---|---|---|---|
| Device | Comment Group No. | Check this item when writing the comment group No. of the comment displayed by the touched alarm into the device. This item can be used only when advanced user alarm is displayed. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Comment No. | Check this item when writing the comment No. (comment group) displayed by the touched alarm into the device. When advanced system alarm is selected, error code is written. | |
| | Alarm Status*1 | Check this item when writing the status of the touched alarm into the device.<br>The following values are written.<br>b15 to b3 \| b2 \| b1 \| b0<br>b0 : Stores whether the touched alarm is occurring or restored.<br>0: Restored 1: Occurring<br>b1 : Stores whether the touched alarm is checked or not.<br>0: Not checked 1: Checked<br>b2 : Stores whether the status of the touched alarm can be written into the device or not.<br>0: Not effective 1: Effective<br>This bit is set to "Not effective (0)" if a higher alarm or middle alarm is touched.<br>b15 to b3 : Not usable | |
| | Occurred Date*1,*2 | Check this item when writing the touched alarm's occurred date into the device. | |
| | Occurred Time*1,*2 | Check this item when writing the touched alarm's occurred time into the device. | |
| | Restored Date*1,*2 | Check this item when writing the touched alarm's restored date into the device. | |
| | Restored Time*1,*2 | Check this item when writing the touched alarm's restored time into the device. | |
| | Checked Date*1,*2 | Check this item when writing the touched alarm's checked date into the device. | |
| | Checked Time*1,*2 | Check this item when writing the touched alarm's checked time into the device. | |
| | Level*1 | Check this item when writing the touched alarm's level No. into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Group*1 | Check this item when writing the touched alarm's group No. into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Occurred Frequency*1 | Check this item when writing the number of times of occurrence of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Cumulative Time*1,*2 | Check this item when writing the cumulative time of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Down Time*1,*2 | Check this item when writing the down time of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |

For details of *1, *2, refer to the following.

*1 Condition for writing

(1) Alarm hierarchy to which alarm data can be written (when advanced user alarm is displayed)
Only when general alarms are displayed, alarm data are written into the device.
When higher alarms or middle alarms are displayed, "0" is written (except for alarm ID, comment group No., and comment No.).
In addition, if the alarm is restored, "0" is written into the down time.

(2) Writable data according to the collection mode
The data which can be written vary depending on the collection mode specified at Advanced Alarm Observation.
For the details, refer to the following.

☞ Section 8.2.2 2 Collection flow and collection mode

*2 Writing format of date and time

Date and time are written in word data of two words.
(This section describes with occurred date as D254 (2 points) and occurred time as D256 (2 points).)

(1) Date
Year (AD), month, and day data are stored in the BCD code.

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D254 | Month (1 to 12) | Day (1 to 31) |
| D255 | Upper 2 digits of dominical year | Lower 2 digits of dominical year |

(2) Time
Hour, minute, and second data are stored in the BCD code.

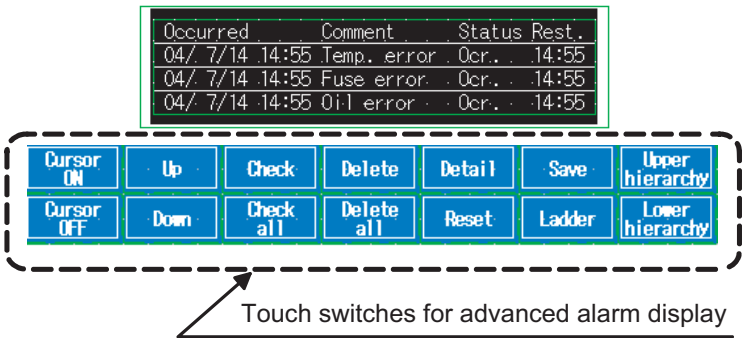
| | b15 to b8 | b7 to b0 |
|---|---|---|
| D256 | Minute (0 to 59) | Second (0 to 59) |
| D257 | $00_H$ | Hour (0 to 23) |

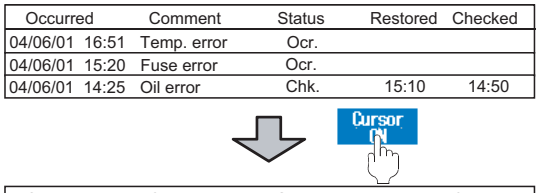
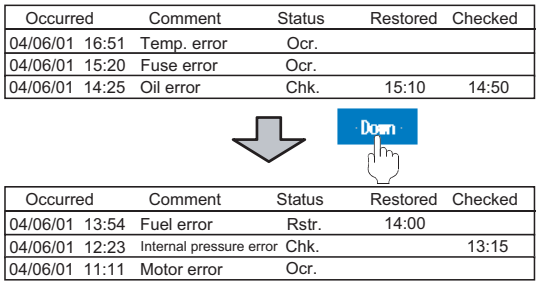
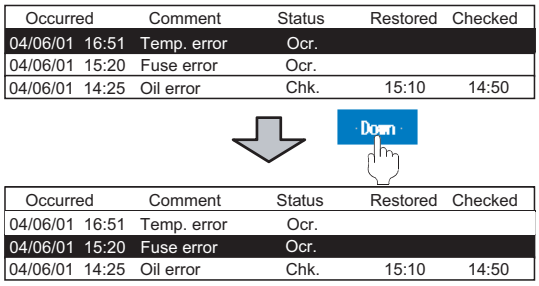
Example: July 1, 2004 12:24:56

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D254 | $07_H$ (Month) | $01_H$ (Day) |
| D255 | $20_H$ (Dominical year) | $04_H$ |
| D256 | $24_H$ (Minute) | $56_H$ (Second) |
| D257 | $00_H$ | $12_H$ (Hour) |

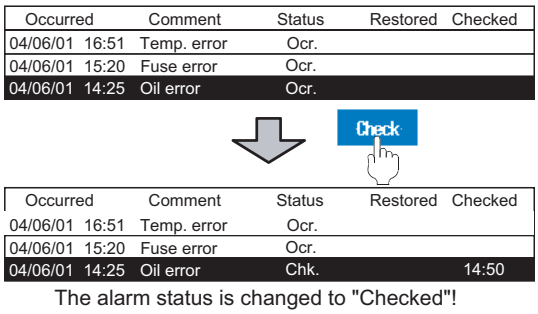
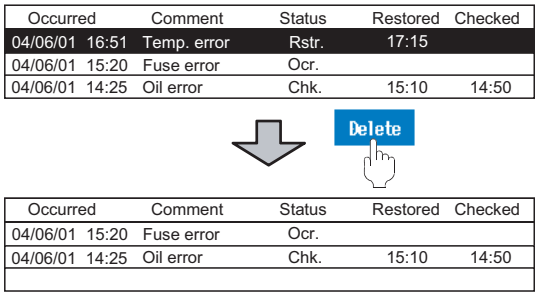
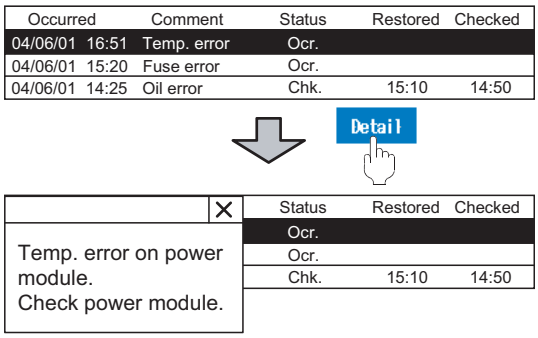
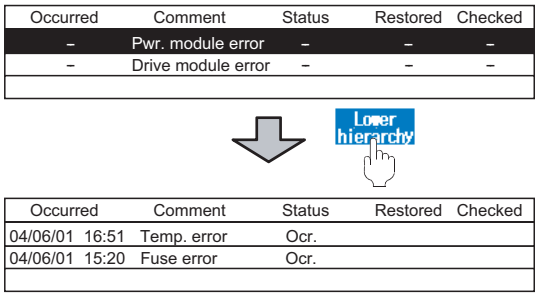
## 8.4.6 Description on touch switches for advanced alarm display

Touch switch for displaying advanced alarm can be read from the library for GT Designer2.
Also, text on the touch switch and its shape can be changed by the user.
By setting a key code to touch switch, a user can create a touch switch for displaying advanced alarm display.




| Touch switch | Key code | Description |
|---|---|---|
| Show cursor<br>Cursor ON | FFB0H | Show/Hide the Cursor.<br>  <br><br>Show the cursor! |
| Hide cursor<br>Cursor OFF | FFB1H | |
| Move cursor upward<br>Up | FFB2H | • If the cursor is hidden:<br>The cursor moves to the previous/next page (page by page).<br>  <br><br>Move to the next page! |
| Move cursor downward<br>Down | FFB3H | • If the cursor is shown:<br>The cursor moves up/down one line (line by line).<br>  <br><br>Move the cursor! |

(Continued to next page)

| Function | Key code | Description |
|---|---|---|
| Display date/time of selected data (check)<br>Check | FFB4H | The alarm status is changed to "checked."<br>  <br><br>The alarm status is changed to "Checked"! |
| Display date/time of all data (check all)<br>Check all | FFB5H | |
| Clear the selected alarm data (delete)<br>Delete | FFB6H | A restored alarm or all restored alarms are deleted.<br>  <br><br>The restored alarm is deleted! |
| Clear all alarm data (delete all)<br>Delete all | FFB7H | |
| Display detail*1<br>Detail | FFB8H | If touched while general alarms are displayed, the detailed screen of the selected alarms is displayed.<br>  <br><br>The detailed screen is displayed! |
| Move to the lower hierarchy*1<br>Lower hierarchy | | If touched while higher alarms or middle alarms are displayed, alarms displayed are switched to the lower hierarchy.<br>  <br><br>The hierarchy is moved to the lower one! |

For the details of *1, refer to next page.

(Continued to next page)

| Function | Key code | Description |
|---|---|---|
| Reset the selected alarm data[*2]<br>Reset | FFB9H | The selected alarm is reset.<br>Occurred Comment Status Restored Checked<br>04/06/01 16:51 Temp. error Ocr.<br>04/06/01 15:20 Fuse error Ocr.<br>04/06/01 14:25 Oil error Chk. 15:10 14:50<br>Reset<br>Occurred Comment Status Restored Checked<br>04/06/01 16:51 Temp. error Rstr. 17:11<br>04/06/01 15:20 Fuse error Ocr.<br>04/06/01 14:25 Oil error Chk. 15:10 14:50<br>The selected alarm is reset!<br>• Advanced user alarms<br>The device value is changed to OFF status/reset value specified on the Device tab.Resetting is performed only for general alarms.<br>• Advanced system alarms<br>The alarm status on GOT is changed from "Occurred" to "Restored." |
| Save alarm contents to Memory Card<br>Save | FFBBH | Advanced alarm data are saved in the memory card as an alarm log file.<br>Occurred Comment Status Restored Checked<br>04/06/01 16:51 Temp. error Ocr.<br>04/06/01 15:20 Fuse error Ocr.<br>04/06/01 14:25 Oil error Chk. 15:10 14:50<br>Save<br>The data are saved in the memory card! |
| Display ladder | FFBCH | A device is automatically searched in specified program file by coil-search/defect search, and the result is displayed on the ladder monitor screen. (One-touch ladder jump function)<br>Specify the search mode and program file to be searched in the setting dialog box of the Advanced User Alarm Observation. (☞ Section 8.2.5 Setting items)<br>Occurred Comment Status Restored Checked<br>04/06/01 16:51 Temp. error Ocr.<br>04/06/01 15:20 Fuse error Ocr.<br>04/06/01 14:25 Oil error Chk. 15:10 14:50<br>Ladder<br>M999 MOV 1 D1<br>MOV 2 D2<br>Displays the ladder monitor screen<br>(displays the ladder including the specified device) |

| Function | Key code | Description |
|---|---|---|
| Move to the upper hierarchy*1<br>Upper hierarchy | FFC2H | The hierarchy of the alarms displayed is switched.<br>Occurred Comment Status Restored Checked<br>04/06/01 16:51 Temp. error Ocr.<br>04/06/01 15:20 Fuse error Ocr.<br>Upper hierarchy<br>Occurred Comment Status Restored Checked<br>– Pwr. module error – – –<br>– Drive module error – – –<br>The hierarchy is moved to the upper one! |

For the details of *1, *2, refer to the following.

*1 Alarms for which "Display detail," "Move to the lower hierarchy," and "Move to the upper hierarchy" are available

"Display detail," "Move to the lower hierarchy," and "Move to the upper hierarchy" are available only for advanced user alarms but not available for advanced system alarms.

*2 Resetting of advanced user alarms

To change the device value to the OFF status/reset value by the touch switches, "YES" the "Reset" on the Device tab of advanced alarm observation.

☞ Section 8.2.5 2 (2) Device tab

**Hint!**

Touch switches operating differently depending on the display status

The touch switches for advanced alarm display operate differently depending on the display status.

- Move cursor upward (FFB2H) / downward (FFB3H)
  If the cursor is hidden, the display is moved to the previous/next page (page by page).
  While the cursor is displayed, the cursor is moved upward/downward (line by line).
- Display detail (FFB8H) / Move to the lower hierarchy (FFB8H)
  This switch operates in 2 ways for a key code.
  When higher alarms or middle alarms are displayed, the display is moved to the lower hierarchy.
  When general alarms are displayed, details are displayed on the comment window.

**Remark**

(1) Operation method by directly touching Advanced Alarm Display
By setting [Touch Mode] on the Basic tab, the operations below can be used.

(☞ Section 8.4.5 1 Basic tab)

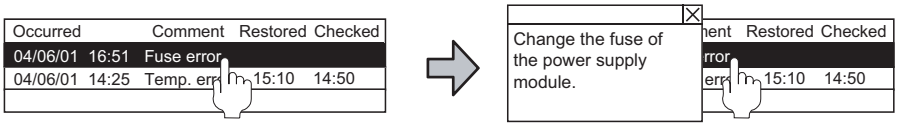
- Selection of an alarm (Set [Touch mode" to [Selection.])
  Alarms can be selected by touching the advanced alarm display directly. (equivalent operation to cursor show/hide)

The touched alarm is selected.

The alarm is deselected by touching it again.

(2) Change of cursor color
The cursor color can be changed by [Cursor] on the Table tab.
(☞ Section 8.4.5 2 Table tab)

- Hierarchy switching and detail display of alarms (Set [Touch mode] to [Operation])
  Alarm hierarchies can be switched and detail screen can be displayed by touching the advanced alarm display directly. (equivalent operation to displaying detail or moving to the lower hierarchy)




When the selected alarm is touched again, display is moved to the lower alarm hierarchy and detail screen is displayed.

(2) Change of cursor color
The cursor color can be changed by [Cursor] on the Table tab.

(☞ Section 8.4.5 2 Table tab)

(3) Setting method of touch switches
For details, refer to the following.

☞ Section 6.2.9 Setting items of key code switch

## 8.4.7 Precautions

Precautions for using advanced alarm display are as shown below.

### 1 Precautions for drawing

(1) Maximum number of the objects that can be placed (set) on a screen
Only one advanced alarm display can be set (placed) on a base screen, an overlap window, or a superimpose window, respectively.

(2) Hierarchy switching device for placing multiple display objects on the same screen
If the same hierarchy switching device (set on the extended tab) is specified for the objects below, the objects may not be displayed on the specified initial display hierarchy.

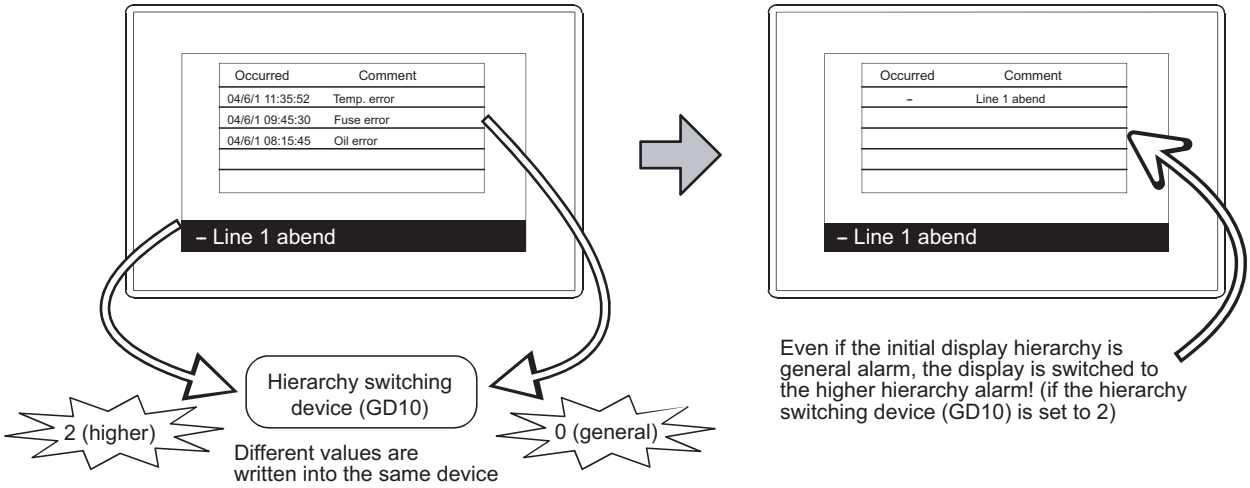
- Advanced Alarm Display
- Advanced Alarm Popup Display

This is because the value of the initial display hierarchy is written into the hierarchy switching device when the screen is displayed (when the screen is switched).
To display the object on the specified initial display hierarchy, use different devices on the objects above, respectively. (Prepare at least 2 hierarchy switching devices.)

Example: When the hierarchy switching device and initial display hierarchy are set as follows.
(Assume that other settings for displaying alarms have already been completed.)

| Setting of advanced user alarm display | Setting of advanced alarm popup display |
|---|---|
| • Hierarchy switching device : GD10<br>• Initial display hierarchy : General<br>• Place on base screen 1 | • Hierarchy switching device : GD10<br>• Initial display hierarchy : Higher |

Operations when base screen 1 is displayed

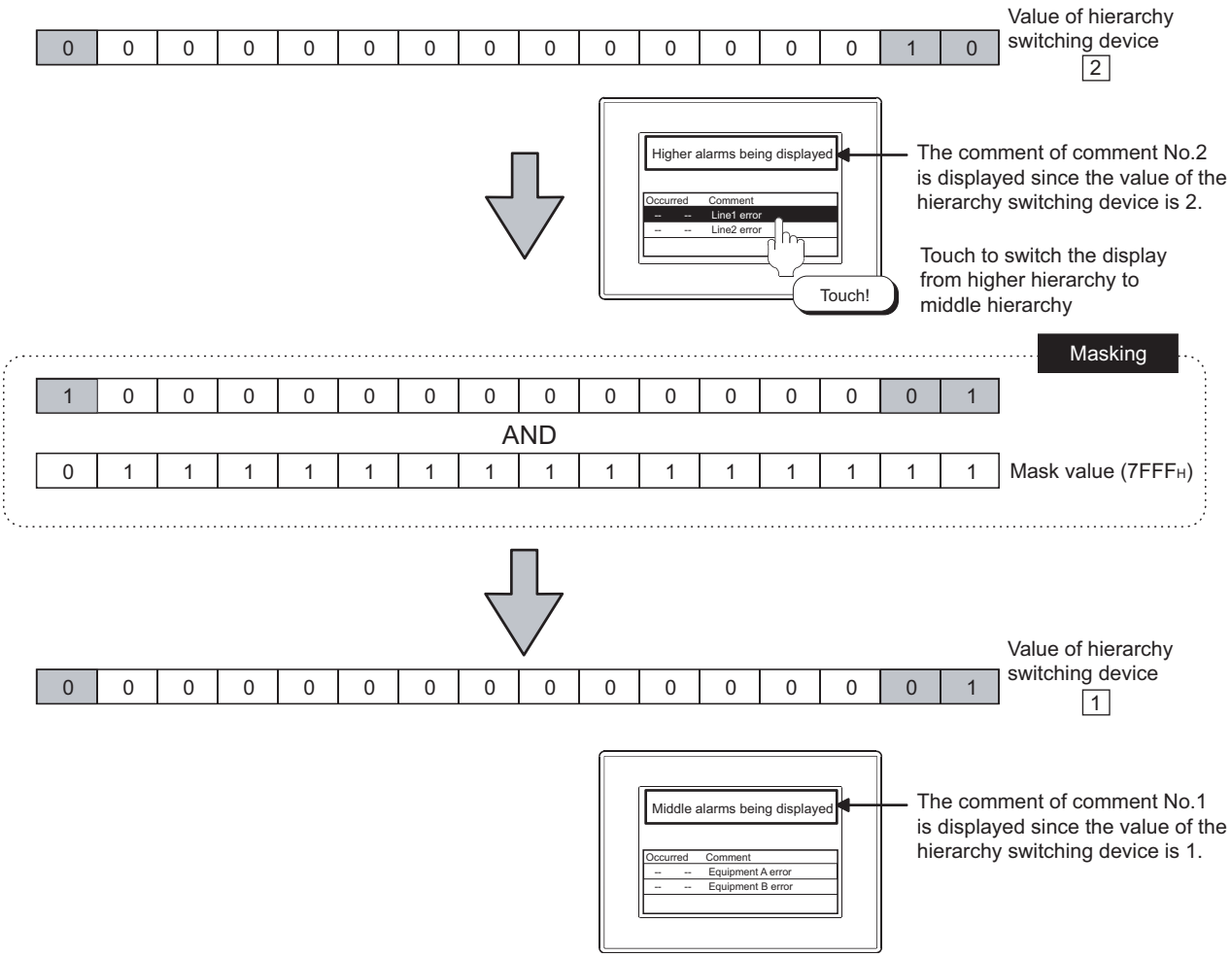


(3) When switching comment display and others using the hierarchy switching device
Since the uppermost bit of the hierarchy switching device (specified on the Extended tab) is changed to 1 by touching, mask the device value with 7FFFH so that the uppermost bit is fixed to 0. Comment cannot be displayed correctly without masking.

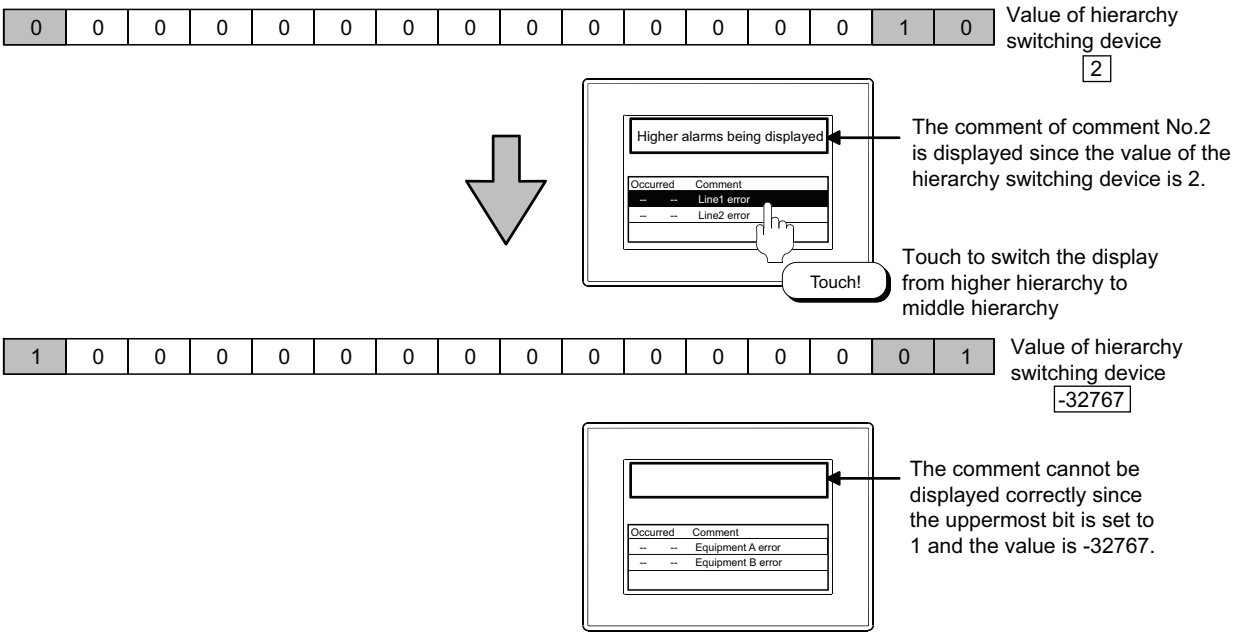
Example: When switching the comments displayed by the value of the hierarchy switching device

| Value of hierarchy switching device | Corresponding comment No. | Comments displayed |
|---|---|---|
| 0 | 0 | General alarms being displayed. |
| 1 | 1 | Middle alarms being displayed. |
| 2 | 2 | Higher alarms being displayed. |

(a) When masking is applied



(b) When masking is not applied




(4) Setting for saving advanced alarm data in the memory card
To place the button for saving advanced alarm data, perform one of the following settings.

(a) When setting the storing trigger device by advanced alarm observation
Set the storing trigger device on the File Save tab described in the following to save advanced alarm data.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

☞ Section 8.3 Advanced Alarm Observation (Advanced System Alarm)

(b) When saving the data by the touch switch for advanced alarm display
Place the touch switch for advanced alarm display on the screen where advanced alarm display was specified to save the data.

☞ Section 8.4.6 Description on touch switches for advanced alarm display

(5) The character display of the line on which the cursor is currently displayed
The characters of the line on which the cursor is currently displayed are not displayed when the text color is set to Black with [Text Color Switching] of the Text tab. (Characters will be hidden since the text color and the cursor color are the same.)
To display the characters of the line on which the cursor is currently displayed, set the text color to other than Black.

(6) Precautions for setting

(a) Setting number
When object setting exceeds the user area of the GOT in size by the setting in the advanced recipe setting, the advanced recipe function cannot be used.
Therefore, some of the setting (device number, etc.) may not be set at the maximum value.
Set within the free user area available for GOT.

For computing method for the setting size of the advanced alarm display, refer to the following.

☞ Section 2.4 1 Object specifications

For free user area available for GOT, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(Chapter 8 TRANSFERRING DATA)

(b) Saving a file
The memory card must be larger than the file to be saved in size.
For the file size, refer to the following.

☞ Section 8.2.2 4 Retention of advanced user alarm data under power failure

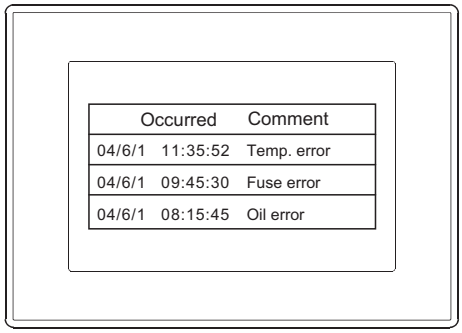
(7) Precautions for using comment group
When a value (column No.) that does not exist is set at the language switching device, "No message" is displayed.

## 2 Precautions for use

(1) Refining-display of alarms when many alarms are monitored
If alarms are refined and displayed for many monitoring devices using the switching device in advanced user alarm observation (☞ Section 8.4.3 4 Display switching by device (Specify on [Switching Device] on the [Extended] tab)), it may take a few minutes to display the data.

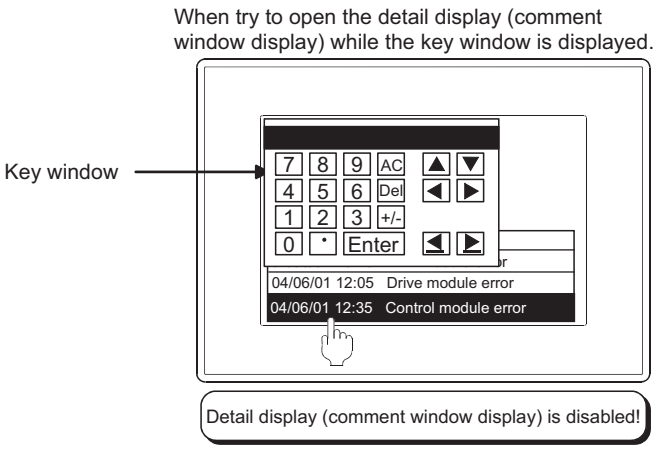
(2) Priority of alarm display

(a) When the alarms displayed have not been changed by [Switching Device] on the Extended tab
The alarms are displayed in the descending order of occurred date/time.

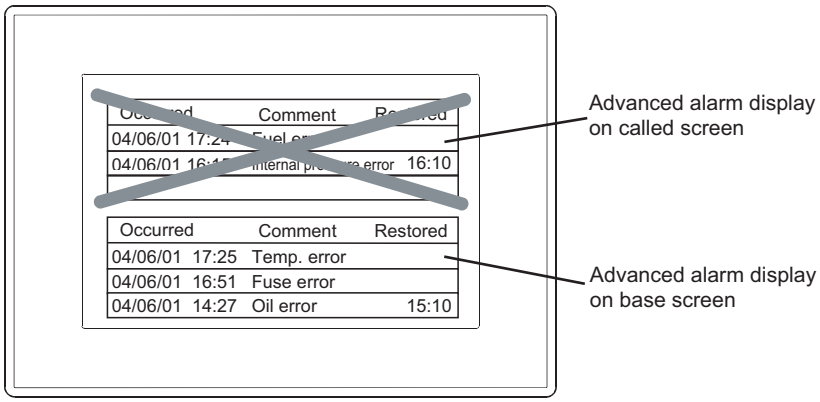



(b) When the alarms displayed have been changed by [Switching Device] on the Extended tab
The alarms are displayed as the display data specified by the switching device.

(3) Display of the comment window and key window
When key window is on display, the comment window cannot be displayed.
Make sure to erase the key window before displaying the comment window.



(4) Advanced alarm display when using the set overlay screen function
When setting the advanced alarm display on the called screen, do not set the advanced alarm display on the base screen.
The called screen cannot display the advanced alarm display when the advanced alarm display is set on the base screen.



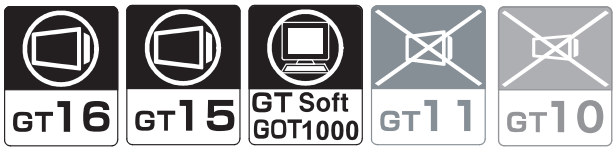

For settings of the set overlay screen, refer to the following.

☞ Section 15.1 Set Overlay Screen Function

(5) Display of occurred time, checked time and restored time
For occurred time, GOT's clock data is displayed.
For the precautions and restrictions of the clock function for managing GOT's clock data, refer to the following.

☞ Section 2.5 Clock Function

# 8.5 Advanced Alarm Popup Display



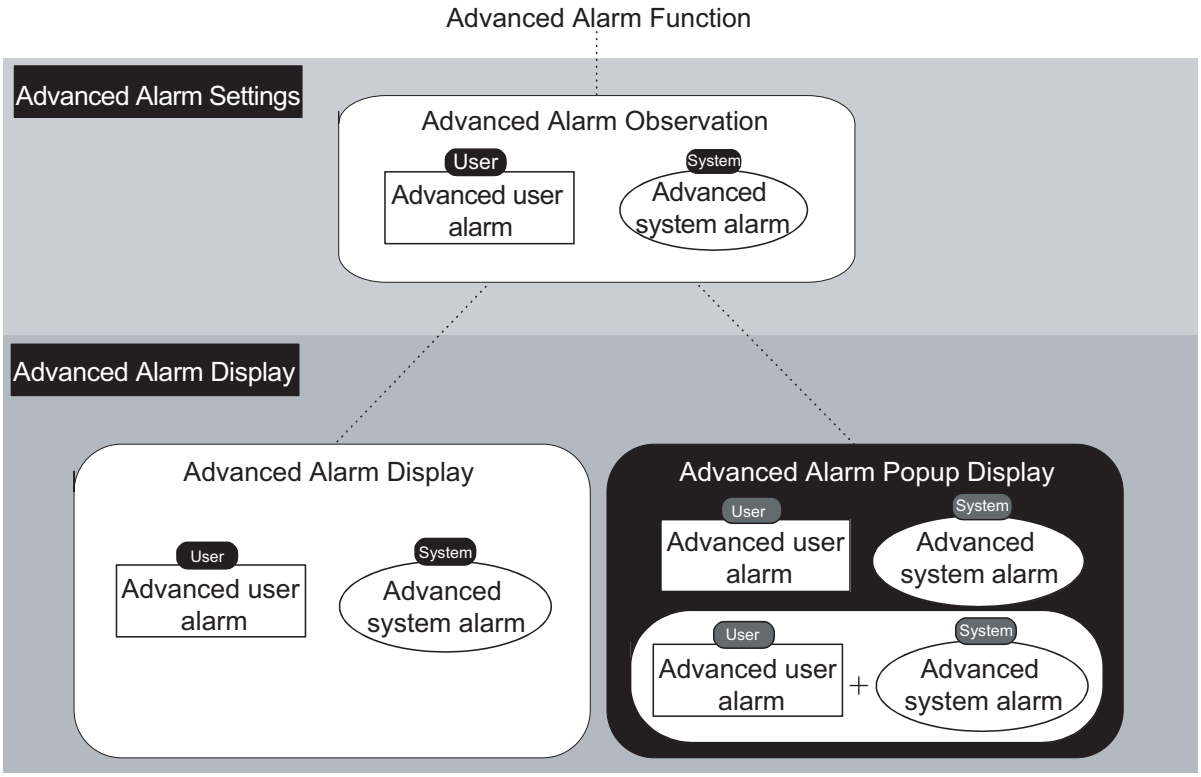

Alarms are displayed as a popup display regardless of whether an alarm display object is placed on the screen or not (regardless of the display screen).
Since the display can be flown from right to left, even a long comment can be displayed all.

**Point**

Before setting advanced alarm popup display

This section explains the advanced alarm popup display of the advanced alarm function.
Read the following before setting advanced alarm popup display.

Section 8.1.2 Advanced alarm function



## 8.5.1 Relevant settings

For advanced alarm popup display, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to advanced alarm popup display, (advanced alarm popup display,) only
…Relevant to advanced alarm popup display, (advanced alarm popup display) only.

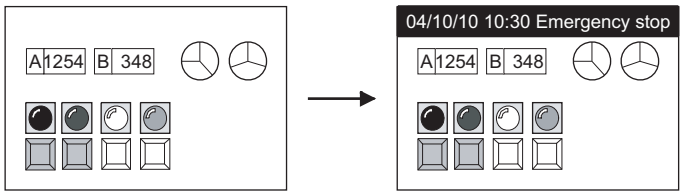
(2) Functions relevant to advanced alarm popup display (advanced alarm popup display) and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to advanced alarm popup display only

• Enabling/Disabling advanced alarm popup display

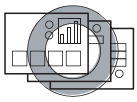
The advanced alarm popup display is enabled or disabled for each screen.
The display position can be selected from the top row, center row, and bottom row.




The corresponding comment pops up at the top row of the screen when an alarm occurs

Setting for each project

Setting for each screen



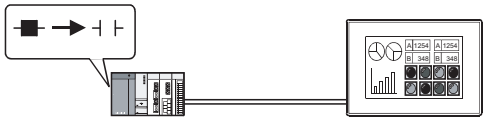
Setting items
• [Carry out display of advanced alarm pop up]

### 2 System information (☞ Section 3.6 System Information Setting)

(1) Functions relevant to advanced alarm popup display and others

• Key Code Read Complete Signal
(Read device: System Signal 1-1. b3)

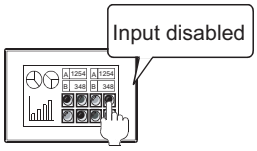
Turns off the key input signal



Key input signal OFF

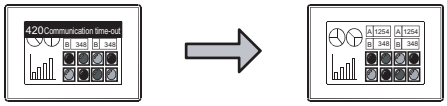
• Key-In Disable Signal
(Read device: System Signal 1-1. b9)

Disables all key inputs.




• GOT Error Reset Signal
(Read device: System Signal 1-1. b13)

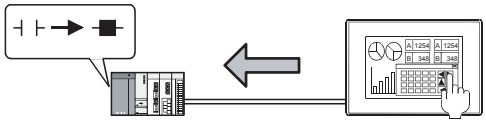
Resets the system alarm or system information (GOT error code, GOT error detecting signal).



The system alarm message is cleared

• Key Input Signal
(Write device: System Signal 2-1. b3)

Notifies the key input.

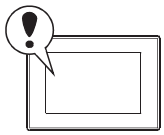


## 3 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

### (1) Functions relevant to system alarm and others

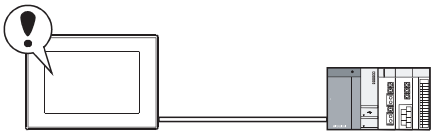
• System alarm GOT error channel No.
(Write device: GS262)

Stores the channel number where system alarm (GOT error) occurred.



• System alarm CPU error channel No.
(Write device: GS263)

Stores the channel number where system alarm (CPU error) occurred.



• System alarm network error channel No.
(Write device: GS264)

Stores the channel number where system alarm (network error) occurred.

## 8.5.2 Before setting

This section describes the setting and function needed for using the advanced alarm popup display.

### 1 Displayable alarm types and settings

(1) Alarm types

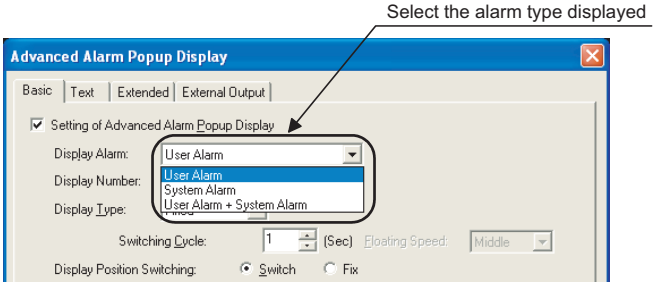
For advanced alarm popup display, advanced user alarms and advanced system alarms can be displayed.

Advanced alarm popup display is set as follows.

(a) Setting of advanced alarm popup display

Select the alarm type displayed by advanced alarm popup display.

(☞ Section 8.5.5 1 Basic tab)

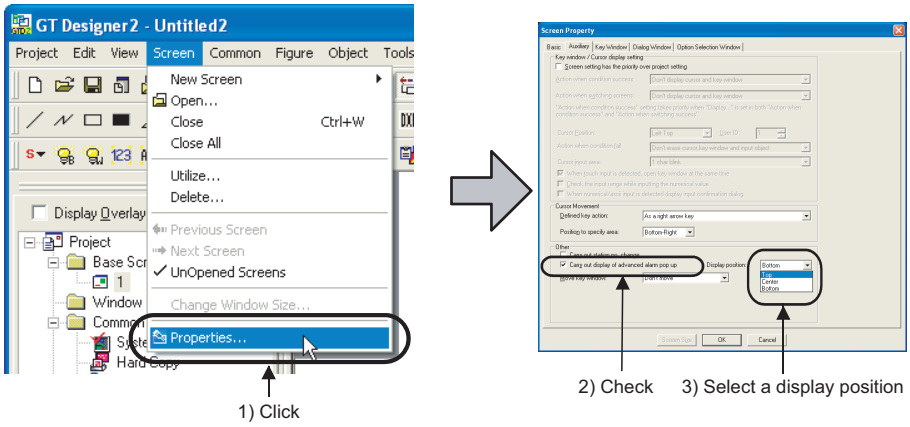



(b) Auxiliary setting for each screen

Set whether to display popup display and the position of the popup display for each base screen.

The setting is carried out on the Auxiliary Settings tab of the Base screen.

(☞ Section 4.4 Auxiliary Settings)




**Hint!**

(1) When the display position overlaps other objects

If an object (touch switch and others) is hidden by advanced alarm popup display, the object cannot be operated. Therefore, set the object so that it does not overlap other objects.

(2) Switching of display position by touch operation

The position of advanced alarm popup display can also be switched by touch operation.

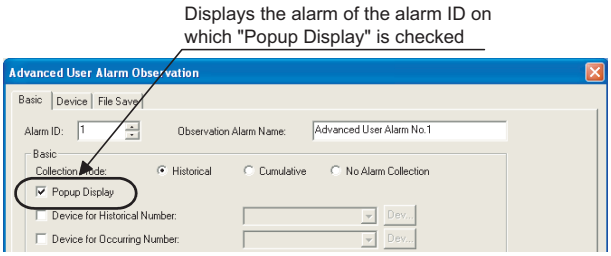
For details, refer to the following.

☞ Section 8.5.3 1 (3) Switching of display position

(2) Settings required for using advanced alarm popup display
Set the alarm displayed on the advanced alarm observation screen.

(a) To display advanced user alarms
Check "Popup Display" on the advanced user alarm observation screen.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)




**Hint!**

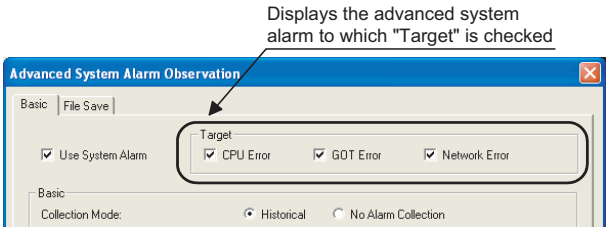
Purpose of checking "Popup Display"

This setting is to select whether to use popup display when displaying the advanced user alarms of multiple alarm IDs.
The advanced user alarms can be displayed with one alarm ID refined by using a device.

☞ Section 8.5.3 4 Display switching by device

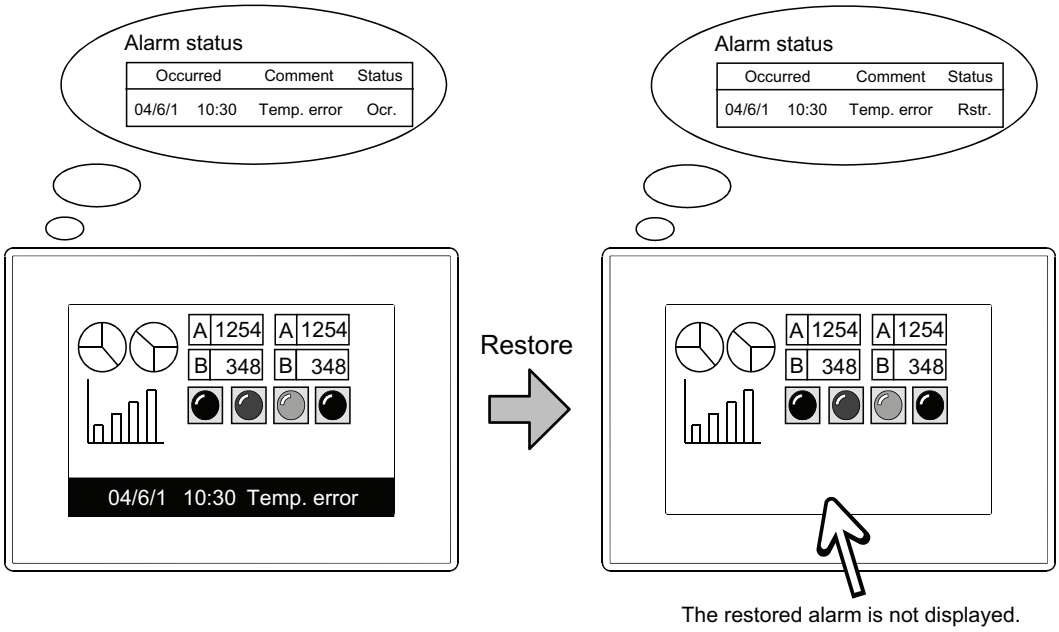
(b) To display advanced system alarms
Check "Target" on the advanced system alarm observation screen.

☞ Section 8.3 Advanced Alarm Observation (Advanced System Alarm)



## 2 Alarms displayed by popup display

With the advanced popup display, an alarm of the "Occurred" status (including "Chk") is displayed. When the alarm becomes "Restored" (including the recovered alarm) status, the display disappears.



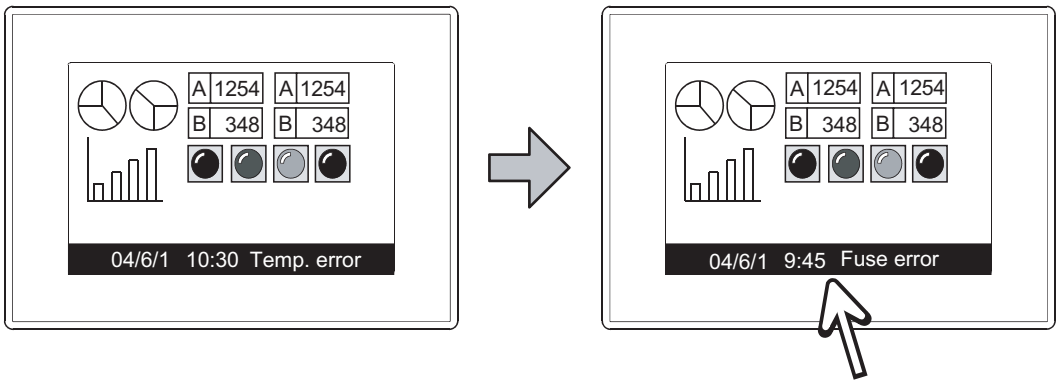
## 3 Selection of display method

The following display methods are available. (☞ Section 8.5.5 1 Basic tab)

(1) Fixed

The comment displayed when an alarm occurs is displayed in a fixed line.
When more than one alarm occur, the alarms can be switched and displayed automatically. (Set the "Display Number" on the basic tab to "Plural")

When a temp. error and fuse error occur

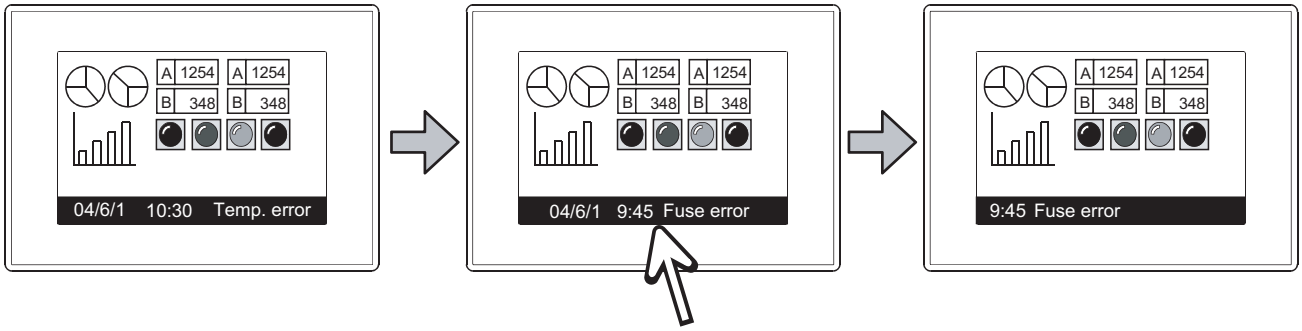



The occurring alarms are switched and displayed!
(The cycle for switching display can be set by "Switching Cycle" on the basic tab)

(2) Float

The comment displayed when an alarm occurs is displayed as a flow from right to left.
When more than one alarm occur, the alarms are displayed in order.
(Set the "Display Number" on the basic tab to "Plural")

When a temp. error and fuse error occur




The occurring errors are displayed as a flow from right to left
(The flow speed can be specified on "Floating Speed" on the basic tab.)

**Point**

(1) Display priority (display order) when multiple alarms occur
For details, refer to the following.

☞ Section 8.5.6 2 (3) Alarm display priority

(2) When more than one comment rows are specified

Fixed : Only the comment of the first row is displayed.
Comments on and after the second row cannot be displayed.

Float : Displays the comment of the second row as a flow after the comment of the first row.
(The same applies to the third row and after.)

## 8.5.3 Useful information

This section describes some useful functions to know before using advanced alarm popup display.

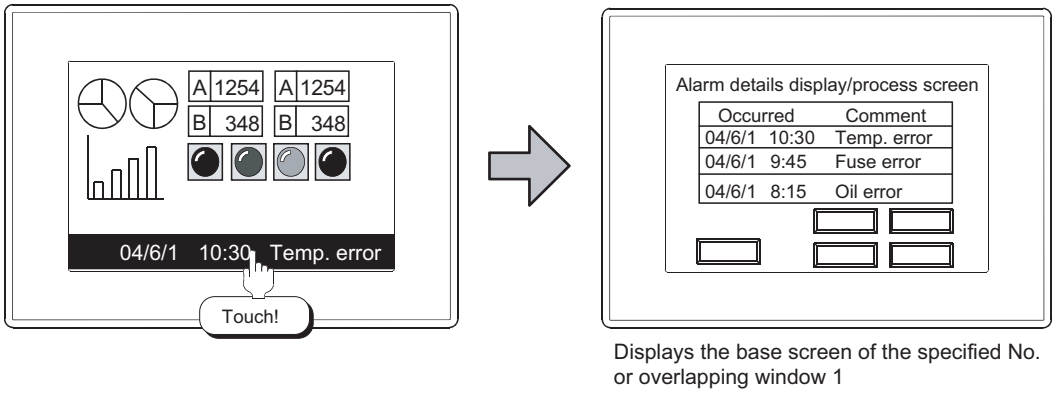
### 1 Operations when touching popup display directly

The following operations are available.

(1) Screen switching

Touching the alarm display can switch the screen to the base screen of the specified No. or overlapping window 1.

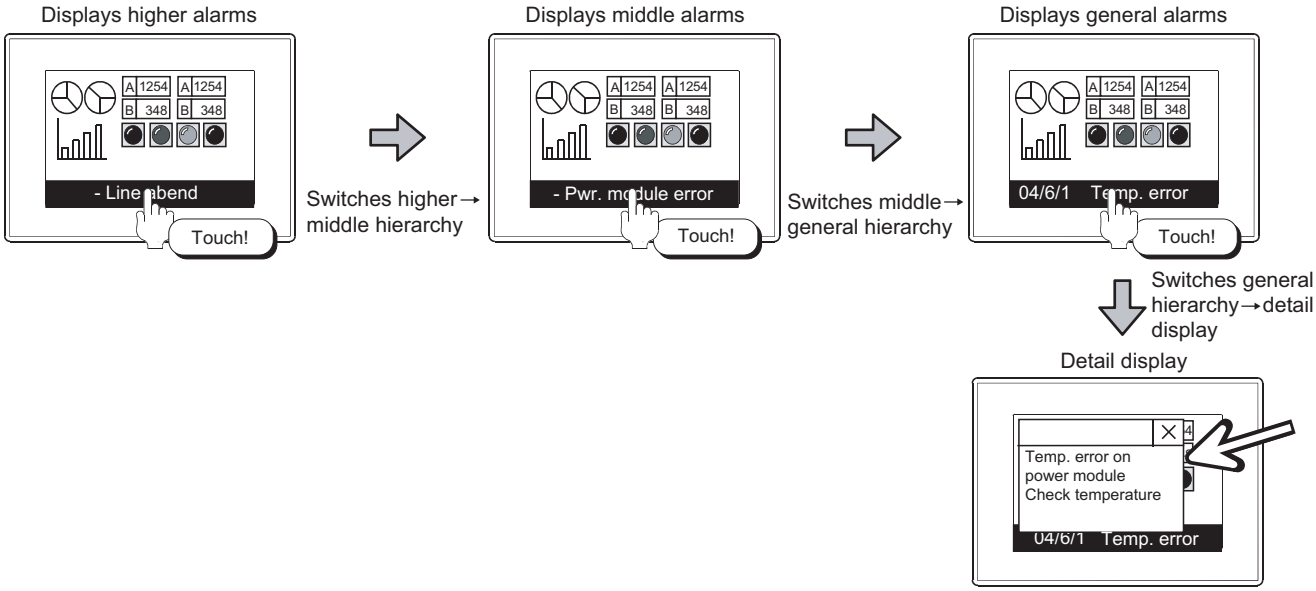
This function allows displaying the detailed alarm process screen when the popup display is touched. (☞ Section 8.5.5 1 Basic tab)




(2) Stage hierarchy switching/detail display

The display hierarchy of comments can be switched (only when advanced user alarms are displayed)

(☞ Section 8.5.5 1 Basic tab)



**Point**

(1) Hierarchies that can be switched by touch operation
By touch operation, hierarchies can be switched only to the lower ones.
To switch to the upper hierarchy, set "Hierarchy" of "Switching Device" on the extended tab, and store the hierarchy value in the device.

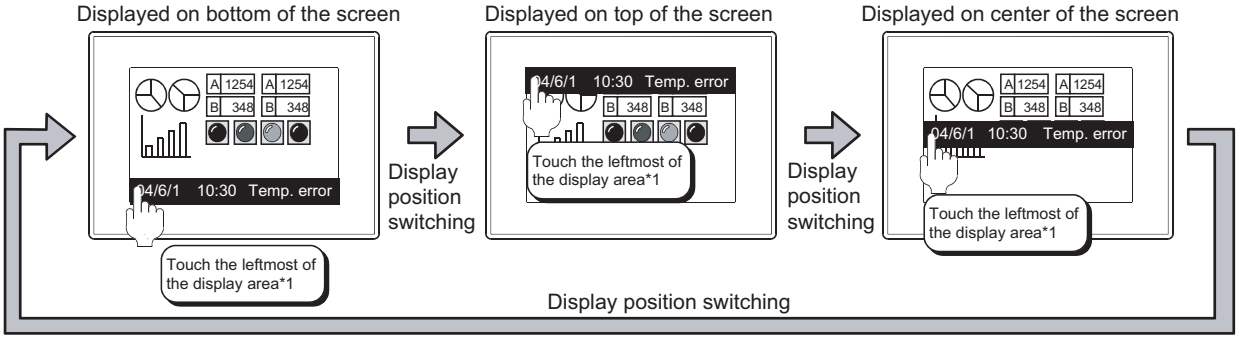
☞ Section 8.5.5 3 Extended tab

(2) Difference of display scope depending on the switching hierarchies method
Display scope is different between the case that hierarchies are switched by touch operation and by switching device. For details, refer to the following.

☞ This section 2 Switching of alarm hierarchies (Only when advanced user alarms is displayed)

(3) Switching of display position

If any other object is hidden by an advanced alarm popup display, the display position can be switched by touch operation. (When [Display Position Switching] is set to enabled on the Basic tab in the Advanced Alarm Popup Display dialog box)

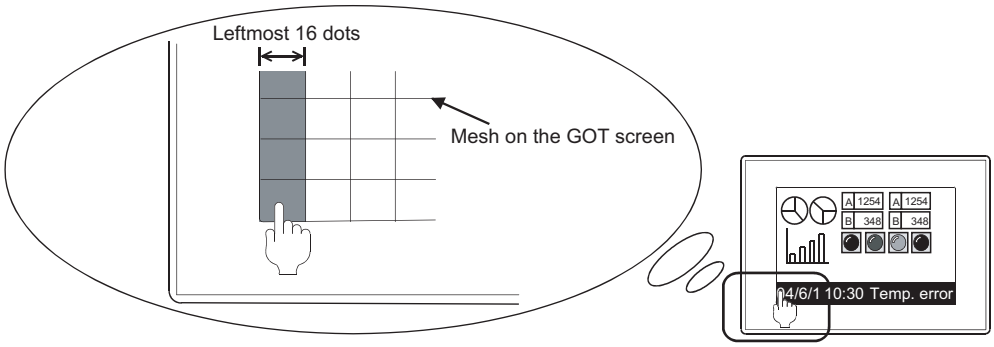



For the details of *1, refer to the following.

By touching the leftmost of the advanced alarm popup display area, the display position is switched to the top, center and bottom of the screen in order.

*1 Screen area for switching display position

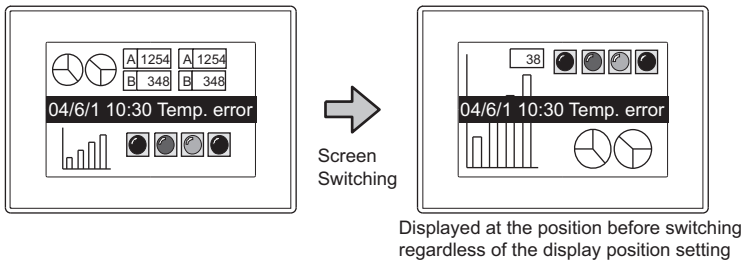
The touch operation area for switching display position is the leftmost 16-dot area of the display area.




**Point**

Display position during screen switching

When screen is switched during popup display, the popup is displayed at the position before switching. (It is not displayed at the position specified by the auxiliary settings of the screen.)



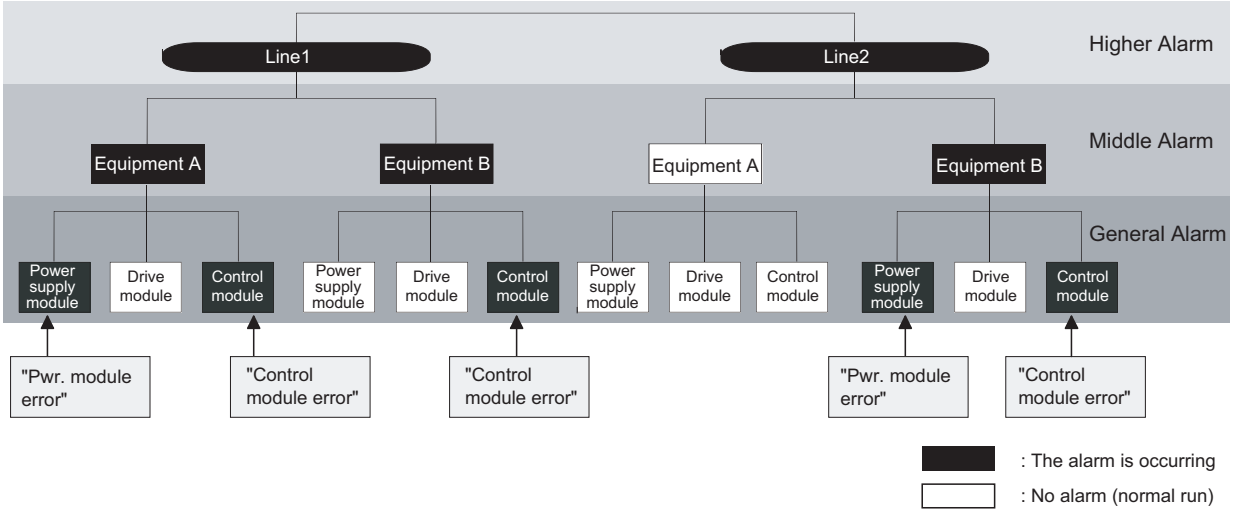

The display position set by the Auxiliary Settings of the screen becomes effective when a new popup is displayed.

## 2 Switching of alarm hierarchies (Only when advanced user alarms is displayed)

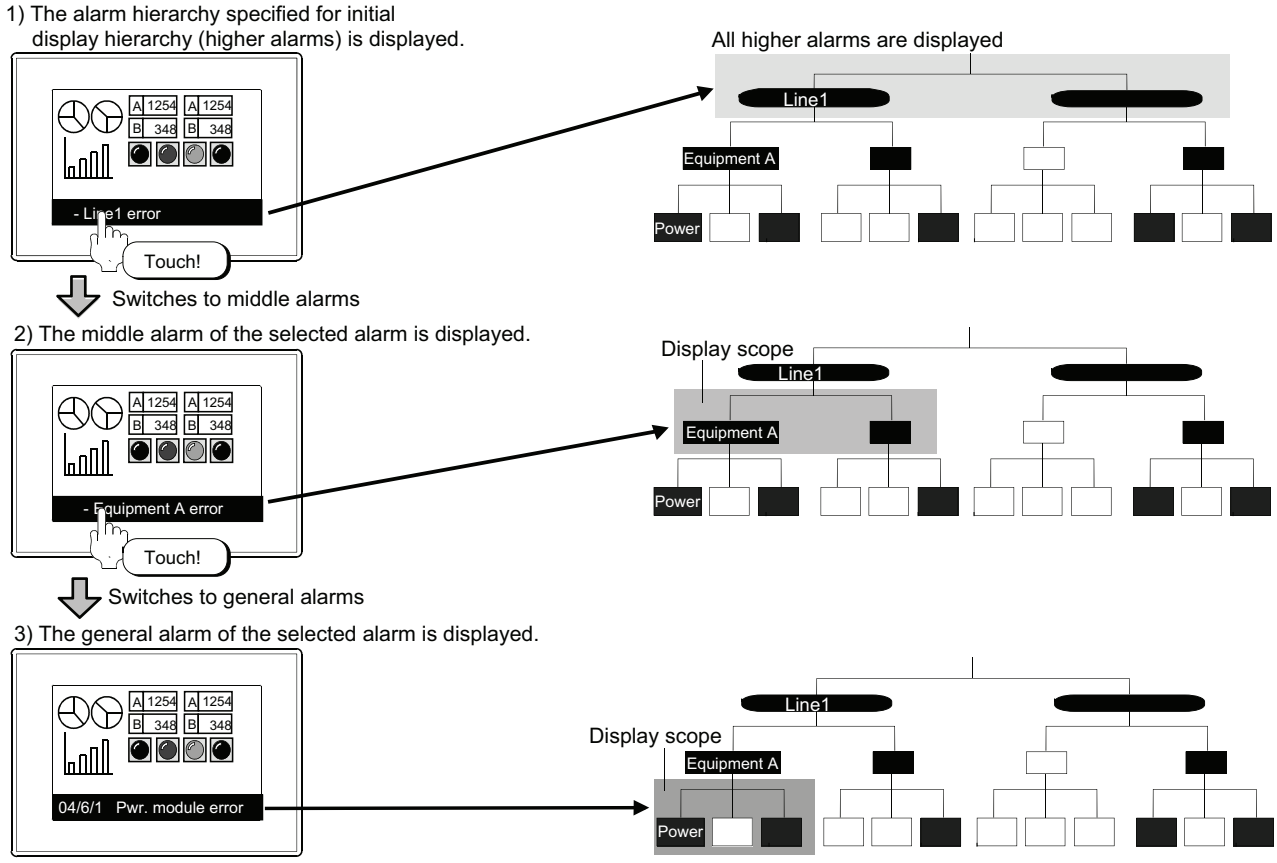
For advanced alarm popup display, alarm hierarchies can be switched by one of the following methods. However, the display scope differs depending on the switching method.

- Touch the popup display directly
- Use the device specified on "Hierarchy" of "Switching Device" on the extended tab

The following system example describes the difference of the display scope depending on the switching method.



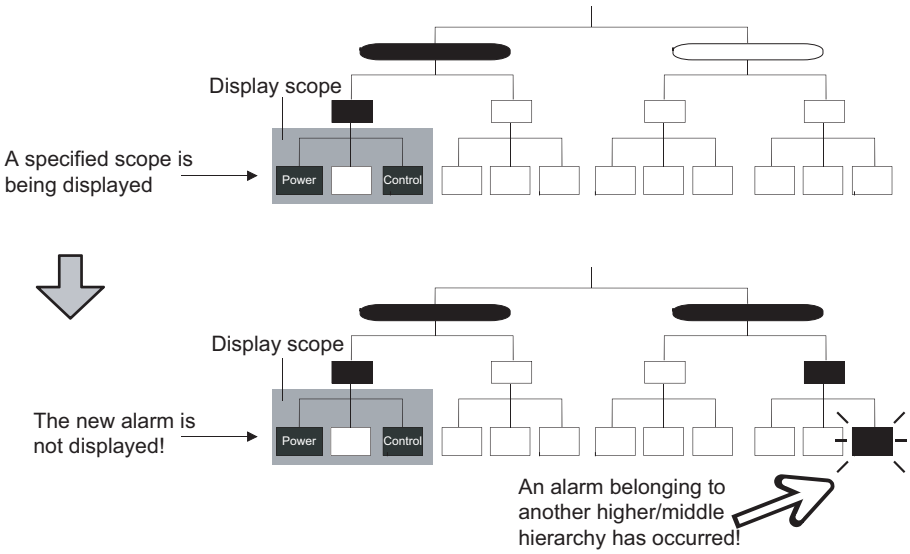

(1) Touch the popup display directly
Displays the lower hierarchy of the touched alarm.
The following is the case that "Initial Display Hierarchy" on the basic tab is specified as the higher alarms.



**Point**

A new alarm belonging to another higher/middle hierarchy has occurred while a specified scope is being displayed

If a new alarm belonging to another higher/middle hierarchy has occurred while an alarm belonging to the higher/middle hierarchy is being displayed, the new alarm is not displayed.



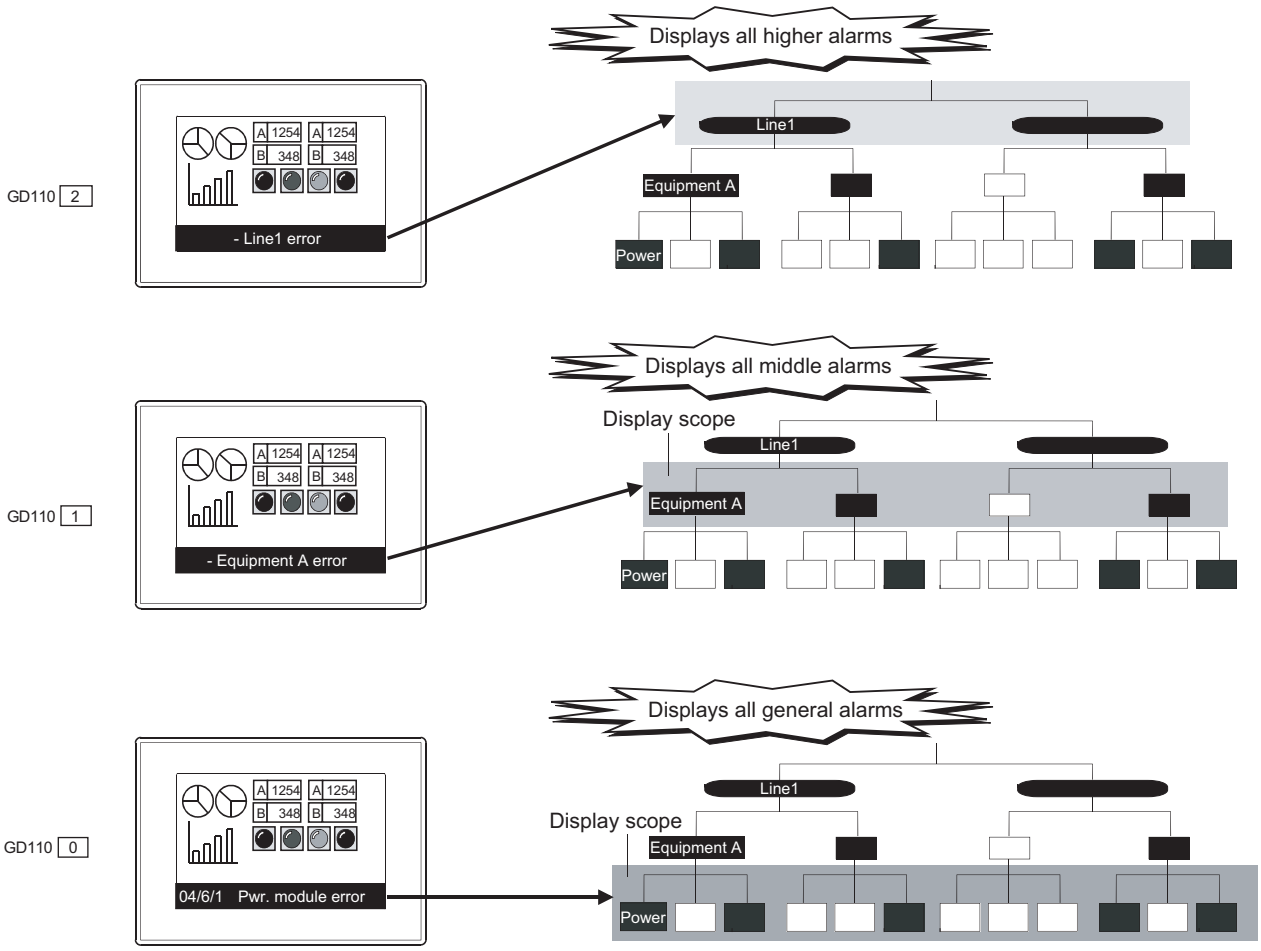

Display the new alarm by one of the following methods.

- Use the hierarchy switching device to display all the alarms of the specified hierarchy. (☞ This section 2 (2) Switch the hierarchy using the device specified by "Hierarchy" of "Switching Device" on the extended tab)
- Display higher alarms and move to the hierarchy of the new alarm.
  (And, move to the lower hierarchy and display the new alarm.)

(2) Switch the hierarchy using the device specified by "Hierarchy" of "Switching Device" on the extended tab

Display all the alarms of the hierarchy specified by the device. (☞ Section 8.5.5 3 Extended tab)

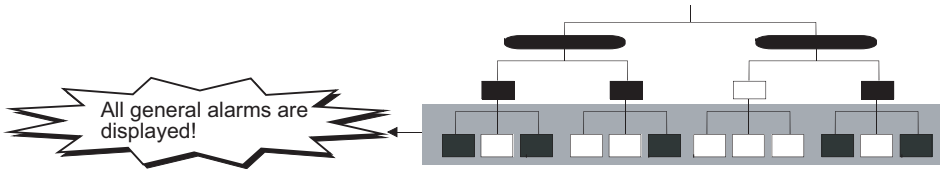
The following shows an example when the switching device of hierarchy is set to GD110.



**Point**

(1) Alarm hierarchy specified as the initial display hierarchy
To display alarms in hierarchy, it is recommended to specify the highest alarm hierarchy as the initial display hierarchy.
If any lower alarm hierarchy is specified as the initial display hierarchy, alarms are displayed with the vertical hierarchies ignored.

Example: When the initial display hierarchy is specified to general alarms

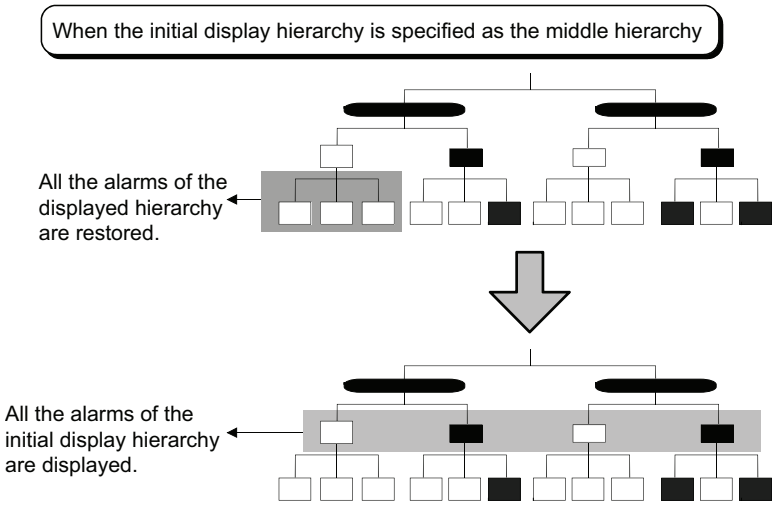



(2) Timing at which alarms are switched to the initial display hierarchy regardless of the hierarchy being displayed
In the following example, all the alarms of the hierarchy specified by the initial display hierarchy are displayed.

- All the alarms of the displayed hierarchy are restored.
- The advanced user alarm (alarm ID) to be displayed by the device is switched

This section 4 Display switching by device

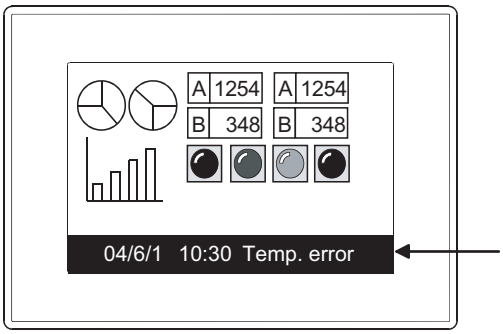
Example: When all the alarms of the displayed hierarchy are restored



## 3 Specify font, text color, and background color to display alarms

Specifying a font, text color and background color can prevent from overlooking popup display.
In addition, although level and group cannot be displayed for the advanced alarm popup display function, level and group can be identified visually by setting a display color.

(☞ Section 8.5.5 2 Text tab)




By specifying a background color, oversighting popup display can be prevented.

In addition, by specifying a text color for each level or group, alarm's level and group can be identified visually.

## 4 Display switching by device

Display data can be switched by the device value.

The display shown below is available. (☞ Section 8.5.5 3 Extended tab)

- Refinement display of data by level, group, and alarm ID (advanced user alarm only) specified by users
- Change the comment displayed according to the target user or purpose
- Change the displaying order (descending, ascending and soon)

(1) Items to which a switching device can be set

| Available switching device settings | Display alarm | |
|---|---|---|
| | Advanced user alarm | Advanced system alarm |
| Hierarchy*1 | All the alarms generated in the specified alarm hierarchy are displayed. | — |
| Level*1 | Alarms at the specified level are displayed. | |
| Group*1 | Alarms of the specified group are displayed. | |
| Priority Level Attribute | The display order is changed between ascending order and descending order.<br>For the sort key, occurred date/time, level or group can be selected. | The display order is changed between ascending order and descending order.<br>For the sort key, occurred date/time, level or group can be selected. |
| Advanced User Alarm Observation | The setting of the advanced user alarm observation (alarm ID) displayed by advanced alarm display can be changed.<br>Multiple sets of alarm data can be displayed by an advanced alarm display window. | — |
| General Comment Group | The comments displayed when an alarm occurs can be changed for each comment group.<br>The comment displayed can be changed according to the user or purpose. | |
| Middle Comment Group | | |
| Higher Comment Group | | |

*1 The hierarchy, level and group for alarms are set by the advanced user alarm observation function.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

(2) Display example

Alarms are refined and displayed by changing the value of the device.

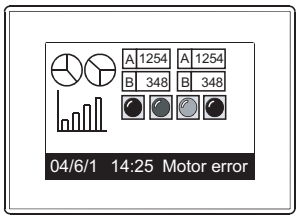
This section shows an example that the switching device (level) is set to GD10 and the switching device (group) to GD11.

Assume that the alarms below occurred.

| Occurred | | Message | Status | Level | Group |
|---|---|---|---|---|---|
| 04/06/01 | 16:50 | Temp. error | Ocr. | 1 | 1 |
| 04/06/01 | 14:25 | Motor error | Ocr. | 3 | 1 |
| 04/06/01 | 11:20 | Oil error | Chk. | 3 | 2 |
| 04/06/01 | 10:00 | Fuel error | Ocr. | 3 | 2 |
| 04/06/01 | 08:10 | Internal pressure error | Ocr. | 2 | 1 |
| 04/06/01 | 07:40 | Fuse error | Rstr. | 1 | 1 |

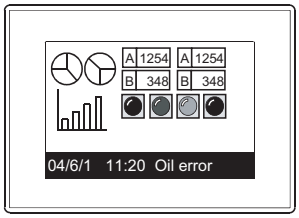
"Restored" alarm is not displayed by advanced alarm popup display.

GD10 3
GD11 0




| Occurred | | Message | Status | Level | Group |
|---|---|---|---|---|---|
| 04/06/01 | 14:25 | Motor error | Ocr. | 3 | 1 |
| 04/06/01 | 11:20 | Oil error | Chk. | 3 | 2 |
| 04/06/01 | 10:00 | Fuel error | Ocr. | 3 | 2 |

GD10 3
GD11 2




(Alarms to be displayed)

| Occurred | | Message | Status | Level | Group |
|---|---|---|---|---|---|
| 04/06/01 | 11:20 | Oil error | Chk. | 3 | 2 |
| 04/06/01 | 10:00 | Fuel error | Ocr. | 3 | 2 |

**Point**

(1) Display priority when not switching the display data by the device
For details, refer to the following.

☞ Section 8.5.6 2 (3) Alarm display priority

(2) Changing the alarm sorting order by "Priority Level Attribute"
Sorting order can be changed only while general alarms are displayed, and cannot be changed while higher alarms or middle alarms are displayed.

(3) Advanced user alarm (alarm ID) displayed
Alarms are displayed even when its alarm ID is not checked on the "Popup Display" item of the advanced user alarm observation window. (Alarms are displayed regardless of whether the item is checked or not.)
When specify an alarm ID with the "Popup Display" item checked, displays the alarm ID only.

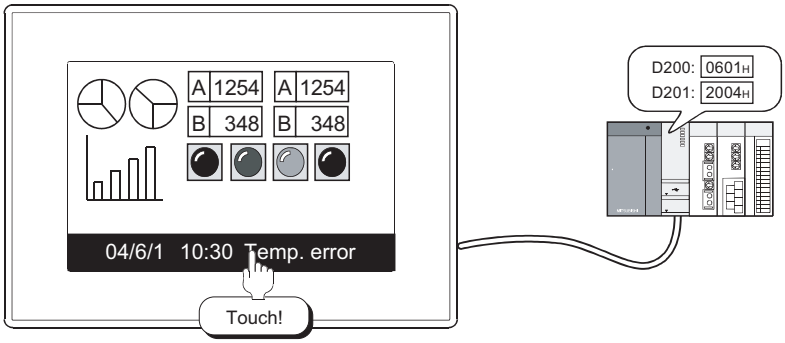
## 5 Writing alarm data into device

The alarm data touched on the advanced alarm popup display can be written into the device (word device).
Data that cannot be displayed by advanced alarm popup display (down time and others) can also be written into the device. (☞ Section 8.5.5 4 External output tab)

(1) Alarm data written into the device (15 types)

- Alarm ID
- Comment group No.
- Comment No.
- Alarm status
- Occurred date
- Occurred time
- Restored date
- Restored time
- Checked date
- Checked time
- Level
- Group
- Occurred frequency
- Cumulative time
- Down time

(2) Alarms to be written
The data of the alarm touched on advanced alarm popup display are written.




The occurred date of the selected alarm (04/06/01) is output to the device

**Point**

Touch mode when data are written into the device

To write alarm data into the device, set "Touch Mode" on the Basic tab to "Screen Switching" or "Stage Hierarchy Switching/Detail Display".

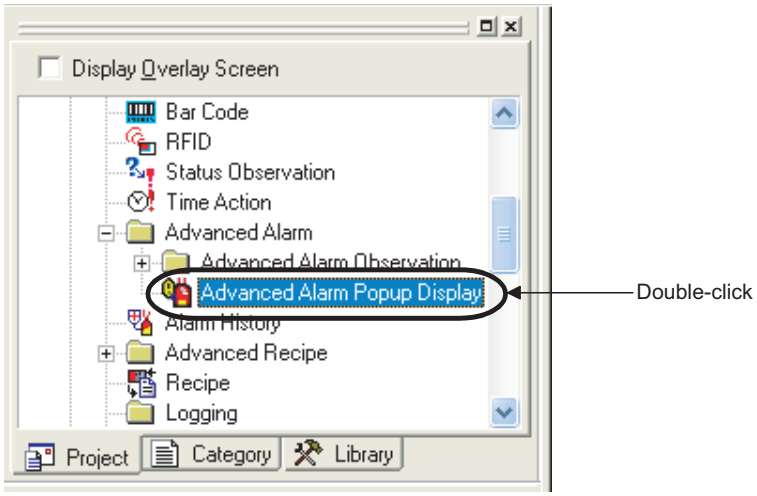
## 8.5.4 Placement and settings

1. Perform either of the following operations.
   - Select [Common] → [Advanced Alarm Popup Display] menu.
   - Click (Advanced Alarm Popup Display.)

2. The setting dialog box is displayed. Refer to the following description to perform the setting.
   (☞ Section 8.5.5 Setting items)

**Remark** When setting in Workspace (Project)

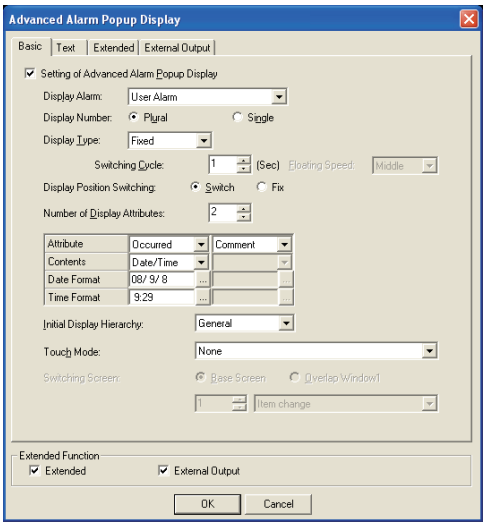
Double-click Advanced Alarm Popup Display in Workspace (Project). The setting dialog box is displayed.



## 8.5.5 Setting items

### 1 Basic tab

Set the displayed advanced alarm popup display type, display contents and touch modes.




Basic | Text | Extended | External Output

| Item | | Description | Model |
|---|---|---|---|
| Setting of Advanced Alarm Popup Display | | Check this item when using advanced alarm popup display. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display Alarm | | Select an alarm type to be displayed.<br>For the display priority when multiple alarms occur, refer to the following.<br>☞ Section 8.5.6 2 (3) Alarm display priority<br>• User Alarm : Displays advanced user alarm only.<br>• System Alarm : Displays advanced system alarm only.<br>• User Alarm + System Alarm : Displays advanced user alarm or advanced system alarm | |
| Display Number | | Select the number of alarms displayed.<br>For the alarm display priority, refer to the following.<br>☞ Section 8.5.6 2 (3) Alarm display priority<br>• Plural : Displays more than one advanced alarms in order.<br>• Single : Displays the alarm with the highest display priority. | |
| Display Type | | Select a display method of the comment displayed for the alarm.<br>☞ Section 8.5.2 3 Selection of display method<br>Fixed : Displays the comment in a line when an alarm occurs. Any part exceeding the length of the comment displayed in a line or the second line and after of the comment over multiple lines is not displayed.<br>Float : Displays the comment as a flow from right to left when an alarm occurs. For the comment including multiple lines, the second line and after are also displayed. After selecting "Float," select a speed to display the comment as a flow by "Floating Speed." | |
| | Switching Cycle | Set a cycle to switch the alarm displayed while more than one alarm has occurred (1 to 60s).<br>This item can be set only when the "Display Type" item is "Fixed." | |
| | Floating Speed | If setting "Display Type" to "Float," select a speed for the flowing display.<br>High : The comment flows at a speed of approximately 213 dots (16-dot character x 13) per second.<br>Middle : The comment flows at a speed of approximately 106 dots (16-dot character x 7) per second.<br>Low : The comment flows at a speed of approximately 53 dots (16-dot character x 3) per second. | |

(Continued to next page)

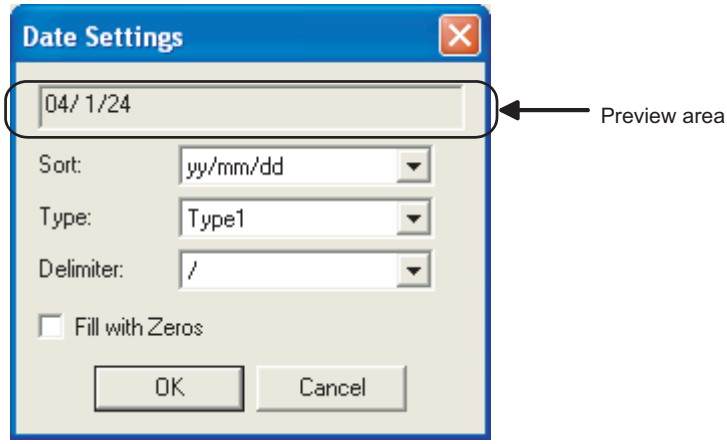
Basic | Text | Extended | External Output

| Item | | Description | Model |
|---|---|---|---|
| Display Position Switching | | Set whether to enable or disable the display position switching of the advanced alarm popup display.<br>☞ Section 8.5.3 1 (3) Switching of display position<br>• Switch : The display position switching is enabled.<br>• Fix : The display position switching is disabled. | |
| Number of Display Attributes | | Set the number of the items displayed on an alarm (1 to 2). | |
| | Attribute | Select the items displayed for advanced alarm display.<br>Occurred : Select this item when displaying the occurred date/time of the alarm.<br>Comment : Select this item when displaying the comment related to the alarm. | |
| | Contents | Select format in which occurred date/time of alarm is specified.<br>After selecting this item, select the display format of date and time.<br>Date/Time : Select when displaying both date and time.<br>Date : Select when displaying date only.<br>Time : Select when displaying time only. | |
| | Date Format*1 | Set the display format of date by clicking ...<br>This item can be set when "Contents" is set to "Date/Time" or "Date." | |
| | Time Format*2 | Set the display format of time by clicking ...<br>This item can be set when "Contents" is set to "Date/Time" or "Time." | |
| Initial Display Hierarchy | | Select the alarm hierarchy initially displayed when an advanced user alarm occurs.<br>☞ Section 8.5.3 2 Switching of alarm hierarchies (Only when advanced user alarms is displayed)<br>General : General alarms are initially displayed.<br>Middle : Middle alarms are initially displayed.<br>Higher : Higher alarms are initially displayed.<br>This item can be set only when "Display Alarm" is "User Alarm" or "User Alarm + System Alarm." | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Touch Mode | | Select the operation when the advanced alarm popup display is touched.<br>☞ Section 8.5.3 1 Operations when touching popup display directly<br>None : No operation even if touching the popup display.<br>Screen Switching : If touch the advanced alarm popup display, displays the base screen of the No. specified on "Switching Screen" or overlap window 1.<br>Stage Hierarchy Switching/Detail Display<br>: Switches the alarm hierarchy of the touched alarm or displays the detailed screen.<br>Operations vary depending on the alarm hierarchy being displayed.<br>• When displaying higher/middle alarm: The alarm hierarchy is switched to the lower one.<br>• When displaying general alarm : The detailed screen is displayed. | |
| Switching Screen | | Set the screen displayed when the advanced alarm popup display is touched.<br>Select "Base Screen" or "Overlap Window 1," and set a screen number (1 to 32767).<br>Only overlap window 1 is usable for advanced alarm popup display.<br>When select "Overlap Window 1," set the number of the window screen. | |

For details of *1, *2, refer to the following.

*1 Date settings

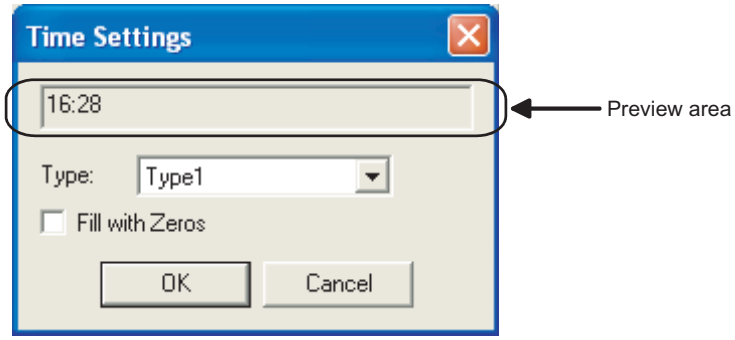
Set the display type of date.
The display type of date set can be confirmed in the preview area.




| Item | Description |
|---|---|
| 04/ 1/24 (Preview area) | The result of date setting is displayed as a display example. |
| Sort | Select a sorting order of year/month/day.<br>• yy/mm/dd: 04/01/24 • dd/mm/yy: 24/01/04<br>• mm/dd/yy: 01/24/04 |
| Type | Select a display type of date.<br>Select a display type depending on whether to use upper/lower case for English/alphabetic expression, presence/absence of day display and a type of Japanese expression.<br>The display example below shows the case that "Sort" is set to "yy/mm/dd."<br>• Type 1 : 04/01/24 • Type 11 : 2004/JAN/24<br>• Type 2 : Jan/24 • Type 12 : 2004/Jan/24(FRI)<br>• Type 3 : JAN/24 • Type 13 : 2004/JAN/24(FRI)<br>• Type 4 : Jan/24(FRI) • Type 1 (Japanese) : 1月24日<br>• Type 5 : JAN/24(FRI) • Type 2 (Japanese) : 1月24日(金)<br>• Type 6 : 04/Jan/24 • Type 3 (Japanese) : 04年1月24日<br>• Type 7 : 04/JAN/24 • Type 4 (Japanese) : 04年1月24日(金)<br>• Type 8 : 04/Jan/24(FRI) • Type 5 (Japanese) : 2004年1月24日<br>• Type 9 : 04/JAN/24(FRI) • Type 6 (Japanese) : 2004年1月24日(金)<br>• Type 10 : 2004/Jan/24<br>"Type 1 (Japanese)" to "Type 6 (Japanese)" can be selected only when setting "Sort" to "yy/mm/dd." |
| Delimiter | Select a delimiter for year, month, and day.<br>• "/" : 04/01/24 • "." : 04.01.24<br>• "-" : 04-01-24 |
| Fill with Zeros | Check when displaying "0" before month and day.<br>Example: Jan. 24, 2004<br>When checked : 04/01/24<br>When not checked : 04/1/24 |

*2 Time settings

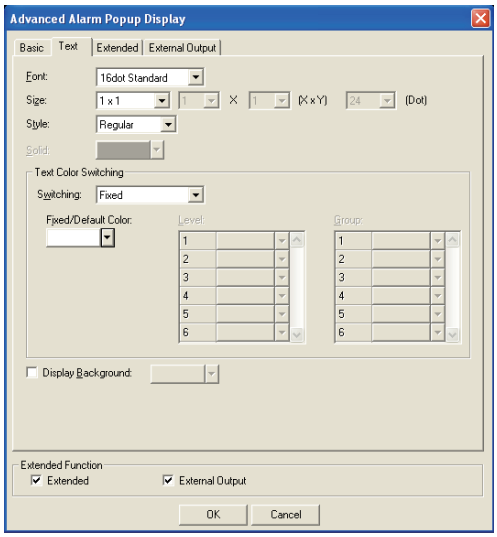
Set a display type of time.
The display type of the specified time can be confirmed in the preview area.




| Item | Description |
|---|---|
| 16:28 (Preview area) | The result of time setting is displayed as a display example. |
| Type | Select a display type of time.<br>Select a display type depending on whether to use English expression, presence/absence of am and pm and a type of Japanese expression.<br>• Type 1 : 16:28 • Type 1 (Japanese) : 16時28分<br>• Type 2 : 16:28:28 • Type 2 (Japanese) : 16時28分28秒<br>• Type 3 : 04:28(PM) • Type 3 (Japanese) : 午後4時28分 |
| Fill with Zeros | Check when displaying "0" before hour, minute, and second.<br>Example: 5 past 6<br>• 06:05 (When checked)<br>• 6:5 (When not checked) |

## 2 Text tab

Set the text format of alarms.




Basic | **Text** | Extended | External Output

| Item | Description | Model |
|---|---|---|
| Font | Select a font of the characters displayed.<br>• 12dot Standard • 16dot Standard • 16dot HQ Mincho<br>• 16dot HQ Gothic • Stroke<br>If "HQ font" is set for the advanced alarm, the text of comment will be displayed in the standard font.<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Size | | |
| Style | Select a display format for text (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Regular Bold Solid Raised | |
| Solid | Select a color of the shadow when the [Style] item is set to [Solid] or [Raised]. | |
| Text Color Switching*1 | Select the target for applying color-coding.<br>☞ Section 8.5.3 3 Specify font, text color, and background color to display alarms<br>• Fixed : Select this item when displaying characters in a color only. Set the color after selecting "Fixed".<br>• Level : Select this item when using different colors depending on levels.<br>• Group : Select this item when using different colors depending on groups.<br>• Comment Color : Select this item to display comment with the color specified for comment group when displaying advanced user alarm. (The font, size and style are specified at the style setting on this setting. The setting of the comment group except for "Text" is not effective.) For advanced system alarms display, alarms are displayed in the color specified by "Fixed/Default Color." | |
| Fixed/Default Color*1 | • When "Fixed" is selected for "Text Color Switching," Select the character color when displaying text in a color only.<br>• When "Comment Color" is selected for "Text Color Switching" Select a character color to be used when there is no comment for advanced user alarms. Select a character color of advanced system alarms. | |
| Level*1 | Select character colors for each level number. (enabled only for advanced user alarms display) | |
| Group*1 | Select character colors for each group number. (enabled only for advanced user alarms display) | |
| Display Background | Select a background color of the advanced alarm popup display.<br>Check the check box to select the background color. | |

For details of *1, refer to the following.

*1 Relation between the specified character color and actually displayed character color

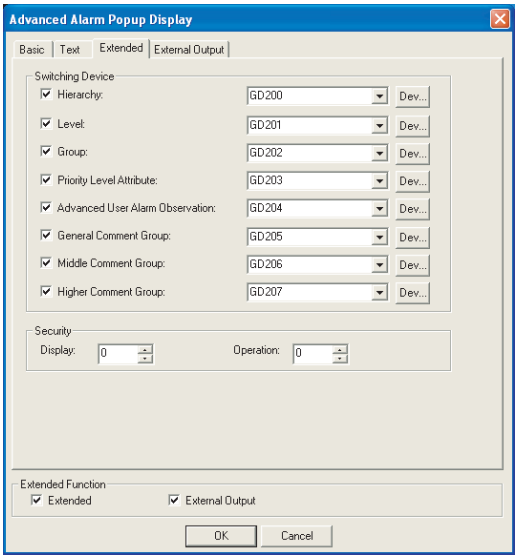
| Alarms displayed | Set "Switching" | | | |
|---|---|---|---|---|
| | Fixed | Level | Group | Comment Color |
| Advanced user alarm | Displayed in the color specified on "Fixed/ Default Color." | Displayed in the color specified on "Level". Higher alarms and middle alarms are displayed in the color specified as "Level Color 1." | Displayed in the color specified on "Group". Higher alarms and middle alarms are displayed in the color specified as "Group Color 1." | Displayed in the color specified for comment group. If there is no comment, the comment area is displayed in the color specified by "Fixed/ Default Color." |
| Advanced system alarm | | Displayed in the color specified as "Level Color 1." | Displayed in the color specified as "Group Color 1." | Displayed in the color specified as "Fixed/ Default Color" |

(Level, group and comment are effective only when "User Alarm" or "User Alarm + System Alarm" is selected on "Display Alarm" of the basic tab.)

## 3 Extended tab

Perform the setting for switching the displayed contents of the advanced alarm popup display by using a device.

This tab is displayed by checking the Extended Function at the bottom of the dialog box.




Basic | Text | **Extended** | External Output

| Item | | Description | Model |
|---|---|---|---|
| Switching Device | | Check the item whose display is switched by the device.<br>☞ Section 8.5.3 4 Display switching by device | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Hierarchy*1 | Check this item when switching the alarm hierarchy displayed using the value of the device.<br>All the alarms of the specified alarm hierarchy are displayed.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>This item is enabled for advanced user alarms only. | |
| | Level | Check this item when displaying only the alarms of the specified level number.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>Store the level number of the advanced alarm displayed in the device.<br>• To display a specified level, specify a level number in the range of 1 to 255.<br>However, if any nonexistent level number is specified, advanced alarms are not displayed.<br>• To display all levels, specify 0 or 256 or more.<br>• This item is enabled only for advanced user alarms. | |
| | Group | Check this item when displaying only the alarms of the specified group number.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>Store the group number of the advanced alarm displayed in the device.<br>• To display a specified group, specify a level number in the range of 1 to 255.<br>However, if any nonexistent group number is specified, advanced alarms are not displayed.<br>• To display all groups, specify 0 or 256 or more.<br>• This item is enabled only for advanced user alarms. | |
| | Priority Level Attribute*2 | Check this item when switching the sort key by the value of the device.<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting) | |

For details of *1, *2, refer to the following.

(Continued to next page)

Basic | Text | **Extended** | External Output

| Item | | Description | Model |
|---|---|---|---|
| Switching Device | Advanced User Alarm Observation | Check this item when displaying the specified advanced user alarm (alarm ID).<br>After checking this item, set the switching device. (☞ Section 5.1 Device Setting)<br>• Store the alarm ID for advanced user alarm observation in this device.<br>• The alarm of the stored alarm ID is displayed regardless of the setting of "Popup Display" of advanced user alarm observation.<br>• If store "0" in this device, displays only the alarms of which "Popup Display" item of advanced user alarm observation is checked.<br>• If any nonexistent alarm ID is specified, the alarm is not displayed.<br>• This item is enabled for advanced user alarms only. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | General Comment Group / Middle Comment Group / Higher Comment Group | Check this item when switching the comment group of the comments displayed for general alarm, middle alarm, or higher alarm by the value of the device.<br>After checking the item, set the switching device. (☞ Section 5.1 Device Setting)<br>• When "0" is stored in this device, the comment group specified for advanced user alarm observation is displayed.<br>If any nonexistent comment group No. is stored, "No message" is displayed.<br>• This item can be selected only when advanced user alarms are displayed. | |
| Security | Display | To set the security function, specify a security level (1 to15).<br>• Specify "0" when not setting the security function.<br>• Be sure to specify a number for security (Operation) that is larger than the number for security (Display).<br>☞ Section 5.8 Security Function | |
| | Operation | | |

*1 Hierarchies

Store values in the device as follows to switch hierarchies.

| b15 to b3 | b2 | b1 | b0 |
|---|---|---|---|

b1 to b0 : Specify the target hierarchy of the alarm to switch.
- 00(0) : General alarms
- 01(1) : Middle alarms
- 10(2) : Higher alarms

b14 to b2 : Not usable

b15 : Stores the switching operations for switching hierarchies (hierarchy switching control identifier).
To switch hierarchies by the hierarchy switching device, be sure to set this bit to "0."
- 0 : Switching by the switching device
- 1 : Switching by touching the display area

For precautions about switching comment display using this device, refer to the following.

☞ Section 8.5.6 1 (2) When switching comment display and others using the hierarchy switching device

*2 Priority level attribute

Store values in the device as shown below to switch the alarm display order.

| b15 | b14 to b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|

b3 to b0 : Specifies a sort key. (□: Reserved)

□□□0H : Regular (Occurred)

□□□1H : Occurred Data/Time

□□□5H : Level

□□□6H : Group

b14 to b4 : Not usable

b15 : Specifies ascending order or descending order. (□: Reserved)

0□□□H : Descending order

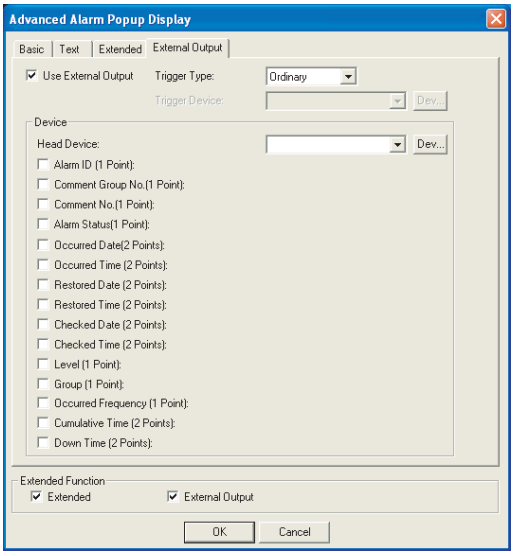
8□□□H : Ascending order

Level and group are effective only for advanced user alarms.

If any value other than above is stored, alarms are displayed in the order of occurred.

## 4 External output tab

Perform setting for writing the information about the alarm touched on the advanced alarm popup display area into the device.
This tab is displayed by checking the Extended Function at the bottom of the dialog box.




Basic | Text | Extended | **External Output**

| Item | | Description | Model |
|---|---|---|---|
| Use External Output | | Check this item when writing the information about the touched alarm into the device.<br>☞ Section 8.5.3 5 Writing alarm data into device | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Trigger Type<br>Trigger Device | Select a timing to write the data of the touched alarm into the device.<br>Ordinary : When the popup display is touched, alarm data are written into the device.<br>ON : When the device is ON and the popup display is touched, alarm data are written into the device.<br>OFF : When the device is OFF and the popup display is touched, alarm data are written into the device.<br>When selecting "ON" or "OFF," set the device to be used for trigger.<br>(☞ Section 5.1 Device Setting) | |
| Device | | Set the device to which alarm data are written. | |
| | Head Device | Set the head device (word device) into which the data of the touched alarm are written.<br>As selecting the items to be written into the device, the devices following the head device are automatically set consecutively. (No device is set on any non-checked item.)<br>(☞ Section 5.1 Device Setting) | |
| | Alarm ID | Check this item when writing the alarm ID of the touched alarm into the device.<br>This item can be used only when advanced user alarm is displayed. | |
| | Comment Group No. | Check this item when writing the comment group No. of the comment displayed by the touched alarm into the device.<br>This item can be used only when advanced user alarm is displayed. | |
| | Comment No. | Check this item when writing the comment No. (comment group) displayed by the touched alarm into the device.<br>When advanced system alarm is selected, error code is written. | |

(Continued to next page)

Basic | Text | Extended | **External Output**

| Item | | Description | Model |
|---|---|---|---|
| Device | Alarm Status*1 | Check this item when writing the status of the touched alarm into the device.<br>The following values are written.<br><br>b15 to b3 \| b2 \| b1 \| b0<br><br>b0 : Stores whether the touched alarm is occurring or restored.<br>0: Restored 1: Occurring<br>b1 : Stores whether the touched alarm is checked or not.<br>0: Not checked 1: Checked<br>b2 : Stores whether the status of the touched alarm can be written into the device or not.<br>0: Not effective 1: Effective<br>This bit is set to "Not effective (0)" if a higher alarm or middle alarm is touched.<br>b15 to b3 : Not usable | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Occurred Date*1,*2 | Check this item when writing the touched alarm's occurred date into the device. | |
| | Occurred Time*1,*2 | Check this item when writing the touched alarm's occurred time into the device. | |
| | Restored Date*1,*2 | Check this item when writing the touched alarm's restored date into the device. | |
| | Restored Time*1,*2 | Check this item when writing the touched alarm's restored time into the device. | |
| | Checked Date*1,*2 | Check this item when writing the touched alarm's checked date into the device. | |
| | Checked Time*1,*2 | Check this item when writing the touched alarm's checked time into the device. | |
| | Level*1 | Check this item when writing the touched alarm's level No. into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Group*1 | Check this item when writing the touched alarm's group No. into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Occurred Frequency*1 | Check this item when writing the number of times of occurrence of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Cumulative Time*1,*2 | Check this item when writing the cumulative time of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |
| | Down Time*1,*2 | Check this item when writing the down time of the touched alarm into the device.<br>This item can be used only when advanced user alarms are displayed. | |

For details of *1, *2, refer to the following.

*1 Condition for writing

(1) Alarm hierarchy to which alarm data can be written (when advanced user alarm is displayed)
Only when general alarms are displayed, alarm data are written into the device.
When higher alarms or middle alarms are displayed, "0" is written (except for alarm ID, comment group No., and comment No.).

(2) Writable data according to the collection mode
The data which can be written vary depending on the collection mode specified at Advanced Alarm Observation.
For the details, refer to the following.

☞ Section 8.2.2 2 Collection flow and collection mode

*2 Writing format of date and time

Date and time are written in word data of two words.
(This section describes with occurred date as D254 (2 points) and occurred time as D256 (2 points).)

(1) Date
Year (AD), month, and day data are stored in the BCD code.

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D254 | Month (1 to 12) | Day (1 to 31) |

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D255 | Upper 2 digits of dominical year | Lower 2 digits of dominical year |

(2) Time
Hour, minute, and second data are stored in the BCD code.

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D256 | Minute (0 to 59) | Second (0 to 59) |

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D257 | $00_H$ | Hour (0 to 23) |

Example: July 1, 2004 12:24:56

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D254 | $07_H$ | $01_H$ |
| | (Month) | (Day) |

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D255 | $20_H$ | $04_H$ |
| | (Dominical year) | |

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D256 | $24_H$ | $56_H$ |
| | (Minute) | (Second) |

| | b15 to b8 | b7 to b0 |
|---|---|---|
| D257 | $00_H$ | $12_H$ |
| | | (Hour) |

## 8.5.6 Precautions

Precautions for using advanced alarm popup display are as show below.

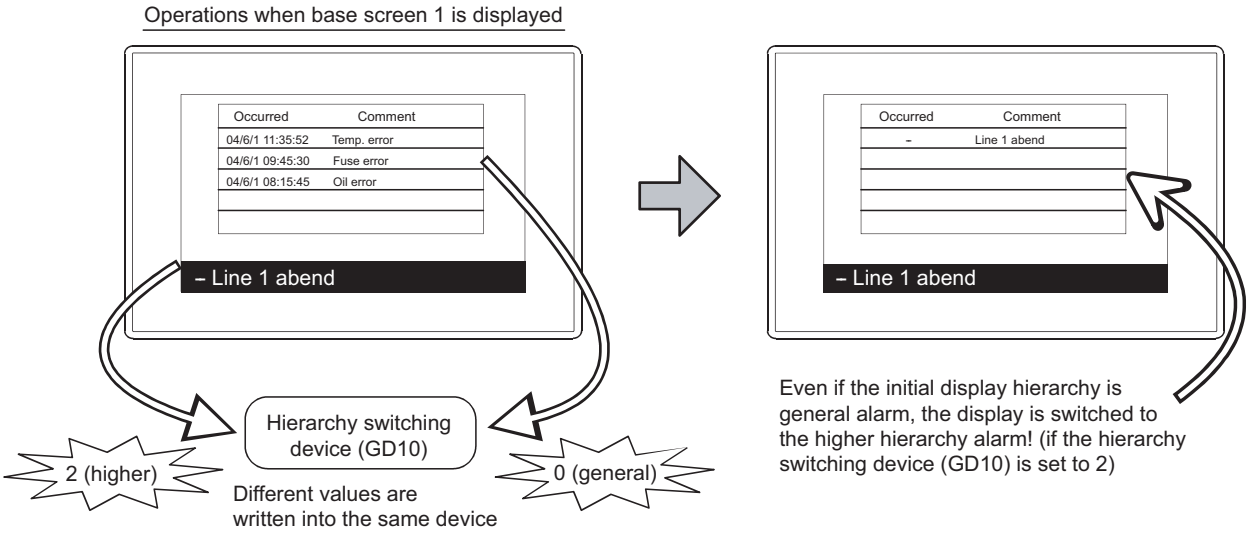
### 1 Precaution for Drawing

(1) Hierarchy switching device for placing multiple display objects on the same screen
If the same hierarchy switching device (set on the extended tab) is specified for the objects below, the objects may not be displayed on the specified initial display hierarchy.

- Advanced Alarm Display
- Advanced Alarm Popup Display

This is because the value of the initial display hierarchy is written into the hierarchy switching device when the screen is displayed (when the screen is switched).
To display the object on the specified initial display hierarchy, use different devices on the objects above, respectively. (Prepare at least 2 hierarchy switching devices.)
Example: When the hierarchy switching device and initial display hierarchy are set as follows.
(Assume that other settings for displaying alarms have already been completed.)

| Setting of advanced user alarm display | Setting of advanced alarm popup display |
|---|---|
| • Hierarchy switching device : GD10<br>• Initial display hierarchy : General<br>• Place on base screen 1 | • Hierarchy switching device : GD10<br>• Initial display hierarchy : Higher |

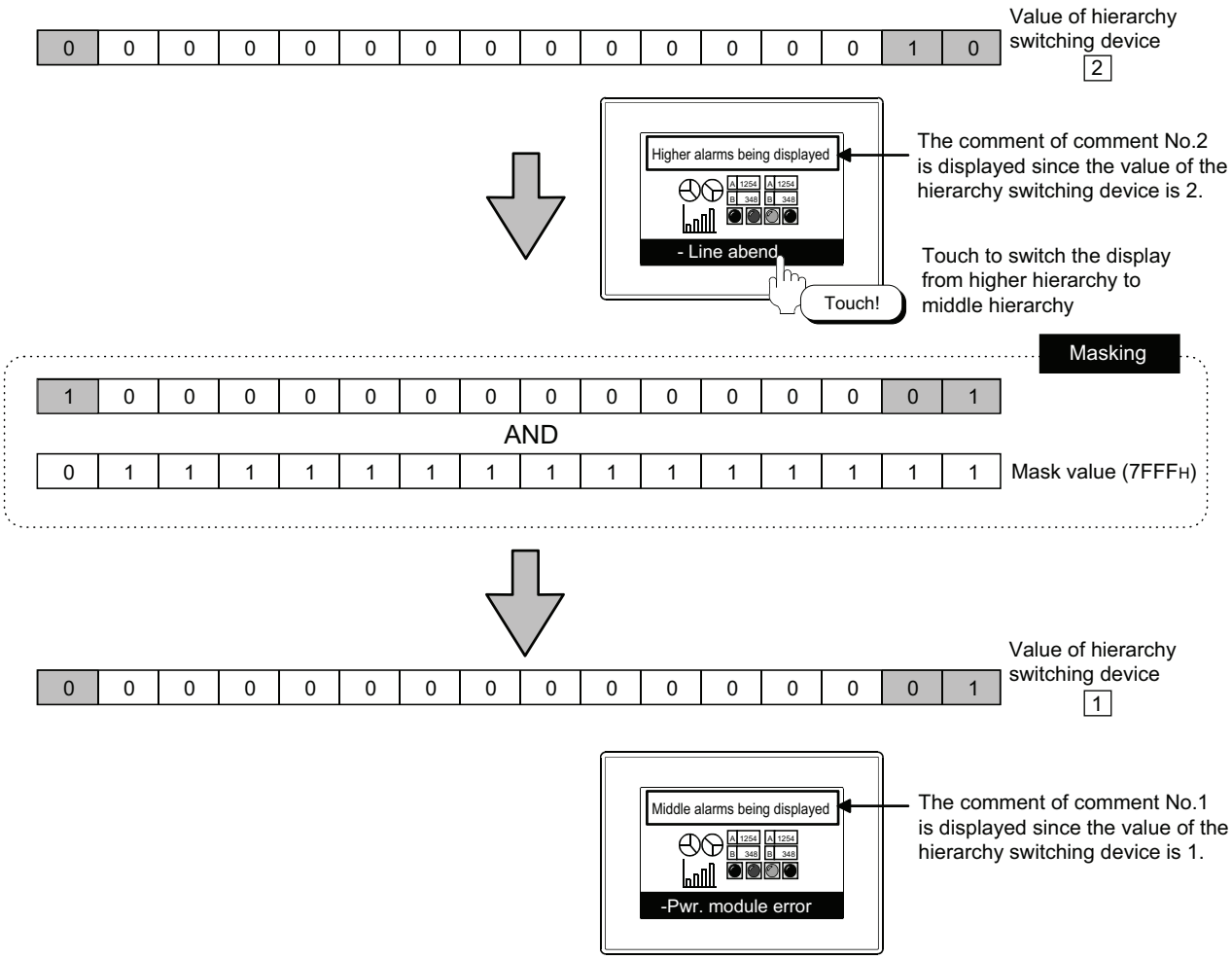


(2) When switching comment display and others using the hierarchy switching device
Since the uppermost bit of the hierarchy switching device (specified on the extended tab) is changed to 1 by touching, mask the device value with 7FFFH so that the uppermost bit is fixed to 0. Comment cannot be displayed correctly without masking.

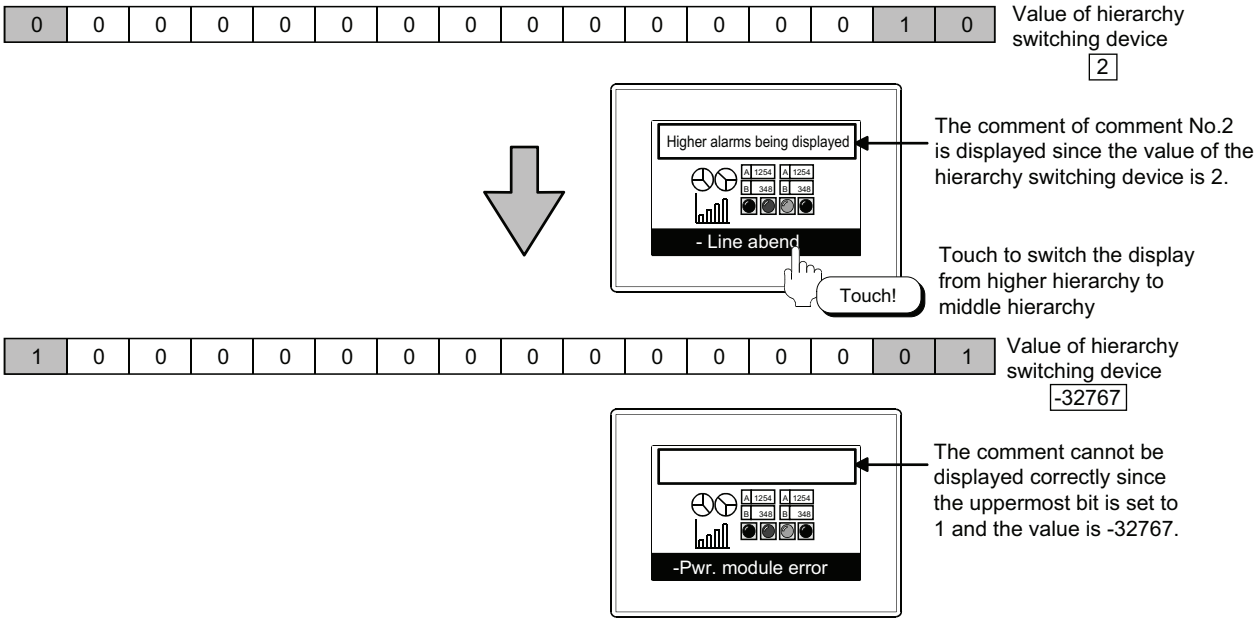
Example: When switching the comments displayed by the value of the hierarchy switching device

| Value of hierarchy switching device | Corresponding comment No. | Comments displayed |
|---|---|---|
| 0 | 0 | General alarms being displayed. |
| 1 | 1 | Middle alarms being displayed. |
| 2 | 2 | Higher alarms being displayed. |

(a) When masking is applied



(b) When masking is not applied




(3) Setting for saving advanced alarm data in the memory card
The touch switch for saving alarms cannot be assigned for advanced alarm popup display.
To place the button for saving advanced alarm data, perform one of the following settings.

(a) When setting the store trigger device by advanced alarm observation
Set the store trigger device on the File Save tab described in the following to save advanced alarm data.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

☞ Section 8.3 Advanced Alarm Observation (Advanced System Alarm)

(b) When store data by the touch switch for advanced alarm display
Place the touch switch for advanced alarm display on the screen where advanced alarm display was specified, and store the data.

☞ Section 8.4.6 Description on touch switches for advanced alarm display

(4) Precautions for using comment group
When a value (column No.) that does not exist is set at the language switching device, "No message" is displayed.

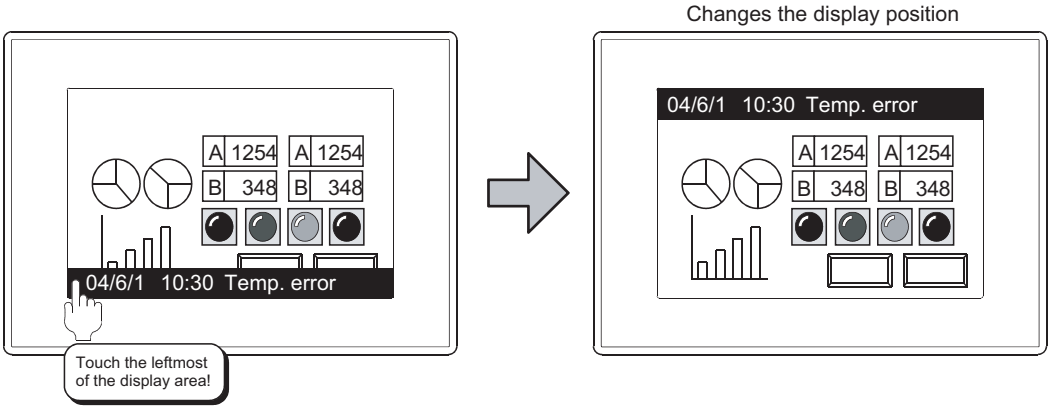
## 2 Precautions for use

(1) When an object is overlapping another object

If an object (touch switch and others) is hidden by advanced alarm popup display, the object cannot be operated.

In such a case, change the position of the advanced alarm popup display area.

Section 8.5.3 1 (3) Switching of display position




(2) When the advanced alarm popup display is not performed

Refer to the following to check the setting.

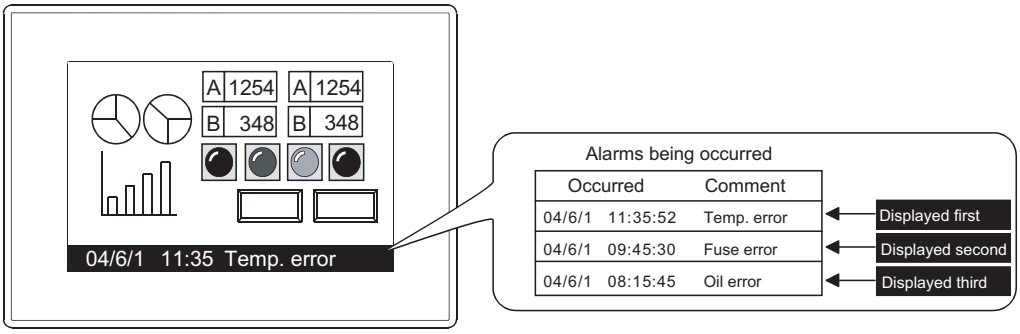
Section 8.5.2 1 Displayable alarm types and settings

(3) Alarm display priority

(a) When the displayed contents have not been changed by "Switching Device" on the extended tab

The alarms are displayed in the descending order of occurred date/time.

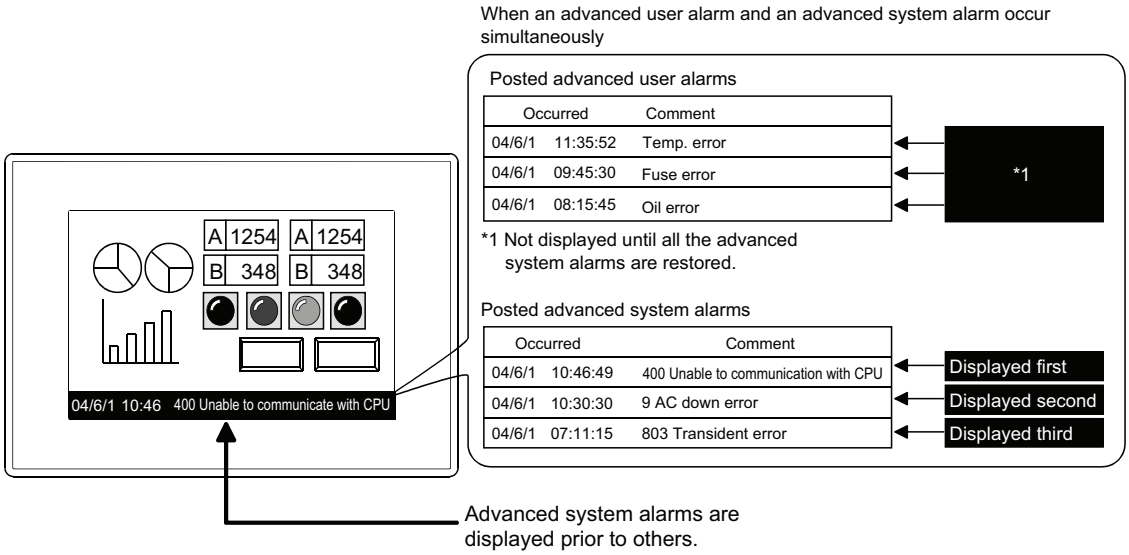
For advanced user alarms, only the alarm of the alarm ID to which "Popup Display" of advanced user alarm observation was checked is displayed.




(b) When the displayed data have been changed by "Switching Device" on the extended tab

The alarms are displayed as the display data specified by the switching device.

(c) When "User Alarm + System Alarm" is selected on "Display Alarm" of the basic tab
If an advanced user alarm and an advanced system alarm have occurred simultaneously, only the advanced system alarm is displayed.
The advanced user alarm is displayed when all the advanced system alarms are restored.




**Point**

Restoration method of advanced system alarms

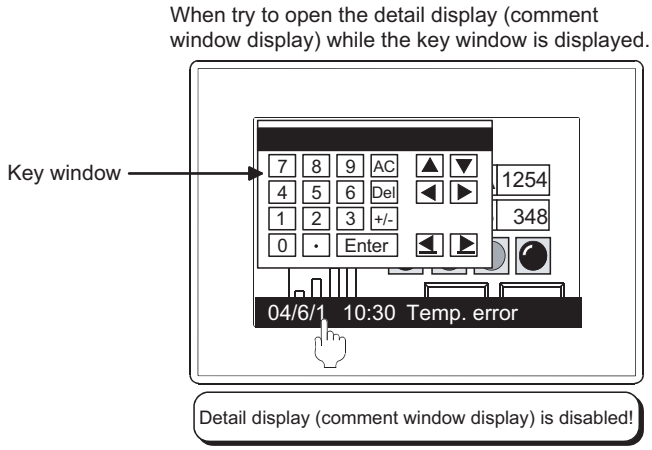
For details, refer to the following.

☞ Section 8.3.2 3 Alarm restoration

(4) When switching the hierarchy displayed by the hierarchy switching device
If switch the hierarchy displayed by the hierarchy switching device with "Display Type" on the basic tab specified to "Fixed", the display is updated at the intervals specified by "Switching Cycle."
Therefore, note that display may not be switched soon after switching the hierarchy.

(5) Refining-display of alarms when many alarms are monitored
If alarms are refined and displayed for many monitoring devices using the switching device in advanced user alarm observation (☞ Section 8.5.3 4 Display switching by device) it may take a few minutes to display the data.

(6) Display of the comment window and key window
When key window is on display, the comment window cannot be displayed.
Make sure to erase the key window before displaying the comment window.



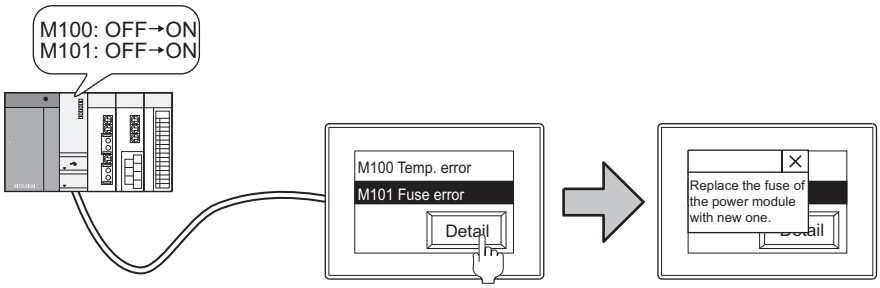

(7) Display of occurred time, checked time and restored time
For occurred time, GOT's clock data is displayed.
For the precautions and restrictions of the clock function for managing GOT's clock data, refer to the following.

☞ Section 2.5 Clock Function

(8) Clearing of advanced alarm popup display (Network error)
The advanced alarm popup display for a network error that occurred in the CC-Link communication unit, MELSECNET/10 communication unit, or MELSECNET/H communication unit will not be cleared until the GOT is powered OFF or reset even if the alarm cause is eliminated.

# 8.6 User Alarm Display

User alarm is a function that displays user-created comments as alarm messages when an alarm occurs. When multiple devices turn on, the comments are displayed as alarm messages in the set display order.



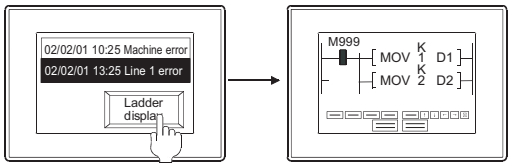

**Remark** Comments to be displayed as user alarm

The comments to be displayed must be registered in advance.
Register the comments that will be displayed on the user alarm as basic comment.

☞ Section 4.1 Comment Registration

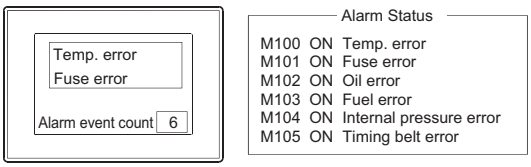
Example:

| Starting the ladder monitor function on alarm list display and searching a device automatically (One-touch ladder jump function) | Displaying the number of alarms occurred |
|---|---|
| ☞ Set by Touch Switch (Section 6.2.9) | ☞ Set on the Device tab |




Displays the ladder monitor function by touch operation.

A device corresponding to a cause of an alarm is automatically searched.




The number of all alarms occurred is displayed on the alarm list display.

## 8.6.1 Relevant settings

For user alarms, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

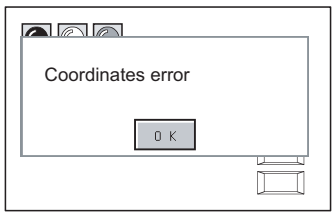
(1) Functions relevant to user alarms and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

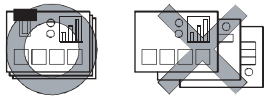
(1) Functions relevant to user alarms and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

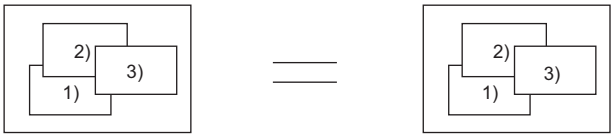


Setting items
• [Carry out check for overlapping objects within GOT]

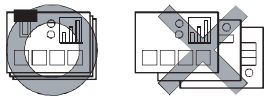
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



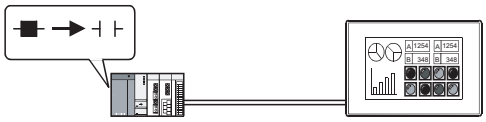
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to user alarms and others

- Key Code Read Complete Signal
  (Read device: System Signal 1-1.b3)

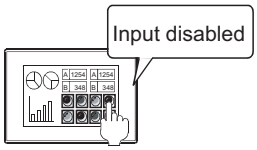
Turns off the key input signal



Key input signal OFF

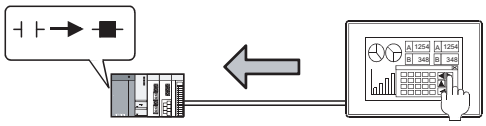
- Key-In Disable Signal
  (Read device: System Signal 1-1.b9)

Disables all key inputs.



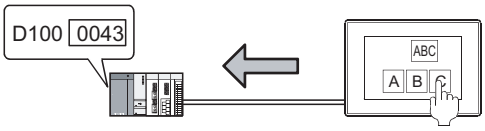

- Key Input Signal
  (Write device: System Signal 2-1.b3)

Notifies the key input.



- Key Code Input
  (Write device)

Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.



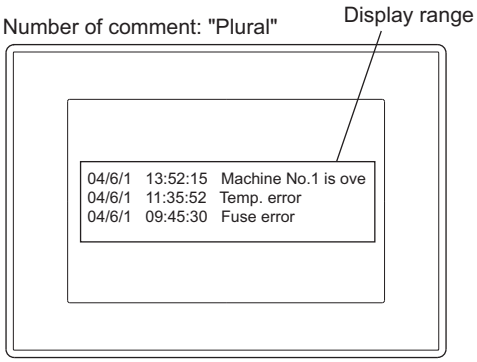

The key code is notified

## 8.6.2 Before setting user alarm

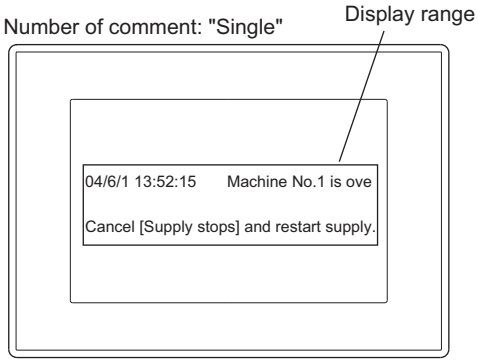
This function displays alarm occurrence time and user-registered comments as alarm messages.
The comments used as alarm messages must be registered as the basic comment in advance.
(☞ Section 4.1 Comment Registration)

### 1 Number of displayed alarms

Select whether to display multiple alarm occurrences (with plural comments) or only one (with single comment).



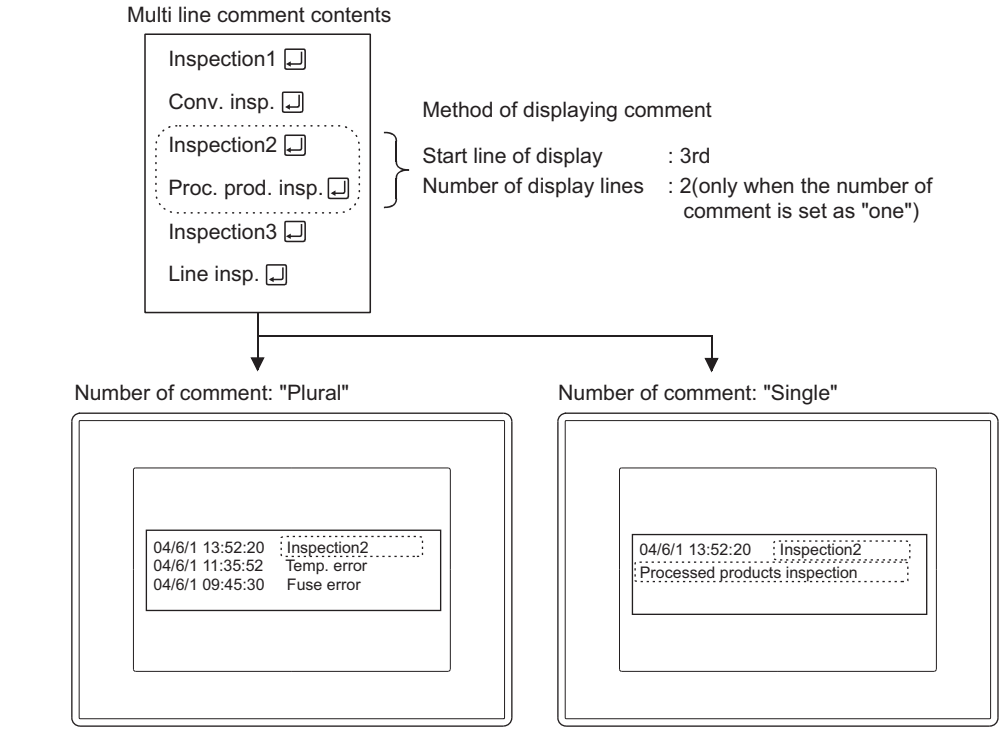

One alarm is displayed in one line.
The text out of the line will not be displayed.
If a comment is longer than two lines, only the first line is displayed.




The texts will be continuously displayed in the second line.
Even if the comment size exceeds two lines, the texts from the second line can be displayed, providing it does not exceed the display range.

**Remark** Display method for multi line comment (☞ Section 8.6.4 3 Extended tab)

Any line of the multi line comment can be specified to display.
Example: Display any line of the 6-line comment that has been registered

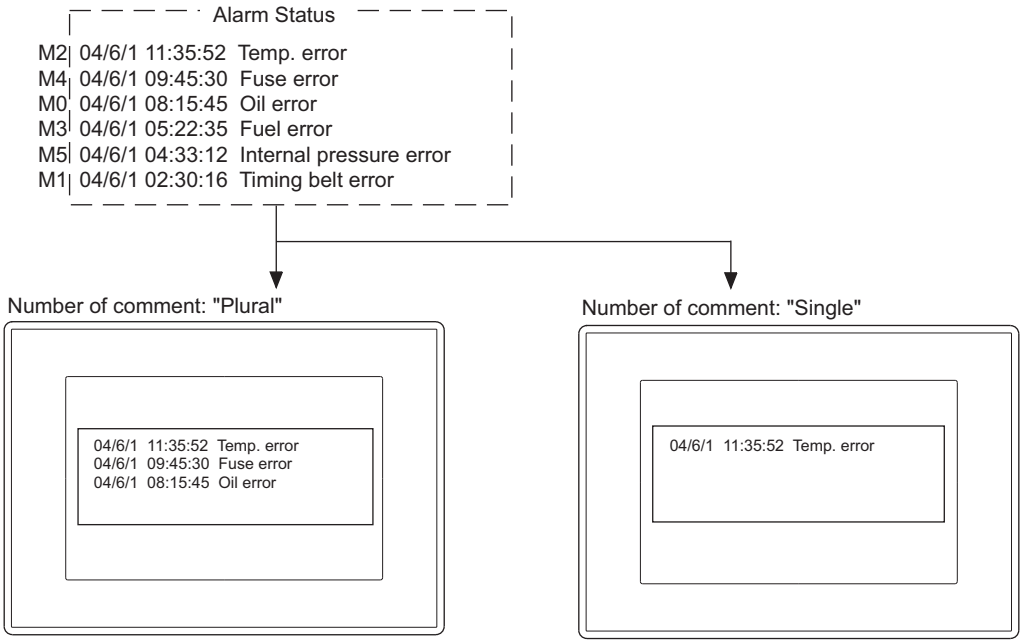



Only one line can be randomly specified to be displayed. The range of lines to be displayed can be specified.

## 2 Sort

Set the order to display alarm occurrences.
It can be set by the device No. order (ascending/descending) and alarm occurrence order (Oldest /Latest).

Example: Display alarms by "Latest" sort

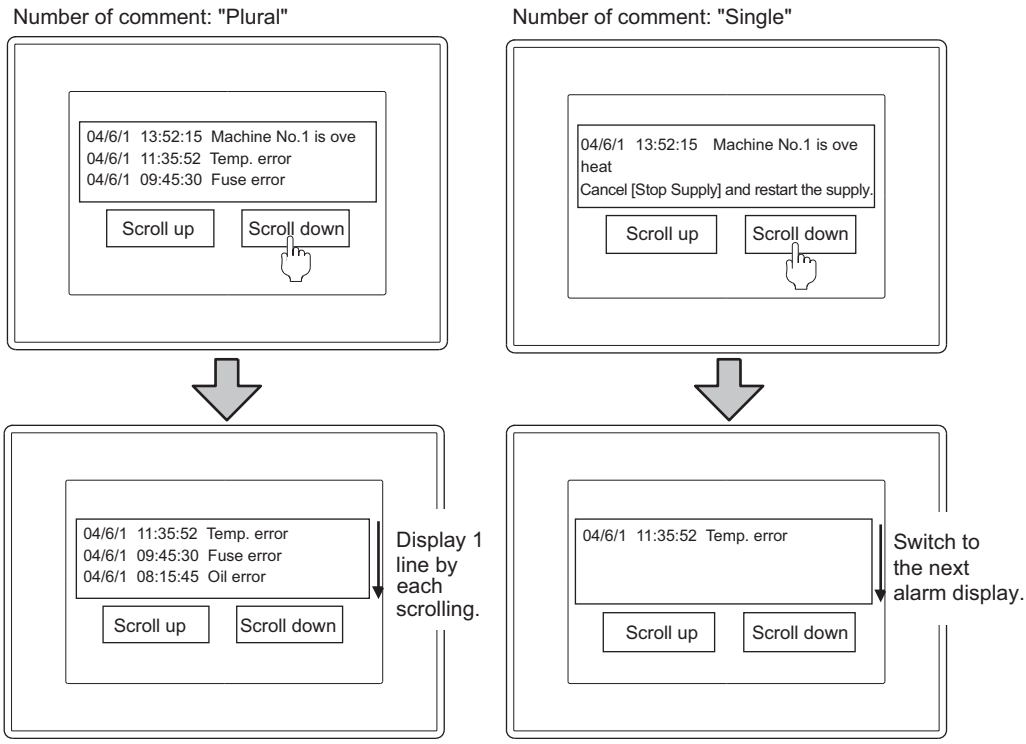



## 3 Scroll on

Checking if the alarm comment exceeds the display range is done by scrolling the user alarm with touch switches

Create the touch switches for user alarm.

☞ Section 8.6.5 Touch switch for displaying user alarm



## 4 Details of display (only for [Plural] number of comment)

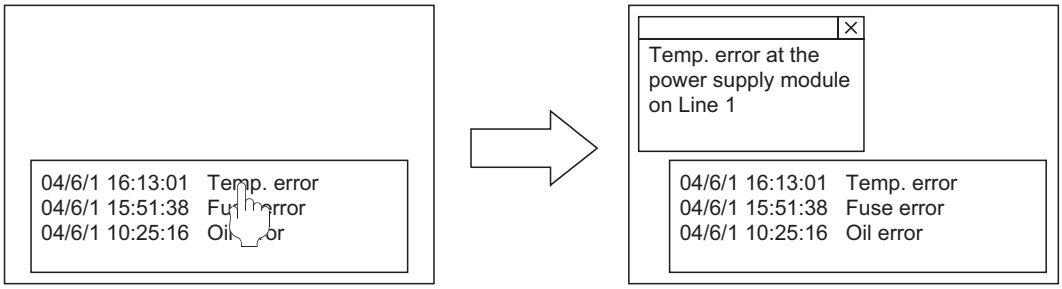
(1) Applicable screen (☞ Section 8.6.4 2 Device tab)

To display the cause and corrective action of alarm in details, select a screen from the following three types.

(a) Comment window

Display the user-registered comment in a comment window.

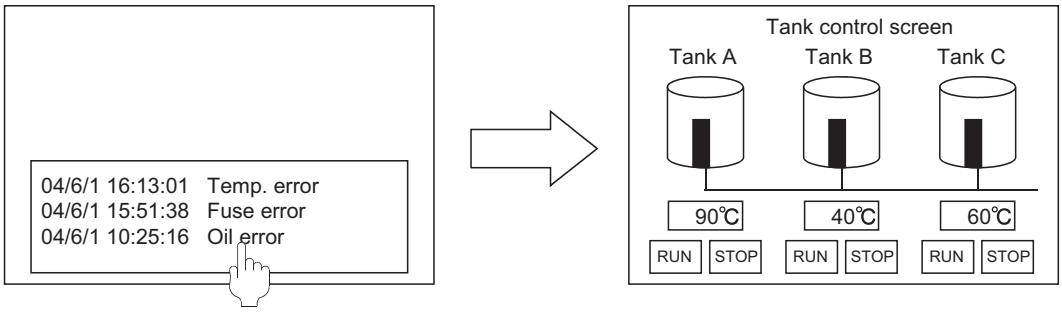
The comment different from that in user alarm comment can be displayed as a detailed comment.




Base Screen1 Base Screen1+Comment Window

(b) Base screen

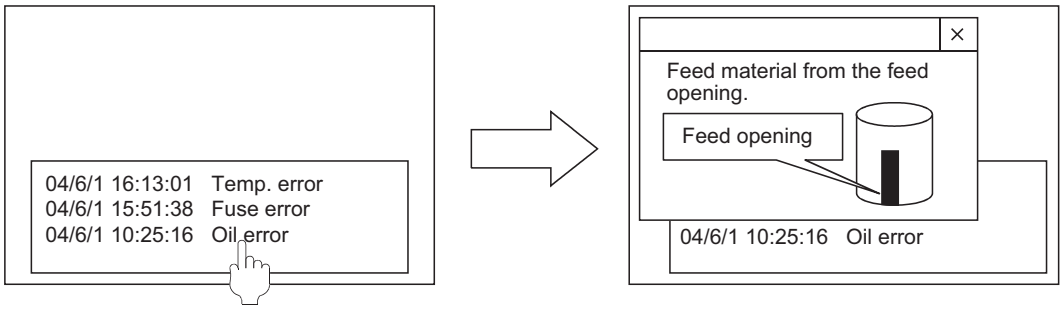
Display the specified base screen.




Base Screen1 Base Screen5

(c) Window Screen

Display the specified window screen (overlap window 1).




Base Screen1 Base Screen1+Window Screen10

(2) Screen that includes user alarm and the corresponding detailed alarm type screen.

| Screen that includes user alarm | Detailed alarm display type screen | | |
|---|---|---|---|
| | Comment window | Window screen | Base screen |
| Base screen | Simultaneous display | Simultaneous display | Switch |
| Overlap window 1 | | Switch | Simultaneous display |
| Overlap window 2 | | Simultaneous display | |
| Overlap window 3 | | | |
| Overlap window 4 | | | |
| Overlap window 5 | | | |
| Superimpose window1 | | | |
| Superimpose window2 | | | |

* Switch : Switch the screen that includes user alarm to the corresponding detailed alarm display type screen.

Simultaneous display : Display the detailed alarm display type screen keeping the screen that includes user alarm on the display.

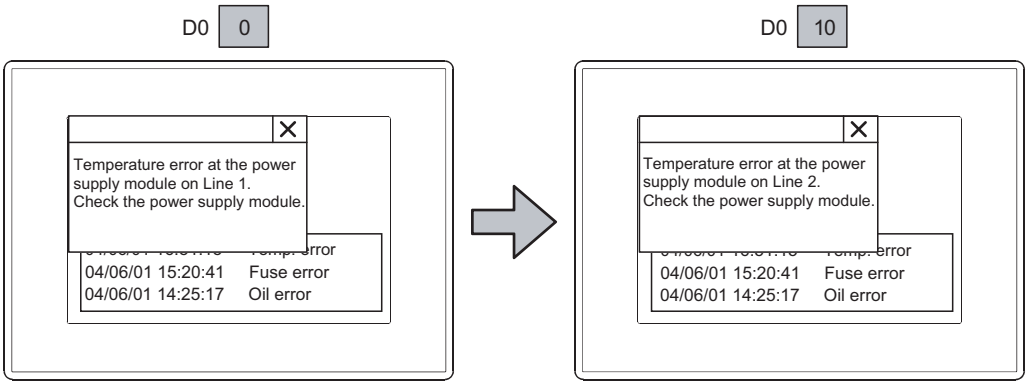
(3) Specifying a comment No. to be displayed or offset value for screen No. (Offset for Datailed No.)
By setting 'Offset for Detailed No.' on the Device Tab, an offset value for details display described below can be specified: (☞ Section 8.6.4 2 Device tab)

- No. of the basic comment that will be displayed on the comment window
- No. of the Base screen and Window screen

While monitoring by the GOT, the comment No. or screen No. can be switched using the device.

Example: When the device for "Offset for Detailed No." is set to "D0", and the following comments are registered

| Comment No. (Basic comment) | Comment |
|---|---|
| 1 | Temperature error at the power supply module on Line 1.<br>Check the power supply module. |
| 2 | Replace the fuse of the power supply module on Line 1. |
| ⋮ | ⋮ |
| 11 | Temperature error at the power supply module on Line 2.<br>Check the power supply module. |
| 12 | Replace the fuse of the power supply module on Line 2. |




Comment No.1 is displayed

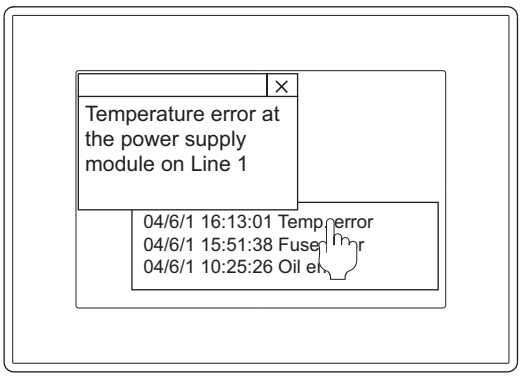
Comment No.11 is displayed

**Hint!** To match the user alarm display with details screen:

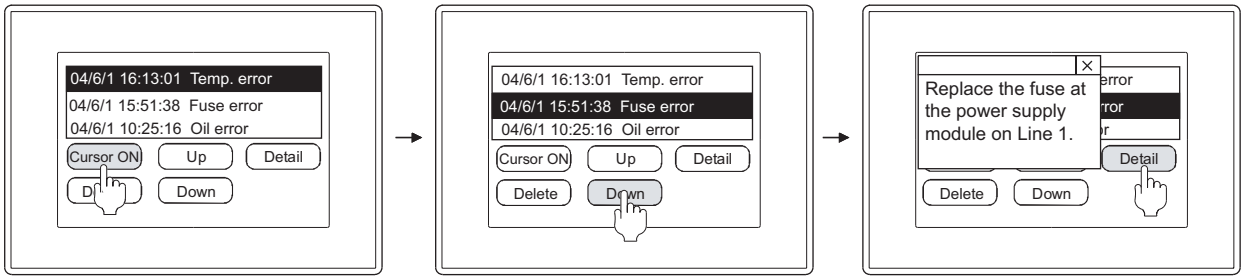
By using "Offset for Detailed No." the comment on the user alarm cannot be changed.
An offset value for comment No. (basic comment) on the user alarm should be specified in "Offset for Comment No." on the Extended tab.
(☞ Section 8.6.4 3 Extended tab)
Match display the user alarm with the comment on the details screen by using "Offset for Detailed No. and "Offset for Comment No.".

(4) Display method
Select the method for details display from the following two types.

(a) One touch (☞ Section 8.6.4 2 Device tab)
Touch the user alarm directly to display the detailed information.




(b) Touch switch (☞ Section 8.6.5 Touch switch for displaying user alarm)
Create touch switches for user alarm to display the detailed information.




Display the cursor → Move (up/down) the cursor to the alarm for details display. → Display the detailed information

## 5 Store memory

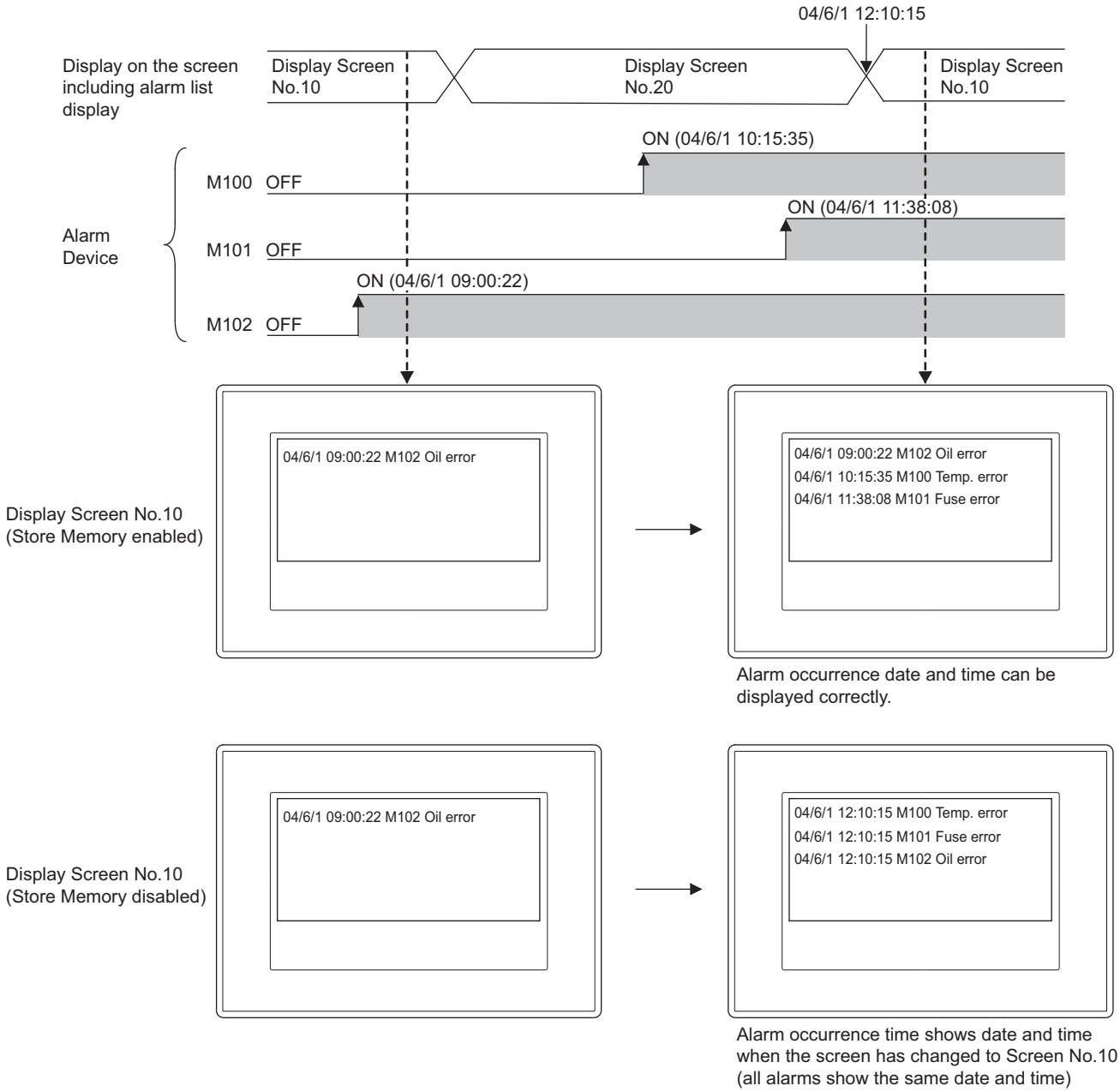
Check "Store Memory" when collecting the information on alarm occurrence date/time even when a screen including no user alarm is displayed.
The GOT monitors the alarm occurrence status at all times and stores the information in the GOT internal memory.
This setting item is provided on the Trigger tab.

With the settings made, the alarm occurrence date/time is displayed as follows:

Store Memory enabled: The alarms are displayed with the date and time when the alarm actually occurred.

Store Memory disabled: The alarms are displayed with the time and date when the screen is displayed.

Example: The following shows differences of the user alarm display according to the "Store memory" settings (enabled or disabled) when the screen switches and the alarm devices turn ON/OFF at the timing below.



**Point**

(1) The timing when the data stored in memory is cleared.

The data stored in memory is cleared when the GOT is reset or powered off.

(2) The timing when the alarm occurrence date/time is cleared with the Store Memory disabled.

When "Store Memory" is disabled, alarm occurrence time information is not collected at any of the timings below, causing the collected alarm occurrence time to be cleared:

- The screen including the user alarm is hidden and then displayed again.
- The screen is switched to the base screen while the user alarm is on the superimpose window.
- The security switching is made.
- The language switching is made.
- The machine No. switching is made.
- The offset switching is made.

## 8.6.3 Placement and settings

1. Register comments in advance.

   Register alarm messages in a basic comment. (☞ Section 4.1.4 1 Registering comments as basic comment)

2. Carry out either of the following operations:

   - Select the [Object] → [Alarm List] → [User Alarm] from the menu.
   - Click (User Alarm).

3. Click on the position where user alarm to be located to complete the arrangement.

   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)

4. Double click on the arranged user alarm to display the setting dialog box.

   For the setting method, refer to the explanation on the next page.

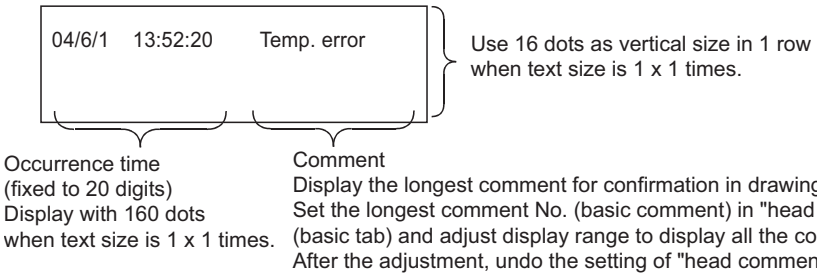
5. After setting user alarm, set the touch switch for scrolling user alarm up/down and to display the alarm detailed information.

   ☞ Section 8.6.5 Touch switch for displaying user alarm

**Point**

Method of adjusting display range

Adjust the display range as following when the comment cannot be displayed completely.



**Hint!**

Easy setting method

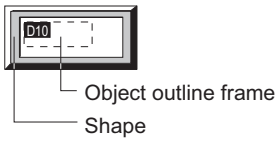
The direct setting of object can be made on property sheet.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

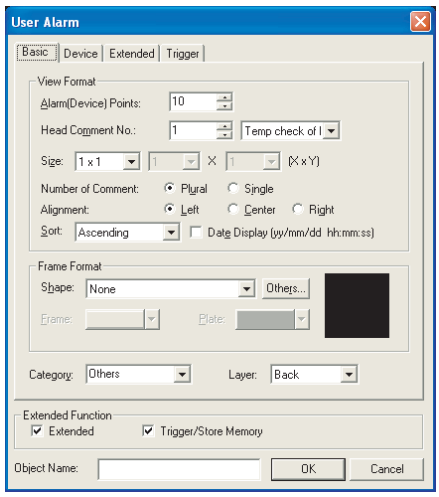



☞ Section 5.3.3 Object size change

## 8.6.4 Setting items

### 1 Basic tab

Set the number of monitor devices and view format (number of comments/sort/frame).




**Basic** | Device | Extended | Trigger

| Items | | Description | Model |
|---|---|---|---|
| View Format | Alarm (Device) Points*1 | Set the number of monitor devices.<br>The devices that can be set are different on the settings made in [Device No.] of device tab.<br>• In [Continuous] setting : 8192 points (Up to 512 points for GT10)<br>• In [Random] setting : 512 points ([Random] cannot be set for GT10.) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Head Comment No. | Set the comment to be displayed when an alarm occurs. (Setting range: 1 to 32767)<br>The comment No. (Basic comment) set here is assigned in head device of device tab.<br>Continuous comment No. will be set respectively according to the number of monitor devices from the comment No. of head comment No. (Basic comment)<br><br>Example: Head device: M100, head comment No.: 1<br>Monitor device — Comment No.(Basic comment)<br>M100 ····· 1 Temp. error ——— Head comment No.<br>M101 ····· 2 Fuse error<br>M102 ····· 3 Oil error<br>} The comment of continued No. is set from head comment No. | |
| | Size | Select the size of text to be displayed.<br>When (1 x 1) is set, the font size is 8 x 16 dots.<br>When displaying comments that is set to high quality font in [Basic comment] as high quality font, set the font size to the multiple of even number.<br>If set to the multiple of odd number, it will not be displayed as high quality font.<br>A 1 to 8<br>1 to 8 | |
| | Number of Comment | Set the number of comments to be displayed.<br>Plural : Display plural comments in frame.<br>Single : Display only one comment in frame. | |

*1 For GT10, 512 points can be set consecutively. (Random setting is disabled.)

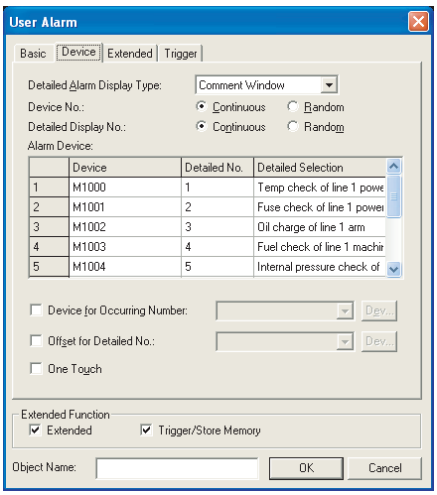
(Continued to the next page )

Basic | Device | Extended | Trigger

| Items | | Description | Model |
|---|---|---|---|
| View Format | Alignment | Select the position to display the text.<br>Left: AAAA BB CCCC  Center: AAAA BB CCCC  Right: AAAA BB CCCC | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Sort | Select the sort of comment.<br>(For GT10, [Oldest] and [Latest] cannot be selected.)<br>Ascending : display according to the order of the smallest to the biggest.<br>Descending : display according to the order of the biggest to the smallest<br>Oldest : display according to the order of the oldest to the latest<br>Latest : display according to the order of the newest to the oldest.<br><br>When monitor is set randomly, [Ascending] [Descending] will be based on the setting order of device.<br>Example: When making following settings in device tab.<br><br>Alarm Device:<br>Device<br>1 M100 ……..Temp. error<br>2 M101 ……..Fuse error<br>3 M102 ……..Oil error<br>Display comment<br><br>Displayed in [Ascending]<br>M100 ON Temp. error<br>M101 ON Fuse error<br>M102 ON Oil error<br><br>Displayed in [Decending]<br>M102 ON Oil error<br>M101 ON Fuse error<br>M100 ON Temp. error<br><br>When [Oldest] or [Latest] is selected, set [Store Memory] on the Trigger tab for collecting data of the alarm occurrence date. | |
| View Format | Date Display | Check this item to display date when an alarm occurs.<br>Date is displayed in the form of "yy/mm/dd: hh: mm: ss"<br>(Year is displayed with the last 2 digits, and hour is displayed in the 24-hour system.)<br>04/06/01␣09:30:40 ␣␣␣ Temp. error<br>Space Space<br>20 digits Comment | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| Frame Format | Frame<br>Plate | Select the frame color/plate color.<br>Machine fault<br>Frame<br>Plate | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Device tab

Set the monitor device and the detailed alarm display type when an alarm occurs.




Basic | **Device** | Extended | Trigger

| Items | | Description | Model |
|---|---|---|---|
| Detailed Alarm Display Type | | Select the method of displaying the detailed alarm comment information.<br>This setting is usable only when [Plural] is selected in [Number of Comment].<br>(For GT10, [Window Screen] cannot be selected.)<br>Not Display : No detailed information to be displayed.<br>Comment Window *1 : A comment window is displayed to provide detailed information.<br>A registered comment is used for the window.<br>(Register comments as basic comment.)<br>Base Screen : The detailed information is displayed on a base screen.<br>The base screen specified by detailed displayed No. of the alarm device is used.<br>Window Screen : Display the window screen (Overlap window1) by details display.<br>Display the window screen that is set in the detailed No. of alarm device. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device No. | | Select the method of setting the device to be monitored.<br>(For GT10, [Random] cannot be selected.)<br>Continuous : Devices are consecutively numbered from the set device.<br>Random : Devices are numbered at random. | |
| Detailed Display No. | | Select the method of displaying the comment window/base screen/window screen used for providing detailed information of alarm.<br>Continuous : Devices are consecutively numbered starting from the set comment No.(Basic comment)/base screen No./window screen No.<br>Random : Devices are numbered at random. | |
| Alarm Device | | Setting the screen No. for monitor device and detailed display. | |
| | Device | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | |
| | Detailed No. | Number the comment (Basic comment)/base screen/window screen used for displaying the detailed information when an alarm occurs (when the specified device condition is satisfied.) | |
| | Detailed Selection | Select the comment to be displayed in details when selecting [Comment Window] in [Detailed alarm display type].<br>The comment can be displayed when confirming the comment contents. | |
| Device for Occurring Number | | Check this item to store the number of alarms (the number of bit devices that have turned ON) in the word device.<br>After checking, set the device to store alarms.<br>(☞ Section 5.1 Device Setting) | |

(Continued to the next page)

Basic | **Device** | Extended | Trigger

| Items | Description | Model |
|---|---|---|
| Offset for Detailed No. | Check this item to switch the detailed information on screen according to the value of one device.<br>The comment No. (Basic comment)/base screen No./window screen No. set as the detailed No. of alarm device is added to the device (offset device) value set here.<br>(The data size of the set device is fixed to 16 bits)<br>For the details about offset function, refer to the following.<br>(☞ Section 5.7 Offset Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| One Touch | Check this item to display the detailed display screen by touching any row of the user alarm.<br>(This setting is usable in the basic tab when [Plural] is set in [Comment Number]) | |

For details of *1, refer to the following.

## *1 Display Method of Comment Window

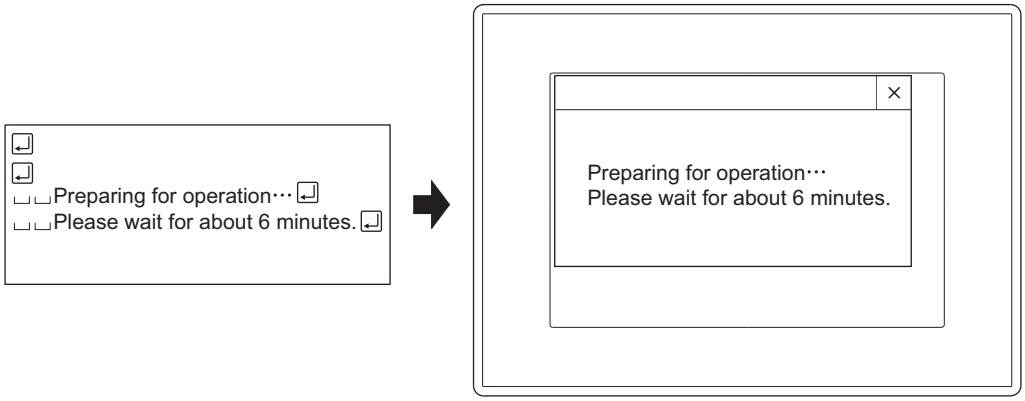
(1) Number of characters available for comment window

| GOT | Number of characters available for comment window |
|---|---|
| GT1695, GT1685, GT1675, GT1665, GT1595, GT1585, GT157□, GT156□, GT155□ (GT1555-V only) , GT SoftGOT1000 | 39 characters × 11 lines (429 characters) |
| GT155□ (GT1555-Q and GT1550-Q only) , GT115□, Handy GOT, GT105□, GT104□ | 23 characters × 7 lines (161 characters) |
| GT1030, GT1020 | 18 characters × 3 lines (54 characters) |

(2) Comment window is displayed on top-left of base screen
The operation of moving and closing the window is the same as that of the window screen.

(3) Comment text is displayed as follows
- Text size: fixed to 1 × length, 1 × width
- The setting reverse and blink are not supported, regardless of the comment registration settings.

(4) The comment lines are displayed in the comment window as follows.
- Comments are displayed from top-left to right in the comment window.
- If the comment exceeds the display range of the comment window, it is continued starting a new line.
- To place the comment in the center of the comment window, make adjustment using the line feed for the comment.



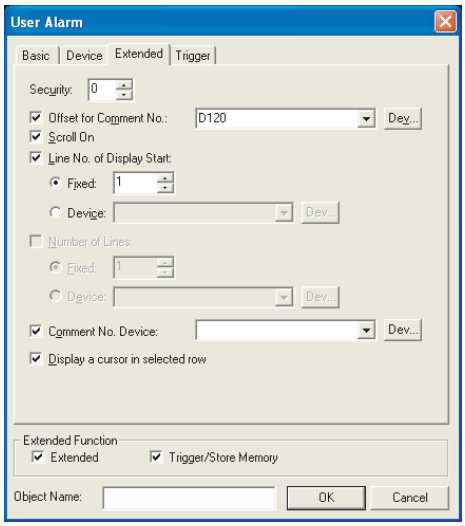

When a comment is registered

Comment window display

## 3 Extended tab

Set the security, offset.

Check the Extended Function at the bottom of dialog box to display this tab.




Basic | Device | **Extended** | Trigger

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Offset for Comment No. | Check this item to switch the comment on the user alarm according to the device value.<br>The device (offset device) value set here is added to the comment No. (Basic comment) that has been set in "Head Comment No." on the Basic tab.<br>(The data size of the device is fixed to 16 bits.)<br>For details on offset function, refer to the following.<br>(☞ Section 5.7 Offset Function) | |
| Scroll On | Check this item to operate the user alarm by using a touch switch for which key code has been set for user alarm.<br>After checking, arrange above touch switch.<br>(☞ Section 8.6.5 Touch switch for displaying user alarm)<br>Note that this item is not available in the following cases:<br>• If the data list and alarm history are set to be displayed on the same screen<br>• If multiple user alarms including the one with [Scroll On] checked are placed on a single screen. | |
| Line No. of Display Start | Check this item to specify the display start line of the multiple-line comment.<br>Then, set the number of the line.<br>Fixed : Set by direct input (1 to 32767)<br>Device : Select this option to set the device value to the start line No.<br>Then, set the device. (☞ Section 5.1 Device Setting)<br>When comment appears as blank, check if the value set as the start line No. is within the number of created comment lines. | |

(Continued to the next page)

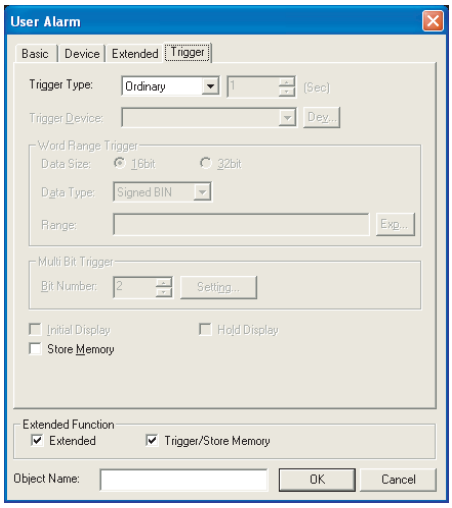
Basic | Device | **Extended** | Trigger

| Items | Description | Model |
|---|---|---|
| Number of Lines | Specify the number of lines of the multiple-line comment.<br>This option is available only when "Number of Comments" is set to "Single" (set in the Basic tab).<br>Then, set the value of each line.<br>Fixed : Set by direct input. (1 to 32767)<br>Device : Select this option to set the device value to the number of comment lines.<br>Then, set the device. (☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment No. Device | Specify the device to store the comment No. of the alarm.<br>For one comment only, the comment No. of the displayed alarm is stored.<br>For multiple comments, the comment No. of the alarm at the cursor position is stored.<br>To display the cursor in the row of the occurred alarm, the following settings are required.<br>• Check [Display a cursor in selected row].<br>• Place the touch switch for the alarm display (key code switch (cursor display)) on the screen that the alarm list display is set.<br>For how to set the touch switch, refer to the following.<br>(☞ Section 8.6.5 Touch switch for displaying user alarm) | |
| Display a cursor in selected row | Check this item to display a cursor by touching the displayed alarm.<br>(A cursor can be displayed at alarm without setting of a touch switch.)<br>Setting [Comment No. Device] enables to store the comment No. of the touched alarm in a device. | |

## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details about trigger setting, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Device | Extended | **Trigger**

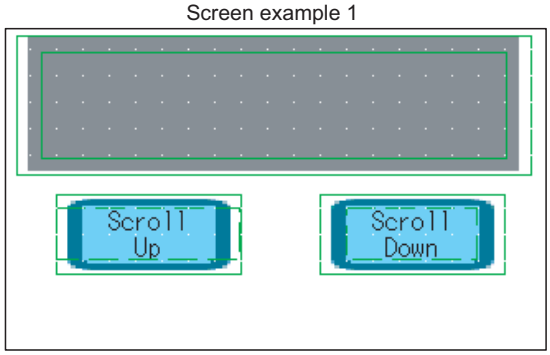
| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying which the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Rise*1<br>• Fall*1 • Sampling*1 • Range*1 • Bit Trigger*1 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items | |
| | Data Size | Select the data size (16 bits/32 bits) of the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real)<br>Real can be selected only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Exp.] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger.After setting, click on the [Seting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object display needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |
| Hold Display | | Check this item to hold the object data when the display condition is not met in the case [Trigger Type] is set to [ON], [OFF], or [Bit Trigger]. If not checked, the object will be deleted when the trigger is not satisfied. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Store Memory | | Check this item to collect the alarm occurrence time while the screen where user alarm has not been set is displayed. (☞ Section 8.6.2 5 Store memory)<br>The alarm occurrence status are always monitored and stored to the GOT internal memory.After checking, set the cycle to collect data (1 to 3600 s) in [Trigger Type]. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 The setting is disabled for GT10.

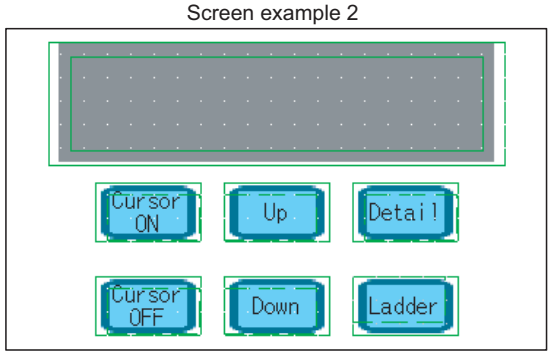
## 8.6.5 Touch switch for displaying user alarm

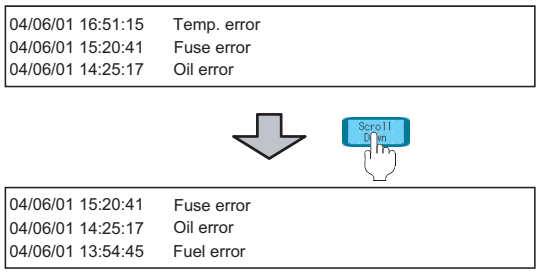
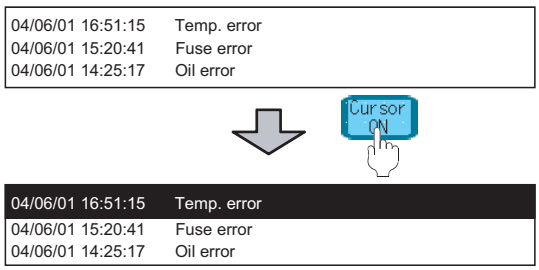
Touch switch for displaying user alarm can be read from the library for GT Designer2.
Also, text on the touch switch and its shape can be changed by the user.
By setting a key code to touch switch, a user can create a touch switch for displaying user alarm.

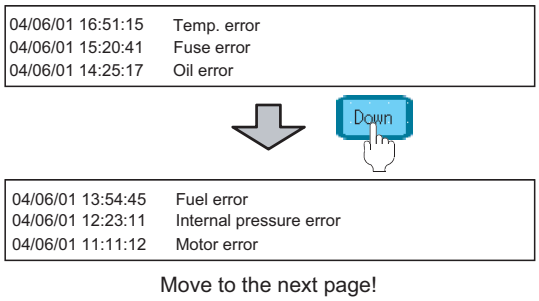
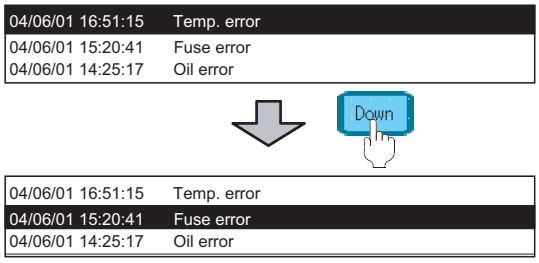
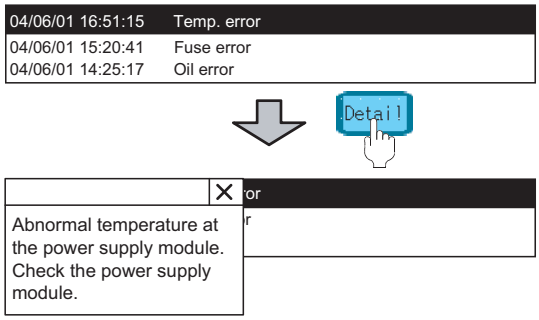
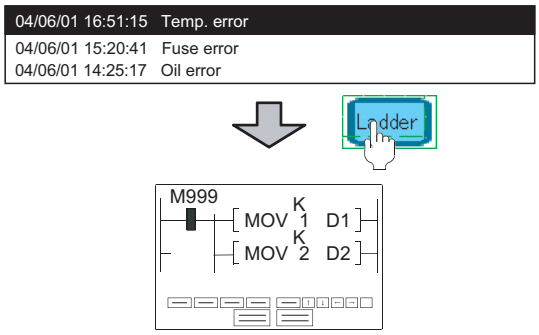
Screen example 1




Screen example 2




| Touch switch | Key code | Description |
|---|---|---|
| Scroll up by one line | 00F2H | Scroll the display up/down one line.<br>This function is available only when the cursor is hidden.<br>  <br><br>Scroll down by one line! |
| Scroll down by one line | 00F3H | |
| Show cursor | FFB0H | Show/Hide the cursor.<br>  <br><br>Show the cursor! |
| Hide cursor | FFB1H | |

| Touch switch | Key code | Description |
|---|---|---|
| Move cursor upward<br> <br> | FFB2H | • If the cursor is hidden:<br>The cursor moves to the previous/next page.(page by page)<br>  <br><br>Move to the next page! |
| Move cursor downward<br> <br> | FFB3H | • If the cursor is shown:<br>The cursor moves up/down one line. (line by line)<br>  <br><br>Move the cursor! |
| Display detail<br> <br> | FFB8H | Display the screen for providing details on the selected alarm.<br>  <br><br>Display detail! |
| Display ladder<br> <br> | FFBCH | Searches alarm device automatically by coil-search, and displays the result in the ladder monitor screen. (One-touch ladder jump function)<br>  <br><br>Ladder monitor screen is displayed!<br>(The specified device in ladder is displayed.) |

**Point**

Enabling the touch switch to be used for displaying user alarm:

Check "Scroll On" on the Extended tab to use the touch switch for displaying user alarm. (☞ Section 8.6.4 3 Extended tab)

**Hint!**

Using switches that operate differently depending on the display status

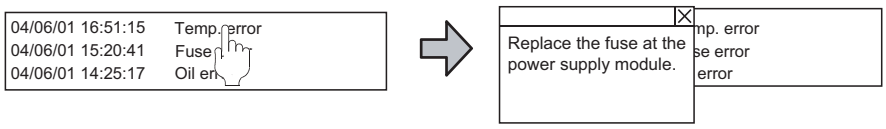
Move cursor upward (FFB2H)/Move cursor downward (FFB3H) operate differently depending on the display status:

- If the cursor is hidden, the display is moved to the previous/next page.
- If the cursor is displayed, the display is moved up/down one line.

**Remark**

(1) Operating by touching user alarm directly

By setting "One Touch" on the device tab, the screen for providing details on the selected alarm. (☞ Section 8.6.4 2 Device tab)




Display detail

(2) Setting touch switch

For details, refer to the following.

☞ Section 6.2.9 Setting items of key code switch

## 8.6.6 Precautions

This section provides the precautions to be taken when using user alarm.

### 1 Drawing precautions

(1) Maximum number of objects that can be set on one screen
Up to 24 user alarm objects can be set.

(2) When [Store Memory] is checked

(a) Up to 16 user alarm objects can be set in the whole project when [Store Memory] is set.

(b) Up to 8192 alarm list objects can be set in the whole projects as the devices applicable for monitoring by [Store Memory]. The preset number of alarm lists is not relevant.

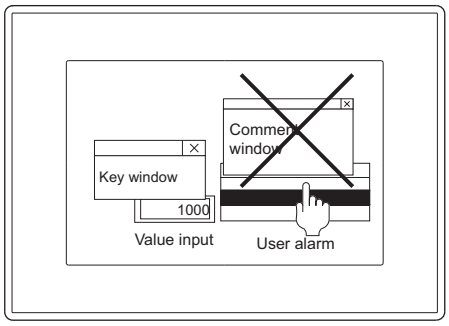
(3) The character display of the line on which the cursor is currently displayed
The characters of the line on which the cursor is currently displayed are not displayed when the screen pattern color or [Plate] of the Basic tab is set to White.
(Characters will be hidden since the color of the text and cursor are the same with the screen color.)
To display the characters of the line on which the cursor is currently displayed, set the screen pattern color or [Plate] of the Basic tab to other than White.

(4) When using GT10
Both the user alarm and alarm history cannot be set on one screen.

(5) Precautions when selecting [Random] for [Device No.]
When selecting [Random] for [Device No.], set the same quantity of alarm devices as the value specified for [Alarm (Device) Points].
If the number of set alarm devices is less than the value specified for [Alarm (Device) Points], all the user alarms are not displayed on a GOT.

### 2 Precautions for use

(1) Display of comment window
When key window is on display, the comment window cannot be displayed.
Make sure to erase the key window before displaying the comment window.



(2) Displaying the alarm occurrence time

To check alarm occurrence time, display the GOT clock data.

For precautions on the clock function that controls GOT time data and relevant restrictions, refer to the following.

☞ Section 2.5 Clock Function

(3) When used with other objects

After checking [Scroll On] in the extended tab (settings to use touch switch for user alarm), the following objects cannot be set in the same screen.

- Data list function object
- Alarm history function object

(4) Touch switch for user alarm

(a) Setting screen

Make sure to set the touch switch for user alarm and user alarm in the same screen.

If not, the touch switch may operate instead of the user alarm, when both alarm history and data list are displayed.

(b) Setting only the touch switch on another screen

To set only the touch switch for user alarm on another screen, make the setting by referring to the following priority order:

- Priority order corresponding to the touch switch screen

Screen for which touch switch has been set

Base screen

Call screen 1 to 5

Superimpose window 1

Superimpose window 2

Overlap window1

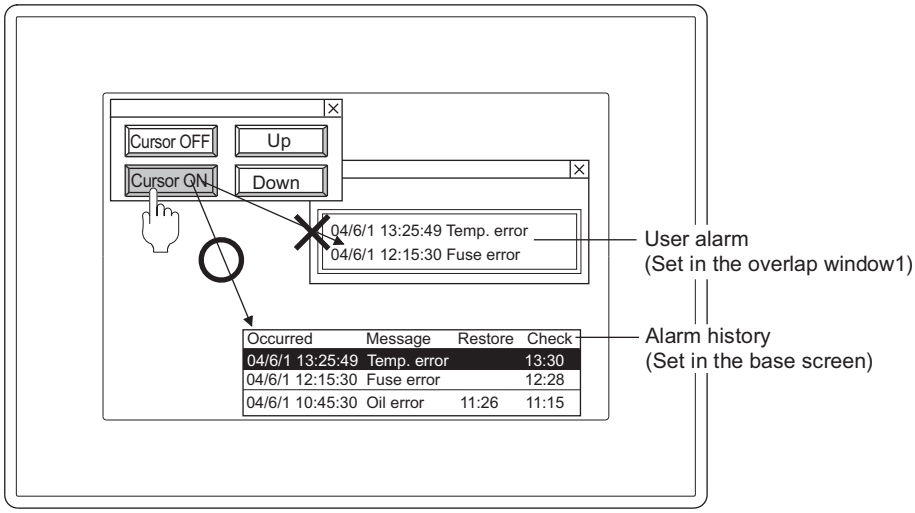
Overlap window2

Overlap window3

Overlap window4

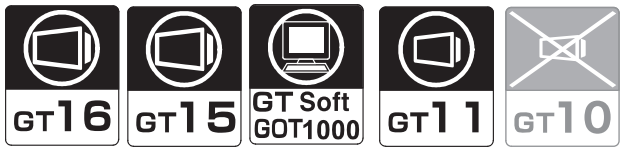
Overlap window5

Example: When touch switch has been set for other screens (overlap window2)

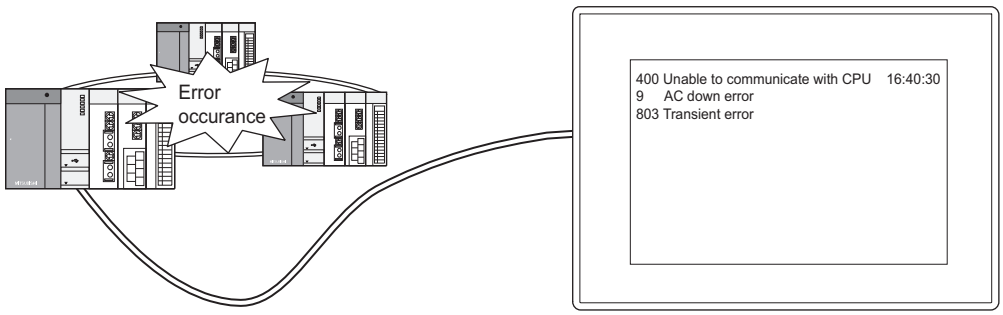



As the base screen has higher priority,
operates it as the touch switch of alarm history.

# 8.7 System Alarm Display




System alarm is a function used to display error codes and error messages when error occurs in the GOT, controller or the network.
Displaying system alarm allows a user to check how the error occurred and its cause.




**Remark** Comments to display

Comments to display in system alarms do not need registration (Registered in GOT).

## 8.7.1 Relevant settings

For advanced system alarms, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

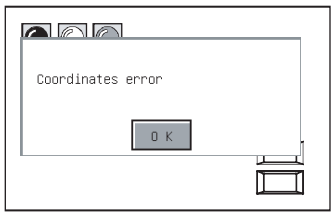
(1) Functions relevant to advanced alarm observation (advanced system alarms) and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

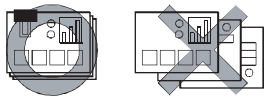
(1) Functions relevant to system alarm and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

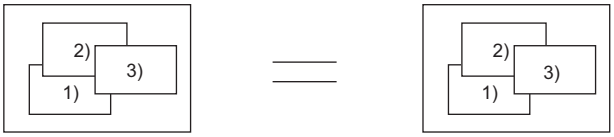


Setting items
• [Carry out check for overlapping objects within GOT]

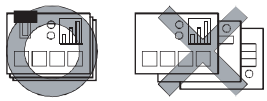
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



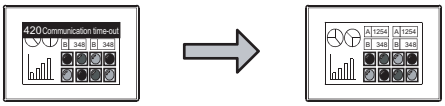
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

### 2 System information (☞ Section 3.6 System Information Setting)

(1) Functions relevant to system alarm and others

• GOT Error Reset Signal
(Read device: System Signal 1-1. b13)

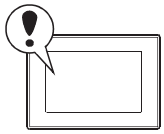
Resets the system alarm or system information (GOT error code, GOT error detecting signal).

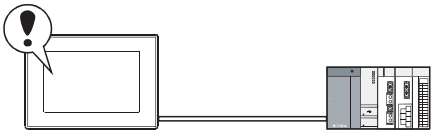



The system alarm message is cleared

## 3 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

(1) Functions relevant to advanced alarm observation (advanced system alarms) and others

| • System alarm GOT error channel No.<br>• (Write device: GS262) |
|---|
| The channel No. with a system alarm (GOT error) is stored in the device.<br>  |

| • System alarm CPU error channel No.<br>• (Write device: GS263) |
|---|
| The channel No. with a system alarm (CPU error) is stored in the device.<br>  |

| • System alarm network error channel No. (Write device: GS264) |
|---|
| The channel No. with a system alarm (network error) is stored in the device.<br> |

## 8.7.2 Before setting system alarm

### 1 Types of system alarm

System alarm has the following three types:

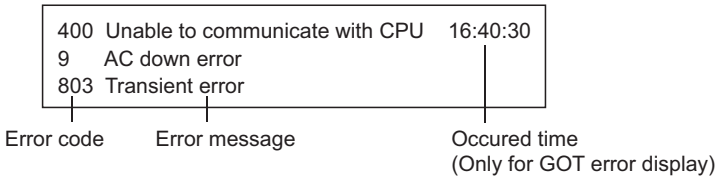
1) GOT error : A GOT error is displayed as an alarm
2) CPU error : A controller error is displayed as an alarm
3) Network error : A network error is displayed as an alarm

### 2 Method of collecting data

Even while the screen that does not include system alarm is displayed, data are always collected every 3 seconds and stored into GOT.

### 3 Displayed information

The error code, error message as well as error time will be displayed in system alarm.
The error code and error message for display are provided by default within GOT. Therefore, they do not need to be created by user.




### 4 Method of displaying alarm

(1) Maximum number of alarms can be displayed
Each system alarm is displayed in one line type; up to 3 lines can be displayed.
The alarm display is updated when new alarm is detected.

Example: When new alarm (Parameter error) is detected by controller

(2) Display priority
When the display range is lower than 2 lines, alarms will be displayed in the following order.
1) GOT error
2) CPU error
3) Network error

When the number of alarm occurrence exceeds the display range, the lower priority alarms will not be displayed.
The error code, error message and error time beyond a single line will not be displayed.

### 5 Alarm causes for each alarm type and actions for error code

For the details, refer to the following manuals.

☞ GT□ User's Manual

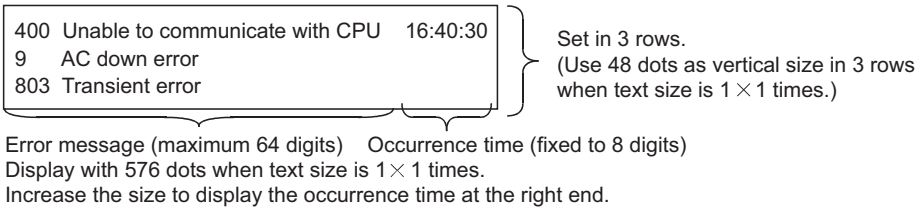
## 8.7.3 Placement and settings

1. Carry out either of the following operations.
   - Select the [Object] → [Alarm List] → [System Alarm] from the menu.
   - Click (System Alarm).
2. Click on the position where System Alarm to be located to complete the arrangement.
3. Double click on the arranged system alarm to display the setting dialog box.
   For the setting method, refer to the explanation on the next page.

**Point**

Display field adjusting method

To prevent an alarm message from being truncated on display, adjust the display field as follows.
If the GOT screen size is smaller than the value described below, adjust the font size.




**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

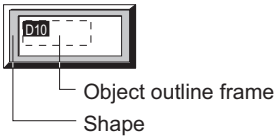
**Hint!**

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

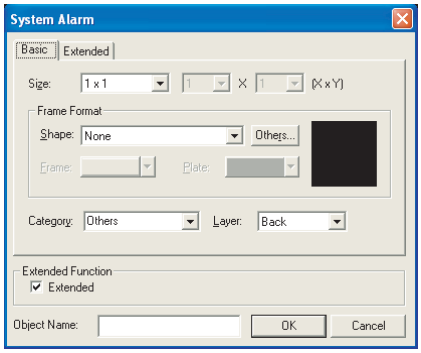
Section 5.3.3 Object size change



## 8.7.4 Setting items

### 1 Basic tab

Set the display format (shape/text size) of system alarm



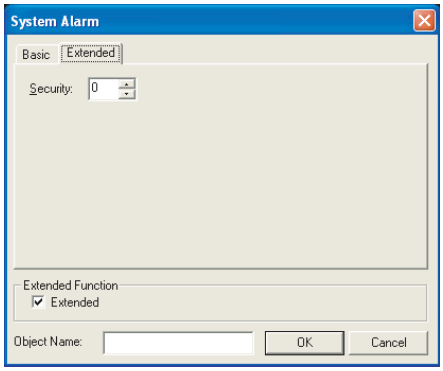

Basic | Extended

| Item | | Description | Model |
|---|---|---|---|
| Size | | Select the text size (0.5 to 8) of the error message to be displayed | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | <br>Select the frame color/plate color. | |
| | Plate | | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 Extended tab

Set the security.

Check "Extended" at the bottom of this dialog box to display this tab.




Basic | **Extended**

| Item | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 8.7.5 Precaution

This section describes precautions for using system alarm.

### 1 Precautions for drawing

Maximum number of system alarms that can be positioned (set) in one screen:
One system alarm can be positioned (set).

### 2 Precautions for use

(1) Controllers for which system alarms are not displayed on GOT
Errors that occurred in the controllers indicated below are not displayed by the system alarm of GOT.
Details of errors must be checked at the controller.
- SIEMENS PLC CPU
- YAMATAKE temperature controller
- RKC temperature controller
- Inverter

(2) Deletion of system alarms on GOT
(a) The GOT error will not be cleared even if the alarm cause is eliminated.
To clear the message, make sure to turn the following device of system information function ON.
- GOT error reset message (system signal1-1. b13)

☞ Section 3.6 System Information Setting

(b) The message of a network error that occurred in the CC-Link communication unit, MELSECNET/10 communication unit, or MELSECNET/H communication unit will not be cleared until the GOT is powered OFF or reset even if the alarm cause is eliminated.

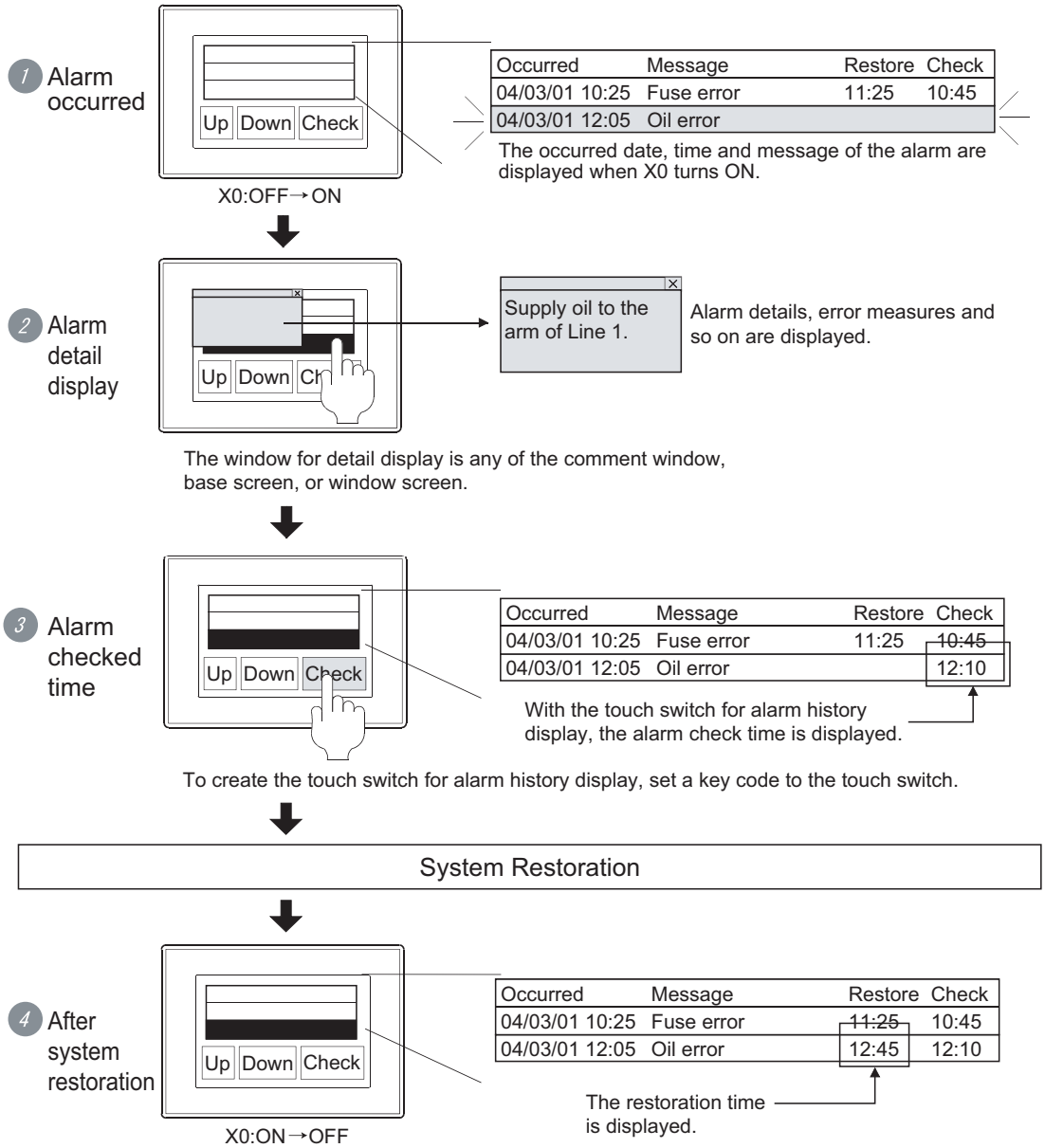
(3) Displaying alarm occurred time
For alarm occurred time, displays the GOT clock data.
For precautions and restrictions for the clock function that manages GOT clock data, refer to the following.

☞ Section 2.5 Clock Function

(4) Text and background color
As the text color for system alarm is fixed to white, set the plate color to non-white.

# 8.8 Alarm History Display

The times and comments of the alarms occurred are stored in the GOT incorporated memory and displayed as a history list when conditions of the device specified for alarm detection are met (Bit OFF to ON/word device range).




**Remark**

Comments displayed on the alarm history display

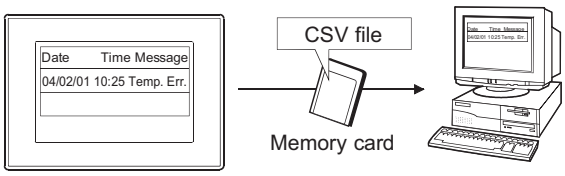
Comments displayed on the alarm history display must be registered in advance.
Register comments in the basic comment or comment group.

☞ Section 4.1 Comment Registration

## Examples

### Display alarm data on PC

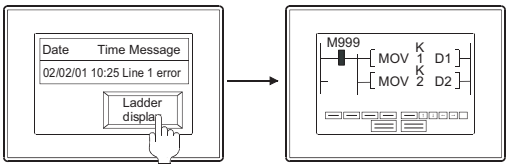
☞ Make setting on Option (Common) tab




The alarm historical data saved to memory card in CSV file format are read by spreadsheet software.

### Starting the ladder monitor function on alarm history display and searching a device automatically (One-touch ladder jump function)

☞ Make setting with Touch Switch (Section 6.2.9)

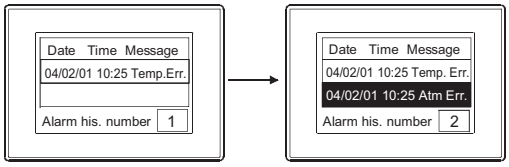



Ladder monitor function is displayed by touch switch

Device corresponding to the a displayed on alarm history dis is automatically searched.

### Display number of alarm that have been historical

☞ Make setting on Option (Common) tab




The number of all alarms historical is displayed in alarm history.

## 8.8.1 Relevant settings

For alarm history, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

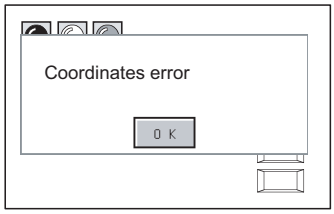
(1) Functions relevant to alarm history and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

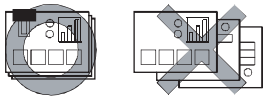
(1) Functions relevant to alarm history and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

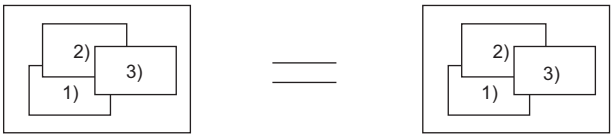


Setting items
• [Carry out check for overlapping objects within GOT]

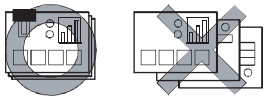
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



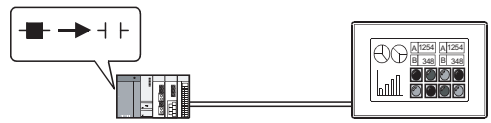
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 System information (☞ Section 3.6 System Information Setting)

### (1) Functions relevant to alarm history and others

- Key Code Read Complete Signal
  (Read device: System Signal 1-1.b3)

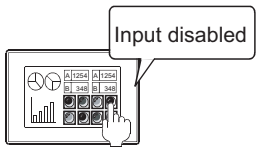
Turns off the key input signal



Key input signal OFF

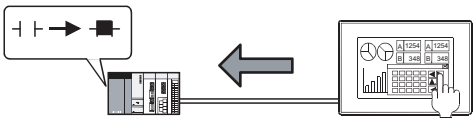
- Key-In Disable Signal
  (Read device: System Signal 1-1.b9)

Disables all key inputs.



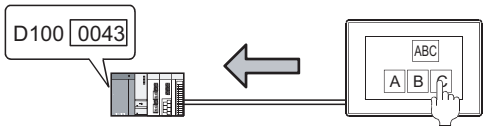

- Key Input Signal
  (Write device: System Signal 2-1.b3)

Notifies the key input.



- Key Code Input
  (Write device)

Notifies the key code that is assigned to the input key when a value is entered by the ASCII input or touch switch.




The key code is notified

## 8.8.2 Before setting alarm history display

Collected alarms are displayed as history.
Register messages to be displayed in the basic comment or comment group in advance.

### 1 Alarm collection mode

Select either of the two collection modes, historical mode or cumulative mode.
When an alarm occurs, the following information can be collected and displayed.

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 20:00 | Pwr. module error | - | - | - | 1 |
| 04/06/01 18:30 | Oil pressure error | - | 18:50 | - | 2 |
| 04/06/01 16:10 | Drive module error | 16:30 | 16:20 | 00:20 | 2 |
| 1) | 2) | 3) | 4) | 5) | 6) |

(In the example above, 3), 4), and 5) indicate time only.)

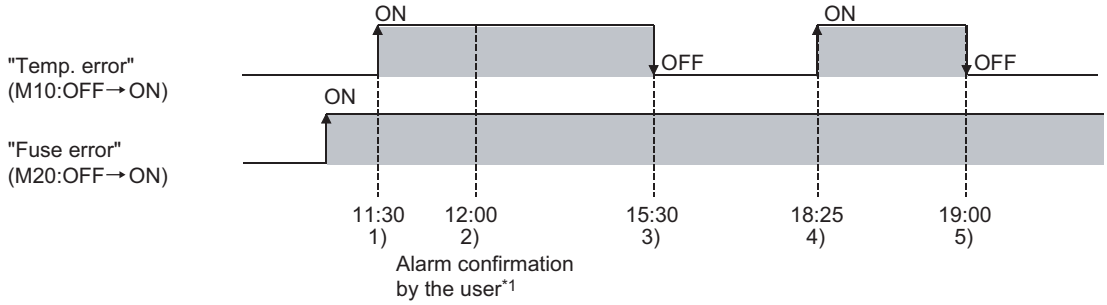
| Info displayed | Description | |
|---|---|---|
| | Historical mode | Cumulative mode |
| 1) Occurred | The date/time of alarm occurrence is displayed. | |
| 2) Message | The comment assigned to an alarm is displayed when the alarm occurs. | |
| 3) Restore | The date/time of alarm restoration is displayed. | |
| 4) Check | The date/time when alarm occurrence was checked is displayed.<br>Alarm occurrence is checked by the corresponding touch switch.<br>(☞ 8.8.5 Description on touch switches for alarm history display)<br>Message Restore Check<br>Pwr. module error<br>→ Check (FFB4H) →<br>Message Restore Check<br>Pwr. module error 19:00 | |
| 5) Cumulative time | — | Displays the total amount of time for which alarms were generated in the past.<br>Cumulative time = t1 + t2 + t3<br>Status of alarm occurrence (X0: OFF→ON)<br>t1 t2 t3<br>Alarm occurred (1st) Alarm occurred (2nd) Alarm occurred (3rd)<br>Time |
| 6) Count | — | The number of alarm occurrence times is displayed. |

- Historical mode
  In this mode, the data of the alarm is added to the GOT internal memory every time an alarm occurs. (The data are added to the history every time an alarm occurs.)
  - GT15, GT SoftGOT1000: 3072
  - GT11 : 2048
  - GT10 :1000
- Cumulative mode
  In this mode, the latest alarm status and the cumulative count and time of the alarms that occurred in the past are calculated and displayed for each alarm type.

Example: Examples of alarm display

This section shows examples of alarm history display for each collection mode.

(Timing of alarm occurrence)




*1 Alarms are confirmed with the touch switch for confirmation.

(☞ Section 8.8.5 Description on touch switches for alarm history display)

(1) Historical mode

The information on alarm occurrence status are collected as history.

Status is added to the history every time an alarm occurs.

Not collected in the historical mode.

1) "Temp. error" occurs.

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | | | | |
| 04/06/01 10:25 | Fuse error | | | | |
| | | | | | |

"Temp. error" occurs!

2) "Temp. error" is checked.

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | | 12:00 | | |
| 04/06/01 10:25 | Fuse error | | | | |
| | | | | | |

"Temp. error" is checked.

Check (FFB4H)

3) Restored from "Temp. error"

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | 15:30 | 12:00 | | |
| 04/06/01 10:25 | Fuse error | | | | |
| | | | | | |

Restoration date/time is displayed.

4) The restored "Temp. error" occurred again.

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 18:25 | Temp. error | | | | |
| 04/06/01 11:30 | Temp. error | 15:30 | 12:00 | | |
| 04/06/01 10:25 | Fuse error | | | | |

A new line is added and displayed.

5) Restored from "Temp. error"

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 18:25 | Temp. error | 19:00 | | | |
| 04/06/01 11:30 | Temp. error | 15:30 | 12:00 | | |
| 04/06/01 10:25 | Fuse error | | | | |

Restoration date/time is displayed.

(2) Cumulative mode

The information on the latest alarm status,the number of alarms that have occurred and the cumulative alarm occurrence time are collected for each alarm type.

1) "Temp. error" occurs

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | | | 00:00 | 1 |
| 04/06/01 10:25 | Temp. error | | | 00:00 | 1 |

"Temp. error" occurs!

2) "Temp. error" is checked

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | | 12:00 | 00:00 | 1 |
| 04/06/01 10:25 | Fuse error | | | 00:00 | 1 |

"Temp. error" is checked.

Check (FFB4H)

3) Restored from "Temp. error"

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 11:30 | Temp. error | 15:30 | 12:00 | 04:00 | 1 |
| 04/06/01 10:25 | Fuse error | | | | |

Restoration time and cumulative time are displayed.

4) The restored "Temp. error" occurred again

| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 18:25 | Temp. error | | | 04:00 | 2 |
| 04/06/01 10:25 | Fuse error | | | | |

The occurrence time when the alarm occurred again is displayed on the same line of the alarm frequency is increased by one.

5) Restored from "Temp. error"

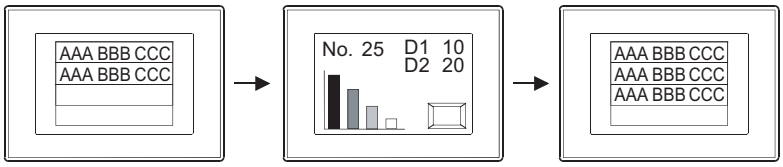
| Occurred | Message | Restore | Check | Cumulate | Count |
|---|---|---|---|---|---|
| 04/06/01 18:25 | Temp. error | | 19:00 | 04:35 | 2 |
| 04/06/01 10:25 | Fuse error | | | | |

Restoration time is displayed.
The time during which the alarm has been generated is added to the cumulative time.

## 2 Collecting and holding alarm data

(1) Collecting alarm data

The GOT collects alarm data at any time and saves the data in the GOT internal memory.
Alarm data are constantly collected and updated even while the monitor screen not including alarm history display is displayed.




Switch to another screen

The alarm data updated while the other screen was displayed are shown.

(2) Deleting alarm data

Alarm data are deleted at the following timing.

(a) Power-off or reset of the GOT

(b) When the following settings are made within utilities

| Item | | Description |
|---|---|---|
| Communication setting | | [Channel No. (Ch No.) setting], [Communication settings], [RS232 5V power supply] |
| GOT setup | Display | [Opening screen time], [Screen save backlight], [Language] |
| | Operation | [Buzzer volume], [Window move buzzer], [Utility call key] |
| Program/data control | | OS installation, project download |
| Debug & self check | Self check | [I/O check] |
| Main menu | | Message change (Japanese/English) using the system message switch button |

(c) Project data download, OS installation, drive information delete and drive format

(d) Clear trigger device
Turning on the device specified at "History Clear" (on the Option (Common) tab) deletes all the alarms in the restored status.

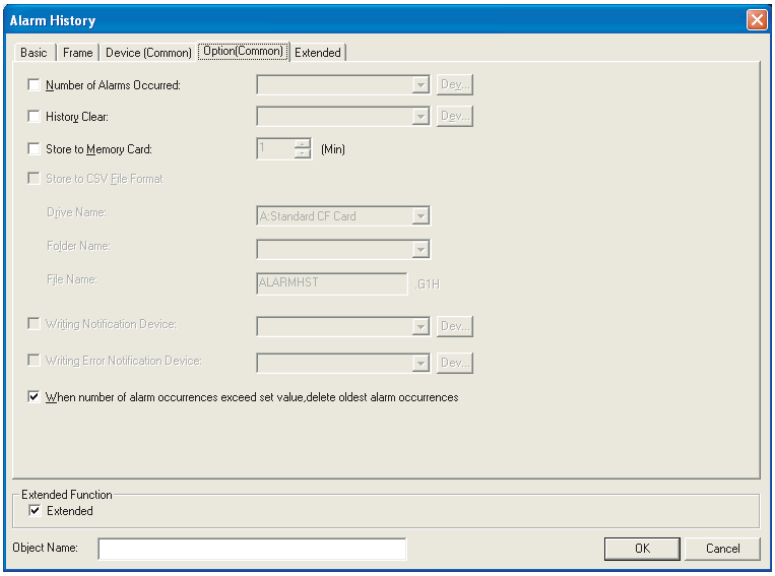
(e) Key operations of the switches for alarm history display (touch switches)
Alarms in the restored status can be deleted using the following touch switches.
- Delete (FFB6H): Delete the alarms in the restored status one by one.
- Delete All (FFB7H): Delete all the alarms in the restored status.

☞ Section 8.8.5 Description on touch switches for alarm history display

(f) When the number of alarms occurred has exceeded the upper limit (when the collection mode is "Historical")
In the case where "When number of alarm occurrences exceeds set value, delete oldest alarm occurrences" was check-marked on the Option (common) tab, if the number of alarms occurred has exceeded the upper limit, the older alarms are deleted from the oldest one.

[Upper limit in total number of alarms occurred]
- GT16, GT15, GT SoftGOT1000: 3072
- GT11 : 2048
- GT10 : 1000

[Operation setting for the case where the maximum number of alarms is exceeded]




Alarm History dialog box (Option (Common tab))

(3) Holding alarm data under power failure
Alarm data can be held even if the GOT is powered off by saving them to the memory card.

## 3 Detail display

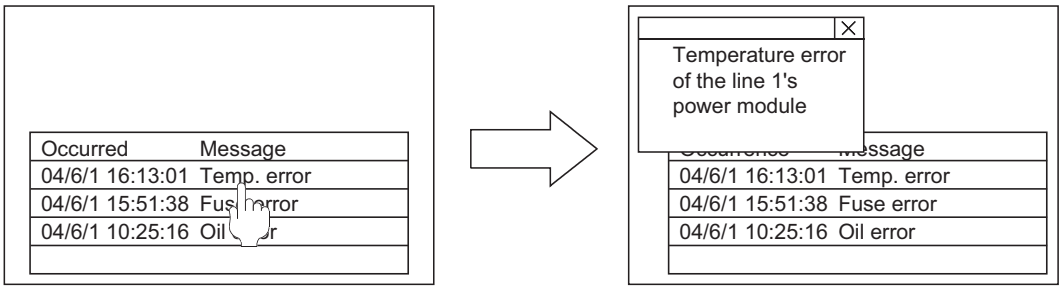
(1) Usable screens (☞ Section 8.8.4 3 Device (Common) tab)

To display alarm causes and corrective actions in details, any of the following 3 screen types can be selected.

(a) Comment window

Comments registered by the user are displayed on the comment window.

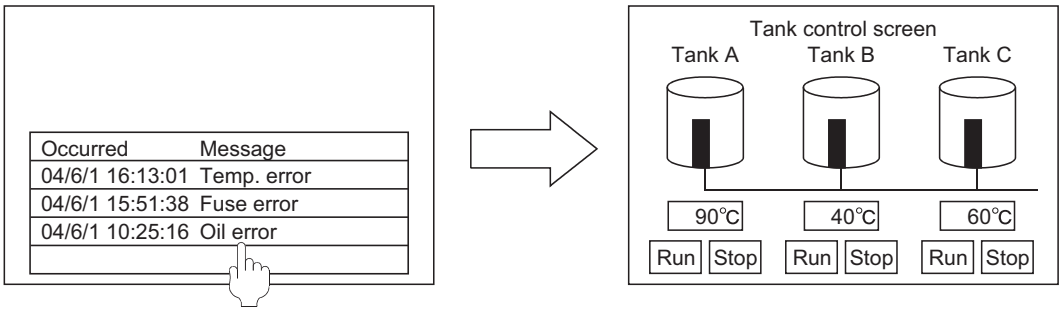
More detailed comments such as details and corrective actions can be displayed on the comment window.




Base screen 1 | Base screen 1 + Comment window

(b) Base screen

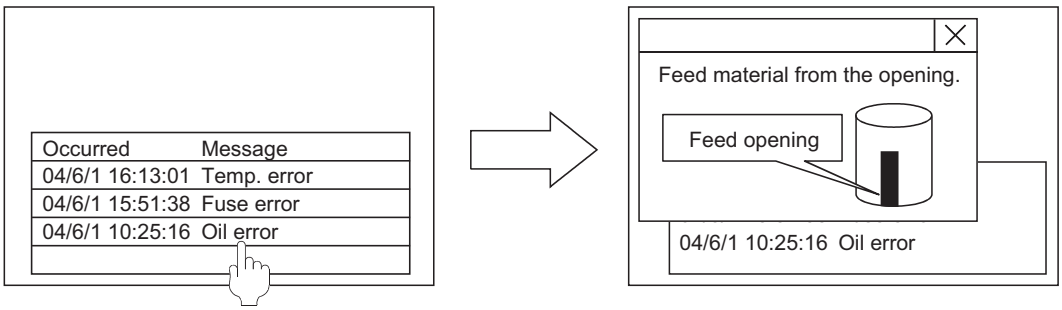
The specified base screen is displayed.




Base screen 1 | Base screen 5

(c) Window screen

The specified window screen (overlap window 1) is displayed.



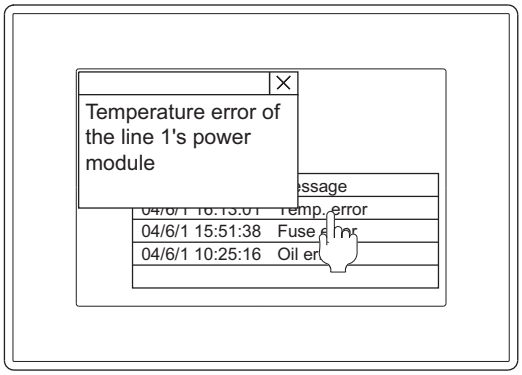

Base screen 1 | Base screen 1 + Window screen 10

(2) Display method

Select either of the following 2 methods for detail display.

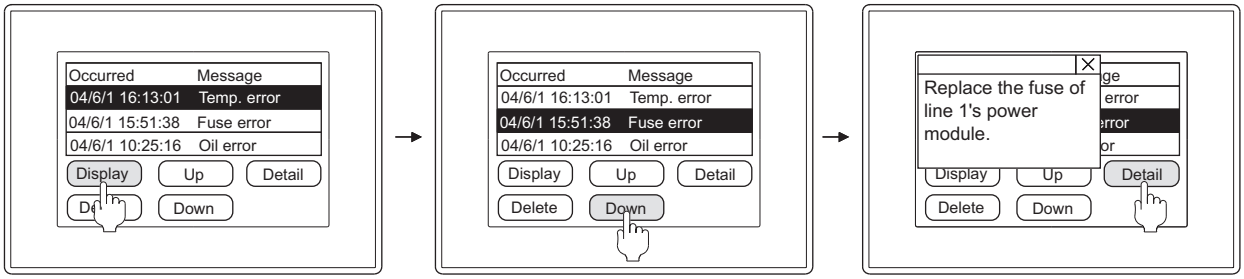
(a) One touch (☞ Section 8.8.4 1 Basic tab)

Display the detail display by touching the alarm history display item directly.




(b) Touch switch (☞ Section 8.8.5 Description on touch switches for alarm history display)

Create a touch switch for alarm history to display the detailed data.




Display the cursor

Move the cursor (using Up or Down) to the target alarm.

Make the details displayed

## 8.8.3 Placement and settings

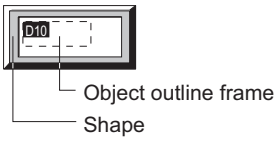
1. Carry out either of the following operations.
   - Select the [Object] → [Alarm History] from the menu
   - Click (Alarm History).
2. Click on the desired position completes the arrangement of the alarm history display.

**Remark**

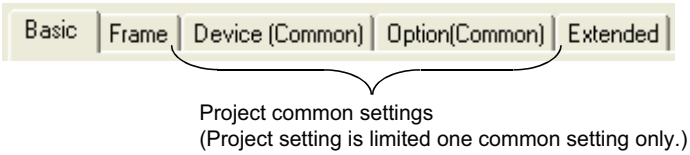
The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

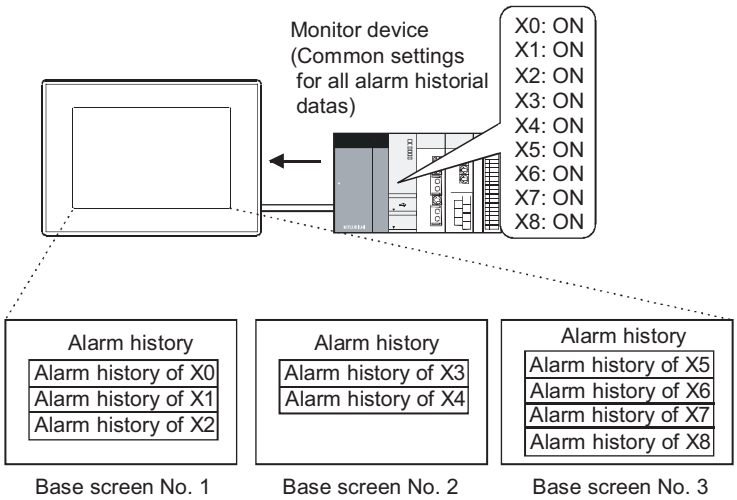
☞ Section 5.3.3 Object size change




3. Double click on the arranged alarm history display, and make setting in the displayed dialog box with reference to the following explanation.
   The settings whose tab names are marked with (Common) in the dialog box are common settings in project.




As shown in the following example, although monitor devices are set in the same way for all alarm history displays, different display formats (number of display rows/alarm frame color) can be set for each display.




Different settings for the number of row and frame color are available for each alarm history.

**Hint!** Easy setting method

The direct setting of object can be made on property sheet.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Hint!** Common settings of alarm history

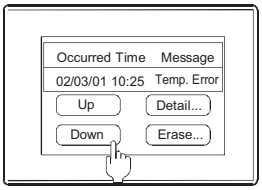
The common settings of alarm history can be set as follows.

- Select [Common] → [Alarm History] from the menu.
- Select [Project] → [Common Settings] → [Alarm History] from project workspace

4 Setting touch switches for alarm history

Set the touch switches that are used for alarm history display such as cursor display, movement, detailed alarm display.

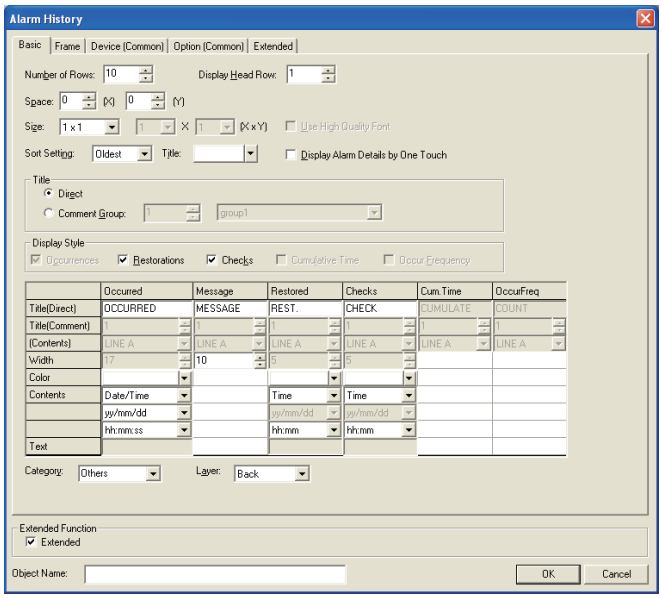
☞ Section 8.8.5 Description on touch switches for alarm history display



## 8.8.4 Setting items

### 1 Basic tab

Set the display details (e.g. style, format, order of the display.)

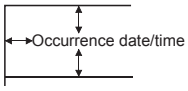
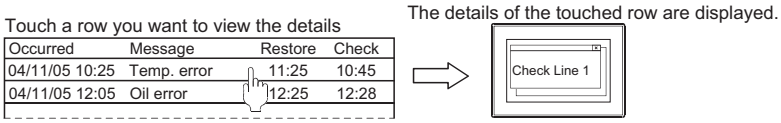
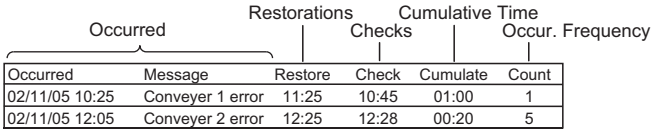



Basic | Frame | Device (Common) | Option (Common) | Extended

| Item | Description | Model |
|---|---|---|
| Number of Rows | Set the number of rows displayed for each screen. (Up to 27 rows)<br>Example: When this is set to 3<br><br>Occurred date Time / Message / Restore / Check<br>04/11/05 10:25 Temp. error 11:25 10:45<br>04/11/05 12:05 Oil error 12:25 12:28<br>04/11/06 08:30 Fuel error 09:45 09:40<br>} Display rows (not including the title line) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display Head Row*1 | Set the alarm row No. from which alarm display starts in the order of occurrence (1 to 1024) when the conditions of more than one specified device are met.<br>If the number of generated alarms is smaller than the value set in "Display Head Row", the display is left blank.<br>Example: When 4 is set<br><br>Occurrence / Message / Restore / Check<br>04/11/05 10:25 M3 ON 11:25 10:45<br>04/11/05 12:05 M4 ON 12:25 12:28<br>Alarms of the No.4 and later are displayed.<br><br>Alarms occurred<br>1) M0 is ON<br>2) M1 is ON<br>3) M2 is ON<br>4) M3 is ON<br>5) M4 is ON<br>⋮<br>Order of alarm occurrence | |

(Continued to the next page)

Basic | Frame | Device (Common) | Option (Common) | Extended

| Item | Description | Model |
|---|---|---|
| Space | Set how much space is kept between the ruled line of the table and the characters such as time display.<br>X : 0 to 32 dots (Available in 1-dot units)<br>Y : 0 to 32 dots (Available in 8-dot units)<br>According to the setting of "Size" (magnification of character size), the actual horizontal space is as follows:<br>"Magnification of character size × set value in Space"<br>Example:<br>When "Size" is set to 2 and "Space" to 8, space of 16 dots is ensured.<br>  | |
| Size | Select a size of the character displayed on the alarm history display (magnification of horizontal size (X) × vertical size (Y) (1 to 8).<br>When X × Y is 1 × 1, the character size is 8 × 16 dots (X × Y). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Use High Quality Font | Check the checkbox when displaying characters in the high-quality font.<br>(Only when the character size is set to 2 × 2, 4 × 4, 6 × 6, or 8 × 8 (horizontal × vertical))<br>Check this item when displaying characters in the 16-dot HQ Mincho font.<br>If not checked, characters are displayed in the 16-dot standard font.<br>To display HQ font characters, set the HQ font in the Basic Comment setting. | |
| Sort Setting | Select the display order of alarm items.<br>Oldest : Displays the alarm data in order of occurrence starting from the oldest data.<br>Latest : Displays the alarm data in order of occurrence starting from the latest data. | |
| Title | Select the title color. | |
| Display Alarm Details by One Touch | Check this item to display the detailed display screen by touching any row of the alarm history.<br>Touch a row you want to view the details<br>The details of the touched row are displayed.<br>  | |
| Use comment scrolling depending on message width | Check the item for displaying the scrolling message that moves from right to left on the alarm history. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Title | Select the setting method of the title name to be displayed items.<br>• Direct : Select this item to input the title name in [Title(Direct)].<br>• Comment Group : Select this item to display the title name with a comment set for the comment group.<br>After selecting, set the comment group No. for the comment displayed in the title name. | |
| Display style | Check the items to be displayed on the alarm history display.<br>  | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Occurrences | The date and time of the alarm occurred and the comment associated with the alarm are displayed.<br>(This item is always check-marked.) | |
| Restorations | Check the checkbox when displaying the date and time of restoration from an alarm (when the specified device condition is changed from "met" to "not met"). | |

(Continued to the next page)

Basic | Frame | Device (Common) | Option (Common) | Extended

| Item | | Description | Model |
|---|---|---|---|
| Display style | Checks | Check the checkbox to display the time at which alarm occurrence was confirmed.<br>The time at which the Check switch was touched after alarm occurrence is displayed.<br>(☞ Section 8.8.5 Description on touch switches for alarm history display)<br>Message Restore Check / Oil error → Check → Message Restore Check / Oil error 12:00 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Cumulative Time | Check the checkbox when displaying the time that elapsed from alarm occurrence until restoration in minutes.<br>To set this item, select "Cumulative" in "Mode" on the Device (Common) tab. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Occur Frequency | Check the checkbox when displaying how many times alarms were generated.<br>To set this item, select "Cumulative" in "Mode" on the Device (Common) tab. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | | Set the view format of the items set in [Display style]. | |
| | Title(Direct) | Input the title name for each view item.<br>The title can be input when [Direct] is selected for [Title] only. | |
| | Title(Comment) | Set the title name for display items that is selected from comments set for the comment group.<br>The comment is set in the comment No. for the comment group.<br>The item can be input only when [Comment Group] is selected for [Title]. | |
| | (Contents) | Displays the comment corresponding to the comment No. set for [Title(Comment)].<br>The item displays the comment only when [Comment Group] is selected for [Title]. | |
| | Width | Set the number of digits (column width) for each item.<br>Example: When message width is set to 12<br>Occurred / Message / Restore Check<br>04/11/05 10:25 / Oil error / 11:25 10:45<br>Displayed with a width of 12 digits<br>Occurred : Set automatically based on the setting of "Contents" shown below. (A value is set in the range of 1 to 20 if "Content" is "String.")<br>Message : 1 to 80 digits<br>Restored/Checks : Set automatically based on the setting of "Contents" shown below. (A value is set in the range of 1 to 20 if the "Contents" is "String.")<br>Cum. Time : Fixed to 8 digits<br>OccurFreq : Fixed to 8 digits | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Color | Select the title color for each view item. | |
| | Contents*2 | Select this item to set the view format for date and time of alarm occurrence.<br>Date/Time : Displays data and time. (After selection, select the view format for data and time)<br>Date : Displays date only. (After selection, select the view format for date)<br>Time : Displays time only. (After selection, select the view format for time)<br>String : Displays the specified character string. (After selection, input the character string to the [Text] below.) | |
| | Text | Input characters to display the date and time of the alarm occurred (when triggers of specified device are satisfied) as a specified character string.<br>Select [String] in [Contents] to set this item.<br>Maximum 20 characters can be input. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |

(Continued to the next page)

Basic | Frame | Device (Common) | Option (Common) | Extended

| Item | Description | Model |
|---|---|---|
| Layer | When not superimposing an object with another, set it by default (back).<br>When superimposing an object with another, the object must be set to Front or Back.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet) and in the operation log.<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT 1000 GT11 GT10 |

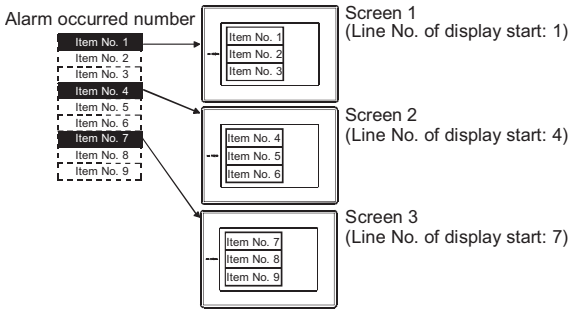
For details of *1, *2, refer to the following.

*1 Display head row

If the number of alarms becomes higher than the numbers set to [Display Head Row] while alarm history is displayed on the GOT, [Display Head Row] setting will not be valid.
To enable [Display Head Row] setting, switch the screen, and then return the screen to the alarm history display screen.

**Hint!**

If different line No. of display start are set on plural screens, different alarm history can be displayed for each screen.




*2 View format of alarm date/time

- View format of date
  Year is displayed by the last 2 digits of the year.

  Example: Nov. 25, 2004
  [yy/mm/dd] : 02/11/25 (8 digits)
  [mm/dd/yy] : 11/25/02 (8 digits)
  [dd/mm/yy] : 25/11/02 (8 digits)
  [mm/dd] : 11/25 (5 digits)

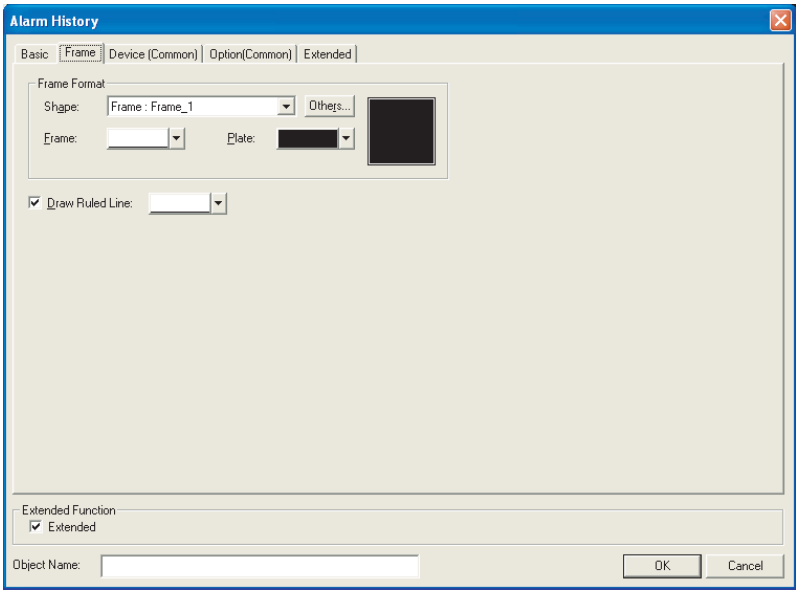
- View format of time
  Time is displayed by 24-hour format.
  Example: 9: 50: 48a.m.
  [hh: mm: ss] : 09: 50: 48 (8 digits)
  [hh: mm] : 09: 50 (5 digits)

- Display format of date/time
  A one-digit space is inserted between the date and time.

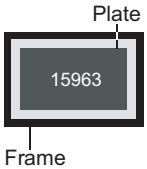
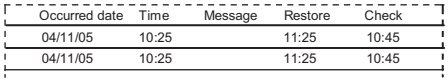
  04/11/25_09:50:48 (17 digits)
  Space (1 digit)

## 2 Frame tab

Set the frame, ruled line/ vertical line for alarm history.

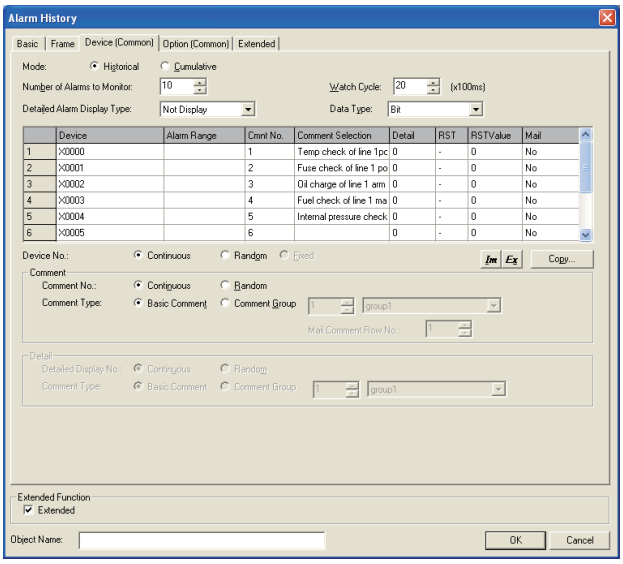



Basic | **Frame** | Device (Common) | Option (Common) | Extended

| Item | | Description | Model |
|---|---|---|---|
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Frame | Select the frame color/plate color.<br>  <br> | |
| | Plate | | |
| Draw Ruled Line | | Check this item to draw ruled lines for alarm history.<br>After checking, select a color for the ruled line.<br>  <br>Occurred date Time Message Restore Check<br>04/11/05 10:25 11:25 10:45<br>04/11/05 10:25 11:25 10:45 | |

## 3 Device (Common) tab

Set the collecting method of alarm data and the device.
The setting on this tab is reflected for display of all the alarm historical data.




Basic | Frame | **Device (Common)** | Option (Common) | Extended

| Item | Description | Model |
|---|---|---|
| Mode | Select a collection mode of the alarm history display function.<br>Historical : Corrects alarm data as history.<br>If an alarm in the restored status occurs again, the alarm data is collected as a new alarm.<br>Cumulative : The latest alarm status, the cumulative period of time the alarm has been generated, and the cumulative number of times of the alarm occurrences are calculated.<br>If any alarm in the restored status occurs again, the occurrence frequency increases, and the previous alarm information (occurrence date/time, restored time, and checked time) is updated to the latest one.<br>For differences in the collection modes, refer to the following.<br>☞ Section 8.8.2 1 Alarm collection mode | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Number of alarms to monitor | Set the points of the device to be monitored.<br>The number of the device points you can specify differs depending on the type of the device monitored.<br>(For GT10, the bit of word, word device (16 bits), word device (32 bits) cannot be set.)<br>Bit device : 1 to 3072 Points (GT10: 1 to 1000 Points)<br>Bit device or bit specification of word device: 1 to 3072 points<br>Word device (16 bits) : 1 to 1024 points<br>(ON status is recognized through the value range setting.)<br>Word device (32 bits) : 1 to 512 points<br>(ON status is recognized through the value range setting.) | |
| Watch Cycle | Set the cycle in which the GOT monitors the specified devices of the controller.<br>Cycle can be set from 600ms to 80s in the units of 100ms. | |
| Detailed alarm display type | Select a method for displaying alarm details.<br>Set the comment No., base screen No., or window screen No. for [Detail No.] in the alarm setting list that is listed below [Detailed alarm display type].<br>(For GT10, [Window Screen] cannot be selected.)<br>No Display : No details are displayed.<br>Comment Window*1 : Created comments are displayed on the comment window.<br>Base Screen : The detailed information is displayed on the base screen.<br>Window Screen*6 : The detailed information is displayed on the window screen (Overlap window 1). | |

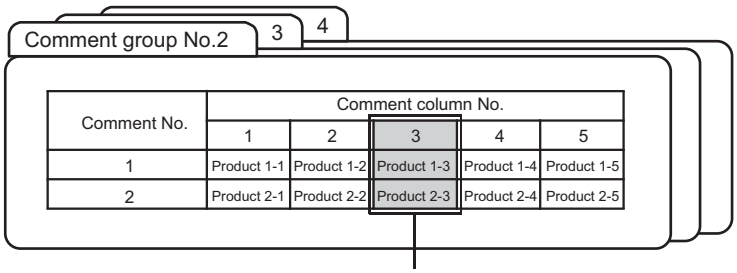
(Continued to the next page)

Basic | Frame | **Device (Common)** | Option (Common) | Extended

| Item | | Description | Model |
|---|---|---|---|
| Data Type | | Select a data type of the device monitored.<br>For GT10, [Bit of Word], [Signed BIN16], [Unsigned BIN16], [Signed BIN32], [Unsigned BIN32], [BCD16], [BCD32], and [Real] cannot be selected.)<br>Bit : Select this when monitoring a bit device by the ON/OFF change.<br>Bit Of Word : Select this when monitoring a word device by ON/OFF of specified bits.<br>Signed BIN16 : The word device value is handled as a signed 16-bit binary.<br>Unsigned BIN16 : The word device value is handled as an unsigned 16-bit binary.<br>Signed BIN32 : The word device value is handled as a signed 32-bit binary.<br>Unsigned BIN32 : The word device value is handled as an unsigned 32-bit binary.<br>BCD16 : The word device value is handled as a 16-bit BCD (binary-coded decimal).<br>BCD32 : The word device value is handled as a 32-bit BCD (binary-coded decimal).<br>Real : The word device value is handled as a floating-point real number.<br>After selecting any of the above, specify the devices monitored in the Device column of the alarm setting list below. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Alarm setting list | | Set the devices specified for alarms, conditions for alarm occurrences, and operation when an alarm occurs. | |
| | Device | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | |
| | Alarm Range*2 | When setting a device as a word device, click the Exp. button to set the range of the word device values for the alarm data display. | |
| | Cmnt. No. | Set a comment No. used for the device specified.<br>Occurred / Message / Restore / Check<br>04/11/05 10:25 / Temp. error / 11:25 / 10:45<br>04/11/05 12:05 / Oil error / 12:25 / 12:28<br>Set a comment No. of the message to be displayed in this area. | |
| | Comment Selection | The comment corresponding to the "Cmnt. No." is displayed.<br>Any comment registered can be selected. If a comment is selected here, the "Cmnt. No." is switched automatically. | |
| | Detail | Set the comment No., window screen No., or base screen No. for displaying detailed data when an alarm occurs (when specified device conditions are satisfied). | |
| | RST | Select whether or not to enable the alarm resetting (turning off or resetting the specified device by the touch switch for resetting).<br>After checking this item, set up a reset value if the device is a word device.<br>(☞ Section 8.8.5 Description on touch switches for alarm history display) | |
| | RSTValue | Set a value written into the word device (reset value) when the GOT is reset by the touch switch for alarm history display. (Fixed to "0" for GT10) | |
| | Mail | Select a mail-sending mode.<br>No : No mails are sent.<br>Occur : The occurred date/time and comment of the alarm is sent by email when an alarm occurs (when the conditions of the device are met).<br>Restore : The restored date/time and comment of the alarm is sent by email when an alarm is restored (when the conditions of the device are not met).<br>Both : The occurred or restored date/time and comment of the alarm is sent by email when an alarm occurs or an alarm is restored. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device No. | | Select a device setting method.<br>(For GT10, [Random] and [Fixed] cannot be selected.)<br>Continuous :Set devices continuously starting from the device specified.<br>Random :Set devices one by one.<br>Fixed :Set more than one alarm range with the same word device when the word device is set.<br>When "Random" is selected, it is not allowed to set a bit device and the word device bits together as monitoring devices. | GT16 GT15 SoftGOT1000 GT11 GT10 |

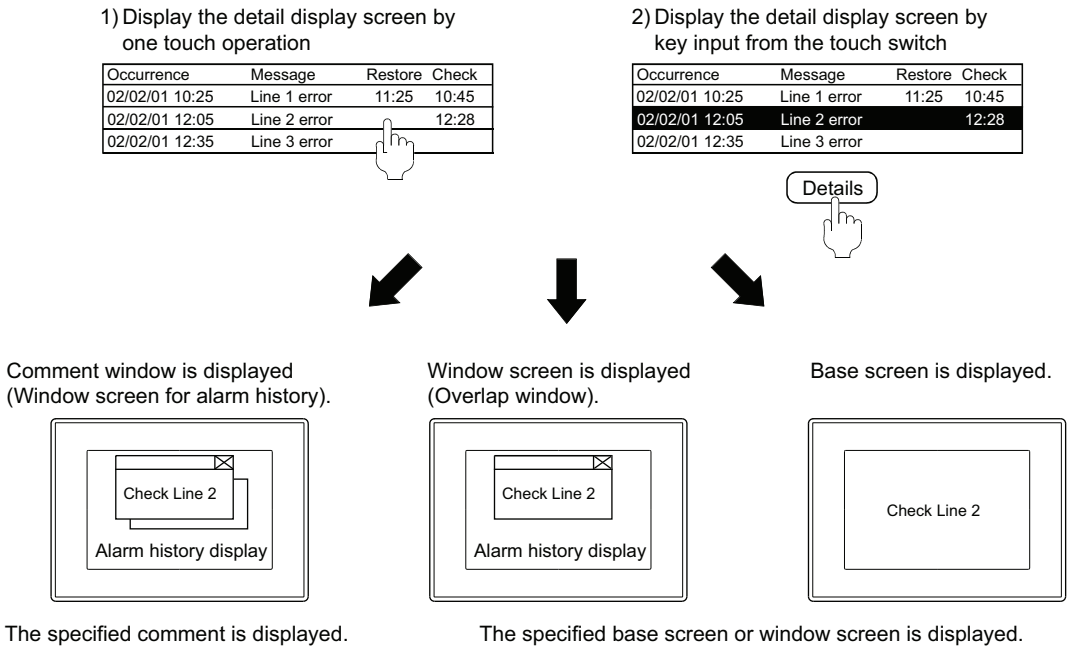
(Continued to the next page)

Basic | Frame | **Device (Common)** | Option (Common) | Extended

| Item | | Description | Model |
|---|---|---|---|
| Comment | Comment No. | Select how to set the comment No. corresponding to the specified device.<br>(For GT10, [Random] cannot be selected.)<br>Continuous :Set continuous comment numbers starting from the comment No. specified.<br>Random :Set comment numbers one by one. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Comment Type | Select comment types (the basic comment or the comment group).<br>When selecting [Comment Group], set the comment group No. | |
| | Mail Comment Row No. | The setting is available when selecting [Comment Group] for [Comment Type] only.<br>When sending a mail, select the comment column No. from the comment group to be used for the comment.<br>Example) When setting the comment group No. to 2 and the mail comment row No. to 3.<br>  <br><br>Use this comment row No. when sending a mail. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Detail | Detailed Display No. | Select how to set the comment window, window screen, or base screen for detail display.<br>Continuous :Set continuous numbers starting from the comment No., window screen No., or base screen No.<br>Random :Set numbers one by one. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Comment Type | Select comment types (the basic comment or the comment group).<br>When selecting [Comment Group], set the comment group No. | |
| Copy*3 | | When copying the set data to another field, click the Copy button. | |
| Im (Import)*4 | | Reads out the alarm history settings that have been edited in a CSV file to GT Designer2. | |
| Ex (Export)*4 | | Saves the alarm history settings that have been set by GT Designer2 as a CSV file. | |

For details of *1 to *4, refer to the following.

*1 Displaying the comment window



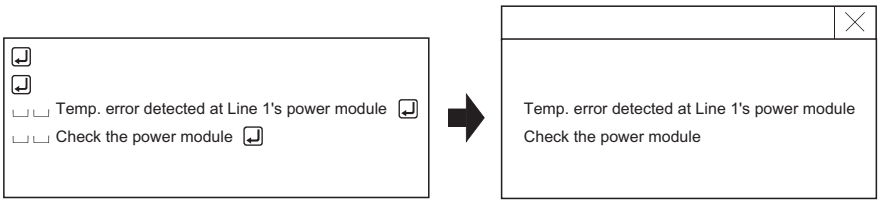

(1) Number of characters available for comment window

| GOT | Number of characters available for comment window |
|---|---|
| GT1695, GT1685, GT1675, GT1665, GT1595, GT1585, GT157□, GT156□, GT155□ (GT1555-V only) , GT SoftGOT1000 | 39 characters × 11 lines (429 characters) |
| GT155□ (GT1555-Q and GT1550-Q only) , GT115□, Handy GOT, GT105□, GT104□ | 23 characters × 7 lines (161 characters) |
| GT1030, GT1020 | 18 characters × 3 lines (54 characters) |

(2) Comment window is displayed on top-left of base screen
The operation of moving and closing the window is the same as that of the window screen.

(3) Comment text is displayed as follows
- Text size: fixed to 1 × length, 1 × width
- The setting reverse and blink are not supported, regardless of the comment registration settings.

(4) The comment lines are displayed in the comment window as follows.
- Comments are displayed from top-left to right in the comment window.
- If the comment exceeds the display range of the comment window, it is continued starting a new line.
- To place the comment in the center of the comment window, make adjustment using the line feed for the comment.



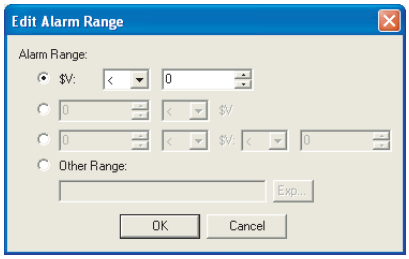

When a comment is registered

Comment window display

*2 Alarm range

Edit Alarm Range dialog box

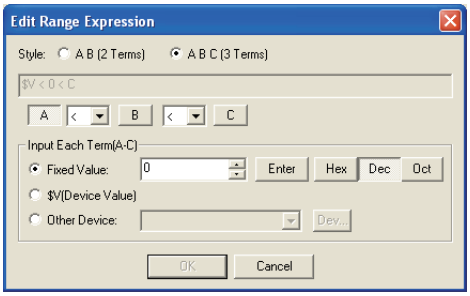
Set a range of word device values for displaying alarms.




| Item | Description |
|---|---|
| Alarm Range | Set a range of word device values for displaying alarms using a conditional expression.<br>• Select any of the following conditional expressions.<br>Set a conditional expression by a combination of a device value ($V) and constants.<br> <br>Constant Relational operator Device value for alarm display ($V)<br>• To set an expression other than the above 3 patterns, select "Other Range" and then click the "Exp..." button.<br>When the Edit Range Expression dialog box appears, set any conditional expression.<br>In a conditional expression set by a user, the value of another word device can be set as a condition.<br> |
| 0 (Constant) | Enter a value in decimal. |
| < (Relational operator) | Set a relational operator for the conditional expression.<br>< : The value of the left term is less than that of the right term<br>== : The value of the left term is equal to that of the right term<br><= : The value of the left term is equal to or less than that of the right term<br>!= : The value of the left term is not equal to that of the right term |
| $V | Indicates the value of the device used for alarm display. |
| Exp... *1 | Clicking this displays the edit range expression dialog box. |

For details of *1, refer to the following.

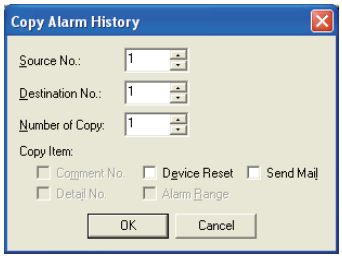
*1 Edit Range Expression dialog box




| Item | Description |
|---|---|
| Style | Select a format of the conditional expression.<br>A B (2 Terms) : Sets a range of the condition using 2 terms.<br>A B C (3 Terms) : Sets a range of the condition using 3 terms. |
| A | By clicking the A, B, or C button, set a constant or variable of the term in "Input Each Term (A-C)." |
| < | Set a relational operator of the conditional expression.<br>< : The value of the left term is less than that of the right term<br>== : The value of the left term is equal to that of the right term<br><= : The value of the left term is equal to or less than that of the right term<br>!= : The value of the left term is not equal to that of the right term |
| Input Each Term (A-C) | Set each of the terms of the conditional expression.<br>Fixed Value :Set a constant.<br>Select this item, enter a value and click the Input button.<br>Select the data type of the numerical value by the Hex, Dec, or Oct button.<br>$V (Device Value) :Set the word device by which an alarm is displayed.<br>Other Device :Set s value of device other than the word device set for alarm display as a term of the conditional expression.<br>(☞ Section 5.1 Device Setting) |

*3 Copy

This section explains how to copy the set alarm history items to other place.

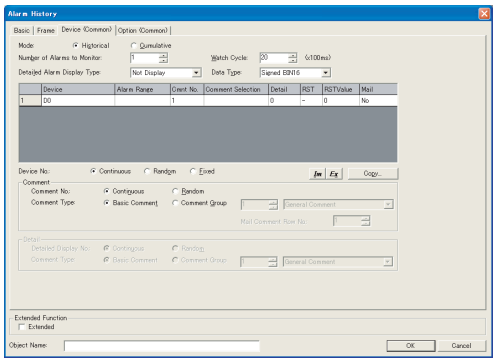



| Item | | Description |
|---|---|---|
| Source No. | | Set the alarm history No. that will be copied. |
| Destination No. | | Set the alarm history No. that will be a copy destination. |
| Number of Copy | | Set the number of copies. |
| Copy Item | | Check the relevant items. |
| | Comment No. | Copies comment No. (Basic comment) of the source. |
| | Detail No. | Copies the detailed display No. of the source. |
| | Device Reset | Copies the device reset settings of the source. |
| | Alarm Range | Copies the range setting of the source. |
| | Send Mail | Copies the send mail settings of the source. |

*4 Import/Export

The exported CSV file can be edited using such as the spreadsheet software.
The CSV file, after editing, can be imported to and opened by GT Designer2.

Example: Importing and exporting in CSV file



Exported in CSV file

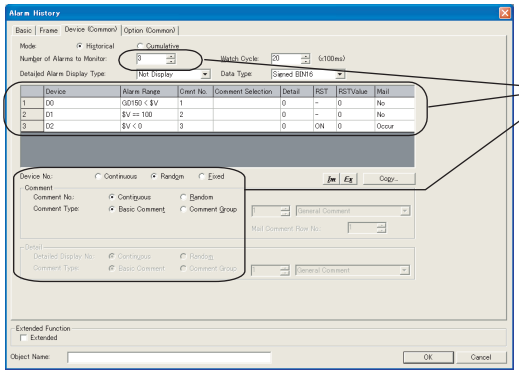
| | | | | | | |
|---|---|---|---|---|---|---|
| Alarm History | | | | | | |
| Number of alarms to monitor | 1 | Data Type | Signed BIN16 | Detailed alarm display type | Not Display | |
| Device | Alarm Range | Cmnt No. | Detail | RST | RST Value | Mail |
| D0 | | 1 | 0 | – | 0 | No |
| Device No. | Continuous | | | | | |
| Comment No. | Continuous | Basic Comment | | | | |
| Detailed Display No. | Continuous | Basic Comment | | | | |

Editing the exported file

Add the setting using applications such as Microsoft® Excel.

| | | | | | | |
|---|---|---|---|---|---|---|
| Alarm History | | | | | | |
| Number of alarms to monitor | 3 | Data Type | Signed BIN16 | Detailed alarm display type | Not Display | |
| Device | Alarm Range | Cmnt No. | Detail | RST | RST Value | Mail |
| D0 | GD150,<,$V | 1 | 10 | – | 0 | No |
| D1 | $V,==,(100) | 2 | 11 | – | 0 | No |
| D2 | $V,<,(0) | 3 | 12 | ON | 0 | Occur |
| Device No. | Random | | | | | |
| Comment No. | Continuous | Basic Comment | | | | |
| Detailed Display No. | Continuous | Basic Comment | | | | |

Importing to GT Designer2



The added contents are displayed.

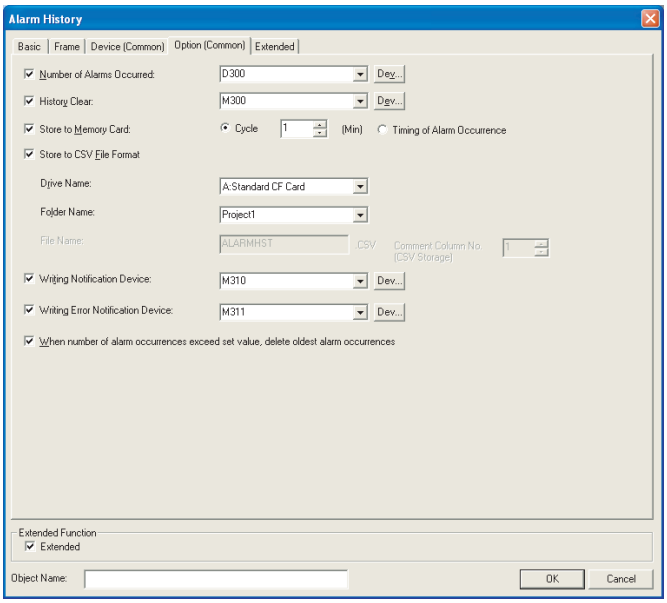
**Point**

When using languages other than Japanese and English

For using languages other than Japanese and English for comments, do not import or export CSV files.
When CSV files are imported or exported, data stored in the files may not be correctly displayed.

## 4 Option (Common) tab

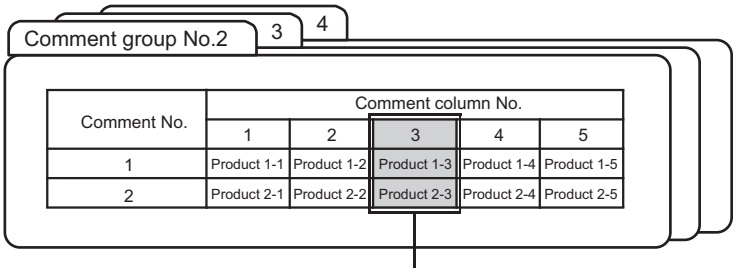
Set the history retention (history clear, saved to memory card) for alarm history.
The settings on this tab will be reflected in all alarm history display.




Basic | Frame | Device (Common) | **Option (Common)** | Extended

| Item | Description | Model |
|---|---|---|
| Number of Alarms Occurred | Check this item to store the number of alarms currently occurred and restored to a word device.<br>After checking, click on Dev... button and set the device.<br>(☞ Section 5.1 Device Setting)<br>The cycle for GOT to monitor the history clear trigger device is the same as [Watch Cycle] set on the Device (Common) tab. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| History Clear | Check the checkbox when forcibly deleting the restored-state alarm data by changing the specified device status from OFF to ON.<br>After checking the box, click on the Dev... button to set the device to be used as a history clear trigger.<br>(☞ Section 5.1 Device Setting)<br>The cycle in which the GOT monitors the history clear trigger device is the same as "Watch Cycle" set on the Device (Common) tab.<br>Alarm data can be cleared by the touch switch (the switch for history clearance) as well.<br>(☞ Section 8.8.5 Description on touch switches for alarm history display) | |

(Continued to the next page)

| Item | | Description | Model |
|---|---|---|---|
| Store to Memory Card*3 | | Check this item to save alarm historical data to memory card.<br>After checking, select the timing of data storage into a memory card.<br>• Cycle :The alarm history is stored by the set sampling cycle, respectively. After checking, select the storage cycle in one-minute unit within a range from 1 minute to maximum 60 minutes.<br>• Timing of alarm occurrence :When alarms occur, store the alarm history.<br>Data can be stored to memory card using the alarm history switch.<br>(☞ Section 8.8.5 Description on touch switches for alarm history display) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Store to CSV File Format*1 | Check the checkbox when saving alarm data to the memory card in the CSV file format.<br>This is selectable only when "Store to Memory Card" is check-marked. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Drive Name*2 | Select the name of drive where the alarm data are saved.<br>(For the GT105□, GT104□, and GT1030, the item is fixed to [D:Built-in SRAM]. For the GT1020, the item is fixed to [C:Built-in Flash Memory].) | |
| | Folder Name*4 | Enter the name of the folder in which the CSV file is stored. (Up to 62 characters)<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-\) can be used.<br>The default folder name can be changed by the following procedure.<br>1) Select [Common] → [System Environment].<br>2) Set a project name on "Project Folder" of "System Setting." | |
| | File Name | The file name is displayed.<br>Using the CSV file format: Displayed as ALARMHST.CSV<br>Not using the CSV file format: Displayed as ALARMHST.DAT | |
| | Comment Column No. (CSV Storage) | The item can be set only when [Store to Memory Card] and [Store to CSV File Format] are checked and when [Comment Group] is selected for [Comment Type] in the Device (Common) tab.<br>When storing an alarm history in a memory card, select the comment column No. from the comment group to be used for the CSV file comment.<br>Example) When setting the comment group No. to 2 and the CSV file comment column No. to 3.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Writing Notification Device | | Set the device to be ON while alarm data are written to the memory card.<br>(☞ Section 5.1 Device Setting) | |
| Writing Error Notification Device | | Set the device by which an error is notified when alarm data writing to the memory card fails.<br>(☞ Section 5.1 Device Setting)<br>This device must be turned off manually because it is not turned off automatically even after the error is restored. | |
| When number of alarm occurrences exceed set value, delete oldest alarm occurrences | | Check the checkbox so that the oldest alarm history data will be deleted and new alarm data will be added when the number of alarms occurred reaches or exceeds the upper limit (GT15, GT SoftGOT1000: 3072, GT11: 2048, GT10: 1000) and conditions for the specified device are met.<br>(☞ Section 8.8.6 Precautions)<br>If unchecked, new alarm data are not added when the number of alarms occurred reaches or exceeds the upper limit. | |

For details of *1 to *4, refer to the following.

*1 Saving data in the CSV format

(1) Data stored

Alarm data are converted into a CSV file data as follows.

The CSV file can be read and displayed on a PC by spreadsheet software.

Number of alarms occurred
Number of restored-state alarms
Number of checked alarms

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Number of Alarm History | 2 | | | | Not collected in historical mode | |
| 2 | Number of Recovery record | 1 | | | | | |
| 3 | Number of Check record | 2 | | | | | |
| 4 | DATE | TIME | MESSAGE | RECOVERY | CHECK | BREAK TIME | BREAK NUM |
| 5 | 2004/5/29 | 11:40:30 | Temp. error | 11:50:30 | 11:45:25 | 0:10 | 1 |
| 6 | 2004/5/29 | 11:31:30 | Fuse error | | | 0:00 | 1 |

Occurrence date/time (may be displayed differently (e.g. "2004/5/29") depending on the spreadsheet software setting.) — Comment — Restoration date/time — Check date/time — Cumulative time — Occurrence frequency

(2) Updating stored data

Data collected on the alarm history display are overwritten to the CSV file at the user-specified cycles (1 to 60min).

Because the alarm data deleted on the alarm history display are deleted in the CSV file as well, do not delete the alarm to be kept in the CSV file.

**Remark** When all of alarm history data are deleted

If the alarm history is stored to a CSV file after all data have been deleted with the touch switch Delete all (FFB7H) or "History Clear," the CSV file is left blank.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Number of Alarm History | 2 | | |
| 2 | Number of Recovery record | 1 | | |
| 3 | Number of Check record | 2 | | |
| 4 | DATE | TIME | MESSAGE | RECOVERY |
| 5 | 2004/5/29 | 11:40:30 | Temp. error | 11:50:30 |
| 6 | 2004/5/29 | 11:31:30 | Fuse error | |

Stored to a CSV file with alarm history deleted

→

| | A | B | C | D |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

Nothing is stored.

*2 Storage drive

The following shows the applicable storage drives for each GOT type.

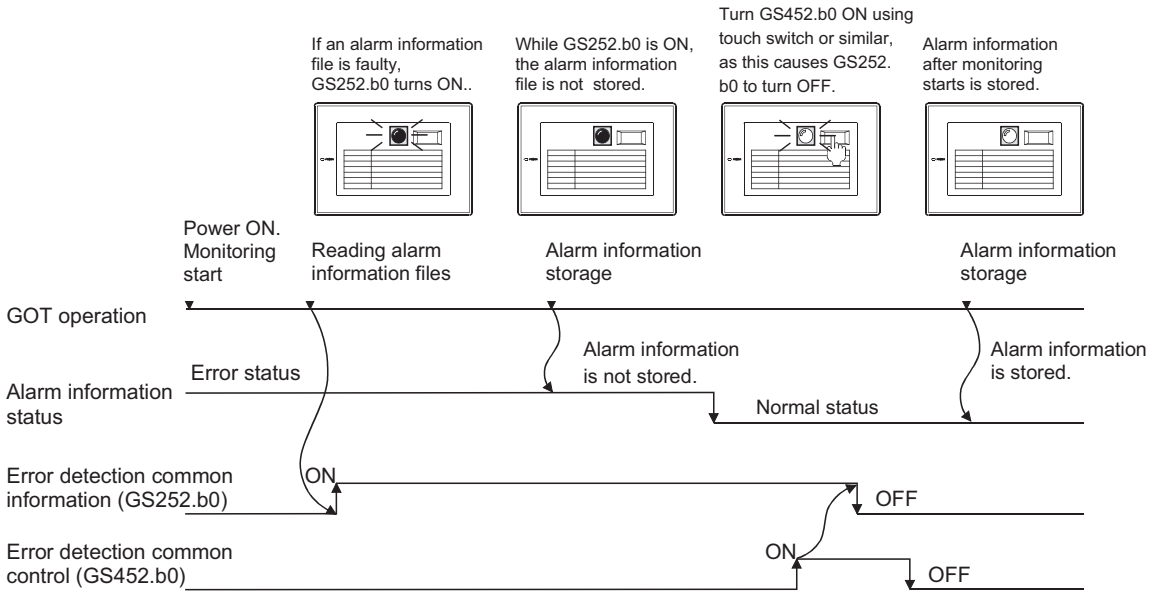
| GOT type | Applicable storage drive |
|---|---|
| GT16, GT15, GT SoftGOT1000 | A: Standard CF Card, B: Extended Memory Card |
| GT11 | A: Standard CF Card, D: Built-in SRAM |

*3 Storing erroneous alarm information data

If the memory card is faulty or the files are different from those in the memory card, the GOT internal device (error detection common information: GS252.b0) turns ON to disable the alarm information to be stored (Device data collection is continued).
If the storage operation is done in this situation, the system alarm will occur.
If GS252.b0 turns ON, replace the memory card or check the data within the card.

Turning ON the GOT internal device (error detection common control: GS452.b0) will turn GS252.b0 OFF. This allows the file storage to be resumed.
For details of GOT internal devices, refer to the following.

☞ Section 2.9.1 GOT internal devices




**Hint!** Application of error detection common information

An overlap window (for file error detection) can be displayed by detecting GS252.b0 with script function.

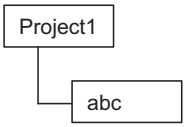
*4 Folder name

A folder name as shown below cannot be used.

- Folder name starting as G1
- Folder name starting from . (period) or \
- Folder name ending at . (period) or \
- Folder name with only . (period) or .. (two periods)

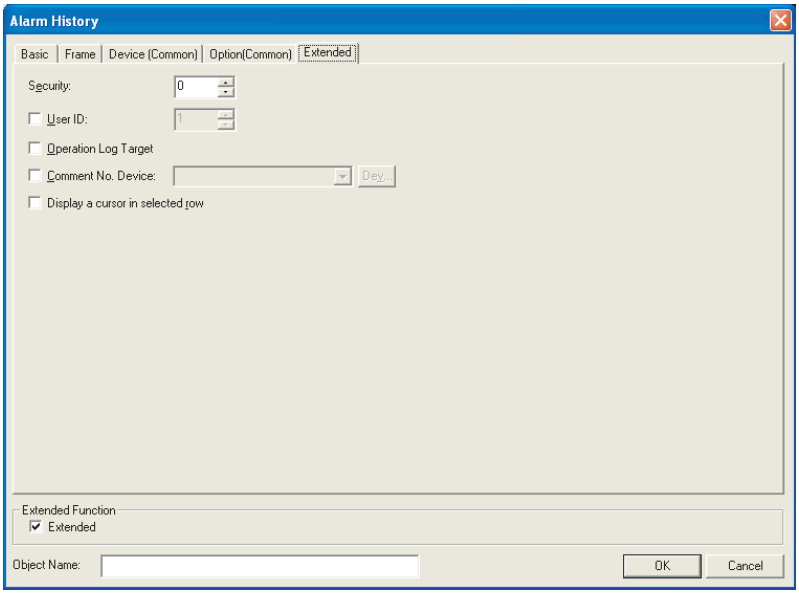
**Remark** When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.
(Setting example)
[Folder Name] : Project1\abc



## 5 Extended tab

Setting of this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

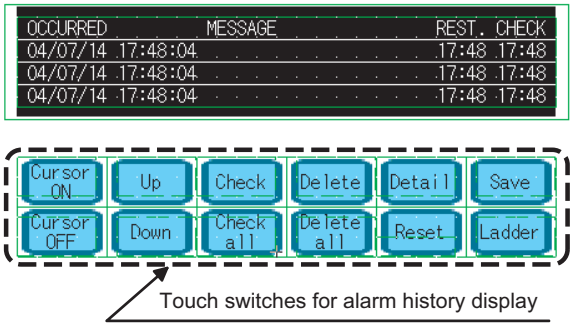



Basic | Frame | Device (Common) | Option (Common) | **Extended**

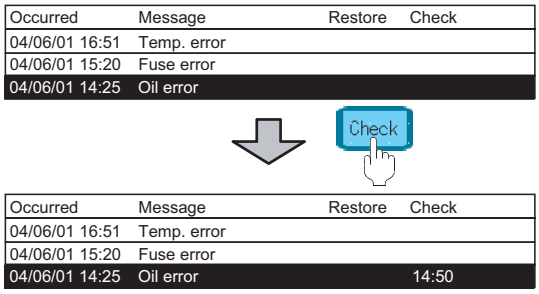
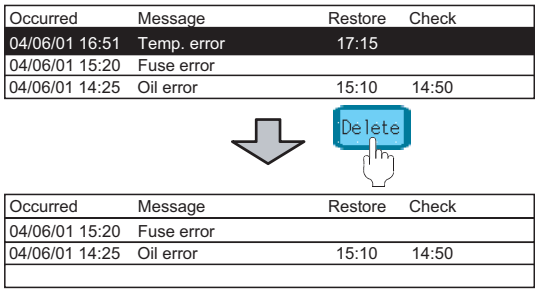
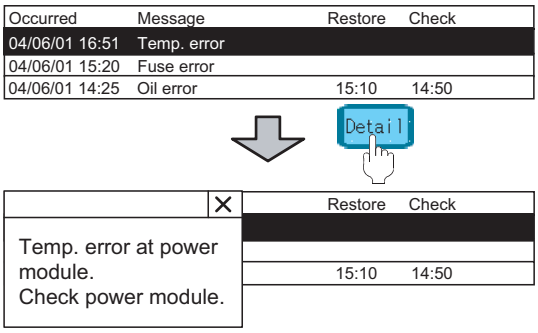
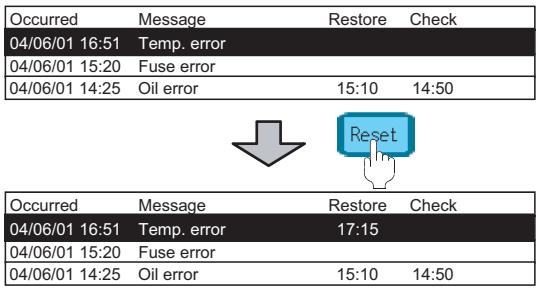
| Item | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| User ID | Check this item when setting a user ID (1 to 65535).<br>When the user ID is set, the following operation is enabled.<br>To specify the used object in the operation log.<br>(☞ Section 15.2 Operation Log Function) | |
| Operation Log Target | Check this item to set the object being set as the target for logging the operation.<br>(☞ Section 15.2 Operation Log Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Comment No. Device | Specify the device where the comment number of an alarm with the cursor displayed is stored.<br>Use the following operation to store a comment number by displaying the cursor on an alarm.<br>Check the [Display a cursor in selected row] item.<br>Use the touch switch (key code switch (cursor display)) for alarm history display.<br>(☞ 8.8.5 Description on touch switches for alarm history display) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Display a cursor in selected row | Check this item when displaying the cursor by touching the displayed alarm.<br>(This allows displaying of the cursor for the alarm without setting a touch switch.)<br>Setting the [Comment No. Device] item stores the comment number of the touched alarm to the device. | |

## 8.8.5 Description on touch switches for alarm history display

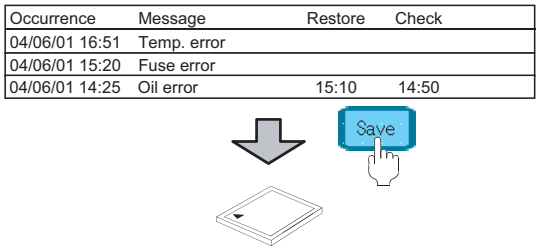
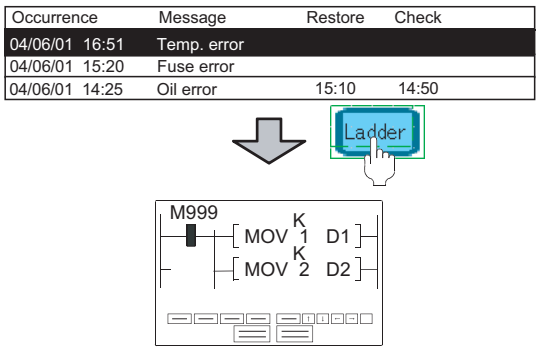
Touch switch for displaying alarm history can be read from the library for GT Designer2.
Also, text on the touch switch and its shape can be changed by the user.
By setting a key code to touch switch, a user can create a touch switch for displaying alarm history.




| Touch switch | Key code | Description |
|---|---|---|
| Show cursor<br>Cursor ON | FFB0H | Show/Hide the cursor<br>Occurred / Message / Restore / Check<br>04/06/01 16:51 Temp. error<br>04/06/01 15:20 Fuse error<br>04/06/01 14:25 Oil error 15:10 14:50<br>Cursor ON<br>Occurred / Message / Restore / Check<br>04/06/01 16:51 Temp. error<br>04/06/01 15:20 Fuse error<br>04/06/01 14:25 Oil error 15:10 14:50<br>Show the cursor! |
| Hide cursor<br>Cursor OFF | FFB1H | |
| Move cursor upward<br>Up | FFB2H | • If the cursor is hidden:<br>The cursor moves to the previous/next page. (page by page)<br>Occurrend / Message / Restore / Check<br>04/06/01 16:51 Temp. error<br>04/06/01 15:20 Fuse error<br>04/06/01 14:25 Oil error 15:10 14:50<br>Down<br>Occurred / Message / Restore / Check<br>04/06/01 13:54 Fuse error 14:00<br>04/06/01 12:23 Internal pressure error 13:15<br>04/06/01 11:11 Motor error<br>Moved to the next page!<br>• If the cursor is shown:<br>The cursor moves up/down one line (line by line)<br>Occurred / Message / Restore / Check<br>04/06/01 16:51 Temp. error<br>04/06/01 15:20 Fuse error<br>04/06/01 14:25 Oil error 15:10 14:50<br>Down<br>Occurred / Message / Restore / Check<br>04/06/01 16:51 Temp. error<br>04/06/01 15:20 Fuse error<br>04/06/01 14:25 Oil error 15:10 14:50<br>Move the cursor! |
| Move cursor downward<br>Down | FFB3H | |

| Touch switch | Key code | Description |
|---|---|---|
| Display date/time of selected data (check)<br>Check | FFB4H | The alarm status is changed to "checked."<br>  <br><br>The alarm status is changed to "Checked"! |
| Display date/time of all data (check all)<br>Check all | FFB5H | |
| Clear the selected alarm data (delete)<br>Delete | FFB6H | A restored alarm or all restored alarms are deleted.<br>  <br><br>The restored alarm is deleted! |
| Clear all alarm data (delete all)<br>Delete all | FFB7H | |
| Display detail<br>Detail | FFB8H | The detailed screen of the selected alarms is displayed.<br>  <br><br>The detailed screen is displayed! |
| Reset the selected alarm data*1<br>Reset | FFB9H | Resets the selected alarm data. (Changes the device value to off or the reset value according to the setting on the device tab)<br>  <br><br>The selected alarm is reset! |

For details of *1, refer to the following.

| Touch switch | Key code | Description |
|---|---|---|
| Save alarm contents to memory card<br>Save | FFBBH | Stores alarm data to the memory card.<br>  <br><br>The data are saved to the memory card! |
| Display ladder<br>Ladder | FFBCH | Searches alarm device automatically by coil-search, and displays the result in the ladder monitor screen.ÅiOne-touch ladder jump function)<br>  <br><br>Ladder monitor screen is displayed!<br>(The specified device in ladder is displayed.) |

*1 Resetting user alarms

To change the device value to the OFF status or the reset value by a touch switch, set "ON" in "RST" on the Device (Common) tab.

Section 8.8.4 3 Device (Common) tab

**Hint!**

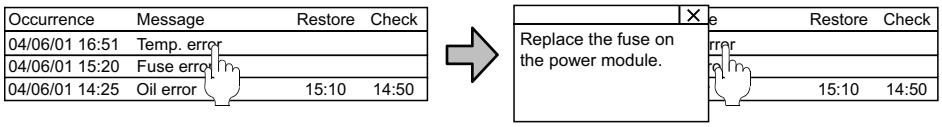
Touch switches behaving differently depending on the display status

Move cursor upward (FFB2H) and Move cursor downward (FFB3H) function differently depending on the display status.

- If the cursor is hidden, the display is moved to the previous/next page (on a per page basis).
- If the cursor is shown, the cursor is moved up or down (on a per line basis).

**Remark**

(1) Directly touching alarm history display data
By setting "Display Alarm Details by One Touch" on the Basic tab, the detailed screen of the selected alarm can be displayed. (☞ Section 8.8.4 1 Basic tab)




The detailed screen is displayed.

(2) Touch switch setting method
For details, refer to the following.

☞ Section 6.2.9 Setting items of key code switch

## 8.8.6 Precautions

This section describes precautions to be taken when using alarm history display.

### 1 Precautions for drawing

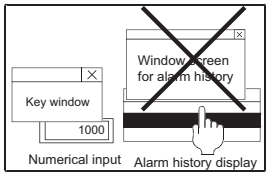
(1) Maximum number of objects that can be set on one screen
Only one object can be set for the alarm history display.

(2) Usable comments
The alarm history display uses comments registered in the basic comment or comment group.

(3) Usable screen
The alarm history display can be set on the base screen only.

(4) Devices to be set
Only one set device and its device name can be set for each project.
On each of plural screens, the alarm history function can be set for each object, but set devices have to be the same.

(5) The comment window cannot be displayed while the key window is displayed.
Erase the key window to display the comment window.

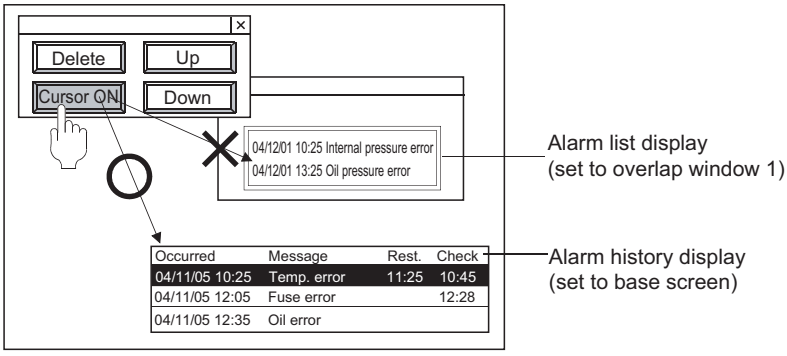



(6) When using other objects at the same time

(a) The following objects cannot be set on the screen where the alarm history function has been set.
- Data list function object
- Alarm list (user alarm) display function object with the up/down scroll function setting

(b) Precautions for the case when the alarm history and alarm list are displayed simultaneously
If the touch switches for alarm list (user alarm) are set for any other screen, they can function for the alarm history.

Example: When the touch switches for alarm list are set for the other screen (overlap window2)




As the base screen has higher precedence,
the touch switches function for alarm history.

(7) Display of occurred time, checked time, and restored time
For the occurred time, GOT's clock data are displayed.
For the precautions and restrictions on the clock function that is controlling GOT's clock data, refer to the following.
☞ Section 2.5 Clock Function

(8) The character display of the line on which the cursor is currently displayed
The characters of the line on which the cursor is currently displayed are not displayed when the screen pattern color or [Plate] of the Frame tab is set to White.
(Characters will be hidden since the color of the text and cursor are the same with the screen color.)
To display the characters of the line on which the cursor is currently displayed, set the screen pattern color or [Plate] of the Frame tab to other than White.

(9) Timing when alarm history file is newly created (overwritten)
If alarm history setting screen is opened, and closed with the OK button, downloading the project data to the GOT disables to view the past alarm history. (Whether the setting is changed or not on the screen, the past alarm history cannot be viewed by the operation above.)
Furthermore, when the alarm history is stored to the memory card with the above GOT, the history data is cleared (The file is newly created (overwritten).
Then, the CSV file is also overwritten.

To view alarm history after the setting is changed, make setting before the operation above so that the alarm history data is stored to CSV file for backup.
By the backup, the alarm history can be viewed on personal computer even after alarms on the GOT are cleared/overwriteen.
(To prevent data mismatch, alarm history data file (Extension: DAT) will not be displayed on the GOT to which new project data has been downloaded.)

(10) When using GT10
Both the user alarm and alarm history cannot be set on one screen.

## 2 Precautions for use

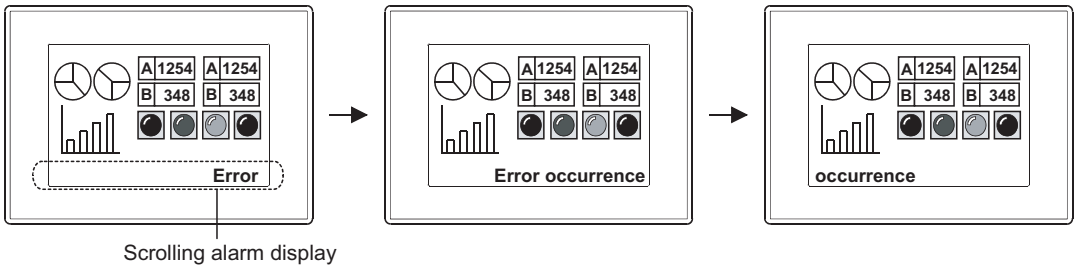
(1) Editing exported files
When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.
When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 8.9 Scrolling Alarm Display

The function enables user-created comments to scroll across the screen from right to left when an alarm occurs.
A comment is repeatedly displayed until causes of the alarm are removed.
The comment display position can be selected from among the top, center, and bottom of the base screen.

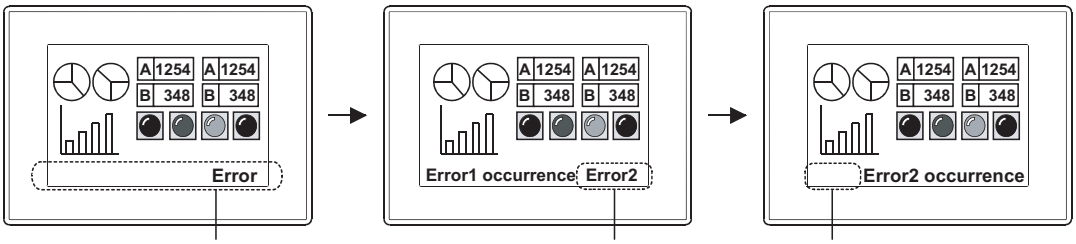
## 1 When only one alarm occurs

The comment corresponding to the occurred alarm scrolls across the screen from right to left.




## 2 When multiple alarms occur

The comments corresponding to the occurred alarms scroll across the screen from right to left in order of alarm occurrence.




Scrolling alarm display

The second or later alarm is displayed following the first alarm.

The GOT stops displaying comments corresponding to the alarms that causes are removed.

**Remark**

Comments to be displayed with scrolling alarm display

Comments to be displayed must be registered in advance.
Register comments to be displayed with the scrolling alarm display in the comment group.

☞ Section 4.1 Comment Registration

## 8.9.1 Relevant settings

For the scrolling alarm display, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description if necessary.

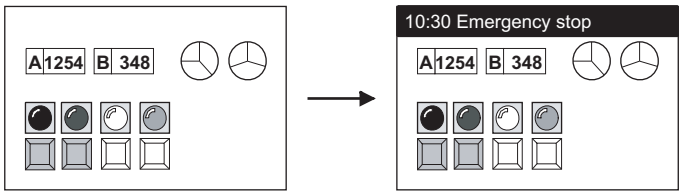
(1) Functions relevant to scrolling alarm display only
…Relevant to the scrolling alarm display only.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to scrolling alarm display only

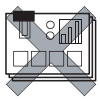
• Displaying/not displaying scrolling alarm display

Whether or not to display the scrolling alarm display can be set for each screen.
The display position can be selected from among the top, center, and bottom rows.

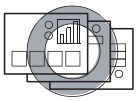



When an alarm occurs, the scrolling alarm display appears on the top row of the screen.

Setting for each project



Setting for each screen



Setting items
• [Carry out display of alarm flow]

## 1 Alarm types and alarm display

(1) Alarm types
The GOT can display user alarms only.

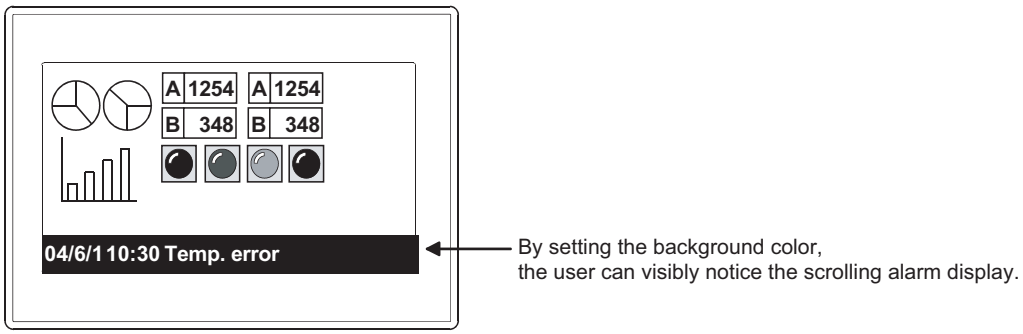
(2) Alarm display

(a) Display timing
When an alarm occurs, the scrolling alarm display appears on the GOT.
When causes of all the alarms are removed, the scrolling alarm display disappears from the screen.

(b) Displaying multiline comment
The second line of a comment is displayed following after the first line of the comment. (The same operation is applied to comments with three or more lines.)

(c) Displaying alarms with font, character color, and background color set
By setting the font, character color, and background color, the user can visibly notice the scrolling alarm display.

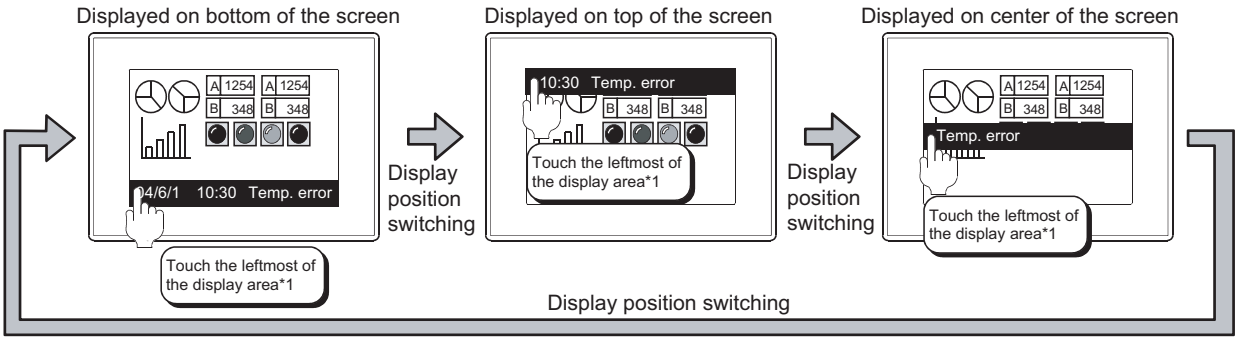
(☞ Section 8.9.4 2 Format tab)




## 2 Operations when directly touching scrolling alarm display

The following operations are available.

(1) Switching display positions
When objects and window screens are hidden under the scrolling alarm display, the scrolling alarm display position can be switched by the touch operation.

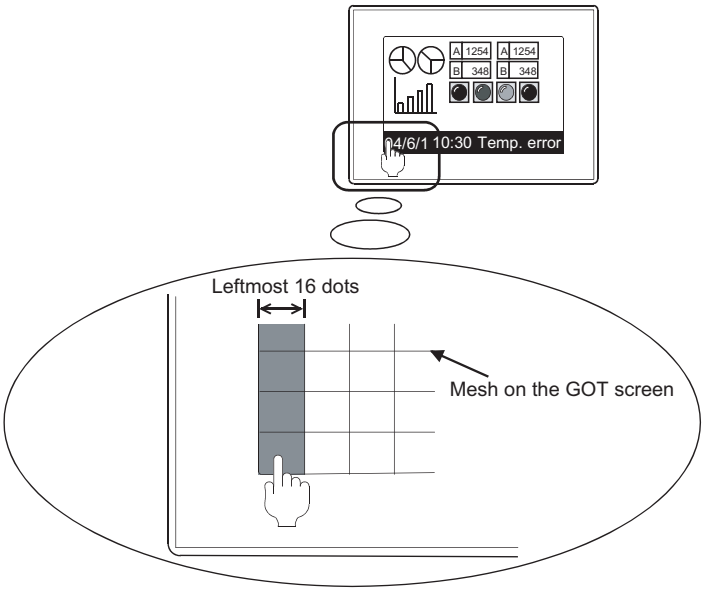



For details of *1, refer to the next page.

By touching the leftmost part of the scrolling alarm display area, the display position is switched to the top, center, bottom of the screen, in that order.

*1 Screen area for switching display positions

The touch operation area for switching display positions is the leftmost 16-dot area of the display area.




The vertical touch operation area for switching display positions depends on the size of characters to be displayed. The size of the vertical touch operation area changes in 16-dot units.

Example 1) When the character size (vertical) is 16 dots

Vertical touch operation area: 16 × 1 = 16 dots

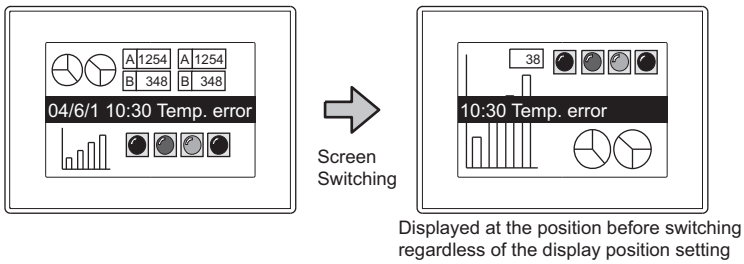
Example 2) When the character size (vertical) is 24 dots

Vertical touch operation area: 16 × 2 = 32 dots

**Point**

Display position when switching screens

When a screen is switched to another screen during the scrolling alarm display, the GOT displays the scrolling alarm display at the same position as before screen switching. (The GOT does not display the scrolling alarm display at the position set on the Auxiliary tab in the Screen Property dialog box.)



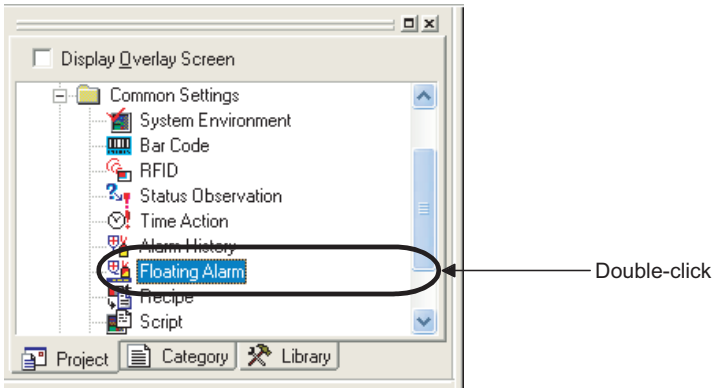

The display position set on the Auxiliary tab in the Screen Property dialog box is enabled when the GOT displays the scrolling alarm display for an alarm newly occurred.

## 8.9.3 Placement and settings

1. Select [Common] → [Floating Alarm] from the menu.
2. As the setting dialog box appears, make the settings with reference to the following explanation.

**Remark** When setting from Workspace(Project)

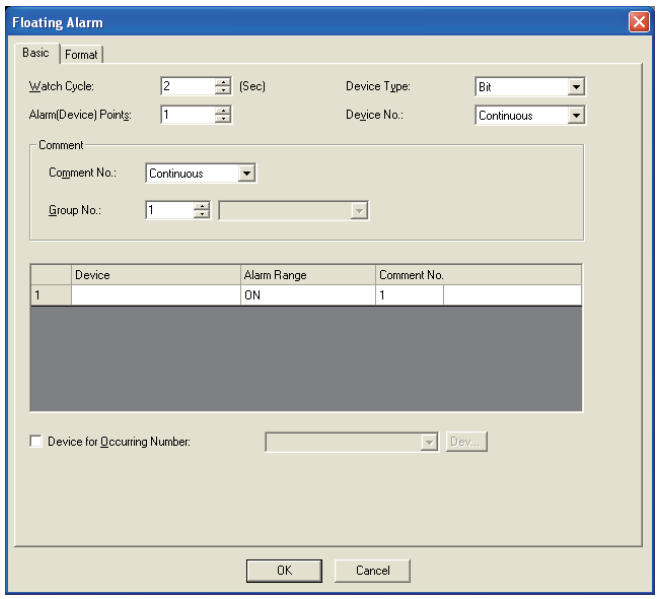
Double-clicking the Floating Alarm in Workspace(Project) displays the setting dialog box.



## 8.9.4 Setting items

### 1 Basic tab

Set the timing of collecting alarm data, devices to be specified for alarms, comments to be displayed with alarm occurrences, and others.




Basic | Format

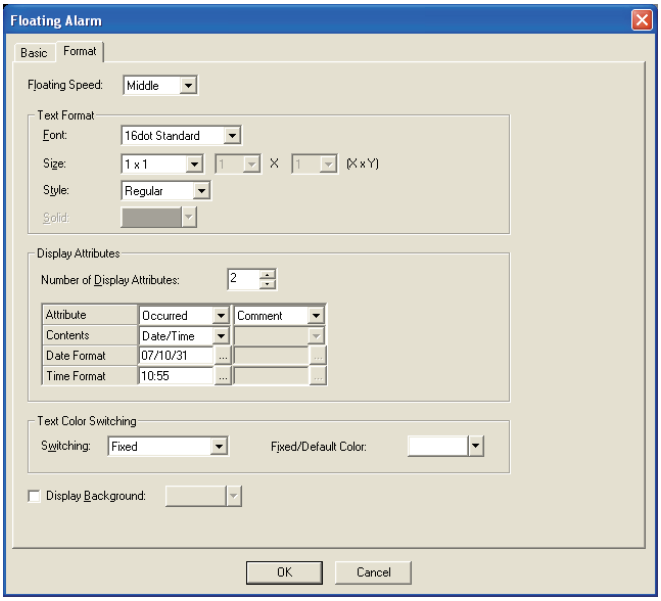
| Item | Description | Model |
|---|---|---|
| Watch Cycle | Set the cycle of monitoring set devices (1 to 3600 seconds). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device Type | Select a device type of devices to be monitored. (For GT10, only [Bit] can be selected.)<br>Bit :Select the item when monitoring a bit device by the ON/OFF change.<br>Signed BIN16 :The word device value is handled as a signed 16-bit binary.<br>Unsigned BIN16 :The word device value is handled as an unsigned 16-bit binary.<br>Signed BIN32 :The word device value is handled as a signed 32-bit binary.<br>Unsigned BIN32 :The word device value is handled as an unsigned 32-bit binary.<br>BCD16 :The word device value is handled as a 16-bit BCD (binary-coded decimal).<br>BCD32 :The word device value is handled as a 32-bit BCD (binary-coded decimal).<br>Real :The word device value is handled as a floating-point real number. | |
| Alarm(Device) Points | Set the number of device points to be monitored (GT11: 1 to 3072, GT10: 1 to 512). | |
| Device No. | Select a method to set devices. (For GT10, [Random] cannot be selected.)<br>Continuous :Select the item for setting consecutive devices starting from the set device.<br>Random :Select the item for setting devices one by one.<br>Fixed :When a device type for monitoring word devices is set, select the item for setting multiple alarm ranges for one word device. | |

(Continued to the next page)

Basic Format

| Item | | Description | Model |
|---|---|---|---|
| Comment | Comment No. | Select a method to set comments of the comment group to be displayed. (For GT10, [Random] cannot be selected.)<br>Continuous :Select the item for setting consecutive comment numbers of the comment group starting from the set comment number.<br>Random :Select the item for setting comment numbers one by one. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Group No. | Set the number of the comment group. | |
| Alarm setting list | | Set devices to be specified for alarms and comments to be displayed when alarms occur. | |
| | Device | Set devices to be specified for alarms. (☞ Section 5.1 Device Setting) | |
| | Alarm Range | Set the ranges of the devices for displaying alarms. (For GT10, [Bit] is fixed for [Device Type], and [ON] is fixed for [Alarm Range].)<br>• When [Device Type] is set to [Bit]<br>ON : When a bit device turns on, an alarm is displayed.<br>OFF: When a bit device turns off, an alarm is displayed.<br>• When [Device Type] is set to any other than [Bit]<br>Click the Exp. button, and then set the range of the word device value for displaying an alarm.<br>(☞ Section 5.5 Trigger Setting) | |
| | Comment No. | Set comment numbers of the comment group for displaying comments when alarms occur. | |
| Device for Occurring Number | | Check the item to store the number of alarm occurrences in a word device.<br>After checking the item, set the device that stores the number of alarm occurrences.<br>(☞ Section 5.1 Device Setting) | |

## 2 Format tab




### Basic Format

| Item | | Description | | Model |
|---|---|---|---|---|
| Floating Speed | | Select a scrolling speed of alarms.<br>High :Alarms scroll at a speed of approximately 213 dots (16-dot character × 13) per second.<br>Middle :Alarms scroll at a speed of approximately 106 dots (16-dot character × 7) per second.<br>Low :Alarms scroll at a speed of approximately 53 dots (16-dot character × 3) per second. | | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Text Format | Font | Select a font of characters. (For GT10, [12dot Standard] cannot be selected.)<br>•12dot Standard •16dot Standard •16dot HQ Mincho<br>•16dot HQ Gothic<br>For details of fonts and the size, refer to the following.<br>(☞ Section 2.2 Figures and Data Capacity) | | |
| | Size | | | |
| | Style | Select a display style of characters (Regular/Bold/Solid/Raised).<br>(☞ Section 2.3 Specifications of Applicable Characters) | Regular Bold Solid Raised | |
| | Solid | Select a color of the shadow when [Style] is set to [Solid] or [Raised]. | | |
| Display Attributes | Number of Display Attributes | Set the number of items to be displayed for an alarm (1 to 2). | | |
| | Attribute | Select an item to be displayed for the scrolling alarm display.<br>Occurred :Select the item to display the date and time of alarm occurrences.<br>Comment :Select the item to display comments corresponding to alarms. | | |
| | Contents | Select whether to display both date and time, or either of date and time when [Attribute] is set to [Occurred].<br>Date/Time :Select the item to display both date and time.<br>Date :Select the item to display the date only.<br>Time :Select the item to display the time only.<br>After selecting an item, set the date format and/or time format. | | |

(Continued to the next page)

Basic **Format**

| Item | | Description | Model |
|---|---|---|---|
| Display Attributes | Date Format*1 | Click ..., and then set the display format of the date.<br>The item can be set when [Contents] is set to [Date/Time] or [Date]. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Time Format*2 | Click ..., and then set the display format of the time.<br>The item can be set when [Contents] is set to [Date/Time] or [Time]. | |
| Text Color Switching | Switching | Select a color of characters to be displayed.<br>• Fixed :Select the item to display characters in one color only. After selecting [Fixed], set the character color.<br>• Comment Color :Select the item to display comments for the scrolling alarm display in comment colors set in the comment group. | |
| | Fixed/Default Color | • When [Fixed] is selected for [Text Color Switching]<br>Select a character color to display characters in one color only.<br>• When [Comment Color] is selected for [Text Color Switching]<br>Select a character color to be displayed when comments are not registered. | |
| Display Background | | Select a background color of the scrolling alarm display area.<br>Check the checkbox, and then select a background color. | |

For details of *1 and *2, refer to the following.

☞ Section 8.5 Advanced Alarm Popup Display

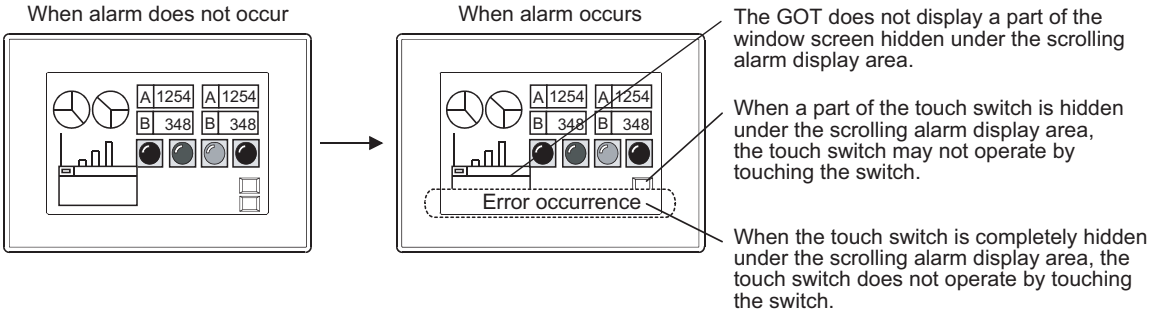
## 8.9.5 Precautions

### 1 Precautions for drawing

(1) Maximum number of scrolling alarm display settings
Only one scrolling alarm display setting is available for one project.
The GOT can display the same scrolling alarm display on multiple base screens.
Whether or not to display the scrolling alarm display can be set for each base screen.
☞ Section 4.4 Auxiliary Settings

### 2 Precautions for use

(1) When scrolling alarm display overlaps with placed objects
The user cannot operate objects, including touch switches, and window screens hidden under the scrolling alarm display.
Change the display position of the scrolling alarm display.
☞ Section 8.9.2 2 Operations when directly touching scrolling alarm display




(2) Displaying occurred time
The GOT clock data is used for displaying the occurred time.
For precautions and restrictions on the GOT clock data for the clock function, refer to the following.
☞ Section 2.5 Clock Function

# Memo

# 9. PARTS

## 9.1 Parts Display

This function displays the registered parts and base screen/window screen according to the device status.

**Remark** Parts displayed by Parts Display

There are the following two types for the parts displayed by Parts Display. The parts to be displayed by Parts Display needs to be registered in advance.

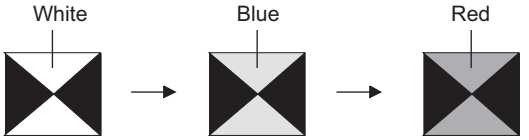
(1) Parts data registered as parts by the GT Designer2 (registered parts)

☞ Section 4.2 Parts Registration

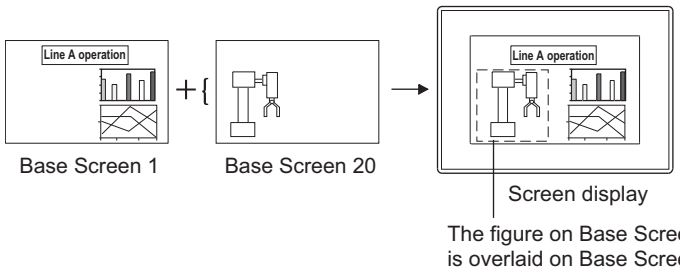
(2) BMP/JPEG files stored in the memory card (BMP/JPEG file parts)

☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

### 1 Applicable parts types

| Type | Description | Remarks |
|---|---|---|
| Parts | The figures registered as parts are displayed.<br>Example: Registrable figures as parts<br> <br>Figures Text BMP/JPEG file | • Parts must have been registered in advance.<br>☞ •Section 4.2 Parts Registration<br>•Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card |
| Mark | The color of the figure registered as a part is displayed according to the change of the device value.<br>The used memory capacity inside of the GOT are saved since different images can be displayed by a single part.<br>  <br>White Blue Red<br>D100 = 0 D100 = 50 D100 = 100<br>The color changing is displayed in the white area. | • BMP/JPEG format parts cannot be used.<br>• Draw the color-changed area in white.<br>• During parts movement (fixed), color change (multiple-color display) is disabled.<br>Only one color is used. |

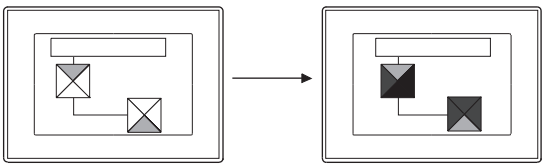
(Continued to next page)

| Type | Description | Remarks |
|---|---|---|
| Base screen<br>Window screen | The figures on any base screens and window screens are displayed.<br>  <br> | • The objects set on the base screens and window screens are not displayed. |

## Application example

**Display different images of the same part (Parts display (bit/word))**

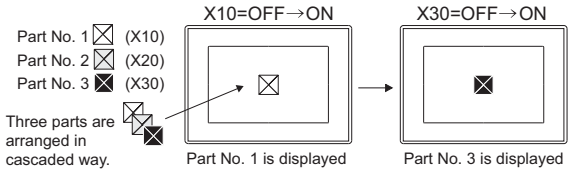
☞ Basic tab (Bit) / Basic tab (Word) Setting



Only the white part of parts changes.

**Cascade multiple parts. (Parts display (fixed))**

☞ Basic tab (Fixed) Setting



## 9.1.1 Relevant settings

For Parts display, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to parts display only
… Relevant to parts display only.

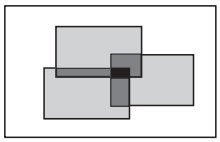
(2) Functions relevant to parts display and others
… Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

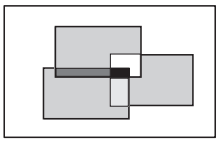
(1) Functions relevant to parts display only

• Inverting the grouped parts (XOR display)

When the drawing mode of parts display is set to XOR, the grouped parts can be inverted (XOR display) at once.

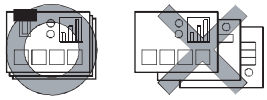


Inverting the grouped figures (XOR display) at once



Inverting each of the grouped figures (XOR display)
(The figures are inverted one by one in the overlapping order.)

Setting for each project | Setting for each screen

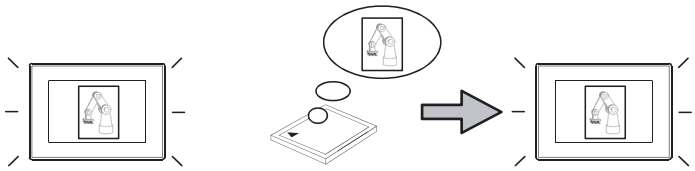


Setting items
• [While display mode of part display is XOR, grouped figures are displayed by XOR]

• Using/Not using the image files in the memory card

Whether to use the image files stored in the memory card for the objects of Parts Display/Parts Movement can be specified.

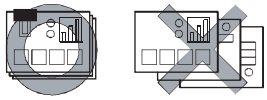
<Not checked> <Checked>



Displays the parts registered in the GOT.

Displays the BMP/JPEG file parts in the memory card.

Setting for each project | Setting for each screen

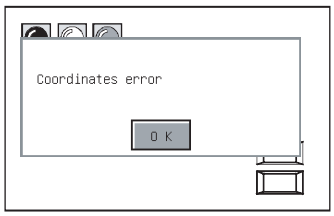


Setting items
• [The image file in a memory card is used for the Parts Image of Parts Display/Movement]

(2) Functions relevant to parts display and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project

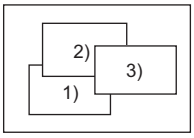
Setting for each screen

Setting items
• [Carry out check for overlapping objects within GOT]

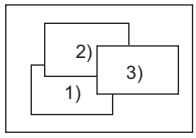
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2>

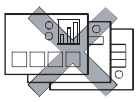



<Order of displaying objects on the GOT>




Setting for each project

Setting for each screen



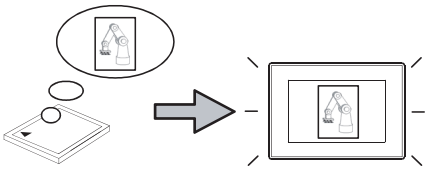
Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 2 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to parts display only

• Memory card image file display setting signal
(Write device: GS450.b8)

The image files in the memory card can be used for the objects of Parts Display/Parts Movement.



Displays the BMP/JPEG file parts in the memory card.

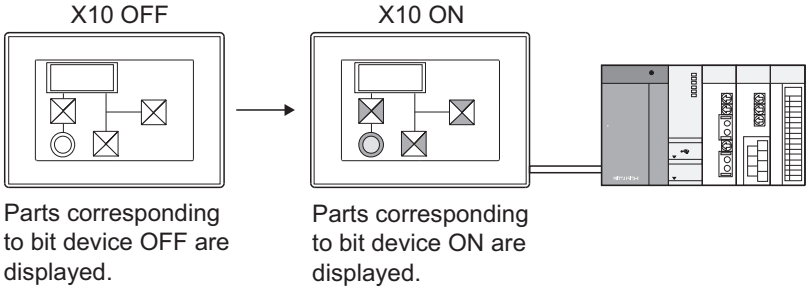
## 9.1.2 Parts displaying method

This section describes the parts displaying method of Parts Display.

### 1 Parts switching method

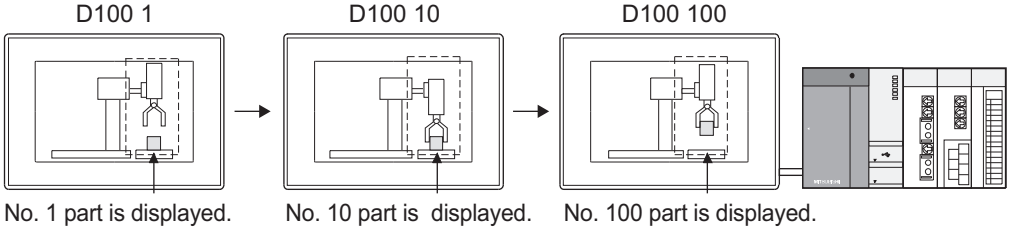
(1) Bit parts display (☞ Section 9.1.4 Setting items of bit parts display)

This function is used to display the parts/base screen/window screen corresponding to bit device ON/OFF.



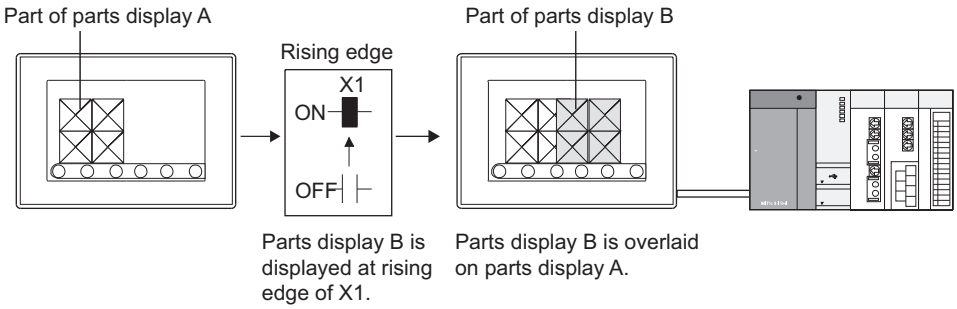

(2) Word parts display (☞ Section 9.1.5 Setting items of word parts display)

This function is used to display the parts/base screen/window screen corresponding to word device value.




(3) Fixed parts display (☞ Section 9.1.6 Setting items of fixed parts display)

This function displays the parts/base screen/window screen at rising/falling edge of a bit device. Only one type of part can be displayed, but the part can be overlaid on the other parts display.



## 2 Displaying method of the BMP/JPEG file stored in the memory card

BMP/JPEG file parts are displayed in units of objects/projects.

(1) Display method in units of objects (using image file)

(a) When using BMP/JPEG file part in memory card

In each object setting of Parts Display/Parts Movement, specify the BMP/JPEG file stored in the memory card for display.

1. Store a BMP/JPEG file to be displayed as parts in the memory card. For storage method, refer to the following.

☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

1 Displaying BMP/JPEG files (object units)

2. After the display triggers of the part are met in Parts Display/Parts Movement, the BMP/JPEG file part in specified memory card is displayed.

Set the following items in the Basic tab and Case tab (only for word) of the Parts Display/Parts Movement for use.

- Image File Setting
- Image File No. setting

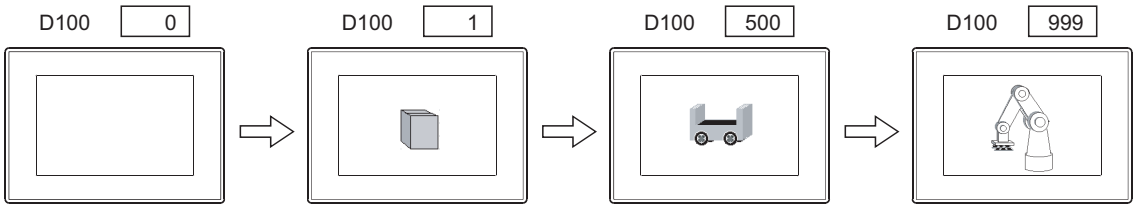
(b) Display example

The following figure shows the display example when the BMP file parts are stored in the memory card.

Example: Displaying the BMP image with Parts Display (Word)

Setting image file and entering part number 1 to 65536 in word device displays the BMP image.

- Word device for displaying the part: D100




If specifying "0" to the part number, BMP file parts are hidden.

Displays BMP file part (IMG0001.BMP).

Displays BMP file part (IMG0500.BMP).

Displays BMP file part (IMG0999.BMP).

(2) Display method in units of projects (using a part)

The BMP/JPEG file parts stored in the memory card can be displayed by specifying a number from 9001 to 9999 for the parts No.

To display a BMP/JPEG file part in the memory card by specifying parts No. of 9001 to 9999, make the setting in the following procedure.

(a) To ordinarily select a BMP/JPEG file parts in the memory card

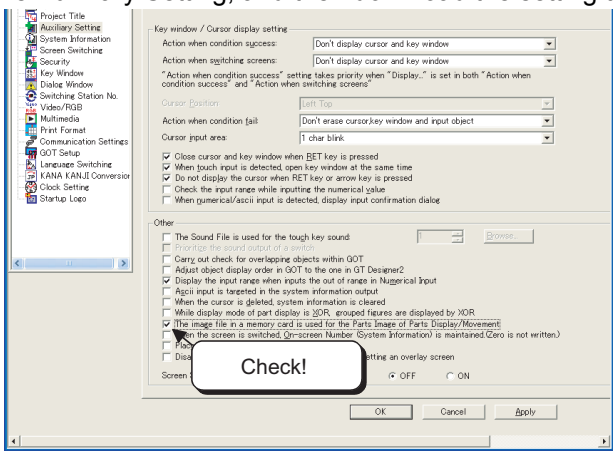
The BMP/JPEG file parts in the memory card will be displayed ordinarily when a parts No. of 9001 to 9999 is specified.

1 Store a BMP/JPEG file to be displayed as parts in the memory card.

Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

2 Displaying BMP/JPEG files (project units)

2 Check [The image file in a memory card is used for the Parts Image of Parts Display/ Movement] of the Auxiliary Setting, and then download the setting to the GOT.




3 The BMP/JPEG file parts in the memory card will be displayed when the parts displaying condition (Parts No.: 9001 to 9999) is met on Parts Display/Parts Movement.

Setting of image file and image file No. are not required.

(b) To display a BMP/JPEG file parts in the memory card by using the GS450.b8
The displaying of the parts registered by the GT Designer2 will be switched to displaying of the BMP/JPEG file parts in the memory card when a parts No. of 9001 to 9999 is specified.

| Parts No. | When GS450.b8 is ON | When GS450.b8 is OFF |
|---|---|---|
| 9001 to 9999 | The BMP/JPEG file part in the memory card is displayed. | The part registered by the GT Degisner2 is displayed. |

1. Store a BMP/JPEG file to be displayed as parts in the memory card.

☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

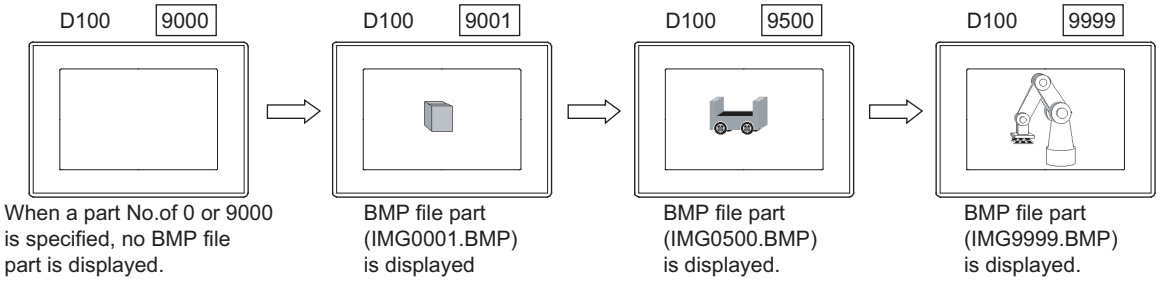
2 Displaying BMP/JPEG files (project units)

2. Turn ON the GS450.b8.

3. The BMP/JPEG file parts in the memory card will be displayed when the parts displaying condition (Parts No.: 9001 to 9999) is met on Parts Display/Parts Movement.

(c) Display example
The display example in the case where the following BMP file parts are stored on the memory card is shown below.

Example: BMP file parts are displayed in parts display (word)
When any of the part numbers from 9001 to 9999 is entered in a word device, the corresponding BMP file part is displayed.
• Word device for parts display: D100



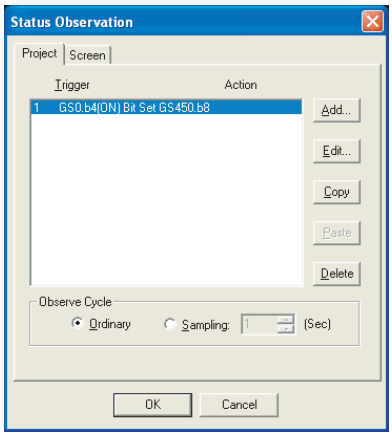
**Point**

(1) When specifying a parts No. out of 9001 to 9999
When specifying a parts No. out of 9001 to 9999, the parts registered by the GT Designer2 will be displayed even if the setting for displaying the BMP/JPEG file parts in the memory card has been made.

(2) When switching the parts display to the display of the BMP/JPEG file parts of the corresponding parts No. in the memory card (Only when using the GS450.b8.)
To display the BMP/JPEG file parts of the corresponding parts No. in the memory card while displaying parts of parts No. of 9001 to 9999 registered by the GT Designer2, operate as follows.

1. Turn ON the GS450.b8.
2. Specify the parts No. 0 or 9000 to hide the parts currently displayed.
3. Specify the parts No. of the BMP/JPEG file parts in the memory card to be displayed.

(3) The example of turning on the GS450.b8 automatically after the GOT powering on
The following shows the example of turning on the GS450.b8 automatically after the GOT is powered on by using the status observation function.
It is convenient for displaying the BMP/JPEG file parts in the memory card from the beginning when using the GS450.b8.
On the status monitor function, set the internal device (Ordinary ON device: GS0.b4) to store "1" to GS450.b8 when the Trigger is ON.
After the GOT is powered on, "1" is stored into GS450.b8 by the status monitor function.




- Make setting on the status monitor.
- Set the first line of the status monitor function. ("1" is stored into GS450.b8 immediately after the GOT is switched ON.)*1
- Set the condition monitor cycle to [Ordinary].

*1 At a GOT startup, to display or parts movement parts may not be changed to BMP/JPEG image parts. (Switch the screen change parts.)
Design screens considering the characteristics of BMP image parts.

## 3 Parts No.

The displayable parts or the motions differ depending on the parts No.
The displayable parts for each parts No. are shown in the following table.

| Parts No. | When the setting for displaying the BMP/JPEG file parts in the memory card has been made. | | When the setting for displaying the BMP/JPEG file parts in the memory card has not been made. | |
|---|---|---|---|---|
| | Parts registered by the GT Designer2 | BMP/JPEG file parts in the memory card | Parts registered by the GT Designer2 | BMP/JPEG file parts in the memory card |
| 0 | —*1 | —*1 | —*1 | × |
| 1 to 8999 | ○ | × | ○ | × |
| 9000 | × | —*1 | ○ | × |
| 9001 to 9999 | ×*2 | ○ | ○ | × |
| 10000 to 32767 | ○ | × | ○ | × |

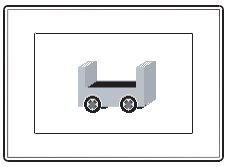
○: Displayable ×: Not displayable —: Hidden

*1 When [Indirect (Device Value)] in the [Attribute (Normal Case)] of the Word Parts Movement has been set, the parts will not be hidden. (The current display is retained.)
For the method of hiding parts with the Word Parts Movement, refer to the [Attribute (Normal Case)] of the Word Parts Movement.

( Section 9.2.8 1 Basic tab (Word))

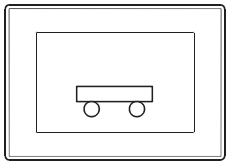
*2 The parts cannot be displayed even if they have been registered by the GT Designer2.
Example: When a part registered by the GT Designer2 has been registered for the parts No. 9123

The BMP/JPEG file part is displayed.



When the setting for displaying the BMP/JPEG file parts in the memory card has been made.

The part registered by the GT Designer2 (parts No.9123) is displayed.



When the setting for displaying the BMP/JPEG file parts in the memory card has not been made.

## 9.1.3 Arrangement and settings

1. Carry out either of the following operations
   - Click on [Bit Parts Display]/ [Word Parts Display]/ [Fixed Parts Display]
   - Select [Object] → [Parts Display] → [Bit Parts]/[Word Parts]/[Fixed Parts] from the menu.
2. Click on the position where the part to be loca ted to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged part to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

Part image displayed when the part is arranged.

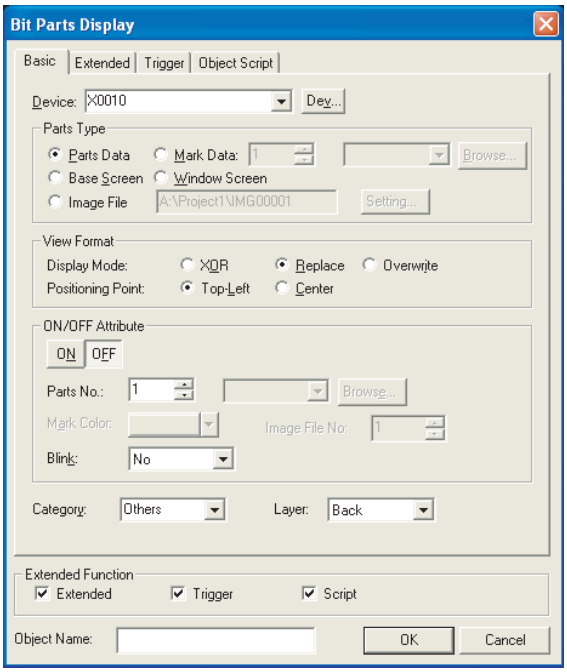
(1) When parts are displayed
- In the case of bit parts display
  Parts of which status is set in ON/OFF attribute are displayed.
  (☞ Basic tab [ON/OFF Attribute])
- In the case of word parts display
  Parts of which part No. is set in [Preview No.] are displayed.
  (☞ Basic tab [Preview Parts]

(2) When base screen and window screen are displayed as parts
"X" mark indicating position is displayed.

## 9.1.4 Setting items of bit parts display

### 1 Basic tab (Bit)

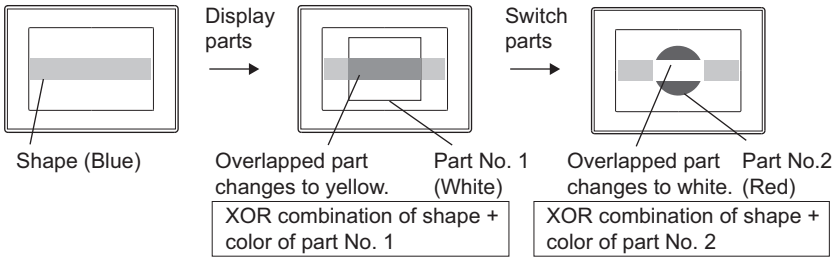
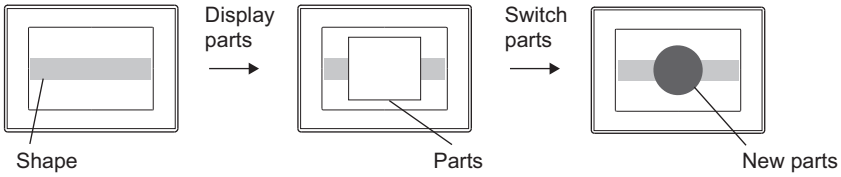
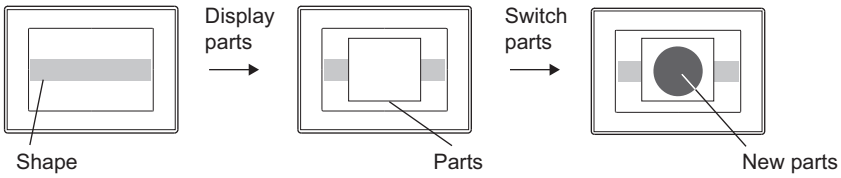
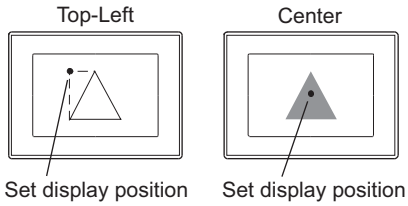
In basic tab, the [Parts Type] and [Parts No.] during ON/OFF are set.




Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set a device to be monitored.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Parts Type | | Select the type of part to be displayed. | |
| | Parts Data*1 | The registered part is displayed. | |
| | Mark Data*1 | Changes the white part of the registered part into the different color according to the device change.<br>After selecting this item, set the [Parts No.].<br>The type of registered part can be checked by clicking on Browse button.<br>Refer to the following for the parts displayed by Mark.<br>(☞ Section 4.2 Parts Registration) | |
| | Base Screen | Displays the registered base screen as part. | |
| | Window Screen | Displays the registered window screen as part. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Image File*2 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the Setting button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts when they are switched.<br>XOR :Distinguishes between overlapping parts by showing different colors in the overlapping portion of the parts.<br>For the XOR combination of the overlapped colors, refer to the following.<br>(☞ Appendix3 Synthesized Colors Available for XOR)<br>  <br><br>Replace :The part being displayed is deleted to display a new part.<br>Please note this item is not available when the [Parts Type] is for the [Base Screen] or [Window Screen].<br>(☞ Basic Tab [Parts Type])<br>  <br><br>Overwrite :Displays the new part/base screen/window screen over the previously displayed part.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Positioning Point | Select the reference point to display parts/base screen/window screen.<br>Top-Left :Set the display position at the top left of the part/base screen/window screen.<br>Center :Set the display position at the center of the part/base screen/window screen.<br>  <br> | |

(Continued to next page)

Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| ON/OFF Attribute | ON | Click on this item to set the part/base screen/window screen to be displayed the device turns ON. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | OFF | Click on this item to set the part/base screen/window screen to be displayed the device turns OFF. | |
| | Parts No. | Set the part/base screen/window screen No. to be displayed.<br>The registered part/base screen/window screen can be checked by clicking on Browse button.<br>Set zero in "Parts No." to erase the part.<br>Set the [Parts No.] condition when the device bit is OFF to "0" in order to display the part only when the device bit is ON. | |
| | Mark Color | Select the color to be switched from the white area of the part when [Mark] has been set in [Parts Type].<br>(☞ Basic Tab [Parts Type]) | |
| | Image File No. | Can specify image file No.<br>The allowable range of the specification depends on [Digits] in the Image File Setting dialog box.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the image is deleted.<br>To display the image only at power-on, specify [Image File No.] at power-off to "0". | |
| | Blink | Select the blinking pattern of the parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, *2, refer to the following.

*1 How to enable transparent setting of parts

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

When setting the transparent color to the image data set for [Parts Type], the transparent setting for [Parts Type] is enabled.
The following shows how to enable the transparent setting of parts.

1. Set the transparent color to the image data.
   (The transparent color can be set to image data in the BMP format only.)
2. Register the image data that the transparent color is set in the parts or library.
3. Set the part or library for [Parts Type] in the Parts Display screens.

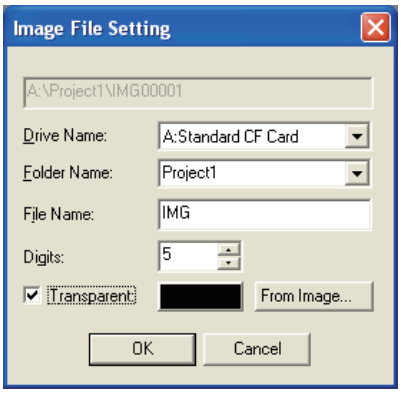
For how to set the transparent color to the image data, refer to the following manual.

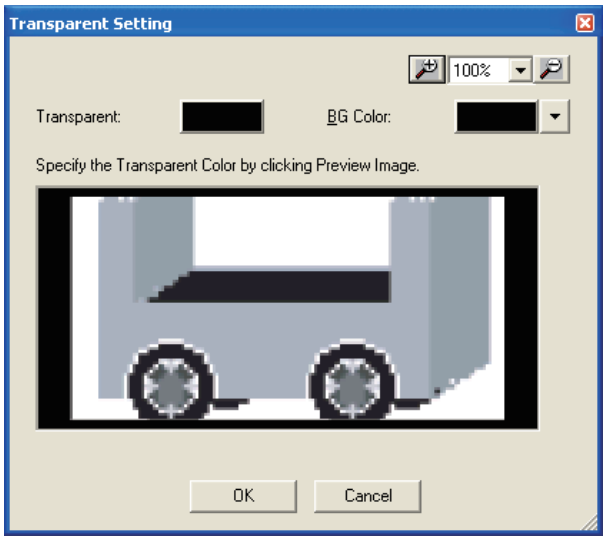
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual (Section 11.1 Drawing Figures)

## *2 Image File Setting

GT 16 GT 15 Soft GOT 1000 GT 11 GT 10

Set an image file to be displayed.

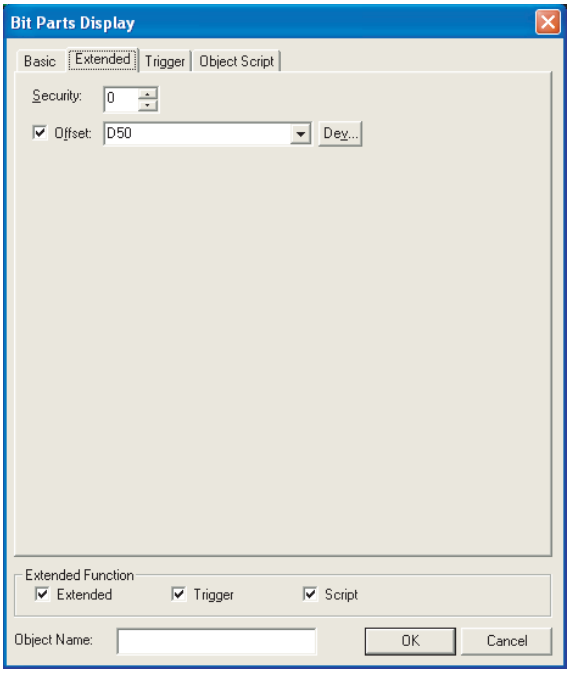



| Item | Description |
|---|---|
| Image file path | Display the full path of the specified image file.<br>If "0" is set to the image file No., the path is not displayed.<br>Make setting so that the whole path can be within 78 characters. |
| Drive Name | Select a drive where an image file is to be stored. |
| Folder Name | Select a folder where an image file is to be stored. |
| File Name | Specify a part of image file name (head character except for image file No.). |
| Digits | Specify the number of digits (1 to 5) for [Imege File No.] to an image file. |
| Transparent | Check the item for setting the transparent color to the specified image file.<br>The transparent color can be set to BMP files.<br>After checking the item, click the From Image button, and then the Open dialog box is displayed. Select the file that the transparent color is set.<br>After selecting the file, the Transparent Setting dialog box is displayed and specify the area that the transparent color is set.<br>  <br><br>• Transparent: Displays the set transparent color.<br>• BG Color: Change background colors for the preview.<br>• Preview: Displays the selected image file.<br>Click the preview, and then the color of the clicked part is specified as the transparent color. |

## 2 Extended tab (Bit)

Set the security and offset.

This tab will be displayed when the extended function at the bottom of the dialog box is checked.



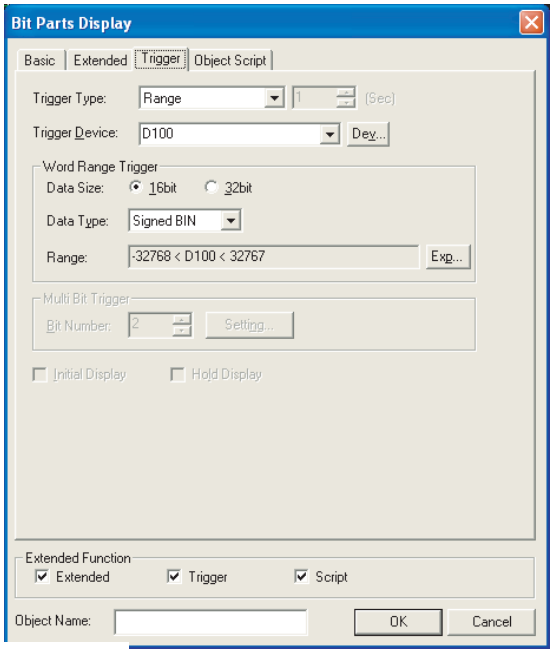

Basic | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

## 3 Trigger tab (Bit)

Set conditions for displaying the object.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting



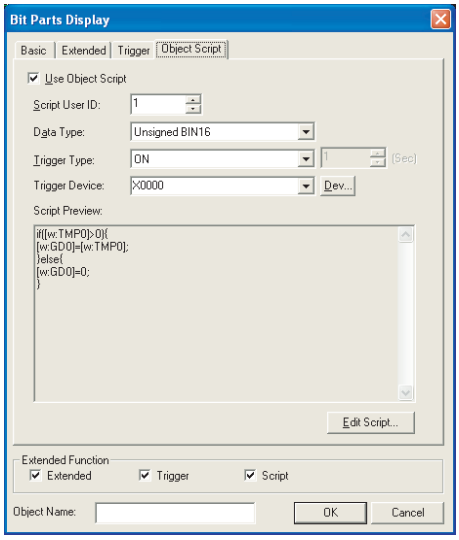

Basic | Extended | **Trigger** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be set.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items.<br>(☞ Trigger tab [Trigger Type]) | |
| | Data Size | Select the [Data Size] (16 bit/32 bit) of the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the Range button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. (☞ Trigger tab [Trigger Type])<br>After setting, click on the Setting button and set the bit devices and their conditions. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied.<br>(☞ Trigger tab [Trigger Type]) | |
| Hold Display | | When [ON], [OFF], [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied.<br>(☞ Trigger tab [Trigger Type])<br>If not checked, the object will be deleted when the conditions become invalid. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 4 Object Script tab (Bit)

For details of settings made on the Object Script tab, refer to the following.

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Display mode | draw_mode | ○ | 3) |
| | Parts No. | part_no | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| | Blink | blink | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

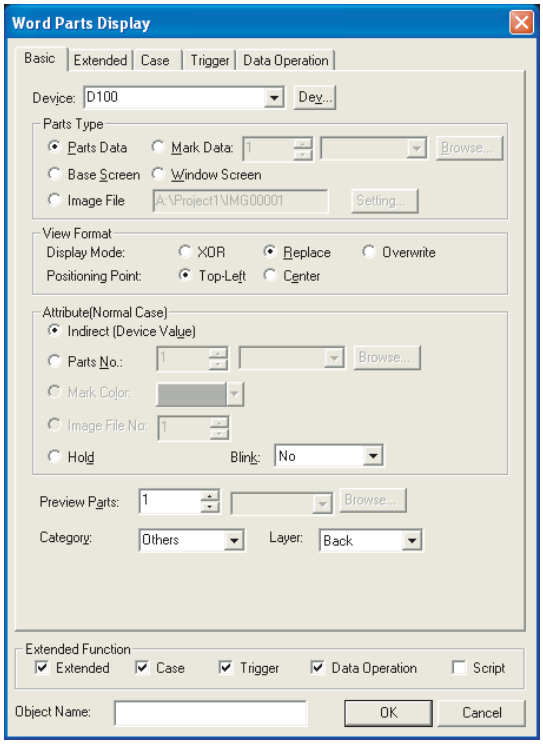
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.1.5 Setting items of word parts display

### 1 Basic tab (Word)

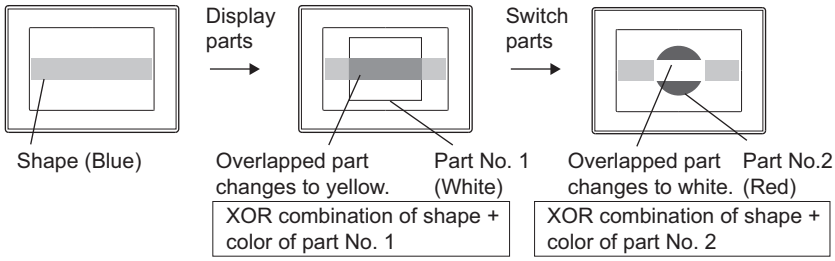
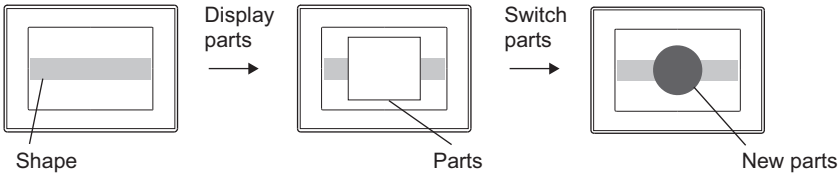
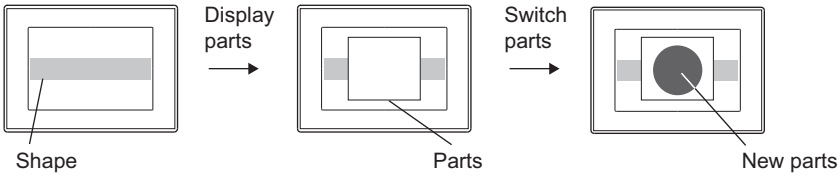
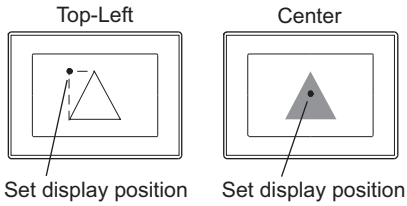
Here the parts type and parts No. displayed corresponding to word device value is set.




Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set the device to be monitored. (☞ Section 5.1 Device Setting)<br>The default of a written data format is signed BIN.<br>To write by the other data format, change the setting in "Data Form" on the Extended tab.<br>(☞ Extended tab [Data Type]) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Parts Type | | Select the type of part to be displayed. | |
| | Parts Data*1 | The registered part is displayed. | |
| | Mark Data*1 | Changes the white part of the registered part into the different color according to the device change.<br>After selecting this item, set the [Parts No.].<br>The type of registered part can be checked by clicking on Browse button.<br>Refer to the following for the parts displayed by Mark.<br>(☞ Section 4.2 Parts Registration) | |
| | Base Screen | Displays the registered base screen as part. | |
| | Window Screen | Displays the registered window screen as part. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Image File*1 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the Setting button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts when they are switched.<br>XOR :Distinguishes between overlapping parts by showing different colors in the overlapping portion of the parts.<br>For the XOR combination of the overlapped colors, refer to the following.<br>(☞ Appendix3 Synthesized Colors Available for XOR)<br>  <br><br>Replace :The part being displayed is deleted to display a new part.<br>Please note this item is not available when the [Parts Type] is for the [Base Screen] or [Window Screen].<br>(☞ Basic tab [Parts Type])<br>  <br><br>Overwrite :Displays the new part/base screen/window screen over the previously displayed part.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Positioning Point | Select the reference point to display parts/base screen/window screen.<br>Top-Left :Set the display position at the top left of the part/base screen/window screen.<br>Center :Set the display position at the center of the part/base screen/window screen.<br>  <br> | |

(Continued to next page)

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Attribute (Normal Case)*2 | | Set the display attribute of parts.<br>Use the state (Range Setting tab) for switching to multiple parts except "Indirect (Device value)".<br><br>Indirect (Device value) :Displays the parts/base screen/window screen No. corresponding to the word device value.<br>Set zero in the word device value to erase the part.<br>Parts No. :Select this item at displaying the registered parts/base screen/window screen by specifying it.<br>Click the Browse button to check the registered parts/base screen/window screen.<br>Set zero in "Parts No." to erase the part.<br>Mark Color :At selecting "Mark" in "Parts Type" category, select the displayed color to change in the white area of the registered part.<br>(☞ Basic tab [Parts Type])<br>Image File No. :Can specify image file No.The allowable range of the specification depends on [Digits] in the Image File Setting dialogbox.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted.<br>Hold :Select this item to hold the currently displayed parts/base screen/window screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Preview Parts | | Displays the part of specified No. on the GT Designer2 screen. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

☞ Secton9.1.4 Setting items of bit parts display

For details of *2, refer to the following.

*2 Parts switching method

Set on State (Case tab) except "Indirect (Device value)" in "Attribute (Normal case)" category.
The following describes how to change the displayed part depending on the "Attribute (Normal case)" and State settings.

| "Attribute (Normal case)" type | State setting | |
|---|---|---|
| | Set | Not set |
| [Indirect (Device Value)] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set to the state is displayed.<br>• When trigger is not satisfied<br>The displayed part is changed depending on the monitored device value. | Set the state if required.<br>The displayed part is changed depending on the monitored device value.<br>Set the state to change the part except the above condition. |
| [Parts No.]<br>[Mark Color] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set at the state is displayed.<br>• When trigger is not satisfied<br>The part set at "Attribute (Normal case)" is displayed. | Set the state at any time.<br>Only one type of part is kept displayed without sate settings.<br>It cannot be switched to any other part. |
| [Hold] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set at the state is displayed.<br>• When trigger is not satisfied<br>The part set at the state is kept displayed. | Set the state at any time.<br>Nothing is displayed without sate settings. |

Example: When "Attribute (Normal case)" is set to "Parts No."
Set the following on each tab.

Basics tab

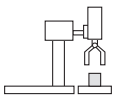
[Device]: D10
[Parts Type]: [Parts Data]
[Attribute (Normal Case)]: [Parts No.1]

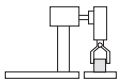
Range Setting tab

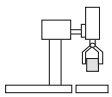
State 1
[Range] : 1<= D10 <= 100
[Attribute] : Parts No.2

State 2
[Range] : 100 < D10
[Attribute] : Parts No.3

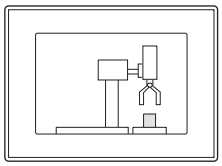
(Displayed part)


Part No. 1


Part No. 2

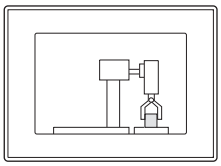

Part No. 3

D10 = 0



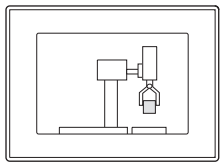
Part set at "Attribute" is displayed (Part No. 1).

D10 = 40



Part set at State 1 is displayed (Part No. 2).

D10 = 150



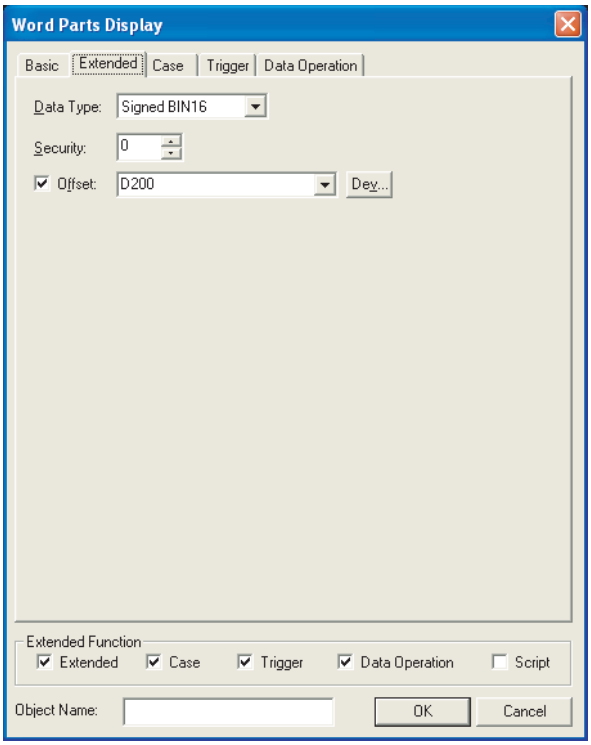
Part set at State 2 is displayed (Part No. 3).

Refer to the following section for details of the state.

☞ Section 5.4 State Setting

## 2 Extended tab (Word)

Set the data type, security and offset of monitor device.
This tab is displayed when the extended function at the bottom of the dialog box is checked.



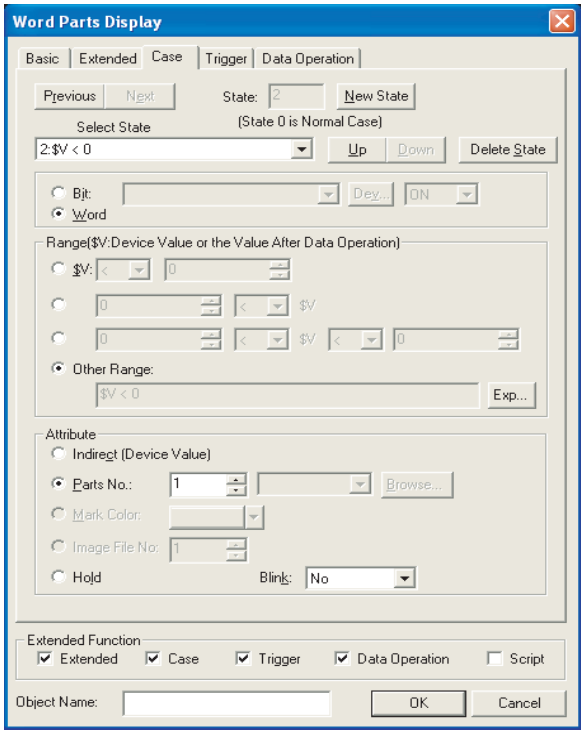

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN16 : Treats the word device value as a signed binary value.<br>Unsigned BIN16 : Treats the word device value as an unsigned binary value.<br>BCD16 : Treats the word device value as a 16-bit BCD (binary decimal) value. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

## 3 Case tab (Word)

The attribute can be changed on this setting depending on the device status.
This tab will be displayed when the “Extended Function” at the bottom of the dialog box is checked.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Device | Select the condition to change the display according to the state.<br>Bit : Select it when changing the display according to the ON/OFF status of bit device. After selecting, set the bit device and device status (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>Word : Select it when changing the display according to the vlaue of word device. After selecting, set the conditional expression of word device value in [Range].<br>(☞ Case tab [Range]) | |
| | Range | Set the range of word device values for display change using a conditional expression. | |

(Continued to next page)

Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | Attribute | Select the display method of parts.<br>Indirect (Device value) :Display the parts/base screen/window screen corresponding to word device value.<br>Set zero in the word device value to erase the part.<br>Parts No. :Select this item at displaying the registered parts/base screen/window screen by specifying it.<br>After selection, set the parts/base screen/window screen to be displayed.<br>Set zero in "Parts No." to erase the part.<br>Mark Color :When [Mark] selecting in [Parts Type], select this item to switch the white of the parts to other color.<br>Image File No. :Can specify image file No.The allowable range of the specification depends on [Digits] in the Image File Setting dialogbox.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted.<br>Hold :Select this item to hold the currently displayed parts/base screen/window screen. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |

For details of *1, refer to the following.

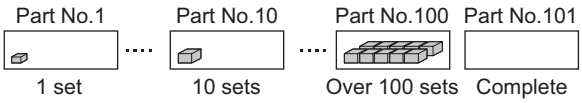
*1 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

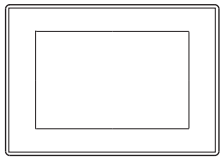
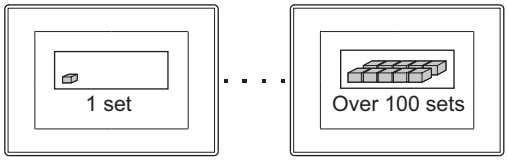
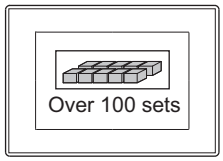
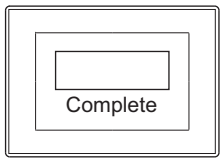
Example: Monitor device : D100
Data view format : Signed decimal, 16-bit signed decimal

Registered parts :




| Action priority for setting overlap conditions | State No. | Display range | Display parts |
|---|---|---|---|
| High | 1 | $V<=0 | No.0 |
| ↓ | 2 | 1<=$V<=100 | Indirect |
| | 3 | 101<=$V<=199 | Hold |
| Low | Normal case (State 0) | - | No.101 |

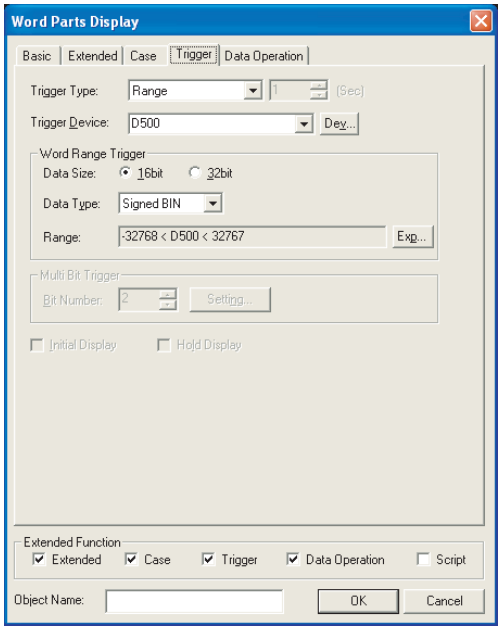
*$V indicates monitor device value

| | | |
|---|---|---|
| State 1 | When monitor device value is equal to or less than 0 ($V ≦ 0), the parts will not be displayed. |  |
| State 2 | When monitor device value is between 1 and 100 (1 ≦ $V ≦ 100), the parts corresponding to device value will be displayed. |   |
| State 3 | When monitor device value is between 101 and 199 (101 ≦ $V ≦ 199), parts display will not be switched. |   |
| Normal case (State 0) | In the case when other than the conditions of state 1 to 3, part No. 101 will be displayed. |   |

## 4 Trigger tab (Word)

The setting items of the trigger tab are the same with bit parts display.
For details of setting items, refer to the following.

☞ Section 9.1.4 Setting items of bit parts display

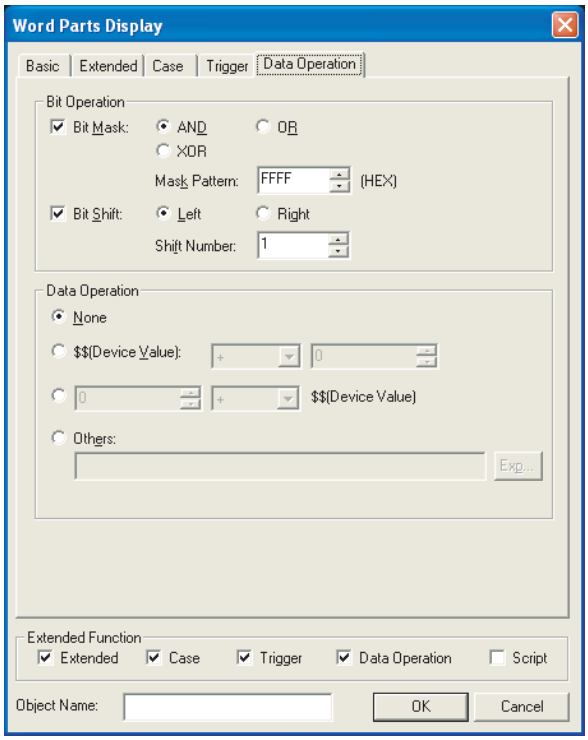


## 5 Data Operation tab (Word)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



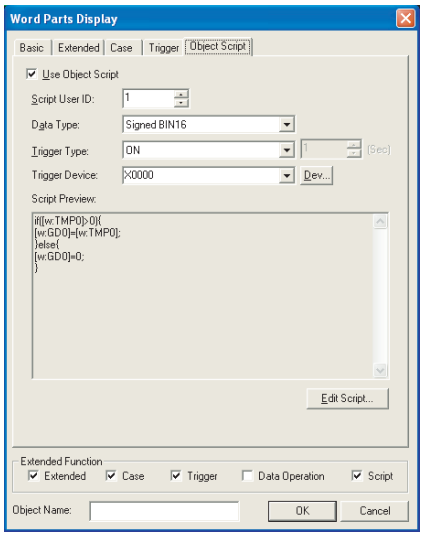

Basic | Extended | Case | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab (Word)

For details of settings made on the object script tab, refer to the following

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Display mode | draw_mode | ○ | 3) |
| | Parts No. | part_no | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| | Blink | blink | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

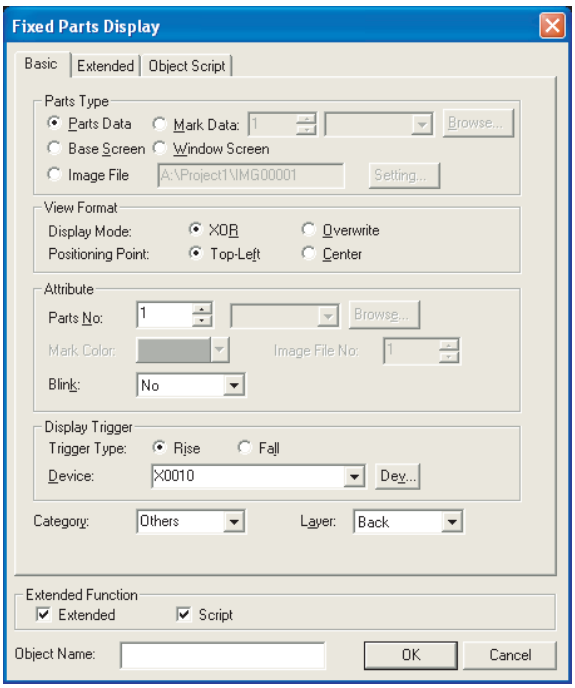
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.1.6 Setting items of fixed parts display

### 1 Basic tab (Fixed)

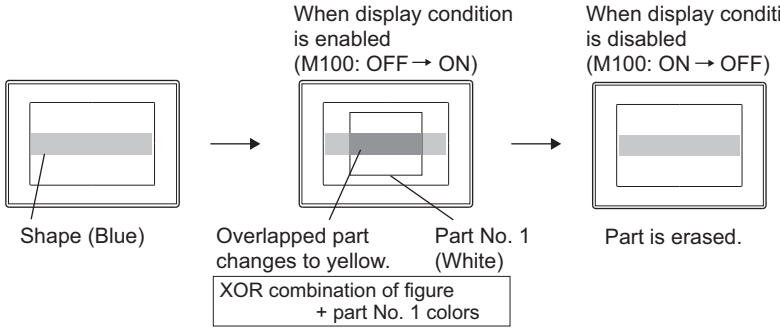
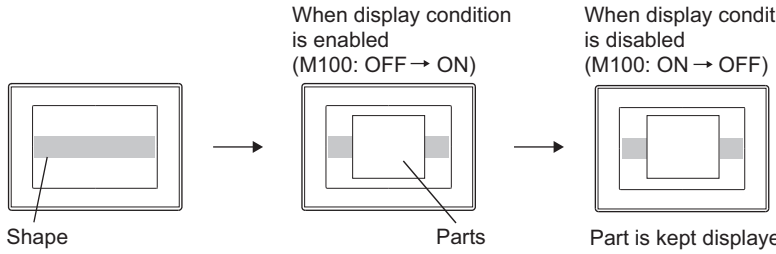
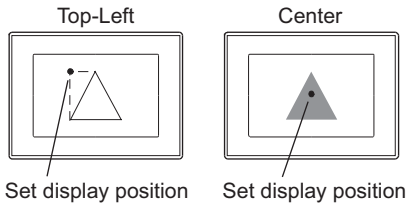
Directly specify and set the parts/base screen/window screen to be displayed.




Basic | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Parts Type | | Select the type of part to be displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Parts Data*1 | The registered part is displayed. | |
| | Mark Data*1 | Changes the white part of the registered part into the different color according to the device change.<br>After selecting this item, set the [Parts No.].<br>The type of registered part can be checked by clicking on [Browse] button.<br>Refer to the following for the displayed parts by Mark.<br>(☞ Section 4.2 Parts Registration) | |
| | Base Screen | Displays the registered base screen as part. | |
| | Window Screen | Displays the registered window screen as part. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Image File*1 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the [Setting] button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts when they are switched.<br>XOR :The parts/base screen/window screen by XOR combination is overlaid on a figure or other part display.<br>The parts/base screen/window screen is erased at the disabled display condition.<br>For the XOR combination of the overlapped colors, refer to the following.<br>(☞ Appendix3 Synthesized Colors Available for XOR )<br>Example: Display condition: Rising edge of M100<br>  <br><br>Overwrite :The parts/base screen/window screen is overlaid on a figure or other part display.<br>The parts/base screen/window screen is kept displaying without regarding to the display condition.<br>Example: Display condition: Rising edge of M100<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Positioning Point | Select the reference point to display parts/base screen/window screen.<br>Top-Left :Set the display position at the top left of the part/base screen/window screen.<br>Center :Set the display position at the center of the part/base screen/window screen.<br>  <br> | |

(Continued to next page)

Basic | Extended | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Attribute | | Set the display attribute of parts.<br>Parts No. :Select this item to display the parts/base screen/window screen and screen during registration.<br>After the selection, set the parts/base screen/window screen No. to be displayed.<br>Mark Color :When the registered parts are [Mark] selected in [Parts Type], select the color to which the white part of the parts will be switched.<br>(☞ Basic tab [Parts Type])<br>Image File No. :Can specify image file No.The allowable range of the specification depends on [Digits] in the Image File Setting dialogbox.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the Parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Display Trigger | Trigger Type | Select the trigger by which data is displayed.<br>(☞ Section 5.5 Trigger Setting)<br>• Rise • Fall | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Device | Click on Dev... button to specify the device to be set as trigger.<br>(☞ Section 5.1 Device Setting) | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

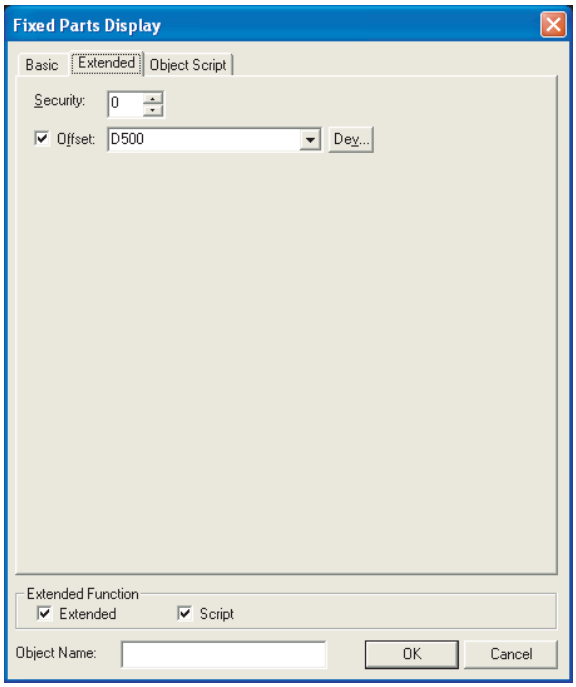
For details of *1, refer to the following.

☞ Secton9.1.4 Setting items of bit parts display

## 2 Extended tab (Fixed)

The setting items of the Extended tab are the same with bit parts display.
For details of setting items, refer to the following.

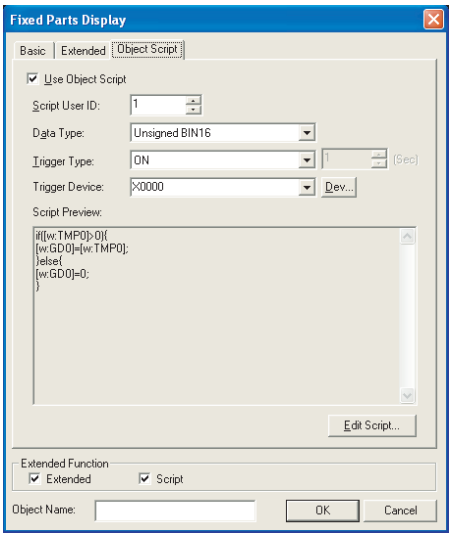
☞ Section 9.1.4 Setting items of bit parts display



## 3 Object script tab (Fixed)

For details of settings made on the object script tab, refer to the following

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Display mode | draw_mode | ○ | 3) |
| | Parts No. | part_no | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| | Blink | blink | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.1.7 Precautions

The following provides the precautions when using parts display function.

### 1 Precautions for drawing

(1) Maximum number of objects that may be set on one screen
1000 objects can be set for the clock display.

(2) Precautions for registering parts
Refer to the following for the precautions for registering parts.

(a) When using registered parts
☞ Section 4.2 Parts Registration

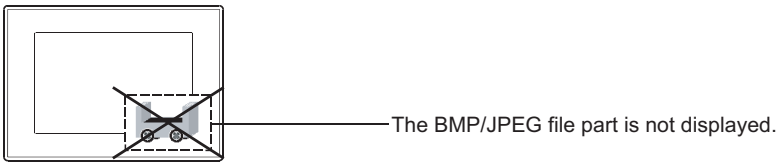
(b) When using BMP/JPEG file parts
☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

(3) Precautions for setting the parts to be inverted (XOR display)
(a) Inverting the parts to a figure
Set the parts on the back layer.
(b) Inverting overlapped parts
- Only the parts of the "fixed" attribute can be overlapped.
- Place all parts on the same layer.
- If the parts are placed on the front layer, the area that are not overlapped will be inverted to the "transparent color" of the screen.

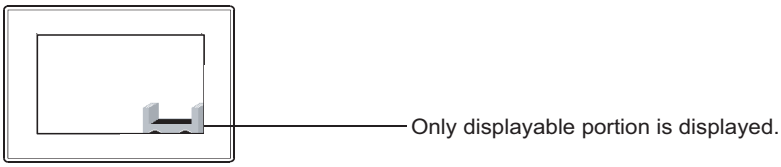
(c) Inverting parts including characters
If the parts include the text with "bold," "solid" or "raised" text style set, the text may be chipped or displayed in the incorrect color.

(4) Setting of Parts Display/Parts Movement
Do not set the display position with which any part of the BMP/JPEG file part will be out of the screen.
If such a display position is set, the part is displayed as follows.
Check the display position on the Preview.

(a) The BMP/JPEG file parts registered for the GOT
The part is not displayed.




(b) The BMP/JPEG file parts registered for the memory card
Only displayable portion is displayed.




The result of inverse (XOR display) can be viewed by using the preview function of GT Designer2.
For details of the layer, refer to the following.

☞ Section 2.6.1 Superimposition using layers

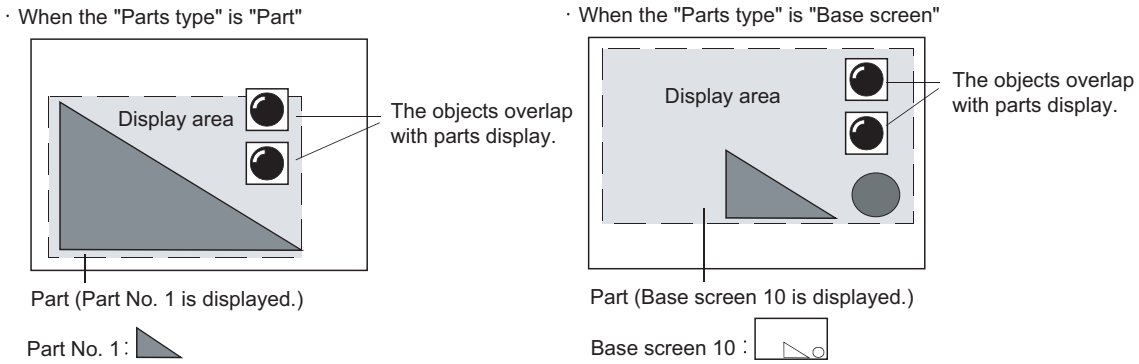
(5) Precautions when parts overlap with other objects

Make sure to place parts so that they will not overlap with other objects.

If they overlap, the overlapped objects may not be displayed correctly.

In this case, place the parts on the layer different from the other objects.

Also, note that the following cases may cause a similar problem.




(6) Precautions when screen is set as parts type and "XOR" is set as display mode

(a) If the base screen or window screen is set as a parts type of parts display (bit/word) and XOR is set as display mode, this will delete the parts on the screen and display a new screen.

(b) The area to be deleted ranges from the drawing point (screen (center, upper left)) of the parts display to the base/window screen.

(c) If the base/window screen area including objects is deleted, the objects are hidden.
To display the objects, change the parts type from screen to part and adjust the position to avoid overlap with other objects, or leave the screen parts type and change the display mode to "Overwrite."
However, if "Overwrite" is set, the previously displayed parts remain. Therefore, make sure to adjust the parts so that they will be the same in size.

(d) If the target base screen or window screen includes objects with "bold," "solid" or "raised" text style set, characters of the displayed part may be chipped or the character color may be incorrect.

## 2 Precautions for use

(1) Erasing parts

To erase the part, use "Parts" or "Mark" setting in "Parts Type" category.

The part set to "Base Screen" or "Window Screen" in "Parts Type" category is not erased even if setting to zero.

(The part will be erased by redisplaying current screen after switching to another screen.)

(☞ Basic tab [Parts Type])

(2) Reading the BMP/JPEG file

The monitor screen pauses during a file reading.

(3) The partway-displayed BMP/JPEG file parts

In the process of a file displaying, the display may be paused with the image partway-displayed.

In such a case, display the parts again or check the BMP/JPEG file.

(4) While displaying the BMP/JPEG file parts of the memory card

Do not remove the memory card from the GOT while displaying the BMP/JPEG file parts of the memory card.

(5) Discontinuing to use the BMP/JPEG file parts of the memory card
Perform either of the following operations.
- Change the Auxiliary Setting of the GT Designer2 and then download the project data.
- Turn the GOT internal device (GS450.b8) off.

The BMP/JPEG file parts of the memory card can be displayed even if the memory card is removed without the operation above. The reason is the below.
The BMP/JPEG file part displayed on the GOT is retained in the GOT built-in memory. (Only one BMP/JPEG file part can be retained.)
If the BMP/JPEG file part of the same parts No. is specified subsequently, the BMP/JPEG file part retained in the GOT built-in memory will be displayed. Accordingly, the part registered by the GT Designer2 is not displayed.

(6) The validating priority of settings between GT Designer2 and GS450.b8
The BMP/JPEG file parts of the memory card will be displayed regardless of the GS450.b8 if the [The image file in a memory card is used for the Parts Image of Parts Display/Movement] is checked.

# 9.2 Parts Movement

It is the function to change parts position and display (movement) according to the value of word device.
The parts to be displayed can be switched in movement.
Parts movement can be displayed by the following 2 types of devices.

- Position device : The device storing parts move destination.
- Parts switching device : The device to switch the types of parts to be displayed.

**Remark**

Parts displayed by Parts movement

There are the following two types for the parts displayed by Parts movement. The parts to be displayed by Parts movement needs to be registered in advance.

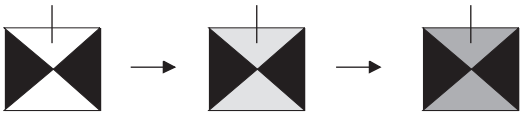
(1) Parts data registered as parts by the GT Designer2 (registered parts)

Section 4.2 Parts Registration

(2) BMP/JPEG files stored in the memory card (BMP/JPEG file parts)

Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

## 1 Applicable parts types

| Type | Description | Remarks |
|---|---|---|
| Parts | The figures registered as parts are displayed.<br>Example: Registrable figures as parts<br> <br>Figures Text BMP/JPEG file | • Parts must have been registered in advance.<br>•Section 4.2 Parts Registration<br>•Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card |
| Mark | The color of the figure registered as a part is displayed according to the change of the device value.<br>The used memory capacity inside of the GOT are saved since different images can be displayed by a single part.<br>  <br>White Blue Red<br>D100 = 0 D100 = 50 D100 = 100<br>The color changing is displayed in the white area. | • BMP/JPEG format parts cannot be used.<br>• Draw the color-changed area in white.<br>• During parts movement (fixed), color change (multiple-color display) is disabled.<br>Only one color is used. |

## 9.2.1 Relevant settings

For Parts movement, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to parts movement only
…Relevant to parts movement only.

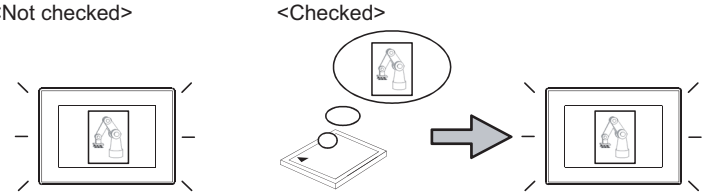
(2) Functions relevant to parts movement and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

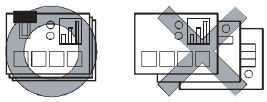
(1) Functions relevant to parts movement only

• Using/Not using the image files in the memory card

Whether to use the image files stored in the memory card for the objects of Parts Display/ Parts Movement can be specified.




Setting for each project | Setting for each screen



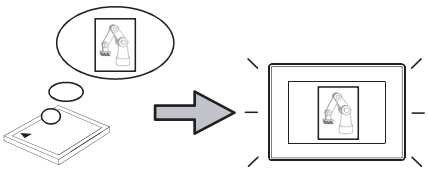
Setting items
• [The image file in a memory card is used for the Parts Image of Parts Display/Movement]

### 2 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(2) Functions relevant to parts movement and others

• Memory card image file display setting signal
(Write device: GS450.b8)

The image files in the memory card can be used for the objects of Parts Display/Parts Movement.



## 9.2.2 Moving and displaying parts

### 1 Move way of parts (control with position device)

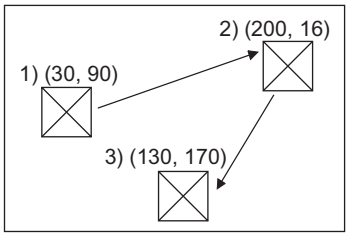
The following three types of move ways can be selected.

(1) Position

Display parts at the position (dot notation).

Specify the display position using 2 points indicated by the word device values in X/Y axis, respectively.

The display position can be changed in dot unit by changing the value of position device.

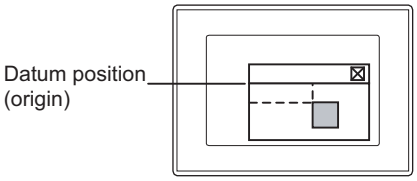



| | 1) | | 2) | | 3) |
|---|---|---|---|---|---|
| Position device (X coordinate): D100 | 30 | → | 200 | → | 130 |
| Position device (Y coordinate): D101 | 90 | → | 16 | → | 170 |

(a) Datum position

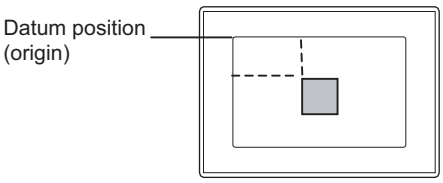
A part displayed on the overlap window has the datum position at the upper left corner of the overlap window.

Example: Overlap window

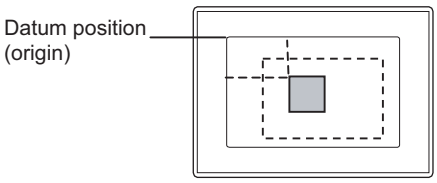



In other cases (base screen, superimpose window, etc.), the upper left corner of the displayed base screen is taken as the datum position.

Example: Base screen

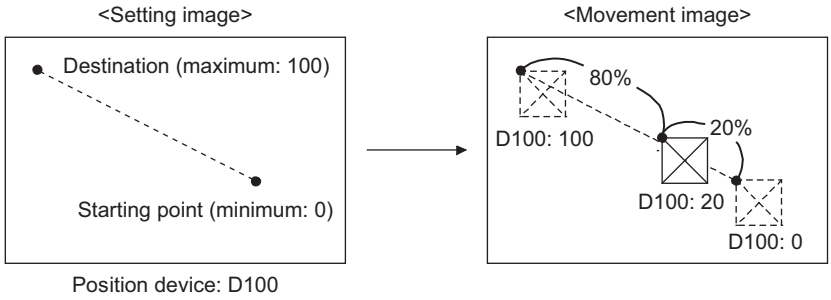



Example: Set overlay screen, superimpose window, etc.



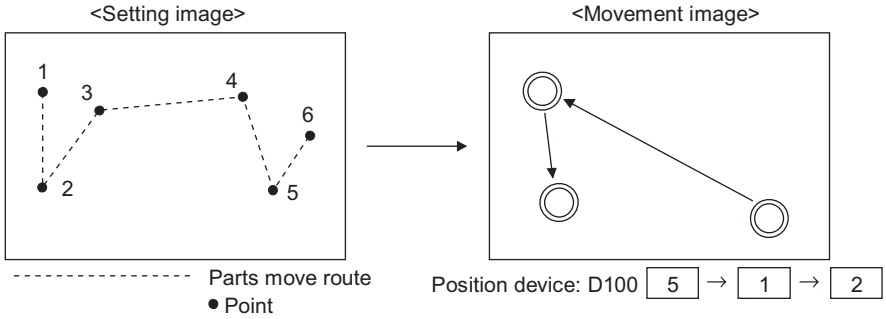
(2) Line

Move parts along lines between starting point and destination point that have been set.
Set the start point as minimum value, and the maximum value for the destination position, in order to display the parts using this method.

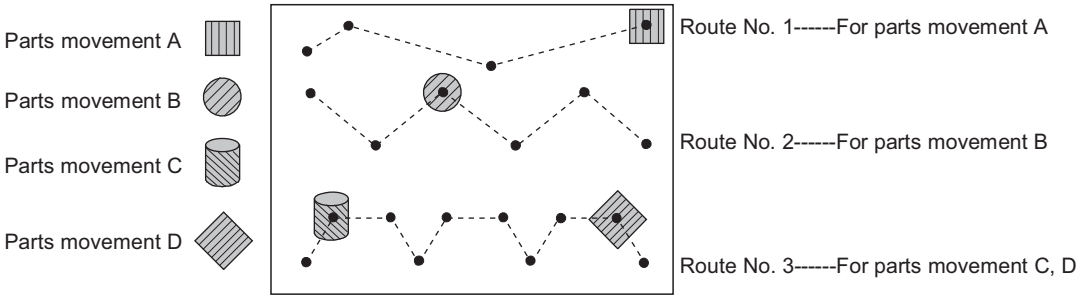



(3) Point

Display parts at preset display position (point).
Point setting is made by registering a line connecting multiple points (parts move route).
Parts are displayed at the place indicated by the point No. that is the same as the value of position device.



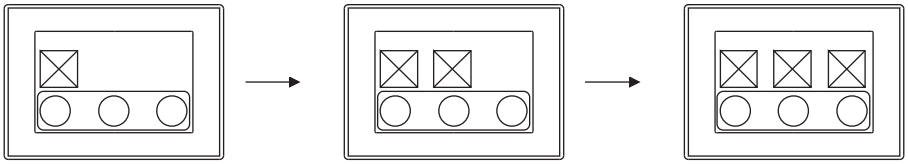

Up to 30 Parts move routes can be set in one screen. This setting is made for each screen.
The parts move route can be used for moving multiple parts.




**Remark** Locus

Movement locus that keeps the locus can be set in each move way.

☞ The setting of parts movement setting dialog box (basic tab)



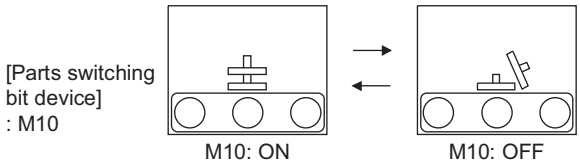
## 2 Parts switching method (control with parts switching device)

The following 3 switching methods can be selected.

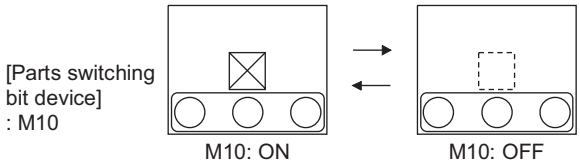
(1) Bit parts movement (☞ Section 9.2.5 Setting items of bit parts movement)

Switches to display 2 types of parts.

(a) Switch different parts according to ON/OFF of bit device.



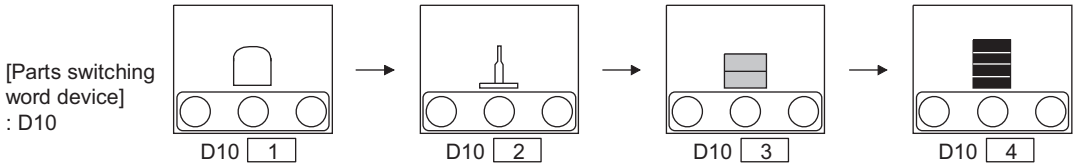

(b) Displays/hides parts according to ON/OFF of bit device.



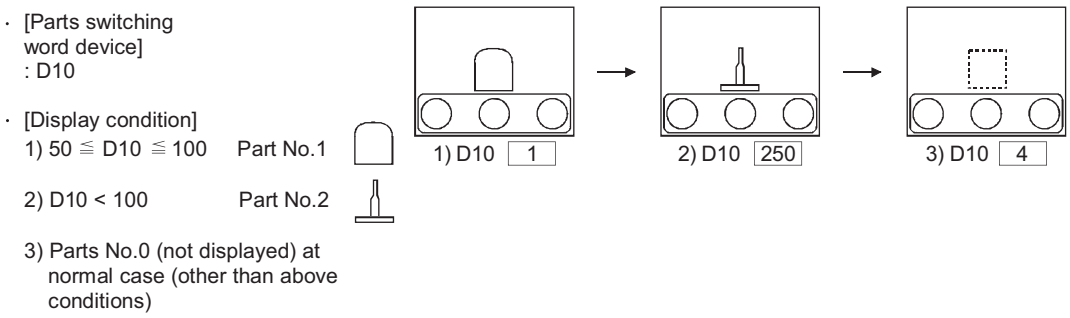

(2) Word parts movement (☞ Section 9.2.6 Setting items of word parts movement)

Switches to display more than 3 types of parts.

(a) Switch to display parts of which parts No. is the same as the word device value.



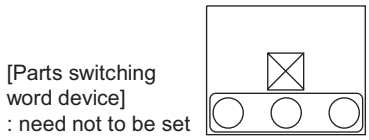

(b) Switch parts type according to the range and condition of word device value.




(3) Fixed part movement (☞ Section 9.2.7 Setting items of fixed parts movement)

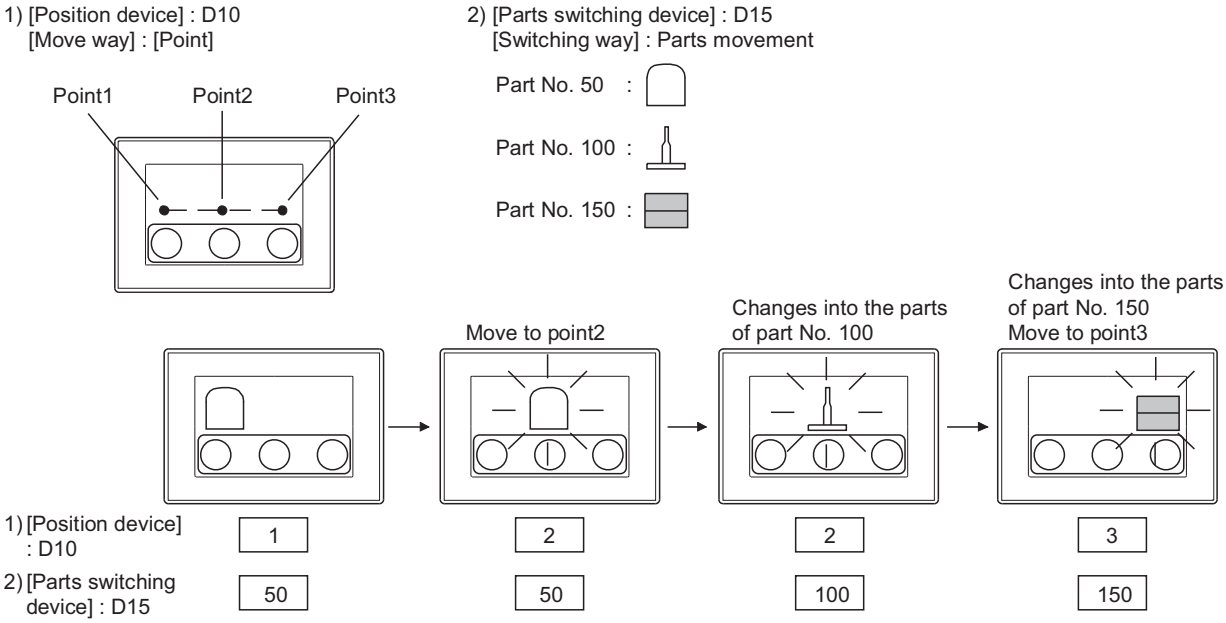
Only one type of parts is displayed.

Parts switching device is not set.



## 3 Parts movement example

Execute parts movement display by position device and parts switching device.




## 4 The setting order of parts movement

When setting the object of parts movement, select parts switching way, then parts move way.

1. Select parts switching way

   Select from the menu. (☞ Section 9.2.4 Arrangement and setting)

   The switching method cannot be changed after setting the object of parts movement.

2. Select parts move way

   Set in the dialog box that is displayed after selecting parts switching way.
   The move method can be changed even after setting the object of parts movement.

**Point**

When "Point" is specified to the type for the parts movement (☞ "Movement Type" on Basic tab)

Make sure to set parts move route in advance before setting object of parts movement.

(☞ Section 9.2.3 Setting of parts move route (common setting for each screen))

## 5 Displaying method of the BMP/JPEG file stored in the memory card

BMP/JPEG file parts are displayed in units of objects/projects.

(1) Display method in units of objects (using image file)

(a) When using BMP/JPEG file part in memory card

In each object setting of Parts Display/Parts Movement, specify the BMP/JPEG file stored in the memory card for display.

1. Store BMP/JPEG file to be displayed as a part in the memory card.
   For storage method, refer to the following.
   ☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card
   2 Displaying BMP/JPEG files (project units)
2. After the display triggers of the part are met in Parts Display/Parts Movement, the BMP/JPEG file part in specified memory card is displayed.
   Set the following items in the Basic tab and Case tab (only for word) of the Parts Display/Parts Movement for use.
   - Image File Setting
   - Image File No. setting

(2) Display method in units of projects

The BMP/JPEG file parts stored in the memory card can be displayed by specifying a number from 9001 to 9999 for the parts No.

To display a BMP/JPEG file part in the memory card by specifying parts No. of 9001 to 9999, make the setting in the following procedure.

(a) To ordinarily select a BMP/JPEG file parts in the memory card

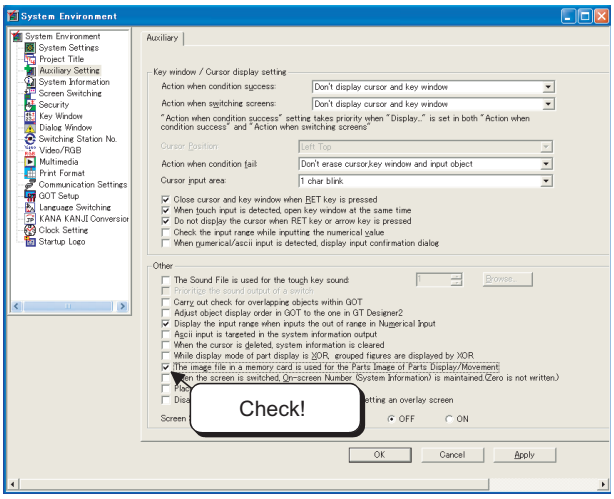
The BMP/JPEG file parts in the memory card will be displayed ordinarily when a parts No. of 9001 to 9999 is specified.

1 Store a BMP/JPEG file to be displayed as parts in the memory card.

Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

2 Displaying BMP/JPEG files (project units)

2 Check [The image file in a memory card is used for the Parts Image of Parts Display/Movement] of the Auxiliary Setting, and then download the setting to the GOT.




3 The BMP/JPEG file parts in the memory card will be displayed when the parts displaying condition (Parts No.: 9001 to 9999) is met on Parts Display/Parts Movement.

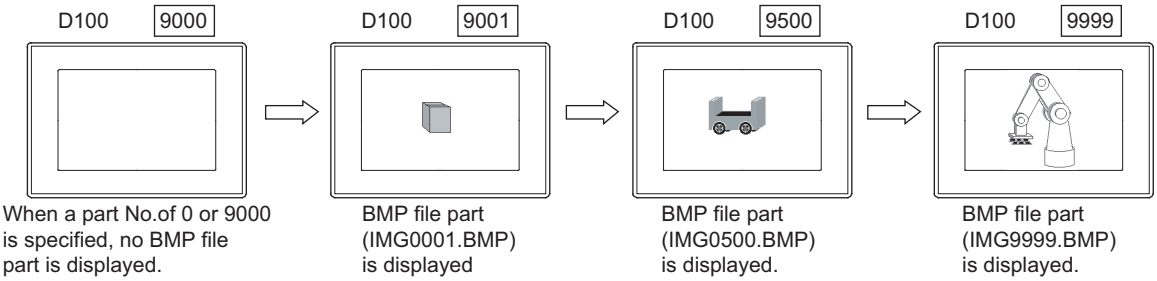
(b) To display a BMP/JPEG file parts in the memory card by using the GS450.b8
The displaying of the parts registered by the GT Designer2 will be switched to displaying of the BMP/JPEG file parts in the memory card when a parts No. of 9001 to 9999 is specified.

| Parts No. | When GS450.b8 is ON | When GS450.b8 is OFF |
|---|---|---|
| 9001 to 9999 | The BMP/JPEG file part in the memory card is displayed. | The part registered by the GT Degisner2 is displayed. |

1. Store a BMP/JPEG file to be displayed as parts in the memory card.
   ☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card
   2 Displaying BMP/JPEG files (project units)
2. Turn ON the GS450.b8.
3. The BMP/JPEG file parts in the memory card will be displayed when the parts displaying condition (Parts No.: 9001 to 9999) is met on Parts Display/Parts Movement.

(3) Display example (display method in units of projects)
The display example in the case where the following BMP file parts are stored on the memory card is shown below.

Example: BMP file parts are displayed in parts display (word)
When any of the part numbers from 9001 to 9999 is entered in a word device, the corresponding BMP file part is displayed.
- Word device for parts display: D100



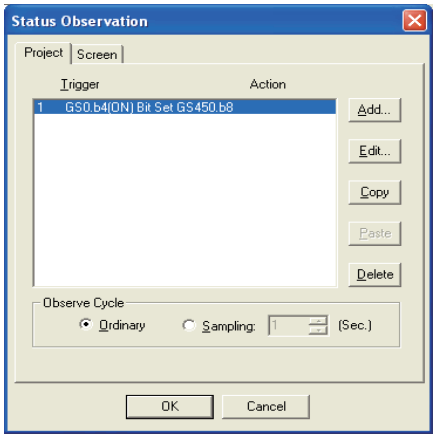
**Point**

(1) When specifying a parts No. out of 9001 to 9999
When specifying a parts No. out of 9001 to 9999, the parts registered by the GT Designer2 will be displayed even if the setting for displaying the BMP/JPEG file parts in the memory card has been made.

(2) When switching the parts display to the display of the BMP/JPEG file parts of the corresponding parts No. in the memory card (Only when using the GS450.b8.)
To display the BMP/JPEG file parts of the corresponding parts No. in the memory card while displaying parts of parts No. of 9001 to 9999 registered by the GT Designer2, operate as follows.

1. Turn ON the GS450.b8.
2. Specify the parts No. 0 or 9000 to hide the parts currently displayed.
3. Specify the parts No. of the BMP/JPEG file parts in the memory card to be displayed.

(3) The example of turning on the GS450.b8 automatically after the GOT powering on
The following shows the example of turning on the GS450.b8 automatically after the GOT is powered on by using the status observation function.
It is convenient for displaying the BMP/JPEG file parts in the memory card from the beginning when using the GS450.b8.
On the status monitor function, set the internal device (Ordinary ON device: GS0.b4) to store "1" to GS450.b8 when the Trigger is ON.
After the GOT is powered on, "1" is stored into GS450.b8 by the status monitor function.




- Make setting on the status monitor.
- Set the first line of the status monitor function. ("1" is stored into GS450.b8 immediately after the GOT is switched ON.)*1
- Set the condition monitor cycle to [Ordinary].

*1 At a GOT startup, to display or parts movement parts may not be changed to BMP/JPEG image parts. (Switch the screen change parts.)
Design screens considering the characteristics of BMP image parts.

## 6 Parts No.

The displayable parts or the motions differ depending on the parts No.
The displayable parts for each parts No. are shown in the following table.

| Parts No. | When the setting for displaying the BMP/JPEG file parts in the memory card has been made. | | When the setting for displaying the BMP/JPEG file parts in the memory card has not been made. | |
|---|---|---|---|---|
| | Parts registered by the GT Designer2 | BMP/JPEG file parts in the memory card | Parts registered by the GT Designer2 | BMP/JPEG file parts in the memory card |
| 0 | —*1 | —*1 | —*1 | × |
| 1 to 8999 | ○ | × | ○ | × |
| 9000 | × | —*1 | ○ | × |
| 9001 to 9999 | ×*2 | ○ | ○ | × |
| 10000 to 32767 | ○ | × | ○ | × |

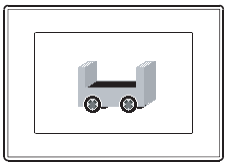
○: Displayable ×: Not displayable —: Hidden

*1 When [Indirect (Device Value)] in the [Attribute (Normal Case)] of the Word Parts Movement has been set, the parts will not be hidden. (The current display is retained.)
For the method of hiding parts with the Word Parts Movement, refer to the [Attribute (Normal Case)] of the Word Parts Movement.

( ☞ Section 9.2.6 1 Basic tab (word))

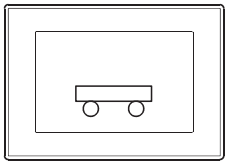
*2 The parts cannot be displayed even if they have been registered by the GT Designer2.
Example: When a part registered by the GT Designer2 has been registered for the parts No. 9123

The BMP/JPEG file part is displayed.



When the setting for displaying the BMP/JPEG file parts in the memory card has been made.

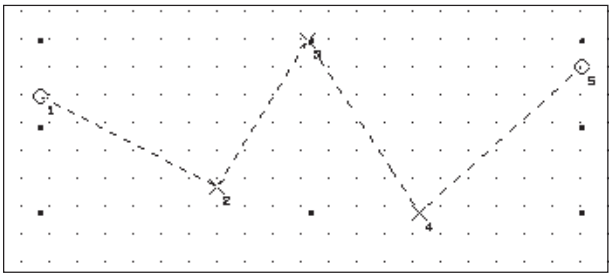
The part registered by the GT Designer2 (parts No.9123) is displayed.



When the setting for displaying the BMP/JPEG file parts in the memory card has not been made.

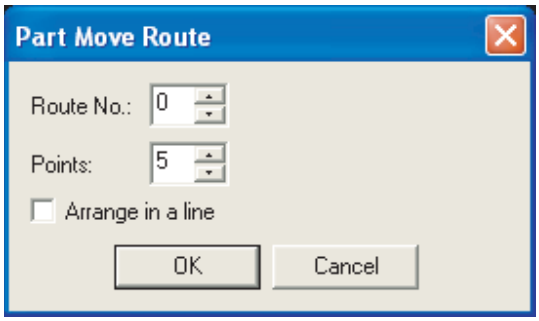
## 9.2.3 Setting of parts move route (common setting for each screen)

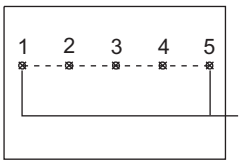
When "Point" is specified the type for the parts movement (☞ "Movement Type*2" on Basic tab), set the Parts Move Route for positions where parts are to be displayed.
Up to 30 parts move routes can be set in one screen
The parts move route can be used for multiple parts movement.



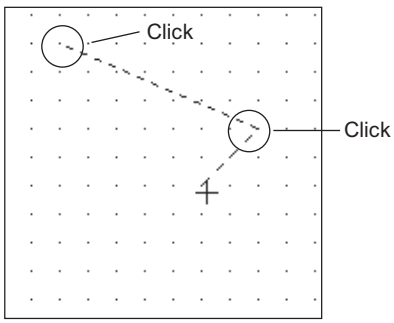

1. Select [Object] → [Parts Movement] → [Parts Move Route] from the menu.

2. After parts move route dialog box appears, make the following settings and click on the OK button.

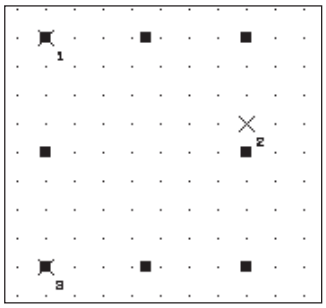



| Items | Description |
|---|---|
| Route No. | Set route No. (0 to 29) of parts move route to be created. |
| Points | Set points (1 to 100) movement position (position to display parts). |
| Arrange in a line | Check this item to move parts in a line.<br>When arranging in a line, points proportion set in [Points] will be arranged automatically according to the setting of starting point and destination.<br>Example: Points: Set to 5<br>  <br><br>Set the start point and destination point<br>(2 to 4: automatic arrangement) |

3 As the mark (+) will appear on drawing screen, click on the mark to arrange Point 1.
Click on the positions as many as the number of set points for arrangement.




4 Point No. will appear at the set position after setting.



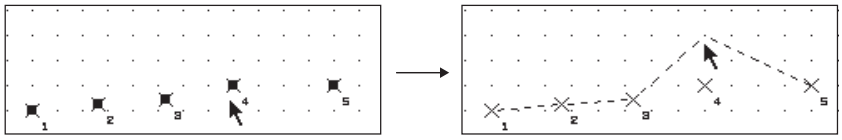
**Remark**

The correction of parts move route

(1) Change the point position

1 Click to select parts move route, right click on the route to [Edit Point]

2 The route is now in "Edit Vertex" mode. Drag a point of the selected route to the destination position. Thus, the point position can be changed.
Vertex mode.



Edit vertex mode  Drag to change point position

(2) Change the [Points] and [Route No.]
Double click on the parts move route to display the setting dialog box.
Then change the [Points] and [Route No.] in the corresponding items.

## 9.2.4 Arrangement and setting

1. Carry out any of the following operations
   - Click on [Bit Parts Movement] / [Word Parts Movement] / [Fixed Parts Movement.].
   - Select [Object] → [Parts Movement] → [Bit Parts] / [Word Parts] / [Fixed Parts] from menu.
2. As the setting dialog box appears, make the settings with reference to the following explanation.

**Point**

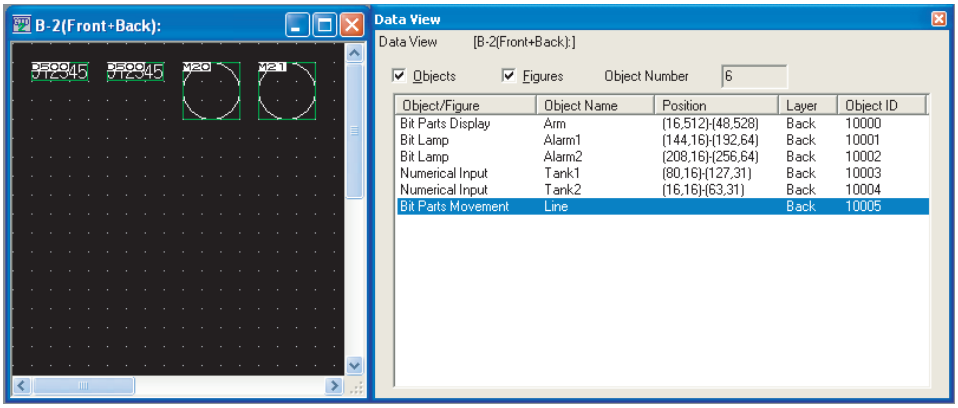
When changing the settings of parts movement

Parts movement cannot be arranged on screen when movement type is [Position], [Point]. [Movement Type*2] within Basic tab.

Carry out the following method when changing the settings of the preset parts movement.

(1) Edit using data view

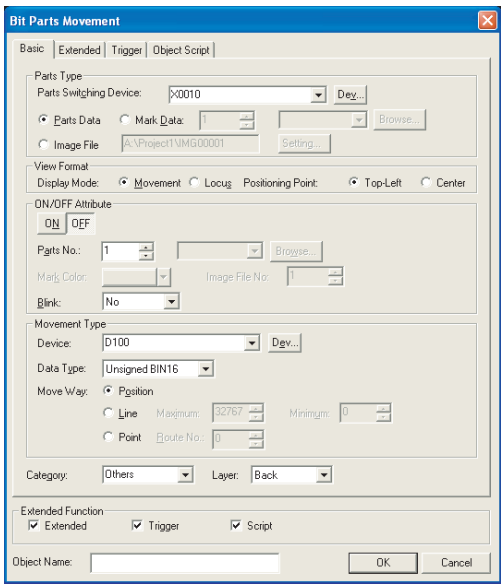
Double click on the parts movement displayed in data view to display the setting dialog box.



## 9.2.5 Setting items of bit parts movement

### 1 Basic tab (bit)

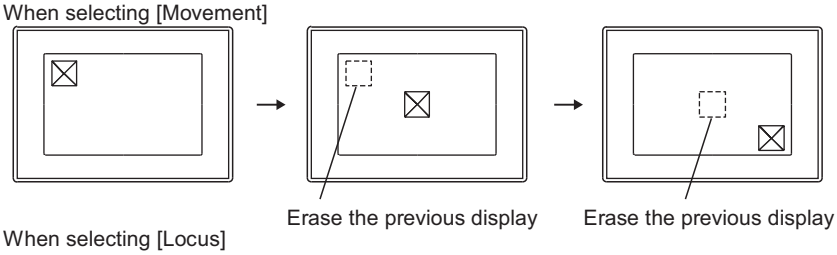
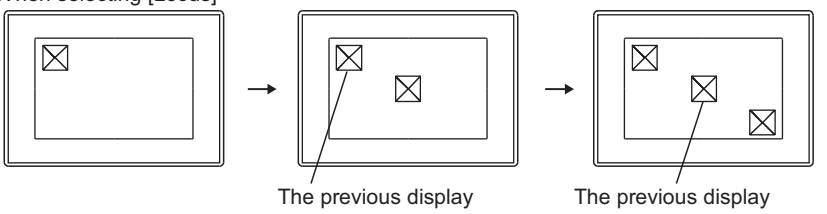
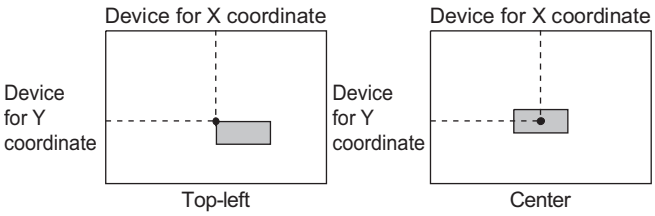
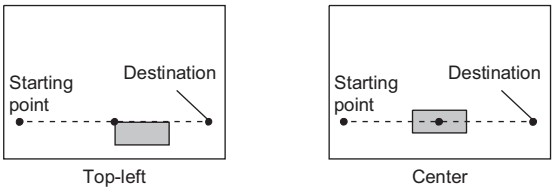
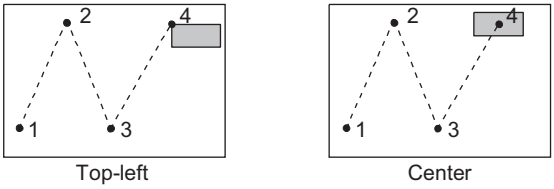
Set the parts move way and the parts to be displayed when the device turns ON/OFF.




Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Parts Switching Device | | Set the device to switch the part to be displayed.<br>With this setting, the part to be displayed can be switched even while the parts are moving.<br>(☞ Section 5.1 Device Setting)<br><br>Example:<br>X10: ON<br> <br>Display part No.1<br>X10: OFF<br> <br>Display part No.10 | |
| Parts Type | | Select the part to be moved. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Parts Data*1 | Displays the registered part | |
| | Mark Data*1 | Changes the white part of the registered part into the different color according to the parts switching device change.<br>After selecting, set the [Parts No.] to be displayed as mark. The registered part can be checked by clicking on Browse button.<br>Refer to the following for the parts displayed by Mark.<br>(☞ Section 4.2 Parts Registration) | |
| | Image File*1 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the Setting button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts during parts movement.<br>Movement : Displays the moving parts without showing the images of previous display on the screen.<br>Locus : Displays the moving parts while showing the images of previous display on the screen.<br>Example:<br>When selecting [Movement]<br>  <br><br>When selecting [Locus]<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Positioning Point | Select the base point to display the part.<br>Top-left : Displays the part with reference to the upper-left position to that part.<br>Center : Displays the part with reference to the center of that part.<br>Example:<br>When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device: 240)<br>  <br><br>When [Line] is selected in [Move Way] (Device: D100=50)<br>  <br><br>When [Point] is selected in [Move Way] (Device: D200=4)<br>  <br> | |

(Continued to next page)

Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| ON/OFF Attribute | ON | Click on this item to set the part to be displayed when the device turns ON | |
| | OFF | Click on this item to set the part to be displayed when the device turns OFF | |
| | Parts No. | Set the pat No. to be displayed.<br>The registered part can be checked by clicking on Browse button.<br>Set 0 in "Parts No." to erase the part.<br>(Set the part No. when the device is OFF to "0" in order to display the part only when the device is ON.) | |
| | Mark Color | Select the color to be switched from the white area of the part when [Mark] has been set in [Parts Type].<br>☞ [Parts Type] within Basic tab | |
| | Image File No. | Can specify image file No.<br>The allowable range of the specification depends on [Digits] in the Image File Setting dialog box.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the image is deleted.<br>To display the image only at power-on, specify [Image File No.] at power-off to "0". | |
| | Blink | Select the blinking pattern of the Parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Movement Type*2 | Move Way | Select the move way.<br>Position : Select this item to display the moving part using two word device values as X/Y coordinate points respectively.<br>Set the devices to store the position<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>(☞ Section 5.1 Device Setting)<br>Line *3 : Select this item to display the moving part in the line of which starting point and end point have been set.<br>Se the minimum value to the starting point, and maximum value to the end point.<br>Point : Select this item to display the part at the position (point) specified in advance.<br>Then, set the parts movement route No. (0 to 29).<br>The parts movement route must be set on the corresponding screen in advance.<br>(☞ Section 9.2.3 Setting of parts move route (common setting for each screen)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Device | After selecting the [Move Way], set the position device to store the movement destination of parts.<br>(☞ Section 5.1 Device Setting)<br>The setting items differ according to the settings made in [Move Way].<br>Position : Sets the device to store the value of X and Y coordinate.<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>Line : Sets the device storing the relative value corresponding to the starting point and ending point.<br>Point : Sets the device to store the display position (point). | |
| | Data Type | When selecting [Line] from [Move Way], select the data type of word device (signed BIN16/unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point]) | |

(Continued to next page)

Basic | Extended | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

For details of *1, refer to the following.

☞ Section 9.1.4 Setting items of bit parts display

For details of *2, *3, refer to the following.

*2 Movement Type

Select the movement type when moving parts.
Refer to the following for the details about parts movement type.

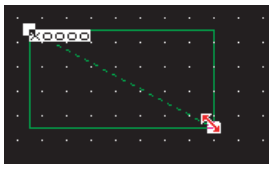
☞ Section 9.2.2 2 Move way of parts (control with position device)

*3 Line

Set the line as the parts move range when the move way is set as [Line].
Execute the following operations after making settings in the setting dialog box.

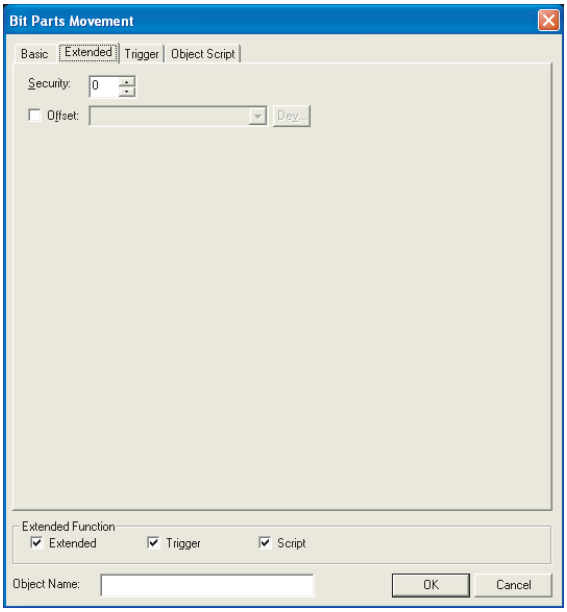
1 Click on the start position in drawing screen.

2 Set the line as the parts move range after moving cursor and clicking on the destination.



## 2 Extended tab (bit)

It is to set the security and offset.
Check the "Extended Function" at the bottom of dialog box to display this tab.



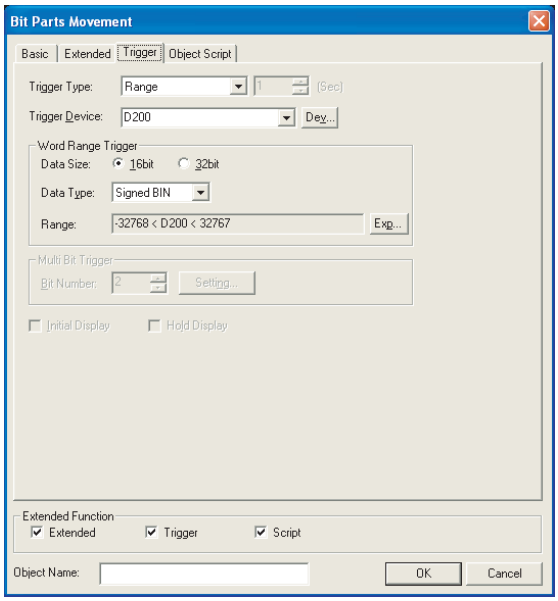

Basic | **Extended** | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

## 3 Trigger tab (bit)

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting



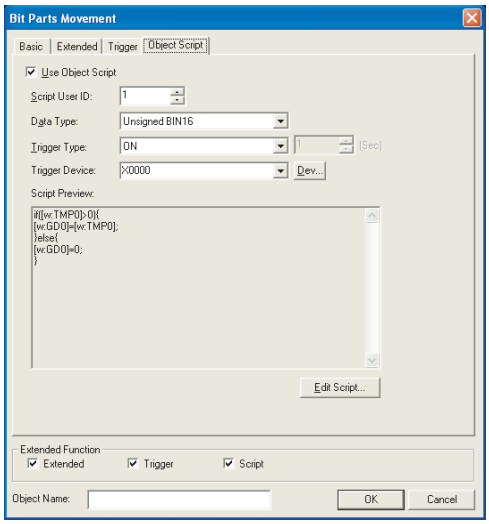

Basic | Extended | **Trigger** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>• Ordinary • NO • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select the [Data Size] (16 bit/32 bit) of the word device. | |
| | Data Type | Select the [Data Type] of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger.<br>After setting, click on the [Setting] button and set the bit devices and their triggers<br>☞ [Trigger Type] within [Trigger] tab | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.<br>☞ [Trigger Type] within [Trigger] tab | |
| Hold Display | | When [ON], [OFF] ,[Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>☞ [Trigger Type] within [Trigger] tab<br>If not checked, the object will be deleted when the trigger is not satisfied. | |

## 4 Object script tab (Bit)

For details of settings made on the object script tab, refer to the following

☞ Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Parts No. | part_no | ○ | 3) |
| | Blink | blink | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

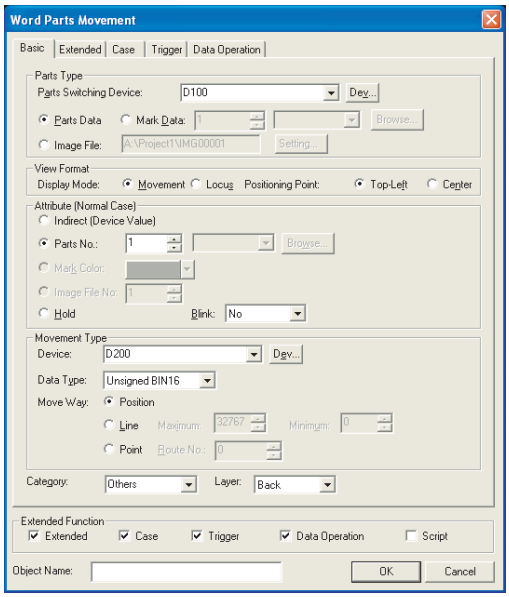
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.2.6 Setting items of word parts movement

### 1 Basic tab (word)

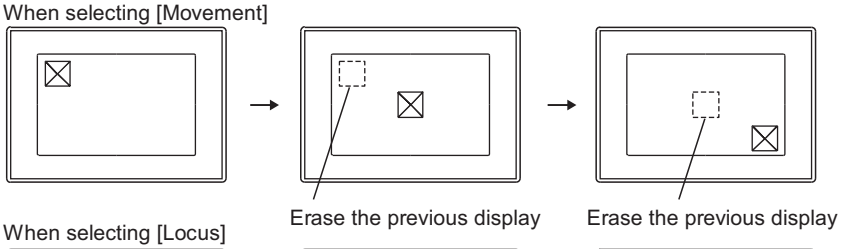
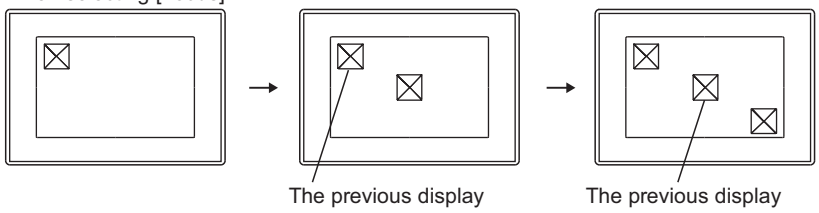
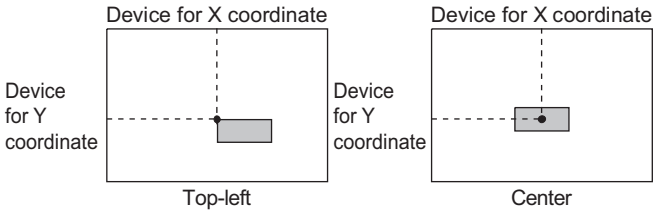
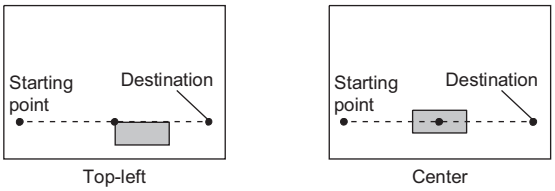
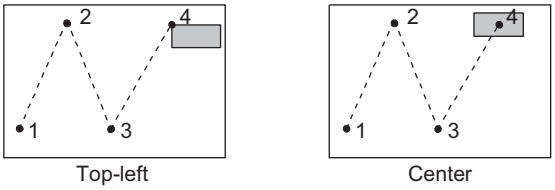
Set move way of parts, the parts type and Parts No. to be displayed according to word device value.



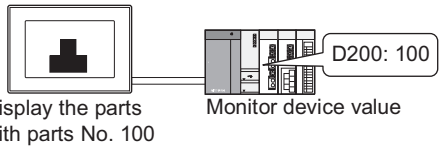

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Parts Switching Device | | Set the device to switch the part to be displayed. (☞ Section 5.1 Device Setting)<br>With this setting, the part to be displayed can be switched even while the parts are moving.<br>The default of a written data format is signed BIN. To write by the other data format, change the setting in "Data Form" on the Extended tab.<br>☞ [ Data Type] within Extended tab<br>Example:<br>D10: 1 — Display part No.1<br>D10: 2 — Display part No.2<br>D10: 3 — Display part No.3 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Parts Type | | Select the part to be moved. | |
| | Parts Data*1 | Displays the registered part | |
| | Mark Data*1 | Changes the white part of the part into the different color according to the parts switching device change.<br>After selecting, set the [Parts No.] to be displayed as mark.<br>The registered part can be checked by clicking on Browse button.<br>Refer to the following for the parts displayed by Mark.<br>(☞ Section 4.2 Parts Registration) | |
| | Image File*1 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the Setting button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts during parts movement.<br>Movement : Displays the moving parts without showing the images of previous display on the screen.<br>Locus : Displays the moving parts while showing the images of previous display on the screen.<br>Example:<br>When selecting [Movement]<br>  <br><br>When selecting [Locus]<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Positioning Point | Select the base point to display the part.<br>Top-left : Displays the part with the reference to the upper-left position to that part.<br>Center : Displays the part with the reference to the center of that part.<br>Example:<br>When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device:240)<br>  <br><br>When [Line] is selected in [Move Way] (Device: D100=50)<br>  <br><br>When [Point] is selected in [Move Way] (Device: D200=4)<br>  <br> | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| Attribute (Normal Case)*4 | | Set the display attribute of parts.<br>Use the state (Range Setting tab) for switching to multiple parts except "Indirect (Device value)".<br>Indirect [Device Value] : Displays the parts/base screen/window screen No. corresponding to the word device value.<br>The current display is hold at setting 0 (setting 0 or 9000 when specifying the BMP/JPEG file parts in the memory card) in the parts switching device.<br>When clearing parts, make the following settings ( ☞ case tab) :<br>• Set "$V==0" in [Rande] within case tab.<br>• Set "Parts No.: 0" in [Attribute]<br>Example:<br>  <br><br>Parts No. : Select this time to specify and display the registered part.<br>After this, set the [Parts No.] to be displayed.<br>Set 0 in Parts No. to erase the part.<br>Mark Color : At selecting "Mark" in "Parts Type" category, select the displayed color to change in the white area of the registered part.<br>☞ [Parts Type] within Basic tab<br>Image File No. : Can specify image file No.<br>The allowable range of the specification depends on [Digits] in the Image File Setting dialog box.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted.<br>Hold : Select this item to hold current parts display. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the Parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |

(Continued to next page)

Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Movement Type*2 | Move Way | Select the move way.<br>Position : Select this item to display the moving part using two word devicevalues as X/Y coordinate points respectively.<br>Set the devices to store the position<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>(☞ Section 5.1 Device Setting)<br>Line *3 : Select this item to display the moving part in the line of which starting point and end point have been set.<br>Se the minimum value to the starting point, and maximum value to the end point.<br>Point : Select this item to display the part at the position (point) specified in advance.<br>Then, set the parts movement route No. (0 to 29).<br>The parts movement route must be set on the corresponding screen in advance.<br>(☞ Section 9.2.3 Setting of parts move route (common setting for each screen)) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Device | After selecting the [Move Way], set the position device to store the movement destination of parts.<br>(☞ Section 5.1 Device Setting)<br>The setting items differ according to the settings made in [Move Way].<br>Position : Sets the device to store the value of X and Y coordinate.<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>Line *3 : Sets the device storing the relative value corresponding to the starting point and ending point.<br>Point : Sets the device to store the display position (point). | |
| | Data Type | When selecting [Line] from [Move Way], select the data type of word device (signed BIN16/unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point]) | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

For details of *1, refer to the following.

☞ Section 9.1.4 Setting items of bit parts display

For details of *2 to *4, refer to the following.

*2 Movement Type

Select the movement type when moving parts.

Refer to the following for the details about parts movement type.

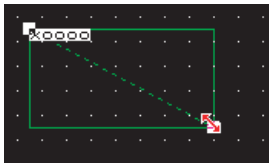
☞ Section 9.2 1 Move way of parts (control with position device)

*3 Line

Set the line as the parts move range when the move way is set as [Line].
Execute the following operations after making settings in the setting dialog box.

1. Click on the start position in drawing screen.

2. Set the line as the parts move range after moving cursor and clicking on the destination.



*4 Parts switching method

Set on State (Case tab) except "Indirect (Device value)" in "Attribute (Normal case)" category.
The following describes how to change the displayed part depending on the "Attribute (Normal case)" and State settings.

| "Attribute (Normal case)" type | State setting | |
|---|---|---|
| | Set | Not set |
| [Indirect (Device Value)] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set to the state is displayed.<br>• When trigger is not satisfied<br>The displayed part is changed depending on the parts switching device value. | Set the state if required.<br>The displayed part is changed depending on the parts switching device value.<br>Set the state to change the part except the above condition. |
| [Parts No.]<br>[Mark Color] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set at the state is displayed.<br>• When trigger is not satisfied<br>The part set at "Attribute (Normal case)" is displayed. | Set the state at any time.<br>Only one type of part is kept displayed without sate settings.<br>It cannot be switched to any other part. |
| [Hold] | The part is displayed as below depending on the condition set to the state.<br>• When trigger is satisfied<br>The part set at the state is displayed.<br>• When trigger is not satisfied<br>The part set at the state is kept displayed. | Set the state at any time.<br>Nothing is displayed without sate settings. |

Example: When "Attribute (Normal case)" is set to "Parts No."
Set the following on each tab.

Basics tab

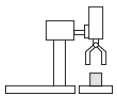
[Parts Switcing Device]: D10
[Parts Type]: [Parts Data]
[Attribute (Normal Case)]: [Parts No.1]

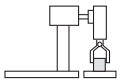
Range Setting tab

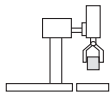
State 1
[Range] : 1 <= D10 <= 100
[Attribute] : Parts No.2

State 2
[Range] : 100 < D10
[Attribute] : Parts No.3

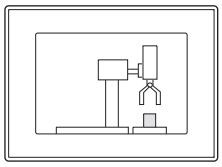
(Displayed part)


Part No. 1


Part No. 2

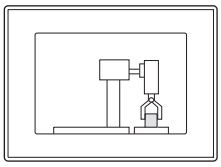

Part No. 3

D10 = 0



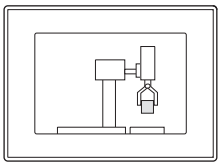
Part set at "Attribute" is displayed (Part No. 1).

D10 = 40



Part set at State 1 is displayed (Part No. 2).

D10 = 150



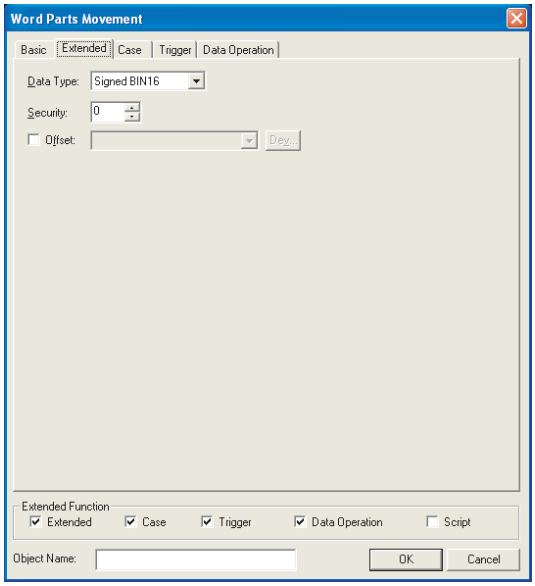
Part set at State 2 is displayed (Part No. 3).

Refer to the following section for details of the state.

☞ Section 5.4 State Setting

## 2 Extended tab (word)

Set the data type, security and offset of monitor device.
Check "Extended Function" at the bottom of the dialog box to display this tab.



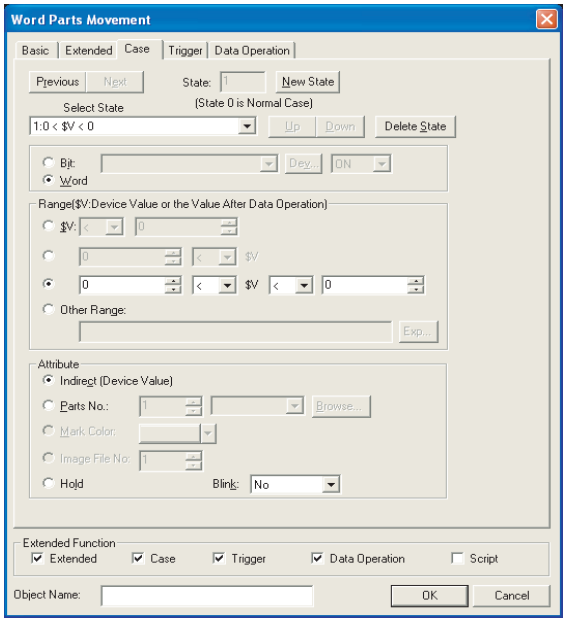

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the parts switching dvice.<br>Signed BIN 16 : Treats word device value as a signed binary value.<br>Unsigned BIN 16 : Treats word device value as an unsigned binary value.<br>BCD 16 : Treats word device value as 16-bit BCD (binary decimal) value.<br><br>This setting item is not available for the following devices.<br>Position device (☞ ([Movement Type] within Basic tab)<br>Device set in , (☞ [Trigger Type] within Trigger tab<br>([Trigger Type] within Trigger tab) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

## 3 Case tab (word)

The attribute can be changed on this setting depending on the device status.
Check "Extended Function" at the bottom of the dialog box to display this tab.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Device | Select the display change conditions according to state.<br>Bit : Select it when changing the display according to the ON/OFF status of bit device. After selecting, set the bit device and device status (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>Word : Select it when changing the display according to the value of word device. After selecting, set the conditional expression of word device value in [Range]. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |

(Continued to next page)

Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | Attribute | Select the method of displaying parts.<br>Indirect (Device Value) : Displays the parts/base screen/window screen No. corresponding to the word device value.<br>The current display is hold at setting zero in the parts switching device.<br>The part will be erased by redisplaying current screen after switching to another screen.<br>Parts No. : Select this time to specify and display the registered part.<br>After selection, set the displayed parts No.<br>Set 0 in "Parts No." to erase the part.<br>Mark Color : Select this item to change the white part of the registered part into the different color when the part is set to [Mark Data] in [Parts Type].<br>(☞ [Parts Type] within Basic tab)<br>Image File No. : Can specify image file No.<br>The allowable range of the specification depends on [Digits] in the Image File Setting dialog box.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted.<br>Hold : Select this item to hold current parts display even though state condition is satisfied. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the Parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |

For details of *1, refer to the following.

*1 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Parts switching device : D100
Data view format : Signed decimal 16-bit signed decimal
Registered parts : Parts No. 1 ···· Parts No. 10 Parts No. 11 Parts No. 12

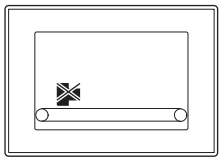
The operation priority for setting overlap conditions.
High
↓
Low

| State No. | Display range | Display parts |
|---|---|---|
| 1 | M10 ON | No.11 |
| 2 | 1<=$V<=9 | Indirect |
| 3 | 10<=$V | Hold |
| Normal Case (State 0) | ------ | No.12 |

*$V indicates the value of monitor device.

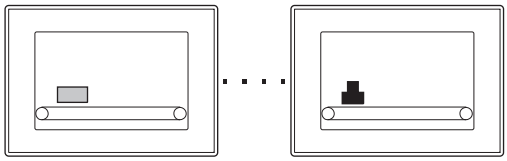
State 1

Display parts No.11 when M10 is ON.



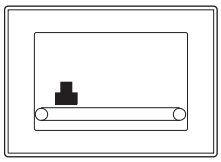
State 2

Display the parts corresponding to parts switching device value when the value is between 1 and 9 (1<=$V<=9).



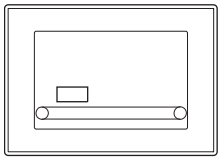
State 3

Do not switch parts display when parts switching device value is 10 or greater (10<=$V).



Normal Case (State 0)

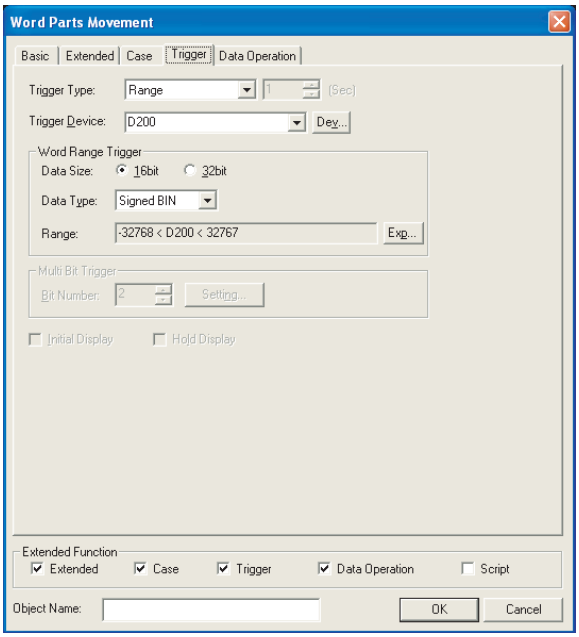
Display parts No.12 in the condition other than state 1 to 3.



## 4 Trigger tab (word)

The setting items of trigger tab are the same as bit parts movement.
For details of setting items, refer to the following.

☞ Section 9.2.5 Setting items of bit parts movement

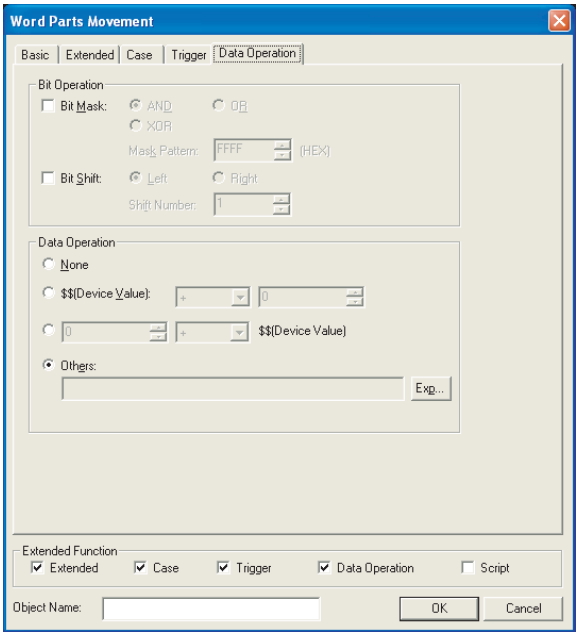


## 5 Data Operation tab (word)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



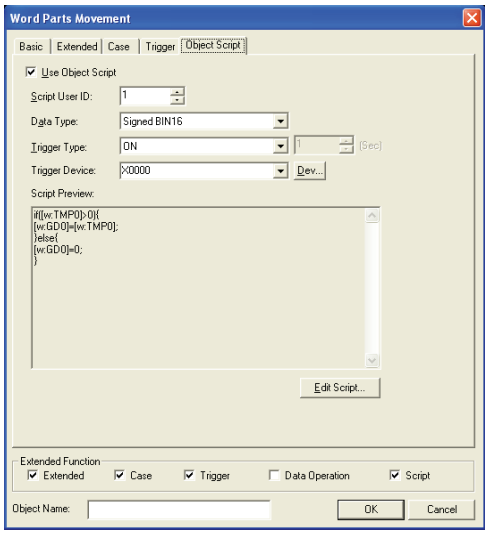

Basic | Extended | Case | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab (Word)

For details of settings made on the object script tab, refer to the following

Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Parts No. | part_no | ○ | 3) |
| | Blink | blink | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

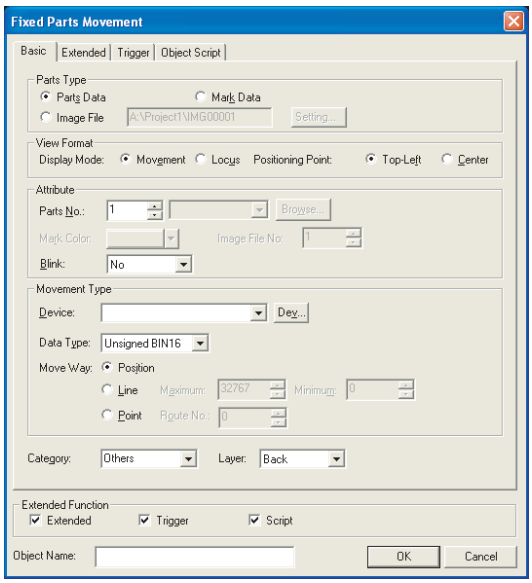
*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.2.7 Setting items of fixed parts movement

### 1 Basic tab (fixed)

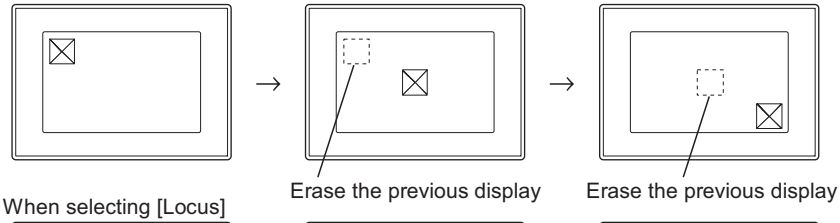
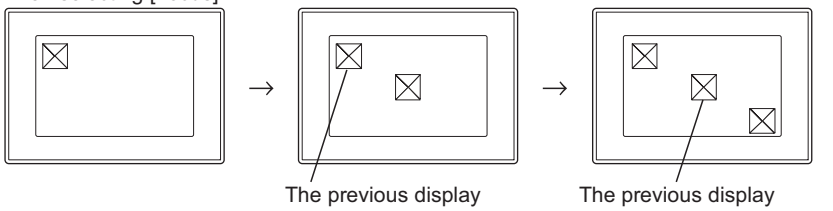
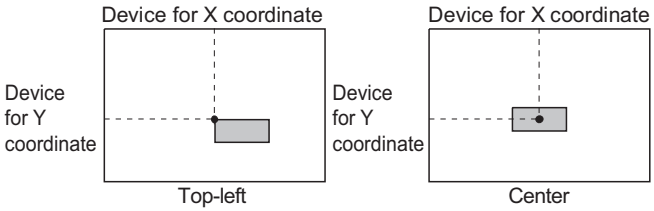
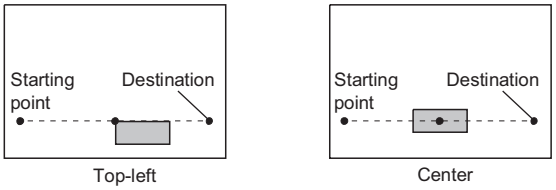
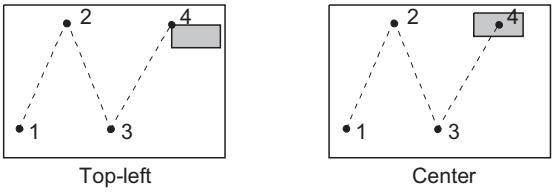
Directly specify and set the parts move way as well as the parts to be display.




Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Parts Type | | Select the part to be moved. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Parts Data*1 | Displays the registered part | |
| | Mark Data*1 | Changes the white part of the part into the color set in [Mark Color]. | |
| | Image File*1 | Select an image file to display the image file saved in memory card as a part.<br>After the selection, clicking the Setting button displays the Image File Setting dialog box.<br>Displays the full path of the specified image file. | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Display Mode | Select the method of displaying parts during parts movement.<br>Movement : Displays the moving parts without showing the images of previous display on the screen.<br>Locus : Displays the moving parts while showing the images of previous display on the screen.<br>Example:<br>When selecting [Movement]<br>  <br><br>When selecting [Locus]<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Positioning Point | Select the base point to display the part.<br>Top-left : Displays the part with reference to the upper-left position to that part.<br>Center : Displays the part with reference to the center of that part.<br>Example:<br>When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device:240)<br>  <br><br>When [Line] is selected in [Move Way] (Device: D100=50)<br>  <br><br>When [Point] is selected in [Move Way] (Device: D200=4)<br>  <br> | |

(Continued to next page)

Basic | Extended | Trigger | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Attribute | | Set the display attribute of parts.<br>Parts No. : Select this item to display parts in registration.<br>Set the parts No. to be displayed after the selection.<br>Click on Browse button to specify the registered parts.<br>Mark Color : Select the color to change from white color of the registered part when the part is set to [Mark Data] in [Parts Type].<br>mark-selecting registered parts in [Parts Type].<br>(☞ [ Parts Type] within Basic tab)<br>Image File No.:Can specify image file No.<br>The allowable range of the specification depends on [Digits] in the Image File Setting dialog box.<br>5 digits : 00001 to 65535<br>4 digits : 0001 to 9999<br>3 digits : 001 to 999<br>2 digits : 01 to 99<br>1 digit : 1 to 9<br>If [Image File No.] is set to "0", the parts are deleted. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Blink | Select the blinking pattern of the Parts.<br>No : Not blink.<br>Low : Blinks every 1 second.<br>Middle : Blinks every 0.5 seconds.<br>High : Blinks every 0.2 seconds. | |
| Movement Type*2 | Move Way | Select the movement type.<br>Position : Select this item to display the moving part using two word device values as X/Y coordinator points respectively.<br>Set the devices to store the position<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>(☞ Section 5.1 Device Setting)<br>Line *3 : Select this item to display the moving part in the line of which\ starting point and end point have been set.<br>Se the minimum value to the starting point, and maximum value to the end point.<br>Point : Select this item to display the part at the position (point) specified in advance.<br>Then, set the parts movement route No. (0 to 29).<br>The parts movement route must be set on the corresponding screen in advance.<br>(☞ Section 9.2.3 Setting of parts move route (common setting for each screen)) | |
| | Device | After selecting the [Move Way], set the position device to store the movement destination of parts.<br>(☞ Section 5.1 Device Setting)<br>The setting items differ according to the setting made in [Move Way].<br>Position : Sets the device to store the value of X and Y coordinate.<br>From the set device, 2 device points are set continuously for X • Y position storage.<br>(The set device is for X storage)<br>Line : Sets the device storing the relative value corresponding to the starting point and ending point.<br>Point : Sets the device to store the display position (point). | |
| | Data Type | When selecting [Line] from [Move Way], select the data type of word device (signed BIN16/unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point]) | |

(Continued to next page)

Basic | Extended | Trigger | Object Script

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

For details of *1, refer to the following.

☞ Section 9.1.4 Setting items of bit parts display

For details of *2 to *3, refer to the following.

*2 Movement Type

Select the movement type when moving parts.

Refer to the following for the details about parts movement type.

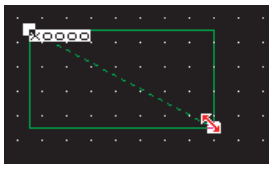
☞ Section 9.2.2 1 Move way of parts (control with position device)

*3 Line

Set the line as the parts move range when the move way is set as [Line].
Execute the following operations after making settings in the setting dialog box.

1. Click on the start position in drawing screen.

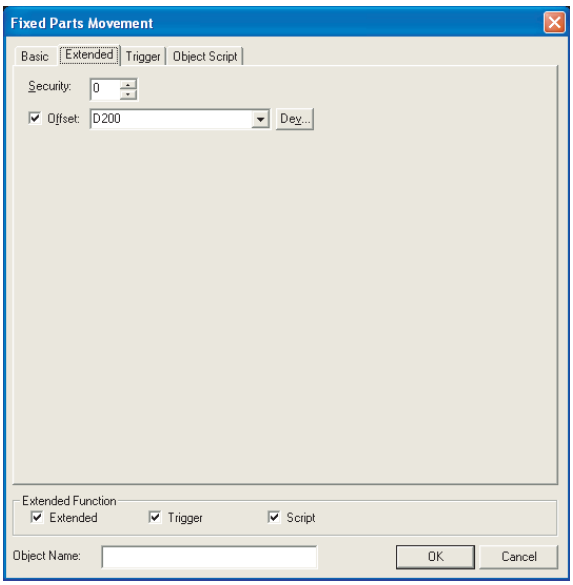
2. Set the line as the parts move range after moving cursor and clicking on the destination.



## 2 Extended tab (fixed)

The setting items of extended tab are the same as bit parts movement.
Refer to the following for the details about the setting items.

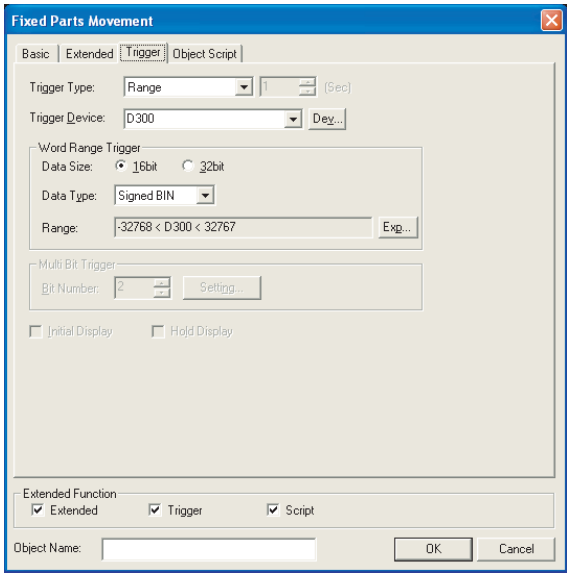
☞ Section 9.2.5 Setting items of bit parts movement




## 3 Trigger tab (fixed)

The setting items of trigger tab are the same as bit parts movement.
Refer to the following for the details about the setting items.

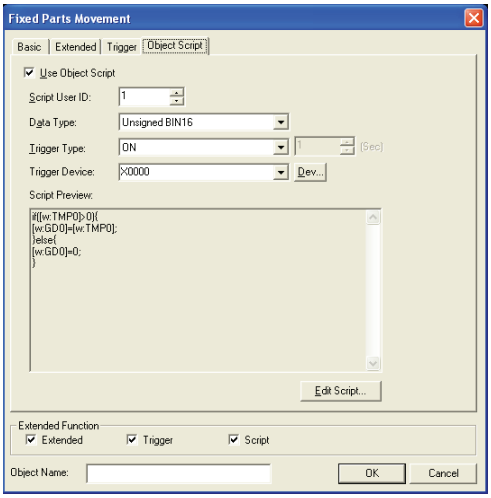
☞ Section 9.2.5 Setting items of bit parts movement



## 4 Object script tab (Fixed)

For details of settings made on the object script tab, refer to the following

Secton16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.
The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| 1 Basic | Parts No. | part_no | ○ | 3) |
| | Blink | blink | ○ | 3) |
| | Mark Color | mark_color | ○ | 3) |
| 2 Extended | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 9.2.8 Precautions

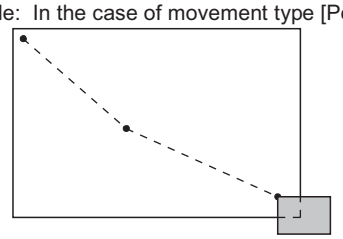
This section provides the precautions for using parts movement function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be set on a screen
Up to 100 parts movement objects can be placed (set).

(2) Display position of parts
If the display position of parts out of screen is set in Designer2, parts will not be movement-displayed. The previous display will be held.

Example: In the case of movement type [Point]



Parts out of the screen will not be displayed.

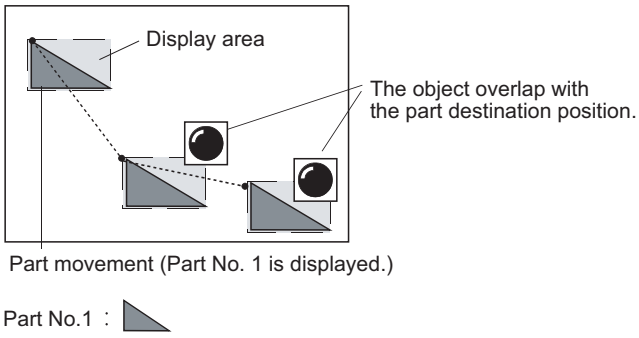
(3) Registering parts
Refer to the following for the cautions for registering parts.

(a) When using registered parts
☞ Section 4.2 Parts Registration

(b) When using BMP/JPEG file parts
☞ Section 4.3 Registering BMP/JPEG Files for Parts in the Memory Card

(4) Precautions when parts overlap with other objects
Make the settings so that the part destination position will not overlap with other objects.
If they overlap, the overlapped object may not be displayed correctly.
In this case, set the moving part on a layer different from the other object.

· When the "Move way" is "Point"




### 2 Precautions for use

(1) The value stored in position device
If the value stored in position device exceeding the display range (position, out of the range of maximum to minimum, point No.), parts will not be movement-displayed. The previous display will be held.

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Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 2/3

(For GOT1000 Series)

| | |
|---|---|
| MODEL | SW2-GT1000-R-E |
| MODEL CODE | 1D7M25 |
| SH(NA)-080530ENG-R 2/3(1209)MEE | |

MITSUBISHI ELECTRIC CORPORATION

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NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.

Printed in Japan, September 2012.

MITSUBISHI

MELSOFT

Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 3/3

(For GOT1000 Series)

SW2D5C-GTWK2-E
SW2D5C-GTD2-E

# ● SAFETY PRECAUTIONS ●

(Be sure to read these instructions before using the product)

Before using this product, read this manual and the relevant manuals introduced in this manual carefully and handle the product correctly with full attention to safety.
Note that these precautions apply only to this product.
In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

| | |
|---|---|
| ⚠ **WARNING** | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| ⚠ **CAUTION** | Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. |

Note that failure to observe the ⚠ CAUTION level instructions may also lead to serious results depending on the circumstances.
Be sure to observe the instructions of both levels to ensure personal safety.

Please keep this manual in accessible place and be sure to forward it to the end user.

## [Test operation precautions]

**⚠ DANGER**

- When testing the operation (e.g. turning bit devices ON/OFF or changing a current word device value, a current or set timer/counter value, or a current buffer memory value), thoroughly read the relevant manual to fully understand the operating procedures. When testing, never change the data of the devices that control the operation essential for the system.
  Faulty output and malfunction may result in an accident.

# CAUTIONS FOR USING THIS SOFTWARE

1. Required PC memory

   The processing may be terminated by Microsoft® Windows® on a personal computer of which main memory capacity is less than 64M bytes. Make sure to secure the capacity of 64 M bytes or more.

2. Free capacity of hard disk (virtual memory)

   At least 100M bytes of free capacity of virtual memory should be secured within hard disk to run this software. The processing may be terminated by Windows® , if 100M bytes or more of free space cannot be secured within hard disk while running GT Designer2.
   Secure enough free capacity of virtual memory within hard disk space in order to run the software.

   When enough free capacity cannot be secured, make sure to save projects frequently.

3. Error messages displayed while starting and editing

   "Operation will be terminated because of insufficient memory. Would you like to stop?"

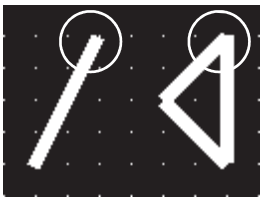
   If the above message appears, close other running application software or reboot Windows® in order to secure at least 50M bytes of free hard disk space.

4. GT Designer2 and GOT display

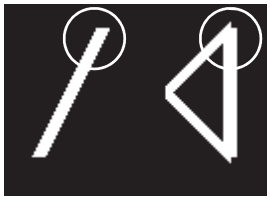
   (a) Cautions for displaying straight line other than full line (dotted line, for example) in bold.
   When straight line other than full line is drawn in bold, the line may not be displayed with its actual line width on a personal computer. However, it will be displayed correctly on GOT. This phenomenon does not mean data problem.

   (b) Display of end points of straight line/line freeform/polygon
   As shown below, the end points of straight line/line freeform/polygon are displayed differently between GT Designer2 and GOT.

   On GT Designer2

   On GOT

   (c) Start position for filling patterns
   Some filling patterns may be differently displayed. For example, the start position may be different between GT Designer2 and GOT.

   (d) Drawing of different type lines
   The length of the dots varies in different dotted lines (for example: the chain lines).

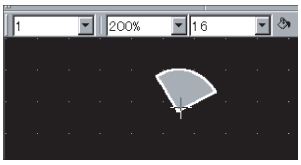
   (e) Display of object

   - The display position of the memory data display in graph function is different between GT Designer2 and GOT.
   - Even if the display-start-line of a comment has been set, the comment will be displayed from the first line on GT Designer2.

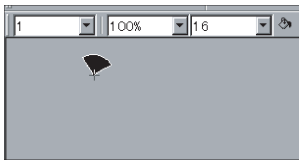
(f) Display magnification
When display magnification is changed, the connected lines or figures may be separated or the filled-paint may be out of outline of the figure.
However, if they are displayed correctly on the preview screen, they will appear correctly on GOT as well.

Example: When filled-paint is out of the outline.

Display magnification: 200%




Display magnification: 100%




Position of Paint mark may be shifted and the filled-paint may exceed the outline of the figure.

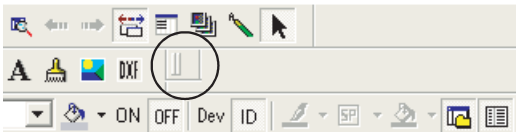
5. Restrictions when the color setting is changed to the setting of less colors in the system environment (256 colors → 2 colors)
   - The color palette for setting color will be changed according to the new settings.
   - The color on the drawing screen will be kept the same as prior to the change.
     If the color setting for a [red] rectangle-figure is changed to the 2 colors (B/W), the [red] color will remain.
   - The colors of the image data (BMP format file) will be reduced when the project is stored, the screen is closed and that image data is double-clicked.

6. Object function and device type
   The object (bit lamp or word lamp),for which bit device setting and word device setting are separated, cannot be converted between bit device and word device.

7. When device type is changed
   Confirm the device type when the set bit device is changed from bit device into word device.
   The device flag may be represented as "??", depending on the settings .
   Example: D0. b0 → D0  D0.b5 → ??

8. OS setting
   Set the font size as "Small Font" when setting OS (Windows®) screen.
   The GT designer2 dialog box cannot be displayed correctly if the font size is set as "Large font".

9. When the toolbar icon appears in smaller size after startup of GT Desinger2
   The toolbar icon may appear in smaller size right after GT Designer2 is started up.
   To correctly display the icon, initialize it as instructed below.
   (Click on [Project] → [References] from the menu, and select the toolbar tab. Click on Reset All button in that tab.)




10. When using GT Designer2 in the PC in which the OS other than applicable language version
    The text may not be displayed correctly depending on the OS versions; some version include the fonts incompatible with GT Designer2 or GOT.

REVISIONS

* The manual number is given on the left bottom of the back cover.

| Print Date | Manual Number | Revision |
|---|---|---|
| Oct., 2004 | SH(NA)-080530ENG-A | First Printing |
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| Apr., 2005 | SH(NA)-080530ENG-C | Compatible with the GT Designer2 Version2.11M.<br>Partical additions<br>Section 3.2, 12.1, 12.2.3 |
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# INTRODUCTION

Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).
Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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# FUNCTION QUICK REFERENCE

## Edit Operation (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Preview | Shows the preview of screen image of GOT. | Page 7-51 |
| Align | Aligns objects or images | Page 11-42 |
| Property sheet | Sets same attributes to objects or images in the same screen | Page 12-1 |
| Guidelines | Displays lines to align figures and objects when arranging a placed figure or object. | Page 11-45 |
| Replace colors<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the color(s) of the objects and figures arranged on plural screens at the same time | Page 12-12 |
| Replace shapes<br>Base 2 Base 3 Base 1 → Base 2 Base 3 Base 1 | Changes the switch/lamp figures at the same time | Page 12-12 |
| Replace devices<br>M10 M11 M12 → M100 M101 M102 | Changes the preset devices at the same time | Page 12-12 |
| Replace CH No.<br>@1M10 @1M11 @1M12 → @3M10 @3M11 @3M12 | Changes channel numbers at the same time. | Page 12-12 |
| Data View<br>Select | Overlapping images or objects | Page 12-16 |
| Device list<br>Base 2 Base 3 Base 1<br>D100 Numerical display<br>D200 ASCII display<br>D300 Panel meter display | Display the set device in list | Page 12-17 |

| Image | Function | Page |
|---|---|---|
| Text list<br>Base 2 Base 3 Base 1<br>Run Bit Switch<br>Stop Bit Switch<br>Error Word Lamp | Displays the direct input texts in a list. | Page 12-19 |
| Multiple language input<br>Man. Auto → 手动 自动<br>English Chinese | Input characters or comments in other language. | Page 12-26 |
| Import BMP/JPEG/DXF file<br>BMP file JPEG file DXF file Import | Imports BMP/JPEG/DXF files | Page 11-24 |
| IGES data read<br>IGES data Read | Reads IGES data. | Page 11-34 |
| Import Project<br>Import | Utilizes other project data | Page 12-36 |
| Change object name<br>Touch switch Line A start switch<br>Touch switch Line B start switch | Changes an object name. | Page 7-38 |

# Object Functions (GT Designer2 Version□ Screen Design Manual)

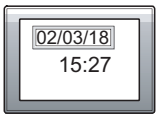
## 1 Lamp/Switch

| Image | Function | Page |
|---|---|---|
| Lamp display<br>Red RUN → Blue STOP | Displays device value via lamp color changing | Page 6-1 |
| Bit switch<br>MO:ON→OFF | Touch it to switch device ON/OFF | Page 6-32 |
| Data set switch<br>D100: 200 → 350 | Touch it to change bit device value | Page 6-61 |

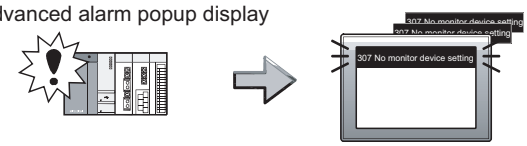
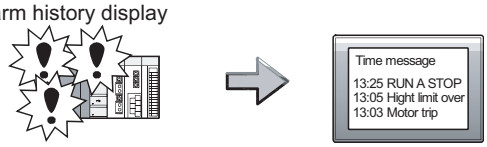
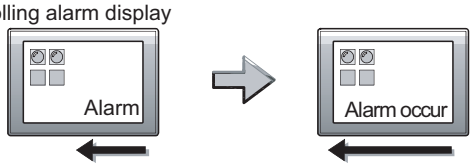
| Image | Function | Page |
|---|---|---|
| Special function switch | Touch it to switch the screen to such as the Utility screen. | Page 6-65 |
| Go to screen switch<br>Base 1 Base 2 | Touch it to switch between the base and window screen | Page 6-75 |
| Change station No. switch<br>Change monitor destination | Touch it to switch the monitored controller station No. | Page 6-87 |
| Key code switch | Used as the key for inputting numerical value/ASCII | Page 6-97 |
| Data change switch | Displays the specified key window at the specified position and displays the cursor on the corresponding object. | Page 6-93 |

## 2 Digit/font display

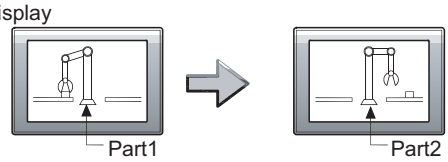
| Image | Function | Page |
|---|---|---|
| Numerical display<br>D100:334 | Displays device value in numerical value | Page 7-1 |
| Numerical input<br>D100:45 | Write value on device | Page 7-1 |
| Data list<br>D100: 55<br>D101:122<br>D102: 34 | Display multipledevice value in list | Page 7-46 |
| ASCII display<br>D10:4241H(BA)<br>D11:4443H(DC)<br>ABCD | Displays device value in text | Page 7-62 |
| ASCII input<br>D10:4241H(BA)<br>D11:4443H(DC) | Inputs text code device | Page 7-62 |

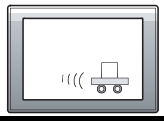
| Image | Function | Page |
|---|---|---|
| Clock display   | Displays hour/minutes, year/month/date | Page 7-86 |
| Comment display | Displays command | Page 7-96 |

## 3 Alarm

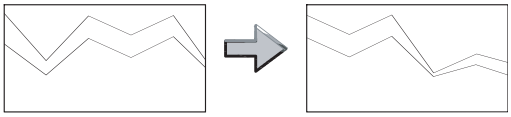
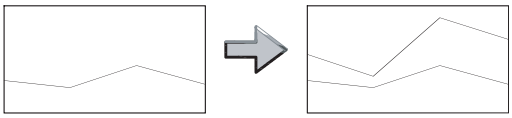
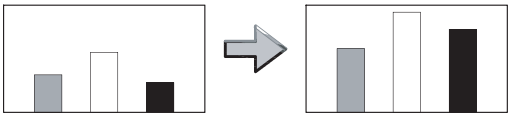
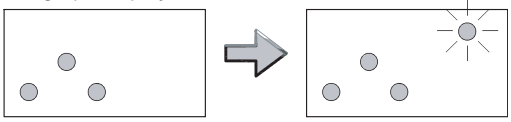
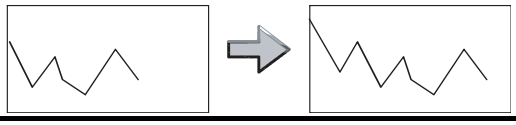
| Image | Function | Page |
|---|---|---|
| Advanced alarm display | Displays a history of GOT errors, communication errors or user-created messages at alarm occurrence.<br>Also displays alarms hierarchically. | Page 8-101 |
| Advanced alarm popup display   | Pops up a GOT error, communication error or user-created message at alarm occurrence. Also displays alarms hierarchically. | Page 8-150 |
| User alarm display | Displays a user-created message at alarm occurrence. | Page 8-186 |
| System alarm display | Displays a GOT error or communication error at alarm occurrence. | Page 8-210 |
| Alarm history display   | Displays a history of user-created messages at alarm occurrence. | Page 8-218 |
| Scrolling alarm display   | Displays alarm in floating. | Page 8-256 |

## 4 Parts

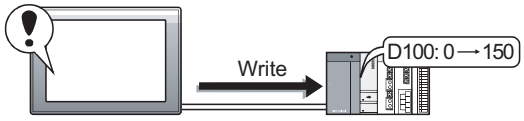
| Image | Function | Page |
|---|---|---|
| Parts display   | Display entered device | Page 9-1 |

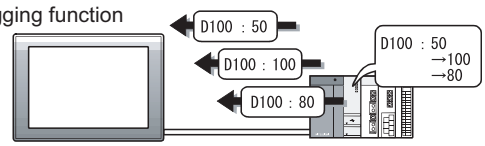
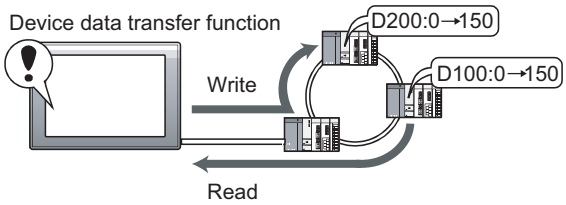
| Image | Function | Page |
|---|---|---|
| Parts movement display  | Displays moving parts | Page 9-39 |

## 5 Graph/Meter

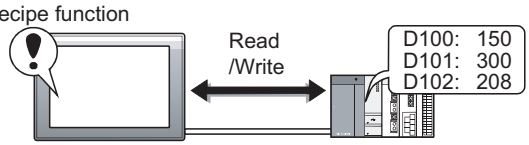
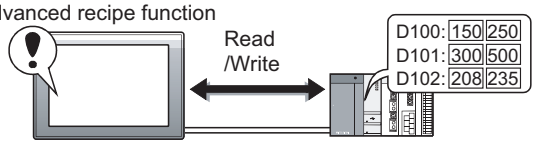
| Image | Function | Page |
|---|---|---|
| Panel meter display | Displays device data on panel meter | Page 10-1 |
| Level display | Displays device data in proportional level | Page 10-16 |
| Trend graph display  | Displays device data in trend graph | Page 10-33 |
| Line graph display  | Displays device data in line graph | Page 10-50 |
| Bar graph display  | Displays device data in bar graph | Page 10-70 |
| Statistics graph display Circle graph Bar graph | Displays device data in statistics graph | Page 10-85 |
| Scatter graph display  | Displays device data in scatter graph | Page 10-99 |
| Historical trend graph display  | Displays the past data having been collected by the logging function in trend graph, starting from the present. | Page 10-125 |

## 6 Trigger → action

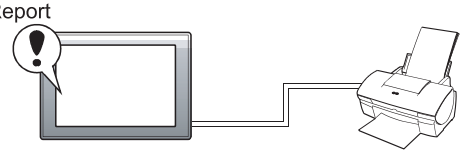
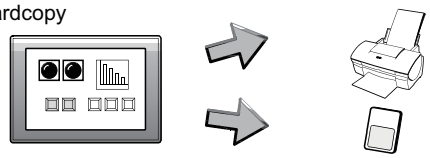
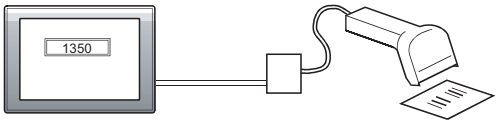
| Image | Function | Page |
|---|---|---|
| Status observation function   | Monitors status of device and write value to device or operates GOT when condition meets | Page 11-1 |

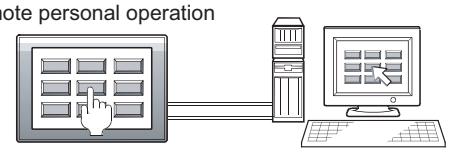
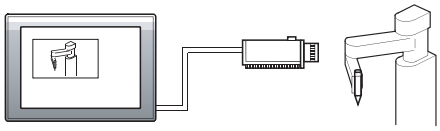
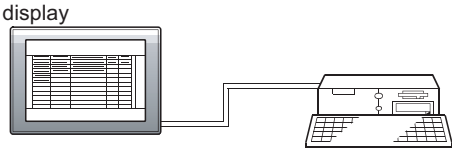
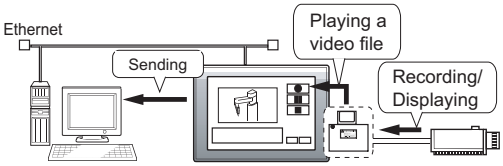
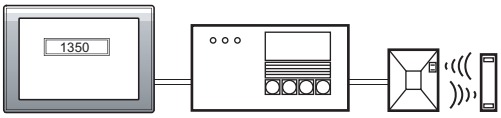
| Image | Function | Page |
|---|---|---|
| Time action function | Outputs the device writing and sound at specified time. | Page 11-11 |
| Logging function   | Collects and stores the device values. | Page 11-20 |
| Device data transfer function   | Reads the device values and writes to the other device when the trigger condition is satisfied. | Page 11-61 |

## 7 Recipe

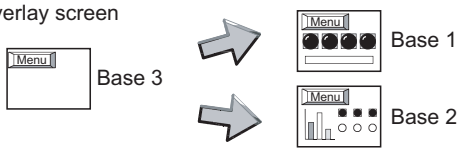
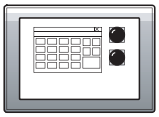
| Image | Function | Page |
|---|---|---|
| Recipe function   | Monitors status of device and read/write device data when condition meets.<br>One value can be set to a device. | Page 12-12 |
| Advanced recipe function   | Monitors status of device and read/write device data when condition meets.<br>Multiple values can be set to a device.<br>The device value can be read/written by the utility. | Page 12-25 |

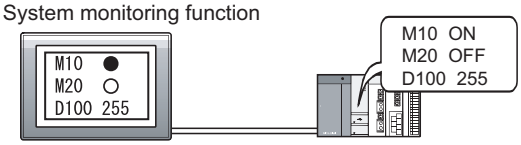
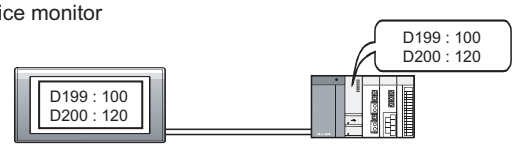
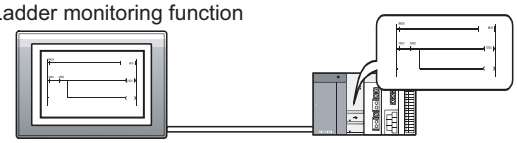
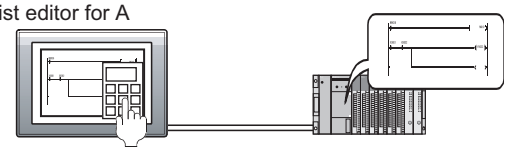
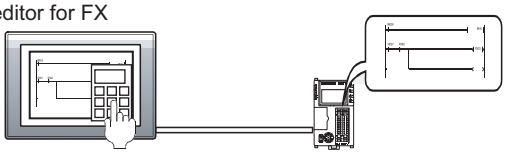
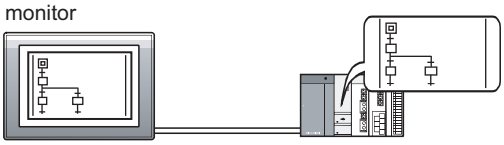
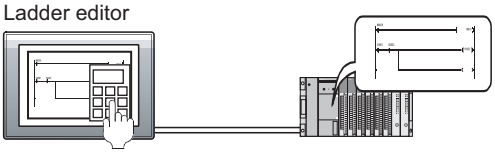
## 8 External input/output

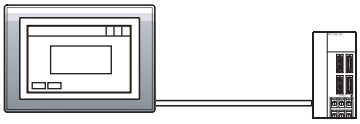
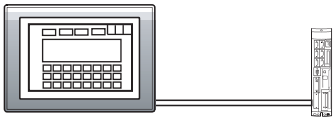
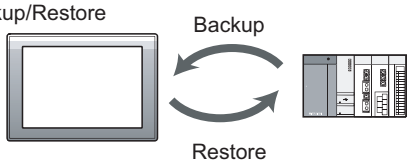
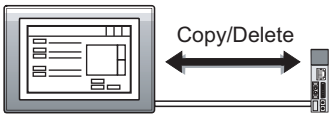
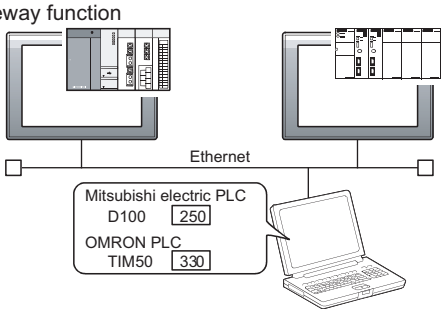
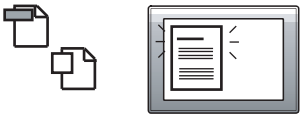
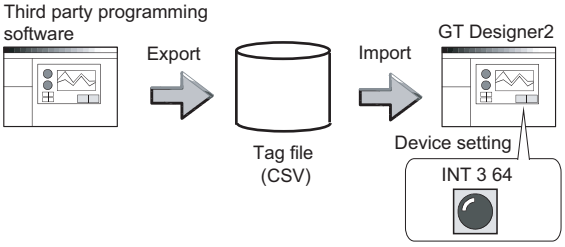
| Image | Function | Page |
|---|---|---|
| Report  | Collects data such as production management and production status and prints the collected data. | Page 13-1 |
| Hardcopy  | Outputs the GOT monitor screen to printer or memory card | Page 13-1 |
| Bar code   | Writes data read by bar code reader to device | Page 13-35 |

| Image | Function | Page |
|---|---|---|
| Remote personal operation  | Operates the mouse pointer on the personal computer by touching the personal computer screen displayed on the GOT using the RGB display. | Page 13-74 |
| Video  | Displays video | Page 13-44 |
| RGB display  | Displays PC screens | Page 13-64 |
| Multimedia function   | Displays or records a video image.<br>Plays a video file.<br>Sends a video file to a personal computer. | Page 13-118 |
| Operation panel | Writes data to a device with the operation panel. | Page 13-82 |
| Sound output | Outputs sounds | Page 13-94 |
| RFID   | Reads and writes IC tag data with RFID readers/writers. | Page 13-99 |

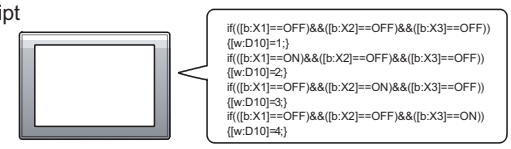
## 9 Others

| Image | Function | Page |
|---|---|---|
| Set overlay screen   | Set overlay screen from other screens | Page 15-1 |
| Test function  | Changes device values on a test window while displaying a monitor screen. | Page 15-59 |

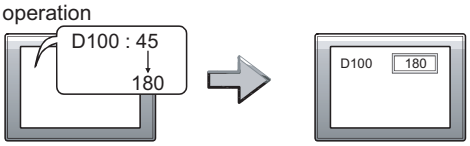
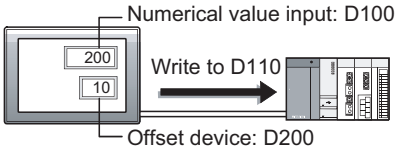
| Image | Function | Page |
|---|---|---|
| System monitoring function   | Displays the operation status of a sequence program. | Page 14-2 |
| Device monitor   | Monitors the device states of the PLC. | Page 14-3 |
| Ladder monitoring function  | Monitors the status of ACPU devices. | Page 14-4 |
| List editor for A  | Reads a sequence program from ACPU and display in list to change instructions. | Page 14-6 |
| List editor for FX  | Reads a sequence program from FXCPU and displays in list to change instructions. | Page 14-7 |
| SFC monitor  | Displays the operation status of a SFC program. | Page 14-16 |
| Ladder editor  | Monitors and edits a sequence program, or changes current device values in the controller by using the GOT without the dedicated software. | Page 14-18 |
| Intelligent module monitor | Monitors the buffer memory of the intelligent function module on the dedicated screen to change the data. | Page 14-8 |
| Network monitor | Monitors the network status of MELSECNET/H, MELSECNET/10 and MELSECNET(II). | Page 14-9 |
| Motion monitor | Performs servo monitoring and parameter setting for motion controller CPU (Q series). | Page 14-10 |

| Image | Function | Page |
|---|---|---|
| Servo amplifier monitor  | Performs various monitoring functions, parameter changes and test run for the servo amplifier where a GOT is connected. | Page 14-11 |
| CNC monitor  | Executes the position display monitor and others of the CNC that is connected to the GOT. The position display monitor and others of the CNC are equivalent to those of the MELDAS dedicated display. | Page 14-12 |
| Backup/Restore   | Backs up and restores data for controllers with the GOT. | Page 14-13 |
| CNC data I/O   | Copies or deletes machining programs, parameters, and others of the CNC that is connected to the GOT. | Page 14-15 |
| Gateway function   | Performs remote monitoring and remote maintenance of production site from the office. | Page 15-62 |
| Document display  | Displays document data on the GOT. | Page 15-39 |
| MES interface | Enables data communications between the controllers and databases in the information system (manufacturing execution system) without a communication gateway. | Page 15-63 |
| Tag import function   | Import a CSV tag file created by the third party programming software to GT Designer2, and set a tag as a device. | Page 15-64 |

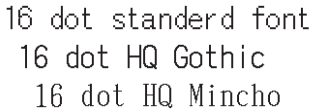
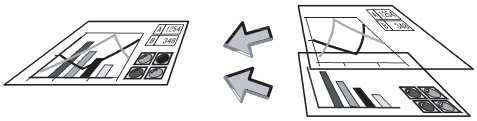
## 10 Script function

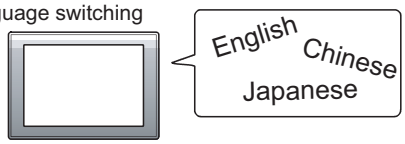
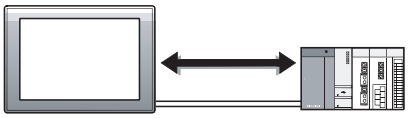
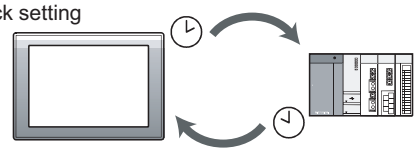
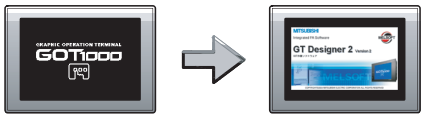
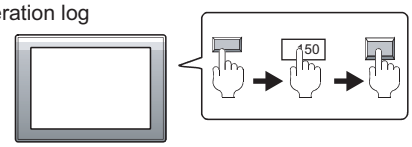
| Image | Function | Page |
|---|---|---|
| Script   | Controls GOT display by scripts | Page 16-1 |

## 11 Object setting

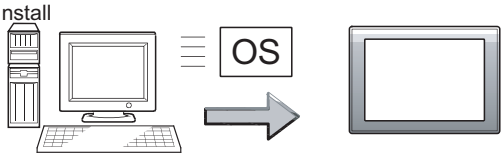
| Image | Function | Page |
|---|---|---|
| Data operation   | Operates device values by expression and enables objects using the operated value | Page 5-74 |
| Offset   | Accumulates the offset device value in monitor device address and monitor. | Page 5-80 |
| Security | Restricts the password users | Page 5-84 |

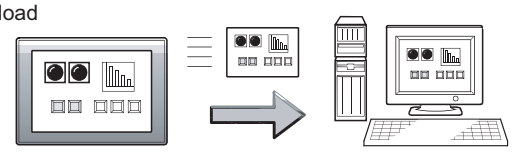
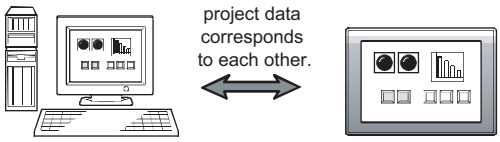
# Other Functions (GT Designer2 Version□ Screen Design Manual)

| Image | Function | Page |
|---|---|---|
| Font   | Displays a text in various fonts. | Page 2-20 |
| Superimposition  | Superimposes figures and objects. | Page 2-80 |
| Multi-channel function | Monitors multiple controllers. | Page 2-194 |

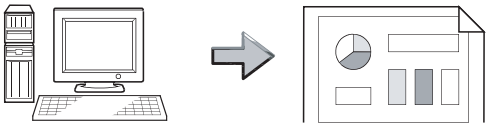
| Image | Function | Page |
|---|---|---|
| Language switching   | Switches between multiple languages. | Page 3-27 |
| Communication settings  | Makes the communication settings of the controller. | Page 3-100 |
| GOT Setup | Makes the settings relevant to GOT display and operation. | Page 3-159 |
| Clock setting  | Sets the clock used by the GOT. | Page 3-168 |
| Startup logo   | Sets the screen (BMP file) to be displayed at GOT startup. | Page 3-169 |
| Dialog window | Customizes the GOT system messages. | Page 3-175 |
| Operation log   | Saves the user's operation performed at the GOT as an operation history. | Page 15-13 |

## Data Transmission (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Install   | Transfers OS from PC to the GOT. | Page 8-73 |
| Download | Transimits monitor screen data from PC to GOT | Page 8-80 |

| Image | Function | Page |
|---|---|---|
| Upload  | Transmits monitor screen data from GOT to PC | Page 8-93 |
| Verify   | Check the project data displayed on the GT Designer2 against the project data stored in the GOT. | Page 8-87 |

## Print (GT Designer2 Version□ Basic Operation/Data Transfer Manual)

| Image | Function | Page |
|---|---|---|
| Print  | Prints the project information (screen image, title list, etc.). | Page 9-1 |

# MANUALS

The following table lists the manual relevant to this product.
You can order it as necessary.
Stored in the GT Works2/GT Designer2 in PDF format.

Related Manuals

| Manual Name | Manual Number (Type code) |
|---|---|
| GT16 User's Manual (Hardware)<br>Describes the GT16 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>(Sold separately) | SH-080928ENG<br>(1D7MD3) |
| GT16 User's Manual (Basic Utility)<br>Describes the GT16 utility-relevant contents, including the screen settings, operation method settings, program/data management, and self check function.<br>(Sold separately) | SH-080929ENG<br>(1D7MD4) |
| GT15 User's Manual<br>-Describes the GT15 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT15 functions, including the utility.<br>(Sold separately) | SH-080528ENG<br>(1D7M23) |
| GT11 User's Manual<br>-Describes the GT11 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT11 functions, including the utility.<br>(Sold separately) | JY997D17501<br>(09R815) |
| GT11 Handy GOT User's Manual<br>-Describes the Handy GOT hardware-relevant contents, including the system configurations, specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the Handy GOT functions, including the utility, and how to make cables.<br>(Sold separately) | JY997D20101<br>JY997D20102<br>(09R817) |
| GT10 User's Manual<br>-Describes the GT10 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices.<br>-Describes the GT10 functions, including the utility.<br>(Sold separately) | JY997D24701<br>(09R819) |
| GT SoftGOT1000 Operating Manual<br>Describes the screen configuration, functions and using method of GT SoftGOT1000.<br>(Sold separately) | SH-080602ENG<br>(1D7M48) |
| GT Designer2 Version2 Basic Operation/Data Transfer Manual<br>Describes methods of the GOT1000 series installation operation, basic operation for drawing and transmitting data to GOT1000 series<br>(Sold separately) | SH-080529ENG<br>(1D7M24) |

(Continued to next page)

| Manual Name | Manual Number (Type code) |
|---|---|
| GOT1000 Series Connection Manual (1/3, 2/3, 3/3)<br>Describes system configurations of the connection method applicable to GOT1000 series and cable creation<br>(Sold separately) | SH-080532ENG<br>(1D7M26) |
| GOT1000 Series Extended / Option Functions Manual<br>Describes extended functions and option functions applicable to GOT series.<br>(Sold separately) | SH-080544ENG<br>(1D7M32) |
| GOT1000 Series Gateway Functions Manual<br>Describes specifications, system configurations and setting methods of the gateway functions.<br>(Sold separately) | SH-080545ENG<br>(1D7M33) |
| GOT1000 Series MES Interface Function Manual<br>Describes the specifications, system configurations, and setting method of GT MES interface function.<br>(Sold separately) | SH-080654ENG<br>(1D7M63) |

# ABBREVIATIONS AND GENERIC TERMS

Abbreviations and generic terms used in this manual are as follows:

## ■ GOT

| Abbreviations and generic terms | | | Description |
|---|---|---|---|
| GOT1000 Series | GT SoftGOT1000 | | Abbreviation of GT SoftGOT1000 |
| | GT1695 | GT1695M-X | Abbreviation of GT1695M-XTBA, GT1695M-XTBD |
| | GT1685 | GT1685M-S | Abbreviation of GT1685M-STBA, GT1685M-STBD |
| | GT1675 | GT1675M-S | Abbreviation of GT1675M-STBA, GT1675M-STBD |
| | | GT1675M-V | Abbreviation of GT1675M-VTBA, GT1675M-VTBD |
| | GT1665 | GT1665M-S | Abbreviation of GT1665M-STBA, GT1665M-STBD |
| | | GT1665M-V | Abbreviation of GT1665M-VTBA, GT1665M-VTBD |
| | GT16□□, GT16 | | Abbreviation of GT1695,GT1685, GT1675, GT1665 |
| | GT1595 | GT1595-X | Abbreviation of GT1595-XTBA, GT1595-XTBD |
| | GT1585 | GT1585V-S | Abbreviation of GT1585V-STBA, GT1585V-STBD |
| | | GT1585-S | Abbreviation of GT1585-STBA, GT1585-STBD |
| | GT157□ | GT1575V-S | Abbreviation of GT1575V-STBA, GT1575V-STBD |
| | | GT1575-S | Abbreviation of GT1575-STBA, GT1575-STBD |
| | | GT1575-V | Abbreviation of GT1575-VTBA, GT1575-VTBD |
| | | GT1575-VN | Abbreviation of GT1575-VNBA, GT1575-VNBD |
| | | GT1572-VN | Abbreviation of GT1572-VNBA, GT1572-VNBD |
| | GT156□ | GT1565-V | Abbreviation of GT1565-VTBA, GT1565-VTBD |
| | | GT1562-VN | Abbreviation of GT1562-VNBA, GT1562-VNBD |
| | GT155□ | GT1555-V | Abbreviation of GT1555-VTBD |
| | | GT1555-Q | Abbreviation of GT1555-QTBD, GT1555-QSBD |
| | | GT1550-Q | Abbreviation of GT1550-QLBD |
| | GT15□□, GT15 | | Abbreviation of GT1595, GT1585, GT157□, GT156□, GT155□ |
| | GT115□ | GT1155-Q | Abbreviation of GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA, GT1155-QTBD, GT1155-QSBD |
| | | GT1150-Q | Abbreviation of GT1150-QLBDQ, GT1150-QLBDA, GT1150-QLBD |
| | Handy GOT | GT1155HS-Q | Abbreviation of GT1155HS-QSBD |
| | | GT1150HS-Q | Abbreviation of GT1150HS-QLBD |
| | GT11□□, GT11 | | Abbreviation of GT1155-Q, GT1150-Q, GT11 Handy GOT |
| | GT105□ | GT1055-Q | Abbreviation of GT1055-QSBD |
| | | GT1050-Q | Abbreviation of GT1050-QBBD |
| | GT104□ | GT1045-Q | Abbreviation of GT1045-QSBD |
| | | GT1040-Q | Abbreviation of GT1040-QBBD |
| | GT1030 | | Abbreviation of GT1030-LBD, GT1030-LBD2, GT1030-LBDW, GT1030-LBDW2 |
| | GT1020 | | Abbreviation of GT1020-LBD, GT1020-LBD2, GT1020-LBL, GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW |
| | GT10□□, GT10 | | Abbreviation of GT105□, GT104□, GT1030, GT1020 |
| GOT900 Series | | | Abbreviation of GOT-A900 series, GOT-F900 series |
| GOT800 Series | | | Abbreviation of GOT-800 series |

## ■ Communication unit

| Abbreviations and generic terms | Description |
|---|---|
| Bus connection unit | GT15-QBUS, GT15-QBUS2, GT15-ABUS, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L |
| Serial communication unit | GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE |
| RS-422 conversion unit | GT15-RS2T4-9P, GT15-RS2T4-25P |
| Ethernet communication unit | GT15-J71E71-100 |
| MELSECNET/H communication unit | GT15-J71LP23-25, GT15-J71BR13 |
| MELSECNET/10 communication unit | GT15-75J71LP23-Z*1, GT15-75J71BR13-Z*2 |
| CC-Link IE controller network communication unit | GT15-J71GP23-SX |
| CC-Link communication unit | GT15-J61BT13, GT15-75J61BT13-Z*3 |
| Interface converter unit | GT15-75IF900 |
| Serial multi-drop connection unit | GT01-RS4-M |
| Connection Conversion Adapter | GT10-9PT5S |

*1 A9GT-QJ71LP23 + GT15-75IF900 set
*2 A9GT-QJ71BR13 + GT15-75IF900 set
*3 A8GT-J61BT13 + GT15-75IF900 set

## ■ Option unit

| Abbreviations and generic terms | | Description |
|---|---|---|
| Printer unit | | GT15-PRN |
| Video/RGB unit | Video input unit | GT16M-V4, GT15V-75V4 |
| | RGB input unit | GT16M-R2, GT15V-75R1 |
| | Video/RGB input unit | GT16M-V4R1, GT15V-75V4R1 |
| | RGB output unit | GT16M-ROUT, GT15V-75ROUT |
| Multimedia unit | | GT16M-MMR |
| CF card unit | | GT15-CFCD |
| CF card extension unit*1 | | GT15-CFEX-C08SET |
| External I/O unit | | GT15-DIO, GT15-DIOR |
| Sound output unit | | GT15-SOUT |
| Fingerprint unit | | GT15-80FPA |

*1 GT15-CFEX + GT15-CFEXIF + GT15-C08CF set.

## ■ Option

| Abbreviations and generic terms | | Description | | | | |
|---|---|---|---|---|---|---|
| Memory card | CF card | GT05-MEM-16MC, GT05-MEM-256MC, | GT05-MEM-32MC, GT05-MEM-512MC, | GT05-MEM-64MC, GT05-MEM-1GC, | GT05-MEM-128MC, GT05-MEM-2GC | |
| Memory card adaptor | | GT05-MEM-ADPC | | | | |
| Option function board | | GT16-MESB, GT15-QFNB32M, | GT15-FNB, GT15-QFNB48M, | GT15-QFNB, GT15-MESB48M, | GT15-QFNB16M, GT11-50FNB | |
| Battery | | GT15-BAT, | GT11-50BAT | | | |
| Protective Sheet | For GT16 | GT16-90PSCB, GT16-80PSCB, GT16-70PSCB, GT16-60PSCB, | GT16-90PSGB, GT16-80PSGB, GT16-70PSGB, GT16-60PSGB, | GT16-90PSCW, GT16-80PSCW, GT16-70PSCW, GT16-60PSCW, | GT16-90PSGW, GT16-80PSGW, GT16-70PSGW, GT16-60PSGW | |
| | For GT15 | GT15-90PSCB, GT15-80PSCB, GT15-70PSCB, GT15-60PSCB, GT15-50PSCB, | GT15-90PSGB, GT15-80PSGB, GT15-70PSGB, GT15-60PSGB, GT15-50PSGB, | GT15-90PSCW, GT15-80PSCW, GT15-70PSCW, GT15-60PSCW, GT15-50PSCW, | GT15-90PSGW, GT15-80PSGW, GT15-70PSGW, GT15-60PSGW, GT15-50PSGW | |
| | For GT11 | GT11-50PSCB, GT11H-50PSC | GT11-50PSGB, | GT11-50PSCW, | GT11-50PSGW, | |
| | For GT10 | GT10-50PSCB, GT10-40PSCB, GT10-30PSCB, GT10-20PSCB, | GT10-50PSGB, GT10-40PSGB, GT10-30PSGB, GT10-20PSGB, | GT10-50PSCW, GT10-40PSCW, GT10-30PSCW, GT10-20PSCW, | GT10-50PSGW, GT10-40PSGW, GT10-30PSGW, GT10-20PSGW | |
| Protective cover for oil | | GT05-90PCO, GT05-50PCO | GT05-80PCO, | GT05-70PCO, | GT05-60PCO, | |
| USB environmental protection cover | | GT16-UCOV, | GT15-UCOV, | GT11-50UCOV | | |
| Stand | | GT15-90STAND, GT05-50STAND | GT15-80STAND, | GT15-70STAND, | A9GT-50STAND, | |
| Attachment | | GT15-70ATT-98, GT15-60ATT-87, | GT15-70ATT-87, GT15-60ATT-77, | GT15-60ATT-97, GT15-50ATT-95W, | GT15-60ATT-96, GT15-50ATT-85 | |
| Backlight | | GT16-90XLTT, GT16-70SLTT, GT15-70SLTT, GT15-60VLTN | GT16-80SLTT, GT16-70VLTT, GT15-70VLTT, | GT15-90XLTT, GT16-60SLTT, GT15-70VLTN, | GT15-80SLTT, GT16-60VLTT, GT15-60VLTT, | |
| Multi-color display board | | GT15-XHNB, | GT15-VHNB | | | |
| Connector conversion box | | GT11H-CNB-37S | | | | |
| Emergency stop sw guard cover | | GT11H-50ESCOV | | | | |
| Memory loader | | GT10-LDR | | | | |
| Memory board | | GT10-50FMB | | | | |

## ■ Software

| Abbreviations and generic terms | Description |
|---|---|
| GT Works2 Version□ | SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV |
| GT Designer2 Version□ | SW□D5C-GTD2-E, SW□D5C-GTD2-EV |
| GT Designer2 | Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series |
| GT Converter2 | Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series |
| GT Simulator2 | Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series |
| GT SoftGOT1000 | Abbreviation of monitoring software GT SoftGOT1000 |
| GT SoftGOT2 | Abbreviation of monitoring software GT SoftGOT2 |
| GX Developer | Abbreviation of SW□D5C-GPPW-E(-EV)/SW□D5F-GPPW-E type software package |
| GX Simulator | Abbreviation of SW□D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions) |
| Document Converter | Abbreviation of document data conversion software Document Converter for GOT1000 series |
| PX Developer | Abbreviation of SW□D5C-FBDQ-E type FBD software package for process control |

## License key (for GT SoftGOT1000)

| Abbreviations and generic terms | Description |
|---|---|
| License | GT15-SGTKEY-U, GT15-SGTKEY-P |

## License key (for GT SoftGOT2)

| Abbreviations and generic terms | Description |
|---|---|
| License key | A9GTSOFT-LKEY-P (For DOS/V PC) |
| License key FD | SW5D5F-SGLKEY-J (For PC CPU module) |

## Others

| Abbreviations and generic terms | | Description |
|---|---|---|
| OMRON PLC | | Abbreviation of PLC manufactured by OMRON Corporation |
| KEYENCE PLC | | Abbreviation of PLC manufactured by KEYENCE CORPORATION |
| KOYO EI PLC | | Abbreviation of PLC manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD. |
| SHARP PLC | | Abbreviation of PLC manufactured by Sharp Manufacturing Systems Corporation |
| JTEKT PLC | | Abbreviation of PLC manufactured by JTEKT Corporation |
| TOSHIBA PLC | | Abbreviation of PLC manufactured by TOSHIBA CORPORATION |
| TOSHIBA MACHINE PLC | | Abbreviation of PLC manufactured by TOSHIBA MACHINE CO., LTD. |
| HITACHI IES PLC | | Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd. |
| HITACHI PLC | | Abbreviation of PLC manufactured by Hitachi, Ltd. |
| FUJI FA PLC | | Abbreviation of PLC manufactured by Fuji Electric FA Components & Systems Co., Ltd. |
| PANASONIC PLC | | Abbreviation of PLC manufactured by Panasonic Electric Works Co., Ltd. |
| YASKAWA PLC | | Abbreviation of PLC manufactured by YASKAWA Electric Corporation |
| YOKOGAWA PLC | | Abbreviation of PLC manufactured by Yokogawa Electric Corporation |
| ALLEN-BRADLEY PLC | | Abbreviation of Allen-Bradley PLC manufactured by Rockwell Automation, Inc. |
| GE FANUC PLC | | Abbreviation of PLC manufactured by GE Fanuc Automation Corporation |
| LS IS PLC | | Abbreviation of PLC manufactured by LS Industrial Systems Co., Ltd. |
| SCHNEIDER PLC | | Abbreviation of PLC manufactured by Schneider Electric SA |
| SIEMENS PLC | | Abbreviation of PLC manufactured by Siemens AG |
| Temperature controller | OMRON temperature controller | Abbreviation of temperature controller manufactured by OMRON Corporation |
| | SHINKO indicating controller | Abbreviation of temperature controller manufactured by Shinko Technos Co., Ltd. |
| | CHINO controller | Abbreviation of temperature controller manufactured by CHINO CORPORATION |
| | FUJI SYS temperature controller | Abbreviation of temperature controller manufactured by Fuji Electric Systems Co., Ltd. |
| | YAMATAKE temperature controller | Abbreviation of temperature controller manufactured by Yamatake Corporation |
| | YOKOGAWA temperature controller | Abbreviation of temperature controller manufactured by Yokogawa Electric Corporation |
| | RKC temperature controller | Abbreviation of temperature controller manufactured by RKC INSTRUMENT INC. |
| PC CPU module | | Abbreviation of PC CPU Unit manufactured by CONTEC CO., LTD |
| GOT (server) | | Abbreviation of GOTs that use the server function |
| GOT (client) | | Abbreviation of GOTs that use the client function |
| Windows® font | | Abbreviation of TrueType font and OpenType font available for Windows®<br>(Differs from the True Type fonts settable with GT Designer2) |
| Intelligent function module | | Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit. |
| MODBUS® /TCP | | Generic term for the protocol designed to use MODBUS® protocol messages on a TCP/IP network. |

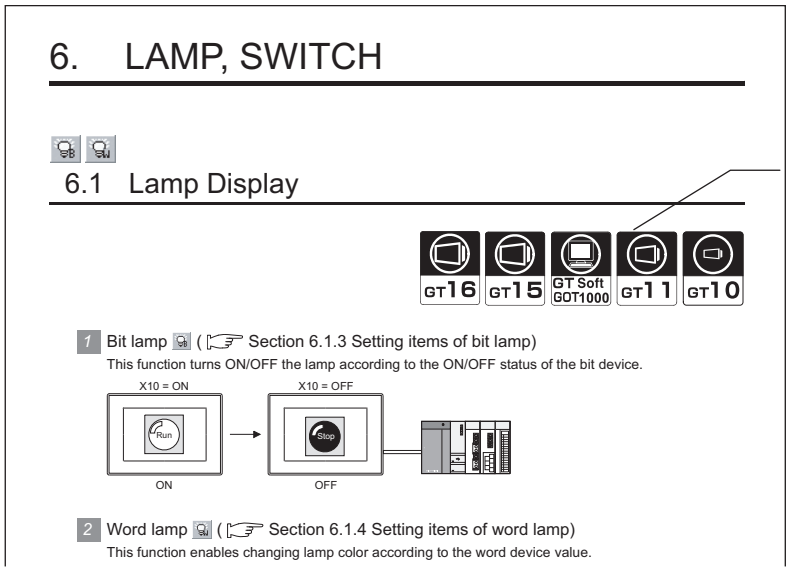
# HOW TO USE THIS MANUAL

## 1 Functions

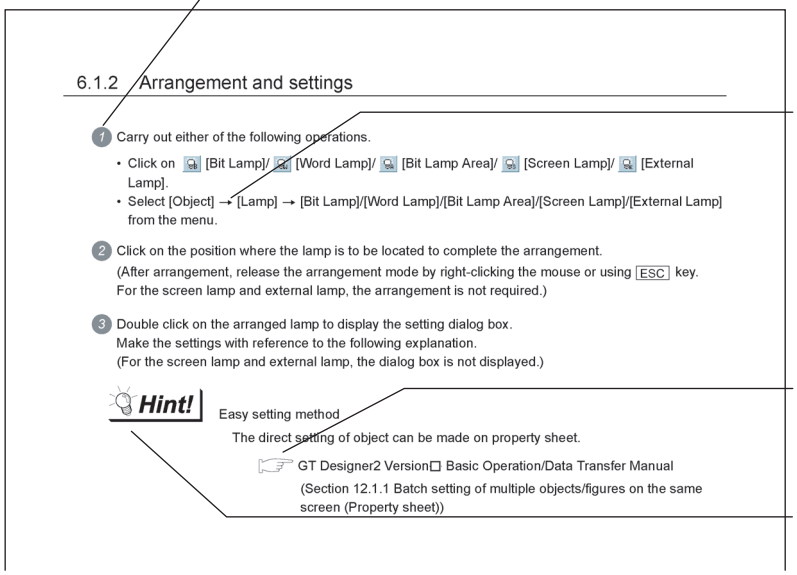
This manual describes functions available for the GT Designer2 Version2.96A.
For the added functions by the product version upgrade, refer to the list of functions added by GT Desiger2 version upgrade in Appendices.
In addition, GT Designer2 Version2.98C supports the multimedia function of recording and playing video files with sound, and GT Works3 Version1.14Q supports the multidrop connection on GT16 and GT15.

## 2 Symbols

Following symbols are used in this manual




Shows functions applicable to GT16, GT15, GT SoftGOT1000, GT11, GT10.
" ○ ", Applicable
" × ", N / A




1 → 2 → 3 · · · ·
Indicates the operation steps.

Brackets used for the menu and items differ.

[ ] :Refers to an item displayed on the computer screen or the GOT screen.
□ :Refers to a button displayed on the computer screen or the GOT screen, or a key of the computer keyboard.

Show the items including detailed explanation (manual and the chapter, section, item).

**Point** Refers to information required for operation.

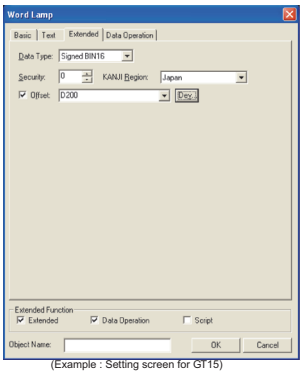
**Hint!** Refers to information useful for operation.

**Remark** Refers to supplementary explanations.

* The above is different from the actual page, as it is provided for explanation only.

3 Extended tab

Set the data type, security level and offset value of the monitor device.
Check [Extended] at the bottom of this dialog box to display this tab.




(Example : Setting screen for GT15)

Basic | Text | **Extended** | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN16 : Lamp display is executed by a signed 16-bit binary value of a word device.<br>Unsigned BIN16 : Lamp display is executed by an unsigned 16-bit binary value of a word device.<br>BCD16 : Lamp display is executed by a 16-bit BCD (Binary-Coded Decimal) value of a word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>• 12-dot standard • 16-dot standard • 12-dot high quality Mincho<br>• 12-dot standard • 16-dot high quality Mincho • 16-dot high quality Gothic<br>• Stroke | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Check this item when executing monitor by switching between multiple devices. | — — |

Shows functions applicable to each GOT.
Each icon shows each GOT model below. The colors of the icons show if the functions are enabled or disabled for each model.

Icon types
16: GT16
15: GT15
SG: GT SoftGOT1000
11: GT11
10: GT10

Icon colors
Black: Enabled
Gray: Disabled

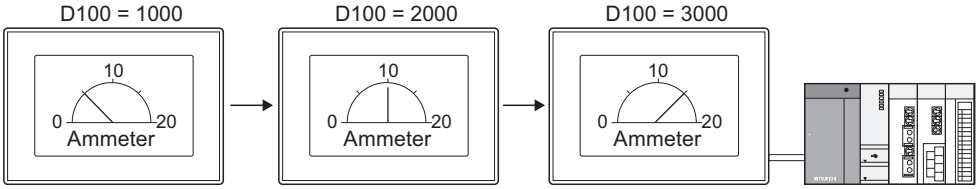
* The above is different from the actual page, as it is provided for explanation only.

# Memo

# 10. GRAPH, METER

## 10.1 Panelmeter

This function enables meter display (needle display) of the word device value relative to the preset upper/lower limit value.




### 10.1.1 Relevant settings

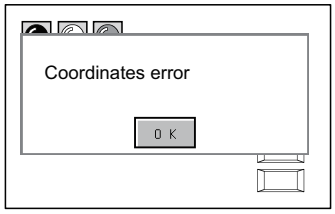
For panelmeter, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to panelmeter and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

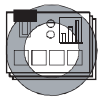
#### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to panelmeter and others

| • Check for overlapping objects |
|---|
| If objects are overlapping each other, a message is displayed on the GOT.<br>As GOT may not display the overlapping objects correctly, correct the monitor screen data. |




Setting for each project

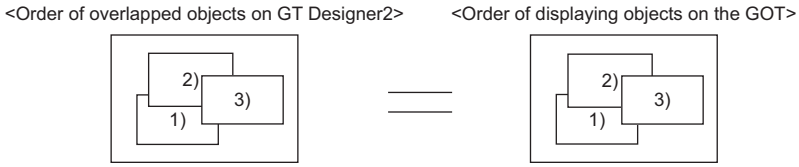


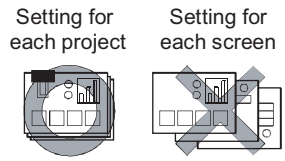
Setting for each screen

Setting items
- [Carry out check for overlapping objects within GOT]

- Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.




Setting items

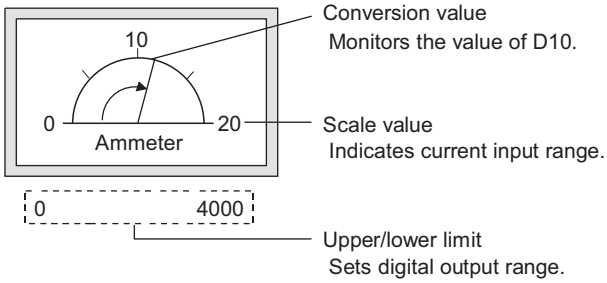
- [Adjust object display order in GOT to the one in GT Designer2]

## 10.1.2 Required knowledge for panelmeter setting

Panelmeter setting method

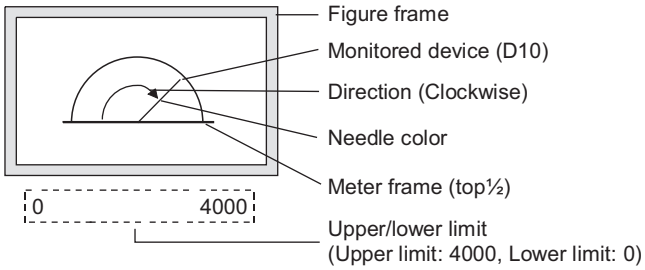
Basic functions of the panelmeter are set on the following tabs of 1 to 3.
The following example is used to explain the general procedure for the panelmeter setting.

Example: Panelmeter that indicates analog/digital conversion value for 12mA
Current input range : 0 to 20mA
Digital output range : 0 to 4000
Conversion value : D10



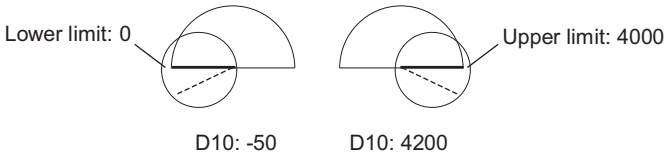

1 Basic tab

Set the meter type, needle color, shape, i.e., frame and upper/lower limit.



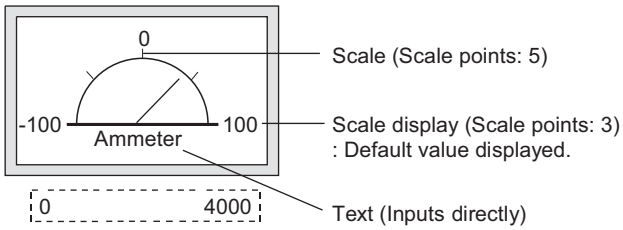

**Remark** Display of value exceeding upper/lower limit

If the monitor device value exceeds the upper/lower limit value, the graph shows it as the upper/lower limit value.



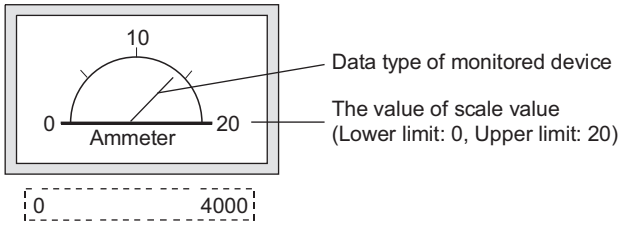
2 Scale/Text tab

Sets the scale and name plate (text) for the panelmeter.




3 Extended tab

Changes the scale values and the data type of the monitored device.




## 10.1.3 Arrangement and settings

1 Carry out either of the following operations.

- Click on [Panelmeter].
- Select [Object]→[Panelmeter] from the menu.

2 Click on the position where the panelmeter is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)

3 Double click on the arranged panelmeter to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

GT Designer2 Version ☐ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

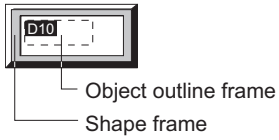
**Hint!**

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

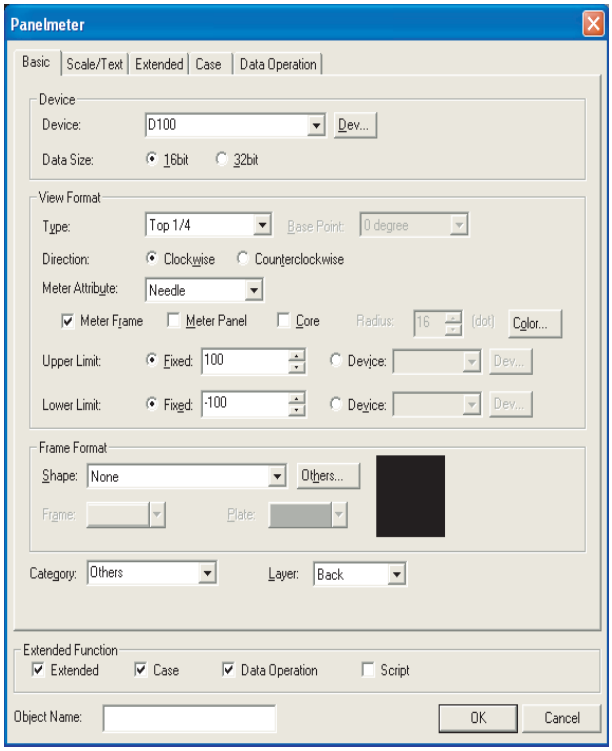
Section 5.3.3 Object size change



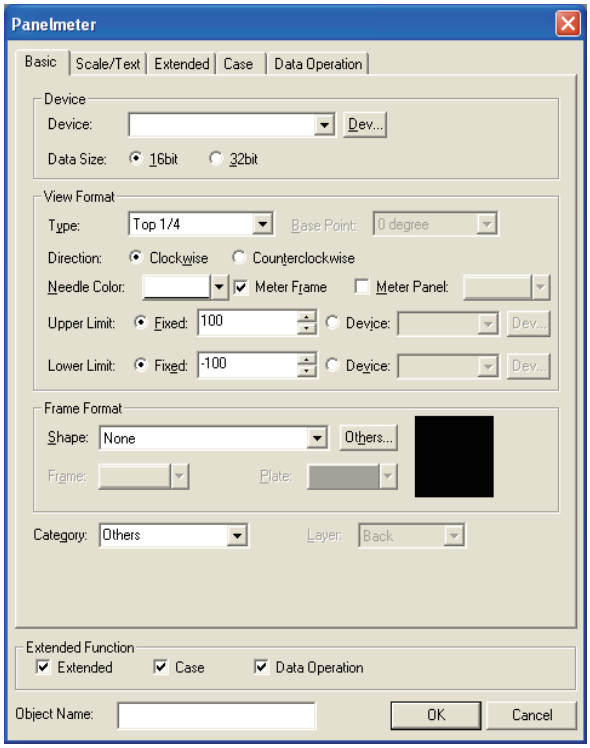
## 10.1.4 Setting items

### 1 Basic tab

Set the type and view format (upper/lower limit value, display frame) for the panelmeter.

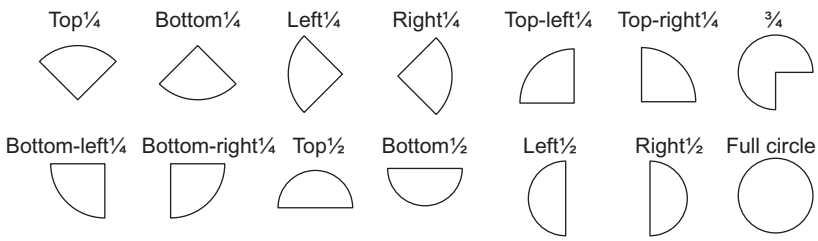
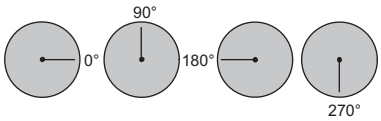



(Example: Setting screen for GT15)



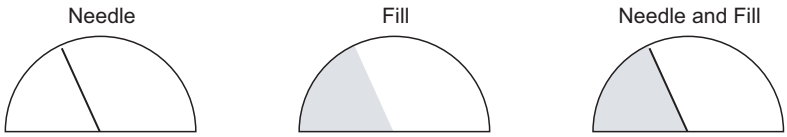
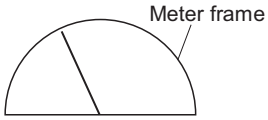
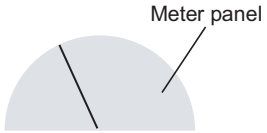
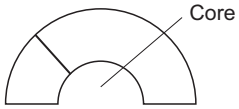
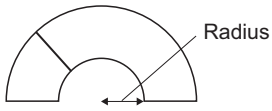
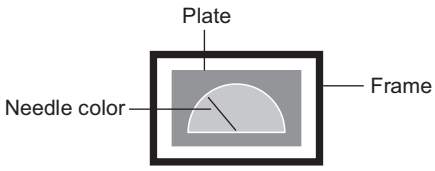

(Example: Setting screen for GT10)

**Basic** | Scale/Text | Extended | Case | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | Device | Set the device to be monitored. (☞ Section 5.1 Device Setting)<br>The device data format is preset to "Signed BIN (Treats it as signed binary value)" as a default.<br>The device data format is changed on the extended tab. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| View Format | Type | Select the panelmeter type.<br>  <br> | |
| | Base Point | When the full circle is selected for [Type], select the meter needle reference point (the position where device lower limit value is displayed) for the meter needle.<br>  <br> | |

(Continued to next page)

Basic | Scale/Text | Extended | Case | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Direction | Select the direction of the needle will move according to the monitor device value.<br>The base point of the panelmeter changes depending on the direction.<br>Clockwise : Clockwise rotation<br>Counterclockwise : Counterclockwise rotation | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Meter Attribute*1 | Select the type of panelmeter display.<br>After the selection, click the Color button and set the needle and fill color.<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Needle Color*2 | Set the needle color of the panelmeter. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Meter Frame | Check this item to display the meter frame.<br>Line width of the frame is fixed to 1 dot, and the color fixed to white.<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Meter Panel*1 | Check this item to color the meter panel face.<br>After the check, click the button and select the panel color.<br>(For GT10, after checking, set the panel color of the panelmeter.)<br>This item can be set only with [Meter Frame].<br>  | |
| | Core*1 | Check this item for core display.<br>After the check, click the Color button to set the core color.<br>  | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Radius | Specify the dots for the core display.<br>This can be specified within the range from 1 to object radius - 1 dot.<br>  | |
| | Upper Limit | Select whether the device value range (Lower/Upper limit) is displayed based on the setting by fixed values or specified device values.<br>Fixed : Sets the fixed values.<br>Device : Sets the device values.<br>(☞ Section 5.1 Device Setting)<br>The setting range of the upper and lower limit is specified by the data type of the monitored device.<br>(☞ Section 5.2 Numeric Data that can be Handled with GOT)<br>Preset the data type of the device. ( ☞ Extended tab) | |
| | Lower Limit | | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Frame | Select the frame color/plate color.<br>  | |
| | Plate | | |

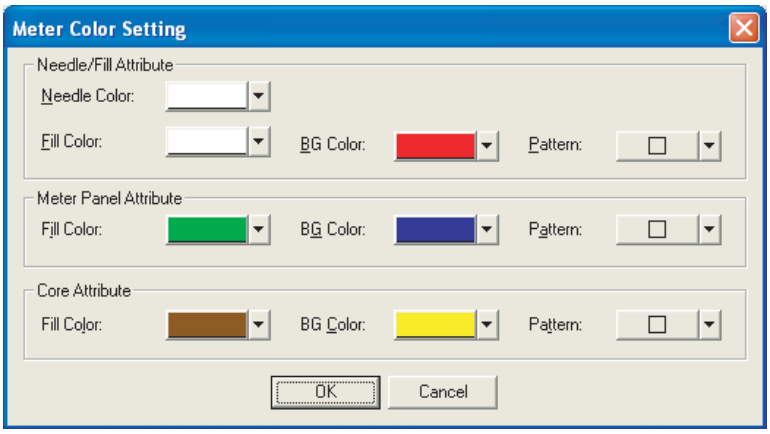
(Continued to next page)

Basic | Scale/Text | Extended | Case | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

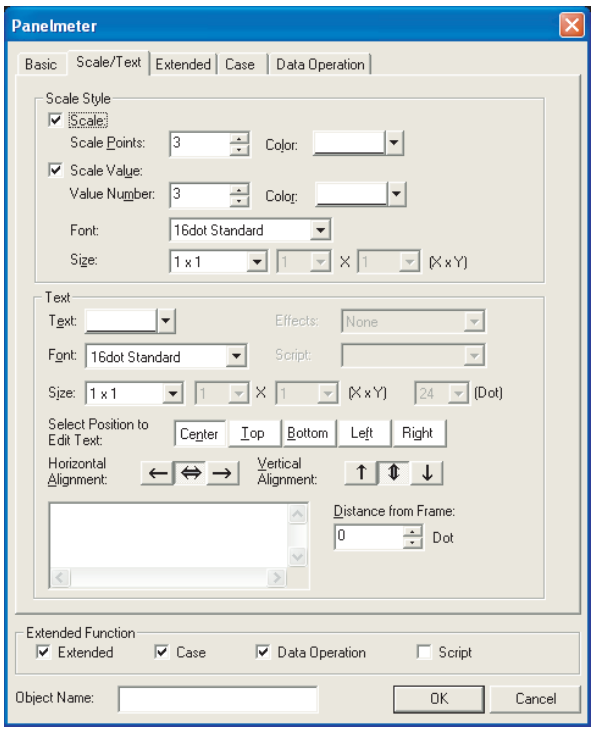
## *1 Meter Color Setting



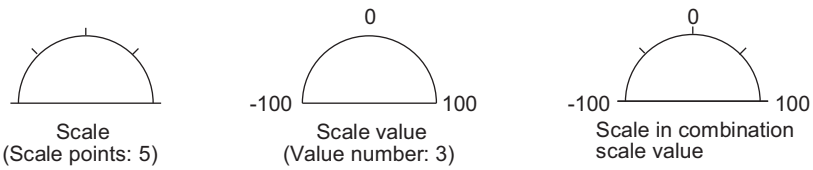

| Items | | Description |
|---|---|---|
| Needle/ Fill Attribute | Needle Color | Sets the needle, fill color, etc. of a meter.<br>(Example) BG Color : ■<br>Pattern : ▩<br>Fill Color : □<br>Pattern + Fill Color<br>BG Color |
| | Fill Color | |
| | BG Color | |
| | Pattern | |
| Meter Panel Attribute | | Sets the display attribute of meter panel.<br>This can be set only when [Meter Panel] is selected in the Basic tab. |
| | Fill Color | |
| | BG Color | |
| | Pattern | |
| Core Attribute | | Sets the display attribute of core.<br>This can be set only when [Core] is selected in the Basic tab. |
| | Fill Color | |
| | BG Color | |
| | Pattern | |

## 2 Scale/Text tab

Set the details of the panelmeter (scale upper/lower limit) and the text to be displayed at the center or on the top, bottom, left or right.




Basic | **Scale/Text** | Extended | Case | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale value to the panelmeter.<br>  <br><br>Scale (Scale points: 5)<br>Scale value (Value number: 3)<br>Scale in combination scale value | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of scale points (2 to101) and the scale color.<br>Once this is set, the space between each scale tick is automatically defined. | |
| | Scale Value | Check this item to display the scale by using numeric values.<br>Set the number of numeric values (2 to 101) in [Value Number] and numeric size (0.5 to 8) in [Size].<br>The default numeric values are set within the range -100 to 100.<br>Select a numeric font.<br>The applicable numeric size depends on the selected font.<br>(For GT10, [12dot Standard] cannot be selected.)<br>• 6 x 8dot : 1×0.5(Fixed)<br>•12-dot Standard : 1×1 to 8×8<br>•16-dot Standard : 0.5×0.5 to 8×8<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity)<br>When changing the numeric value, set the upper limit/lower limit values for the scale value in the extended tab. | |

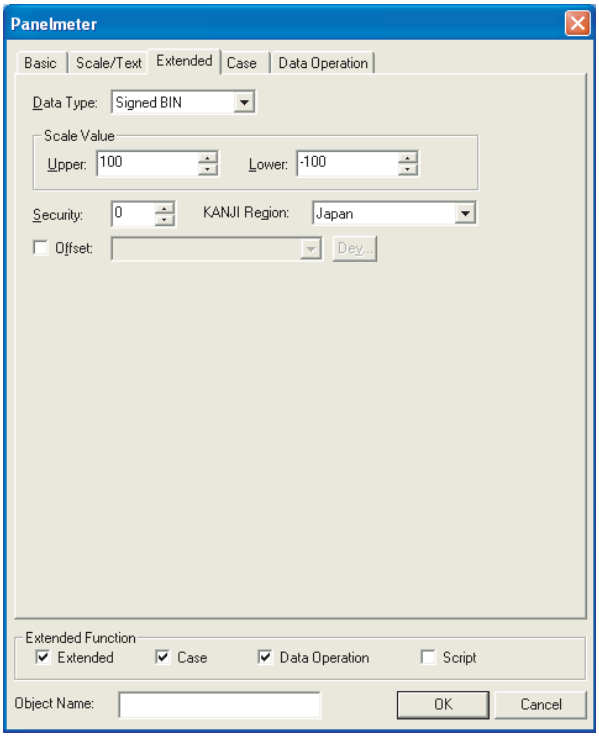
(Continued to next page)

Basic | **Scale/Text** | Extended | Case | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Text | Text | Select a color for the text to be displayed. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Font<br>Size | Select a font.<br>•6 x 8dot font •12-dot high quality Mincho •16-dot high quality Gothic<br>•12-dot standard font •12-dot high quality Gothic •TrueType Mincho<br>•16-dot standard font •16-dot high quality Mincho •TrueType Gothic<br>•Stroke •Windows® font<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity) | |
| | Effects | Select an effect (Italic/Underline/Both).<br>(☞ 2.3 Specifications of Applicable Characters)<br>Standard Italic Underline Both | |
| | Script | Select a character set available for the specified font. (☞ Section 2.2 1 Selectable attributes) | |
| | Select Position to Edit Text<br>Horizontal Alignment<br>Vertical Alignment | This selects the display position of text.<br>Five patterns of text can be displayed simultaneously.<br>The following positions (A to E) can be set by the combined use of Select Position to Edit Text (Center/Top/Bottom/Left/Right) and Horizontal/Vertical Alignment.<br>Select Position to Edit Text<br>A: Center<br>B: Up<br>C: Bottom<br>D: Left<br>E: Right<br>B B B<br>D A A A E<br>D A A A E<br>D A A A E<br>C C C | |
| | Distance from Frame | Set the number of dots for the distance between the text and the object frame.<br>Up to 100 dots can be set.<br>Text Text Text Text | |
| | Text | Input the text to be displayed on the panelmeter. (Up to 32 characters)<br>Press the Enter key to input a new line at the end of the first line. | |

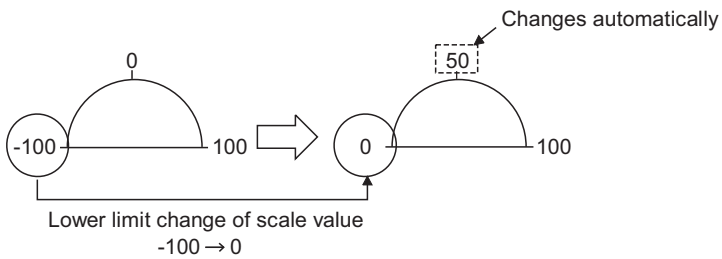
## 3 Extended tab

Set the security level, offset values, data type of the monitor device and upper/lower limit of scale value.
Check "Extended Function" at the bottom of the dialog box to display this tab.




(Setting screen for GT15)

Basic | Scale/Text | **Extended** | Case | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Data Type | | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Scale Value | Upper<br>Lower | Before changing a scale value, set the upper/lower limit values.<br>Example: Change the lower limit value.<br>  <br> | |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |

(Continued to next page)

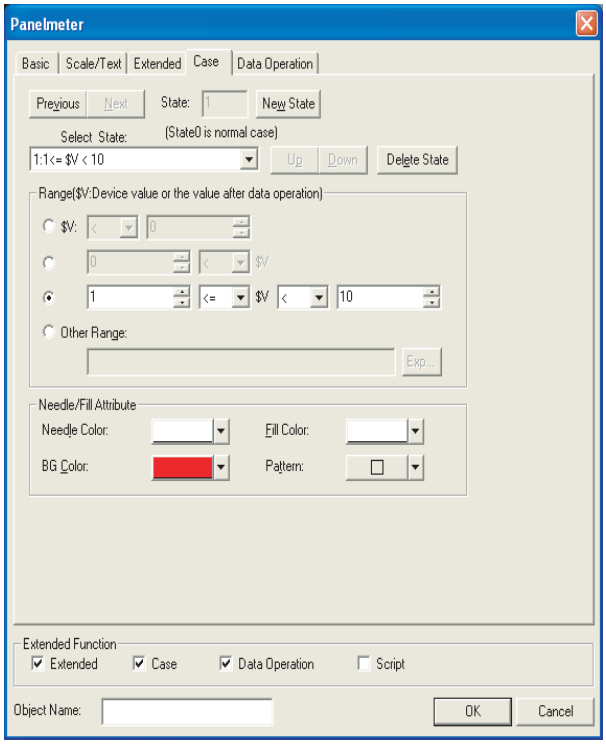
Basic | Scale/Text | **Extended** | Case | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| KANJI Region | Select a kanji region of the characters displayed.<br>(☞ Section 2.3 Specifications of Applicable Characters)<br>Japan : Displays Japanese-Chinese characters.<br>China (GB) - Mincho : Displays simplified Chinese characters.<br>China (Big5 )-Gothic : Displays traditional Chainese characters.<br>Example: Difference between "Japan" and "China (GB) - Mincho"<br>置 置<br>Japan China (GB) -Mincho<br>This setting is available when any of the following fonts is selected.<br>•12-dot standard •16-dot standard •12-dot high quality Mincho<br>•12-dot standard •16-dot high quality Mincho •16-dot high quality Gothic<br>(☞ Scale/Text Font) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |

## 4 Case tab

Set the change properties of the panelmeter needle color according to the device state.
For details of state, refer to the following.

☞ Section 5.4 State Setting




Basic | Scale/Text | Extended | **Case** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Needle Color | Select the needle color that is displayed corresponding to the set condition. | |
| Needle/ Fill Attribute | Needle Color | Sets the needle, fill color, etc. of a meter.<br>(Example) BG Color :<br>Pattern :<br>Fill Color :<br>Pattern + Fill Color<br>BG Color | |
| | Fill Color | | |
| | BG Color | | |
| | Pattern | | |

For details of *1, refer to the following.

*1 State

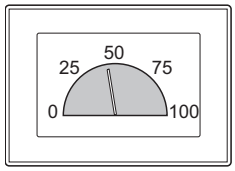
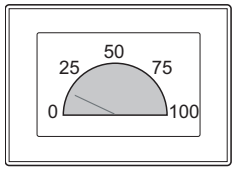
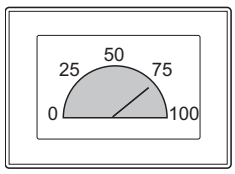
(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Monitored Device: D100

| Operation priority for setting overlap condition | State No. | Display range | Needle Color |
|---|---|---|---|
| High | 1 | 21<=$V<=60 | Yellow |
| ↓ | 2 | $V<=20 | Red |
| Low | Normal case (State 0) | ——— | Blue |

* $V indicates the monitored device value.

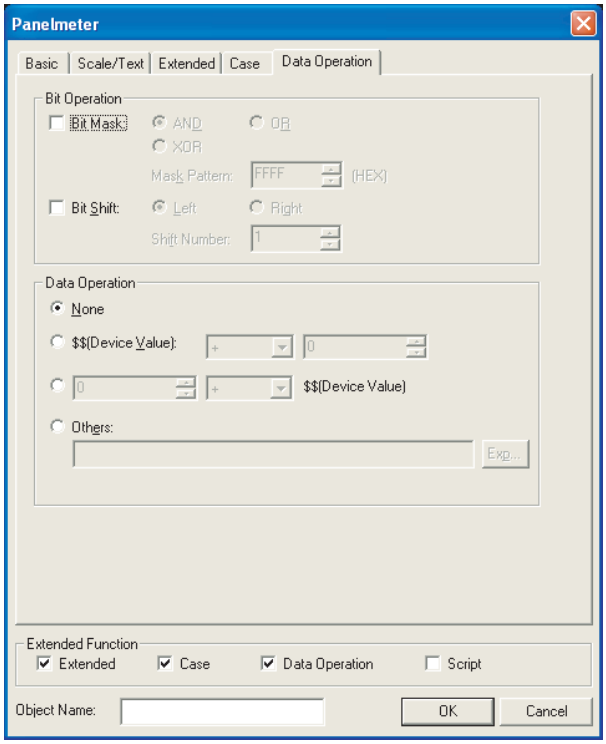
| | | |
|---|---|---|
| State 1 | When the device value is between 21 and 60 (21 $V 60), the needle color will be yellow. |   |
| State 2 | When the device value is 20 or below ($V 20), the needle color will be red. |   |
| Normal case (State 0) | When the condition is other than state 1,2 the needle color will be blue. |   |

## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



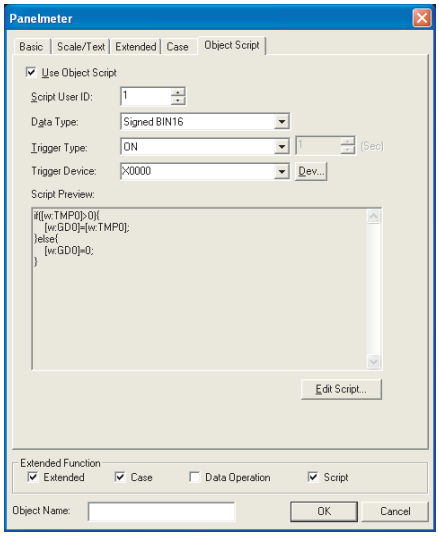

Basic | Scale/Text | Extended | Case | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Needle Color | graph_color | ○ | 3) |
| | Meter Panel | back_color | ○ | 4) |
| | Frame | frame_color | ○ | × |
| | Plate | plate_color | ○ | 4) |
| | Pattern of Meter Panel | pattern | ○ | 4) |
| | BG Color of Meter Panel | pattern_bg_color | ○ | 4) |
| | Fill Color | fill_color | ○ | 3) |
| | BG Color of Fill | fill_bg_color | ○ | 3) |
| | Pattern of Fill | fill_pattern | ○ | 3) |
| | Core color | core_color | ○ | 4) |

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| 1 Basic | BG Color of Core | core_bg_color | ○ | 4) |
| | Core pattern | core_pattern | ○ | 4) |
| 3 Extended | Security | security | ○ | 4) |
| | Upper | scale_max[0] | ○ | 4) |
| | Lower | scale_min[0] | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.1.5 Precautions

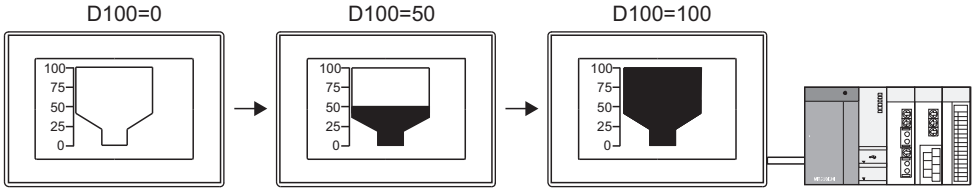
The following is the precautions for using the panelmeter function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
1000 objects can be set for the panelmeter.

# 10.2 Level

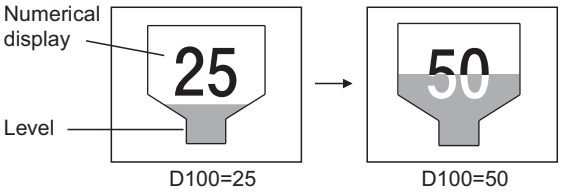
This function is used to fill the specified range (level) equivalent to the device value, corresponding to the to the percentage of the difference between the upper/lower limit values.
With this function, the device value can be shown as a level in any closed figure.




Example:

When combined with the numerical display function

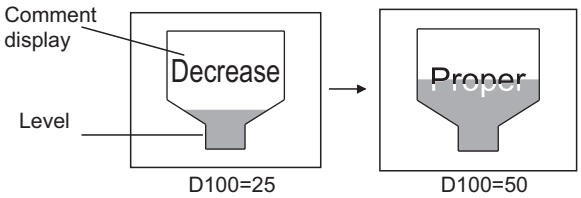
Section 7.1 Numerical Display/Numerical Input




Numeric value is displayed in the XOR-combined color.

When combined with the comment display function

Section 7.5 Comment Display




Text of comment display is changed according to level, and displayed in XOR-combined color.
Refer to the following for setting details.

Section 10.2.4 3 State*1

## 10.2.1 Relevant settings

For Level, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

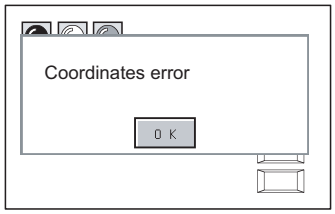
(1) Functions relevant to Level and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

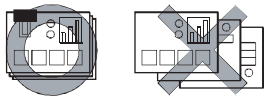
(1) Functions relevant to Level and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

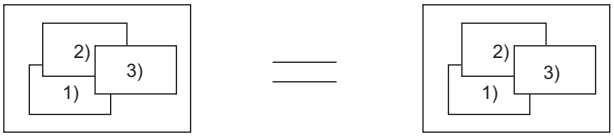


Setting items
• [Carry out check for overlapping objects within GOT]

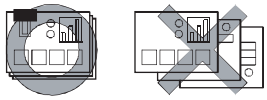
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen

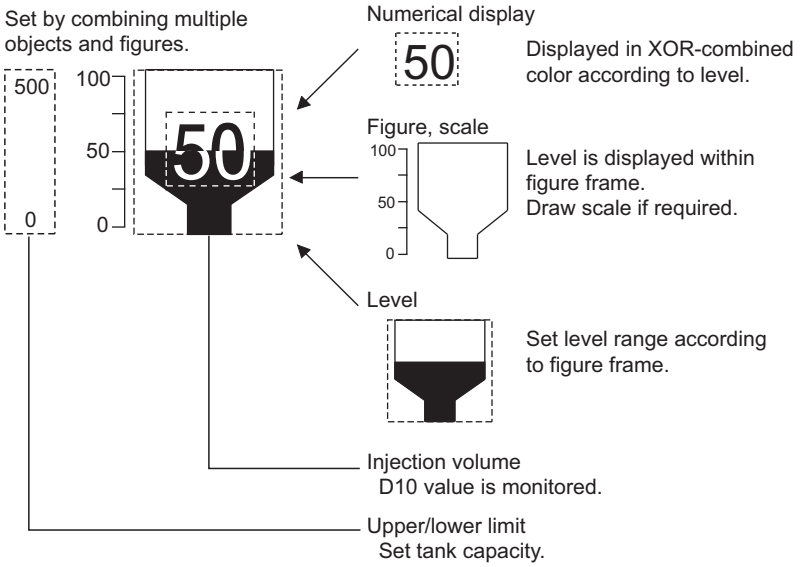


Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 10.2.2 Required knowledge for level setting

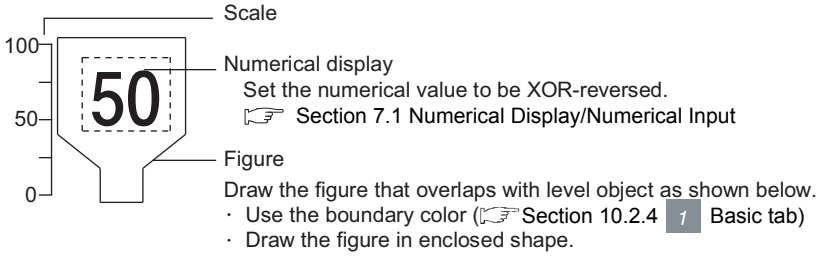
A level object can be overlapped with figures and numerical/comment display objects.
The following example explains how to make the settings for overlapping a level object with figures and numerical display objects.

Example: Level for tank Injection volume
Tank capacity : 0 to 500 liter
Injection volume: D10
Injection rate : 0 to 100%

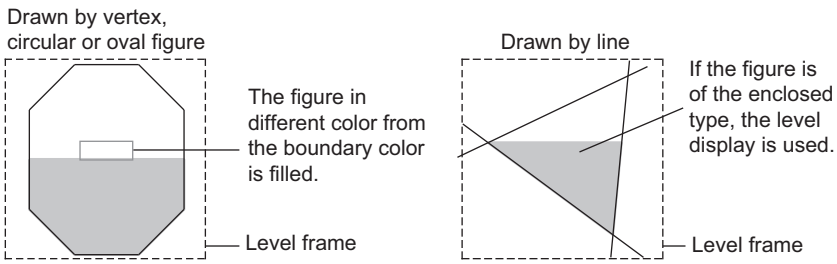



1 Setting figure, scale and numerical display

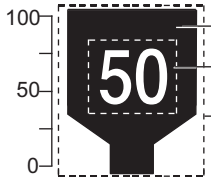
Make the settings for figure, scale and numerical display before arranging the "level" object.




Example} Figure drawn for level display



## 2 Level and figure overlapped

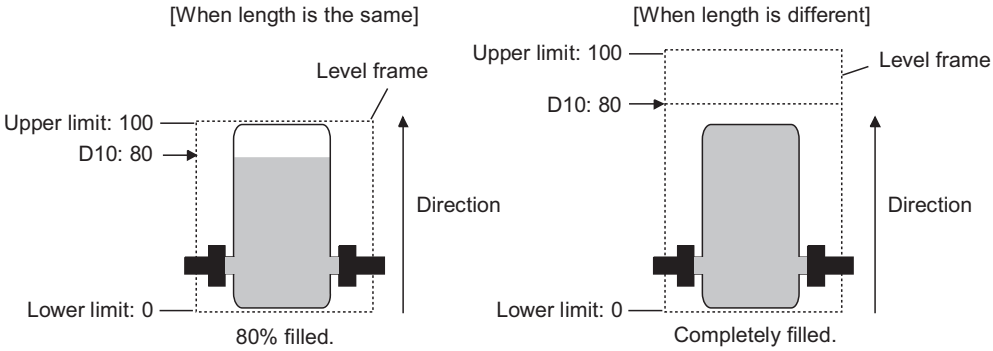



Figure

Numerical display

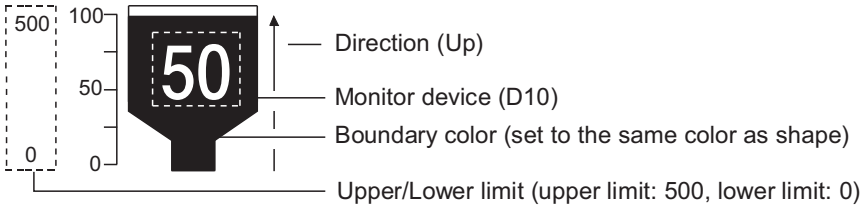
Level

Figure and numerical object must be enclosed within the "level" frame.
Arrange level frame and figure to the same length.
If the length of level and figure are different, the value different with actual one is displayed.




## 3 Basic Tab

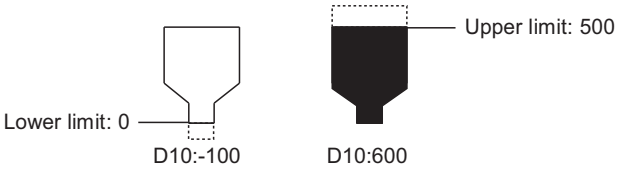
Set the direction, boundary color and upper/lower limit of level.




**Remark**

Display the value out of the upper/lower limit

When the monitor device value exceeds upper limit, it will be displayed as the new upper limit. When falling below lower limit, it will not be displayed.

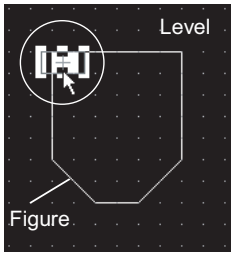


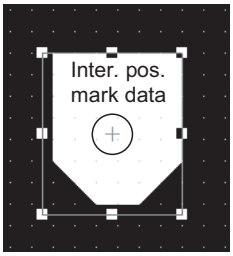
## 10.2.3 Arrangement and settings

1. To enable level display inside a figure, draw a figure for the level display.
2. Carry out either of the following operations.
   - Click on [Level Graph].
   - Select [Object] → [Level] from the menu.
3. Click on the level arrangement position to arrange the level.

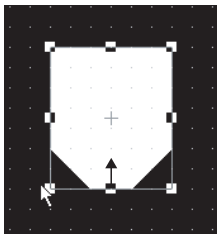
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
4. To display the level within a figure, adjust the dotted frame in order that it will fit the figure.

   If the internal position mark (+)is overlapped with the figure and then reversed, this means the level display has been arranged.




5. Adjust the dotted line of level display in order that it will fit the outline of the figure.



6. Double click on the arranged level object to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

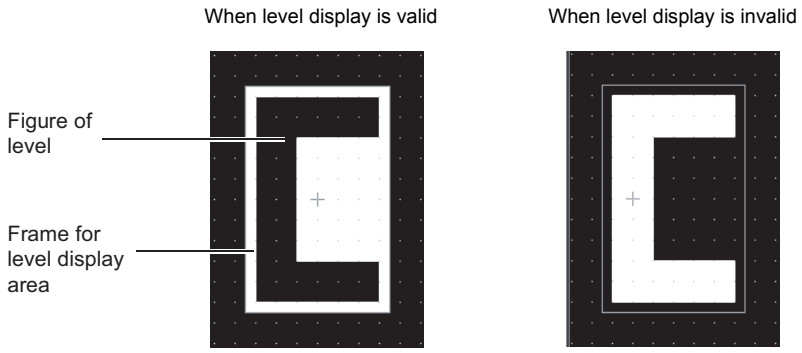
**Hint!**

**Remark**

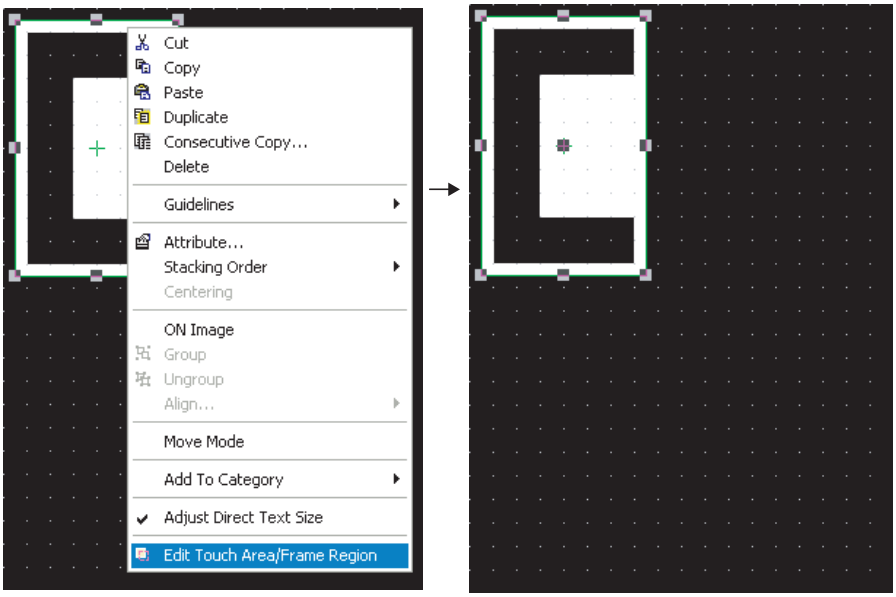
When internal position mark (+) are not overlapped with the figure

When internal position marks are not overlapped with the figure, move the internal position mark according to the following procedure.
The level display is not applicable to the figure that is not overlapped with internal

position mark.




1. Right-click the dotted frame for the level display, and then click [Edit Touch Area/Frame Region].




Internal position mark data change from to .

2. Drag the internal position mark in order it will overlap with the figure.

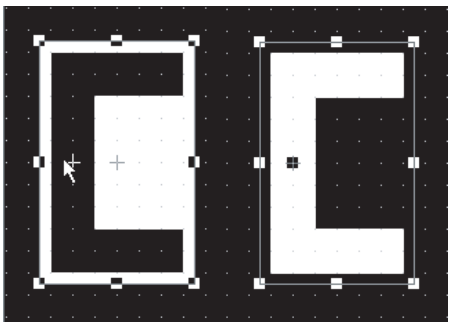
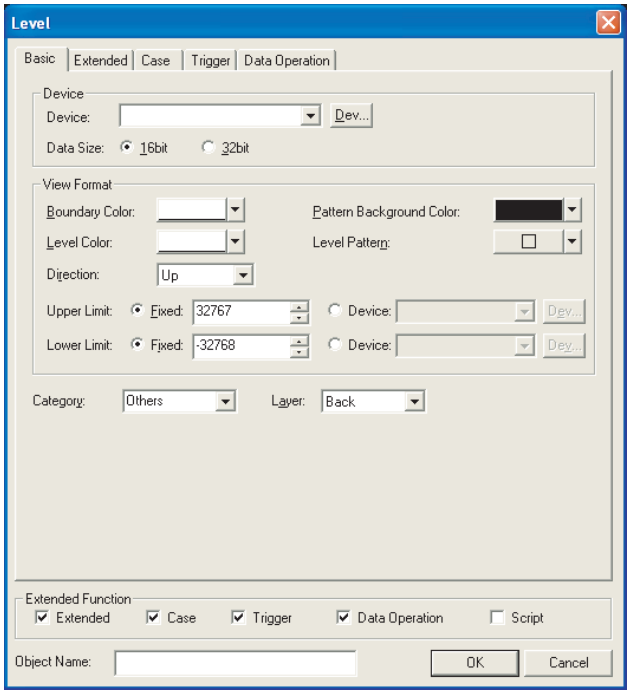


Figure is reversed and level display is valid.

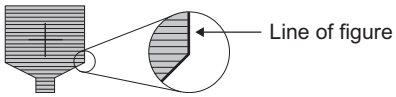
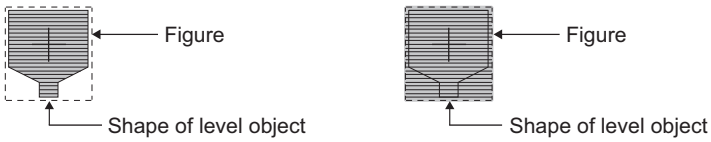
## 10.2.4 Setting items

### 1 Basic tab

Set the upper/lower limit and display attribute (color, direction) for monitor device and level.

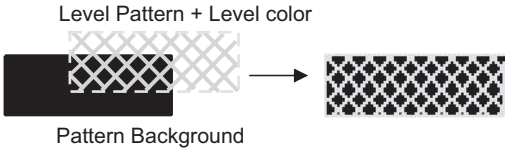
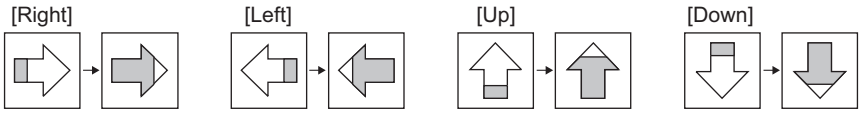



Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | Device | Set the device to be monitored.<br>(☞ Section 5.1 Device Setting)<br>The device data format is preset to "Signed BIN (Treats it as signed binary value)" as a default.<br>The device data format is changed on the extended tab. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| View Format | Boundary Color | Set the frame line color of the figure for level display.<br>  <br><br>The level without the frame line is not displayed inside of the figure.<br>Example 1: When the boundary color isExample 2) When the boundary color differs<br>the same as the figure frame line colorfrom the figure frame line color<br>  <br><br>Level display is validLevel display is invalid | |
| | Level Color | Select filling color for level display. | |

(Continued to next page)

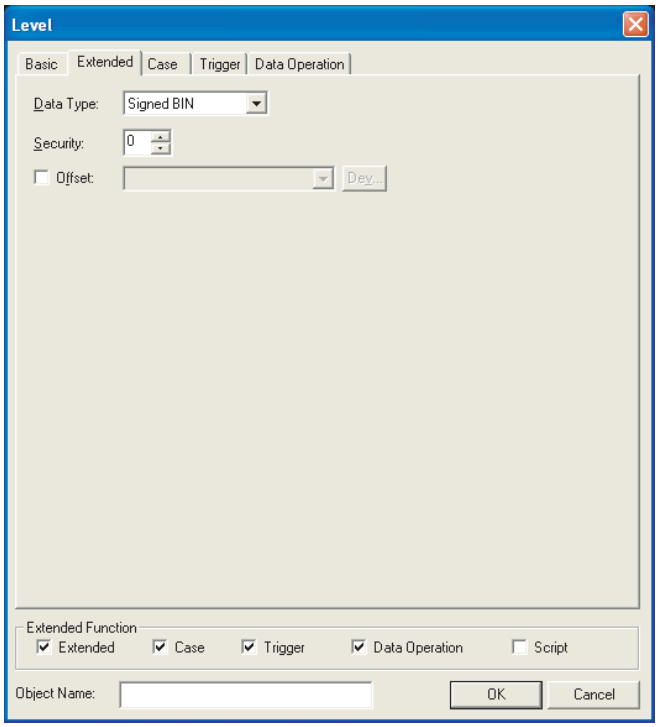
Basic | Extended | Case | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Level Pattern<br>Pattern Background Color | Select the pattern and background color for level display.<br>The selected pattern in the level color is displayed on the background color.<br>Example: Pattern Background :<br>Level Pattern :<br>Level color :<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Direction | Select the direction the color changes when the monitor device value increases.<br>  <br> | |
| | Upper Limit<br>Lower Limit | Select whether the device value range (upper/lower limit) for level display is displayed based on the setting by fixed values or specified device values.<br>Fixed : Sets the fixed values as the upper/lower limit values.<br>Device : Sets the device values as the upper/lower limit values.<br>(☞ Section 5.1 Device Setting)<br>The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance. | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 Extended tab

Set the security and offset.

Check Extended Function at the bottom of dialog box to display this tab.



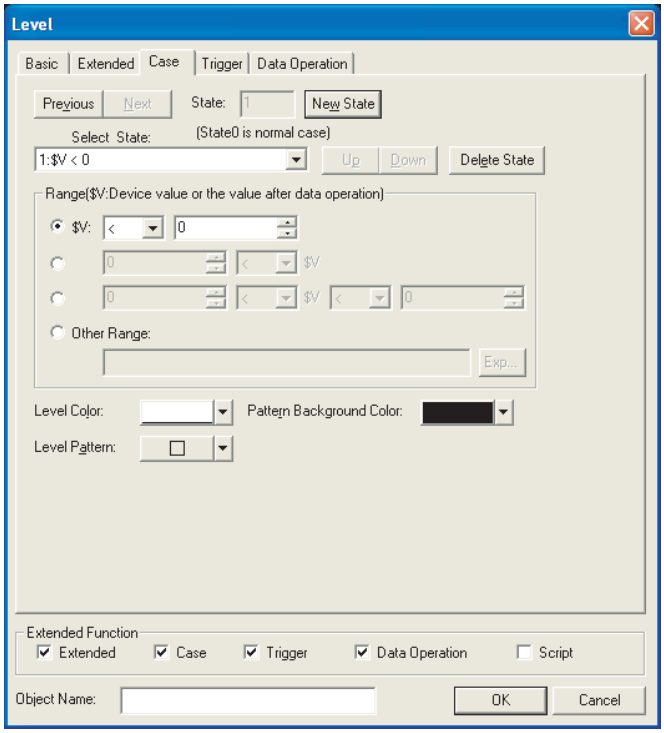

Basic | **Extended** | Case | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting) | |

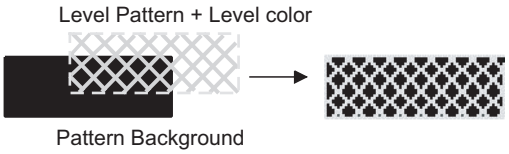
## 3 Case tab

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

☞ Section 5.4 State Setting




Basic | Extended | **Case** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous /Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Level Color | Select the filling color for level. | |
| | Level Pattern | Select the pattern and background color for level display.<br>The selected pattern in the level color is displayed on the background color. | |
| | Pattern Background Color | Example: Pattern Background : ■<br>Level Pattern : ▩<br>Level color : □<br>  <br> | |

For details of *1, refer to the following.

*1 State

(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: evel object and comment are combined.
Set the same condition (display range) to the level display and comment display, and change the level color and display comment simultaneously.

• Level

| | |
|---|---|
| Monitor device | : D100 |
| Direction | : Up |
| Upper limit | : 100 |
| Lower limit | : 0 |

• Comment display

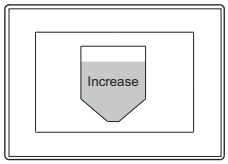
| | | |
|---|---|---|
| Monitor device | : D100 | |
| Display mode | : Transparent | |
| Register comment | : Comment No. 1 | Increase |
| | Comment No. 2 | Decrease |
| | Comment No. 3 | Proper |

| Operation priority for setting overlap condition | State No. | Display range | Level: Level color | Comment display: Display comment |
|---|---|---|---|---|
| High | 1 | 71<=$V | Red | Increase |
| ↓ | 2 | $V<=30 | Yellow | Decrease |
| Low | Normal case (State 0) | ——— | Light blue | Proper |

* $V represents the monitor device value

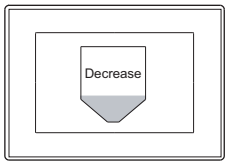
State 1

When the device value is 71 or greater (71 $V), the level color will appear as red and the text, "Increase", will be displayed.



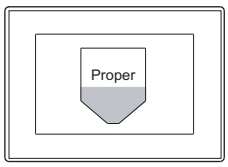

State 2

When the device value is 20 or less ($V 20), the level color will appear as yellow and the text, "Decrease" will be displayed.




Normal case (State 0)

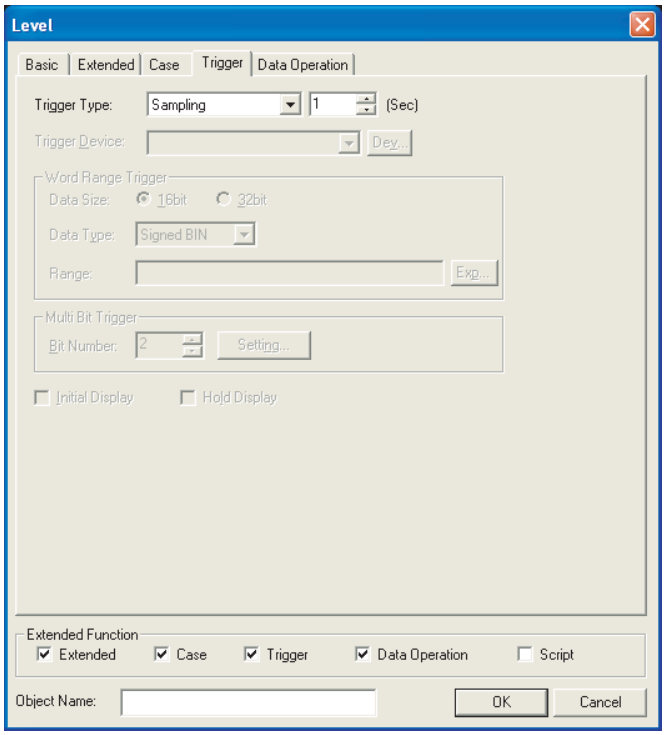
Under the condition other than the range of state 1, 2, the level color will appear as light blue and the text, "Proper", will be displayed as text.



## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Extended | Case | **Trigger** | Data Operation | Object Script

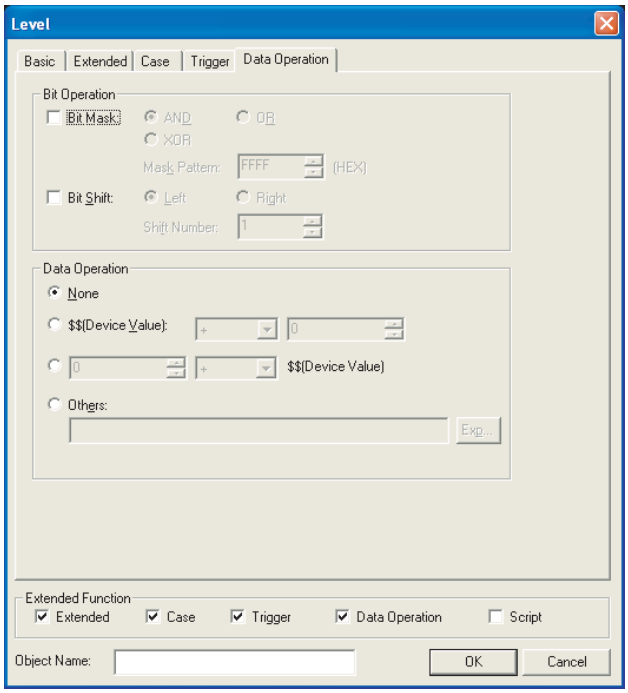
| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>• Ordinary • OFF • Fal • Range<br>• ON • Rise • Sampling • Bit Trigger | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select the [Data Size] (16 bit/32 bit) of the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |
| Hold Display | | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>If not checked, the object will be deleted when the trigger is not satisfied. | |

## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



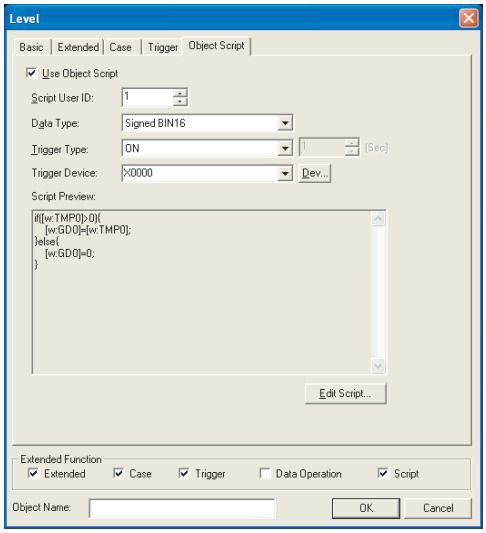

Basic | Extended | Case | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

☞ Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Level Color | graph_color | ○ | 3) |
| | Level Pattern | pattern | ○ | 3) |
| | Pattern Background Color | back_color | ○ | 3) |
| 3 Extended | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

☞ Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.2.5 Precautions

This section provides the precautions when using the level function.

### 1 Maximum number of objects that can be arranged (set) for one screen

1000 objects can be set for the level display.

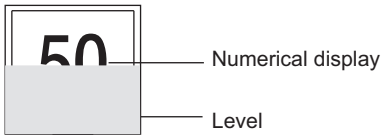
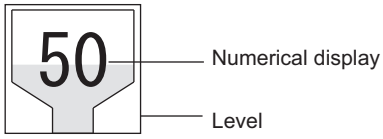
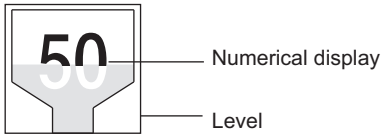
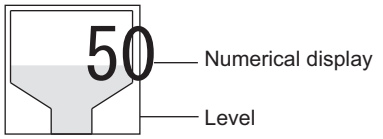
### 2 Precautions when numerical/comment display object is arranged on a level object

(1) Precautions for arrangement

The displayed screen varies depending on whether the layer is used or not.

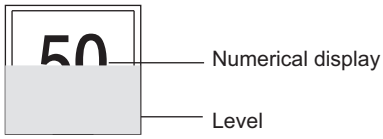
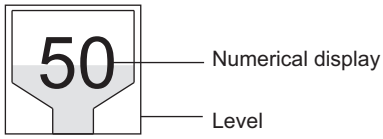
☞ Section 2.6 Superimposition Settings

(a) To display XOR-combined level display and numerical display/comment display

| Result | Layer | Description | Display example |
|---|---|---|---|
| ✕ Impossible | Used | Level display is not displayed correctly if the numerical display or comment display is arranged on the back layer and the level display is arranged on the front layer. |   |
| | | If the numerical display or comment display is arranged on the front layer and the level display is arranged on the back layer, the numerical display or comment display will not be inverted (XOR display not possible). |   |
| ○ Possible | Not used | The XOR-combined numerical display and comment display is displayed with XOR display mode. |   |
| ✕ Impossible | | The numerical display and comment display extended off the level range are not XOR-combined. |   |

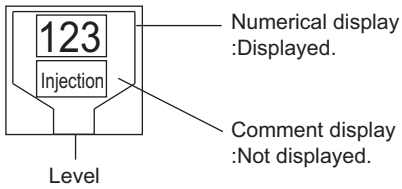
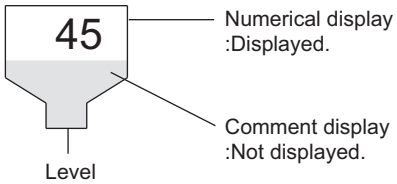
○ : Can be displayed as expected, ✕ : Cannot be displayed as expected

(b) To display numerical value/comment unaffected by level

| Result | Layer | Description | Display example |
|---|---|---|---|
| ✕ Impossible | Used | Level display is not displayed correctly if the numerical display or comment display is arranged on the back layer and the level display is arranged on the front layer. |  |
| ○ Possible | Used | The numeric display or comment display is free from effects of the level display if the numeric display or comment display is arranged on the front layer and the level display is arranged on the back layer. |  |
| ○ Possible | Not used | The numerical display/comment display is unaffected by the level with transparent mode. | |

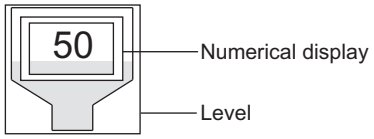
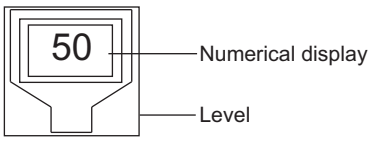
○ : Can be displayed as expected, ✕ : Cannot be displayed as expected

(c) To display multiple numerical displays/comment displays over level

| Result | Layer | Description | Display example |
|---|---|---|---|
| ○ Possible | Used | More than one numerical display or comment display are displayed if they are arranged on the front layer and the level display is arranged on the back layer. |  |
| ✕ Impossible | Not used | Only one numerical display/comment display is displayed.<br>The second or later numerical displays/comment displays are not displayed. |  |

○ : Can be displayed as expected, ✕ : Cannot be displayed as expected

(d) With figure frame to numerical display/comment display

| Result | Layer | Description | Display example |
|---|---|---|---|
| ○ Possible | Used | The shape is free from effects of the level display if it is specified in the numerical display or comment display and arranged on the front layer and if the level display is arranged on the back layer. |  |
| ✕ Impossible | Not used | Normal display may not be displayed normally. |  |

○ : Can be displayed as expected, ✕ : Cannot be displayed as expected

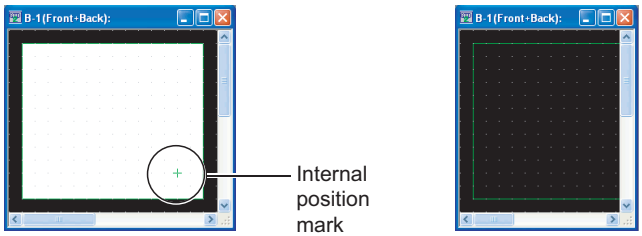
(2) Precautions for use

(a) The numerical/comment display will be updated when the level is updated.
The settings (trigger) to update the display for numerical display/comment display is not relevant.
To update the numerical display or comment display at the timing different from the level display, arrange each of them on separate layers.

(b) Numerical display/Comment display is not blinked or reversed.

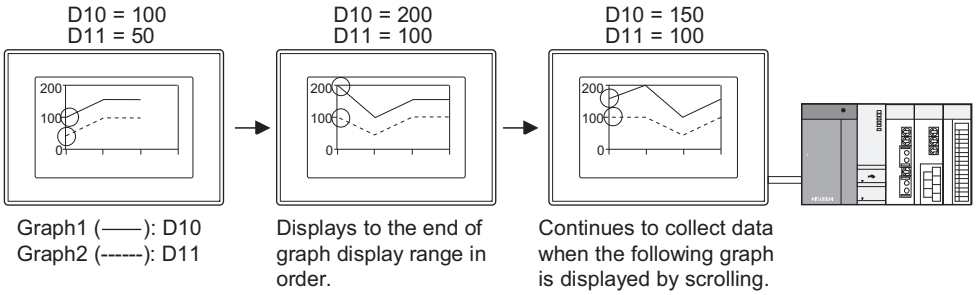
## 3 Display on the drawing screen

If internal position mark is not displayed on the drawing screen, the level will not be filled.



# 10.3 Trend Graph

This function is used to collect word device data continuously and display it in trend graph.




**Hint!** About historical trend graph

Differing from the trend graph function described in this section, historical trend graph accumulates the collected data and displays them in time sequence. Since it displays the accumulated data, both the current and past information can be displayed as graphs.

☞ Section 10.8 Historical Trend Graph

## 10.3.1 Relevant settings

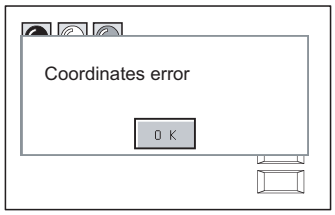
For trend graph, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to trend graph and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

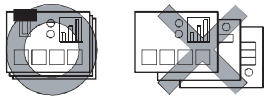
### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

- Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

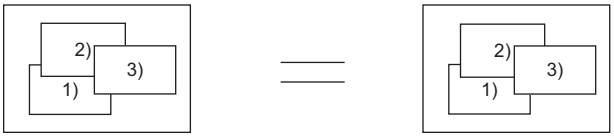


Setting items
- [Carry out check for overlapping objects within GOT]

- Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project

Setting for each screen

Setting items

- [Adjust object display order in GOT to the one in GT Designer2]

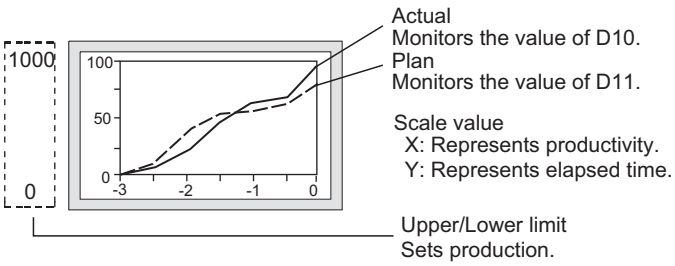
## 10.3.2 Required knowledge for trend graph setting

### 1 Setting method of trend graph

The basic functions of trend graph are set on the following 1 to 4 tab.
The following example explains the general procedures for setting trend graph.

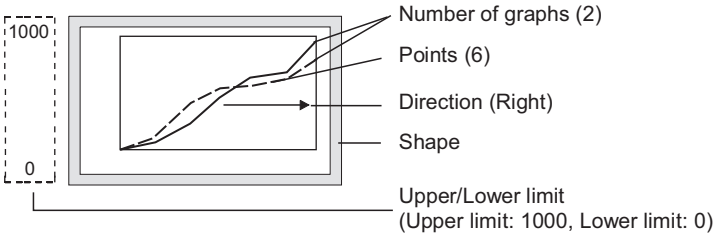
Example: Trend graph for the comparison between Plan and Actual

| | |
|---|---|
| Productivity | : 0 to 100% |
| Time | : 0 to 3 |
| Production | : 0 to 1000 |
| Plan (Graph 1) | : D10 |
| Actual (Graph 2) | : D11 |



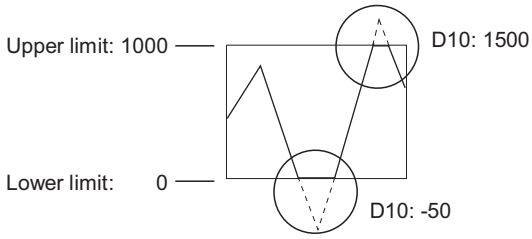
1 Basic tab

Set the number of graphs, upper/lower limit, number of points and figure.



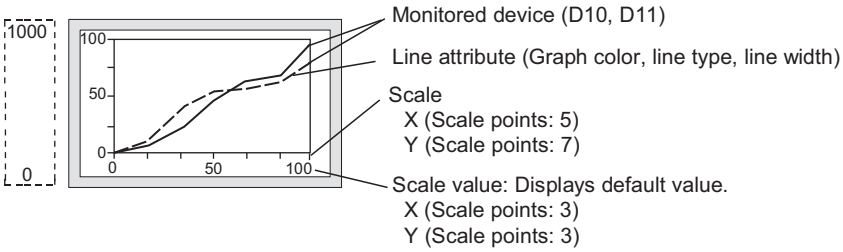

**Remark** Displaying the value exceeding upper/lower limit

When the monitor device value exceeds upper/lower limit, it will be displayed as new upper/lower limit on the graph.



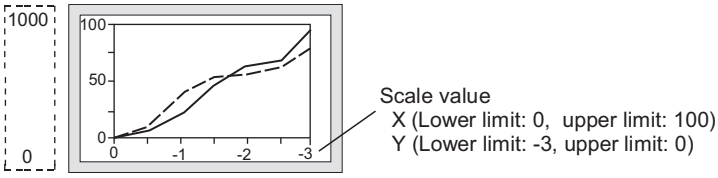

2 Device/Scale tab

Set the device to be monitored, line attribute and scale.




3 Extended tab

Change the numeric value used as scale.




4 Trigger tab

Set the timing of collecting data.

The default timing of collecting data is set in 1 second (1000ms) cycle.

## 2 Store memory

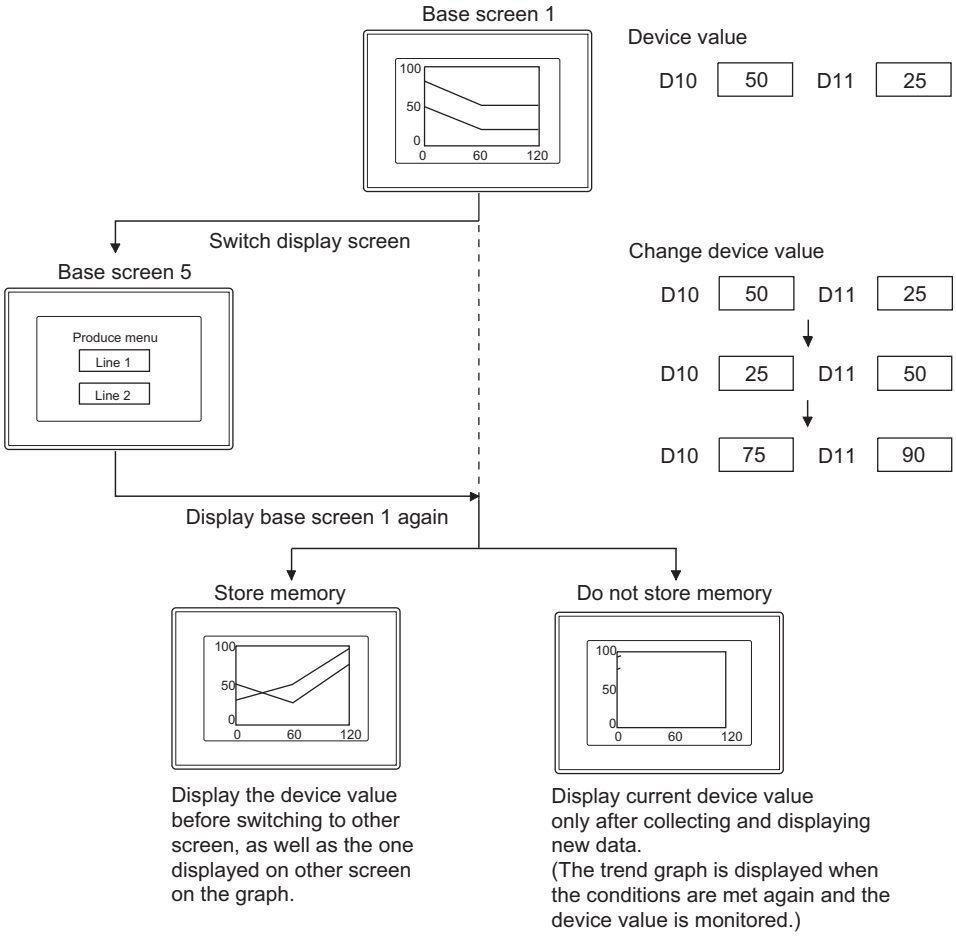
Executing following operations will clear the graph on screen or collected data (device value: 0).
Therefore, enable "Store memory" so that the collected data will be held.
"Store memory" is provided on the Extended tab.

| Item | When Store Memory is not set | When Store Memory is set |
|---|---|---|
| Switching screens or switching to utility | Display is cleared. The device value is reset to zero. | Display is retained. The device value is retained. |
| Switching language switching device | | |
| Switching the base screen when a trend graph is displayed on the superimpose window | | |
| Switching the security level*1 | | |
| Switching the station No. device | | |

*1 If the security level is changed on the security password screen or the device value set for a level device is switched without the Store Memory setting, the display is cleared and the device value is reset to zero.

Example: Operations when switching screens

Monitored device: D10, D11




**Point**

Timing of erasing the display stored in memory

The data stored in memory will be erased according to the following timing.

- When the condition for clearing trigger is enabled
- When GOT is reset or power supply is OFF.
- When the project is downloaded
- When the drive information is displayed
- Execution of operation of which GOT is restart in utility

## 10.3.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Trend Graph].
   - Select [Object] → [Graph] → [Trend Graph] from the menu.
2. Click on the position where the trend graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged trend graph to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

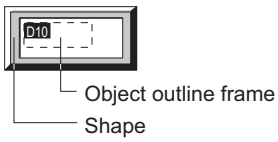
GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

Section 5.3.3 Object size change

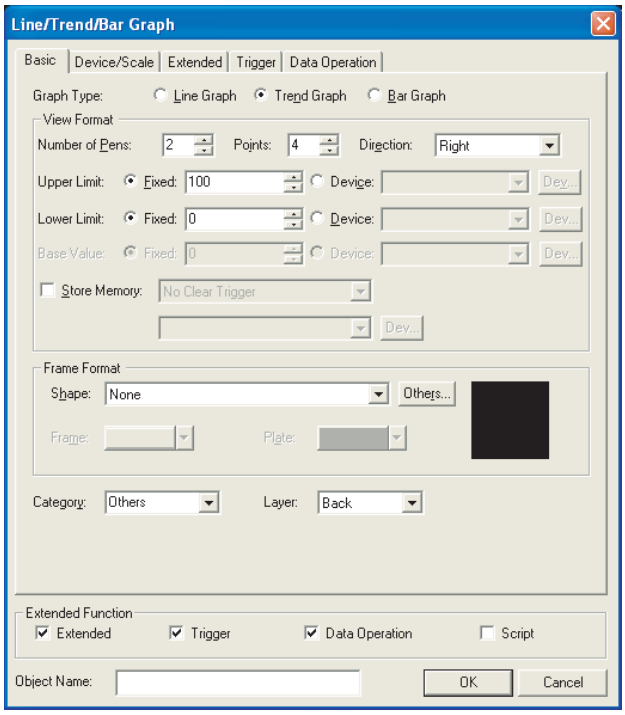


## 10.3.4 Setting items

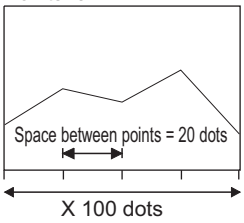
This dialog box is common to the settings for displaying the three types of graphs (line/trend/bar graph). This section provides the explanation about setting trend graph.

### 1 Basic tab

Set the graph type (line/trend/bar graph), number of graphs, upper/lower limit and object shape.

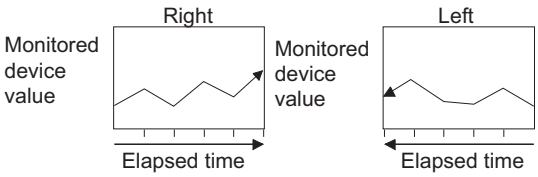
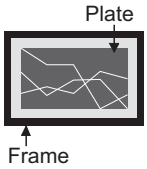



Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Graph Type | | Select the graph to be set (line graph/trend graph/bar graph).<br>This section explains the setting for trend graph. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| View Format | Number of Pens | Set the number of lines in the graph to be displayed (1 to 8).<br>(Up to 4 lines for GT10) | |
| | Points | Set the points (the number of collected data) to be displayed on the graph.<br>up to 100 (2 to 100) points can be set.<br>(Up to 50 points for GT10)<br>The space between each point is automatically specified by the set points and display range of X.<br>Example:<br>Points: 5<br>  <br> | |

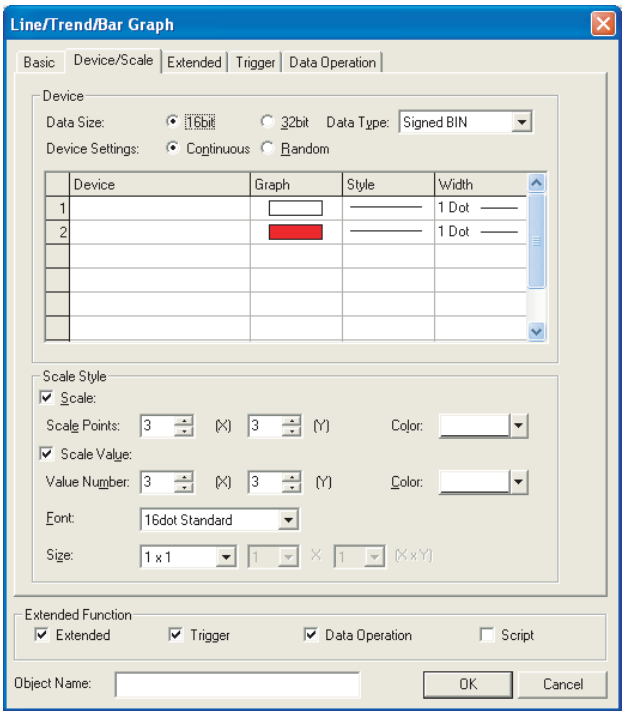
(Continued to next page)

Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Direction | Select the direction for graph.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Upper Limit<br>Lower Limit | Select whether the device value range (Lower/Upper limit) for trend graph is displayed based on the setting by fixed values or specified device values.<br>Fixed : Sets the fixed values as the upper/lower limit values<br>Device : Sets the device values as the upper/lower limit values.<br>(☞ Section 5.1 Device Setting)<br>The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance. | |
| View Format | Base Value | Not available for trend graph. | |
| View Format | Store Memory | Check this item to continually collect data when the screen in which trend graph is not set is displayed.<br>The data as many as the number of points for the graph are stored in the GOT internal memory.<br>Select the timing to erase the data stored in the GOT internal memory.<br>No Clear Trigger : Does not clear the data stored in the GOT internal memory.<br>Clear ON Trigger Rise : Clears the data stored in the GOT internal memory when the bit device rises (turns ON).<br>Clear ON Trigger Falls : Clears the data stored in the GOT internal memory when the bit device falls (turns OFF).<br>When [Clear Trigger Rise] or [Clear Trigger Fall] is selected, set the bit device for the clear trigger.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| Frame Format | Frame<br>Plate | Select the frame color/plate color.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Device/Scale tab

Set the display attribute (graph color/width/type/scale) of graph and monitor device.

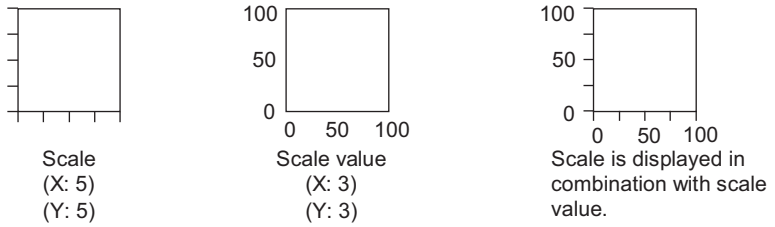



Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | Data Size | Select a data size (16bit/32bit) for the word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Device Settings | When displaying more than two graphs, select the method of setting the device to be monitored in each graph.<br>(For GT10, [Random] cannot be set.)<br>Continue : The device to be monitored in the first graph will be set as the head device. The devices will be consecutively assigned to the second and later graph.<br>Random : One device to be monitored is set for each graph. | |
| | Display Attribute View | Set the graph attributes.<br>Click on each item of the list in [Device] to display the setting dialog box.<br>Then, make the settings as follows:<br>Device : Enter the word device name here, or click on the Dev button and select a word device from the given options to set the word device for monitoring.(☞ Section 5.1 Device Setting)<br>Graph : Select the graph color.<br>Style : Select the graph style.<br>Width : Select the graph width (1 to 7 dots). | |

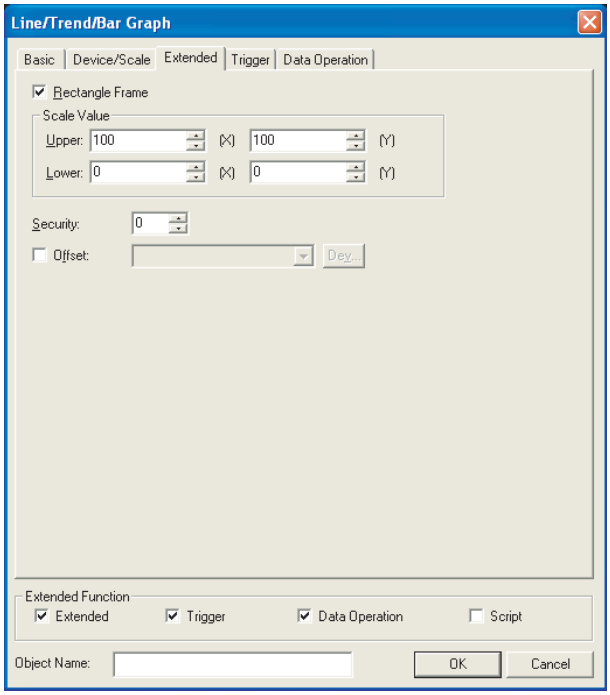
(Continued to next page)

Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

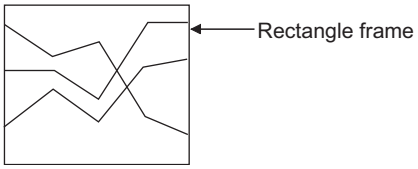
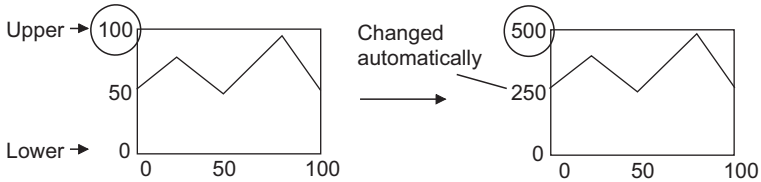
| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale value to the trend graph.<br>Example:<br>  <br><br>Scale<br>(X: 5)<br>(Y: 5)<br>Scale value<br>(X: 3)<br>(Y: 3)<br>Scale is displayed in combination with scale value. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of horizontal and vertical scale points (0, 2 to 101) and the scale color.<br>Once this is set, the space between the scale ticks are automatically defined.<br>A scale is not displayed at setting "0" to the number of scale points. Therefore, a scale can be displayed in the horizontal or vertical direction only. | |
| | Scale Value | Check this item to display the scale by using numeric values.<br>Set the number of numeric values (0, 2 to 101) in [Value Number] and numeric size (0.5 to 8) in [Size].<br>Select a numeric font.<br>The applicable numeric size depends on the selected font.<br>•6 x 8dot font : 1x1(Fixed)<br>•12-dot Standard : 1x1 to 8x8<br>•16-dot Standard : 0.5x0.5 to 8x8<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity)<br><br>The default numeric values for both height and width are set to any of 0 to 100.<br>When changing the numeric value, set a scale value.<br>(☞ Extended "Scale Value")<br>A scale is not displayed at setting "0" to the number of scale points. Therefore, a scale can be displayed in the horizontal or vertical direction only. | |

## 3 Extended tab

Set the security and offset and the upper/lower limit of scale value.
Check Extended Function at the bottom of dialog box to display this tab.




Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Rectangle Frame | | Check this item to display the frame, i.e., shape for the graph.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Scale Value | Upper<br>Lower | Before changing a scale value, set the upper/lower limit values.<br>Set the scale value for height (Y axis) and width (X axis).<br><br>Example: Change the upper limit of the scale value on Y<br>  <br><br>Change scale value on Y<br>Upper: "100" → "500" | |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |

(Continued to next page)

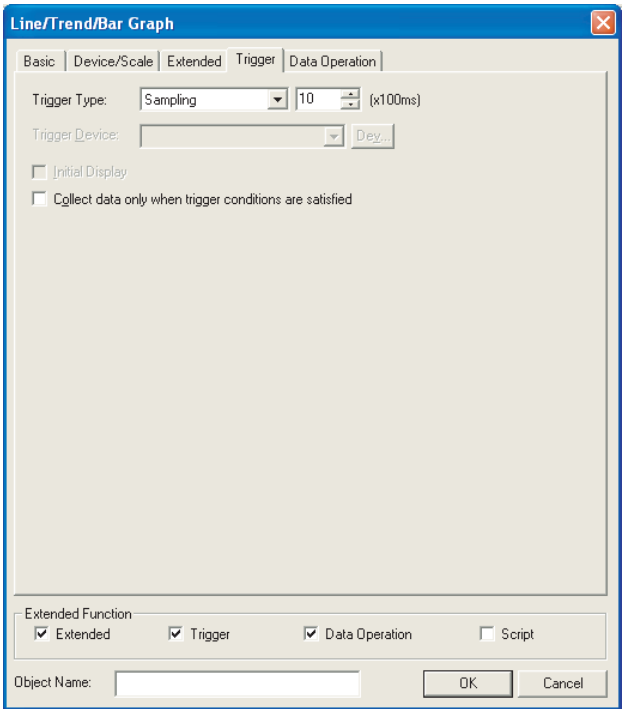
Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br><br>(☞ Section 5.1 Device Setting)<br>Data length is fixed to 16 bits.<br>This setting cannot be set with "Store Memory" (Basic tab) | GT16 GT15 SoftGOT 1000 GT11 GT10 |

## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Trigger Type*1 | Select the trigger for displaying the object.<br>Set sampling (0.1 to 3600 s) with 100ms as unit when selecting [Sampling] [ON Sampling] [OFF Sampling].<br>(For GT10, [Rise], [Fall], [ON Sampling] and [OFF Sampling] cannot be set.)<br>• Rise • Fall • Sampling • ON Sampling • OFF Sampling | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Trigger Device | Specify the device used for the trigger. | |
| Initial Display | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |
| Collect data only when trigger conditions are satisfied | Check this item when collecting the data only when the trigger of display set for [Trigger Type] is met.<br>For displaying the data in graph, communication is made with a controller even when display trigger is not satisfied.<br>By selecting this item, since communication with a controller is made only when the trigger is met, load due to communication between the GOT and a controller can be reduced. *2 | |

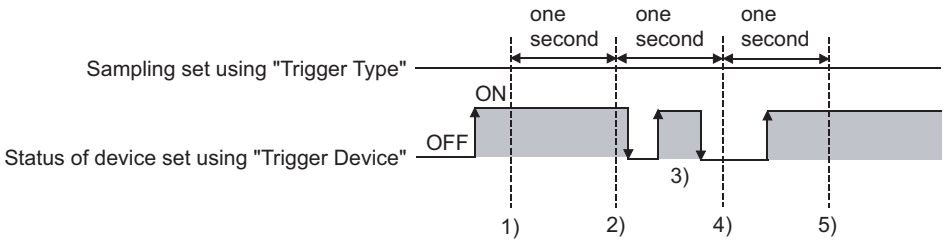
For details of *1, *2, refer to the following.

*1 If the graph display is not updated at the set sampling cycle

(1) Updated timing at setting "ON Sampling" or "OFF sampling"
When setting [ON Sampling] or [OFF Sampling], there are cases that the graph is not updated at the set sampling cycle.
Causes of this problem and the countermeasures to the above are explained below.

(a) Causes
The status of the device is checked at the each sampling set in the "Trigger Type".
When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling to one second)




At the timing of 1), the trend graph is updated.
At the timing of 2), the trend graph is updated.
At the timing of 3), the trend graph is not updated because is unmatchable to Sampling.
At the timing of 4), the trend graph is not updated because is unmatchable to the device condition.
At the timing of 5), the trend graph is updated.

(b) Countermeasures
The sampling set using the "Trigger Type" is not depending on the status of the device. (The sampling is not changed even if turning on or off the device.)
To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(2) Updated timing when setting the either following sampling, "Sampling", "ON Sampling" or "OFF Sampling"
When setting [Sampling], [ON Sampling] or [OFF Sampling], graph updating timing differs depending on whether or not stored memory is used.

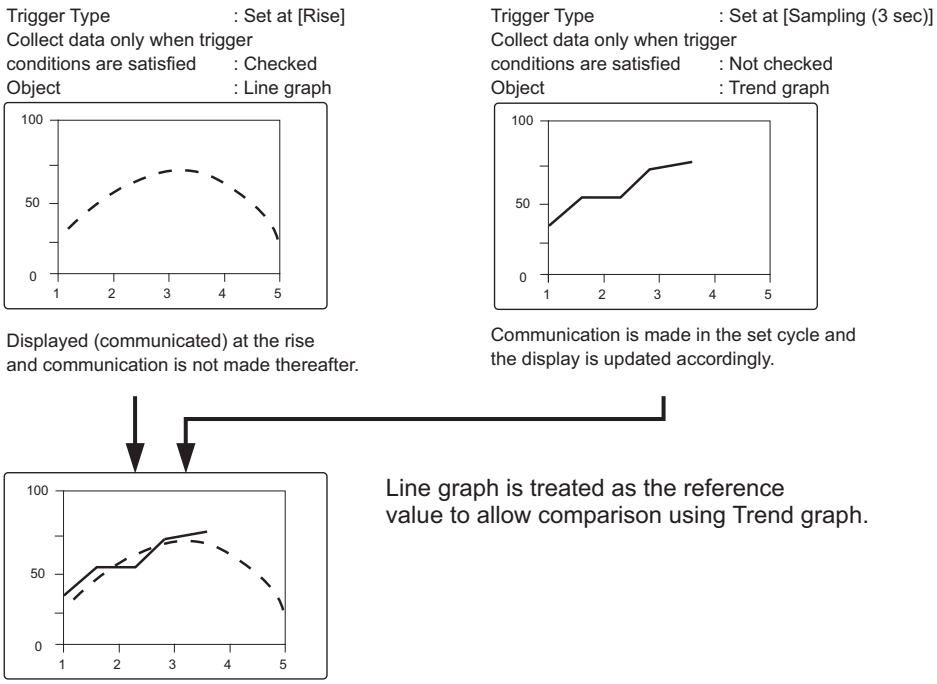
(a) Without setting store memory
Counting the sampling is started and reset at the following timing.
- At trend graph displaying (displaying by screen switching or security level change etc.)
- At station No. switching
- At language switching
- At security level change

(b) With setting store memory
Counting the sampling is started and reset at the following timing.
- At starting GOT
- At project download
- When the drive information is displayed
- Execution of operation of which GOT is restart in utility

*2 Conditions for which the selection of [Collect data only when trigger conditions are satisfied] is effective

For the graph that does not require frequent update, it is possible to reduce the number of communication execution times by checking the [Collect data only when trigger conditions are satisfied] item.
For the graph that requires frequent update and display, it is recommended not to check the [Collect data only when trigger conditions are satisfied] item (to enable continuous communications to obtain device values) because screen refresh may be delayed to fail correct graph display if this item is checked.

The setting for the [Collect data only when trigger conditions are satisfied] can be used with combining various graphs.
The following shows an example in which a line graph and a trend graph are used in combination.

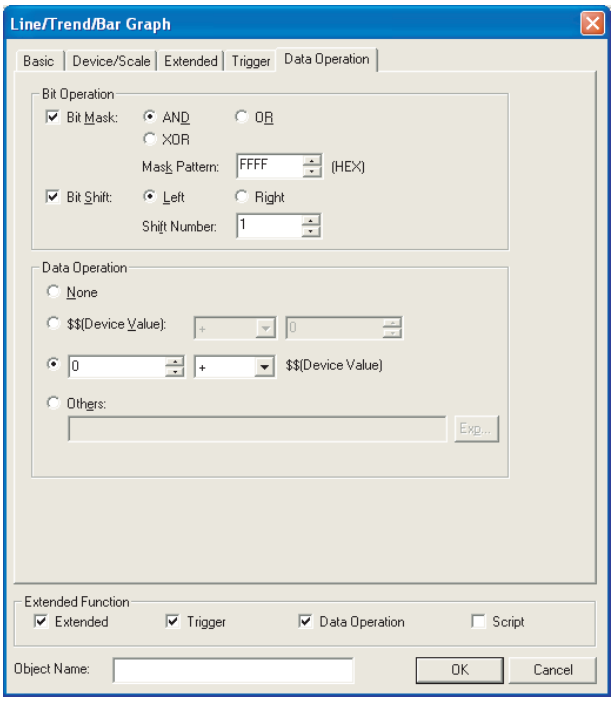


## 5 Data Operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



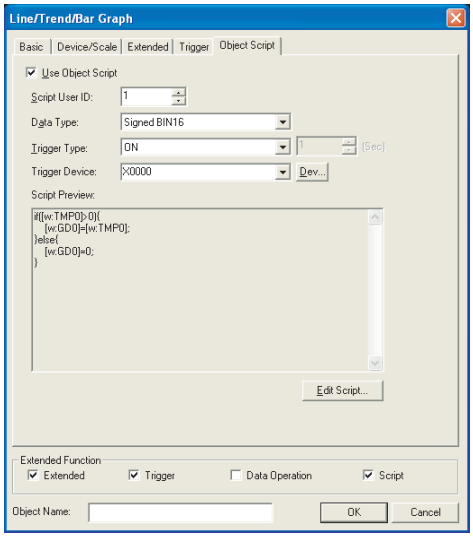

Basic | Device/Scale | Extended | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame Color | frame_color | ○ | × |
| | Plate Color | plate_color | ○ | 4) |
| 3 Extended | Upper (X) | scale_max[0] | ○ | 4) |
| | Upper (Y) | scale_max[1] | ○ | 4) |
| | Lower (X) | scale_min[0] | ○ | 4) |
| | Lower (Y) | scale_min[1] | ○ | 4) |
| | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.3.5 Precautions

This section provides the precautions when using the trend graph function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
24 objects can be set for the trend graph.

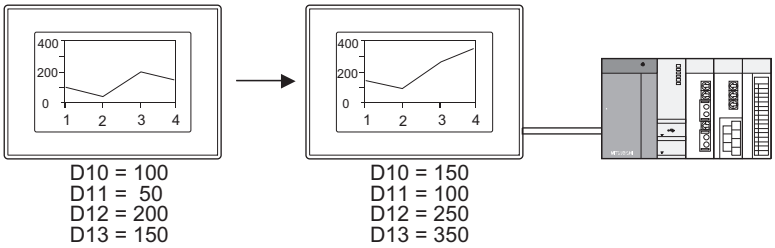
(2) When using store memory
For the trend graph with store memory set, up to 16 objects can be set on the whole project.

(3) When setting [Collect data only when trigger conditions are satisfied]
Do not make a setting in which the trigger is met simultaneously for 257 or more objects for which [Collect data only when trigger conditions are satisfied] is set.
The 258th or later objects are disabled even if the trigger is met and are not displayed correctly (causing system alarm).

(4) When using GT10
Both the trend graph and line graph cannot be set on one screen.

# 10.4 Line Graph

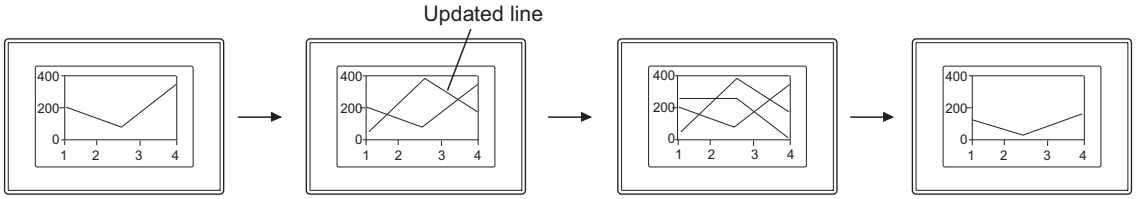
This function enables multiple word device data to be collected in batch and displayed in a line graph.




Example:

Compare the data with the ones previously collected. (Display the locus)

Set on Extended tab




Every time cascade the collected data with the new graph.

Clears the displaying graph by clearing the trigger. Displays the graph with the new collected data.

## 10.4.1 Relevant settings

For line graph, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

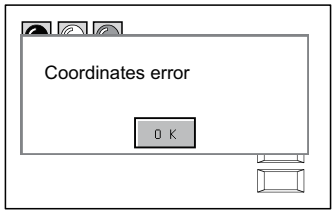
(1) Functions relevant to line graph and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

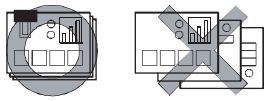
(1) Functions relevant to line graph and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

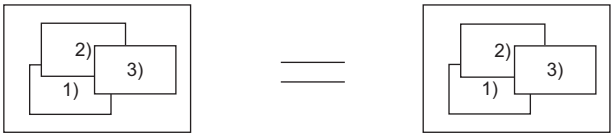


Setting items
• [Carry out check for overlapping objects within GOT]

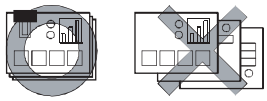
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 10.4.2 Required knowledge for line graph setting

Method for line graph setting

Set the basic function of the line graph on the following tabs, 1 to 3 .
The following line graph example explains the general procedure for the line graph setting.

Example: Line graph for displaying production quantity of multi production line.

Achievement ratio: 0 to 100%

Production quantity: 0 to 6000

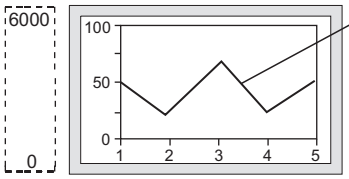
Actual quantity (line 1): D10

(line 2) : D11

(line 3) : D12

(line 4) : D13

(line 5) : D14



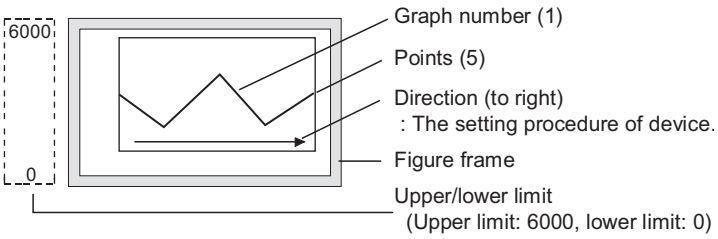

Production quantity (D10 to 14)
of each production line(1 to 5).

Scale value
Vertical : Indicates the completion ratio.
Horizontal: Indicates the No. of the production line whose production quantity is monitored.

Upper /lower limit
Set the production quantity.

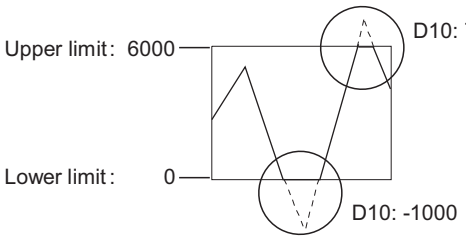
1 Basic tab

Set the number of graphs, the upper and lower limit values, the number of points and the shape.



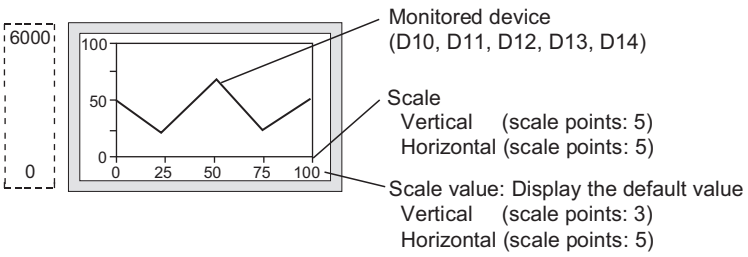

**Remark** Display of values beyond the upper/lower limit.

When a value of the monitored device exceeds the upper or lower limit, it is displayed numerically on the graph.



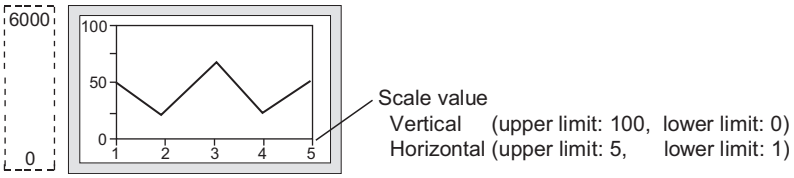

2 Device/Scale tab

Set the monitored devices and the scale.




3 Extended tab

Scale values can be changed on this tab.



## 10.4.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Line Graph].
   - Select [Object] → [Graph] → [Line Graph] from the menu.
2. Click on the position where the line graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using, ESC key.)
3. Double click on the arranged line graph to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

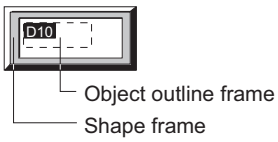
GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

Section 5.3.3 Object size change

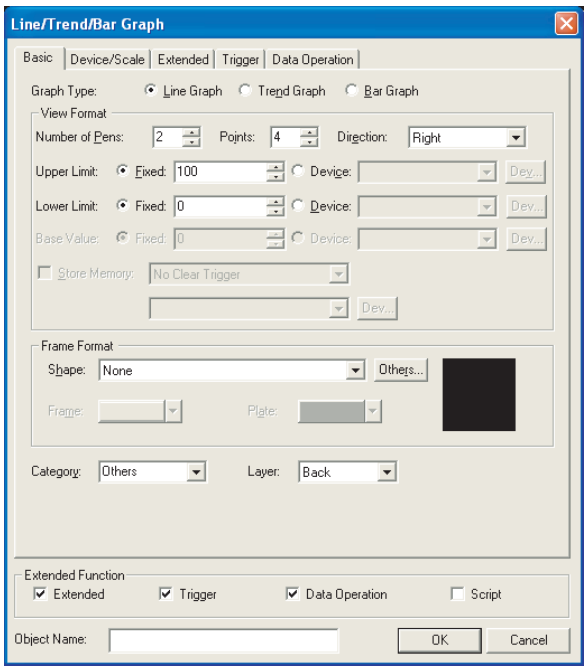


## 10.4.4 Setting items

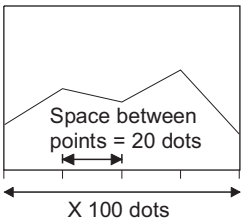
This dialog box is common to the settings for displaying the three types of graphs (line/trend/bar).
This section provides the explanation about setting a line graph.

### 1 Basic tab

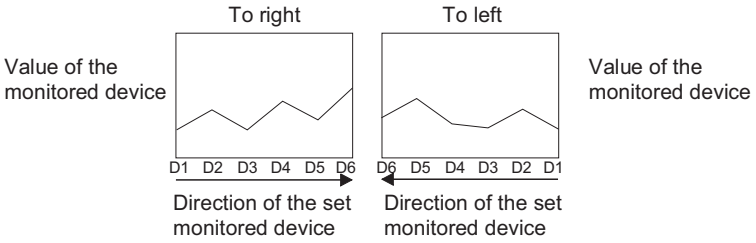
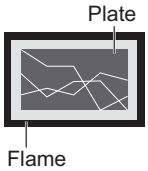
Set the graph type (line/trend/bar graph), number of graphs, upper and lower limit and object shape.




Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

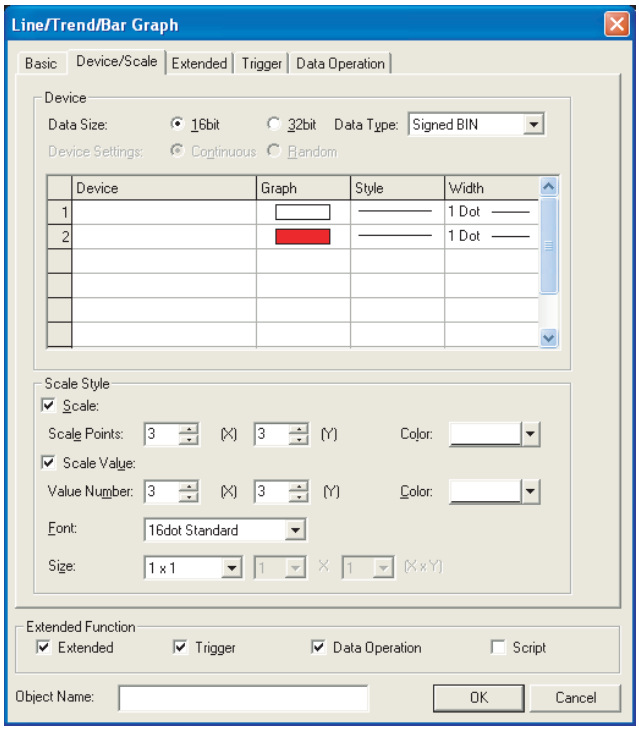
| Items | | Description | Model |
|---|---|---|---|
| Graph Type | | Select the graph to be set (line graph/trend graph/bar graph).<br>This section explains the setting for line graph. | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| View Format | Number of Pens | Set the number of graphs (1 to 8) to be displayed.<br>Set the number of lines in the graph to be displayed (1 to 8).<br>(Up to 4 lines for GT10) | |
| | Points | Set the points (the number of monitored devices) to be displayed in one graph.<br>2 to 500 points can be set.<br>(Up to 50 points for GT10)<br>The space between points is automatically decided by the set points and the display range of X.<br>Example:<br>Points : 5<br>  <br> | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| View Format | Direction | Select the setting direction for the graph.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Upper Limit<br>Lower Limit | Select whether the device value range (Lower/Upper limit) for line graph is displayed based on the setting by fixed values or specified device values.<br>Fixed : Sets the fixed values as the upper/lower limit values.<br>Device : Sets the device values as the upper/lower limit values.<br>( ☞ Section 5.1 Device Setting)<br>The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance. | |
| | Base Value | Not available for line graph. | |
| | Store Memory | Not available for line graph. | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>( ☞ 5.3.2 Object shape setting ) | |
| | Frame<br>Plate | Select the frame color/plate color.<br>  <br> | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>( ☞ Section 2.6 Superimposition Settings ) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Device/Scale tab

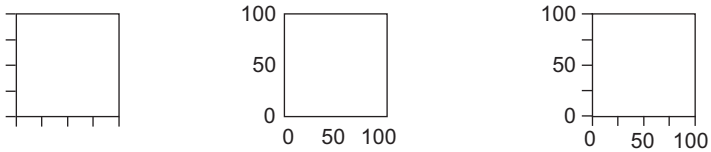
Set the display attribute (graph color/width/type, scale) and devices to be monitored.




Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | Data Size | Select the data size (16bit/32bit) of the word device to be monitored. | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| | Data Type | Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Device Settings | Not available for line graph. | |
| | Display Attribute View | Set the graph attributes.<br>Click on each item of the list in [Device] to display the setting dialog box.<br>Then, make the settings as follows:<br>Device : Click on the Dev. button and set a word device to be monitored. *1<br>Graph : Select the graph color.<br>Style : Select the graph style.<br>Width : Select the graph width. | |

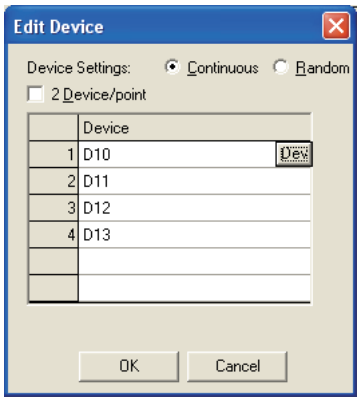
(Continued to next page)

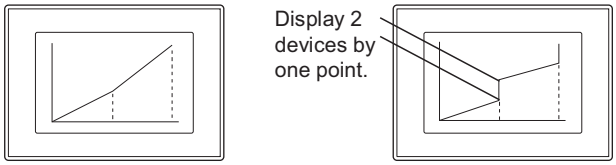
| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale value to the line graph.<br>Example:<br>  <br><br>Scale display (X: 5) (Y: 5)<br>Scale value display (X: 3) (Y: 3)<br>Combine the scale display and scale value display | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of horizontal and vertical scale points (0, 2 to101) and the scale color.<br>Once this is set, the space between the scale ticks are automatically defined.<br>A scale is not displayed at setting "0" to the number of scale points.<br>Therefore, a scale can be displayed in the horizontal or vertical direction only. | |
| | Scale Value | Check this item to display the scale by using numeric values.<br>Set the number of numeric values (0, 2 to 101) in [Value Number], the color in [Color] and numeric size (0.5 to 8) in [Size].<br>For Font, the following items can be selected.<br>And, the setting enabled value for [Size] varies depending on the [Font] selected.<br>(For GT10, [12dot Standard] cannot be selected.)<br>• 6 x 8dot :1 x 0.5 (Fix)<br>• 12dot Standard :1 x 1 to 3 x 3<br>• 16dot Standard :0.5 x 0.5 to 8 x 8<br>For the details of Font or Size, refer to the following.<br>( Section 2.2 Figures and Data Capacity )<br>The default numeric values for both X and Y axes are set to any of 0 to 100.<br>When change value, set [Scale Value].<br>( Extended "Scale Value"<br>A scale is not displayed at setting "0" to the number of scale points.<br>Therefore, a scale can be displayed in the horizontal or vertical direction only. | |

For details of *1, refer to the following.

*1 Edit device dialog box

Set the devices to be monitored in the Edit Device dialog box.

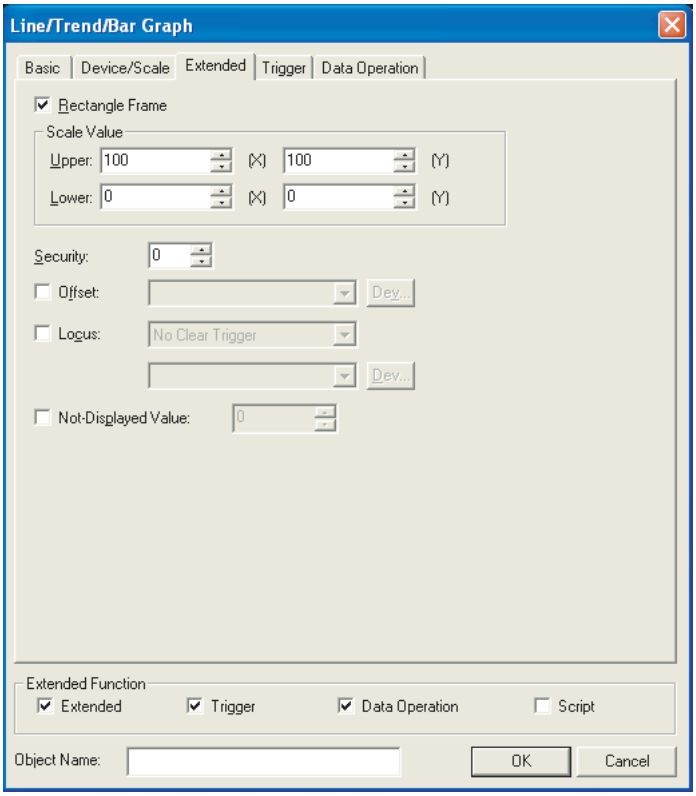



| Items | Description | Model |
|---|---|---|
| Device Settings | Select the setting method in [Device List] described below.<br>(For GT10, [Random] cannot be set.)<br>Continue : The device to be monitored at the first point in the graph will be set as the head device, and any other device will be consecutively assigned to the second and later points.<br>Random : Devices to be monitored are set at random. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| 2 Device/point | Check this item to display a point using 2 devices.<br>  <br><br>1 device/point 2 devices/point | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device List | Click on the desired item in the list to set the monitor device by direct input or clicking on the Dev. button.<br>( Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |

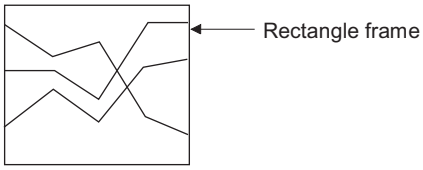
## 3 Extended tab

Set the security, offset, graph display method (locus, not-displayed value setting) and upper and lower limit scale values.

Check Extended Function at the bottom of dialog box to display this tab.

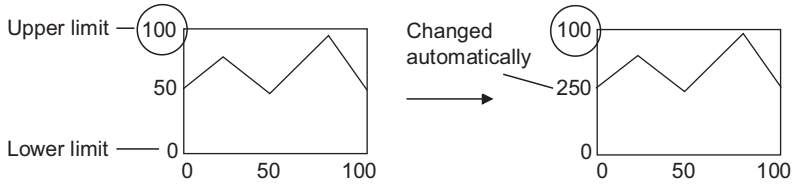
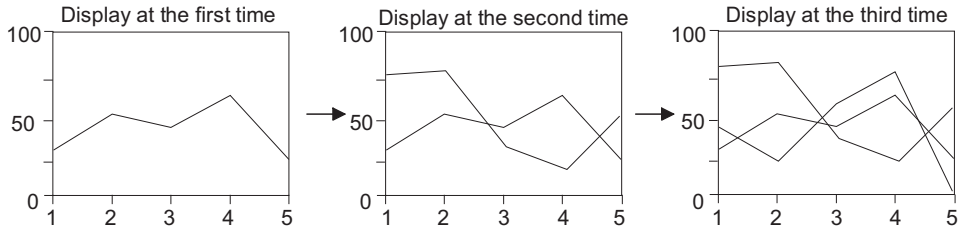
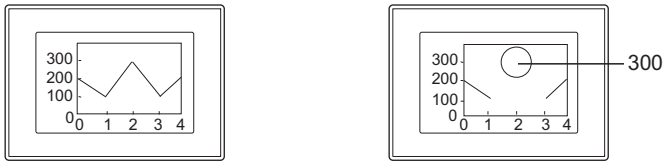



Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Rectangle Frame | Check this item to display the frame, i.e., shape for the graph.   | GT16 GT15 SoftGOT1000 GT11 GT10 |

(Continued to next page)

Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Scale Value | Upper<br>Lower | Before changing a scale value, set the upper/lower limit values.<br>Set the scale value for vertical (Y axis) and horizontal (X axis) lines.<br>Example: Change the upper limit scale value on Y<br>  <br><br>Change the scale value of Y.<br>Upper limit : "100" → "500" | |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>( Section 5.8 Security Function) | |
| Offset | | Check this item when executing monitor by switching between multiple devices.<br>( Section 5.7 Offset Function)<br>After checking, set the offset device.<br>( Section 5.1 Device Setting)<br>Data length is fixed to 16 bits.<br>This setting cannot be set with "Locus" | |
| Locus | | Check this item when cascading the updated line graph and the previous graph.<br>The previous graph is stored in the GOT internal memory.<br>  <br><br>Display the cascaded 1, 2, 3 data contents.<br>Select the timing of clearing locus after the check.<br>No Clear Trigger : Does not erase the locus.<br>Clear On Trigger Rise : Erases the locus with the rise (turns ON) of bit device.*1<br>Clear On Trigger Fall : Erases the locus with the fall (turns OFF) of bit device.*1<br>When selecting [Clear Trigger Rise] or [Clear Trigger Fall], set the bit device to be used for the clear trigger.<br>( Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Not-Displayed Value | | Check this item when setting the value without line connection.<br>After checking, set the not-displayed value.<br>Example:<br>When setting not-displayed valueSet "300" to the not-displayed value.<br>  <br><br>The line connecting 1 to 3 is not displayed. | |

For details of *1, refer to the following.

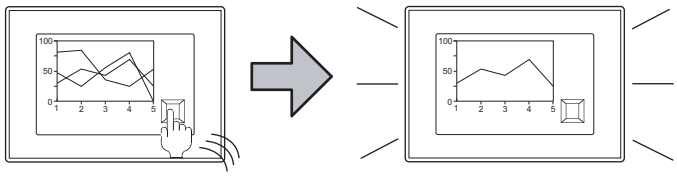
*1 Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).
When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

Example of holding the display for the sampling period set by [Display Trigger Type] or longer

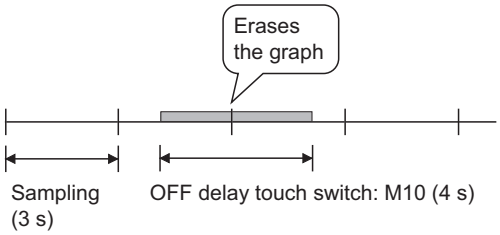
| | |
|---|---|
| Clear Trigger | :Set rise timing and M10 for the device |
| Display Trigger Type | :Set to sampling (3 s) |
| Touch Switch | :Set M10 for the device, bit momentary for Action and 4 s for OFF Delay |

The condition of [Display Trigger Type]: Sampling (3 s) is met after pressing touch switch until the clear trigger (M10) turns off by the OFF Delay (4 s), and the graph is erased.




Touch the touch switch set for the clear trigger

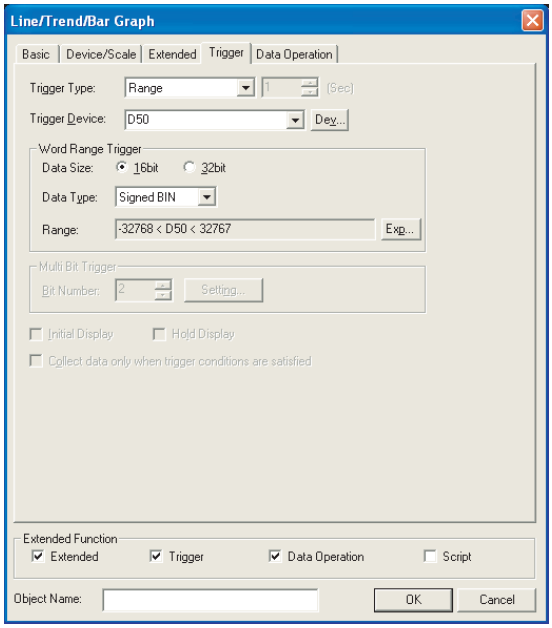
The graph displayed previously is erased.



## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be set.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger<br><br>The trigger is displayed as follows, when [Locus] is set on the Extended tab.<br>When [Sampling], [ON Sampling] or [OFF sampling] is selected, set the sampling cycle (1 to 3600 seconds) by second.*1<br>• Rise • Fall • Sampling • ON sampling • OFF sampling | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |

(Continued to next page)

Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Hold Display | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>If not checked, the object will be deleted when the trigger is not satisfied.<br>This setting cannot be set with "Locus". | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Collect data only when trigger conditions are satisfied | Check this item when collecting the data only when the trigger of display set for [Trigger Type] is met.<br>Setting is possible when [Rise], [Fall], [Sampling], [ON Sampling] or [OFF Sampling] is selected.<br>For displaying the data in graph, communication is made with a controller even when display trigger is not satisfied.<br>By selecting this item, since communication with a controller is made only when the trigger is met, load due to communication between the GOT and a controller can be reduced. *2 | GT16 GT15 SoftGOT1000 GT11 GT10 |

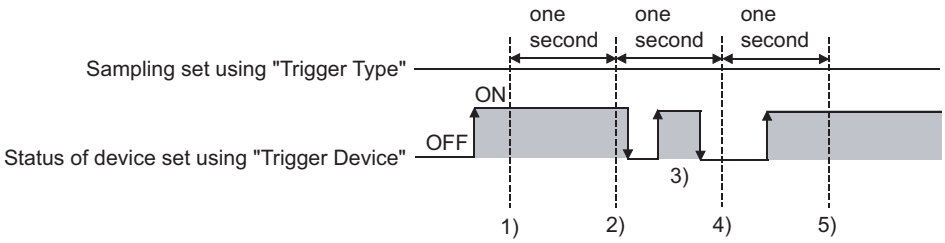
For details of *1, *2, refer to the following.

*1 If the graph display is not updated at the set sampling cycle

(1) Updated timing at setting "ON Sampling" or "OFF sampling"
When setting [ON Sampling] or [OFF Sampling], there are cases that the graph is not updated at the set sampling cycle.
Causes of this problem and the countermeasures to the above are explained below.

(a) Causes
The status of the device is checked at the each sampling set in the "Trigger Type".
When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling to one second)




At the timing of 1), the line graph is updated.
At the timing of 2), the line graph is updated.
At the timing of 3), the line graph is not updated because is unmatchable to Sampling.
At the timing of 4), the line graph is not updated because is unmatchable to the device condition.
At the timing of 5), the line graph is updated.

(b) Countermeasures
The sampling set using the "Trigger Type" is not depending on the status of the device. (The sampling is not changed even if turning on or off the device.)
To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(2) Updated timing when setting the either following sampling, "Sampling", "ON Sampling" or "OFF Sampling"
When setting [Sampling], [ON Sampling] or [OFF Sampling], graph updating timing differs depending on whether or not locus setting is used.

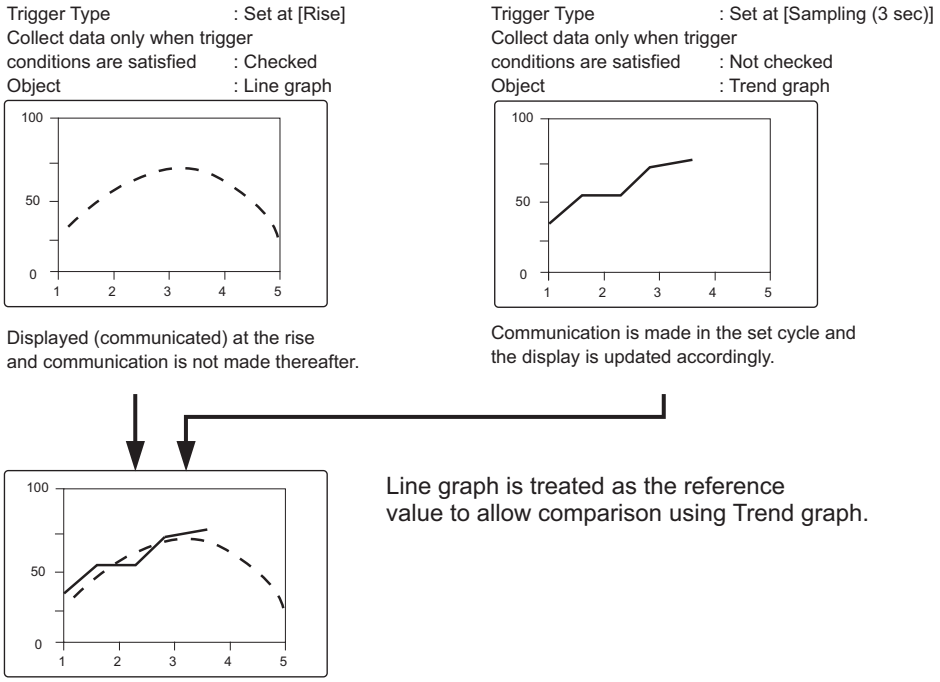
(a) Without setting locus
Counting the sampling is started and reset at the following timing.
- At line graph displaying (displaying by screen switching or security level change etc.)
- At language switching
- At security level change

(b) With setting locus
Counting the sampling is started and reset at the following timing.
- At starting GOT
- At project download
- When the drive information is displayed
- Execution of operation of which GOT is restart in utility

*2 Conditions for which the selection of [Collect data only when trigger conditions are satisfied] is effective

For the graph that does not require frequent update, it is possible to reduce the number of communication execution times by checking the [Collect data only when trigger conditions are satisfied] item.
For the graph that requires frequent update and display, it is recommended not to check the [Collect data only when trigger conditions are satisfied] item (to enable continuous communications to obtain device values) because screen refresh may be delayed to fail correct graph display if this item is checked.

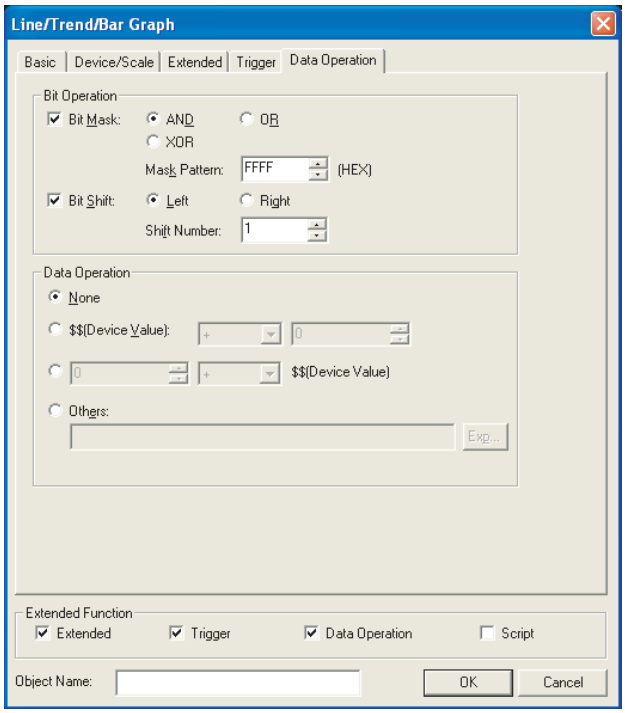
The setting for the [Collect data only when trigger conditions are satisfied] can be used with combining various graphs.
The following shows an example in which a line graph and a trend graph are used in combination.



## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values.
Check Extended Function at the bottom of dialog box to display this tab.
For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



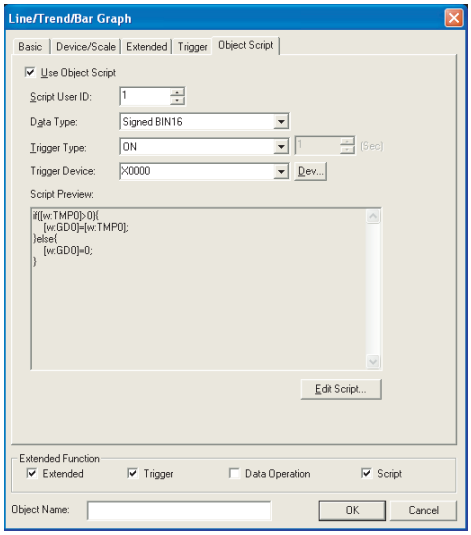

Basic | Device/Scale | Extended | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame Color | frame_color | ○ | × |
| | Plate Color | plate_color | ○ | 4) |
| 3 Extended | Upper (X) | scale_max[0] | ○ | 4) |
| | Upper (Y) | scale_max[1] | ○ | 4) |
| | Lower (X) | scale_min[0] | ○ | 4) |
| | Lower (Y) | scale_min[1] | ○ | 4) |
| | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.4.5 Precautions

This section provides the precautions when using line graph function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
For line graph, up to 32 objects can be arranged (set) for one screen.

(2) When setting [Collect data only when trigger conditions are satisfied]
Do not make a setting in which the trigger is met simultaneously for 257 or more objects for which [Collect data only when trigger conditions are satisfied] is set.
The 258th or later objects are disabled even if the trigger is met and are not displayed correctly (causing system alarm).

(3) When using GT10
Both the trend graph and line graph cannot be set on one screen.

## 2 Precautions for the line graph which locus has been set.

(a) Only one object can be set for the whole project.
When the base screen arranged with line graph is multi-displayed in other base screen with the Set overlay screen function, only the first line graph can be displayed and the second and later will not be displayed.

(b) The setting is available for the base screen only.

(c) When arranging the trend graph on the base screen, some windows cannot be displayed on the base screen.
The following shows the windows that cannot be displayed on each GOT.

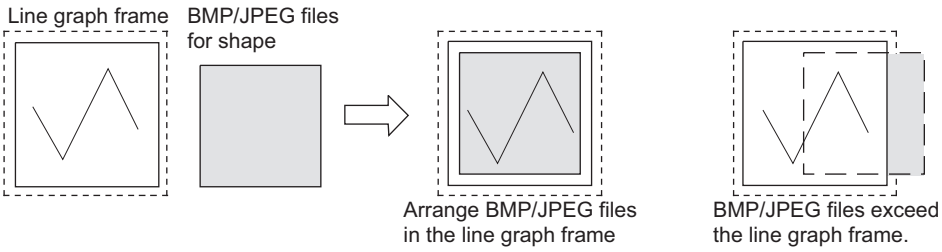
| GOT | Windows that cannot be displayed |
|---|---|
| GT16, GT SoftGOT1000 | Overlap window 5 |
| GT15, GT11, GT10 | Overlap window 2, test window |

(d) The offset function and the station number switching function are not available.

(e) When [Vertical] is set for [Format] in [System Environment] (for GT11 only), the line graph cannot be used. (Not displayed on the GOT even when arranged on the screen.)

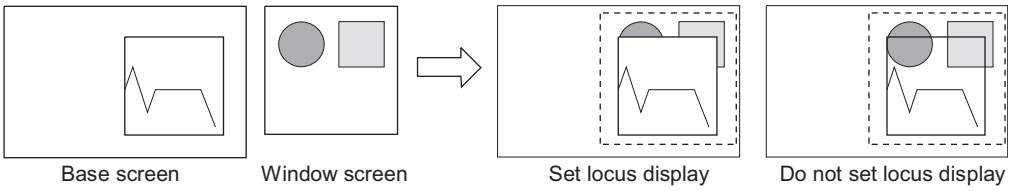
(f) Pay attention to the following when a line graph is overlaid on a shape.
- The BMP/JPEG file pasted to the screen cannot exceed the line graph frame.
  Otherwise, the area that is not overlapped in the line graph frame will not be displayed.

Example:



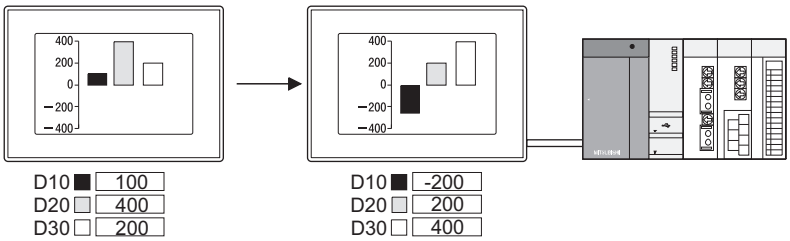

- When using shapes filled with color, arrange the frame of the shape (the boundary line of paint area) within the line graph frame. Otherwise, the shape will not be painted normally
- Since the shape set in the overlay screen is not displayed, it must be directly placed over and as the background for the line graph.
- Do not use the superimpose window because shapes within the superimpose window will not be displayed as background.

Example:



# 10.5 Bar Graph

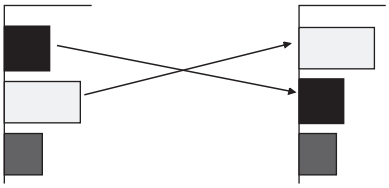
This section explains the function for collecting word device data and displaying them as a bar graph.




Example:

Change bar display

☞ Extended Tab



Sort bar display in deseending order.

Bar display can be sorted in ascending/descending order based on the device values

## 10.5.1 Relevant settings

For bar graph, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

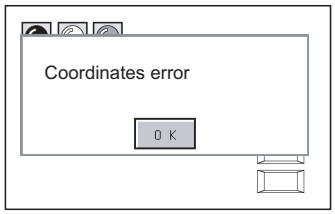
(1) Functions relevant to bar graph and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

## 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

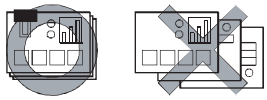
(1) Functions relevant to bar graph and others

- Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

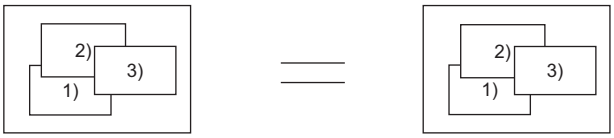


Setting items
- [Carry out check for overlapping objects within GOT]

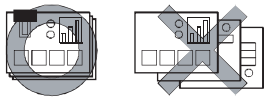
- Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



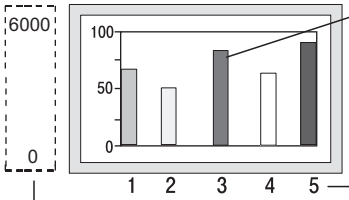
Setting items
- [Adjust object display order in GOT to the one in GT Designer2]

## 10.5.2 Required knowledge for bar graph setting

Set the basic function of the bar graph on the following tab, 1 to 3 .
The following example explains the general procedures for setting a bar graph.

Example: Bar graph displaying production quantity of multiple lines

| | |
|---|---|
| Achievement ratio | : 0 to 100% |
| Production quantity | : 0 to 6000 |
| Actual quantity (Line 1) | : D10 |
| (Line 2) | : D11 |
| (Line 3) | : D12 |
| (Line 4) | : D13 |
| (Line 5) | : D14 |




The production of each line (1 to 5)(D10 to 14)

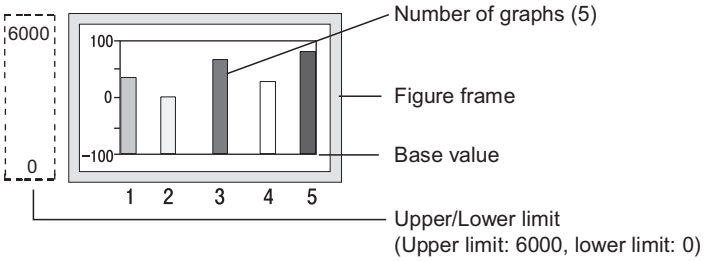
Scale value
X: Indicates achievement ratio.
Y: Indicates line No.

Draws with figure and text.

Upper/Lower limit
Sets production.

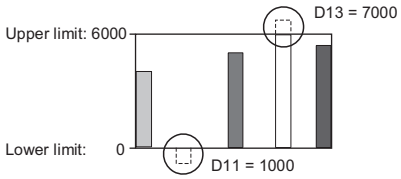
1 Basic tab

Set the number of graphs, figure frame (object shape), base value and upper and lower limit values.



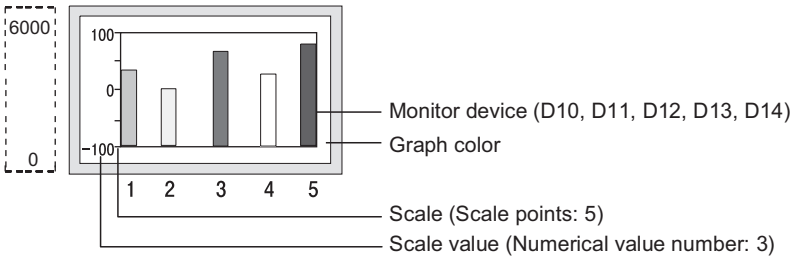

**Remark** Display of values beyond the upper/lower limit

When a monitor device value exceeds the upper/lower limit, it will be displayed numerically on the graph.



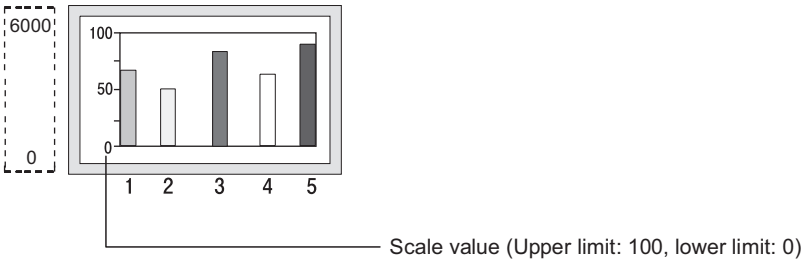

2 Device/Scale tab

Set monitor device, graph color, scale and scale value.




3 Extended tab

Scale values can be changed on this tab.



## 10.5.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Bar Graph].
   - Select [Object] → [Graph] → [Bar Graph] from the menu.
2. Click on the position where the bar graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or use ESC key.)
3. Double click on the arranged bar graph to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

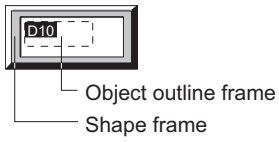
GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

Section 5.3.3 Object size change

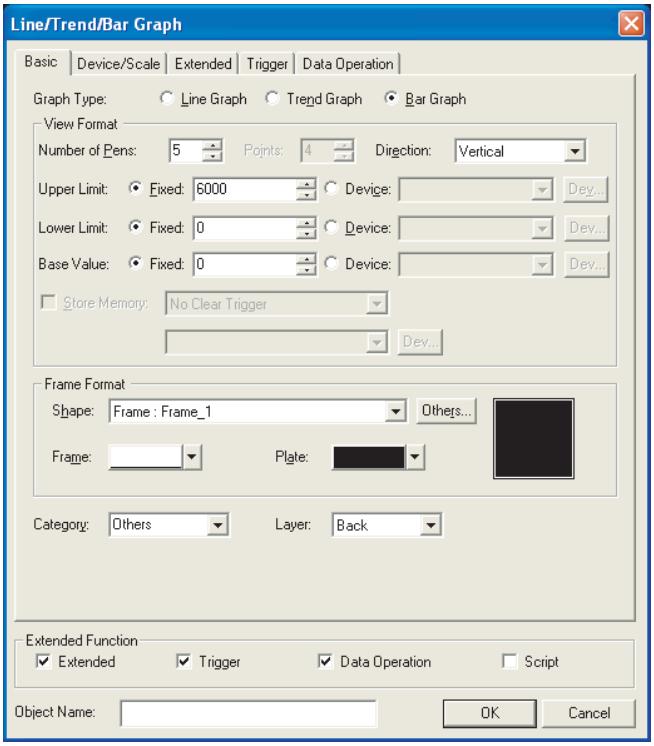


## 10.5.4 Setting items

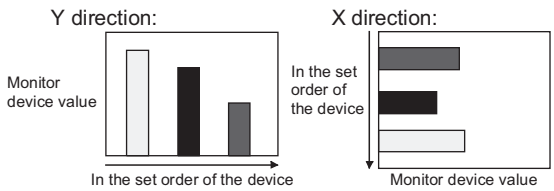
This dialog box is used in common among three types of graph (line/trend/bar graph).
This section provides the explanations of setting of bar graph.

### 1 Basic tab

Set the graph type (line/trend/bar graph), number of graphs, upper limit/lower limit/base value and object shape, i.e., frame.

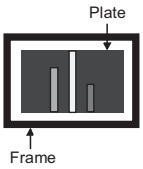



Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Graph Type | | Select the graph to be set (line graph/trend graph/bar graph).<br>This section explains the setting for bar graph. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Number of Pens*1 | Set the number of graphs (1 to 8) to be displayed. | |
| | Points | Not available for a bar graph. | |
| | Direction | Select the setting method of monitor device.<br>Select either of X direction or Y direction.<br>  <br> | |

(Continued to next page)

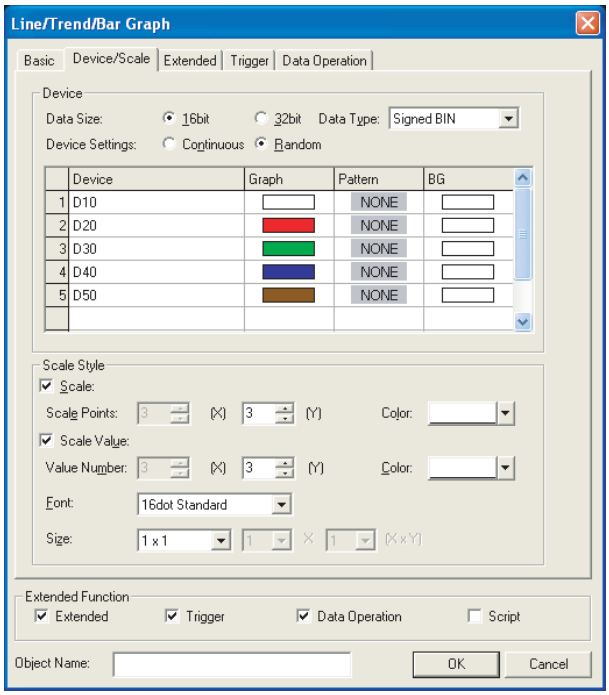
Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| View Format | Upper Limit | Select whether the device value range (Base value, Lower/Upper limit) for the bar graph is displayed based on the setting by fixed values or specified device values.<br>Fixed : Sets the fixed values as the upper limit/lower limit/base values<br>Device : Sets the device values as the upper limit/lower limit/base values.<br>(☞ Section 5.1 Device Setting)<br>The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance (on the Device/Scale tab). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Lower Limit | | |
| | Base Value | | |
| | Store Memory | Not available for bar graph. | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame | Select the frame color/plate color.<br>  | |
| | Plate | | |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1 Up to 4 graphs can be set for GT10.

## 2 Device/Scale tab

Set graph display attribute (graph color/scale) and monitor device.

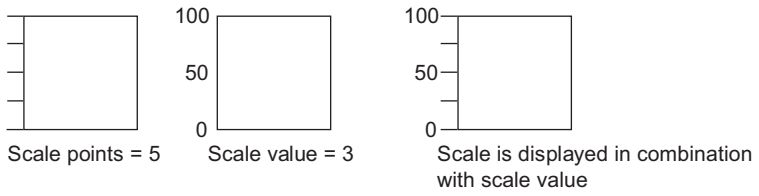



Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Device | Data Size | Select a data size (16bit/32bit) for the word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Device Settings | When displaying more than two graphs, select the method of setting the device to be monitored in each graph.<br>(For GT10, [Random] cannot be set.)<br>Continue : The device to be monitored in the first graph will be set as the head device. The devices will be consecutively assigned to the second and later graph.<br>Random : One device to be monitored is set for each graph. | |
| | Display Attribute View | Set the graph attributes.<br>Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows:<br>Device : Enter the word device name here, or click on the [Dev] button and select a word device from the given options to set the word device for monitoring.<br>(☞ Section 5.1 Device Setting)<br>Graph : Select the graph color.<br>Pattern : Select the filling pattern of the graph.<br>BG : Select the background color of the graph.<br>Example:<br>BG :<br>Pattern :<br>Graph :<br>Pattern + Graph<br>BG | |

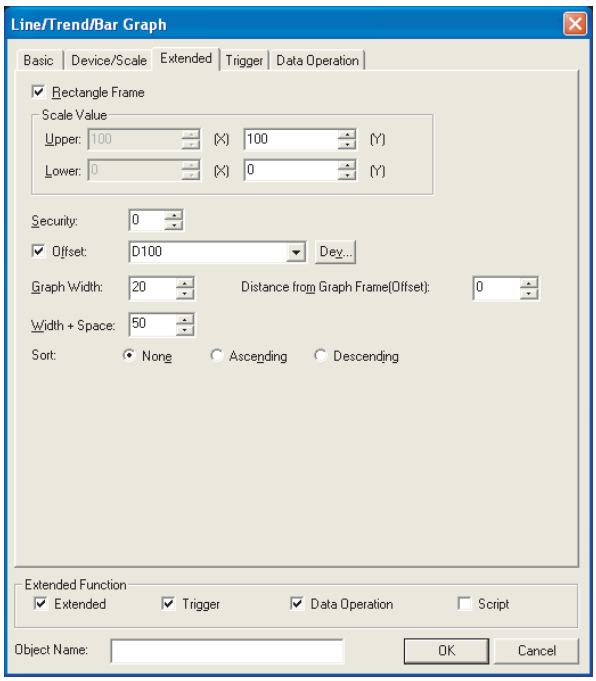
(Continued to next page)

Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

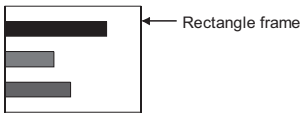
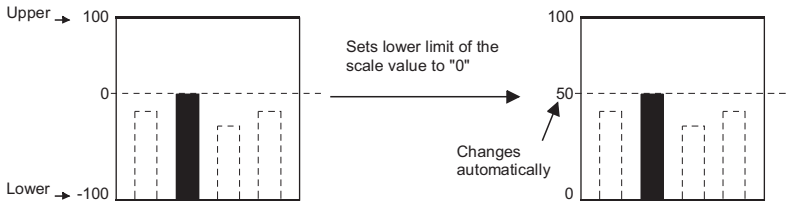
| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale values to the bar graph.<br>Example:<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of horizontal and vertical scale points (0, 2 to101) and the scale color.<br>Once this is set, the space between the scale ticks are automatically defined.<br>Setting the scale to "0" hides the scale. | |
| | Scale Value | Check this item to display the scale by using numeric values.<br>Set the number of numeric values (0, 2 to 101) in [Value Number], the color of numeric display in [Color] and the numeric size (0.5 to 8) in [Size].<br>For Font, the following items can be selected.<br>And, the setting enabled value for [Size] varies depending on the [Font] selected.<br>• 6 x 8dot : 1 x 1 (Fix)<br>• 12dot Standard : 1 x 1 to 8 x 8<br>• 16dot Standard : 0.5 x 0.5 to 8 x 8<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity)<br><br>The default value for both X and Y axes are set to "-100 to 100".<br>When change the value, set [Scale Value].<br>(☞ Extended tab [Scale Value])<br>When set the Scale Value to "0", the scale will not be displayed. | |

## 3 Extended tab

Set the security level, offset and upper/lower limit of the scale values.
Check Extended Function at the bottom of the dialog box to display this tab.

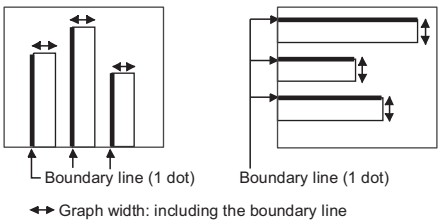
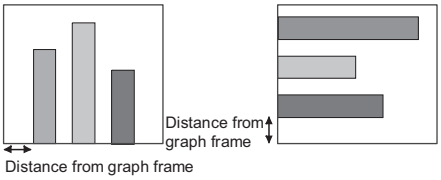
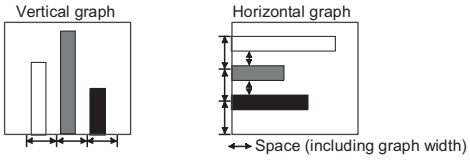
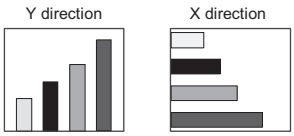
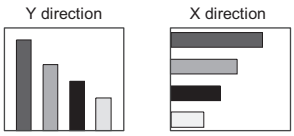



Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Rectangle Frame | | Check this item to display the frame, i.e., shape for the graph.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Scale Value | Upper<br>Lower | Before changing a scale value, set the upper/lower limit values.<br>Example: Changes lower limit of scale value.<br>  <br> | |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data length is fixed to 16 bits. | |

(Continued to next page)

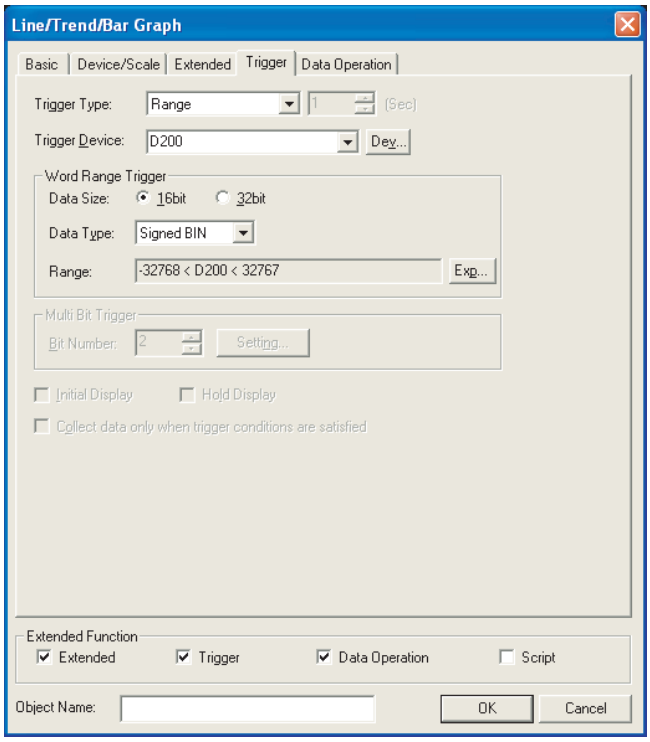
Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Graph Width | Set the graph width (1 to 500 dots) of the bar graph to be displayed.<br>The graph width includes the 1 dot on the boundary line (Vertical bar: Left side, Horizontal bar: Upper side)<br>  <br> | |
| Distance from Graph Frame (Offset) | Set the space between graph OP and the selected position to edit text in bar graph that is near the OP (1 to 100 dots).<br>  <br> | |
| Width + Space | Set the space between bar graphs (including graph width) (1 to 500 dots).<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Sort | Sorting the bars.<br>Select the sorting type and check the corresponding check box.<br>None : Sort is invalid. (Bars are displayed in the device setting order.)<br>Ascending : Arrange from small value to large value.<br>Descending : Arrange from large value to small value.<br>[Ascending]<br>  <br><br>[Descending]<br>  <br> | |

## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Check Extended Function at the bottom of the dialog box to display this tab.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be set.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of the word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the triggers.<br>After setting, click on the [Setting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |

(Continued to next page)

Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

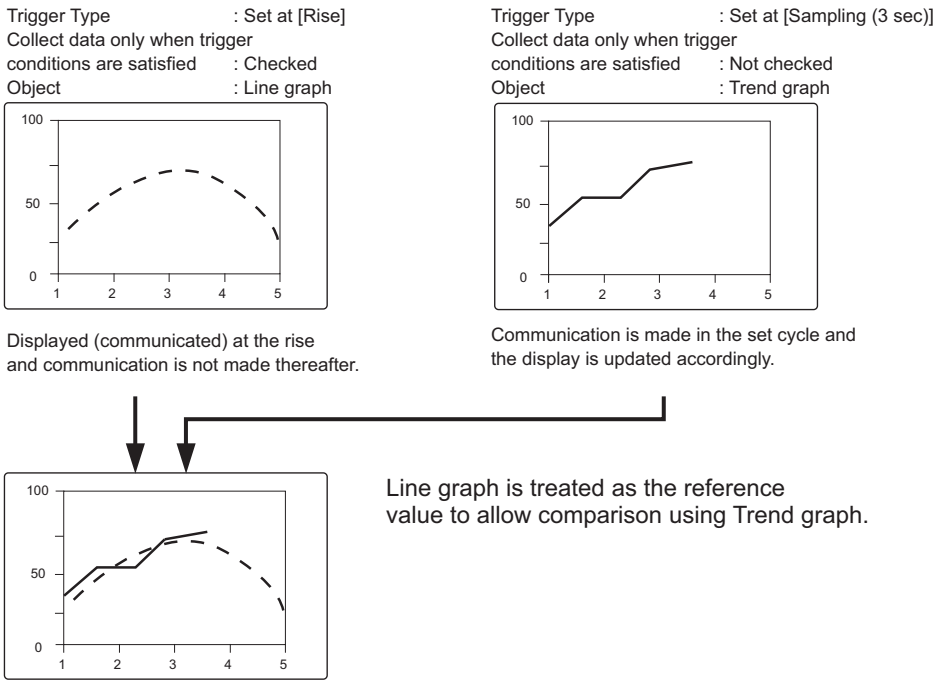
| Items | Description | Model |
|---|---|---|
| Hold Display | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>If not checked, the object will be deleted when the trigger is not satisfied. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Collect data only when trigger conditions are satisfied | Check this item when collecting the data only when the trigger of display set for [Trigger Type] is met.<br>Setting is possible when [Rise], [Fall] or [Sampling] is selected.<br>For displaying the data in graph, communication is made with a controller even when display trigger is not satisfied.<br>By selecting this item, since communication with a controller is made only when the trigger is met, load due to communication between the GOT and a controller can be reduced. *1 | GT16 GT15 SoftGOT1000 GT11 GT10 |

For details of *1, refer to the following.

*1 Conditions for which the selection of [Collect data only when trigger conditions are satisfied] is effective

For the graph that does not require frequent update, it is possible to reduce the number of communication execution times by checking the [Collect data only when trigger conditions are satisfied] item.
For the graph that requires frequent update and display, it is recommended not to check the [Collect data only when trigger conditions are satisfied] item (to enable continuous communications to obtain device values) because screen refresh may be delayed to fail correct graph display if this item is checked.

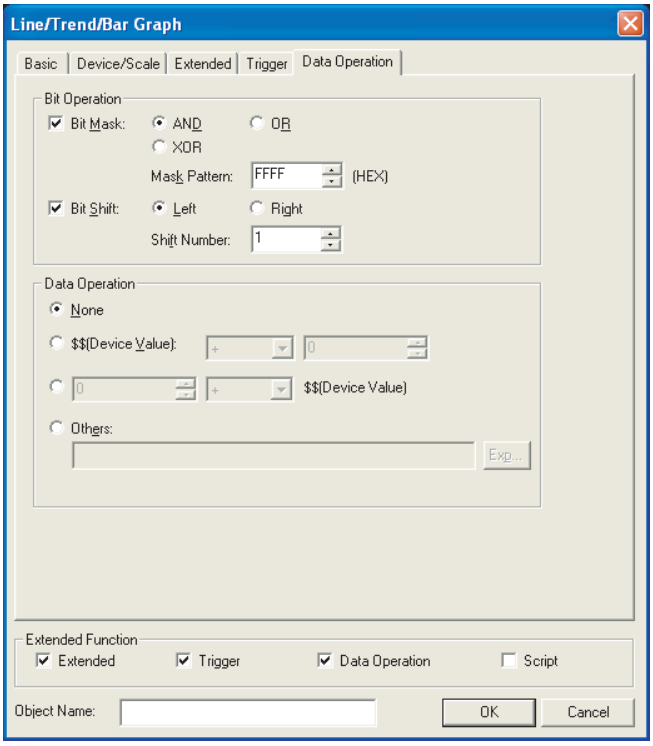
The setting for the [Collect data only when trigger conditions are satisfied] can be used with combining various graphs.
The following shows an example in which a line graph and a trend graph are used in combination.



## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values.
Check Extended Function at the bottom of the dialog box to display this tab.
For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



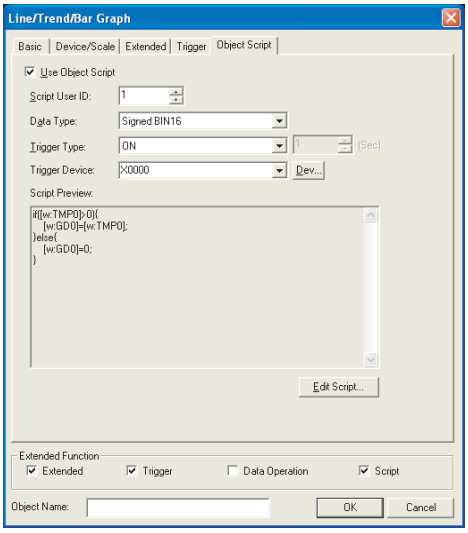

Basic | Device/Scale | Extended | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame Color | frame_color | ○ | × |
| | Plate Color | plate_color | ○ | 4) |
| 3 Extended | Upper (X) | scale_max[0] | ○ | 4) |
| | Upper (Y) | scale_max[1] | ○ | 4) |
| | Lower (X) | scale_min[0] | ○ | 4) |
| | Lower (Y) | scale_min[1] | ○ | 4) |
| | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.5.5 Precautions

This section provides the precautions when using the bar graph function.

### 1 Precautions for drawing

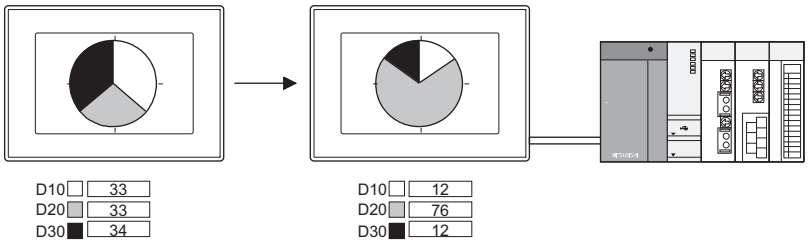
(1) Maximum number of objects that can be arranged (set) for one screen
For bar graph, up to 1000 objects can be arranged (set) for one screen.

(2) When setting [Collect data only when trigger conditions are satisfied]
Do not make a setting in which the trigger is met simultaneously for 257 or more objects for which [Collect data only when trigger conditions are satisfied] is set.
The 258th or later objects are disabled even if the trigger is met and are not displayed correctly (causing system alarm).

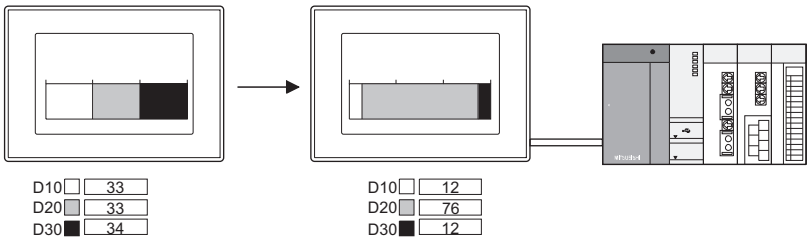
# 10.6 Statistics Graph

The statistics pie/bar graph shows the data ratio of multiple word devices to the total data value.

## 1 Statistics pie graph




## 2 Statistics bar graph

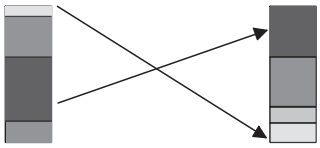



Application example

| Displaying the graph with the data list on one screen | Sorting the corresponding graph sections according to device values |
|---|---|
| ☞ Section 7.2 Data List | ☞ Set in Extended tab |

| No. | | Ma. name | Target vol. | Prod. vol. |
|---|---|---|---|---|
| 1 | | Ma. 1 | 5000 | 2000 |
| 2 | | Ma. 2 | 5000 | 1200 |
| 3 | | Ma. 3 | 5000 | 1000 |

Device status can be displayed more effectively by including the line graph legend.



The sections are sorted in the ascending/descending order of device values.

## 10.6.1 Relevant settings

For statistics graph, relevant settings are available in addition to the settings described in this section. Make the settings by referring the following description, if necessary.

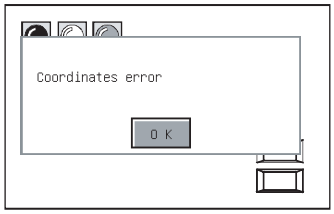
(1) Functions relevant to statistics graph and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

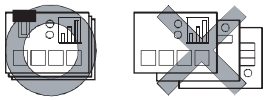
(1) Functions relevant to statistics graph and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

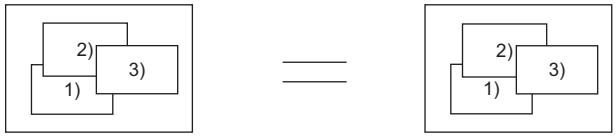


Setting items
• [Carry out check for overlapping objects within GOT]

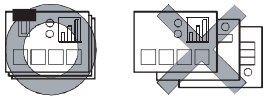
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen

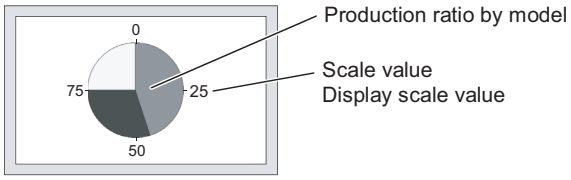


Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

## 10.6.2 Required knowledge for statistics graph setting

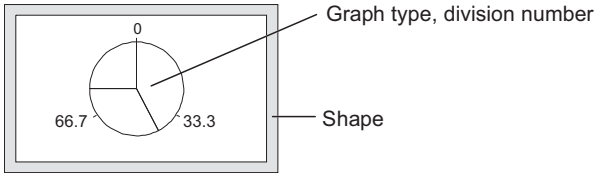
The following 1 to 2 tabs can be used for setting statistics graph basic function.
The procedure for setting the statistics graph is shown as follows.

Example: Statistics pie graph displaying the production ratio by model
Type A : D10
Type B : D11
Type C : D12



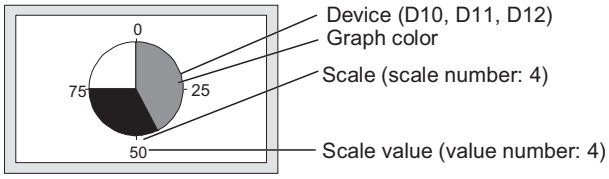

1 Basic tab

It is to set the graph type, division number (number of divided sections) and shape.




2 Device/Scale tab

It is to set the monitor device, graph color, scale and scale value.



## 10.6.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Statistics Pie Graph/Statistics Bar Graph].
   - Select [Object] → [Graph] → [Statistics Pie Graph]/[Statistics Bar Graph] from the menu.
2. Click on the position where the statistics graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged statistics graph to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

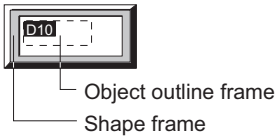
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

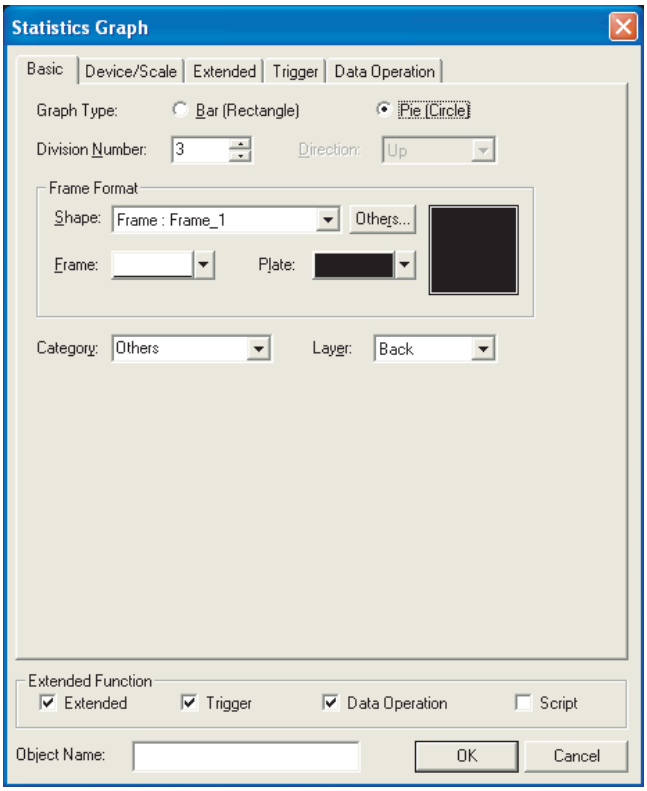
☞ Section 5.3.3 Object size change



## 10.6.4 Setting items

### 1 Basic tab

It is to set the graph type (statistics bar graph, statistics pie graph), division number (number of divided sections) and shape.

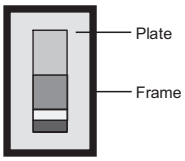



Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Graph Type | | Select the statistics graph type (statistics bar graph/statistics pie graph). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Division Number | | Set the number of word devices to be monitored (2 to 32). | |
| Direction | | Select the setting direction of device to be set in [Statistics Bar Graph].<br>Up: D12, D11, D10<br>Down: D10, D11, D12<br>Right: D10 D11 D12<br>Left: D12 D11 D10 | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |

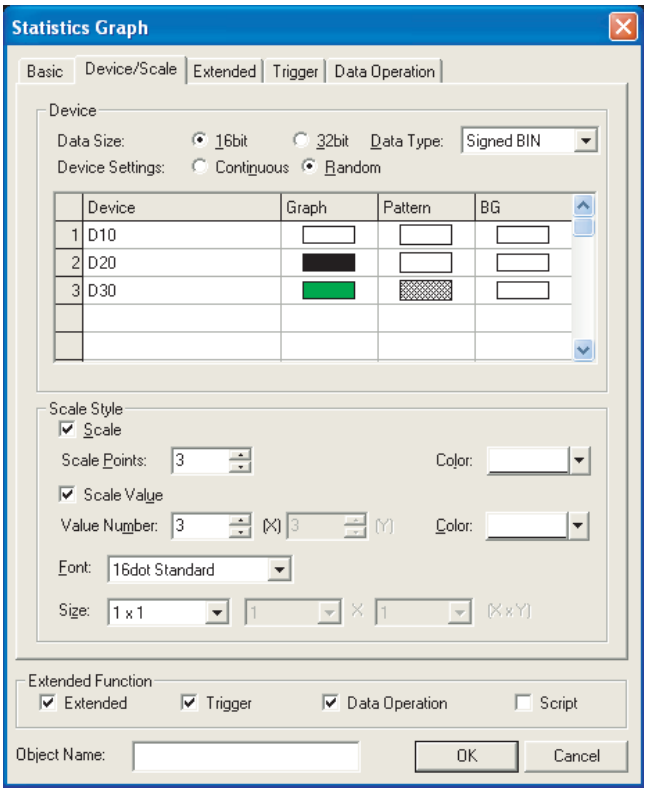
(Continued to next page)

Basic | Device/Scale | Extended | Trigger | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Frame Format | Frame<br>Plate | Select the frame color/plate color.<br>  <br> | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Category | | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | GT16 GT15 SoftGOT1000 GT11 GT10 |

## 2 Device/Scale tab

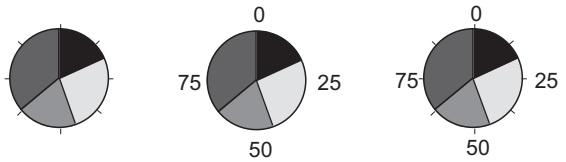
It is to set monitor device and graph display attribute (graph color, scale).




Basic | **Device/Scale** | Extended | Trigger | Data Operation | Object Script

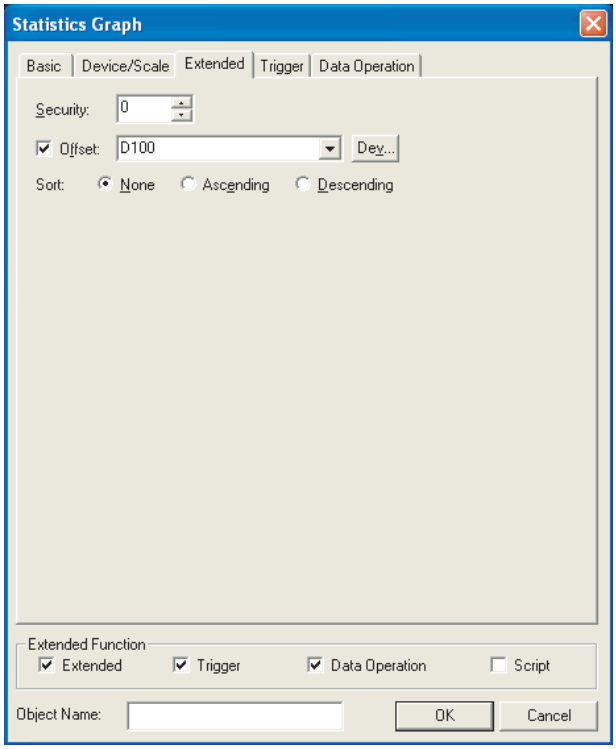
| Items | | Description | Model |
|---|---|---|---|
| Device | Data Size | Select a data size (16bit/32bit) for the word device. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>BCD : Treats the word device value as a BCD (binary decimal) value.<br>Real : Treats the word device value as a floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Device Settings | Select the method of setting the device to be monitored.<br>(For GT10, [Random] cannot be selected.)<br>Continuous : Set the devices as many as the number of divided sections continuously.<br>Random : Set the devices as many as the number of divided sections randomly. | |
| | Display Attribute List | Set the graph attributes.<br>Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows:<br>Device : Enter the word device name here, or click on the Dev button and select a word device from the given options to set the word device for monitoring.<br>(☞ Section 5.1 Device Setting)<br>Graph : Select the graph color.<br>Pattern : Select the filling pattern of the graph.<br>BG : Select the background color of the graph.<br>Example: BG : ■<br>Pattern : ▩<br>Graph : □<br>Pattern + Graph color<br>BG color | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale value of statistics graph.<br>Example:<br>  <br><br>Scale points: 8 Scale value: 4 Combined display of scale and scale value | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of scale points (0, 2 to101) and the scale color.<br>Once this is set, the space between each scale tick is automatically defined.<br>Entering "0" to Scale Points hides the scale. | |
| | Scale Value | Check this item to display the scale numerically.<br>After checking it, set the Value Number (0, 2 to 101), Color, Font and Size (0.5 to 8).<br>For the Font, the following options are selectable. Note that values available for the Size vary depending on the selected font.<br>• 6x8dot : 1 x 1 (Fixed)<br>• 12dot Standard : 1 x 1 to 8 x 8<br>• 16dot Standard : 0.5 x 0.5 to 8 x 8<br>For details of each fonts and size, refer to the following:<br>(☞ Section 2.2 Figures and Data Capacity)<br><br>Entering "0" to Scale Points hides the scale | |

## 3 Extended tab

Set the security, offset and the order displaying graphs (sort).
Check the [Extended Function] at the bottom of dialog box to display this tab.



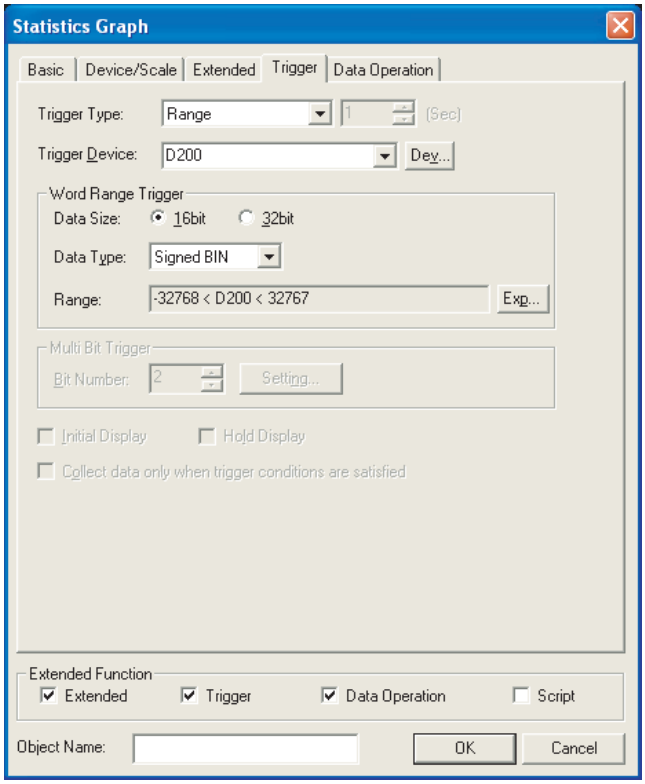

Basic | Device/Scale | **Extended** | Trigger | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Security | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Offset | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data length is fixed to 16 bits. | |
| Sort | Select the sorting type and check the corresponding check box.<br>None : Sort is invalid. (Graph sections are displayed in the device setting order.)<br>Ascending : Arrange from small value to large value.<br>Descending : Arrange from large value to small value.<br>[Ascending] Bar graph<br> <br>Pie graph<br> <br>[Descending] Bar graph<br> <br>Pie graph<br> | |

## 4 Trigger tab

Set conditions for displaying the object, i.e., trigger.
Setting on this tab is displayed by checking the corresponding [Extended Function] at the bottom of the dialog box.
For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting




Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Trigger Type | | Select trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>(For GT10, [Rise], [Fall], [Sampling], [Range], and [Bit Trigger] cannot be selected.)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • Range • Bit Trigger | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Trigger Device | | Specify the device used for the trigger. | |
| Word Range Trigger | | When [Range] is selected in [Trigger Type], set the following items. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of word device (Signed BIN/Unsigned BIN/Real).<br>Real can be set only if [32bit] is selected in [Data Size]. | |
| | Range | Click on the [Range] button and set conditional expression for the word device range. | |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.<br>After setting, click on the [Setting] button and set the bit devices and their triggers. | |
| Initial Display | | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |

(Continued to next page)

Basic | Device/Scale | Extended | **Trigger** | Data Operation | Object Script

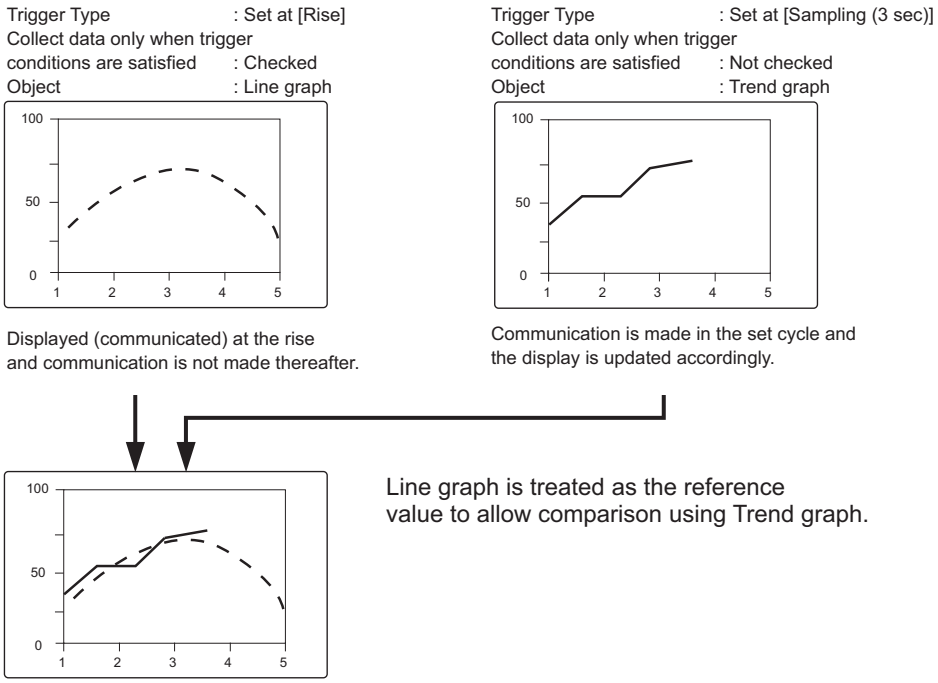
| Items | Description | Model |
|---|---|---|
| Hold Display | When [ON], [OFF], or [Bit Trigger] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.<br>If not checked, the object will be deleted when the trigger is not satisfied | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Collect data only when trigger conditions are satisfied | Check this item when collecting the data only when the trigger of display set for [Trigger Type] is met.<br>Setting is possible when [Rise], [Fall] or [Sampling] is selected.<br>For displaying the data in graph, communication is made with a controller even when display trigger is not satisfied.<br>By selecting this item, since communication with a controller is made only when the trigger is met, load due to communication between the GOT and a controller can be reduced. *1 | |

For details of *1, refer to the following.

*1 Conditions for which the selection of [Collect data only when trigger conditions are satisfied] is effective

For the graph that does not require frequent update, it is possible to reduce the number of communication execution times by checking the [Collect data only when trigger conditions are satisfied] item.
For the graph that requires frequent update and display, it is recommended not to check the [Collect data only when trigger conditions are satisfied] item (to enable continuous communications to obtain device values) because screen refresh may be delayed to fail correct graph display if this item is checked.

The setting for the [Collect data only when trigger conditions are satisfied] can be used with combining various graphs.
The following shows an example in which a line graph and a trend graph are used in combination.

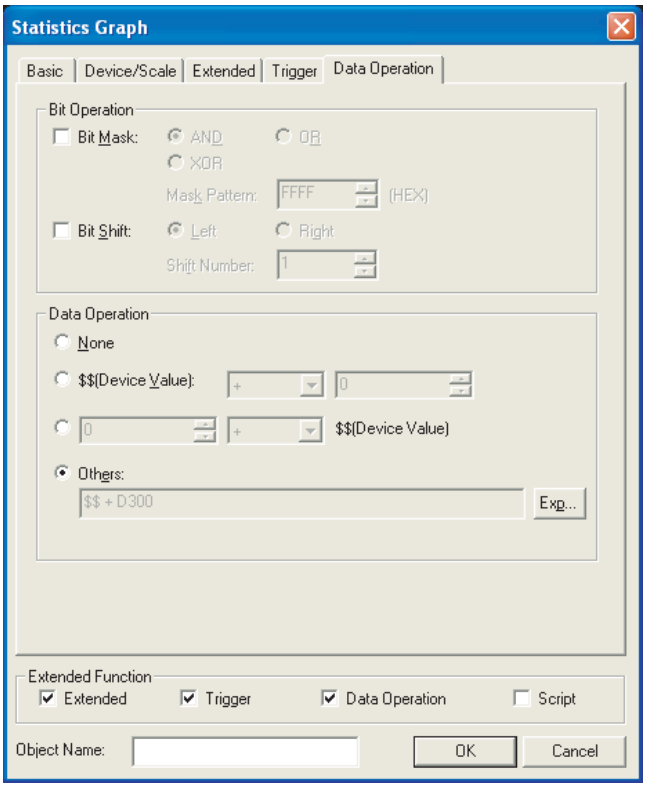


## 5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding "Extended Function" at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



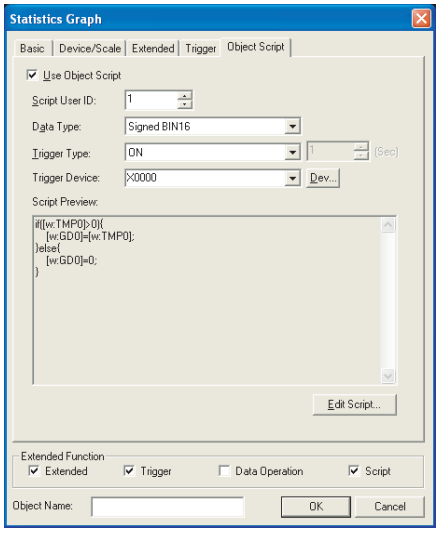

Basic | Device/Scale | Extended | Trigger | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 6 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame Color | plate_color | ○ | × |
| | Plate Color | scale_max[0] | ○ | 4) |
| 3 Option | Security | plate_color | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.6.5 Precautions

This section provides the precautions for using statistics graph function.

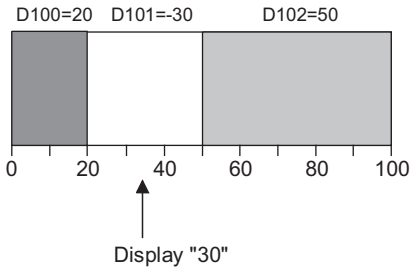
### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
For the statistics graph function, up to 32 objects can be set.

(2) When setting [Collect data only when trigger conditions are satisfied]
Do not make a setting in which the trigger is met simultaneously for 257 or more objects for which [Collect data only when trigger conditions are satisfied] is set.
The 258th or later objects are disabled even if the trigger is met and are not displayed correctly (causing system alarm).

### 2 Precautions for use

(1) When device values are negative
For statistic graph, the absolute value is displayed when monitor device value is a negative number.
Example: When D101 is "—30"



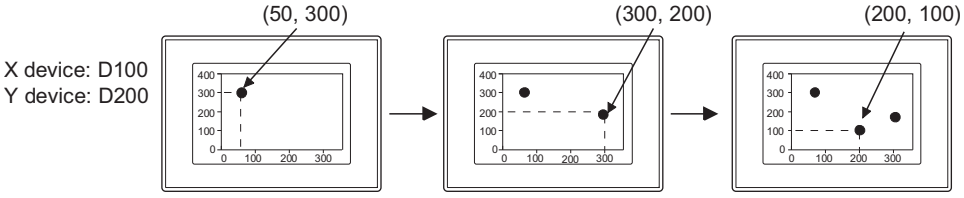

(2) Filling
When handling extremely small data in a statistics pie graph, the start point may coincide with the end point.
If this occurs, no filling is performed.

# 10.7 Scatter Graph

By taking the values of 2 word devices as X and Y coordinates, a corresponding point is displayed on the graph.

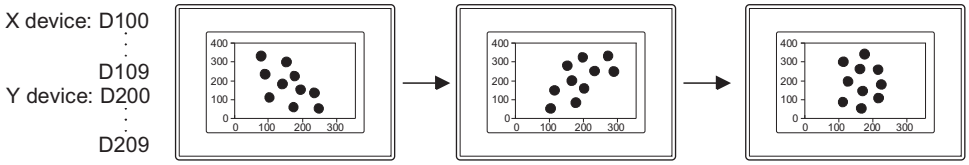
## 1 Sample

Two word device values are collected, and then displayed as a point on the graph.
This graph is updated to the new one with the previously displayed point(s) remained. (Locus)




## 2 Batch

Multiple data of 2 word device values are collected together and displayed as corresponding points.
When refreshing the data, the previously displayed point(s) can be either kept or erased depending on the setting selection.



## 10.7.1 Relevant settings

For scatter graph, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

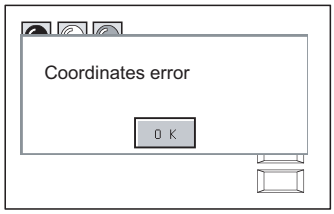
(1) Functions relevant to scatter graph and others
…Confirm the relevant functions, when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

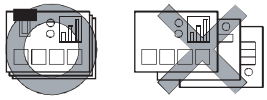
(1) Functions relevant to scatter graph and others

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

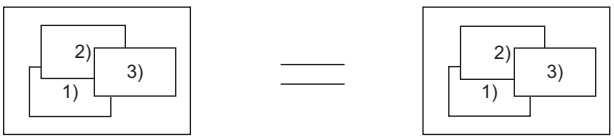


Setting items
• [Carry out check for overlapping objects within GOT]

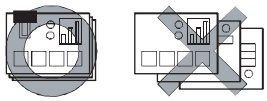
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen



Setting items
• [Adjust object display order in GOT to the one in GT Designer2]

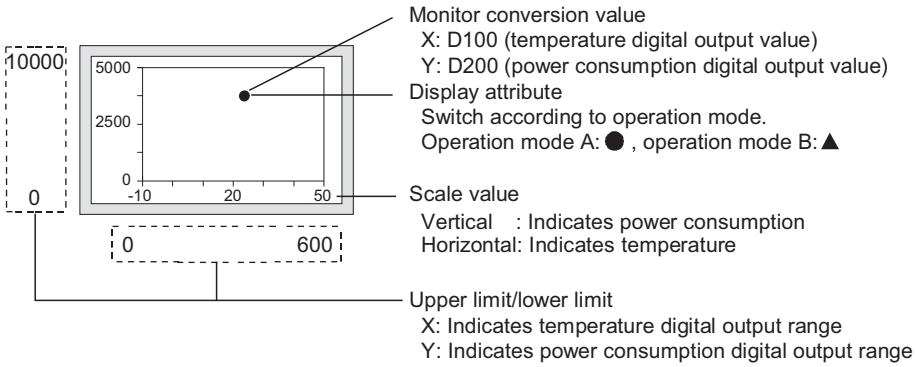
## 10.7.2 Required knowledge for scatter graph setting

### 1 Setting method of scatter graph

Set basic function of the scatter graph on the following tabs 1 to` 5.
The following example explains the general setting procedure.

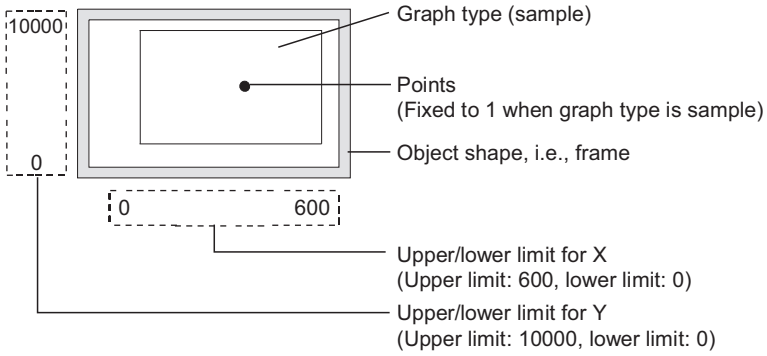
Example: A scatter graph to display power consumption and temperature during line operation

| | |
|---|---|
| Digital output range for temperature | : 0 to 600 |
| Digital output range for power consumption | : 0 to 10000 |
| Power consumption variation range | : 0 to 5000W |
| Temperature variation range | : -10 to 50℃ |
| Conversion value (Digital output value of temperature) | : D100 |
| Conversion value (Digital output value of power consumption) | : D200 |



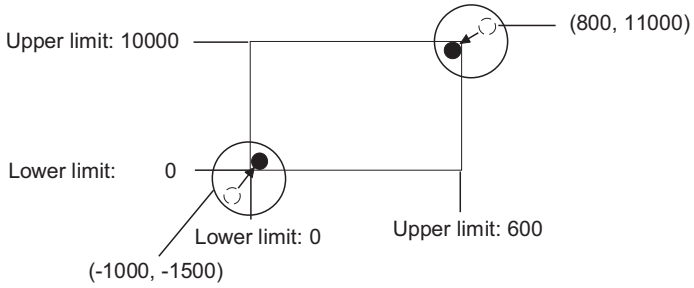

1 Basic tab

Set the graph type, upper/lower limit values and object shapes.



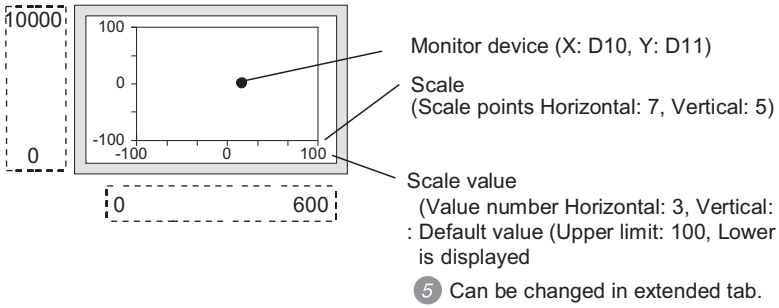

**Remark** Display of values beyond the upper/lower limit

When a value of the monitored device exceeds the upper or lower limit, it will be displayed numerically on the graph.



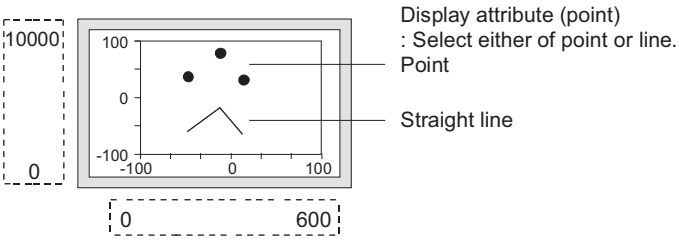
## 2 Device/Scale tab

Set the monitor devices, scale, and scale values.




## 3 Attribute tab

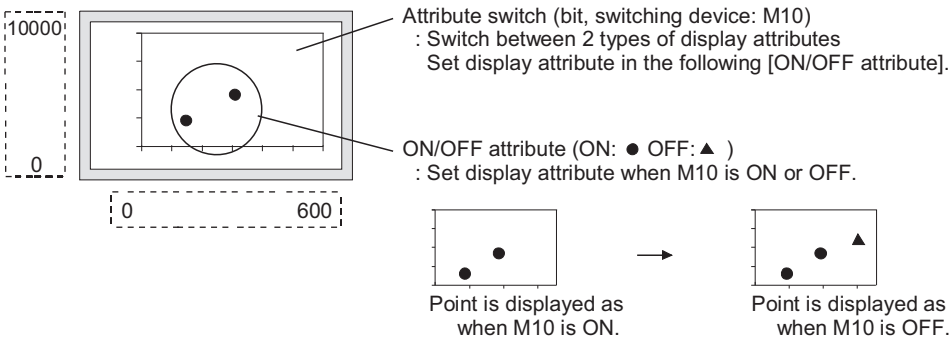
Set the type (point/line) of graph display attribute.




## 4 Trigger tab

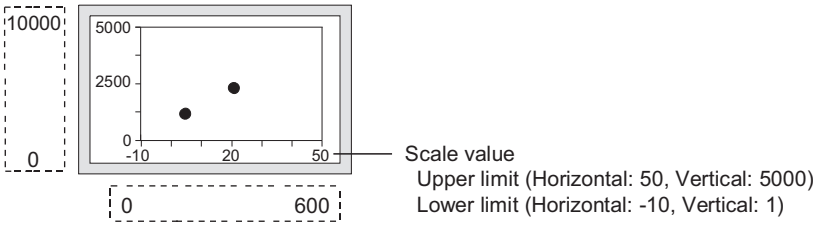
Set the graph display method.

- Switch display attribute : Make setting on this to change the display attribute set in 3 according to the condition of a specified switching device.
- Data collection timing : Set the sampling of data to 600 seconds in this case. The default value is set to 1 second.




## 5 Extended tab

Change the scale values.



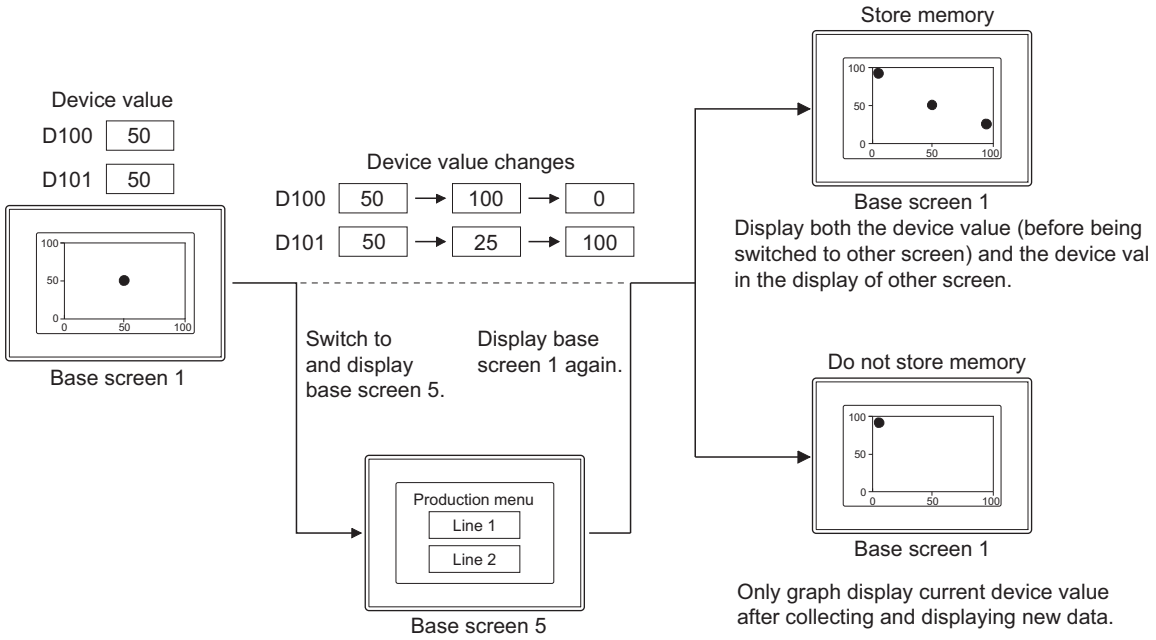
## 2 Store memory

Executing following operations will clear the graph on screen or collected data (device value: 0).
Therefore, enable "Store memory" so that the collected data will be held.
"Store memory" is provided on the Extended tab.

| Item | | When Store Memory not set | When Store Memory set |
|---|---|---|---|
| Screen switching/Switching to the utility | Screen with scatter graph set → Screen with scatter graph not set | Stores the device value | Stores the device value |
| | Screen with scatter graph not set → Screen with scatter graph set | Erases the display. Changes the device value to 0. | Stores the display. Stores the device value. |
| Use Language Switching | | | |
| Switching base screen when scatter graph is displayed on a superimpose window | | | |
| Switching security level | | | |
| Switching station No. switching device | | | |

*1 If switch the security level on the Security-Password screen or switch the device value set for the level device when Store Memory is not set, the display is erased or the device value is changed to 0.

Example: Screen switching operation
Graph type [Sample], X-device: D100, Y-device: D101




(1) The maximum sampling results which can be stored in the memory
Up to 2000 points displayed in scatter graph can be saved in the internal memory.
The following shows the upper limit for each graph type of the scatter graph (sample, batch).

- Sample ····· 2000 times
- Batch ····· $\left(\frac{2000}{\text{Points}}\right)$ times (Round off the part after decimal point)

For the case that the number of displayed points exceed 2000, make setting for [Operation at frequency over time] on the Extended tab.

- Interrupt . . . . . Interrupts data collection
- Initialize and continue . . Clears the internal memory, erase the scatter graph display and collects data again.

**Hint!** Displaying an error message when the sampling number reaches the maximum

An error message can be displayed when the storage sampling number has reached the maximum.

(☞ Section 8.7 System Alarm Display)

(2) Conditions for when the stored memory data is erased

(a) When the clear trigger condition is satisfied

(b) When the number of sampling data available for storage in memory exceeds the maximum (Only when setting [Operation at frequency over time] to [Initialize and continue])

(c) When GOT is reset or power supply is turned OFF

(d) When the project is downloaded

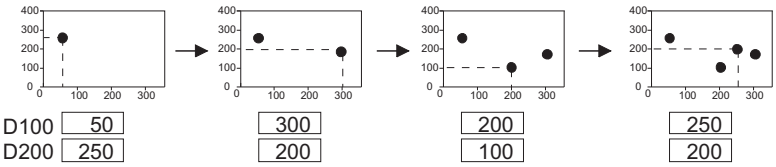
(e) When the drive information is displayed

(f) Execution of operation of which GOT is restart in utility

## 3 Accumulate/Average

The accumulation frequency and the average/maximum/minimum of the data collected in the scatter graph can be written to devices.

Example: X-device: D100, Y-device: D200




| Contents to be written | | Value that has been written |
|---|---|---|
| Accumulation Frequency | | 4 |
| X | Average Value | 200 |
| | Maximum | 300 |
| | Minimum | 50 |
| Y | Average Value | 187 |
| | Maximum | 250 |
| | Minimum | 100 |

**Remark**

(1) Average value

(a) The fractions below the decimal point of the average value are rounded off. If the data type (set on the Device/Scale tab) of the monitor device is real, however, fractions below the decimal point will be written.

(b) Since the average value is calculated on the basis of the average values of every sampling, it is probable to have an error.

(2) Maximum and minimum values

When the value of the monitor device exceeds the upper or lower limit of the scatter graph, the upper or lower limit value will be written as the maximum or minimum accordingly.

(1) Upper limit of sampling number available for accumulation frequency/average value

The upper limit of the sampling number that can be counted as accumulation frequency/average value varies according to the data type (set on the Device/Scale tab) of the monitor device.

[Data Type of Monitor Device]

- Unsigned BIN, Signed BIN, Real, BCD (32 bit) : 65535
- BCD (16 bit) : 9999

When the accumulation frequency exceeds the upper limit, please set the operation in [Operation at frequency over time] of the extended tab.

- Interrupt . . . . . Interrupts the sampling of data.
- Initialize and continue. . . . . Initializes the value of the accumulation frequency, and then recollects data.

**Hint!**

Displaying an error message when the accumulation frequency value exceeds the upper limit

When the accumulation frequency value exceeds the upper limit, an error message can be displayed in the alarm list (system alarm).

(☞ Section 8.7 System Alarm Display)

(2) Initialization timing of accumulation frequency/average value/maximum/minimum
Value "0" is written to the accumulation frequency/average value/maximum/minimum in the following timing.

(a) When the conditions for the clear trigger (set in the Trigger tab) are satisfied

(b) When the accumulation frequency value exceeds the upper limit
(Only when setting [Operation at frequency over time] to [Initialize and continue])

(c) When switching the screen

- When switching the screen (base screen, window screen) with scatter graph arranged
When switching the screen with scatter graph arranged to other screens, the current accumulation frequency/average value will be held. However, when the screen is switched back to the previous screen, the data will be initialized.
- When switching the base screen
The scatter graph arranged in superimpose window will be initialized when the base screen is switched over.

(d) When the security level is changed

(e) When the station number is changed

**Remark**

Executing "the accumulation frequency/average value write" and the "store memory" simultaneously

If the "accumulation frequency/average value" and "store memory" are used simultaneously, the data of accumulation frequency/average value will still be collected even when the screen is switched to others.
However, accumulation frequency/average value can be written until the time that the sampling number for store memory reaches the maximum.
Refer to the following for the maximum sampling number of store memory.

☞ This section 2 Store memory

## 10.7.3 Arrangement and settings

1. Carry out either of the following operations.
   - Click on [Scatter Graph].
   - Select [Object] → [Graph] → [Scatter Graph] from the menu.
2. Click on the position where the scatter graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
3. Double click on the arranged scatter graph to display the setting dialog box. Make the settings with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

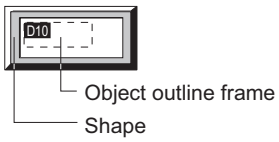
GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

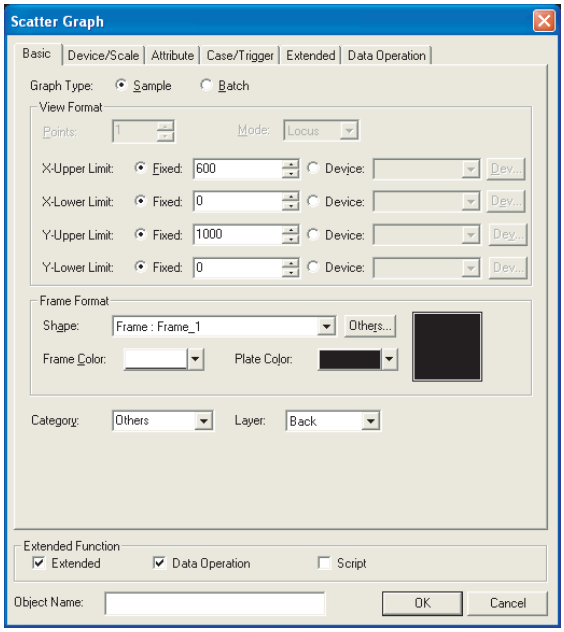
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

Section 5.3.3 Object size change



## 1 Basic tab

Set the graph type, upper limit/lower limit and shape.




Basic | Device/Scale | Attribute | Case/Trigger | Case | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Graph Type | | Select the graph type (sample/batch). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| View Format | Points | Set the points (2 to 500) to be displayed in the graph of [Batch]. | |
| | Mode | Select how to update the graph display of [Batch].<br>Replacement : Only displays the graph of the latest data.<br>Locus : Displays the latest data with the previous displayed graph overlapped. | |
| | X: Upper Limit/ Lower Limit<br>Y: Upper Limit/ Lower Limit | Select whether to set the range (upper limit/lower limit of X/Y) of device displayed in scatter graph in fixed value or in the value of the specified device.<br>Fixed : Set a fixed value to the upper limit/lower limit.<br>Device : Set a device value as the upper limit /lower limit.<br>(☞ Section 5.1 Device Setting)<br>The range of the upper limit/lower limit that can be set depends on the data type of the monitor device. Set the data type (set in the Device/Scale tab) in advance. | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the [Others] button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.3 Object size change) | |
| | Frame Color | Select the frame color/plate color.<br>Plate color<br>Frame color | |
| | Plate Color | | |

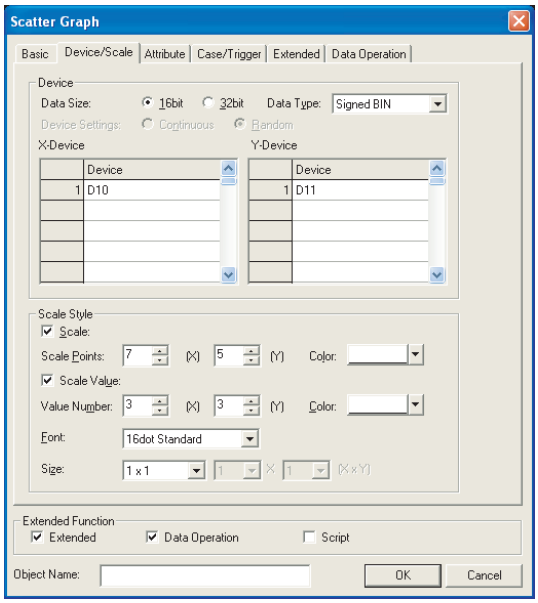
(Continued to next page)

Basic | Device/Scale | Attribute | Case/Trigger | Case | Extended | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 Device/Scale tab

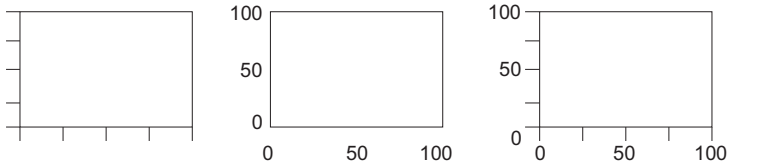
Set the devices to be monitored and the scale displayed in the graph.




Basic | **Device/Scale** | Attribute | Case/Trigger | Case | Extended | Data Operation | Object Script

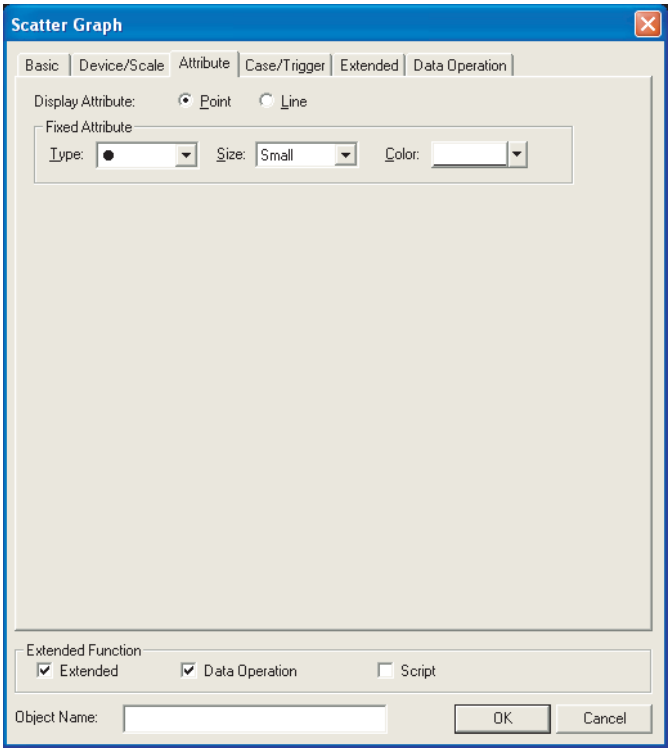
| Items | | Description | Model |
|---|---|---|---|
| Device | Data Size | Select a data size (16bit/32bit) for the word device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].) | |
| | Device Settings | Select the setting method for monitoring devices when [Batch] is used.<br>Continue : The device to be monitored at the first point in the graph will be set as the head device.<br>Random : Devices to be monitored are set at random. | |
| | X-Device/ Y-Device | Input the device directly for each of X and Y axes, or click on the ▼ button to set the monitor word device. (☞ Section 5.1 Device Setting) | |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| Scale Style | | Set the scale and scale values for the scatter graph.<br>Example:<br>  <br><br>Scale display (X:5, Y:5)<br>Scale value display (X:3, Y:3)<br>Combine the scale display and scale value display | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Scale | Check this item to display the scale.<br>After checking, set the number of scale points (i.e. tick marks) (2 to101) and the scale color.<br>Once this is set, the space between each scale tick is automatically defined. | |
| | Scale Value | Check this item to display the scale by using numeric values.<br>After checking, set [Value Number] (2 to 101), [Font] and [Size] (0.5 to 8).<br>For Font, the following items can be selected.<br>And, the setting enabled value for [Size] varies depending on the [Font] selected.<br>• 6 x 8dot : 1 x 1 (Fix)<br>• 12dot Standard : 1 x 1 to 8 x 8<br>• 16dot Standard : 0.5 x 0.5 to 8 x 8<br><br>The default numeric values for both X and Y axes are set within the range from -100 to 100.<br>When changing the numeric values, set the upper limit/lower limit values for the scale value in the extended tab. | |

## 3 Attribute tab

Set the display attribute (type of point/line) of scatter graph.

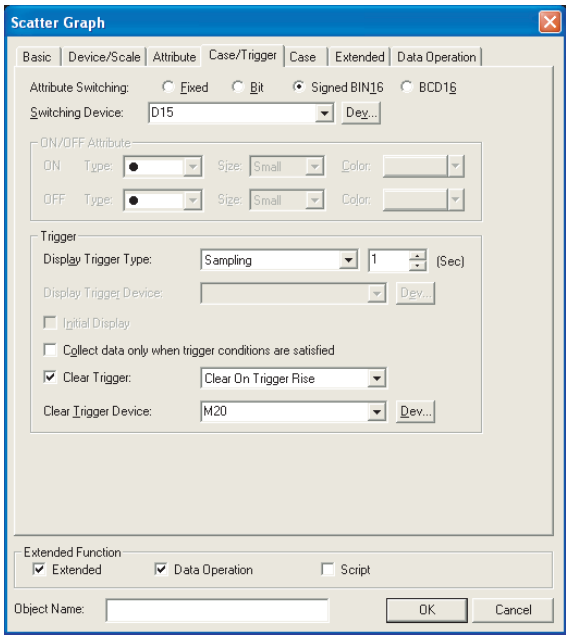



Basic | Device/Scale | **Attribute** | Case/Trigger | Case | Extended | Data Operation | Object Script

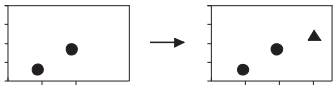
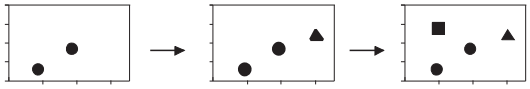
| Items | | Description | Model |
|---|---|---|---|
| Display Attribute | | Select the display attribute (point/line) of scatter graph. | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| Fixed Attribute | | Set display attribute for the case that [Fixed] is selected for [Attribute Switching] on the Trigger tab. | |
| | Type | Select the type of the point/line that indicates coordinate position.<br>Type of point :<br>Type of line :<br>When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line. | |
| | Size | Select the size of the point (large, medium, small)/line (1 to 7). | |
| | Color | Select the display color of the point/line. | |

## 4 Case/Trigger tab

Set the display attribute switching of scatter graph, updating of graph display and timing of erasure.

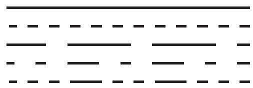



Basic | Device/Scale | Attribute | **Case/Trigger** | Case | Extended | Data Operation | Object Script

| Items | Description | Model |
|---|---|---|
| Attribute Switching | Select the switching display attributes for the scatter graph (type, size and color of point/line)<br>Fixed : The display attribute is not switched.<br>The display attribute set on the Attribute tab is used.<br>Bit : The display attribute is switched depending on the bit device conditions ON/OFF.<br>Signed BIN16 : The display attribute is switched between multiple settings depending on the word device value (16-bit binary value).<br>BCD16 : The display attribute is switched between multiple settings depending on the word device (16-bit BCD (Binary Coded Decimal)).<br>When [Bit] is selected, set the display attribute in [ON/OFF Attribute] of this tab.<br>When [Signed BIN16] or [BCD16] is selected, set it on the Case tab.<br><br>Example1: Attribute switching: [Bit], Switching device: M10<br>  <br>M10: ON<br>Points are displayed as ●.<br>M10: OFF<br>Points are displayed as ▲.<br><br>Example2: Attribute switching: [Signed BIN16], Switching device: D10<br>  <br>D10 = 1<br>Points are displayed as ●.<br>D10 = 10<br>Points are displayed as ▲.<br>D10 < 100<br>Points are displayed as ■. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Switching Device | Set the device for display switching.<br>(☞ Section 5.1 Device Setting) | |

(Continued to next page)

Basic | Device/Scale | Attribute | **Case/Trigger** | Case | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| ON/OFF Attribute | | Set the display attribute for ON/OFF statuses of the display-switching bit device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Type | Select the type of the point/line that indicates coordinate position.<br>Type of point : ● ■ ▲ + ○ □ △ ×<br>Type of line :  <br>When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line. | |
| | Size | Select the size of the point (large, medium, small) /line (1 to 7). | |
| | Color | Select the display color of the point/line. | |
| Trigger | Display Trigger Type*1 | Select the trigger for displaying the object.<br>When [Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit.<br>( Section 5.5 Trigger Setting)<br>• Ordinary • Sampling • Fall • OFF sampling<br>• Rise • ON sampling | |
| | Display Trigger Device | Specify the device used for the trigger. | |
| | Initial Display | When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied. | |
| | Collect data only when trigger conditions are satisfied | Check this item when collecting the data only when the trigger of display set for [Trigger Type] is met.<br>For displaying the data in graph, communication is made with a controller even when display trigger is not satisfied.<br>By selecting this item, since communication with a controller is made only when the trigger is met, load due to communication between the GOT and a controller can be reduced. *2 | |
| | Clear Trigger*3 | Check this item to set the trigger for erasing the display of graphs.<br>After checking, select the timing of erasing graph display.<br>Rise : Erases the graph at rise (turns ON) of bit device.<br>Fall : Erases the graph at fall (turns OFF) of bit device.<br>The clear trigger will clear graph display stored in memory and the accumulation frequency/average value. | |
| | Clear Trigger Device | Assigning a device to function as a clear trigger.<br>( Section 5.1 Device Setting)<br>When the trigger type is set to [Sampling], [ON Sampling] or [OFF Sampling], make sure to hold the clear trigger device status for more than the sampling cycle set in [Trigger Type]. | |

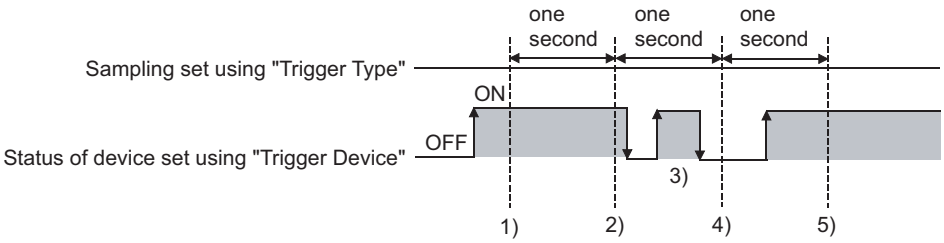
For details of *1 to *3, refer to the following.

*1 If the graph display is not updated at the set sampling cycle

(1) Updated timing at setting "ON Sampling" or "OFF sampling"
When setting [ON Sampling] or [OFF Sampling], there are cases that the graph is not updated at the set sampling cycle.
Causes of this problem and the countermeasures to the above are explained below.

(a) Causes
The status of the device is checked at the each sampling set in the "Trigger Type".
When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling to one second)




At the timing of 1), the scatter graph is updated.
At the timing of 2), the scatter graph is updated.
At the timing of 3), the scatter graph is not updated because is unmatchable to Sampling.
At the timing of 4), the scatter graph is not updated because is unmatchable to the device condition.
At the timing of 5), the scatter graph is updated.

(b) Countermeasures
The sampling set using the "Trigger Type" is not depending on the status of the device. (The sampling is not changed even if turning on or off the device.)
To start the sampling using the device, set as follows.

1. Set "Rise" or "Fall" using "Trigger Type".
2. Program so that turn on or off the device at the timing to update the display using the sequence program.

(2) Updated timing when setting the either following sampling, "Sampling", "ON Sampling" or "OFF Sampling"
When setting [Sampling], [ON Sampling] or [OFF Sampling], graph updating timing differs depending on whether or not stored memory is used.

(a) Without setting store memory
Counting the sampling is started and reset at the following timing.
- At scatter graph displaying (displaying by screen switching or security level change etc.)
- At station No. switching
- At language switching
- At security level change

(b) With setting store memory
Counting the sampling is started and reset at the following timing.
- At starting GOT
- At project download
- When the drive information is displayed
- Execution of operation of which GOT is restart in utility

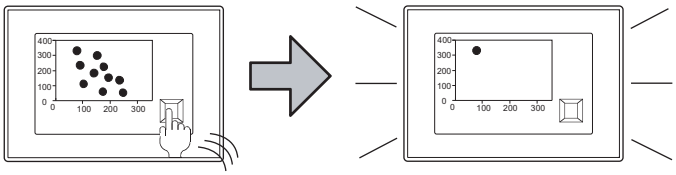
*2 Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).
When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

Example of holding the display for the sampling period set by [Display Trigger Type] or longer

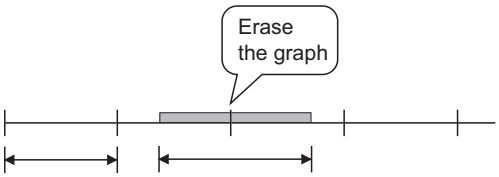
Clear Trigger : Set rise timing and M10 for the device
Display Trigger Type : Set to sampling (3 s)
Touch Switch : Set M10 for the device, bit momentary for Action and 4 s for OFF Delay

The condition of [Display Trigger Type]: Sampling (3 s) is met after pressing touch switch until the clear trigger (M10) turns off by the OFF Delay (4 s), and the graph is erased.




Touch the switch set for the clear trigger

The graph displaed previously erased.




Sampling (3 s)

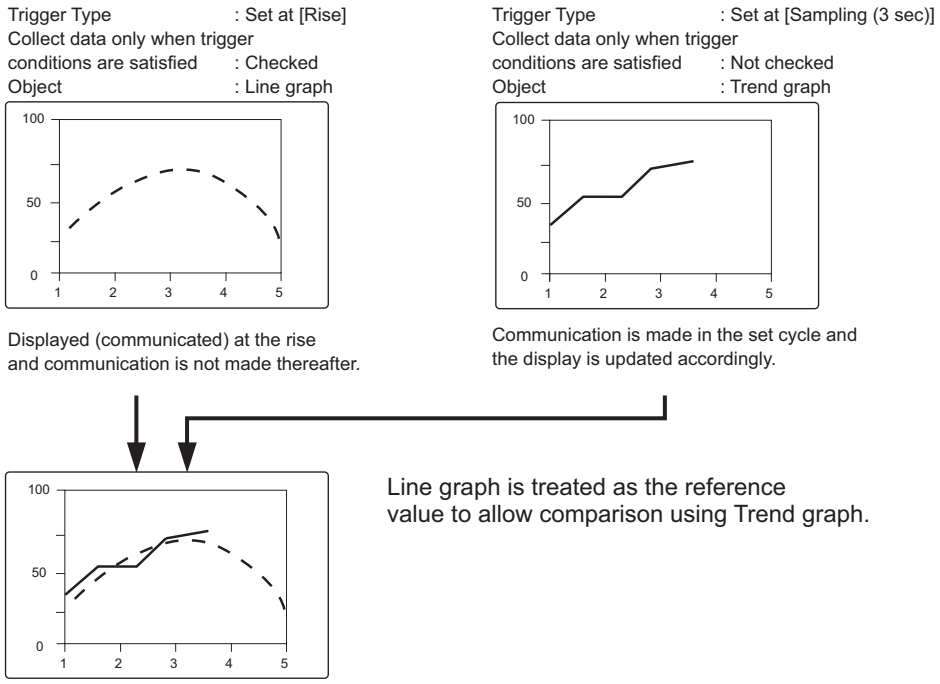
OFF delay touch switch: M10 (4 s)

*3 Conditions for which the selection of [Collect data only when trigger conditions are satisfied] is effective

For the graph that does not require frequent update, it is possible to reduce the number of communication execution times by checking the [Collect data only when trigger conditions are satisfied] item.
For the graph that requires frequent update and display, it is recommended not to check the [Collect data only when trigger conditions are satisfied] item (to enable continuous communications to obtain device values) because screen refresh may be delayed to fail correct graph display if this item is checked.

The setting for the [Collect data only when trigger conditions are satisfied] can be used with combining various graphs.

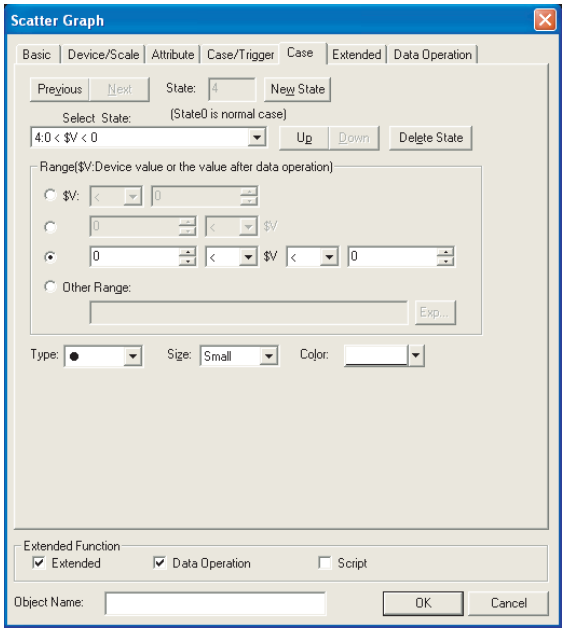
The following shows an example in which a line graph and a trend graph are used in combination.



## 5 Case tab

Set the attributes according to the state of device state condition.
This tab will be displayed only when [Attribute Switching] of the Trigger tab is set to [Signed BIN16] or [BCD16].
Refer to the following for details of state.

☞ Section 5.4 State Setting




Basic | Device/Scale | Attribute | Case/Trigger | **Case** | Extended | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| State*1 | | Make the setting for display conditions and object display for each state.<br>Up to 64 states can be set (including the normal case).<br>(State No. 0 indicates the normal case) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | New State | Creates a new state. | |
| | Delete State | Deletes a specified state. | |
| | Previous/Next | Switches the currently editing state to the previous or next state. | |
| | Up/Down | Changes the priority of the current state. | |
| | Select State | Displays the list of preset states.<br>Selecting any state from the list can make it active on the tab. | |
| | Range | Set the range of word device values for display change using a conditional expression. | |
| | Type | Select the type of the point/line that indicates coordinate position.<br>Type of point : ● ■ ▲ + ○ □ △ ×<br>Type of line : ═ ─ ┅ ┈<br>When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line. | |
| | Size | Select the size of the point (large, medium, small) /line (1 to 7). | |
| | Color | Select the display color of the point/line. | |

For details of *1, refer to the following.

*1 State

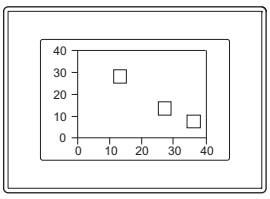
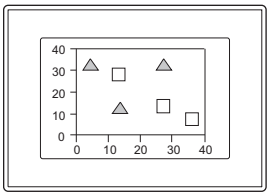
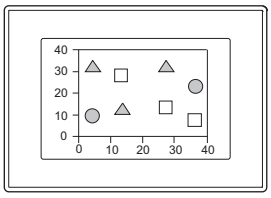
(1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Graph type : Sample,
Switching device : D10

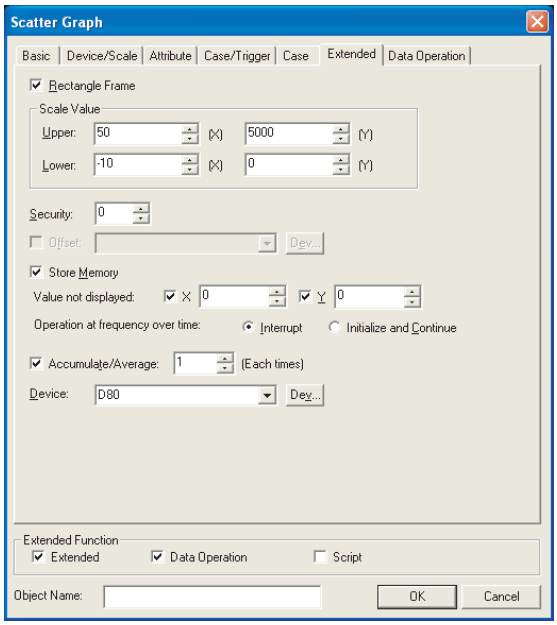
| Operation priority for setting overlap condition. | State No. | Display range | Type | Size | Color |
|---|---|---|---|---|---|
| High | 1 | 8<=$V<=12 | □ | Big | White |
| ↓ | 2 | 13<=$V<=18 | ▲ | Small | Black |
| Low | Normal case (State 0) | —— | ● | Big | Black |

*$V indicates the value of the monitor device.

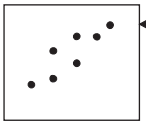
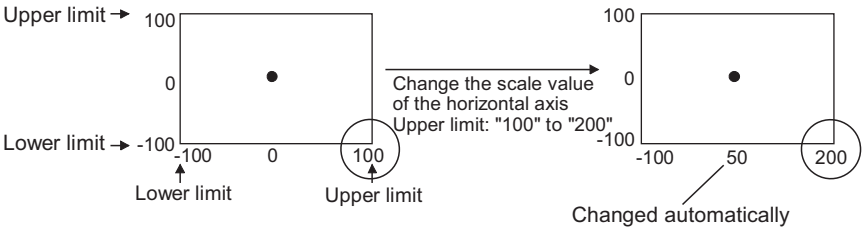
| | | |
|---|---|---|
| State 1 | When the value of the switching device is between 8 and 12 (8<=$V<=12), it will appear as big white quadrangle ( □ ). |  |
| State 2 | When the value of the switching device is between 13 and 18, it will appear as small black triangle ( ▲ ). |  |
| Normal case (State 0) | When other conditions except for the conditions of state 1 to 3 happen, it will appear as big black circle ( ● ). |  |

## 6 Extended tab

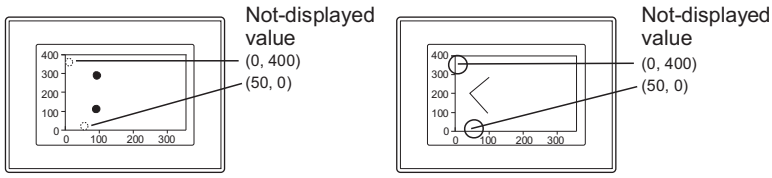
This tab allows the following attributes to be set:
Scale values, security, offset, and the write of collection data's accumulation data.
When the Extended Function at the bottom of the dialog box is checked, the tab is displayed.




Basic | Device/Scale | Attribute | Case/Trigger | Case | **Extended** | Data Operation | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Rectangle Frame | | Check this item to display the frame, i.e., shape for the graph.<br>  <br>Graph frame | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Scale Value | Upper<br>Lower | When changing a scale value, set the upper/lower limit values.<br>Set the scale value for vertical (Y axis) and/or horizontal (X axis) line.<br>Example: Change the upper limit scale value on Y<br>  <br> | |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | |
| Offset | | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>This setting cannot be set with "Store Memory" (Extended tab). | |

(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Store Memory | Check this item to enable data collection during display of the screen without a scatter graph.<br>Data of the points displayed in the graph are stored in the internal memory of GOT. | |
| Value not displayed | Check this item when setting the not-displayed value for X and/or Y of the scatter graph.<br>Example: [0] is set as not-displayed value for X and Y<br>  <br><br>Graph of [Point] Graph of [Line] | |
| Operation at frequency over time | Select the operation when the following functions exceed the maximum sampling number.<br>• Store memory : When exceeding the maximum display points (2000 points).<br>• Accumulation frequency : When accumulation frequency exceeds 65535/average value/maximum/minimum (9999).<br>Interrupt : Interrupts the data collection, and does not update the graph display.<br>Initialize and Continue : After erasing the graph display and initializing the memory and accumulation frequency/average value/maximum/minimum, continues data collection. | |
| Accumulate/Average | Check this item when writing the accumulation frequency/average value/maximum/minimum of collected data into devices.<br>Then, set the interval of writing the accumulation frequency/average value/maximum/minimum into devices by specifying the number of update times.<br>The value set as "Value not displayed" in the scatter graph display is not included.<br>When writing of the accumulation frequency/average value/maximum/minimum is enabled, "Store Memory" is enabled and trigger (sampling) is set to short, this may cause the object to refresh the display considerably slower.<br>In this case, set the writing interval to longer. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device | Set the head bit device to which the accumulation frequency/average value is written.<br>According to the data size (16bit/32bit) of the monitor device, the device range varies as follows.<br><br>Example: The device that has been set: n | |

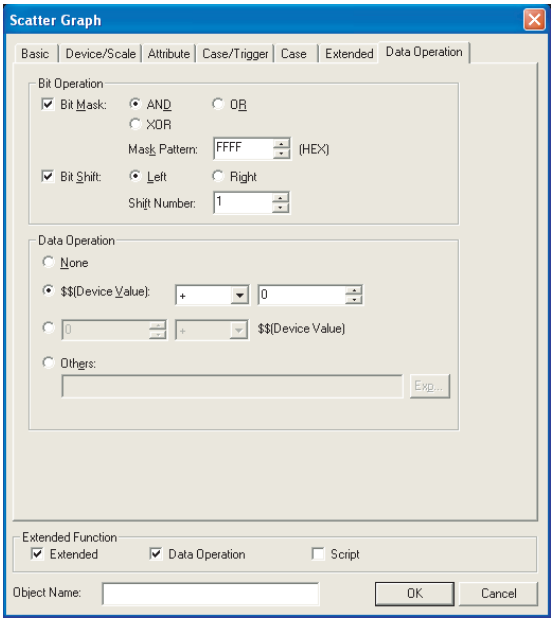
| Write contents | | When setting 16 bit (using 7 word) | When setting 32 bit (using 14 word) |
|---|---|---|---|
| Accumulation frequency | | n | n, n + 1 |
| X | Average value | n + 1 | n + 2, n + 3 |
| | Maximum | n + 2 | n + 4, n + 5 |
| | Minimum | n + 3 | n + 6, n + 7 |
| Y | Average value | n + 4 | n + 8, n + 9 |
| | Maximum | n + 5 | n + 10, n + 11 |
| | Minimum | n + 6 | n + 12, n + 13 |

## 7 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



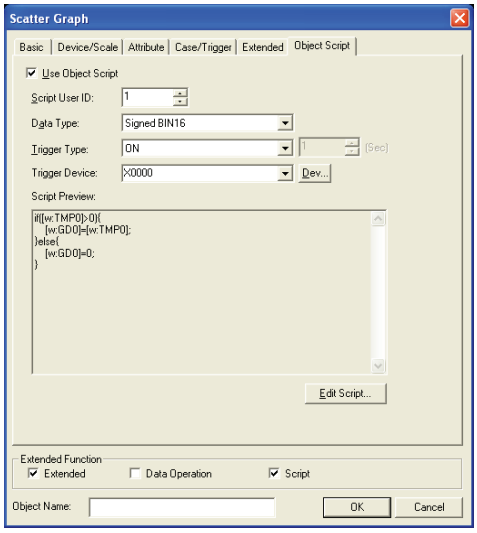

Basic | Device/Scale | Attribute | Case/Trigger | Case | Extended | **Data Operation** | Object Script

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND : Carries out logical AND.<br>OR : Carries out logical OR.<br>XOR : Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left : Left shift<br>Right : Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

## 8 Object script tab

For details of settings made on the object script tab, refer to the following

Section 16.3.6 1 (2) Object Script tab of display object scripts




(1) Correspondence between object setting and property

Reading/changing (writing) of object setting is possible with the object property.

The correspondence between the items for which setting can be read/written with the object property and the object setting dialog box is shown below.

○ : Execution is possible for the object property.

× : Execution is not possible for the object property.

- : Items that correspond to the object property do not exist in the setting dialog box

| Setting dialog box | | Object property | | |
|---|---|---|---|---|
| Tab name | Setting item | Property name | Read | Write*1 |
| - | - | active | ○ | 1) |
| | | x | ○ | 4) |
| | | y | ○ | 4) |
| | | width | ○ | × |
| | | height | ○ | × |
| 1 Basic | Frame Color | frame_color | ○ | × |
| | Plate Color | plate_color | ○ | 4) |
| 3 Attribute | Color | graph_color | ○ | 3) |
| 6 Extended | Upper (X) | scale_max[0] | ○ | 4) |
| | Upper (Y) | scale_max[1] | ○ | 4) |
| | Lower (X) | scale_min[0] | ○ | 4) |
| | Lower (Y) | scale_min[1] | ○ | 4) |
| | Security | security | ○ | 4) |

*1 1) to 5) of Write indicate the timing of feedback of object property to the screen.
For the object property feedback timing to the screen, refer to the following.

Section 16.3.2 1 (2)(a) Timing when the property changes are reflected to screen display

## 10.7.5 Precautions

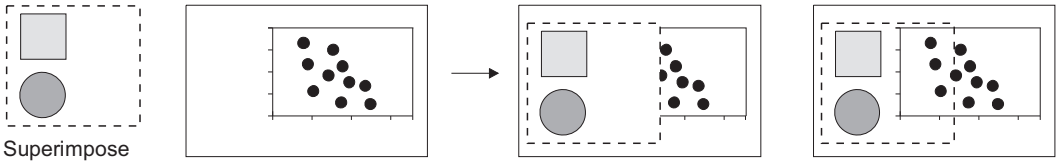
This section provides the precautions for using the scatter graph function.

### 1 Precautions for drawing

(1) Maximum number of objects that can be arranged (set) for one screen
Up to 24 objects can be set for one screen.

(2) When using store memory
For the scatter graph with [Store Memory] set, up to 16 graph objects can be set in a whole project.

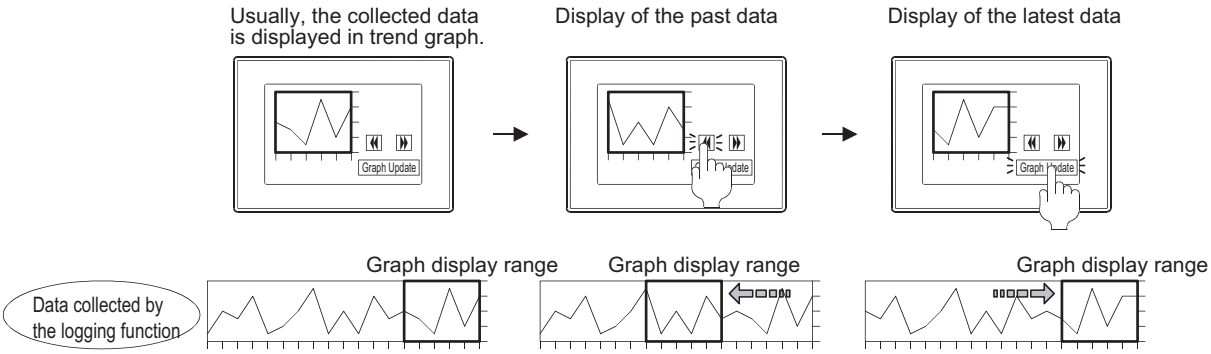
(3) Cautions when displaying superimpose window
Set the superimpose window not to overlap with a scatter graph.
The scatter graph area where the superimpose window is overlapped is not displayed.
Setting [Store Memory] enables full display of the scatter graph in such a case.




(4) When setting [Collect data only when trigger conditions are satisfied]
Do not make a setting in which the trigger is met simultaneously for 257 or more objects for which [Collect data only when trigger conditions are satisfied] is set.
The 258th or later objects are disabled even if the trigger is met and are not displayed correctly (causing system alarm).

# 10.8 Historical Trend Graph

This function displays the device data collected by the logging function in trend graph in time sequence.




**Point**

About historical trend graph

To use a historical trend graph, the logging function must be set in advance.
For the setting of the logging function, refer to the following.

Section 11.3 Logging Function

## 10.8.1 Relevant settings

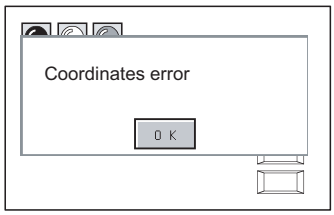
For historical trend graph, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to the functions other than historical trend graph
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

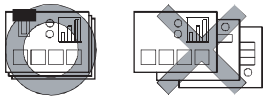
### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

• Check for overlapping objects

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

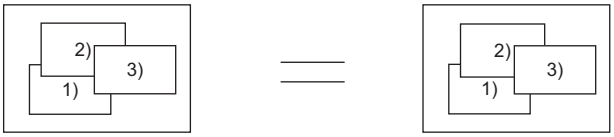


Setting item
• [Carry out check for overlapping objects within GOT]

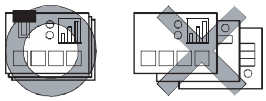
• Setting the order of displaying objects on the GOT

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>




Setting for each project | Setting for each screen

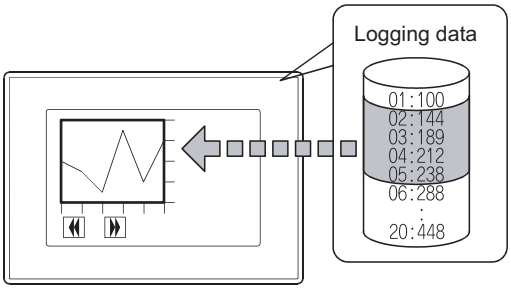


Setting item
• [Adjust object display order in GOT to the one in GT Designer2]

## 10.8.2 Required knowledge for historical trend graph setting

### 1 Relationships with logging function

(1) Contents displayed in historical trend graph
The historical trend graph displays the data collected by the logging function and stored in the buffering area and/or memory card in graph.
To use the stored data, the present and past information can be displayed in graph.




Displaying the stored data in graph

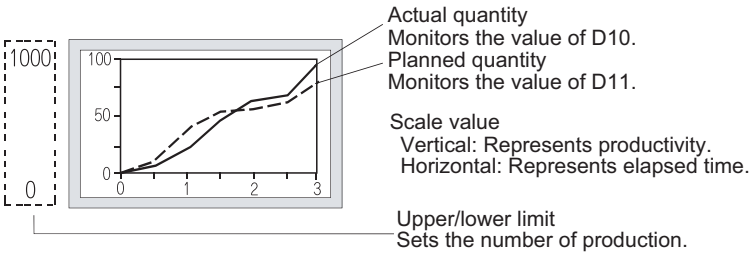
(2) The data collected by the logging function and displayed in historical trend graph
A historical trend graph can display the data set at only one logging ID.
To display multiple logging IDs, it is necessary to set multiple historical trend graphs.

### 2 Setting method of historical trend graph

The basic functions of historical trend graph are set on the following 1 to 3 tabs.
The following example explains the general procedure for setting historical trend graph.

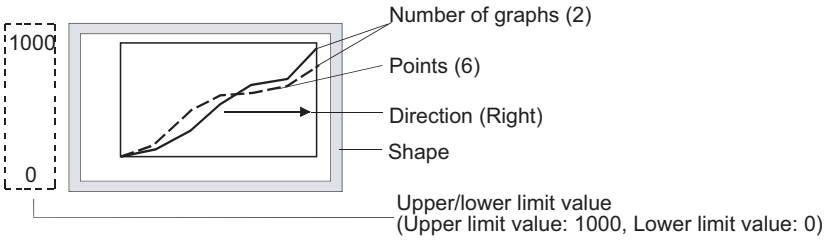
Example: Historical trend graph for comparison between the planned and actual quantity

| | |
|---|---|
| Productivity | : 0 to 100% |
| Time | : 0 to 3 |
| Production | : 0 to 1000 |
| Planned quantity (Graph 1) | : D10 |
| Actual quantity (Graph 2) | : D11 |



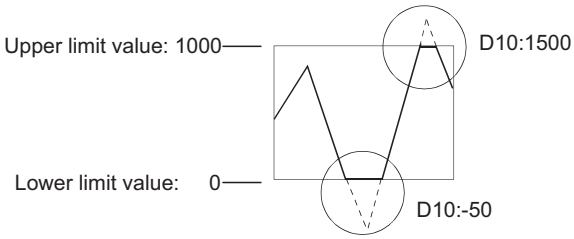
1 Basic tab

Set the number of graphs, the upper and lower limit values, the number of points and the shape.



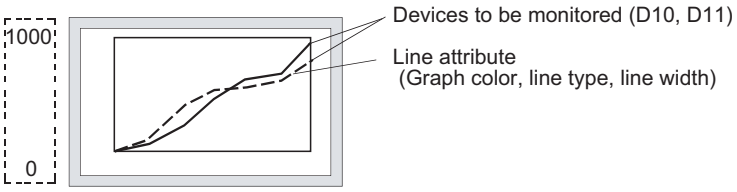

**Remark** Displaying values that exceed the upper or lower limit value

When the value of the monitored device exceeds the upper or lower limit value, such a value is displayed in the upper or lower limit value on the graph.



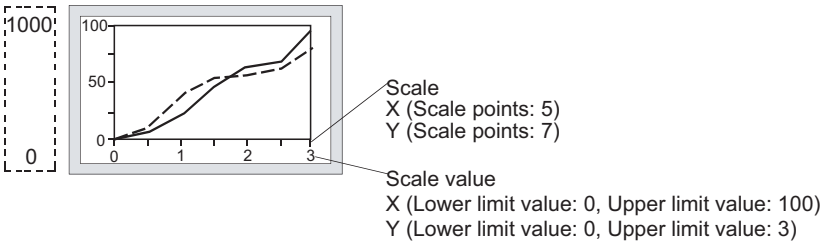

2 Device tab

Set the device to be monitored and the line attribute.




3 Scale tab

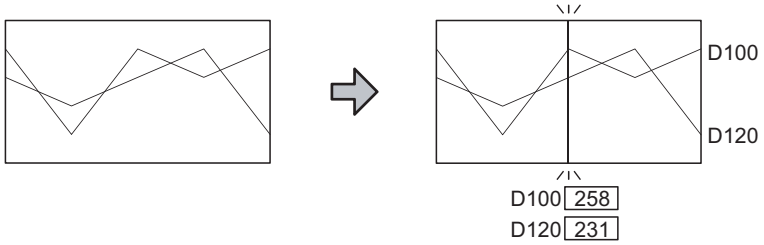
Set the scale and scale values of a graph.



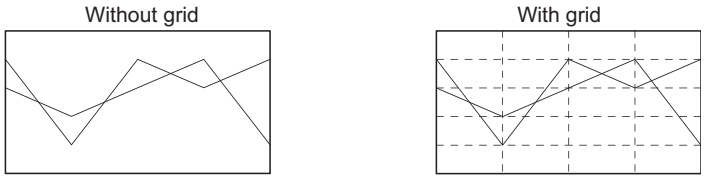
## 3 Useful information

The following explains the useful functions for using the historical trend graph.
(These functions are provided only for historical trend graph and setting them is not possible for trend graph.)

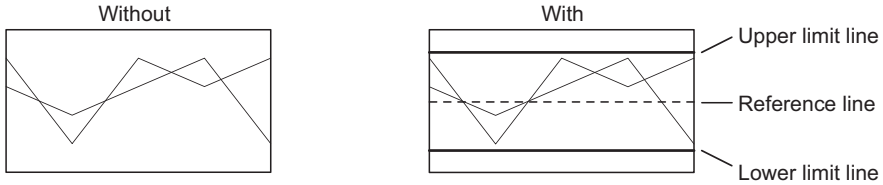
(1) Displaying the cursor (☞ Section 10.8.5 Touch switches for historical trend graph operation)
It is possible to display and move the cursor on the graph using the touch switch for which a key code is assigned.
It is also possible to output the value of the device on which the cursor is displayed to other device.
(☞ Section 10.8.4 2 Device tab)
Graph display is stopped while the cursor is displayed.



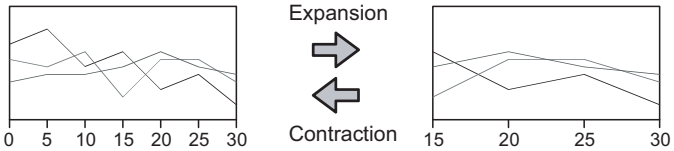

(2) Displaying the grid (☞ Section 10.8.4 3 Scale tab)
It is possible to display the grid on the graph.



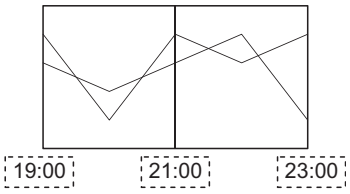

(3) Displaying the reference line / upper limit line / lower limit line (☞ Section 10.8.4 4 Extended tab)
It is possible to display the lines that are used as reference, such as the upper limit and lower limit, on the graph.



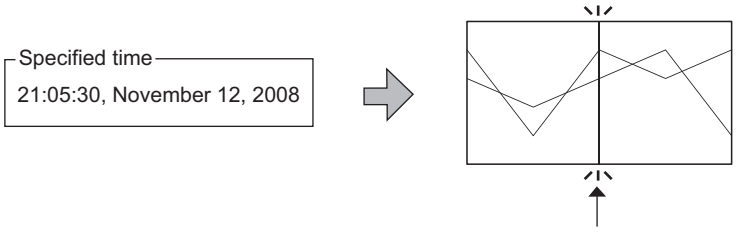

(4) Expanding / contracting the time axis (☞ Section 10.8.5 Touch switches for historical trend graph operation)
It is possible to expand or contract the time axis using the touch switch for which a key code is assigned.
Graph display is stopped while the graph is expanded/contracted.



(5) Outputting the time data to a device (☞ Section 10.8.4 4 Extended tab)
It is possible to output the beginning and end day/time of graph display and the day/time the cursor is displayed using the touch switch for which a key code is assigned.
Graph display is stopped while the time data is output to a device.




(6) Displaying data at the specified time (☞ Section 10.8.4 4 Extended tab))
With a touch switch that the key code is assigned, data at the specified time can be displayed.
The graph display is stopped while the data at the specified time is displayed.




The data at the specified time is displayed in the center.

## 10.8.3 Arrangement and settings

1. Perform either of the following operations.
   - Click (Historical Trend Graph).
   - Select [Object] → [Graph] → [Historical Trend Graph] from the menu.
2. Click on the position where the historical trend graph is to be located to complete the arrangement.
   (After arrangement, release the arrangement mode by right-clicking the mouse or using the ESC key.)
3. Double click on the arranged historical trend graph to display the setting dialog box.
   Set with reference to the following explanation.

**Hint!**

Easy setting method

The direct setting of object can be made on property sheet.

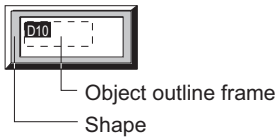
GT Designer2 Version ☐ Basic Operation/Data Transfer Manual
(Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Property sheet))

**Remark**

The adjusting method when shape is set for object.

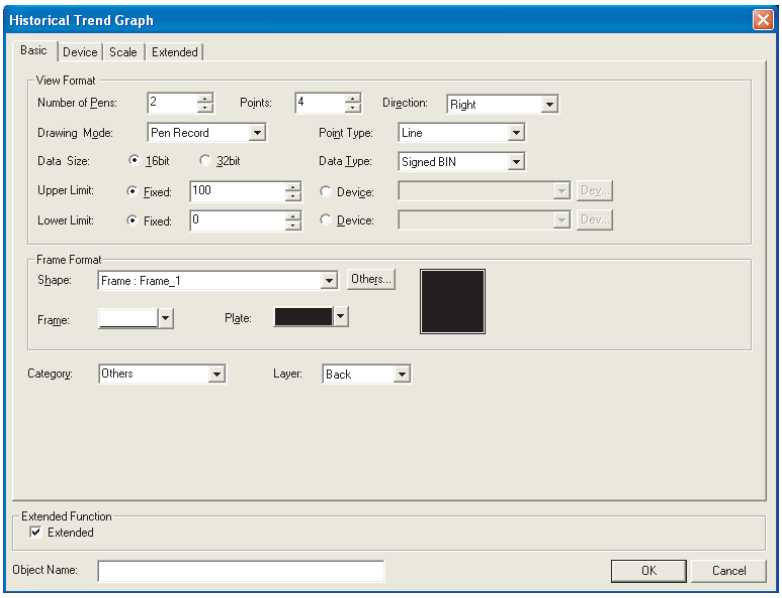
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

Section 5.3.3 Object size change

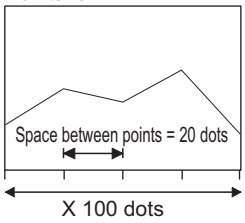
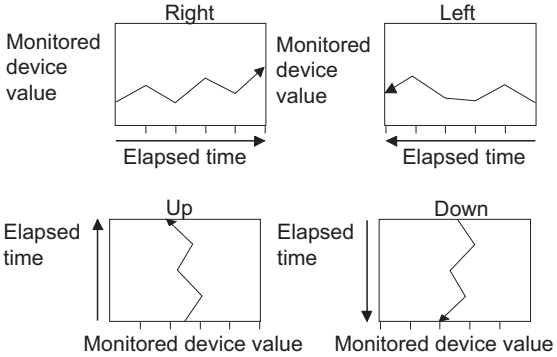


## 1 Basic tab

Set the number of graphs, display method and shape.

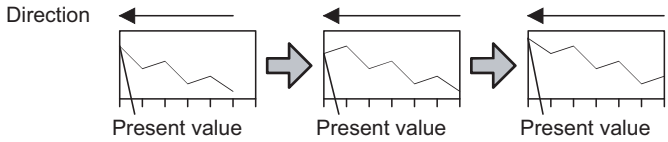
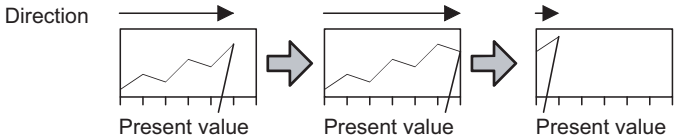
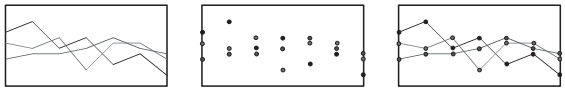
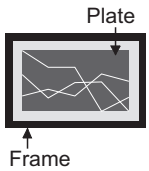



**Basic** | Device | Scale | Extended

| Item | | Description | Model |
|---|---|---|---|
| View Format | Number of Pens | Set the number of graphs to be displayed (1 to 32). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| View Format | Points | Set the number of points (the number of collected data) to be displayed on the graph.<br>Up to 1024 (3 to 1024) points can be set.<br>The space between point is automatically determined by the set number of points and the display range of X.<br>Example:<br>Points: 5<br>  <br> | |
| View Format | Direction | Select the direction for graph.<br>  <br> | |

(Continued to next page)

Basic | Device | Scale | Extended

| Item | | Description | Model |
|---|---|---|---|
| View Format | Drawing Mode | Select the graph drawing mode (Pen Record / One by One).<br>Pen Record : The present value is displayed at the opposite side of display direction. When the graph moves beyond the display range, data is deleted from the older one and the graph displays the latest data.<br>Example: When setting [Direction]=[Right]<br>  <br><br>One by One : The present value is displayed in the same side as the display direction. When the graph moves beyond the display range, the graph presently displayed is cleared and the graph is drawn starting from the succeeding data.<br>Example: When setting [Direction]=[Right]<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Point Type | Select the point type (Line / Point / Line+Point)<br>  <br>(Line) (Point) (Line+Point) | |
| | Data Size | Select the data size (16 bits / 32 bits) of the word device. | |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as a BCD (binary coded decimal) value.<br>Real : Treats word device value as a floating point type real number. (Only when selecting [32 bits] for [Data Size]. | |
| | Upper Limit<br>Lower Limit | Select whether the device value range (Upper limit / Lower limit) for historical trend graph is set by fixed values or specified device values.<br>Fixed : Set the fixed values as the upper and lower limit values.<br>Device : Set the device values as the upper and lower limit values.<br>(☞ Section 5.1 Device Setting)<br>The range that can be set by upper and lower limit values depends on [Data Size] and [Data Type] of the device to be monitored. | |
| Frame Format | Shape | Set a shape for the object.<br>When [None] is selected, no shape will be displayed.<br>By clicking on the Others button, basic figures other than those in the list box or library figures can be selected as shape.<br>(☞ Section 5.3.2 Object shape setting) | |
| | Frame<br>Plate | Select the frame color / plate color of the shape.<br>  <br> | |

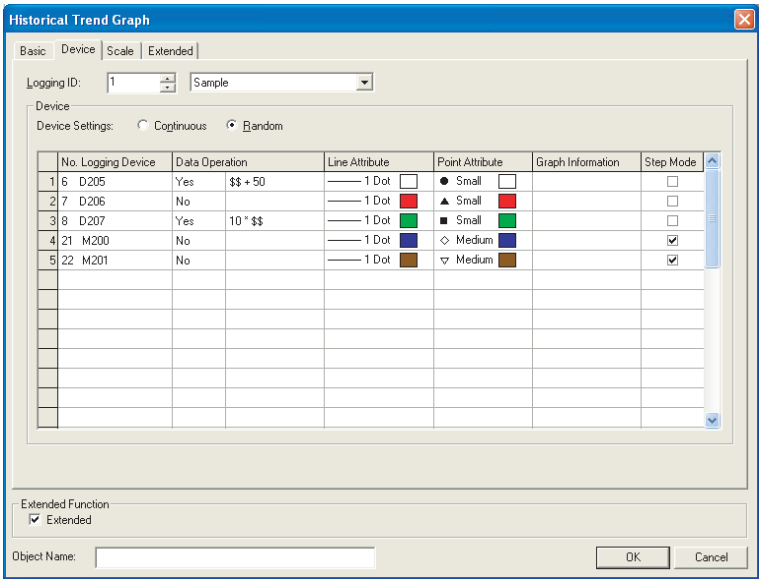
(Continued to next page)

Basic | Device | Scale | Extended

| Item | Description | Model |
|---|---|---|
| Category | Select a category to assign when assigning categories to objects.<br>(☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12.1.2 Batch setting and managing objects/figures for each purpose (Category workspace)) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Layer | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

## 2 Device tab

Set the device to be monitored and displayed in graph and the attribute (color / type) of graph.

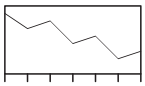
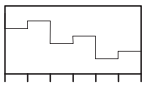



Basic | **Device** | Scale | Extended

| Item | | Description | Model |
|---|---|---|---|
| Logging ID | | Select the logging ID to be displayed in historical trend graph.<br>Selection is possible from logging ID and logging name. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device | Device Settings | Select the setting method for [No. Logging Device]<br>Continuous : The set continuous device points are set from head device automatically.<br>Random : Set the devices one by one for the specified number of points. | |
| | No. Logging Device *1 | Click on the item and the Device List dialog box is displayed.<br>In the device list dialog box, select the device to be displayed in graph from among the devices set for the selected logging ID.<br>On a cell, the selected device and setting order of the logging device are displayed.<br>No. Logging Device<br>1 6 D205<br>Device<br>Setting order of the logging device<br>Represents the order the device is displayed in the device list dialog box.<br>This allows the confirmation of the order number of the device being set in the device list dialog box.<br>The number is conveniently used for confirming the setting change. | |
| | Data Operation | Select [Yes] / [No] for data operation.<br>When the selection is [Yes], click the right column and set the calculation expression.<br>(☞ Section 5.6 Data Operation Function) | |
| | Line Attribute*2 | Click on the item and the Line Attribute dialog box is displayed.<br>Setting for the line attribute is allowed only when the setting for [Point Type] on the Basic tab is [Line] or [Line+Point]. | |

(Continued to next page)

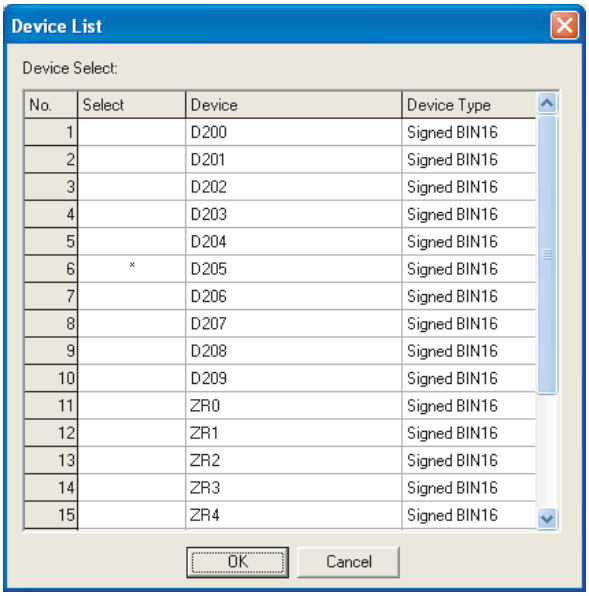
Basic | **Device** | Scale | Extended

| Item | | Description | Model |
|---|---|---|---|
| Device | Point Attribute*2 | Click on the item and the Point Attribute dialog box is displayed.<br>Setting for the line attribute is allowed only when the setting for [Point Type] on the Basic tab is [Point] or [Line+Point]. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Graph Information*3 | Click on the item and the Graph Information dialog box is displayed.<br>The device value of the location where the cursor is displayed and the information (maximum value, minimum value, average value) of the graph in the display range can be written to a device. | |
| | Step Mode | Check this item to display the graph in the step mode.<br>  Graph display without Step Mode checked<br>  Graph display with Step Mode checked | |

For details of *1 to *3, refer to the following.

## *1 Device List dialog box

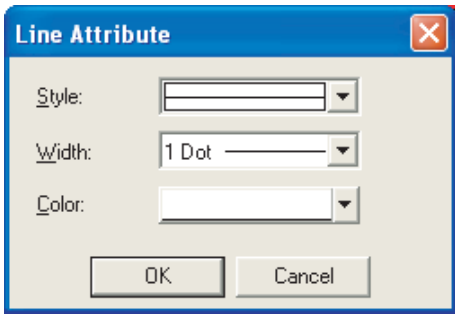
Displays the list of devices set for the selected logging ID.
Select the device to be used for historical trend graph.
A "*" symbol is displayed for the selected device.



*2 Line Attribute / Point Attribute

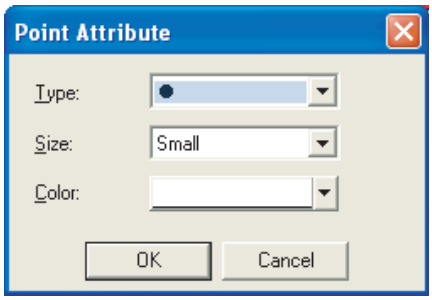
Displays the dialog box used for setting the line attribute / point attribute.

(1) Line attribute




| Item | Description |
|---|---|
| Style | Select the line style of graph. |
| Width | Select the line width (1 to 7 dots) of graph. |
| Color | Select the line color of graph. |

(2) Point attribute

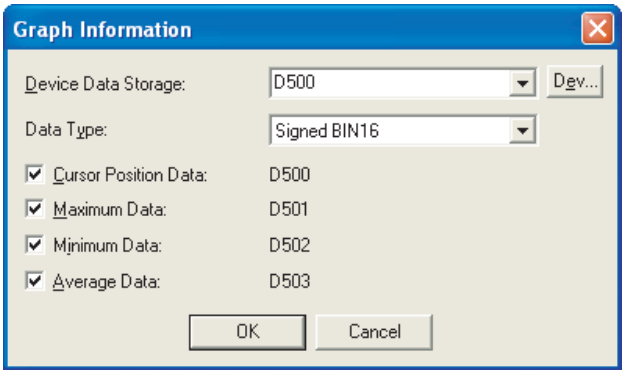



| Item | Description |
|---|---|
| Type | Select the point type of graph. |
| Size | Select the point size (Large / Medium / Small / Minimum / Point) of graph. |
| Color | Select the point color of graph. |

*3 Graph information

(1) About Graph Information dialog box

The device value of the location where the cursor is displayed and the information (maximum value, minimum value, average value) of the graph in the display range can be written to a device.




| Item | | Description |
|---|---|---|
| Device Data Storage | | When a device is set, the devices are automatically set for the following items consecutively.<br>Check only the items to be used. (The unchecked items will not be set.) |
| | Data Type | Select the data type of the device value that stores the graph information.<br>Signed BIN16 : Treats device value as a signed 16-bit binary value.<br>Unsigned BIN16 : Treats device value as an unsigned 16-bit binary value.<br>Signed BIN32 : Treats device value as a signed 32-bit binary value.<br>Unsigned BIN32 : Treats device value as an unsigned 32-bit binary value.<br>BCD16 : Treats device value as a 16-bit BCD (Binary Coded Decimal) value.<br>BC326 : Treats device value as a 32-bit BCD (Binary Coded Decimal) value.<br>Real : Treats device value as a floating point type real number. |
| | Cursor Position Data | Stores the device value where the cursor is displayed. |
| | Maximum Data | Stores the maximum value of the device displayed in the display range. |
| | Minimum Data | Stores the minimum value of the device displayed in the display range. |
| | Average Data | Stores the average value of the device displayed in the display range. |

**Point**

Type to be selected for [Data Type]

Select the same type as the device type of the logging device. When the data type of the logging device is bit, select any of signed BIN16, unsigned BIN16 and BCD16. When the selected type differs from the device type of the logging device, system alarm "307 Monitor device is not set" occurs and the graph information is not stored in the device.

(2) The value to be stored in a device and value storing timing

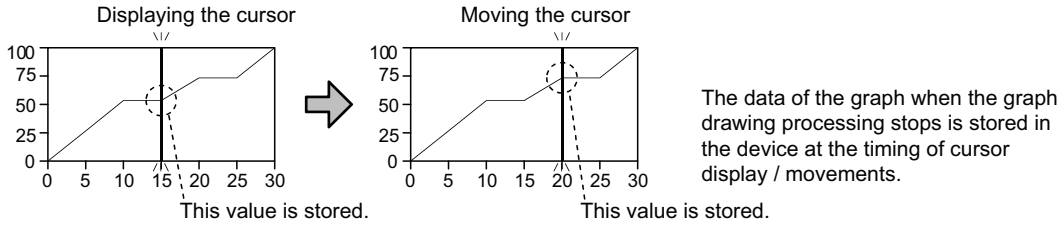
(a) Value storing timing

A value is stored in a device when the historical trend graph is operated by the touch switch for the historical trend graph. (With exceptions of the timing at which the cursor is deleted or the latest data is displayed.)

(b) The value to be stored

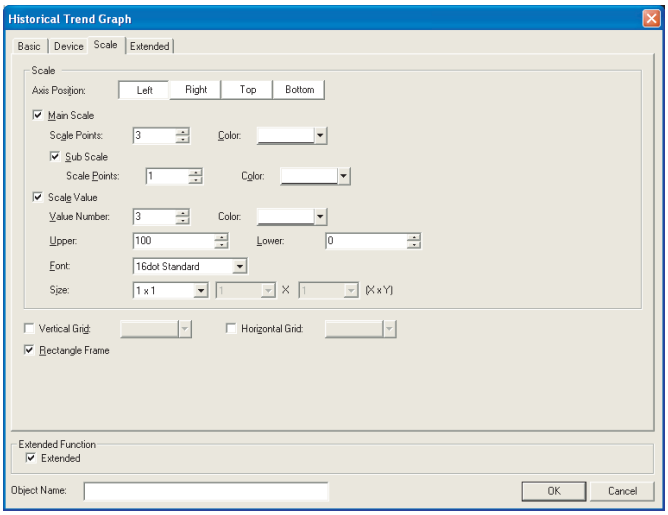
When the cursor is displayed on the graph, graph drawing processing stops.
The value of the graph when the drawing processing stopped is stored in the device.
[Data Operation] is set with a historical trend graph, values to be stored in the devices for [Graph Information] are values before data operations.

Example: When storing the cursor displayed position value to a device

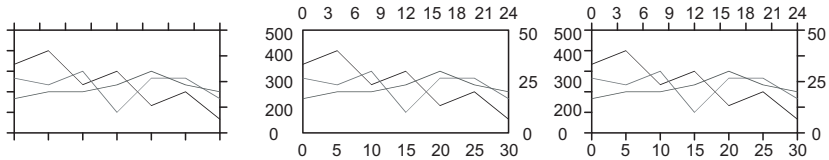
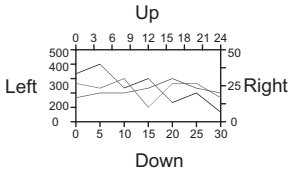
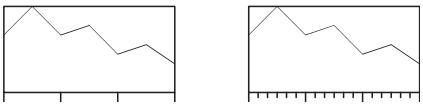


## 3 Scale tab

Set the graph scale, graph frame and grid.

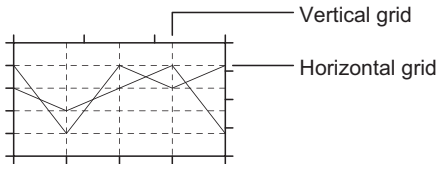
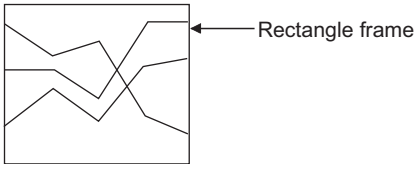



Basic | Device | **Scale** | Extended

| Item | | Description | Model |
|---|---|---|---|
| Scale | | Set the scale and scale values to the historical trend graph.<br>Example:<br>  <br>Display of scales<br>Display of scale values<br>Display by combining scales and scale values | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Axis Position | Select the position at which the [Main Scale] and/or [Scale Value] setting should be changed. (Left / Right / Up / Down)<br>Different setting is possible for each axis position.<br>  <br> | |
| | Main Scale | Check this item to display the scale.<br>After checking, set at [Scale Points] (2 to 12) and [Color].<br>If the [Sub Scale] item is checked, sub scales are displayed between the set scales.<br>After checking, set at [Scale Points] (1 to 9) and [Color] for sub scale.<br><br>The scale intervals are automatically set according to the setting for [Scale Points].<br><br>Example: [Scale Points]: 4, [Scale Points] of [Sub Scale]: 5<br>  <br>Without sub scales<br>With sub scales | |

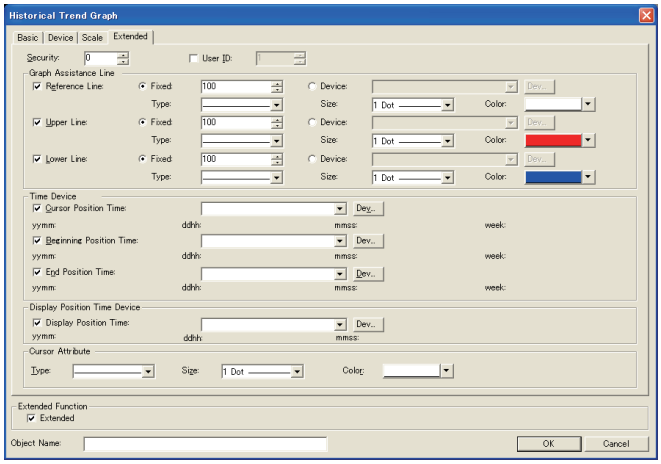
(Continued to next page)

Basic | Device | **Scale** | Extended

| Item | | Description | Model |
|---|---|---|---|
| Scale | Scale Value | Check this item to display the scale by using numeric values.<br>After checking, set at [Value Number] (2 to 11), [Color], [Upper], [Lower], [Font] and [Size] (0.5 to 8).<br>For [Font], selection of the following items is possible.<br>The value that can be set for [Size] varis depending on the selected [Font].<br>• 6 x 8 dot : 1 x 1 (fixed)<br>• 12dot Standard : 1 x 1 to 8 x 8<br>• 16dot Standard : 0.5 x 0.5 to 8 x 8<br>For details of each font and size, refer to the following.<br>( Section 2.3 Specifications of Applicable Characters) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Vertical Grid | | Check these items to display the vertical/horizontal grid.<br>After checking, select the grid color.<br><br>Grid is displayed according to the setting of [Main Scale] and [Scale Points] of [Sub Scale].<br>When the setting is made for [Top] / [Bottom], and [Left] / [Right], the setting for [Bottom] and [Left] has priority.<br>  | |
| Horizontal Grid | | | |
| Rectangle Frame | | Check this item to display the frame, i.e., shape for the graph.<br>  | |

## 4 Extended tab

Set the security, graph assistance line, time device and cursor attribute.
Check Extended Function at the bottom of the dialog box to display the Extended tab.




Basic | Device | Scale | **Extended**

| Item | | Description | Model |
|---|---|---|---|
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| User ID*1 | | Set the user ID (1 to 65535) of historical trend graph. | |
| Graph Assistance Line | Reference Line<br>Upper Line<br>Lower Line | Check the items to display the corresponding lines (reference line / upper limit line / lower limit line) on the graph.<br>After checking an item, select whether the display position is set by a fixed value or a value of the specified device.<br>Fixed : A constant is displayed as the reference line / upper limit line / lower limit line.<br>Device : A value of the device is displayed as the reference line / upper limit line / lower limit line.<br>(☞ Section 5.1 Device Setting)<br>After that, set [Type], [Size] and [Color].<br>Each of the reference line, upper limit line and lower limit line is displayed according to the values set in [Upper Limit] and [Lower Limit] on the Basic tab.<br>Upper limit value 100 — Upper limit line (80)<br>Reference line (50)<br>Lower limit value 0 — Lower limit line (20) | |
| Time Device*2 | Cursor Position Time<br>Beginning Position Time<br>End Position Time | Check the items to write the time of the cursor displayed position and the display range beginning/end position time to a device. (The values are stored in BCD data.)<br>After checking an item, set the device where the time is stored.<br>(☞ Section 5.1 Device Setting)<br>Four points (Y/M, D/H, M/S, Day of week) of devices are set consecutively starting from the set device. | |
| Display Position Time Device*3 | Display Position Time | Check the item to display data at the specified time. (Time specification jump function)<br>After checking the item, set the device where the specified time is stored.<br>(☞ Section 5.1 Device Setting)<br>Three points (year and month, date and hour, minute and second) of devices are set consecutively starting from the set device. | |

(Continued to next page)

Basic | Device | Scale | **Extended**

| Item | | Description | Model |
|---|---|---|---|
| Cursor Attribute | | Set the cursor attribute. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Type | Select the cursor line type. | |
| | Size | Select the cursor line width (1 to 7 dots). | |
| | Color | Select the cursor line color. | |

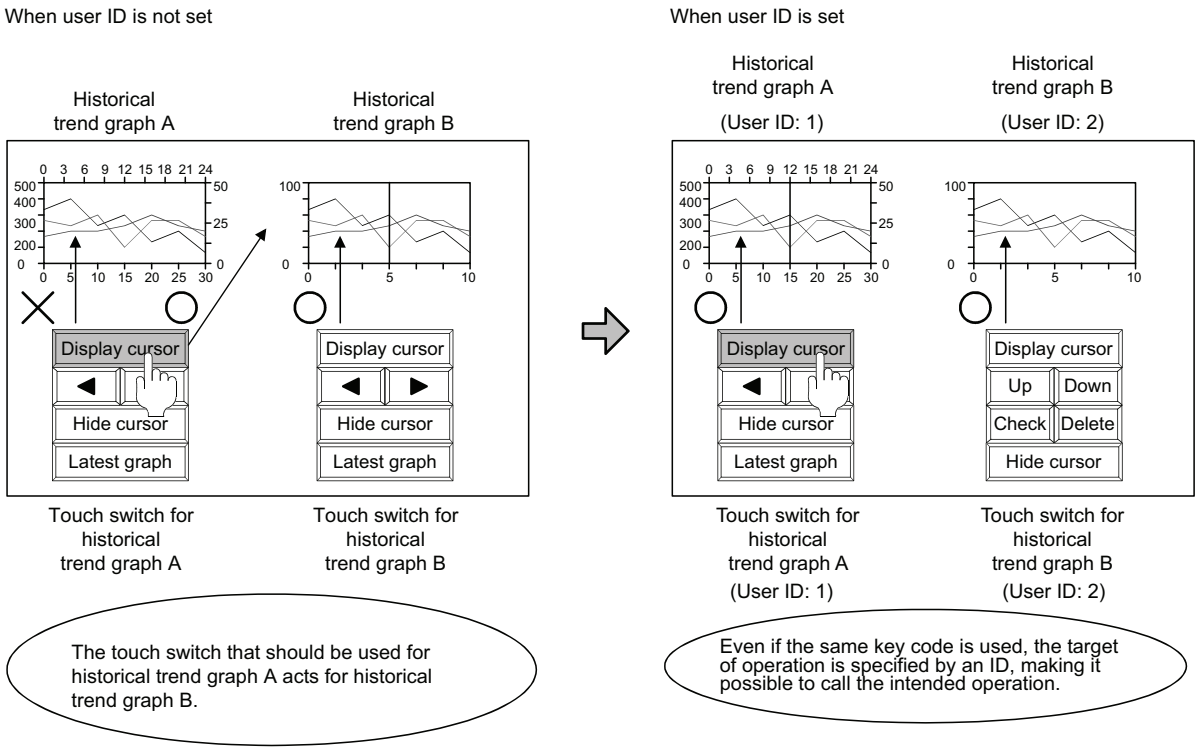
For details of *1 to *3, refer to the following.

*1 User ID

(1) When user ID setting is required

If more than one object that is operated using the switch of the same key code exists on the screen, touching the switch may fail to call the intended operation.

In such a case, it is possible to assign an ID (user ID) to individual objects by setting the user ID so that the ID (object) to be operated by the touch switch can be specified. Thus, intended switch operation can be called by touching the touch switch.



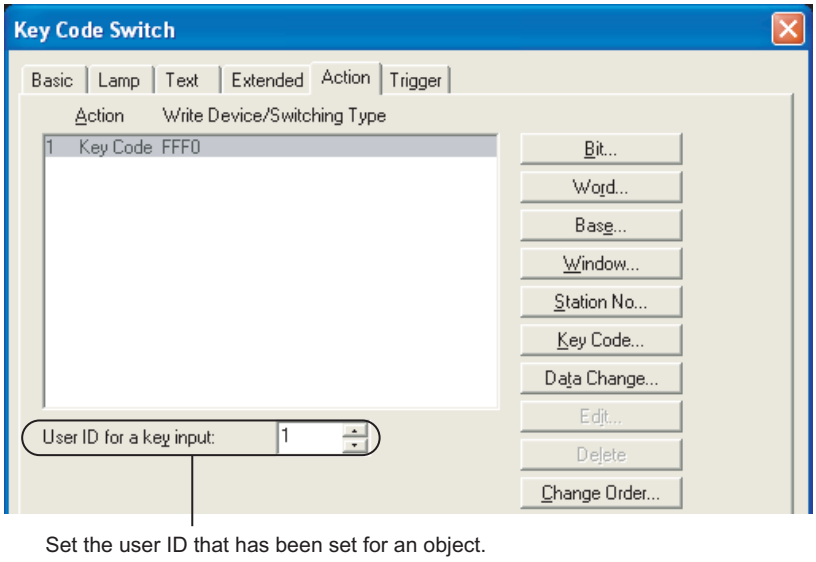

(2) Touch switch setting

Input the user ID, which has been set in this step, to the [User ID for a key input] item in the Key Code Switch dialog box.

For details of key code switch, refer to the following.

(☞ Section 6.2.9 Setting items of key code switch)

Touch switch setting (Action tab)



*2 Time devices

(1) How the data is stored in the time devices
Time data is stored in upper and lower 8 bits of the set devices.
Example: When D100 is set.

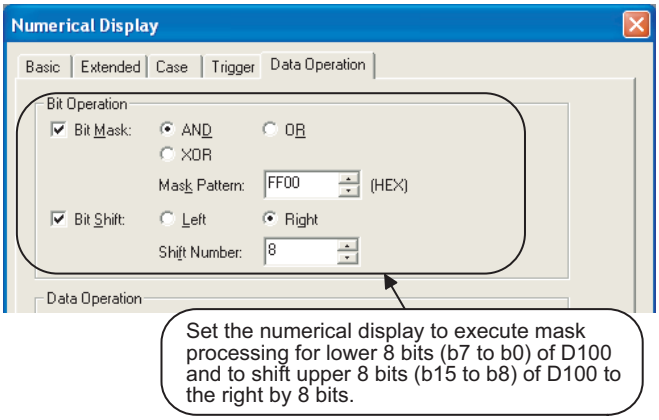
| | | |
|---|---|---|
| D100 | B15 to b8 | B7 to b0 |
| | (Year) | (Month) |
| D101 | B15 to b8 | B7 to b0 |
| | (Day) | (Hour) |
| D102 | B15 to b8 | B7 to b0 |
| | (Minute) | (Second) |
| D103 | B15 to b8 | B7 to b0 |
| | (Not used) | (Day of week) |

(0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday)

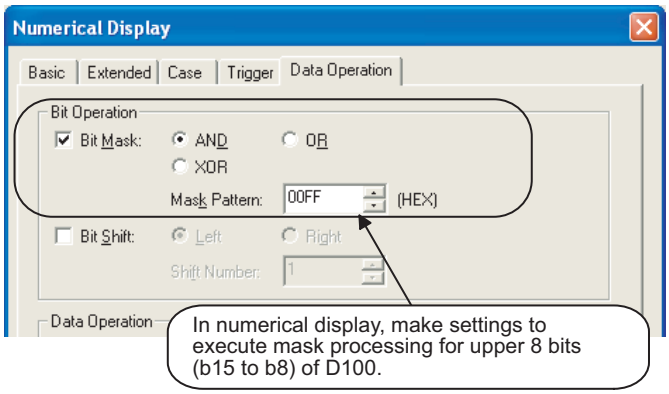
To monitor the devices above by numerical display.
To monitor the above devices by the numerical display and others, execute mask processing and shift processing using the data operation function as shown below.
(☞ Section 5.6 Data Operation Function)
For the data type of Numerical Display (Extended tab), set [BCD] since a value is stored in BCD data.

Example: Setting example of numerical display (Data Operation tab)

• Displaying "year" (upper 8 bits)




• Displaying "month" (lower 8 bits)



(2) The value to be stored in a device and value storing timing

(a) Value storing timing

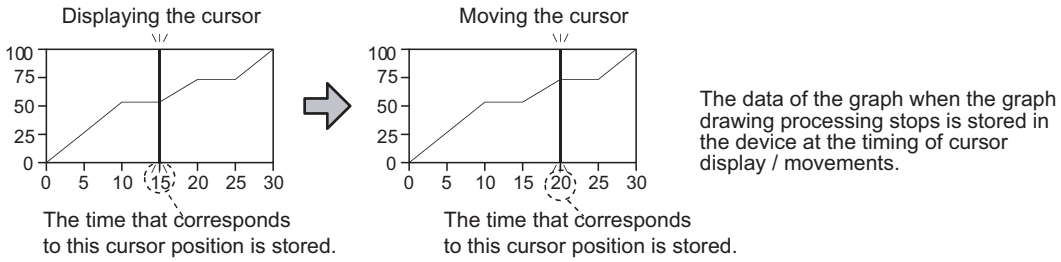
A value is stored to a device at the timing indicated below.

- When the cursor is displayed on the graph.
- When the displayed cursor is moved.
- During the display of the cursor, when the historical trend graph is operated using a touch switch.

(b) The value to be stored

When the cursor is displayed on the graph, graph drawing processing stops.
The value of the graph when the drawing processing stopped is stored in the device.

Example: When storing the time to a device




*3 Displaying data at specified time (Time specification jump function)

With the display position time devices and a touch switch, logging data at the specified time can be displayed in the center of a historical trend graph. (The cursor is displayed at the position for the logging data at the specified time.)
If no logging data at the specified time exists, logging data at the time closest to the specified time is displayed.

(1) Before using time specification jump function

(a) Specifications for settable time

| Item | Description |
|---|---|
| Data format | 16-bit BCD (Binary coded decimal) |
| Data range | From January 1, 2000 to December 31, 2037 |

(b) Required settings

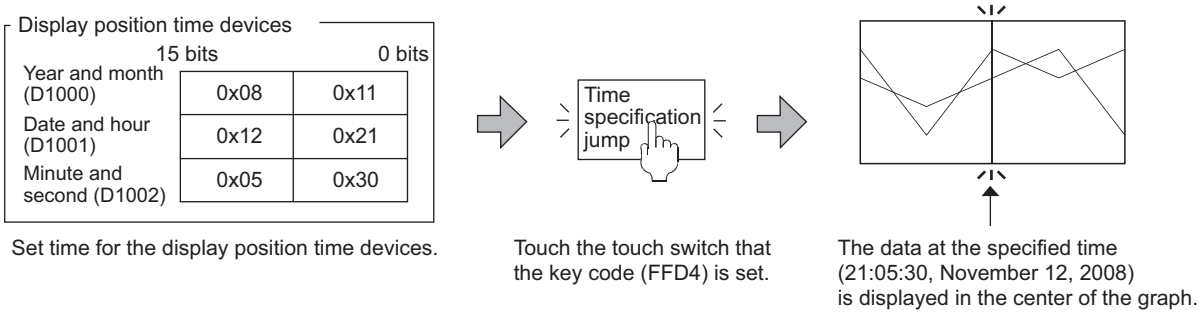
Place and set the following objects on the screen.

| Item | Description |
|---|---|
| Touch switch | A touch switch is available from the library on GT Designer2.<br>(☞ Section 10.8.5 Touch switches for historical trend graph operation)<br>The user can create a touch switch by setting a key code for the switch.<br>(☞ Section 6.2 Touch Switch) |
| Historical trend graph | Check [Display Position Time] on the Extended tab, and set the device.<br>(☞ Section 10.8.4 4 Extended tab) |

(2) Operation example

The following shows an example of operating the time specification jump function.

When setting the display position time device to D1000 and displaying data at 21:05:30 on November 12, 2008




**Point**

Precautions for time specification jump function

(1) When using time specification jump function

When using the time specification jump function, the graph drawing processing stops.

To restart the graph drawing, touch the touch switch that the key code (FFEFH) is set.

(2) When performing other operations during the time specification jump

While the GOT searches for data at the specified time, the other operations for the historical trend graph are unavailable.

(3) When multiple logging data at times close to the specified time exist

When no logging data at the specified time exists and multiple data at times closest to the specified time exist, the data that the GOT detects first is displayed.

(4) When displaying the data at around the starting/ending point of the graph

When the logging data at the specified time is at around the starting or ending point of the graph, the data may not be displayed in the center of the graph.

(5) When executing the time specification jump without specified time

When the time is not specified (all the display position time devices are 0) and the time specification jump is executed, the graph drawing processing stops and the latest data is displayed.

To restart the graph drawing, touch the touch switch that the key code (FFEFH) is set.

(6) When no logging data exists

With no logging data, the time specification jump is not executed.

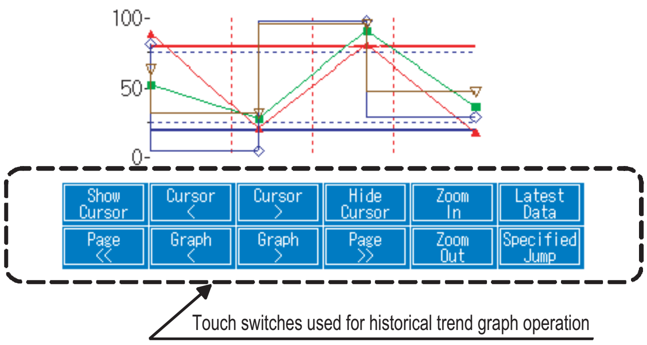
(7) When logging data is not in chronological order

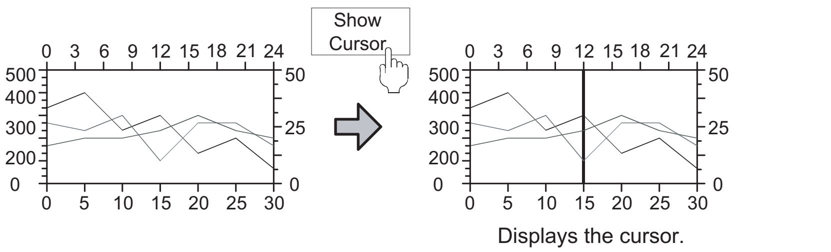
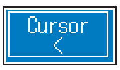
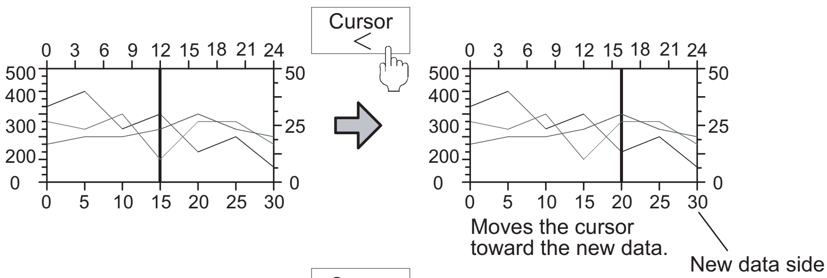
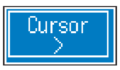
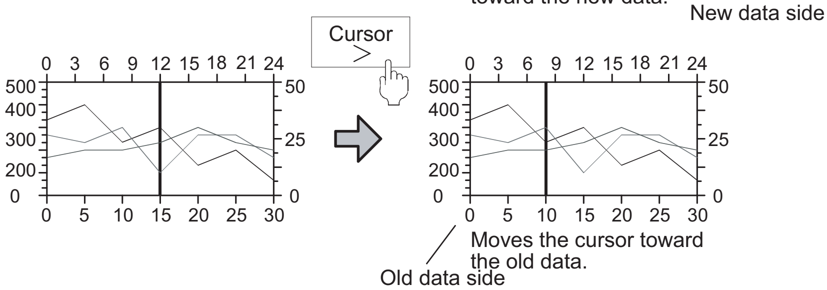
When the logging data is not in chronological order because the GOT clock time is changed, the data at the time closest to the specified time may not be displayed.

Do not change the GOT clock time during collecting logging data.

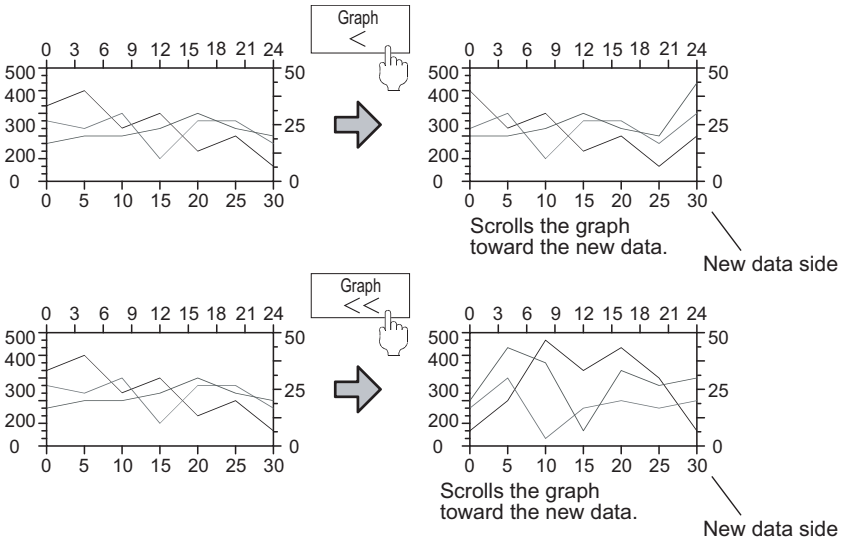
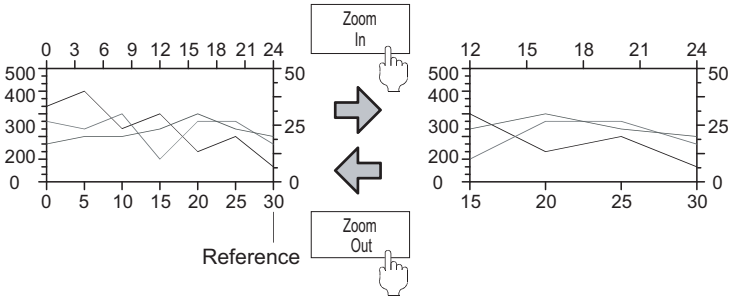
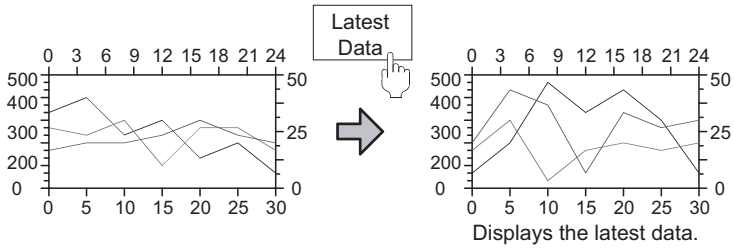
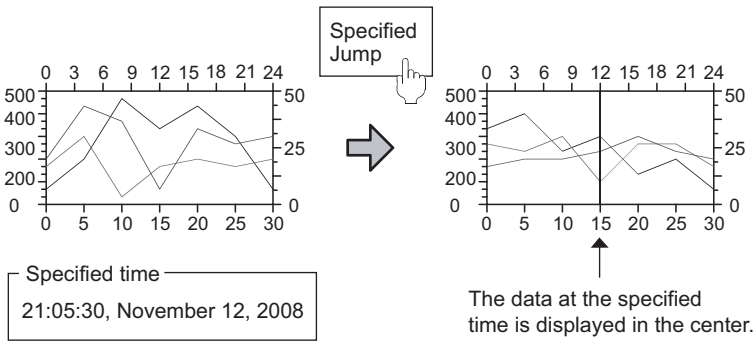
## 10.8.5 Touch switches for historical trend graph operation

Touch switches to be used for historical trend graph operation may be read out from the library of GT Designer2.
Also, text on the touch switch and its shape can be changed by the user.
Touch switches to be used for historical trend graph operation can be created by the user by setting a key code to a touch switch.




| Touch switch | Key code | Description |
|---|---|---|
| Show Cursor | FFF0H | Shows / hides the cursor.<br>The cursor is displayed at the center of the graph.<br>  |
| Hide cursor | FFF1H | |
| Cursor Next  | FFF2H | Moves the cursor in the direction toward the new / past data.<br>  |
| Cursor Previous  | FFF3H |  |

(Continued to next page)

| Touch switch | Key code | Description |
|---|---|---|
| Graph Next<br>Graph < | FFF4H | Moves the graph right and left<br>  |
| Graph Previous<br>Graph > | FFF5H | |
| Graph Next Page Scroll<br>Page << | FFF6H | |
| Graph Previous Page Scroll<br>Page >> | FFF7H | |
| Time Axis Expansion<br>Zoom In | FFF8H | Expands (2 times) or reduces (1/2 times) the time axis of the graph taking the axis of the new data as the reference.<br>  |
| Time Axis Reduction<br>Zoom Out | FFF9H | |
| Latest Data<br>Latest Data | FFFFH | Displays the latest data.<br>  |
| Time Specification Jump<br>Specified Jump | FFD4H | Displays the data at the time stored in the display position time devices in the center of the graph. (Time specification jump function)<br>  |

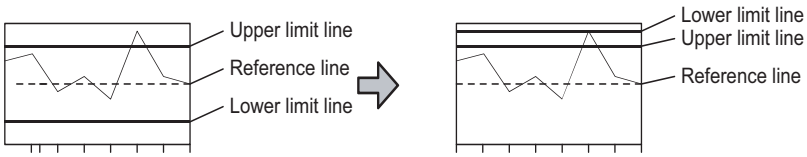
## 1 Precautions for drawing

(1) Maximum number of historical trend graphs that can set for one project
Setting is possible for up to 32 points.

(2) Maximum number of historical trend graphs that can be arranged (set) for one screen
Arrangement (setting) is possible for up to 8 points.

(3) Changing the set logging device or using the data of other project
If the set logging device is changed or the data of other project data is used after setting the historical trend graph, consistency between the device set for logging and the device in historical trend graph may be lost.
In such a case, it is necessary to set the device for historical trend graph again.
The historical trend graph is not displayed unless the device type agrees with each other.

(4) Setting [Graph Assistance Line] by a device
Since the graph assistance lines are displayed only for reference, abnormal state such that the lower limit value exceeds the upper limit value or the upper limit value becomes smaller than the lower limit value does not cause an error.




(5) Devices set for [Time Device] and [Graph Information]
For devices to be set for [Time Device] and [Graph Information], use GOT internal devices.
If a device of a controller is specified, monitoring speed may be lowered.

(6) Logging setting when historical trend graph is used
When historical trend graph is used, setting for [Number of Logs a File] (☞ Section 11.3.4 1 (1) Basic tab) in logging setting must be larger than a value set for [Points] (☞ Section 10.8.4 1 Basic tab) of historical trend graph.

## 2 Precautions for OS

When historical trend graph is used, install the Option OS (Logging) to the GOT.

## 3 Precautions for hardware

When using the historical trend graph with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.

☞ 2.13 Precautions for Option Function Board

## 4 Precautions for use

(1) Differences in display speed from trend graph
The historical trend graph monitors the data collected by the logging function via the buffering area / memory card.
Accordingly, the data display speed is reduced from that of trend graph which directly monitors the controller devices.

(2) Actions during logging data processing
While the logging data is being stored to a memory card, display of historical trend graph stops until the storing processing finishes.

(3) Operation using a touch switch
If any of the operations below is performed using a touch switch, graph drawing is stopped.
- Show cursor, Hide cursor and Cursor Next, Cursor Previous
- Graph Previous, Graph Next, Graph Previous Page Scroll, Graph Next Page Scroll
- Time Axis Expansion, Time Axis Reduction

The graph, for which drawing has been stopped, is drawn again when the Latest Data ($FFEF_H$) switch is touched.

(4) About logging files
(a) Do not delete a logging file in the midst from the logging files stored with serial numbers assigned. The data in the midst will be lost.
(b) When displaying the past information, it may take much time.

(5) When using the security function
Pay attention to the following when using the security function.
(a) When setting to store the status of the cusor position to a device
If the historical trend graph becomes to be hidden due to changing of the security level, the device value at the cursor position is retained as it is. (only when the cursor is displayed.)
(b) When the historical trend graph becomes to be displayed due to changing of the secarity level
If the status of the historical trend graph is changed from hide to display due to security level change, "0" is stored to the device.
To store the cursor position status to the device, display the cursor again.

(6) When the set overlay screen function or a window screen is used
When multiple historical trend graphs, having the same setting, are displayed due to the set overlay screen function or the display of a window screen, the displayed contents may not be synchronized.
It is recommend not to display multiple historical trend graphs having the same setting by using the security function above.

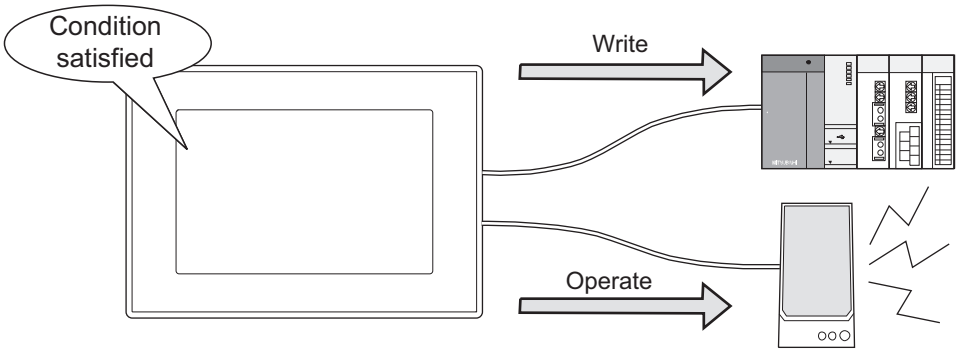
(7) If the displayed logging data disappears
If the logging data displayed by Historical Trend Graph disappears due to such as logging data deletion or memory card removal, the display position is automatically corrected to the existing data when the graph is operated. (The display position may seem to be changed suddenly.)
Note that the logging data may be automatically deleted depending on logging mode or setting.
For the timing that logging data is deleted, refer to the following.
☞ Section 11.3.2 Before setting logging

# Memo

# 11. TRIGGER → ACTIONS

## 11.1 Status Observation Function

This function enables operations such as turning a device ON/OFF and writing a value when the specified conditions are satisfied.




### 1 Settable conditions

Up to 2 settings are available for the following conditions.

- Bit device ON/OFF
- The range specification of word device values

### 2 Write or other operations allowed when conditions are satisfied

- Turning ON a bit device when the condition is satisfied
- Turning ON/OFF a bit device
- Reversing a bit device status
- Writing a value into a word device
- Outputting sounds with external speakers (Only applicable to GT16, GT15, and GT SoftGOT1000)

### 3 Types of status observation functions

The status observation functions can be set with the following two types of monitoring methods

- Status observation common to the entire project
  As the specified condition is satisfied, devices are always monitored.
- Status monitor for each screen
  As the specified condition is satisfied, devices are monitored only when GOT displays the corresponding screen

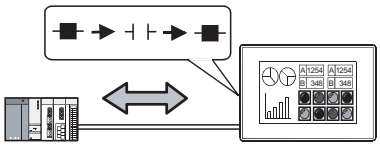
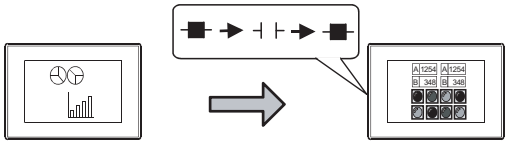
## 11.1.1 Relevant settings

For status observation function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to status observation function only
…Relevant to status observation function only.

### 1 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to status observation function only

| • Base Screen Initial Scan Complete Signal (Write device: GS0.b2) | • Base Screen Initial Scan Complete Signal (Write device: GS1.b2) |
|---|---|
| Keeps ON during one cycle from the switching of the base/window screen to the completion of object processing for status monitoring on the screen.  Turns ON/OFF repeatedly for each communication cycle | Keeps ON during a cycle from the switching of the base screen to the completion of object processing for status monitoring on the screen.  |

## 11.1.2 Settings

1. Select [Common] → [Status Observation] from the menu.
2. The setting dialog box will appear. Make the settings with reference to the following explanation.

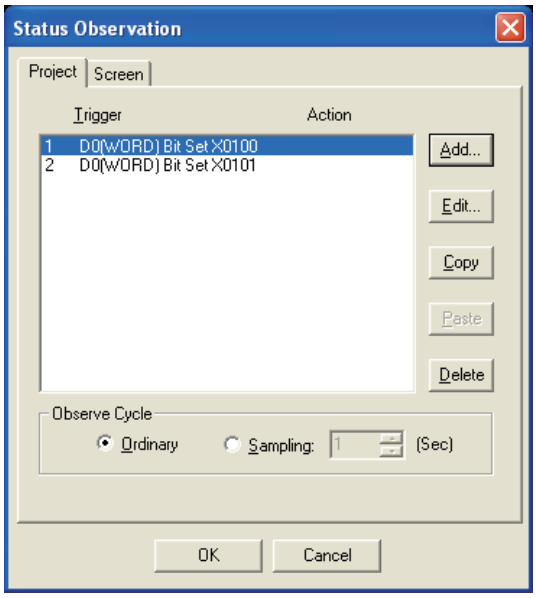
**Remark**

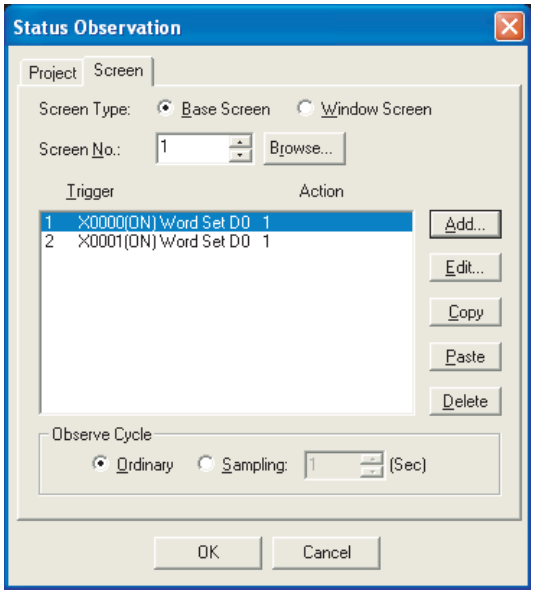
When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on on the project work space.

## 11.1.3 Setting items

Project tab.....Setting the status observation function common to the entire project
Screen tab.....Setting the status observation function for each screen



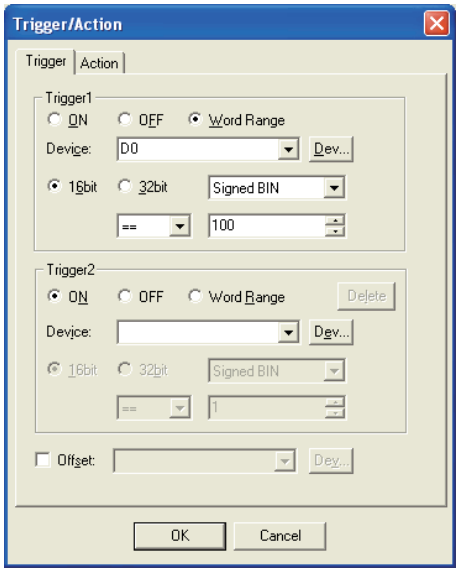




| Items | | Description | Model |
|---|---|---|---|
| Screen Type<br>(for Screen tab only) | | Select a screen for setting the status observation function.<br>Then select a screen No. (For GT10, [Window Screen] cannot be selected.)<br>Base Screen :Select this when setting the status observation function on a base screen.<br>Window Screen :Select this when setting the status observation on a window screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Screen No.<br>(for Screen tab only) | | Set the screen No. where the status observation function is set.<br>Click on the Browse button to confirm the screen image. | |
| List of Status Observation Function data | | Displays status observation function data (Trigger/Action) | |
| | Add | Adds new status observation function data.<br>Setting of up to 512 data is available<br>Click on this button, and a dialog box for setting trigger/action appears.<br>(☞ This section 1 Trigger/Action dialog box<br>The device NW No. and station No. set in trigger must be set as the same when setting plural status observation function data. | |
| | Edit | Changes the selected status observation function data.<br>Click on the button, and a dialog box for setting trigger/ action appears.<br>(☞ This section 1 Trigger/Action dialog box | |
| | Copy | Copies the selected status observation function data. | |
| | Paste | Pastes the copied status observation function data to the end of the list. | |
| | Delete | Deletes the selected status observation function data. | |
| Observe Cycle | | Select the observation cycle for the status observation function.<br>Ordinary : The status of the device set from the Trigger tab is monitored when END processing is completed of the sequence program scan time/link scan time.<br>Sampling : The status of the device set from the Trigger tab is monitored at the set sampling cycle (1 to 60 s). | |

## 1 Trigger/Action dialog box

(1) Trigger tab

Set the trigger to execute the status observation function.




Trigger | Action

| Items | | Description | Model |
|---|---|---|---|
| Trigger1/Trigger2 | | Set the trigger to execute the status observation function.<br>Up to 2 triggers can be set. (Setting 1 trigger only is allowed)<br>In the case of 2 triggers, when both of triggers are satisfied, the status observation function is executed.<br>ON : Operation is executed when bit device turns ON.<br>OFF : Operation is executed when bit device turns OFF.<br>Word range : Operation is executed when the word device value is within the set range.<br>After setting the trigger, assign the device that is used as a trigger.<br>(☞ Section 5.1 Device Setting)<br>In the case of a word device, set the data size, data type and specified range of values. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Data Type | Select the data type of the word device to be monitored.<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>BCD : Treats the word device value as a BCD value.<br>Real : Treats the word device value as real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Specified Range of Word Device Value | Set the word device value range for trigger conditions.<br>To the word device value, set the [operator] in the left, and the [fixed value] in the right.<br>Example: [<], [100]..... Executes operation when the word device value is less than 100.<br>[==], [100]..... Executes operation when the word device value is equal to 100.<br>[! =], [100]..... Executes operation when the word device value is not equal to 100. | |

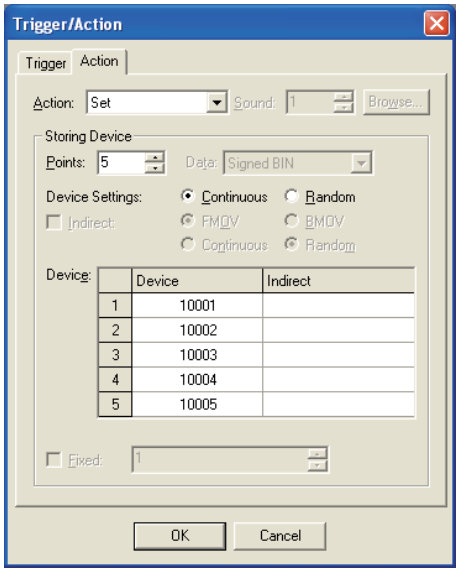
(Continued to next page)

Trigger | Action

| Items | | Description | Model |
|---|---|---|---|
| Trigger1/ Trigger2 | Delete (Only for Trigger2) | Deletes the set data of Trigger2. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Offset (Only allowed in setting of status observation function for each screen) | Check this item when executing monitor by switching between multiple devices.<br>(☞ Section 5.7 Offset Function)<br>After checking, set the offset device.<br>(☞ Section 5.1 Device Setting)<br>Data size is fixed as 16 bits. | |

(2) Action tab

Setting the action data for the status observation function




Trigger | Action

| Items | | Description | Model |
|---|---|---|---|
| Action | | Type of action settings for the status observation function.<br>Momentary : Momentary triggers the bit device ON for an instance.<br>Set : The bit device is turned ON<br>Reset : The bit device is turned OFF<br>Alternate : The current bit device status is inverted (OFF←→ON).<br>Data Set 16bit : Writes a value into the word device (16bit).<br>Data Set 32bit : Writes a value into the word device (32bit).<br>Sound: Sounds are output. (Only GT15 and GT SoftGOT1000)<br>Select [Sound], and then set the number for a sound file to be output.<br>Click the Browse button, and then a sound file can be selected in the list.<br>( Section 13.8 Sound output) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Storing Device | | Set the target device that will result from the action type when the status observation function trigger is satisfied. | |
| | Points | Set the number of action devices (Points) when the trigger is satisfied.<br>The maximum points of devices depend on the setting of [Action].<br>Momentary, SET, RST, ALT : 40 points<br>DataSET(16bit) : 20 points.<br>DataSET(32bit) : 10 points. | |
| | Data | Select the data type in which data are written into devices when [DataSET (16bit)]/[DataSET (32bit)] is set in [Action].<br>Signed BIN : Treats the word device value as a signed binary value.<br>Unsigned BIN : Treats the word device value as an unsigned binary value.<br>BCD : Treats the word device value as a BCD value.<br>Real : Treats the word device value as a real number.<br>(Only when selecting [32bit] for [Data Size].) | |

(Continued to next page)

Trigger **Action**

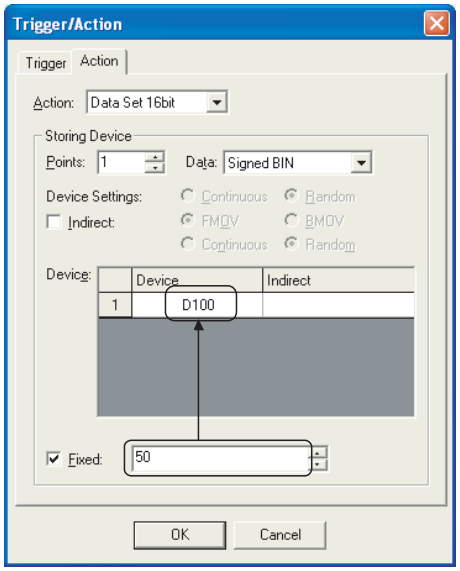
| Items | | Description | Model |
|---|---|---|---|
| Storing Device | Device Settings | Select the device setting methods. (For GT10, [Random] cannot be selected.)<br>Continuous : Select this item to set the specified number of devices continuously and starting from the set device automatically<br>Random : Select this item to randomly set the specified number of devices. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Indirect *1 | Check this item to enable writing other word device value into this word device when the trigger is satisfied.<br>When 2 or more points are set in [Points], select the action (FMOV/BMOV) of the word device to which the current value is written. | |
| | Device | Set the target device for when the trigger is satisfied. (☞ Section 5.1 Device Setting)<br>Setting of the head devices will automatically set the subsequent devices when [Continuous] is set in [Device Settings] and [Indirect].<br>When [Random] is set, click on each column to set the device. | |
| | Fixed *1 | Check this item to enable writing a fixed value into the word device when the trigger is satisfied. | |

For details of *1, refer to the following.

## * 1 Fixed and Indirect

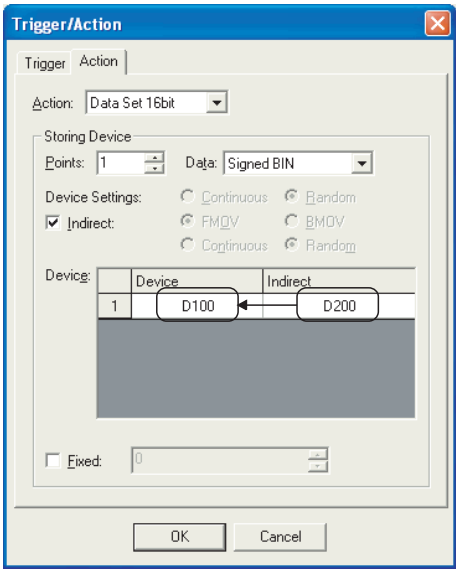
If [Fixed] and [Indirect] are set, the fixed value or other word device value can be written into the preset device.
Both of the [Fixed] and [Indirect] settings can be set concurrently.

(1) Fixed



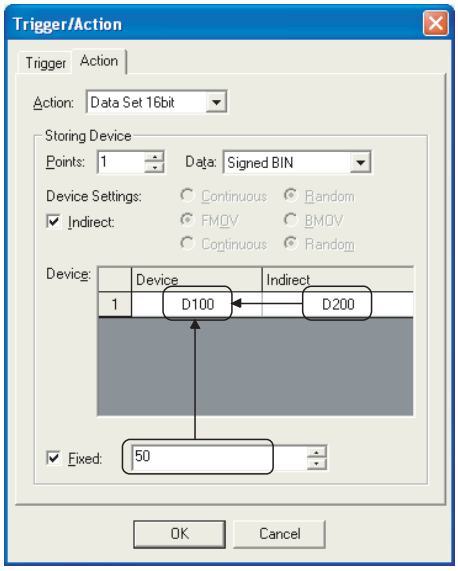

Write fixed value(50) into D100 when trigger is satisfied.

(2) Indirect




Write value of D200 into D100 when trigger is satisfied.

(3)Fixed + Indirect



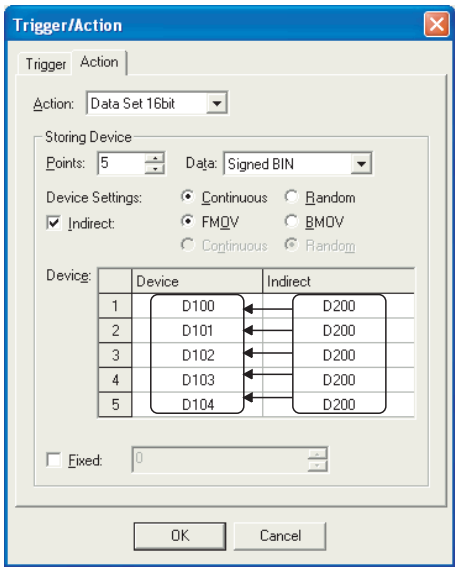

Write value of D200 + fixed (50) into D100 when trigger is satisfied.

When 2 or more setting device points are set under the indirect setting (as shown in above (2), (3)), select the write action to the device. (When [Fixed] is set, the fixed value is added to the written value.)

FMOV :When the trigger is satisfied, writes the current value of the word device specified in [Indirect] to the set device.

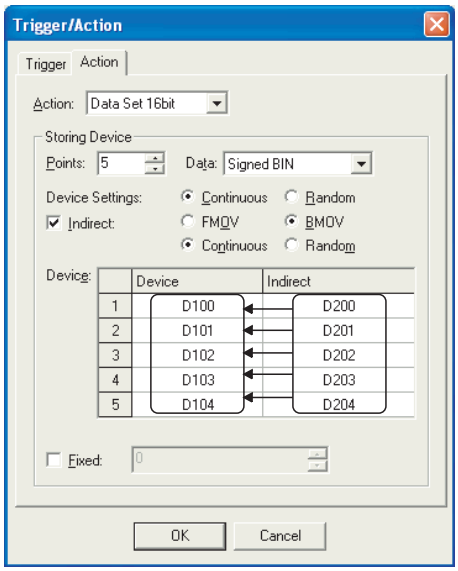
BMOV :When the trigger is satisfied, writes the current values of multiple word devices specified in [Indirect] to the set device.

(1) FMOV




When trigger is satisfied, writes D200 value into D100 to D104.

(2) BMOV




When trigger is satisfied, writes values of D200 to D204 into D100 to D104 respectively.

## 11.1.4 Precautions

This section provides the precautions for using status observation function.

### 1 Precautions for drawing

(1) Maximum number of objects that may be set on one project 512 objects can be set for the status observation function.

(2) Maximum number of objects that may be set on one project 512 objects can be set for the status observation function.

(3) The maximum number of write action data
- Momentary, RST, SET, ALT : 40
- DataSET (16bit) : 20
- DataSET (32bit) : 10

(4) Cautions for setting
When data size exceeds 64 k bytes, even if number of status observation is smaller than 512, no more status observation can be set.
Change the settings to make the data size less than 64k bytes.

☞ Section 2.4 Specifications of Available Object Functions

(5) When the setting of the observe cycle is not correct, (e.g. incomplete data collection owing to timing delay)
And the object with the offset function specified is set on the screen, trigger device monitored in the status observation function will be delayed.
If this happens, the observe cycle setting may not function normally owing to data collection omission resulting form timing delay.
Set the observe cycle to [Ordinary] to execute normal data collection.

(6) Trigger device
The status of the device executing the status observation function (trigger device) must be held for the time of the status observation cycle or longer.

### 2 Precautions for use

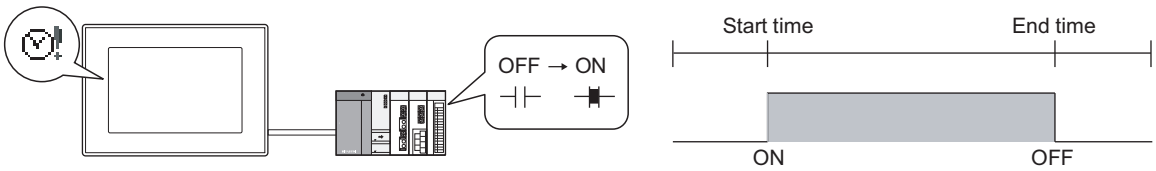
(1) When using sound output function
For the sound output, refer to the precautions for the sound output function.

☞ Section 13.8 Sound output

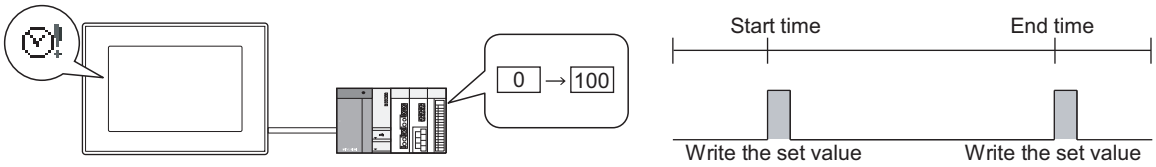
# 11.2 Time Action Function

This function performs any of the following actions 1 to 3 when the set day of week/time of day is reached.
The operations are based on the day of the week and time of the GOT.

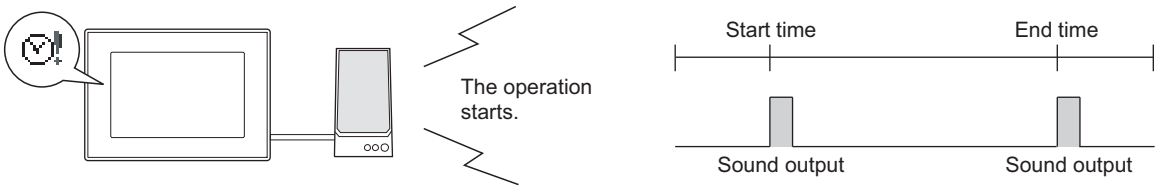
1 Turns bit device ON/OFF.




2 Writes value to word device.



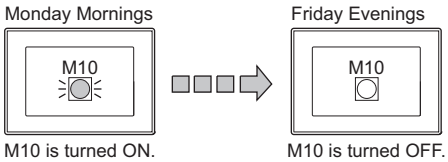

3 Outputs sounds. (External speakers are required. ) (Only GT16, GT15, and GT SoftGOT1000)



Application example

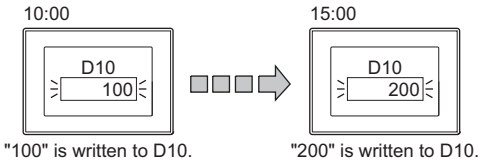
Designated bit device is turned ON on Monday mornings and turned OFF on Friday evenings.

☞ Make settings on Time tab, Action tab.



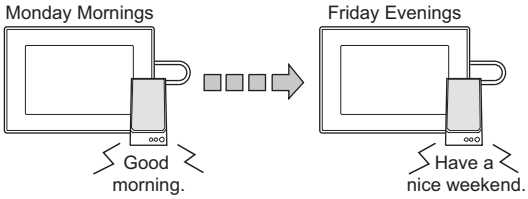

Values are written on word devices at the designated time every day.

☞ Make settings on Time tab, Action tab.




The sound 1 is played on Monday mornings, and the sound 2 is played on Friday evenings.

☞ Make settings on Time tab, Action tab.




## 11.2.1 Settings

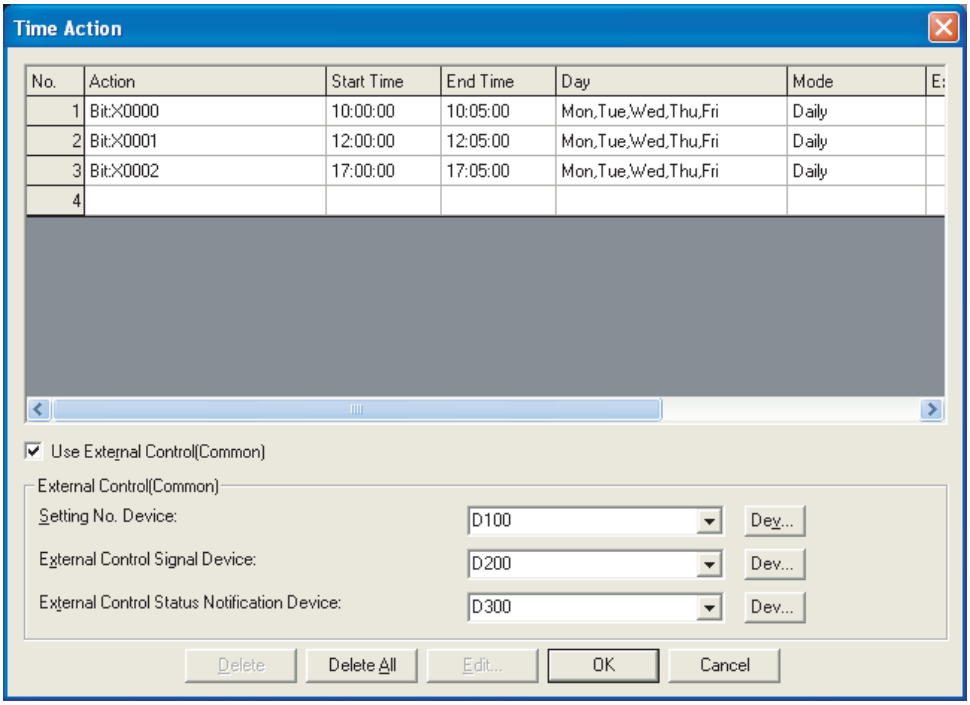
1. Select [Common] → [Time Action] from the menu.
2. As the setting dialog box will appear, make the settings with reference to the following explanation.

**Remark** When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on in the project work space.

## 11.2.2 Setting items

Set the action, start time and end time for the time action.



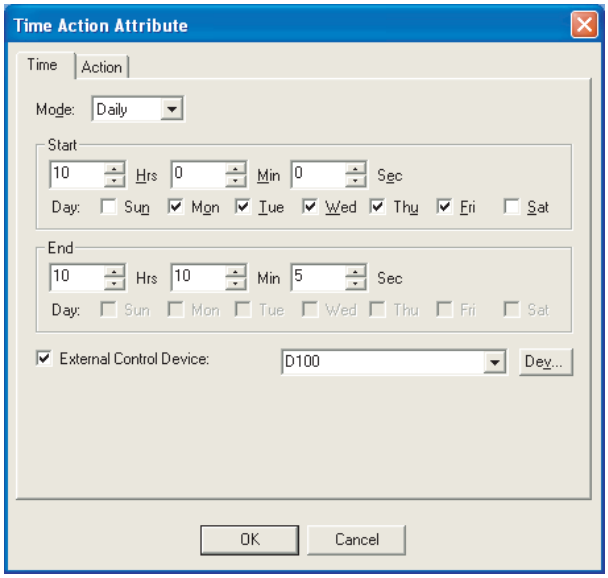

| Items | | Description | Model |
|---|---|---|---|
| Use External Control (Common)*2 | | Check this item to control time action setting with a device.<br>After the check, set each device in [External Control (Common)].<br>This setting enables to output the setting contents of time action to devices and to change the time action setting with a device.<br>Set [External Control Device] in the Time tab of each time action setting before using this setting. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| External Control (Common) | Setting No. Device | Set a device to specify time action setting to be controlled. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | External Control Signal Device | Set a trigger device to execute control. | |
| | External Control Status Notification Device | Set a device to notify the execution result of output/change. | |
| Delete | | Time action setting will be deleted by clicking on the Delete button after selecting the time action to be deleted on the list. | |
| Delete All | | All the time action settings will be deleted by clicking the Delete All button. | |
| Edit *1 | | Time action setting is available by clicking on the Edit button after clicking (selecting) the No. of the row to be set/edited on the list. | |

For details of *1, *2, refer to the following.

*1 Time action settings

Time tab

Set the day-of the-week and time when the time action function is to be used.




Time | Action

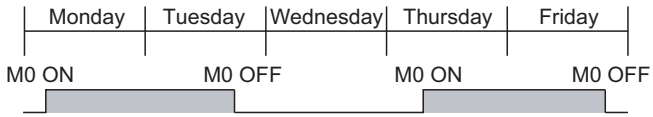
| Items | Description | Model |
|---|---|---|
| Mode | Set the mode type for the time action function.<br>Daily : Time action is executed only on the specified day-of-the-week/time.<br>Through : Time action is executed continuously for the specified number of days. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Start/End | Select the day-of-the-week and time when the time action function starts/ends.<br>Start : Set the day/time when the time action starts.<br>When the mode is set as [Daily], multiple days can be set.<br>End : Set the day/time when the time action ends.<br>Only when the mode is set as [Through], the day-of-the-week setting is available. | |
| External Control Device | Check this item to control time action setting with a device.<br>After the check, specify the device.<br>Continuous eight points from the set device are set as external control devices.<br>(☞ This section *2 External control)<br>Before using this setting, set [Use External Control (Common)] in the Time Action. | |

**Hint!**

Setting the same time action twice a week

When Through is set, a single action only can be executed once in a week.
To set a single action executed twice a week by Through, please set the time function with different start/end time twice (■Mode of [Time] tab: set in Through).

- Turn M0 ON in AM of Monday, and turn M0 OFF in PM of Tuesday (Set this in time action1)
- No action on Wednesday
- Turn M0 ON in AM of Thursday, and turn M0 OFF in PM of Friday (Set this in time action2)

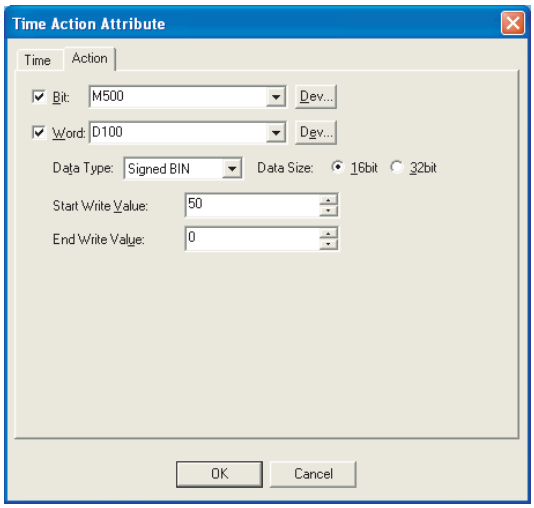


**Remark** When actual day-of-the-week does not match the date controlled by controller

Even if the day-of-the-week data of the PLC CPU is incorrect, GOT will calculate the correct day of the week from the date data of the PLC CPU and execute the time action function on the day.

Action tab

Set the condition trigger executing the time action function.




Time | Action

| Items | | Description | Model |
|---|---|---|---|
| Bit | | Check this item to turn bit device ON/OFF at the start/end time.<br>Set the bit device to be turned ON/OFF. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Word | | Check this item to write the specified value to word device.<br>Set the word device to which the value is written. | |
| | Data Type | Select the data type of the word device for value write.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>BCD : Treats word device value as BCD (binary decimal) value.<br>Real : Treats word device value as floating point type real number.<br>(Only when selecting [32bit] for [Data Size].) | |
| | Data Size | Select a data size (16bit/32bit) for the word device. | |
| | Start Write Value | Set the value to be written to the specified word device at the start time. | |
| | End Write Value | Set the value to be written to the specified word device the at end time. | |
| Sound | | Select the item for outputting sounds at the start or end time.<br>Click the Browse button, and then select a sound file to be played in the list.<br>(☞ Section 13.8 Sound output) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Start | Set the number for the sound file to be played at the start time. | |
| | End | Set the number for the sound file to be played at the end time. | |

*2 External control

The following explains the details of each device which executes the external control of time action.

(1) External control device (set in each Time Action Attribute)
Stores time action setting.
Continuous eight points from the set device are set as external control devices.
If the device values of the start day and end day of the week are 0, the time action setting will be disabled.

| Device | Item | Description |
|---|---|---|
| Set device | Mode | Indicates time action mode.<br>b0 : 0 (Daily), 1 (Through)<br>b1 to b15 : Must not be used |
| Set device + 1 | Start day of the week,<br>End day of the week | Indicates start day of the week/end day of the week for time action.<br>(When the mode for the time action is set to [Daily], do not set the device for the end day of the week.)<br>Start day of the week / End day of the week<br>b0: Sun / b8: Sun<br>b1: Mon / b9: Mon<br>b2: Tue / b10: Tue<br>b3: Wed / b11: Wed<br>b4: Thu / b12: Thu<br>b5: Fri / b13: Fri<br>b6: Sat / b14: Sat<br>b7: Must not be used / b15: Must not be used |
| Set device + 2 | Start time (Hrs) | Indicates the start time of time action. (Data format: BCD) |
| Set device + 3 | Start time (Min) | |
| Set device + 4 | Start time (Sec) | |
| Set device + 5 | End time (Hrs) | Indicates the end time of time action. (Data format: BCD) |
| Set device + 6 | End time (Min) | |
| Set device + 7 | End time (Sec) | |

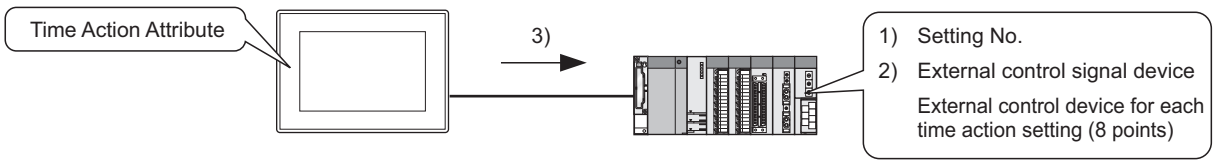
(2) Setting No. (set in Time Action)
Specify time action setting to which external control is executed.

(3) External Control Signal Device (set in Time Action)
Executes external control.
Each bit turns on according to the execution contents.
(If the devices turn on simultaneously, b0 is given the highest priority.)
b0: Output trigger (outputs the contents of time action to an external device)
b1: Change trigger (changes time action setting according to external device contents)
b2 to b15: Must not be used

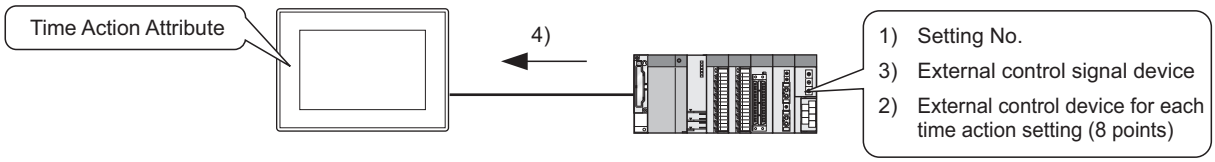
(4) External Control Status Notification Device (set in Time Action)
Notifies the result of when external control is executed.
When turning off external control signal device after output/change, this signal also automatically turns off.
b0: Normal termination of output
b1: Normal termination of change
b2: Error (System alarm occurs.)
b3 to b15: Must not be used

Example: Move at external control

Output (when time action contents are output to an external device)




Change (when time action setting is changed with external device contents)




Output (when time action contents are output to an external device)

1. Specify time action setting to be output with Setting No.
2. Turn ON b0 of external control signal device.
3. The time action setting is output to the external control device.

Change (when time action setting is changed with external device contents)

1. Specify time action setting desired to set with Setting No.
2. Write a value desired to set to the external control device.
3. Turn ON b1 of external control signal device.
4. Time action is set with the setting contents.

## 11.2.3 Precautions

This section provides the precautions for using the time action function.

### 1 Precautions for drawing

(1) Number of time actions that can be set in one project
Up to 32 time actions can be set in the time action function.

(2) Precautions for multiple time action function settings
Do not set different time actions to the same day-of-the-week and time. Otherwise GOT may work abnormally.

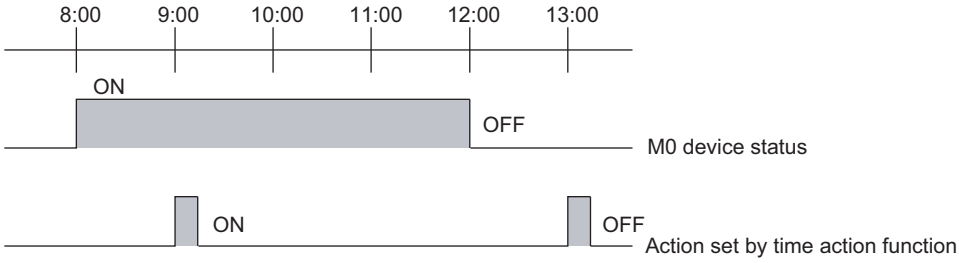
### 2 Precautions for use

(1) Clock function
For the precautions and restrictions about the clock function, refer to the following

☞ Section 2.5 Clock Function

(2) During operation of time action function
Note that changing the GOT's built-in clock time or any preset device status may affect the time action behavior.

Example1: When the set bit device (M0) is turned ON before the time action is executed
The action is not executed at the time set by the time action function



Example2: When the GOT's built-in clock time is changed

The action is executed at the next start time.

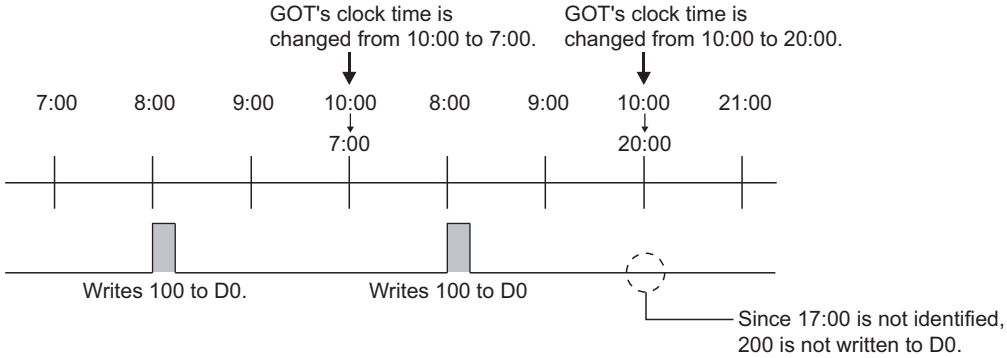
It will not be executed if the change is made after the start/end action time.

The probable causes of why times set by the clock are changed are described below.

- Times may be changed with "clock setting" of Utilities function (Time Notification setting).
- Time of the GOT clock synchronizes with that of controller when "Clock data GOT is matched to clock data External" is checked on Clock Settings of GT Designer2.
- Times may be changed by GOT's internal devices from GS513 to GS516.

Start action : 8:00 D0=100

End action : 17:00 D0=200




(3) When using external control

When time action setting is changed with a device, it can be restored to the setting made with GT Designer2 by either of the following operations.

- Powering off the GOT, resetting
- Transferring OS or project data

(4) When using sound output function

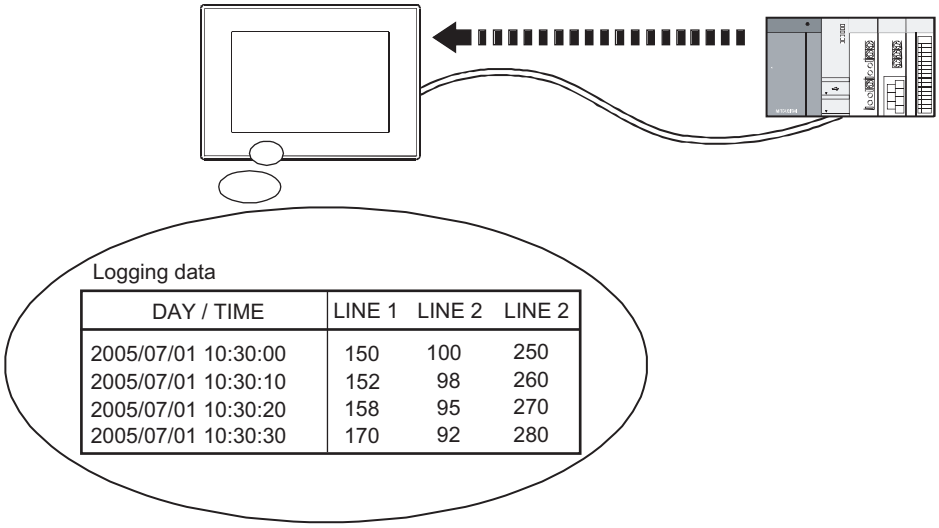
For the sound output, refer to the precautions for the sound output function.

☞ Section 13.8 Sound output

# 11.3 Logging Function

The logging function collects and stores device values of a controller at an arbitrary timing or in specified intervals.
The collected data can be displayed in either of the methods shown below.

- Displaying the collected data using the historical trend graph (☞Section 10.8 Historical Trend Graph)
- Displaying the collected data on a personal computer after saving the data in a CSV file / Unicode text file




| DAY / TIME | LINE 1 | LINE 2 | LINE 2 |
|---|---|---|---|
| 2005/07/01 10:30:00 | 150 | 100 | 250 |
| 2005/07/01 10:30:10 | 152 | 98 | 260 |
| 2005/07/01 10:30:20 | 158 | 95 | 270 |
| 2005/07/01 10:30:30 | 170 | 92 | 280 |

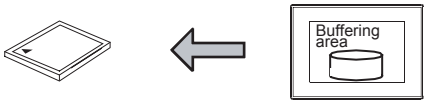
## 11.3.1 Relevant settings

For the logging function, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to the functions other than the logging function
…Confirm the relevant functions when setting.
For those functions, refer to the corresponding sections.

### 1 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

(1) Functions relevant to the functions other than the logging function

| • Buffer flash forced saving signal (GS520.b0) |
| --- |
| Saves the data in the buffering area to a memory card. *1   |

*1 When setting to not save the data to memory card (setting for [Buffer Save] in the logging setting is [No]), the logging data in the buffering area is not saved to a memory card.

## 11.3.2 Before setting logging

Settings to use the logging function and the details of the function are explained below.

### 1 Logging mode

There are two logging modes as below.

| Item | Logging mode | |
|---|---|---|
| | File save mode | Buffer historical mode |
| Application | Saves large-quantity logging data. | High speed operated logging and high speed operated display of historical trend graph |
| Save location of the collected data | Saves the data in the buffering area temporarily and then saves it to a memory card.<br>For a file name, a number (in the range of 0001 to 9999) is automatically appended. *1 | Saves the data in the buffering area only temporarily. *2 |
| Processing when the buffering area is full *3 | Saves the logging data in the buffering area to a memory card. | To be selected from the following.<br>• Further logging data is not taken into the buffering area.<br>• Logging data is deleted from older data. |
| File format for saving | Binary format file (*.G1L) *4 | Binary format file (*.G1L) *4 |
| Application of logging data saved in a memory card | To display the collected data | To be used as the backup data of the buffering area in the event of power failure |

*1 When the number of logs being stored in a file exceeds the set value, a new file is automatically created.
It is set at [Number of Logs a File] in the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)

*2 It is possible to save the logging data to a memory card as the backup of the buffering area in the event of power failure.
(☞ This section 1 (2) (b) Saving the collected data)

*3 The allowable maximum number of logs that can be temporarily saved in the buffering area is set at [Log Storage Number] in the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)

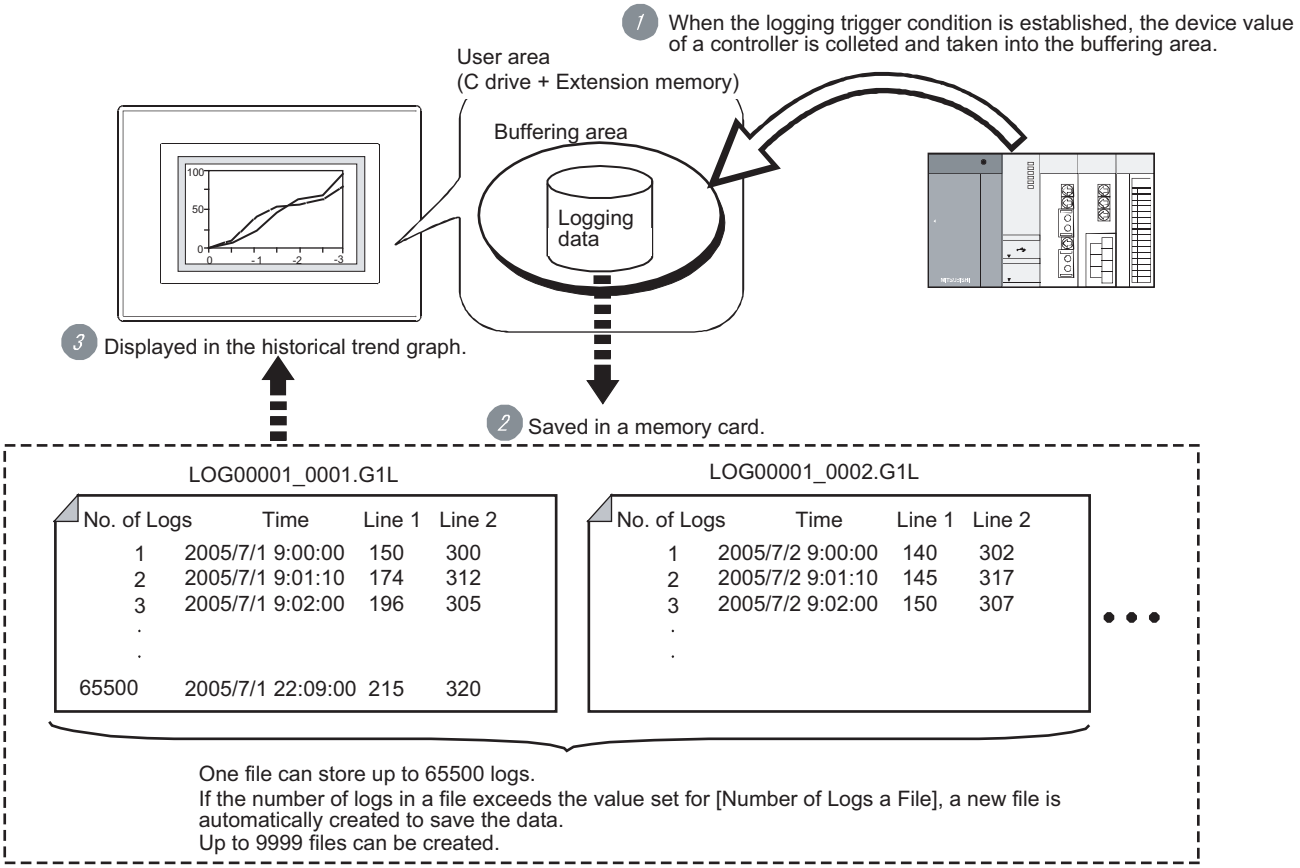
*4 The logging data may also be saved in a CSV file / Unicode text file to be displayed on a personal computer.
(☞ This section 5 (2) Displaying the collected data on a personal computer after saving the data in a CSV file / Unicode text file)

(1) File save mode

The file save mode is used for saving the collected logging data in a memory card.
When a file becomes full, another file is automatically created to save large quantity of logging data.
The file save mode is mainly used in the operations indicated below.

- To save large quantity of logging data
- To save the logging data in multiple files. The number of logs to be stored in a file is set and when the number of stored logs exceeds the set value and new file is created. (Example: Creating a file after collecting the data for a day)

(a) Data collection flow




1 When the logging trigger condition is established, the device value of a controller is collected and taken into the buffering area.

2 Logging data temporarily saved in the buffering area is saved to a memory card.

3 Using the collected logging data, displays as indicated below are possible.

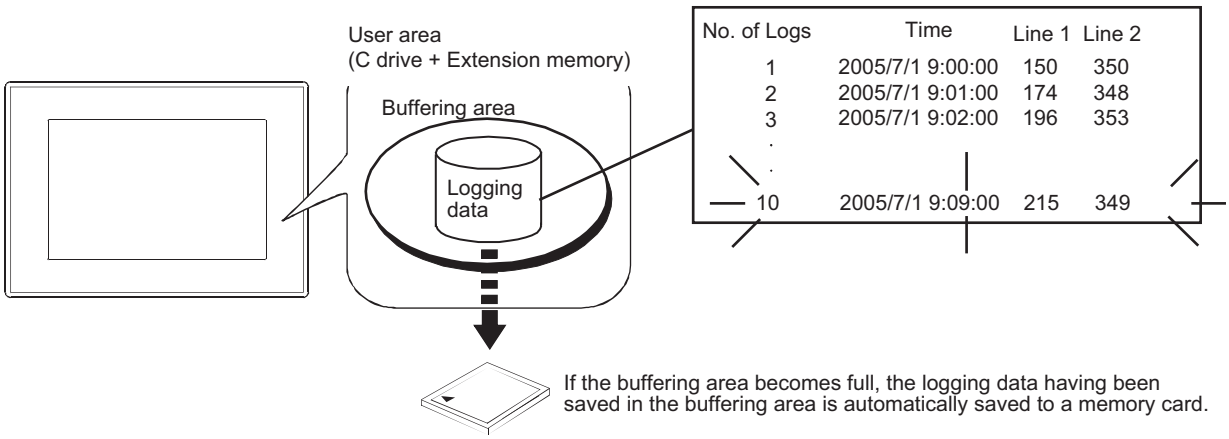
- Display by historical trend graph
- Display on a personal computer by saving the data in a CSV file / Unicode text file

(b) Saving the collected data

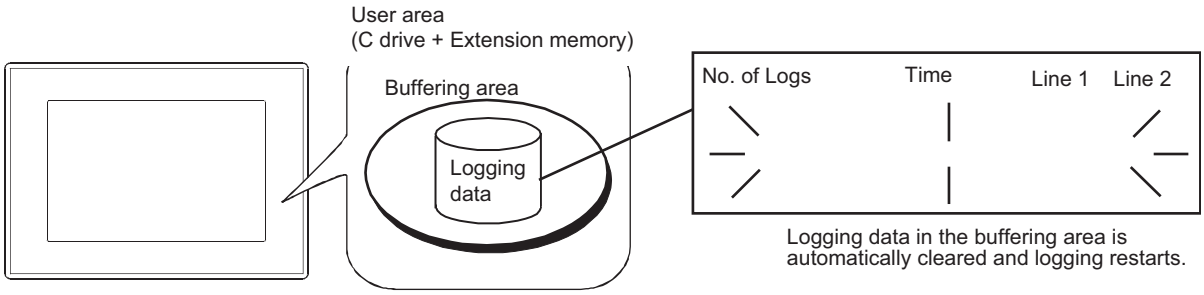
When the buffering area becomes full, the logging data having been saved in the buffering area is automatically saved to a memory card.

The number of logs that are temporarily saved in the buffering area is set for [Log Storage Number] of the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)

When [Log Storage Number] setting is "10"




After the logging data is saved in a memory card, the logging data in the buffering area is automatically cleared and logging restarts.




**Point**

(1) To save the logging data at desired timing

Use either of the following setting.

After saved, the logging data is cleared from the buffering area.

- [File Terminal Trigger] in the logging setting (☞ Section 11.3.2 1 (1)(d) File creation timing (File Terminal Trigger))
- [Store Trigger] in the logging setting (☞ Section 11.3.4 2 (3) File save tab)

(2) When the logging data is already stored in the file

The logging data to be saved is appended to the logging data already stored in the file.

**Remark**

Device for notifying processing

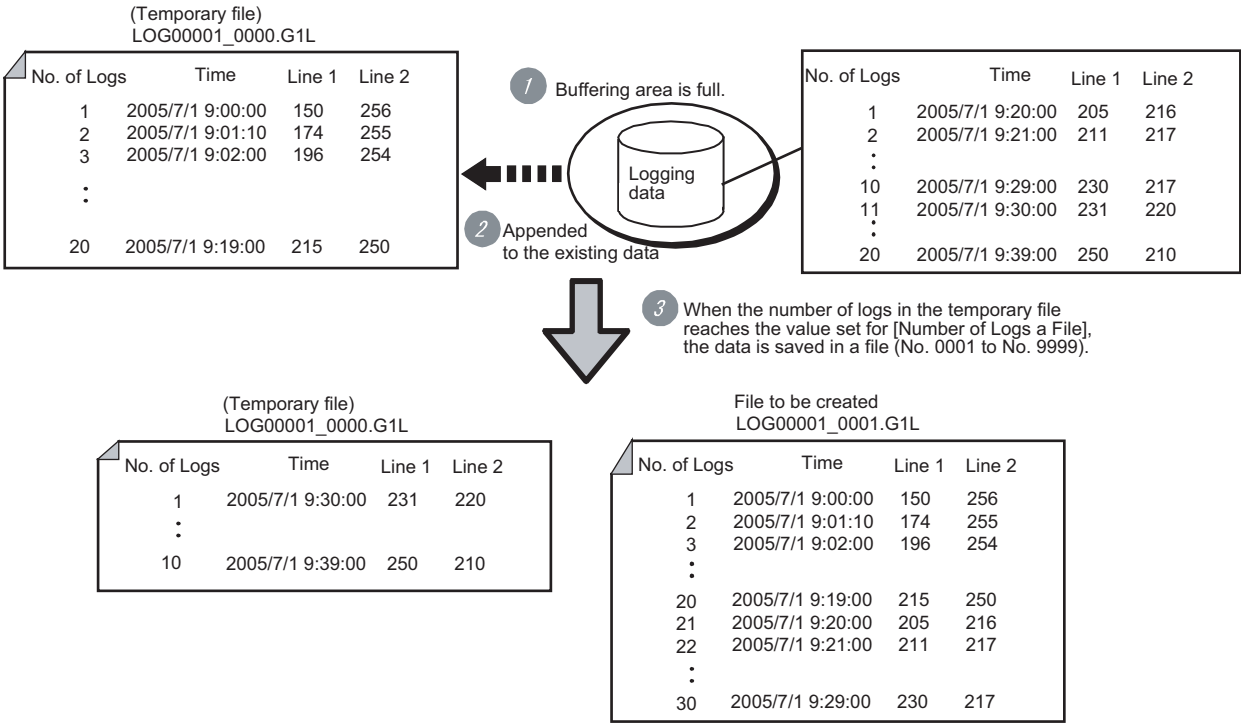
File saving processing can be notified using a device.

(☞ This section 4 (3) Writing notification device)

(c) File creation timing (when the buffering area is full)

When the number of collected logs reaches the value set for [Number of Logs a File] in the logging setting, a file is created automatically to save the successive data. (☞ Section 11.3.4 2 (1) Basic tab)

Example: When [Number of Logs a File] setting is "30"




1 When the buffering area becomes full, the logging data in the buffering area is automatically saved to a memory card (appended to the existing data).

2 The data is saved in a temporary file (file No. 0000).

3 When the number of logs saved in the temporary file reaches the value set for [Number of Logs a File], the data in the temporary file is saved in a file (file No. 0001 to 9999).

**Point**

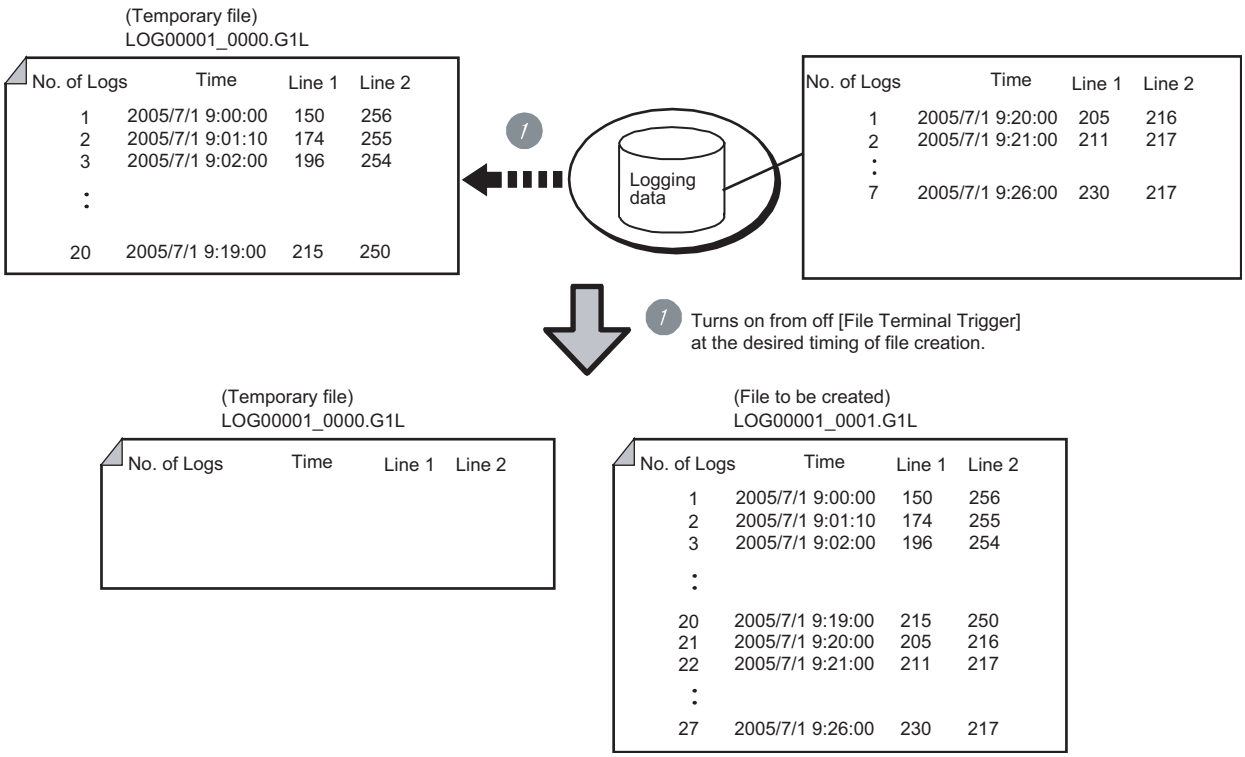
When setting to save a CSV file / Unicode file at the same time

A CSV file / Unicode text file is created at the timing of 3 above.
The file is not created at the timing of 1 above.
For a CSV file / Unicode text file, refer to the following.

☞ This section 5 (2) (a) Creating a file when saving the logging data to a memory card

(d) File creation timing (File Terminal Trigger)

Use [File Terminal Trigger] in the logging setting to save the data at a desired timing by creating a file independent of the saved number of logs. (☞ Section 11.3.4 2 (1) Basic tab)




1 The logging data in the Buffering area / Temporary file (file No. 0000) is saved in a file (file No. 0001 to 9999) when [File Terminal Trigger] is turned ON independent of the number of logs saved in the buffering area.

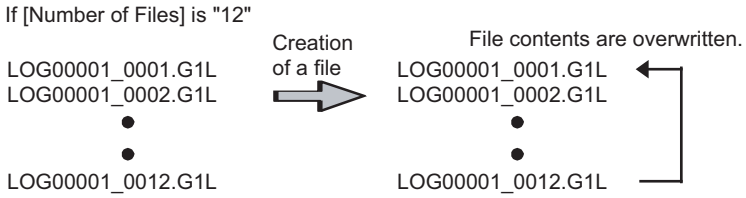
**Point**

When the number of files exceeds the set number of files

The file number returns to "0001".

The logging data to be saved overwrites the data in the file (file No. 0001) and the existing data in the file is deleted.

If the file must not be overwritten, save the file in the memory card to other location.



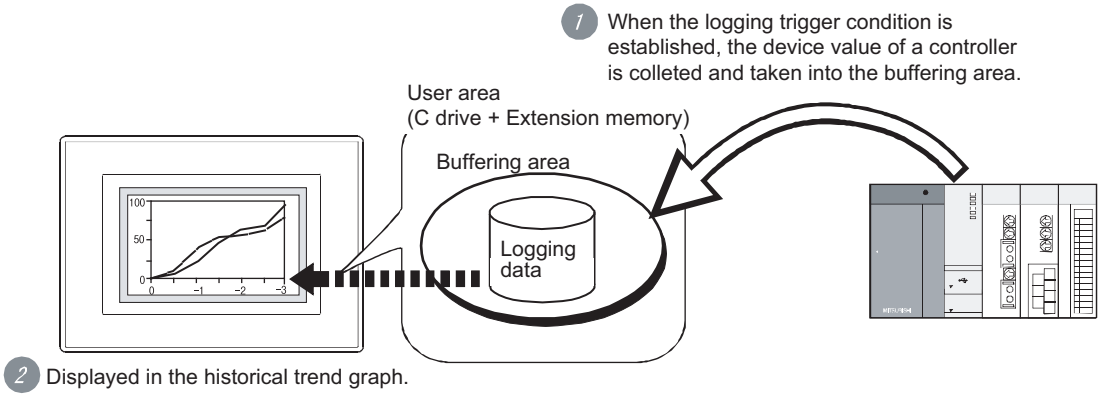
(2) Buffer historical mode

The buffer historical mode retains the logging data only in the buffering area to display the data in historical trend graph on GOT at high speed.

The buffer historical mode is mainly used in the operations indicated below.

- To execute high speed logging and high speed display of historical trend graph
- Cases where saving of large quantity of data is not necessary

(a) Data collection flow



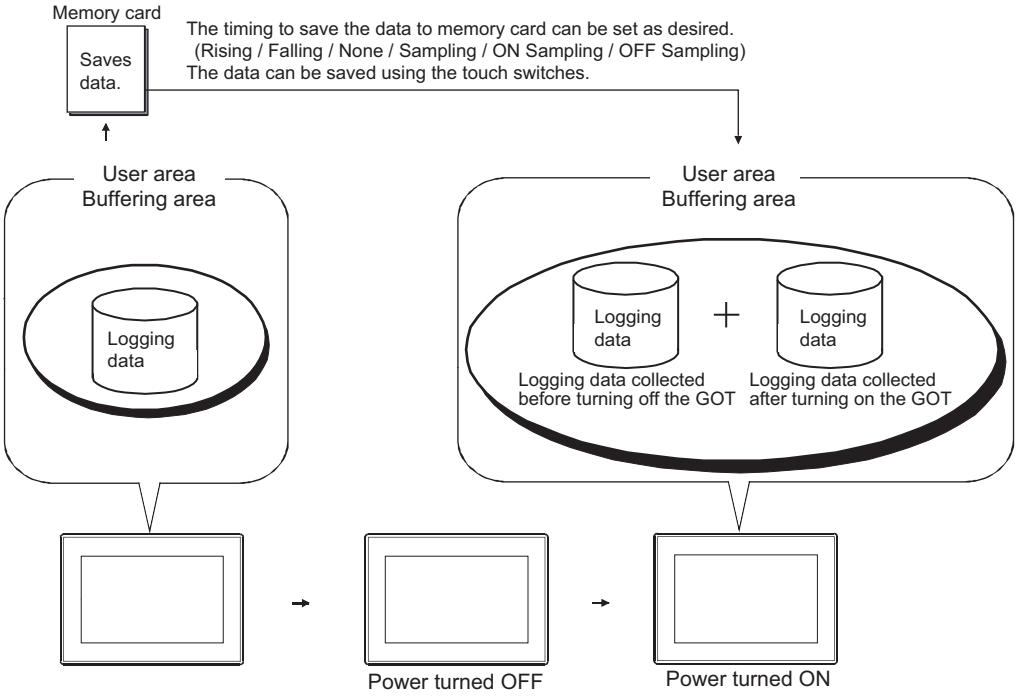

1 When the logging trigger condition is established, the device value of a controller is colleted and temporarily taken into the buffering area.

2 The logging data temporarily saved in the buffering area is displayed in historical trend graph.

(b) Saving the collected data

If the logging data is saved in a memory card, the logging data is read out from the memory card to be restored when the GOT is turned on. (Restoration is automatically executed.)

The buffer historical mode is used to retain the logging data even when power failure occurs.




It is also used to save the data in a memory card due to filled capacity of the buffering area.

It is set at [Buffer Save] of the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)

**Point**

Precautions for starting up the GOT

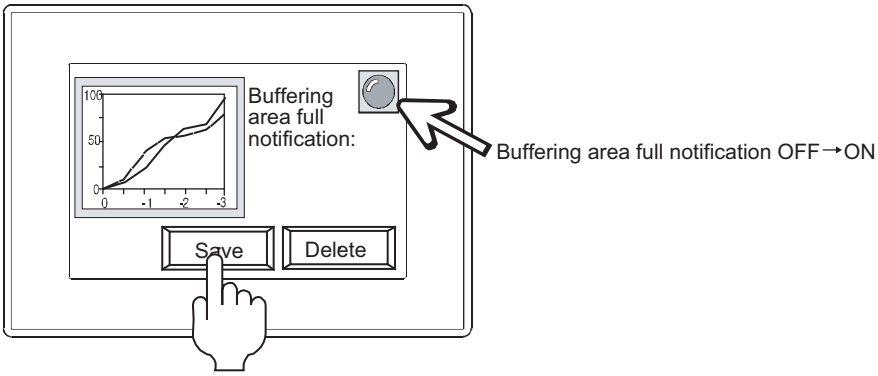
When restore the logging data by reading it out from a memory card, insert the memory card to the GOT before turning ON for the GOT.
Once the GOT is turned ON, the logging data can not be restored by reading out the data from the memory card.
Also when the memory card is inserted after turning ON, the logging data in the memory card is overwritten at saving its data to memory card.

(c) When the buffering area becomes full

When the number of logging data saved in the buffering area reaches the value set for [Log Storage Number] of the logging setting, this state can be notified using [Full Notification Signal Device]. (☞ Section 11.3.4 2 (4) Extended tab)

Other setting items are provided to enable the operations as below.

- To give notification before the buffering area becomes full using [Buffer Full Alert Capacity] (☞ Section 11.3.4 2 (3) File save tab)
- To select the processing when the buffering area is full using [Action When Buffer is Full] (☞ Section 11.3.4 2 (1) Basic tab)



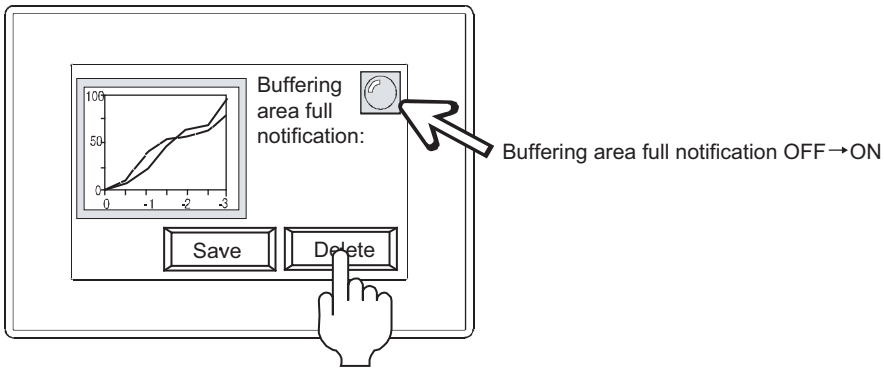

If the buffering area full notification signal turns ON,
the logging data in the buffering area is saved to memory card. *1

*1 The trigger for saving the logging data is set for [Store Trigger] in the logging setting. (☞ Section 11.3.4 2 (3) File save tab)

**Hint!**

Clearing the buffering area without saving the logging data

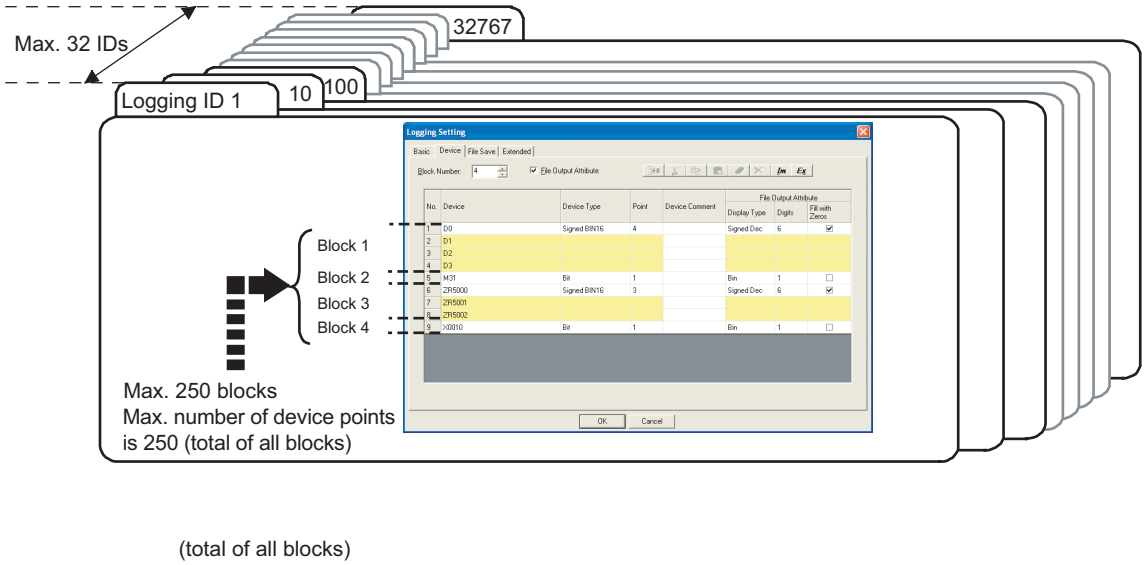
Use [Buffer Historical Data Clear] to clear the logging data in the buffering area.
(☞ Section 11.3.4 2 (4) Extended tab)




Clears the logging data in the buffering area.

## 2 Setting the devices for data collection structurally

The logging function can manage multiple logging in one logging setting by using in units of logging IDs and blocks.




The following explains logging ID and block

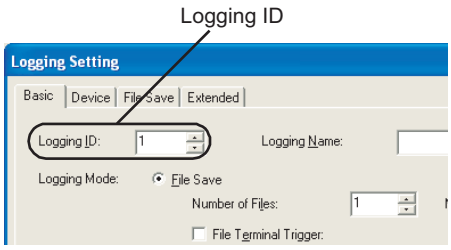
(1) About logging IDs

Logging ID indicates a number that distinguishes the logging setting.
It is also used to specify the data that is displayed in historical trend graph.

(a) Setting example

Logging ID is set in the Basic tab of [Logging Setting].

( ☞ Section 11.3.4 2 (1) Basic tab)




(b) Setting of logging IDs

Setting range of logging ID is 1 to 32767.
Note that the number of allowable logging settings is 32.

(2) For the block

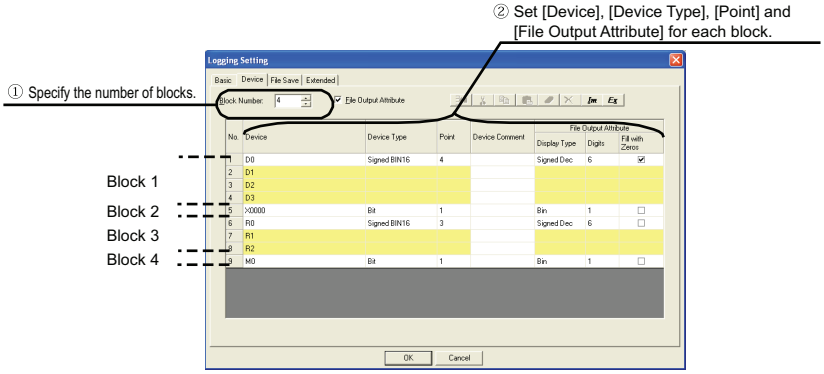
The block is setting unit to set random device number or different device type.

Setting for each block enables to perform the following settings.

- Setting that multiple device types (bit, word, etc.) exist in one setting
- Setting that continuous device number setting and random setting exist in one setting

(a) Setting example

The following explains an example of setting that bit devices and word devices (singed BIN16 and signed BIN32) exist in one logging setting. (☞ Section 11.3.4 2 (2) Device tab)




(b) Max. number of block

Max. 250 block settings can be set in one logging setting.

**Point**

(1) For max. No. of device points

For each logging setting, the allowable maximum number of device points is 250 points in total.

One device is counted as 1 point, regardless of word device or bit device.

For 32-bit devices, however, 1 device is counted as 2 points.

When multiple blocks are set, the device points for a device data transfer setting are the total device points of all the blocks.

Example)

In the case of block 1: 30 points, block 2: 70 points and block 3: 120 points

The number of device points in this setting is counted as 220 points (30 + 70 + 120).

(2) When setting random device numbers

One point of device number can be set in one block.

Therefore, setting must be made in different blocks to set random device numbers.

(3) When the device type is bit

The device that can be set in a block is 1 point (fixed).

## 3 Controlling the logging by device or sampling

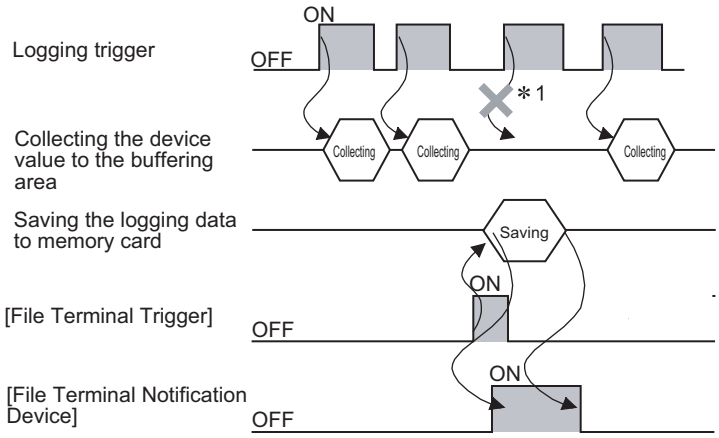
Execution of logging can be controlled by device or sampling (Rise, Fall, Sampling, ON Sampling, OFF Sampling).

It is set at [Logging Trigger] in the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)

## 4 Outputting the logging status to a device

The status of logging can be output to a device.
This feature can prevent problems in logging such as missing of logging data.
Since a device can be set for each logging ID, outputting the process status by logging ID is possible.

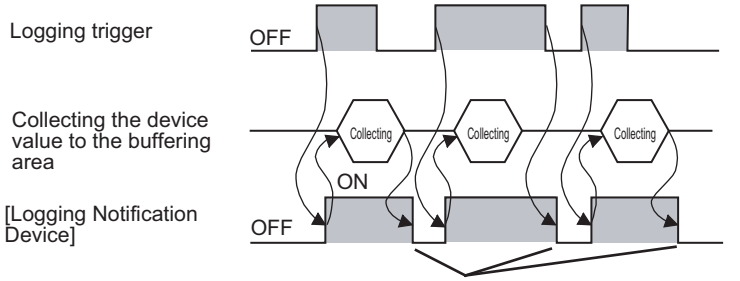
(1) File terminal notification device (file save mode only)
[File Terminal Trigger] notifies that collection of device values is interrupted.
When the signal is ON, device value collection is interrupted.
Have the logging trigger established when the signal is OFF.




*1 Device value collection is not executed while the logging data is being saved.
The established trigger condition is ignored.

(2) Logging notification device
The device notifies that device values of a controller are being collected to the buffering area.
While this signal is ON, device value collection is not executed even if the logging trigger is established.
Have the logging trigger established when the signal is OFF.

When [Trigger Type] of [Logging Trigger] is [Rising]




The logging notification device goes OFF in the state the logging trigger is not established and the device value collection processing has completed.

(3) Writing notification device
The device notifies that the logging data is being saved to a memory card.
When this signal ON, file saving is not executed even if the file save trigger is established.
Have the file save trigger established when this signal is OFF.

(4) Writing error notification device
The device notifies that an error occurred while the logging data was written to a memory card.
The writing error notification device is not automatically turned OFF even if the error state is released. Therefore the device must be turned OFF by the user.
If the signal turns ON, check the following.
- Is the CF card access switch of GOT main unit is ON?
- Is the memory card free of errors?

(5) Logging count device
The device notifies the number of times the device value collection has been executed since the start up of GOT. (This is not the number of logs stored in the buffering area.)
Using this count value, it is possible to check if the logging is executed correctly.
Counting range is 0 to 65535 and when the count value reaches 65535, it cycles back to 0. (In the case of unsigned BIN16)
The count value is cleared when the GOT is turned OFF, or when it is reset or restarted.

(6) Full notification signal device (buffer historical mode only)
This device notifies that the buffering area has become full.
( ☞ This section 1 (2) Buffer historical mode)

(7) Buffer historical data clear alert (buffer historical mode only)
[Buffer Historical Data Clear] notifies that buffering area has been cleared.

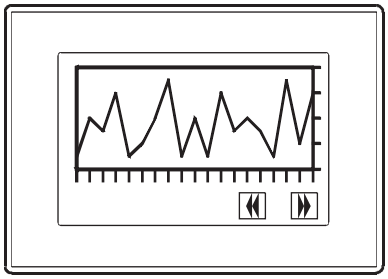
## 5 Using the logging data

Using the collected logging data, the display and operations as shown below are possible.

(1) Displaying in the historical trend graph

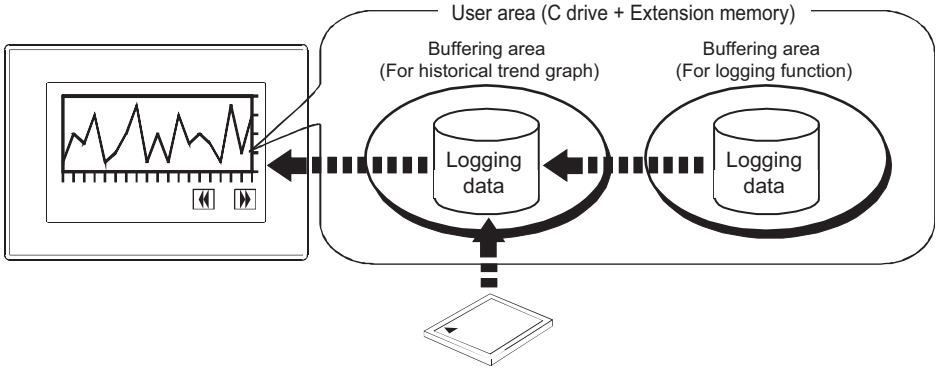
The collected logging data can be displayed in the historical trend graph.

The displayed data is specified using the logging ID. (☞ Section 10.8 Historical Trend Graph)



(a) Display target in the file save mode

The logging data in the buffering area (for the logging function) and the data in the memory card can be displayed.

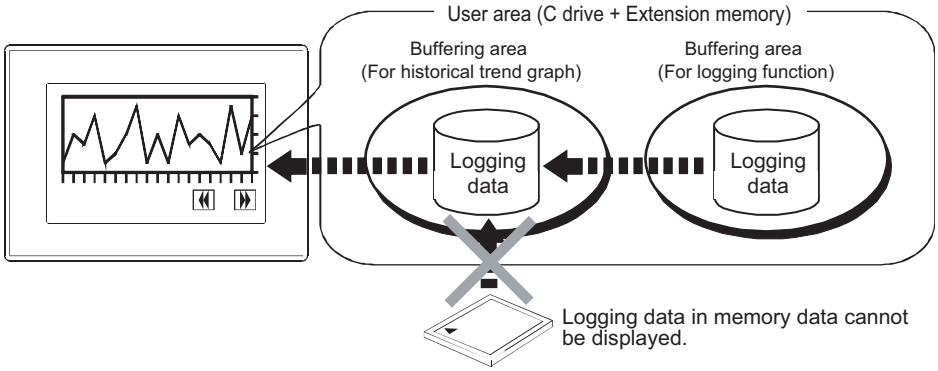



(b) Display target in the buffer historical mode

Only the logging data in the buffering area (for the logging function) can be displayed.

The logging data saved in a memory card is not displayed.

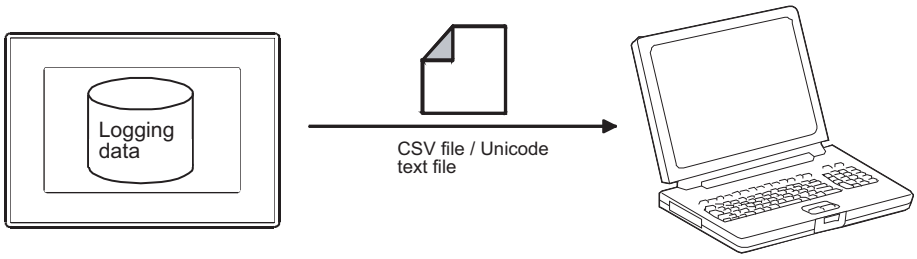
To display the older logging data, use the file save mode.



(2) Displaying the collected data on a personal computer after saving the data in a CSV file / Unicode text file

The collected logging data is saved in a binary format file (*.G1L).

The collected logging data can be displayed on a personal computer by creating a CSV file / Unicode text file from the binary format file (*.G1L).




**Point**

When displaying logging data on personal computer available for multilingual input

For displaying logging data, use the Unicode text file.

With the Unicode text file, multiple languages are correctly displayed.

When binary logging data is converted into a CSV file or a Unicode text file, the logging data is displayed as shown below.

| | 1) | 2) | | | |
|---|---|---|---|---|---|
| :LOG | | | | | |
| :LOGGING_ID | 1 | Error occurs | | | |
| :SERIAL_ID | 1 | | | | 3) |
| :DEVICE_NUM | 4 | | | | 4) |
| :RECORD_NUM | 5 | | | | 5) |
| :DEV_COMMENT | LineA | LineB | LineC | LineD | 6) |
| :DEV_TYPE | BIT | BIN16 | BIN16 | BIN16 | 7) |
| :DISP_TYPE | BIN | DEC | DEC | DEC | 8) |
| :DEV_SIZE | 1 | 1 | 1 | 1 | 9) |
| 2008/1/8 10:34 | 1 | 660 | 332 | 2500 | |
| 2008/1/8 10:59 | 0 | 0 | 0 | 0 | |
| 2008/1/8 10:59 | 1 | 1000 | 11000 | 2200 | 11) |
| 2008/1/8 10:59 | 0 | 100 | 56 | 32 | |
| 2008/1/8 10:59 | 1 | 2558 | 357 | 951 | |

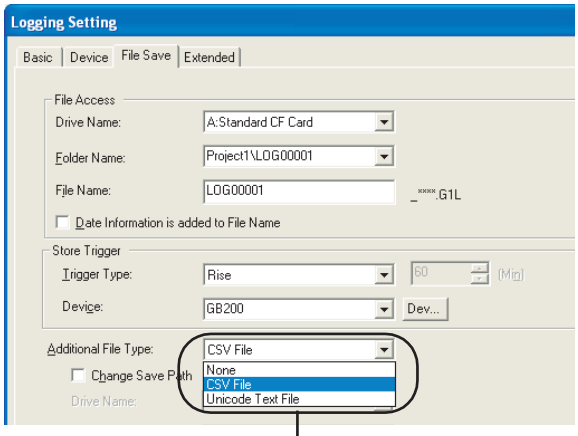
10)

| No. | Item | Description |
|---|---|---|
| 1) | Logging ID | Indicates the logging ID. |
| 2) | Logging name | Indicates the logging name. |
| 3) | ID number | Indicates the number (0001 to 9999) that is at the end of the file name. |
| 4) | Number of set devices | Indicates the number of devices. |
| 5) | Number of logging data | Indicates the number of logging data. |
| 6) | Device comment | Indicates the device comments. |
| 7) | Device format | Indicates the device formats.<br>BIT :Bit<br>BIN16 :Signed BIN16 or unsigned BIN16<br>BIN32 :Signed BIN32 or unsigned BIN32<br>BCD16 :BCD16<br>BCD32 :BCD32<br>REAL :Real number |
| 8) | Display format | Indicates the display formats.<br>BIN :Binary number<br>DEC :Signed decimal number<br>UNSIGNED_DEC:Unsigned decimal number<br>REAL :Real number |
| 9) | Device size | Indicates the device size. (Unit: Byte)<br>1: Bit device or word device (16 bits)<br>2: Word device (32 bits) |
| 10) | Time data | Indicates the time that the device values are collected. |
| 11) | Logging data | Indicates the collected device values. |

A CSV file / Unicode text file can be created using any of the methods indicated below.

(a) Creating a file when saving the logging data to a memory card
A CSV file / Unicode text file is saved when saving the logging data to a memory card. This method does not require special operation since a CSV file / Unicode text file is automatically created.

1 Make setting for [Additional File Type] in the File Save tab of the logging setting




Setting of [Additional File Type]

2 File save operation automatically creates a CSV file / Unicode text file.

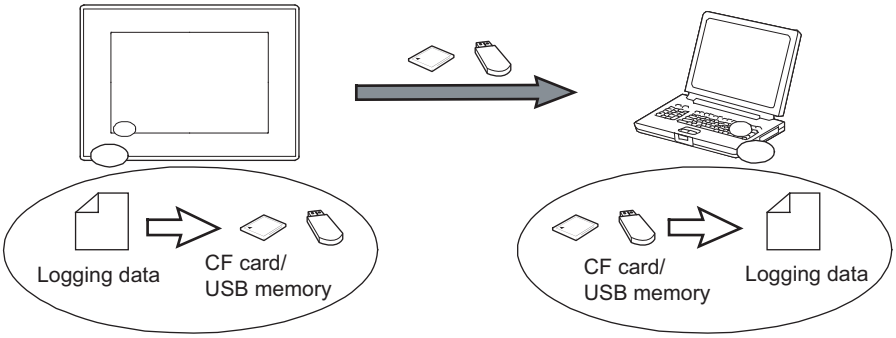
**Point**

(1) Interruption of logging processing due to file saving operation
Logging processing is interrupted during data saving to a file.
To shorten the interruption time, set [None] for [Additional File Type] and convert a binary format file (*.G1L) into a CSV file / Unicode text file using GT Designer2 or utility.

(2) CSV file / Unicode text file creation timing
A CSV file or Unicode text file is created when the logging data is saved to a CF card (at the time a binary format file (*G1L) is created).
Note that a CSV file / Unicode text file is not created at the timing the temporary file is created.
(☞ This section 1 (1)(c) File creation timing (when the buffering area is full))

(b) Creating a CSV file / Unicode text file using GT Designer2
Convert the binary format file (*.G1L) saved in a CF card to CSV files or Unicode text files with GT Designer2.
Since the conversion is executed by GT Designer2, no load is imposed to GOT when creating a CSV file / Unicode text file.

1. Store a binary format file (*.G1L) to a personal computer using either of the methods below.
   - Transferring by GT Designer2
     Select [Communication] → [To/From GOT ...] → [Resource Upload], and execute transfer using the Resource Upload → Computer tab.
   - Storing data in CF card or USB memory
     Save the logging data in a CF card or USB memory, and read the data in the CF card or USB memory using the personal computer.



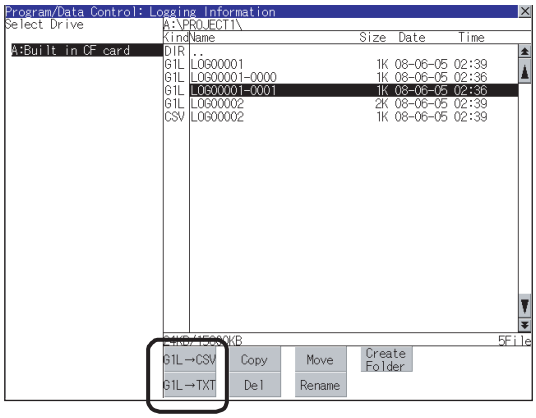

2. At GT Designer2, select [Common] → [Logging] → [Logging File Convert] menu, and then open the convert dialog box. After that, convert a binary format file (*.G1L) into a CSV file / Unicode text file.

(c) Creating a CSV file / Unicode text file using utility

Convert the binary format file (*.G1L) saved in a CF card to CSV files or Unicode text files with the utility.

A CSV file / Unicode text file can be created without using GT Designer2.

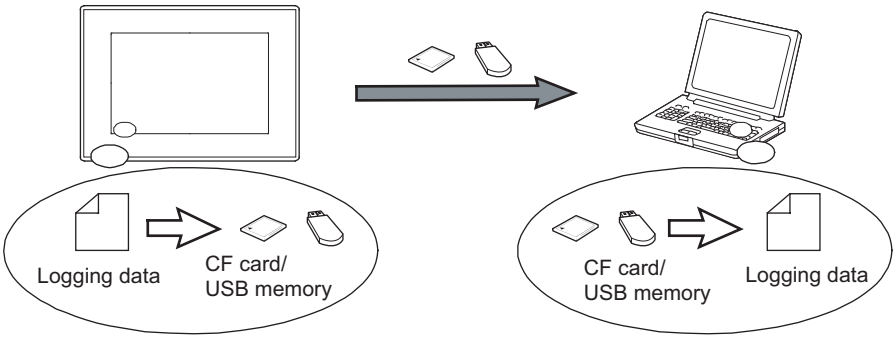
1. In the [Logging Information] of the utility, select G1L file and touch the G1L→CSV or G1L→TXT button.




G1L→CSV, G1L→TXT button

(Continued to next page)

2. Store the converted CSV file / Unicode text file in the personal computer using either of the methods below.
   - Transferring by GT Designer2
     Select [Communication] → [To/From GOT ...], and transfer the files on the Resource Upload → Computer tab.
   - Storing data in CF card or USB memory
     Save the logging data in a CF card or USB memory, and read the data in the CF card or USB memory using the personal computer.




**Remark** About operation in utility

For details, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.8 Logging Information)

## 6 Operation in utility

The logging function can perform the following operation in utility.

- Creating folder
- Deleting folder
- Copying file
- Deleting file
- Renaming file
- Moving file
- G1L → CSV/Unicode text conversion

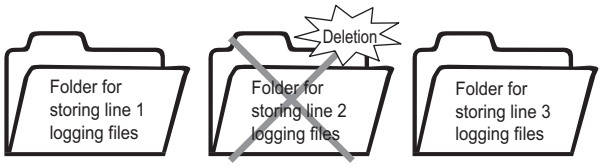
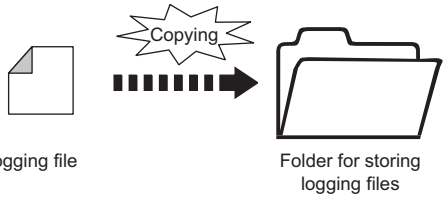
Management of logging files is possible on GOT, without using a personal computer.

**Remark** About operation in utility

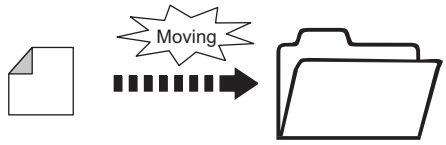
For details, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.8 Logging Information)

Logging file operations as indicated below are possible.
File operation is possible on GOT without reading out a file to a personal computer.

| Item | Description |
|---|---|
| Creating folder | Creates the folder that stores logging files.<br>This enables management of logging files by creating a folder for each line or line of products.<br> |
| Deleting folder | Deletes the folder that stores logging files.<br>  |
| Copying file | Copies a logging file.<br>This operation is used when making a backup file of a logging file.<br>  |
| Deleting file | Deletes a logging file.<br> |

(Continued to next page)

| Item | Description |
|---|---|
| Renaming file | Renames a logging file.<br> <br><br>LOG00001_0001.G1L → LOG00002_0001.G1L |
| Moving file | Moves a logging file to other folder.<br>This operation is used when making a backup file of a logging file.<br>  <br> |
| G1L → CSV/Unicode text conversion | Converts a binary format file (*.G1L) into a CSV file / Unicode text file.<br>( This section 5 (2) (c) Creating a CSV file / Unicode text file using utility) |

## 11.3.3 Settings

1. Perform either of the following operations.
   - Select the menu of the logging.
     [Common] → [Logging] → [Logging Setting]
     [Logging File Convert]
   - Click the logging icon.

     (Logging Setting) (Logging File Convert)

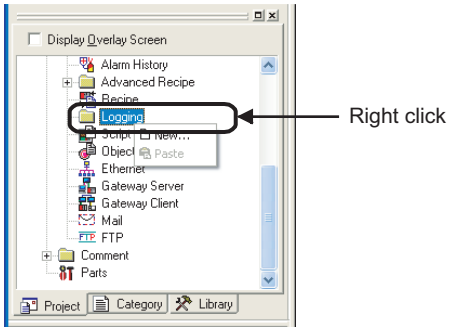
2. The setting dialog box is displayed. Make the settings with reference to the following explanation.

**Remark**

When making settings at the Workspace (Project).

(1) Logging setting

In the project workspace, right click Logging and select [New]. This displays the setting dialog box.



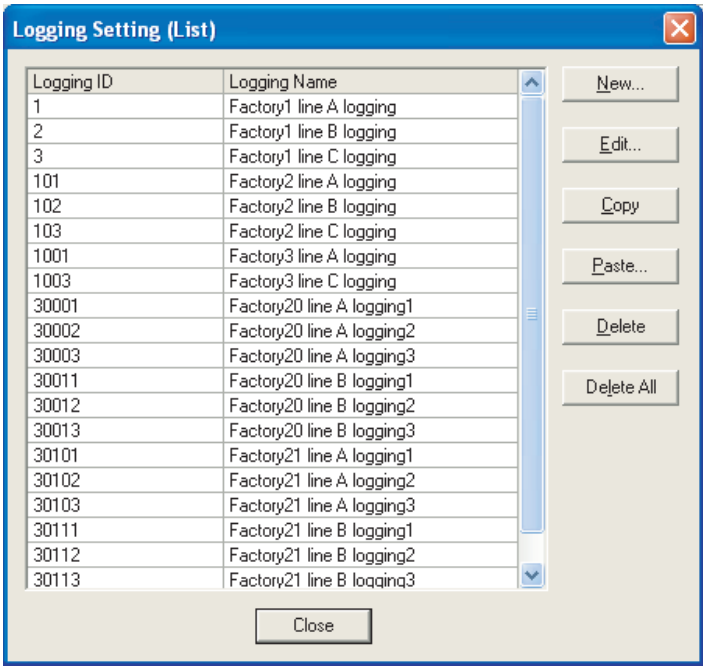

(2) Logging file conversion

Logging file conversion is not possible from the project workspace.
Open the convert screen using the menu.

## 11.3.4 Setting items

### 1 Logging setting (list)

The list of logging settings is displayed for the purpose of management of logging settings.
Setting is possible for up to 32 loggings.
This screen is displayed only by the selection of [Common] → [Logging] → [Logging Setting] menu.
When the logging setting is attempted from the project workspace, this screen is not displayed.

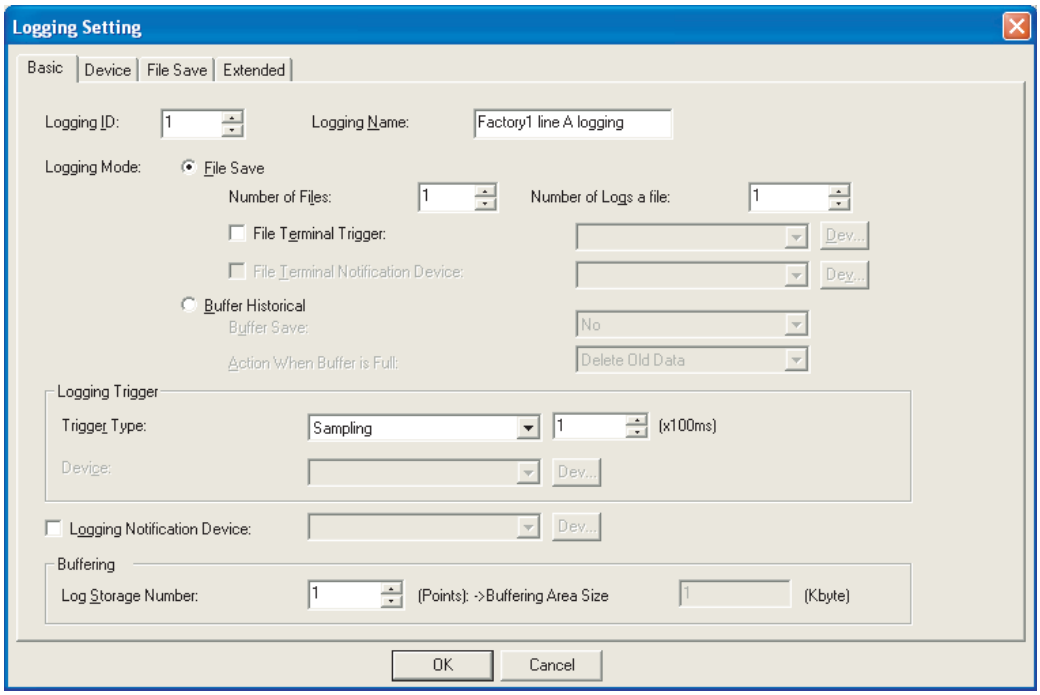



| Item | Description | Model |
|---|---|---|
| New | Click this button when setting a new logging, and the setting dialog box will appear.<br>(☞ This section 2 Logging setting) | GT16 GT15 SoftGOT-1000 GT11 GT10 |
| Edit | Click this button when editing the selected logging setting, and the setting dialog box will appear.<br>(☞ This section 2 Logging setting) | |
| Copy | Click this button to copy the selected logging setting. | |
| Paste | Click this button to paste the copied logging setting to the logging setting list.<br>Set the copy destination after clicking this button. | |
| Delete | Click this button to delete the selected logging setting. | |
| Delete All | Click this button to delete all logging settings. | |
| Close | Click this button to close the setting dialog box of the logging setting (list). | |

## 2 Logging setting

(1) Basic tab

Logging mode, logging trigger and buffering area are set.




**Basic** | Device | File Save | Option

| Item | Description | Model |
|---|---|---|
| Logging ID | Set the logging ID (1 to 32767) of the logging to be set.<br>( ☞ Section 11.3.2 2 (1) About logging IDs) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Logging Name | Set the name of logging.<br>For a logging name, up to 32 characters can be entered.<br>The set logging name is displayed in such as a CSV file / Unicode text file. | |
| Logging Mode | Select the logging mode from [File Save] and [Buffer Historical], explained below. | |
| File Save | Select this when executing logging in the file save mode.<br>( ☞ Section 11.3.2 1 (1) File save mode) | |
| Number of Files | Set the number of files (1 to 9999) that can be saved in a memory card. | |
| Number of Logs a file | Set the number of logs (1 to 65500) that can be stored in a file.<br>The value to be set for this item must be larger than the value set for [Log Storage Number]. | |
| File Terminal Trigger | Check this item to save the logging data by creating a file at desired timing.<br>After checking this item, set the file terminal trigger device.<br>( ☞ Section 5.1 Device Setting) | |
| File Terminal Notification Device | Check this item to enable notifying of interrupted device value collection by [File Terminal Trigger].<br>After checking this item, set the file terminal notification device.<br>( ☞ Section 5.1 Device Setting)<br>This setting is allowed only when [File Terminal Trigger] is set. | |

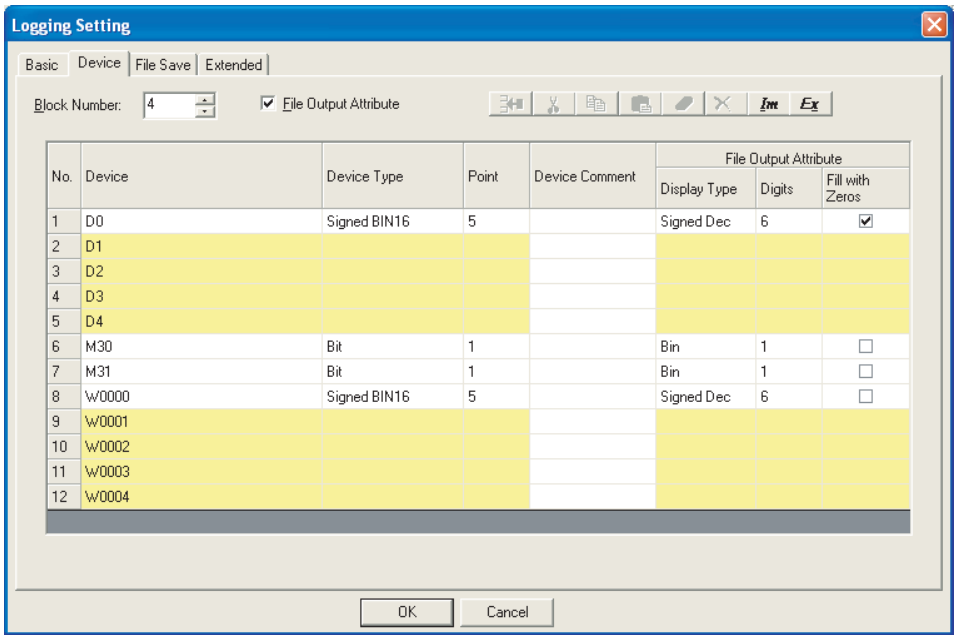
(Continued to next page)

Basic | Device | File Save | Option

| Item | | Description | Model |
|---|---|---|---|
| Buffer Historical | | Select this when executing logging in the buffer historical mode.<br>( Section 11.3.2 1 (2) Buffer historical mode) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Buffer Save | Set whether the logging data in the buffering area is saved to memory card or not.<br>No : Select [No] when the logging data in the buffering area should not be saved in a memory card.<br>This selection enables high speed operated logging since logging processing is not interrupted due to file saving.<br>Yes : Select [Yes] when the logging data in the buffering area should be saved in a memory card.<br>By saving the logging data in a memory card, the logging data is read out from the memory card and restored when the GOT is turned on.<br>Yes (Auto Backup at Save) : The logging data immediately before saving to memory card is saved as a backup file.<br>When the logging data is broken, the data is read out from the backup file if available. | |
| | Action when Buffer is Full | This selects the processing to be taken if the number of logs stored in the buffering area reaches the value set for [Log Storage Number].<br>Delete Old Data : New logging data is added by clearing the oldest data.<br>Stop New Addition : Device values are not collected even if the logging trigger condition is established newly. | |
| Logging Trigger | | Set the trigger for collecting a device value. | |
| | Trigger Type | Select the type of trigger for activating device value collection.<br>( Section 5.5 Trigger Setting)<br>If the selection is [Sampling], [ON Sampling] or [OFF Sampling], set the sampling (1 to 36000).<br>• Rise • Fall • Sampling • ON Sampling • OFF Sampling | |
| | Device | Specify the device used for the trigger. | |
| Logging Notification Device | | Set the device that notifies device values of a controller are being collected into the buffering area.<br>( Section 11.3.2 4 (2) Logging notification device) | |
| Buffering | | Set the number of logs that are temporarily saved in the buffering area.<br>( Section 11.3.5 1 (2) Buffering area size) | |
| | Log Storage Number | Set the number of logs (1 to 32767) that are temporarily saved in the buffering area. | |
| | Buffering Area Size | The size of the buffering area used as temporary storage of the logging data is displayed.<br>The buffering area size increases according to the value set for [Log Storage Number]. | |

(2) Device tab

Target devices of logging data collection are set.




Basic | **Device** | File Save | Option

| Item | Description | Model |
|---|---|---|
| Block Number | Set the number of blocks (1 to 250) in logging setting.<br>( ☞ Section 11.3.2 2 (2) For the block) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| File Output Attribute | Check this item when changing the format of device values to be output to a CSV file / Unicode text file. After checking this item, set the [File Output Attribute] displayed at the right of the [Device Comment] column.<br>Setting for [File Output Attribute] is possible only when [File Save] is selected for [Logging Mode]. | |
| Logging edit buttons | (Insert Block)*1 : Inserts a block. Select a line when inserting a block.<br>(Cut) *1 : Cuts the selected item.<br>(Copy) *1 : Copies the selected item.<br>(Paste) *1 : Pastes the contents that have been cut or copied.<br>(Clear) *1 : Clears a device comment if [Device Comment] is selected. If [Digits] is selected, the digit value is reset to the default value.<br>(Delete) *1 : Deletes the selected setting. Select a line when executing deletion.<br>(Import) *2 : Reads out the settings having been edited in a CSV file / Unicode text file to GT Designre2.<br>(Export) *2 : Saves the logging setting (settings made in Device tab) made by GT Designer2 as a CSV file / Unicode text file. | |

(Continued to next page)

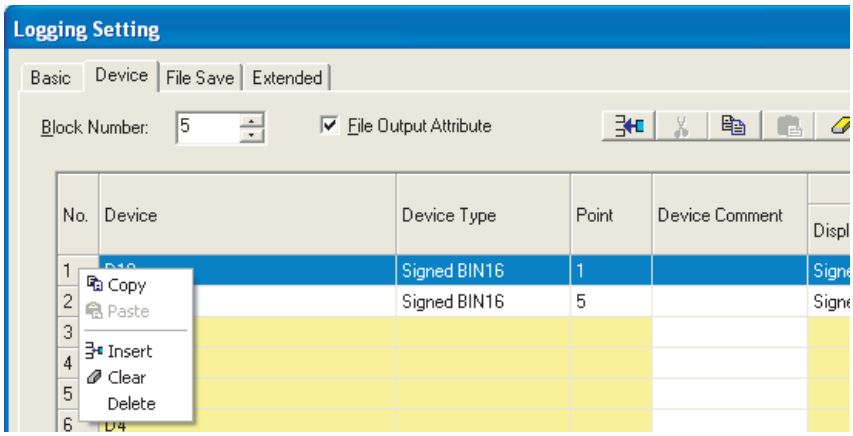
Basic | **Device** | File Save | Option

| Item | | Description | Model |
|---|---|---|---|
| Device list | | Displays the target of device value collection in a list. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Device | Set the device for which the values are collected when the logging function is executed.<br>( Section 5.1 Device Setting) | |
| | Device Type | Select the data type of a device. ( Section 5.2 Numeric Data that can be Handled with GOT)<br>Bit : Select this item when collecting the ON/OFF value of a bit device.<br>Signed BIN16 : Select this item when collecting signed 16-bit binary values.<br>Unsigned BIN16 : Select this item when collecting unsigned 16-bit binary values.<br>Signed BIN32 : Select this item when collecting signed 32-bit binary values.<br>Unsigned BIN32 : Select this item when collecting unsigned 32-bit binary values.<br>BCD16 : Select this item when collecting 16-bit BCD (binary coded decimal) values.<br>BCD32 : Select this item when collecting 32-bit BCD (binary coded decimal) values.<br>Real : Select this item when collecting real (floating point type real) values. | |
| | Point | Set the number of points of devices for which data is collected in block units.<br>The set continuous device points are set from head device.<br>The allowable number of points varies depending on [Device Type].<br>Bit : 1 point<br>Signed BIN16/Unsigned BIN16/BCD16 : 1 to 250 points<br>Signed BIN32/Unsigned BIN32/BCD32/Real : 1 to 125 points | |
| | Device Comment*3 | Set a device comment.<br>For a device comment, up to 32 characters can be entered.<br>The set device comment is displayed in a CSV file / Unicode text file. | |
| File Output Attribute | | Set the format of device values to be output to a CSV file / Unicode text file.<br>For setting the format, check [File Output Attribute] to the right of [Block Number]. | |
| | Display Type | Displays the data display type. | |
| | Digits | Set the number of digits (1 to 32) to be displayed. | |
| | Fill with Zeros | Check this item for displaying "0" preceding a device value.<br>Example: When a collected device value is "125" with "6" set for [Digits]<br>If this item is checked : 000125<br>If this item is not checked : 125 | |

For details of *1 to *3, refer to the following.

## *1 Operation with right click

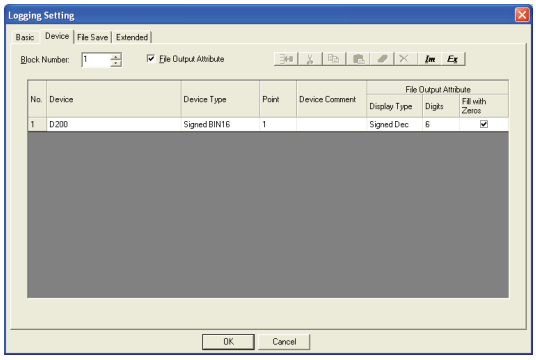
[Insert], [Cut], [Copy], [Paste], [Clear] and [Delete] operations are possible using the menu displayed by right click a mouse.



*2 About import and export

It is possible to edit an exported CSV file / Unicode text file using such as spreadsheet software. After editing, the CSV file / Unicode text file can be read out to GT Designer2 by importing the file.

Example: Import/export of a CSV file




Exporting to a CSV format file

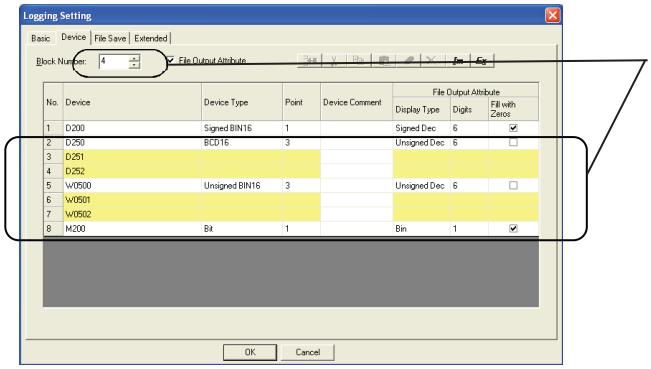
| | | | | | |
|---|---|---|---|---|---|
| Logging | | | | | |
| Block Number | 1 | File Output Attribute | Yes | | |
| | | | | | |
| Device | Device Type | Points | Device Comment | Digits | Fill with Zeros |
| D200 | Signed BIN16 | 1 | | 6 | Yes |

Editing the exported file

| | | | | | |
|---|---|---|---|---|---|
| Logging | | | | | |
| Block Number | 4 | File Output Attribute | Yes | | |
| | | | | | |
| Device | Device Type | Points | Device Comment | Digits | Fill with Zeros |
| D200 | Signed BIN16 | 1 | | 6 | Yes |
| D250 | BCD16 | 3 | | 6 | No |
| W0500 | Unsigned BIN16 | 3 | | 6 | No |
| M200 | Bit | 1 | | 1 | Yes |

Adding the setting using Microsoft® Excel, etc.

Importing to GT Designer2




The addition is displayed.

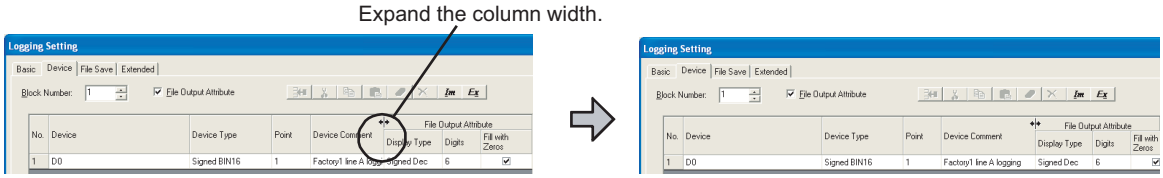
**Point**

Import/export in multilingual environment

Use a Unicode text file to import/export a file in the multilingual environment. Characters in a file can be correctly imported/exported when a Unicode text file is used.

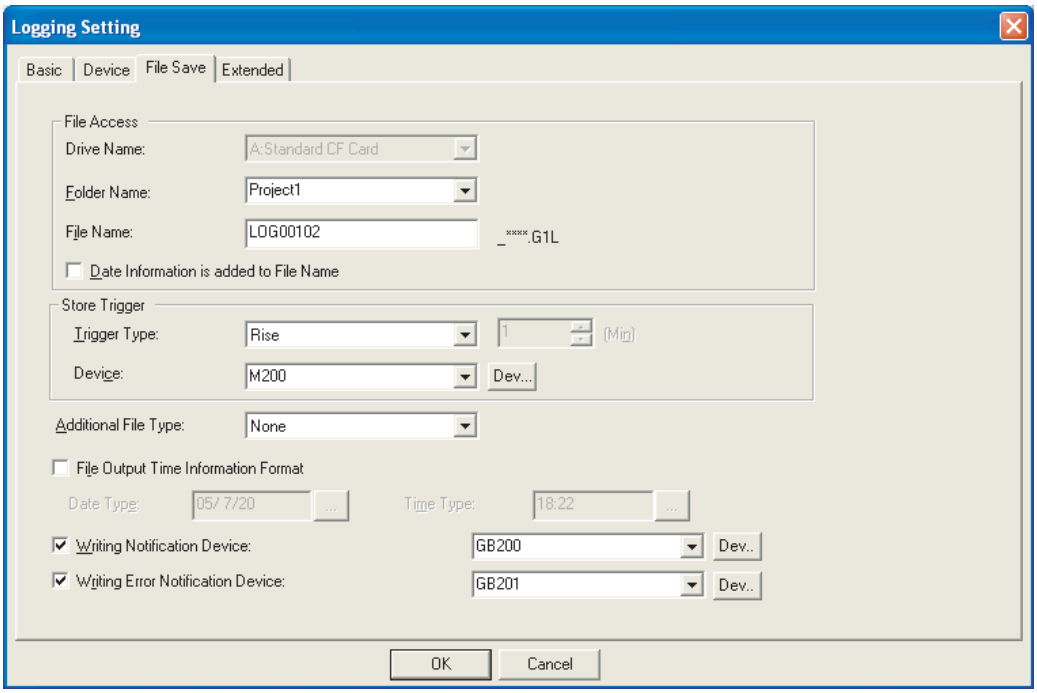
*3 Adjusting the column width

When the set device comment is displayed only a part of it, the column width can be adjusted so that the entire comment is visible.



(3) File save tab

These settings are for saving the logging data saved in the buffering area to a memory card.
This tab is not displayed if [No] is set for [Buffer Save] in the buffer historical mode because a file is not saved in this setting.




Basic | Device | **File Save** | Option

| Item | | Description | Model |
|---|---|---|---|
| File Access | | Set the file where the logging data is saved. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Drive Name | Select a drive where a file is stored. | |
| | Folder Name*1 | Set the folder name where the file is saved.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~\) can be used.<br>Default is the name that is set for [Project Folder].<br>( Section 3.1 GOT/Controller Type Setting) | |
| | File Name*1 | Enter the file name.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~) can be used.<br>Default is the name set for [LOG□] (□: Logging ID). | |
| | Date Information is Added to File Name | Check this item to add the file saving date (year/month/day) and time (hour/minute/second) to the file name.<br>(This setting is valid only when [File Save] is selected for [Logging Mode].) | |
| Store Trigger | | Set the timing for saving the logging data temporarily saved in the buffering area to a memory card. | |
| | Trigger Type | Select the timing for saving the logging data temporarily saved in the buffering area to a memory card.<br>( Section 5.5 Trigger Setting)<br>If [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the sampling (1 to 1440 minutes (1 day)) in 1 minute units.<br>• Rising • Falling • None*2 • Sampling<br>• ON Sampling • OFF Sampling | |
| | Device | Specify the save trigger device.<br>( Section 5.1 Device Setting) | |

(Continued to next page)

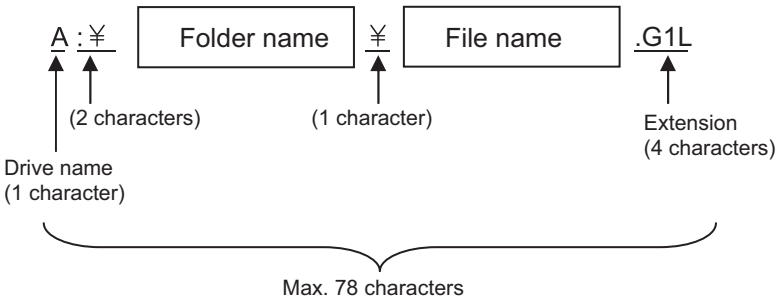
Basic | Device | **File Save** | Option

| Item | Description | Model |
|---|---|---|
| Additional File Type | Set this item when saving a CSV file / Unicode text file at the same time the logging data is saved.<br>( Section 11.3.2 5 (2) Displaying the collected data on a personal computer after saving the data in a CSV file / Unicode text file)<br>None : Saves only the binary format data (*.G1L).<br>CSV File : Saves a CSV file together with the binary format data (*.G1L).<br>Unicode Text File : Saves a Unicode text file together with the binary format data (*.G1L). | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Change Save Path | Check this item to store CSV/Unicode text file to which [Additional File Type] is executed into the save destination different from that of binary format data.<br>After the check, specify [Drive Name] and [Folder Name] where the file is to be stored.<br><br>CSV/Unicode text file can be used for data fetch by storing the file to the different drive. | |
| File Output Time Information Format | Check this item when setting the format of date and time, which is displayed in a CSV file / Unicode text file. | |
| Date Type*3 | Set the date display format by clicking ... . | |
| Time Type*4 | Set the time display format by clicking ... . | |
| Writing Notification Device | Set the device used for notifying that logging data is being saved.<br>( Section 11.3.2 4 (3) Writing notification device) | |
| Writing Error Notification Device | Set the device that notifies an error if saving of the logging data is faulty.<br>( Section 11.3.2 4 (4) Writing error notification device) | |

For details of *1 to *4, refer to the following.

## *1 Folder name and file name

(1) Number of characters set for folder and file name
GOT recognizes file location according to the path explained below.
Set a folder or file name within 78 characters as a whole description of path.
A user can set only the folder and file names.
(Other expressions are automatically set.)
Example: Path of a G1L file saved in memory card



**Point**

(1) File name in the file save mode
In the file save mode, a number is appended to the set file name.
File without a number in the file name : Management data
File with 0000 appended to the file name : Temporary file
File with a number (0001 to 9999) appended to the file name: Logging data
Do not delete the management data and the temporary file.
If deleted, correct logging is disabled.

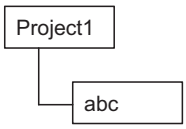
(2) File name in the buffer historical mode
In the buffer historical mode, a file is saved in the set file name.

**Remark**

When setting hierarchy to the folder

When setting [Folder Name], enter \ between folder names.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name]: Project1\abc




(2) Character strings that cannot be set
In a folder or file name, character strings indicated below cannot be used. (They cannot be used irrespective of upper-case or lower-case characters.)

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

Folder or file names indicated below cannot be used.

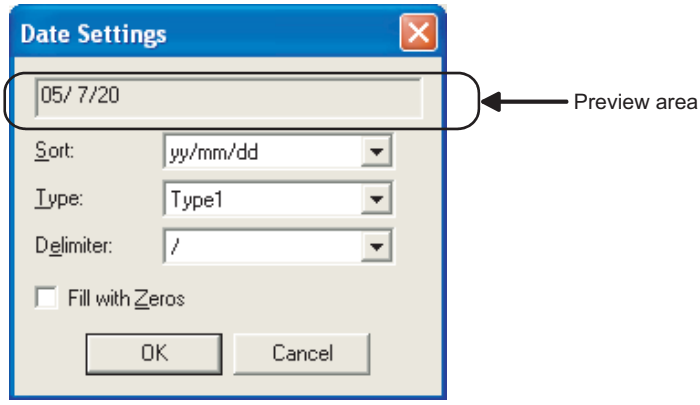
- Folder name beginning with G1
- Folder or file name beginning with . (period) or \
- Folder or file name ending with . (period) or \
- Folder or file name with only . (one period) or .. (two periods)

*2 Processing when [None] is selected for [Trigger Type]

When [None] is selected for [Trigger Type], logging data is automatically saved to a memory card when the buffering area becomes full.

*3 Date Settings

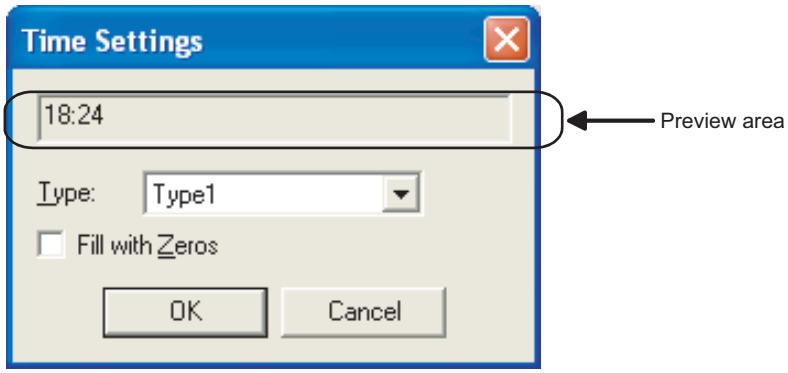
Set the display type of date.
The set date display type can be confirmed in the preview area.




| Item | Description |
|---|---|
| 05/ 7/20 (Preview area) | The result of date setting is displayed as a display example. |
| Sort | Select a sorting order of year, month and day.<br>• yy/mm/dd: 04/01/24 • dd/mm/yy: 24/01/04<br>• mm/dd/yy: 01/24/04 |
| Type | Select asorting type of date.<br>Select the desired display type depending on upper/lower case characters, display of the day of a week and a type of Japanese/English expression.<br>The display examples below assume the setting of [yy/mm/dd] for [Sort].<br>• Type 1 : 04/01/24 • Type 11 : 2004/JAN/24<br>• Type 2 : Jan/24 • Type 12 : 2004/Jan/24(FRI)<br>• Type 3 : JAN/24 • Type 13 : 2004/JAN/24(FRI)<br>• Type 4 : Jan/24(FRI) • Type 1 (Japanese): 1月24日<br>• Type 5 : JAN/24(FRI) • Type 2 (Japanese): 1月24日(金)<br>• Type 6 : 04/Jan/24 • Type 3 (Japanese): 04年1月24日<br>• Type 7 : 04/JAN/24 • Type 4 (Japanese): 04年1月24日(金)<br>• Type 8 : 04/Jan/24(FRI) • Type 5 (Japanese): 2004年1月24日<br>• Type 9 : 04/JAN/24(FRI) • Type 6 (Japanese): 2004年1月24日(金)<br>• Type 10 : 2004/Jan/24 |
| Delimiter | Select a delimiter used for separating expressions of year, month and day.<br>• "/" : 04/01/24 • "." : 04.01.24<br>• "-" : 04-01-24 |
| Fill with Zeros | Check this item for displaying "0" preceding month and day.<br>Example: To display Jan. 24, 2004<br>When checked : 04/01/24<br>When not checked : 04/1/24 |

*4 Time Settings

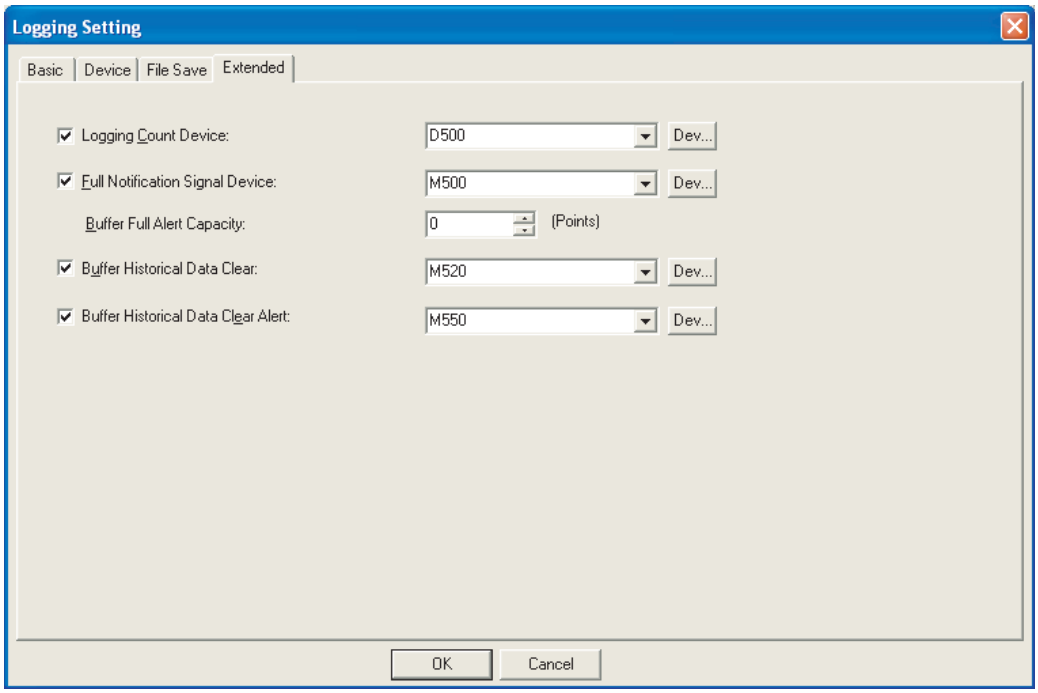
Set the display type of time.
The display type of set time can be confirmed in the preview area.




| Item | Description |
|---|---|
| 18:24 (Preview area) | The result of time setting is displayed as a display example. |
| Type | Select the display type of time.<br>Select the desired display type depending on whether to use, presence/absence of am and pm and a type of Japanese/English expression.<br>• Type 1 : 16:28 • Type 1 (Japanese): 16時28分<br>• Type 2 : 16:28:28 • Type 2 (Japanese): 16時28分28秒<br>• Type 3 : 04:28(PM) • Type 3 (Japanese): 午後4時28分 |
| Fill with Zeros | Check when displaying "0" preceding hour, minute and second.<br>Example: 5 past 6<br>When checked : 06:05<br>When not checked : 6:5 |

(4) Extended tab

Set the devices where logging status is output.

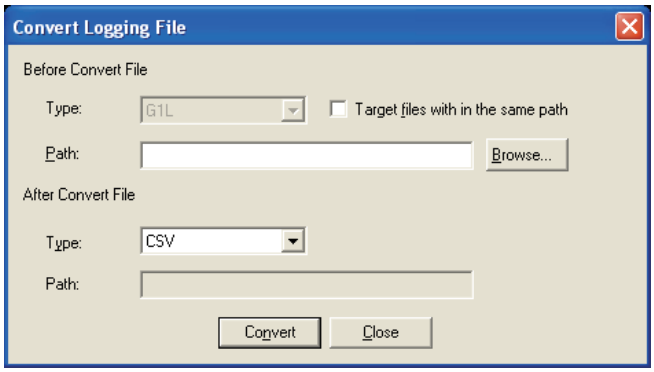



Basic | Device | File Save | **Extended**

| Item | Description | Model |
|---|---|---|
| Logging Count Device | Check this item when setting the device that notifies the number of times device values have been collected after start up of GOT. After checking this item, set the logging count device.<br>( Section 11.3.2 4 (5) Logging count device) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Full Notification Signal Device | Check this item when notifying the status the remaining number of logs that can be saved in the buffering area is reduced to the value set for [Buffer Full Alert Capacity] by turning ON the specified device.<br>After checking this item, set the full notification signal device.<br>( Section 11.3.2 1 (2) (c) When the buffering area becomes full)<br>Setting is possible only when [Buffer Historical] is selected for [Logging Mode]. | |
| Buffer Full Alert Capacity | Set the timing (remaining number of logs that can be saved: 0 to 255) for outputting the notification signal when the available capacity of the buffering area has been reduced.<br>When the remaining number of logs that can be saved in the buffering area has been reduced to the number set for this item, [Full Notification Signal Device] turns ON. | |
| Buffer Historical Data Clear | Check this item when clearing the logging data, temporarily saved in the buffering area, using the specified device.<br>After checking this item, set the buffer historical data clear.<br>( Section 11.3.2 1 (2) (c) When the buffering area becomes full)<br>Setting is possible only when [Buffer Historical] is selected for [Logging Mode]. | |
| Buffer Historical Data Clear Alert | Check this item when giving notification for the completion of buffering area clear by [Buffer Historical Data Clear].<br>After checking this item, set the buffer historical data clear finish signal.<br>Setting is possible only when [Buffer Historical] is selected for [Logging Mode]. | |

## 3 Logging file convert

Logging files are converted to CSV files or Unicode text files.




| Item | | Description | Model |
|---|---|---|---|
| Before Convert File | | Type: Displays the type of a conversion source file.<br>Path: Specify the path of the conversion source file. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Target files with in the same path | Checking this item targets all the files (G1L files only) of the same path for conversion.<br>When performing a file conversion with this item checked, the conversion log is recorded for the specified path automatically.<br>With the conversion log, the full path of the converted file, the conversion result (OK/NG), and the file creation date can be checked. | |
| After Convert File | | Type: Select the type of the conversion destination file (CSV/Unicode Text).<br>Path: Displays the path (same as the path of the conversion source file) where the conversion destination file is saved. | |

## 11.3.5 Precautions

This section provides the precautions for using the logging function.

### 1 Precautions for drawing

(1) Setting number of logging functions in a project file
Setting of up to 32 logging functions is allowed.

(2) Buffering area size
The size of the buffering area varies according to the setting for [Log Storage Number] of the logging setting. (☞ Section 11.3.4 2 (1) Basic tab)
To adjust the value set for [Log Storage Number], referr to the following.

(a) When a large number is set for [Log Storage Number]
The size of user area (C drive + Extension memory) is reduced.
Adjust the setting for [Log Storage Number] taking into consideration the size of user area (C drive + Extension memory).

(b) When a small number is set for [Log Storage Number]
In the file save mode, file saving frequency increases.
Since device value collection is interrupted while the data is saved to a file, device value collection may be disabled. (Especially when device values are collected in short intervals.)
To adjust the value set for [Log Storage Number], referr to the following.

Example: Relationships among logging trigger log storage number and saving frequency

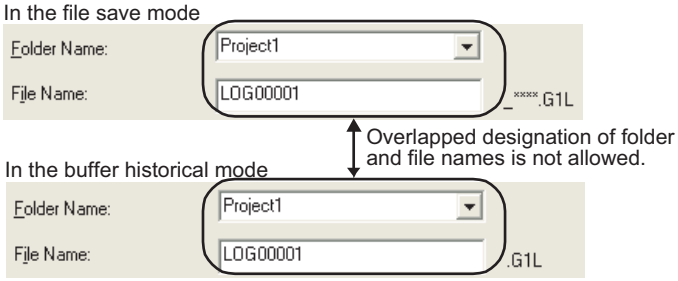
| [Logging Trigger] | [Log Storage Number] | | |
|---|---|---|---|
| | 1 | 100 | 10000 |
| 10 ( × 100ms intervals) | Saving in 1 second intervals | Saving in 100 second intervals | Saving in 10000 second intervals |
| 1000( × 100ms intervals) | Saving in 100 second intervals | Saving in 10000 second intervals | Saving in 1000000 second intervals |

**Point**

Setting of [Log Storage Number] in the file save mode

To collect device values in short intervals, increase a value set for [Log Storage Number].

(3) Mixed use of file save mode and buffer historical mode
Do not overlap the folder name and file name between the two modes.
If there is an overlap, logging cannot be executed correctly.
Check of overlapped designation is possible by selecting [Tools] → [Data Check..] menu.
Example: Example of overlapped designation of folder and file names




In the file save mode, management file "LOG00001.G1L****" is saved at the same timing the "LOG00001_****.G1L" file (*: number) is saved. Since this overlaps with the file name "LOG00001.G1L" used in the buffer historical mode, correct logging is disabled.

(4) Precautions for setting

(a) Setting number
When the object setting exceeds the user area of the GOT in size by the setting in the advanced recipe setting, the advanced recipe function cannot be used.
Therefore, some of the setting (device number, etc.) may not be set at the maximum value.
Make the setting within the free user area available for GOT.

For computing method for the setting size of logging function, refer to the following.

☞ Section 2.4 1 Object specifications

For free user area available for GOT, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(Chapter 8 TRANSFERRING DATA)

(b) Saving a file
The memory card must be larger than the file to be saved in size.
For the file size, refer to the following.

☞ Section 2.4 2 Data capacity available for storage on memory card

(c) The relationship between the device comment and the setting size
The setting size and the file size of the advanced recipe are considerably affected by the device comment.
Therefore, they get larger when the device comment is set for each device.

## 2 Precautions for OS

To use the logging function, install the extension function OS (Logging) to GOT.

## 3 Precautions for hardware

When using the logging function with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

## 4 Precautions for use

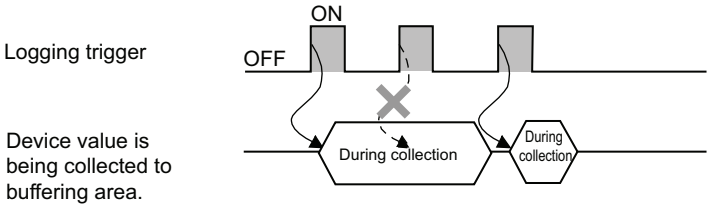
(1) If device value collection is impossible in set intervals or even if the trigger device condition is satisfied

(a) Cause

Collection of device values may be impossible in the cases shown below.

- A large number of device points is set for collection, taking a long communication time between GOT and a controller.
- Logging trigger interval is short (trigger conditions is established during the collection of device value).

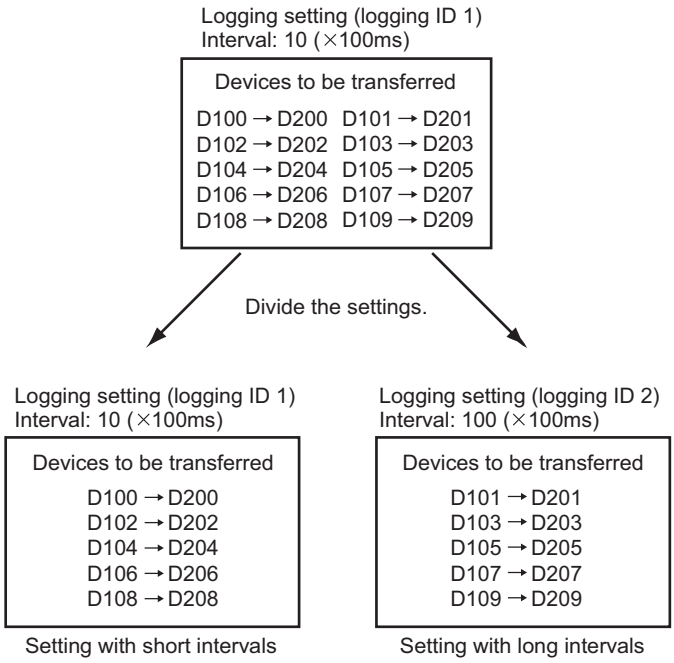
Example: When logging trigger interval is short




(b) Countermeasures

Take any of the measures indicated below.

- When the trigger type is set to [Sampling], reduce the device points for a logging setting enabled with short intervals. (Set logging setting enabled with long intervals separately from those enabled with short intervals.)



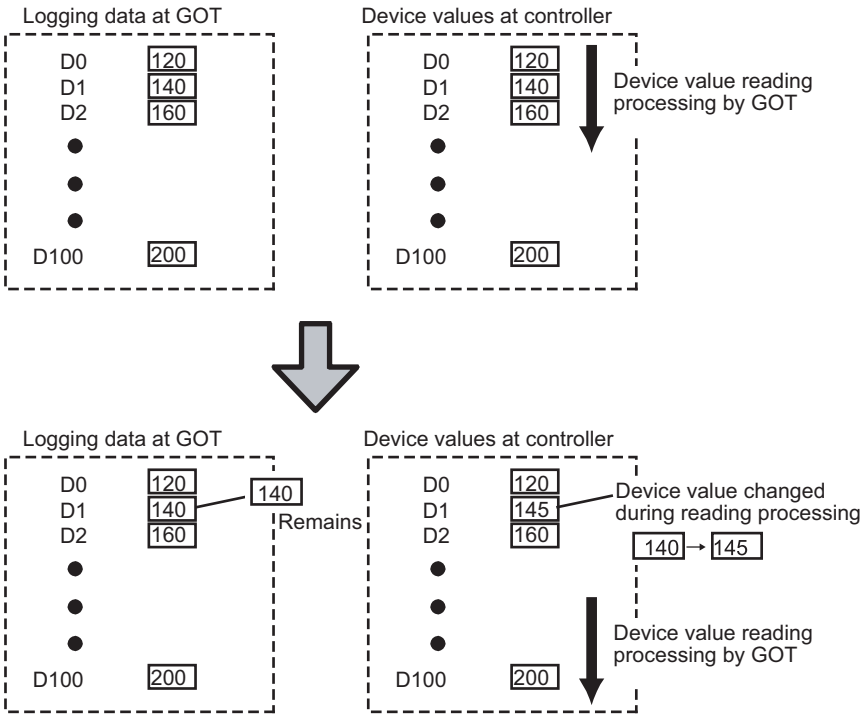

- Have the trigger condition established while the logging notification device is OFF.

  (☞ Section 11.3.2 4 (2) Logging notification device)
- If the baud rate can be changed, increase the baud rate in the Communication detail settings.

**Point** If device value collection is impossible

A device value is collected when the trigger device is established next.
The device value to be collected is the value at the time the trigger condition is established next.

(2) Integrity of the device values between the controller device values and the collected device values
When the number of device points set for device value collection is large, integrity of device values may not be secured between the device values of a controller and the collected data values.




If such a problem occurs, set an interlock at the controller so that the device value will not change until the logging by GOT finishes.
Logging status can be checked by the logging notification device.
( ☞ Section 11.3.2 4 (2) Logging notification device)

(3) Timing at which processing stops or is suspended

(a) Timing at which device value collection stops or is not executed
In the cases shown below, device value collection is not executed even if the trigger condition is established.
Device value collection also stops temporarily.
There are cases a device value cannot be collected correctly. (Particularly when device value collection is executed in short intervals.)

| Item | Countermeasure |
|---|---|
| When saving the logging data to memory card | • In the file save mode, increase the value set for [Log Store Number].<br>• Use the writing notification device appropriately so that the trigger condition is not established during writing. |
| When clearing the buffering area | • Have the trigger condition established only after [Buffer Historical Data Clear Alert] is turned ON. |
| During the access of the historical trend graph to the logging data | • Decrease the device points to be monitored by the historical trend graph. |

(b) Timing at which file saving and buffering area clear are suspended
In the case shown below, file saving and buffering area clear are not executed.

| Item | Countermeasure |
|---|---|
| During the access of the historical trend graph to the logging data | • Decrease the device points to be monitored by the historical trend graph. |

(4) To maintain the access performance

(a) Before starting logging
It is recommended to format the memory card before starting logging.

(b) Number of files stored in a folder
The number of files to be stored in a folder should be less than 500.
If 500 or more files are stored in a folder, file access performance may be lowered.

(c) Repeated write/delete of memory card
If write/delete of memory card has been done many times, it can deteriorate file access performance independent of the set number of files.
If this is the cause of lowered file access performance, format the memory card.

(5) If no memory card is installed when saving a file
At the occurrence of failure in saving the logging data to a memory card, [Writing Error Notification Device] turns ON and device value collection is not executed. (Device value collection is executed even if a memory card is not installed until saving failure occurs.)
Device values are not collected until saving succeeds.
File saving and logging restarts restarts by inserting a memory card.
When using logging function, insert a memory card to the GOT.

(6) When using the historical trend graph
While the logging data is being stored to a memory card, display of historical trend graph stops until the storing processing finishes.

(7) Deletion prohibited file (only in the file save mode)
In the file save mode, a number is appended to the set file name.
Do not delete the management data and the temporary file indicated below.
If deleted, correct logging is disabled.

| | |
|---|---|
| File without a number in the file name | : Management data*1 |
| File with 0000 appended to the file name | : Temporary file*1 |
| File with a number (0001 to 9999) appended to the file name | : Logging data |

*1 Deletion prohibited file

(8) When turning off GOT power, restarting or resetting GOT
The logging data in the buffering area is cleared.
If the logging data must not be cleared, save the data using [File Terminal Trigger] or [Store Trigger].

(9) Using a Unicode text file
For the precautions for using a Unicode text file, refer to the following.
☞ 2.11 Precautions for Using Unicode Text File

(10) When opening CSV file with Microsoft® Excel
When opening CSV file/Unicode text file created using the logging funciton with Microsoft® Excel, the file is displayed in standard format for Microsoft® Excel.
In some setting, data display such as date and hour of logging may differ from the actual format.
If they differ, the format output with the GOT can be checked by opening the CSV file/Unicode text file using text editor.

(11) Editing exported files

When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.

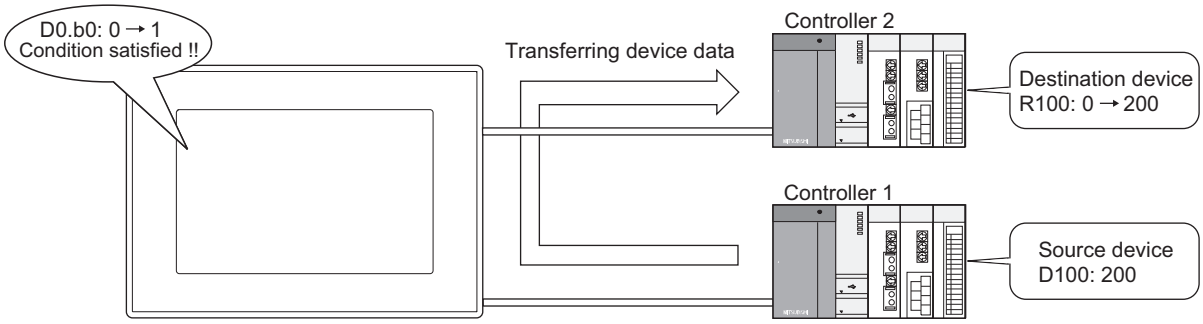
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.

When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 11.4 Device Data Transfer Function

The device data transfer function enables the GOT to read values of specified devices and write the values into the other devices at any timing or by trigger intervals.

- Trigger condition : When D0.b0 turns on
- Source device : D100 of controller 1
- Destination device: R100 of controller 2

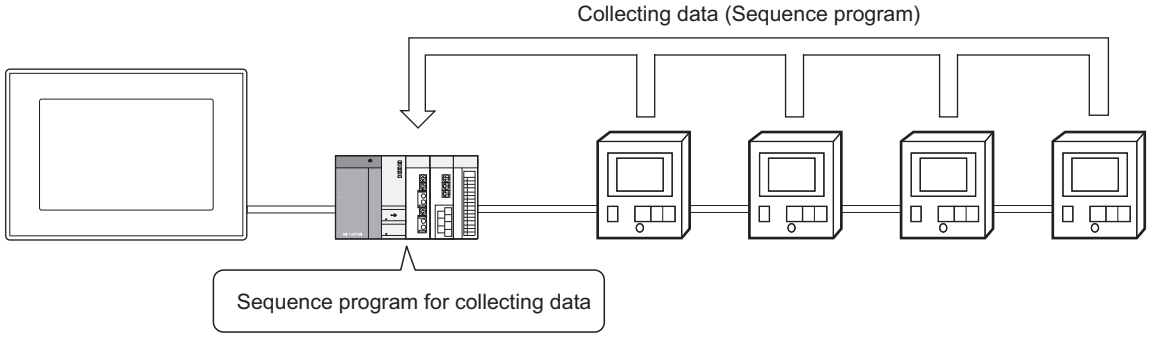



## 1 Collecting controller data without sequence program

With the device data transfer function, the GOT can collect controller data without a sequence program.

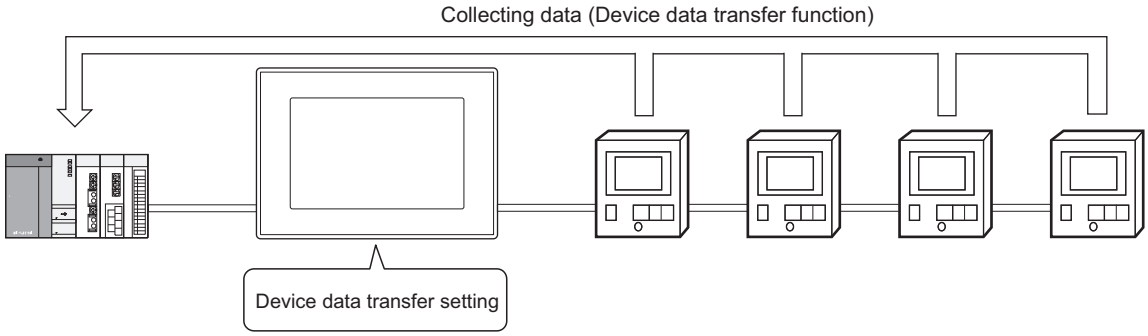
Example 1) When collecting controller data without device data transfer function

A sequence program is required for collecting controller data. (The GOT monitors the data only.)




Example 2) Collecting controller data with device data transfer function

By setting the device data transfer, a sequence program is not required.



## 11.4.1 Relevant settings

For the device data transfer function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description if necessary.

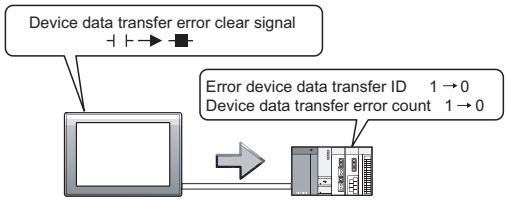
(1) Functions relevant to device data transfer function only
···Relevant to the device data transfer function only.

### 1 GOT internal devices (☞ Section 2.9.1 3 GOT special register (GS))

(1) Functions relevant to device data transfer function only

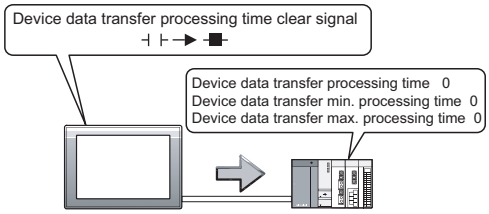
• Device data transfer error clear signal (GS510.b0)

Turning on the signal clears the device data transfer ID and the device data transfer error count.



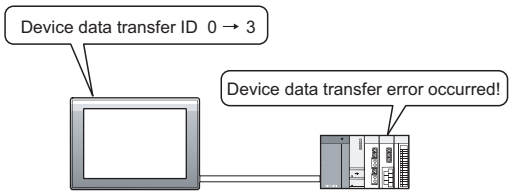

• Device data transfer processing time clear signal (GS510.b1)

Turning on the signal clears the device data transfer processing time, device data transfer min. processing time, and device data transfer max. processing time.



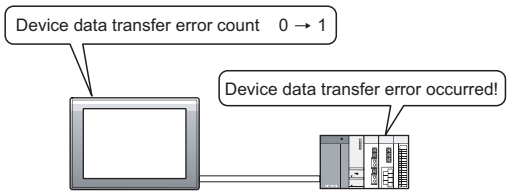

• Error device data transfer ID (GS642)

Stores the device data transfer ID with an error when an error occurs during transferring device data.



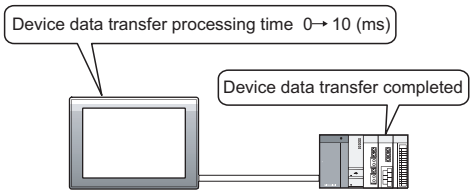

• Device data transfer error count (GS643)

Stores the number of error occurrences during transferring device data.



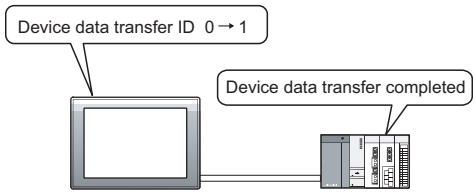
- Device data transfer processing time (GS644)

Stores the processing time for transferring device data.



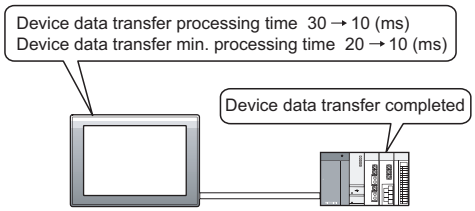

- Device data transfer ID (GS645)

Stores the device data transfer ID for the completed device data transfer when GS644 stores the processing time.



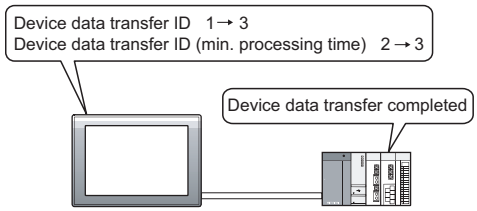

- Device data transfer min. processing time (GS646)

Stores the minimum processing time among data stored in the device data transfer processing time.



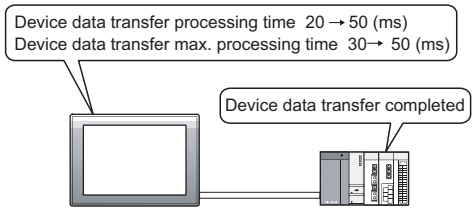

- Device data transfer ID (min. processing time) (GS647)

Stores the device data transfer ID for the completed device data transfer when GS646 stores the minimum processing time.



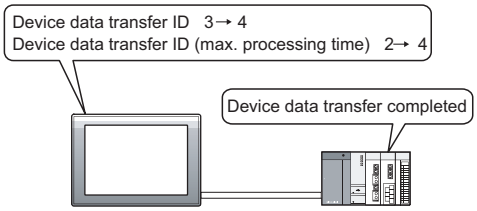

- Device data transfer max. processing time (GS648)

Stores the maximum processing time among data stored in the device data transfer processing time.




- Device data transfer ID (max. processing time) (GS649)

Stores the device data transfer ID for the completed device data transfer when GS648 stores the maximum processing time.



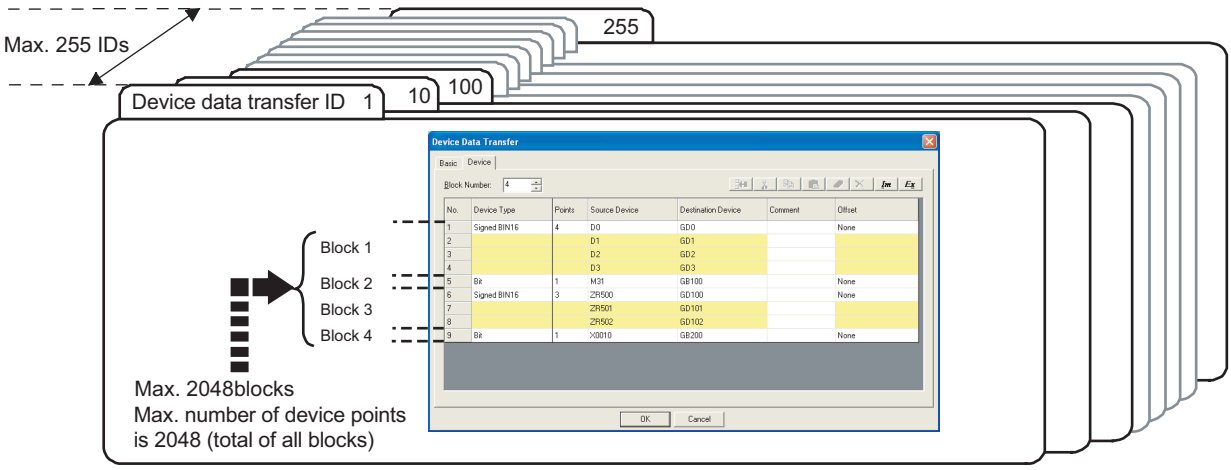
## 1 Controlling device data transfer by device or trigger interval

The device data transfer can be controlled by setting a device or trigger interval (Rise, Fall, Sampling). Set the device or trigger interval for [Device Data Transfer Trigger] in the Device Data Transfer dialog box.

(☞ Section 11.4.4 2 (1) Basic tab)

## 2 Setting device data transfer

Set the device data transfer for each device data transfer ID and each block. Therefore, the GOT can manage multiple device data transfers with one device data transfer setting.




The following explains the device data transfer IDs and blocks.

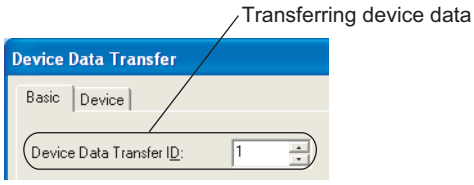
(1) Device data transfer ID

A device data transfer ID is a number that identifies the corresponding device data transfer setting.

(a) Setting example

Set the device data transfer ID on the Basic tab in the Device Data Transfer dialog box.

(☞ Section 11.4.4 2 (1) Basic tab)




(b) Settable device data transfer ID

The setting range for the device data transfer ID is 1 to 255.

(2) Block

A block is a setting unit for setting random device numbers or different device types.

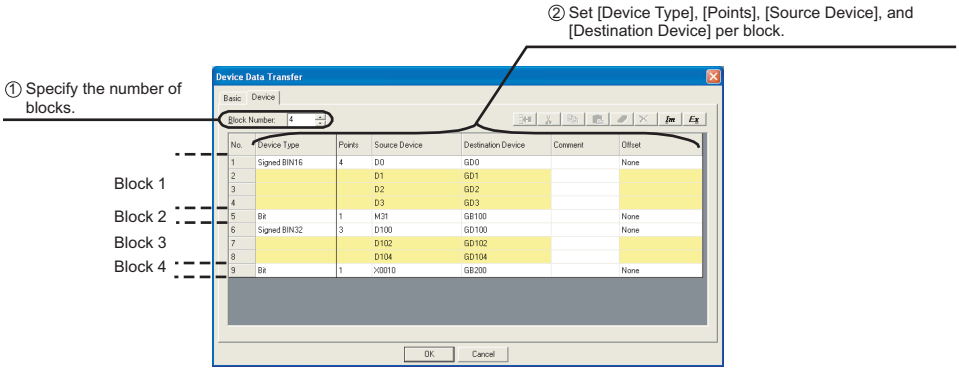
The following settings are available by setting device numbers or device types per block.

- Setting different types of devices, including bit data and word data, in one setting
- Setting consecutive device number settings and random device number settings in one setting

(a) Setting example

The following shows an example of setting bit devices and word devices (signed BIN16 and signed BIN32) in one device data transfer setting.

(☞ Section 11.4.4 2 (2) Device tab)




(b) Maximum number of blocks

Up to 2048 blocks can be set for one device data transfer setting.

**Point**

(1) Maximum device points

Up to 32767 device points can be set for each device data transfer setting.

Each bit device and word device is counted as one point.

One double-word device is counted as two points.

When multiple blocks are set, the device points for a device data transfer setting are the total device points of all the blocks.

Example)

In the case of block 1: 30 points, block 2: 70 points and block 3: 120 points

The number of device points in this setting is counted as 220 points (30 + 70 + 120).

(2) When setting random devices

One device can be set for one block.

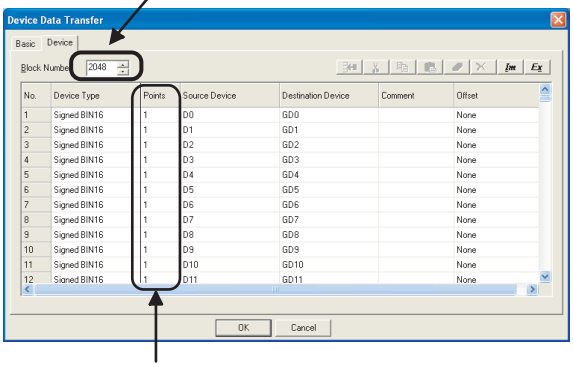
Set random devices in different blocks.

(3) When device type is bit

The device that can be set for one block is one point (fixed).

(4) Maximum device points when device point for each block is one point
When the device point for each block is set to one point as below, up to 2048 device points can be set. (That is because up to 2048 blocks can be set for one device data transfer setting.)
Example) When setting all device types to bit

Up to 2048 blocks can be set for one device data transfer setting.




When the device type is set to [Bit], only one point can be set for one block.
When the device types for all the blocks are set to [Bit], up to 2048 points can be set.
(Because up to 2048 blocks can be set.)

## 3 Outputting device data transfer status to devices

The GOT can output the device data transfer status to devices.
Doing so enables checking the execution status of the device data transfer function.

(☞ Section 11.4.4 2 (1) Basic tab)

(1) Device data transfer notification signal (External notification device.b0)
The signal notifies that the device data transfer is in process.
When the device data transfer trigger condition is met, the signal turns on.
When the device data transfer trigger condition is not met and the device data transfer is completed, the signal turns off.
The next device data transfer can be executed when the processing device data transfer is completed, even if the signal is on.

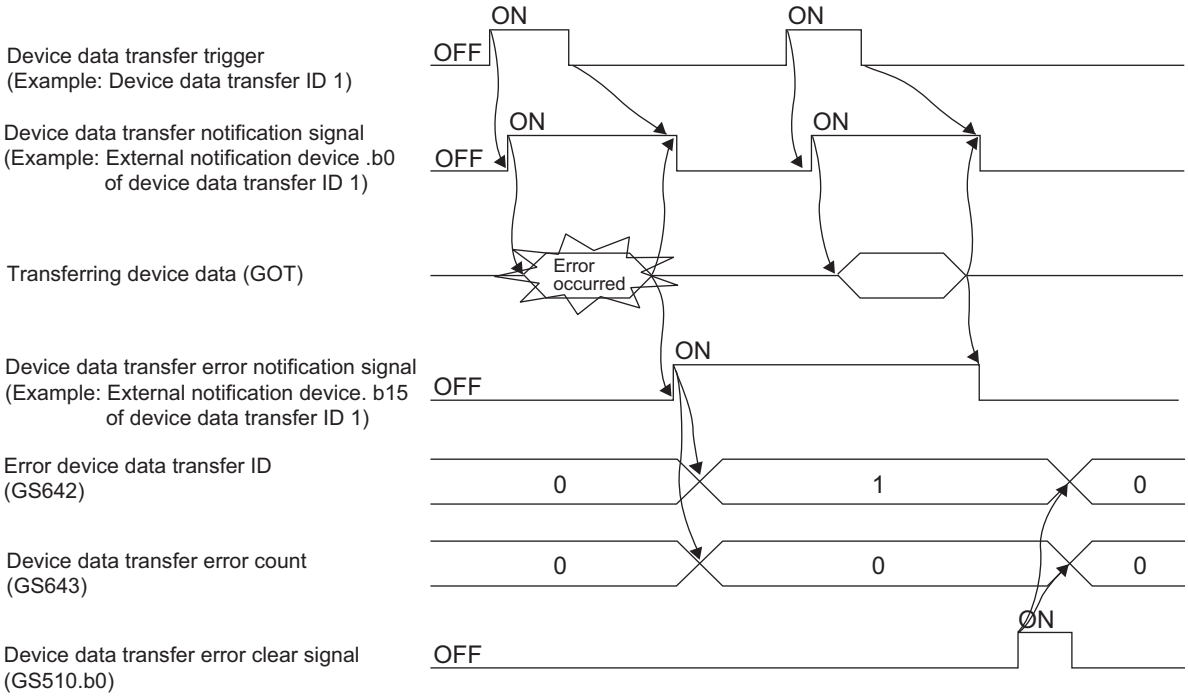
(2) Device data transfer error notification signal (External notification device.b15)
The signal notifies if errors occur during transferring device data.
The signal turns on when errors occur during transferring device data.
The signal turns off when the device data transfer executed after an error occurs is correctly completed.
For errors with the device data transfer, refer to the following.

☞ This section 4 Detecting device data transfer errors and corrective actions

## 4 Detecting device data transfer errors and corrective actions

Check if an error occurs for the device data transfer with [External Notification Device] set on the Basic tab in the Device Data Transfer dialog box.

(☞ Section 11.4.4 2 (1) Basic tab)



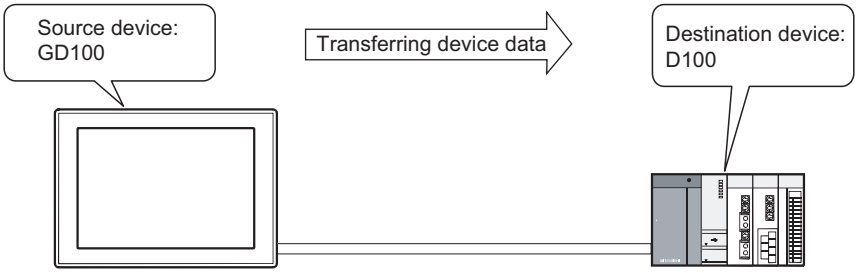

1. When an error occurs, the following operations are executed.
   - The device data transfer error notification signal (external notification device.b15) turns on.
   - The error device data transfer ID (GS642) stores the device data transfer ID corresponding to the device data transfer with the error.
   - The number of error occurrences with the device data transfer is counted.
   - A system alarm occurs.
2. Check the system alarm, and then remove error causes.
   For system alarms and corrective actions, refer to the following manual.
   ☞GT15 User's Manual
3. Execute the device data transfer again.
4. When the transferring is correctly completed, the device data transfer error notification signal turns off.
5. For clearing the error device data transfer ID (GS642) and the device data transfer error count (GS643), turn on the device data transfer error clear signal (GS510.b0).
   (☞ Section 2.9.1 GOT internal devices)

## 5 Inverting source device and destination device

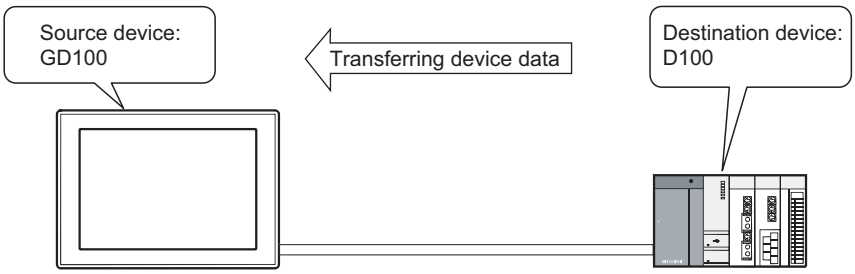
Using the transfer inverting flag device inverts the source device and the destination device.
With inverting the source device and the destination device, data can be transferred from the source device to the destination device and vice versa by one device data transfer setting.

Set the transfer inverting flag device for [Device Data Transfer Trigger] in the Device Data Transfer dialog box. (☞ Section 11.4.4 2 (1) Basic tab)
The following shows the relation among the transfer inverting flag device, source device, and destination device.

(1) When transfer inverting flag device is off
The GOT transfers device data from the source device to the destination device.




(2) When transfer inverting flag device is on
The GOT transfers device data from the destination device to the source device.




## 6 Alternative to script function

Substituting the device data transfer function for the bmov instruction of the script function is available.
With the device data transfer function, the GOT communicates with controllers only when trigger conditions are met. Therefore, the GOT has no communication loads by always monitoring the device used for the script function.
For the script function, refer to the following.

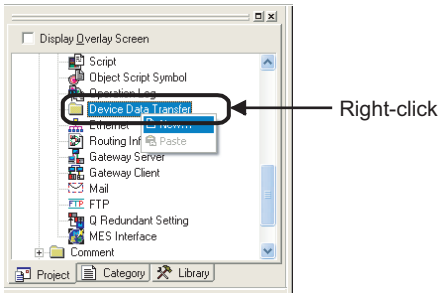
☞ Section 16. SCRIPT FUNCTION

## 11.4.3 Settings

1. Select [Common] → [Device Data Transfer] from the menu.
2. The setting dialog box is displayed. Make the settings with reference to the following explanation.

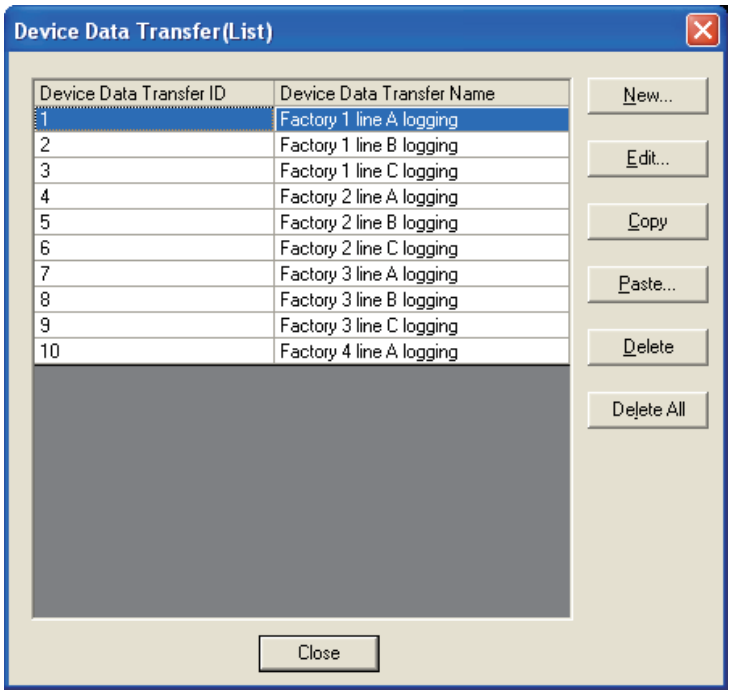
**Remark** When making settings at the Workspace (Project).

In the project workspace, right click Device Data Transfer and select [New]. This displays the setting dialog box.



## 1 Device Data Transfer (List) dialog box

The list of device data transfer settings is displayed for managing the settings.
Up to 255 device data transfer settings are available.
The dialog box appears only by selecting [Common] → [Device Data Transfer] from the menu.
The dialog box does not appear by selecting [Device Data Transfer] in the project workspace.

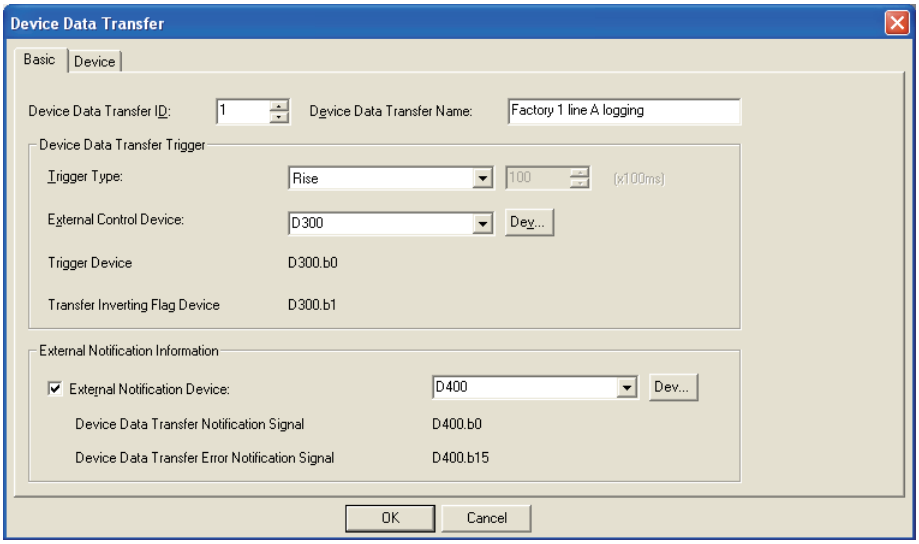



| Item | Description | Model |
|---|---|---|
| New | Set a new device data transfer setting.<br>Click the button, and then the Device Data Transfer dialog box appears.<br>(☞ This section 2 Device Data Transfer dialog box) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Edit | Edit a selected device data transfer setting.<br>Click the button, and then the Device Data Transfer dialog box appears.<br>(☞ This section 2 Device Data Transfer dialog box) | |
| Copy | Copies a selected device data transfer setting. | |
| Paste | Paste the copied device data transfer setting in the list on the Device Data Transfer (List) dialog box.<br>Click the button, and then set the device data transfer ID that the copied setting is pasted in. | |
| Delete | Deletes the selected device data transfer setting. | |
| Delete All | Deletes all the device data transfer settings in the list. | |
| Close | Closes the Device Data Transfer (List) dialog box. | |

## 2 Device Data Transfer dialog box

(1) Basic tab

Set the device data transfer trigger and the external notification information.




Basic | Device

| Item | Description | Model |
|---|---|---|
| Device Data Transfer ID | Set the device data transfer ID (1 to 255) corresponding to the device data transfer setting to be set.<br>(☞ Section 11.4.2 Before setting device data transfer) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device Data Transfer Name | Set the name of the device data transfer setting.<br>For the device data transfer name, up to 32 characters, including one-byte and two-byte characters, can be entered. | |
| Device Data Transfer Trigger | Set conditions for transferring device values. | |
| Trigger Type | Select a trigger type for transferring device values.<br>• Rise • Fall • Sampling<br>When [Sampling] is selected, set the interval between executions of the device data transfer.<br>(1 to 36000)<br>(☞ Section 5.5 Trigger Setting) | |
| External Control Device | Specify the device to be set for the trigger.<br>Be sure to set the item when [Rise] or [Fall] is set for [Trigger Type].<br>When [Sampling] is set for [Trigger Type], set the item only when the transfer inverting flag device is used. | |
| Trigger Device | Bit 0 of the device set for [External Control Device] is specified.<br>The item is enabled only when [Rise] or [Fall] is selected.<br>When trigger conditions are met, the GOT transfers the source device value to the destination device.<br>Set the source device and destination device on the Device tab in the Device Data Transfer dialog box.<br>(☞ This section 2 (2) Device tab) | |
| Transfer Inverting Flag Device | Bit 1 of the device set for [External Control Device] is specified.<br>When the transfer inverting flag device turns on, the source and destination devices are inverted.<br>For inverting the source and destination devices, turn on the transfer inverting flag device before turning on the trigger device, or turn on the transfer inverting flag device and the trigger device at once by the word data.<br>(☞ Section 11.4.2 5 Inverting source device and destination device) | |

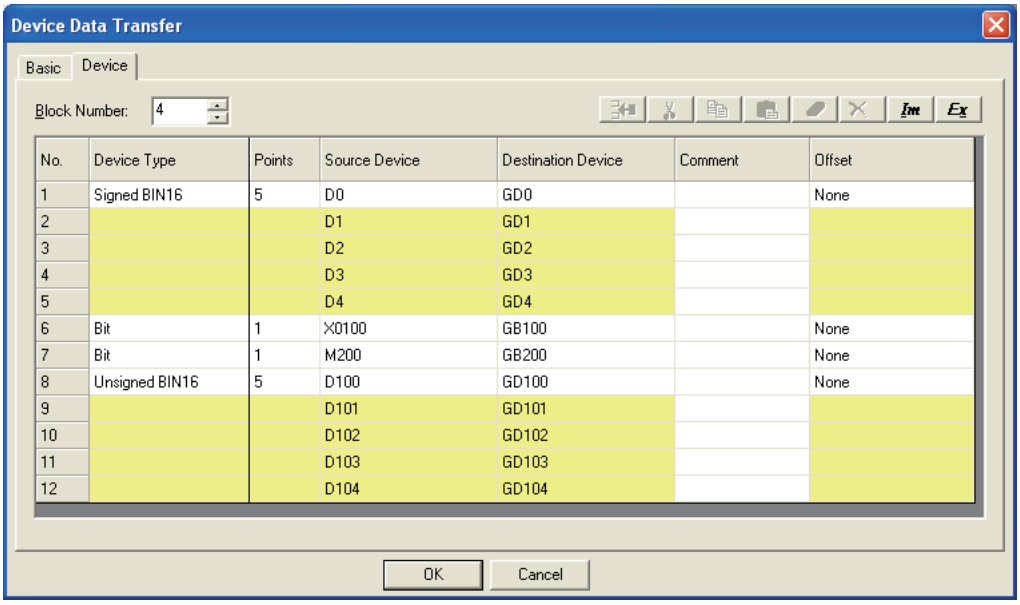
(Continued to next page)

Basic | Device

| Item | | Description | Model |
|---|---|---|---|
| External Notification Information | | Set the device for notifying the transfer status. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | External Notification Device | Check the item for setting the device that notifies the device data transfer status.<br>After checking the item, set the device. (☞ Section 5.1 Device Setting) | |
| | Device Data Transfer Notification Signal | bit 0 of the device set for [External Notification Information] is specified.<br>The signal notifies that the GOT transfers device data in process.<br>(☞ Section 11.4.2 3 Outputting device data transfer status to devices) | |
| | Device Data Transfer Error Notification Signal | bit 15 of the device set for [External Notification Information] is specified.<br>The signal notifies that errors occur during transferring device data.<br>(☞ Section 11.4.2 3 Outputting device data transfer status to devices) | |

(2) Device tab

Set the source device, destination device, and others.




Basic | Device

| Item | Description | Model |
|---|---|---|
| Block Number | Set the number of blocks (1 to 2048) for device data transfer settings.<br>(☞ Section 11.4.2 2 Setting device data transfer) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device data transfer edit buttons | (Insert Block) : Inserts a block on the selected row.<br>(Cut) : Cuts the selected row.<br>(Copy) : Copies the selected row.<br>(Paste) : Pastes the cut data or copied data.<br>(Clear) : Clears a comment.<br>(Delete) : Deletes the selected setting. Select a row for deleting the setting.<br>(Import) *1 : Reads edited setting data as CSV files or Unicode text files.<br>(Export) *1 : Stores the device data transfer setting data set with GT Designer2 (setting data on the Device tab) as CSV files or Unicode text files. | |

(Continued to next page)

Basic | Device

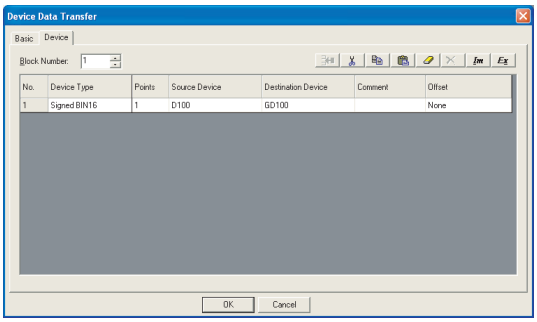
| Item | Description | Model |
|---|---|---|
| Device list | Displays the source device and the destination device for transferring device data in a list. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device Type | Select a data type of the devices. (☞ Section 5.2 Numeric Data that can be Handled with GOT)<br>Bit : Select the item when transferring ON or OFF state of the bit devices.<br>Signed BIN16 : Select the item when transferring signed 16-bit binary values.<br>Unsigned BIN16 : Select the item when transferring unsigned 16-bit binary values.<br>Signed BIN32 : Select the item when transferring signed 32-bit binary values.<br>Unsigned BIN32 : Select the item when transferring unsigned 32-bit binary values.<br>BCD16 : Select the item when transferring 16-bit binary-coded decimal values.<br>BCD32 : Select the item when transferring 32-bit binary-coded decimal values.<br>Real : Select the item when transferring floating point type real. | |
| Points | Set the number of points for devices to be transferred per block.<br>The consecutive devices starting from the head device equivalent to the set points are specified.<br>Set the item so that the total device points for all the blocks are 32767 points or less.<br>The settable number of points differs depending on [Device Type].<br>Bit : 1 point<br>Signed BIN16/Unsigned BIN16/BCD16 : 1 to 32767 points<br>Signed BIN32/Unsigned BIN32/Real : 1 to 16383 points | |
| Source Device*2 | Set the device with values to be transferred to the destination device.<br>(☞ Section 5.1 Device Setting) | |
| Destination Device*2 | Set the device that stores transferred values read from the source device.<br>(☞ Section 5.1 Device Setting) | |
| Comment | Set a comment.<br>Up to 32 characters, including two-byte and one-byte characters, can be entered.<br>The set comment is displayed as a CSV file or Unicode text file. | |
| Offset*3 | Displays the offset target and the offset device.<br>The offset is unavailable when [Bit] is set for [Device Type] and word devices are set for [Source Device] and [Destination Device] as bit devices.<br>Click the ... button, and then the Offset Setting dialog box appears.<br>(☞ Section 5.7 Offset Function) | |

For details of *1 to *3, refer to the following.

## *1 About import and export

It is possible to edit an exported CSV file / Unicode text file using such as spreadsheet software.
After editing, the CSV file / Unicode text file can be read out to GT Designer2 by importing the file.

Example: Import/export of a CSV file




Exporting to a CSV format file

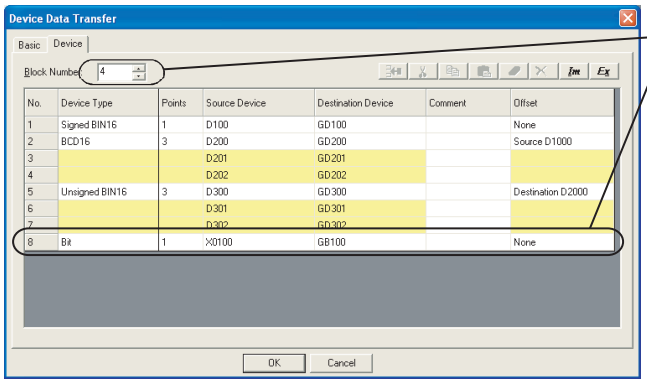
| | | | | | |
|---|---|---|---|---|---|
| Device Data Transfer | | | | | |
| Block Number | 1 | | | | |
| | | | | | |
| Device Type | Points | Source Device | Destination Device | Comment | Offset |
| | | | | | |
| Signed BIN16 | 1 | D100 | GD100 | | None |

Editing the exported file

| | | | | | |
|---|---|---|---|---|---|
| Device Data Transfer | | | | | |
| Block Number | 4 | | | | |
| | | | | | |
| Device Type | Points | Source Device | Destination Device | Comment | Offset |
| | | | | | |
| Signed BIN16 | 1 | D100 | GD100 | | None |
| BCD16 | 3 | D200 | GD200 | | Source D1000 |
| Unsigned BIN16 | 3 | D300 | GD300 | | Destination D2000 |
| Bit | 1 | X0100 | GB100 | | None |

Adding the setting using Microsoft® Excel, etc.

Importing to GT Designer2




The addition is displayed.

**Point**

Import/export in multilingual environment

Use a Unicode text file to import/export a file in the multilingual environment. Characters in a file can be correctly imported/exported when a Unicode text file is used.

*2 Setting same device for source device and destination device

When a device set for the source device is set for the destination device in one device data transfer setting, the GOT may not correctly transfer the device data.
For setting the same device for the source and destination devices, set a device for the source device in one device data transfer setting, and set the same device for the destination device in another device data transfer setting.
The following shows a setting example.

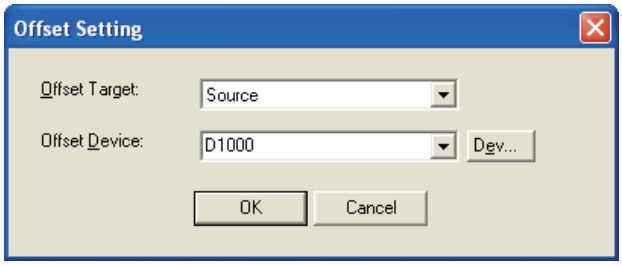
Example: When transferring values of D100, D105, D110 to D110, D115, D120 (D100 is set for the source and destination devices.)
When the same trigger device (D1000.b0) is set in multiple device data transfer settings, the GOT executes the device data transfer with the smallest device data transfer ID first.
The GOT transfers the value of D110 to D120 before transferring the value of D100 to D110.
As a result, the GOT can transfer the value of D110 that is not overwritten with the value of D100 to D120.

| Device data transfer ID | Trigger type | Trigger device | Number of blocks | Source device | Destination device |
|---|---|---|---|---|---|
| 1 | Sampling | D1000.b0 | 1 | D110 | D120 |
| 2 | Sampling | D1000.b0 | 2 | D100 | D110 |
| | | | | D105 | D115 |

When the above settings are set in one device data transfer setting, the GOT transfers the value of D100 to D110 before transferring the value of D110 to D120, and the value of D110 is overwritten with the value of D100.
After that, the GOT transfers the value of D110 to D120. As a result, the value of D100 is stored in D120.

*3 Offset Setting dialog box

Set the offset target and the offset device.




| Item | Description | Model |
|---|---|---|
| Offset Target | Select the offset target.<br>• None • Source • Destination • Both | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Offset Device | Set the offset device.<br>The item can be set when [Offset Target] is set to [Source], [Destination], or [Both].<br>When [Offset Target] is set to [Both], one offset device can be set for both [Source Device] and [Destination Device] in common.<br>(☞ Section 5.1 Device Setting) | |

**Point**

Offset target with transfer inverting flag device

Even if the transfer inverting flag device turns on, [Source Device] and [Destination Device] are not inverted.
Offset targets set for [Source Device] and [Destination Device] do not change.
For the transfer inverting flag device, refer to the following.

☞ Section 11.4.2 5 Inverting source device and destination device

## 11.4.5 Precautions

The following shows precautions for the device data transfer function.

### 1 Precautions for drawing

(1) Maximum number of device data transfer settings for one project
Up to 255 device data transfer settings are available.

(2) Estimate of processing time
The processing time depends on the number of blocks for the device data transfer setting.
For shortening the processing time, reduce the number of blocks.
(Reference value)
Connecting to QCPU with direct CPU connection (Device points: 32767, transmission speed: 115200bps)
- When the number of blocks is 1: Approximately 31 seconds
- When the number of blocks is 2048: Approximately 159 minutes

(3) Precautions for setting

(a) Number of settings
When the total memory capacity used for the device data transfer settings and the other settings, including logging settings, exceeds the free space of the GOT user area, reduce the number of the device data transfer settings.
The maximum number of all the settings, including device points, may not be set.
Make settings so that the memory capacity used for the settings is within the free space of the GOT user area.

For calculating the setting data size of the device data transfer function, refer to the following.

☞ Section 2.4 1 Object specifications

For the free space of the GOT user area, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(Chapter 8 TRANSFERRING DATA)

(b) Comments and setting data size
[Comment] set on the Device tab in the Device Data Transfer dialog box significantly affects the setting data size of the device data transfer.
Therefore, setting comments for each device increases the setting data size.

(c) Precautions for changing [Device Type]
Set [Device Type] before setting [Source Device] and [Destination Device].
When the set device type is changed to a device type with a different data length, settings for [Source Device] and [Destination Device] are cleared.
Example 1) When data length is different between before and after changing [Device Type]

| Before change | After change | Result |
|---|---|---|
| Signed BIN16 | Real | Settings for [Source Device] and [Destination Device] are cleared because the data length is changed from 16 bits to 32 bits. |

Example 2) When data length is the same between before and after changing [Device Type]

| Before change | After change | Result |
|---|---|---|
| Signed BIN16 | BCD16 | Settings for [Source Device] and [Destination Device] do not change because the data length is the same. |

## 2 Precautions for OS

For using the device data transfer function, install the extended function OS (Device Data Transfer) on the GOT.

## 3 Precautions for use

(1) Device data transfer and GOT status

The device data transfer cannot be executed with some GOT statuses.

The device data transfer cannot be executed during the following processing.

- The GOT downloads project data.
- The GOT installs OSs.
- The GOT restarts.

When the device data transfer is interrupted because of the above processing, values in the source device and destination device for the transfer are not synchronized.

When the device data transfer is interrupted, execute the device data transfer again after the GOT completes the above processing.

(2) When device data transfer is not executed with set trigger interval or with trigger condition met

(a) Cause

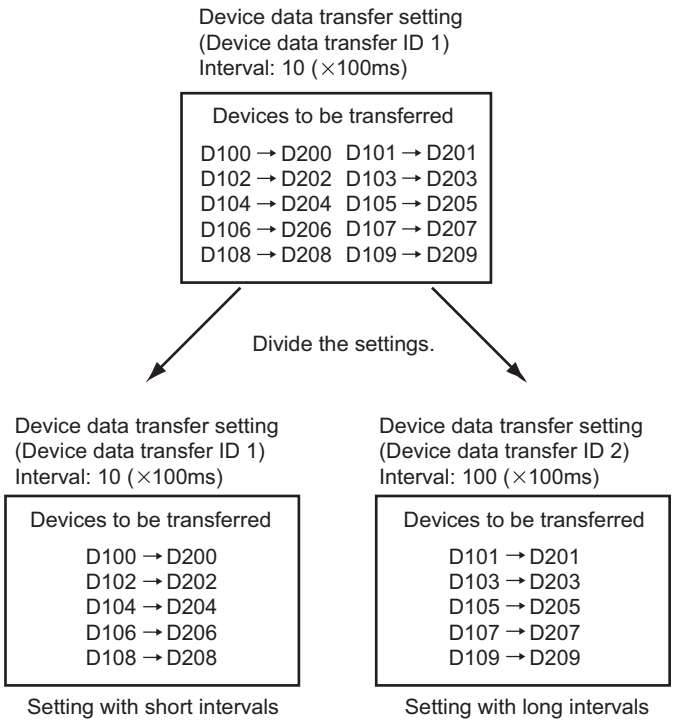
The device data transfer may not be executed in the following cases.

- The communication time between the GOT and a controller takes time because of high device points to be transferred.
- Two or more trigger conditions are met during a device data transfer.
- Functions other than the device data transfer function, including the logging function and recipe function, are set.

(b) Corrective action

Take any of the following actions.

- When the trigger type is set to [Sampling], reduce the device points for one device data transfer setting enabled with short intervals. (Set device data transfer settings enabled with long intervals separately from those enabled with short intervals.)



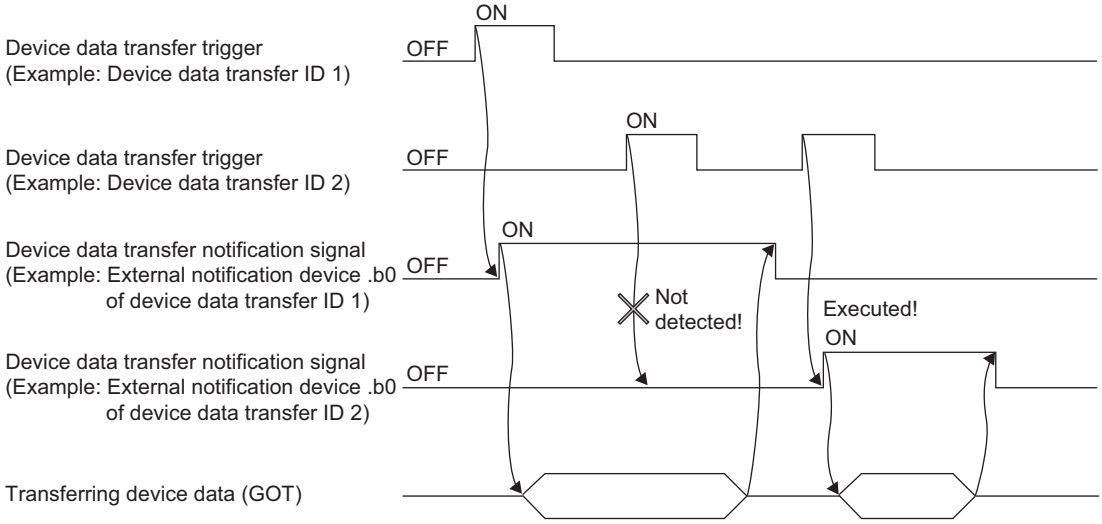

- Make sure that the trigger condition is met when the device data transfer notification signal is off.

  (☞ Section 11.4.2 3 (1) Device data transfer notification signal (External notification device.b0))
- Set a higher transmission speed in the communication detail settings if the transmission speed can be changed.

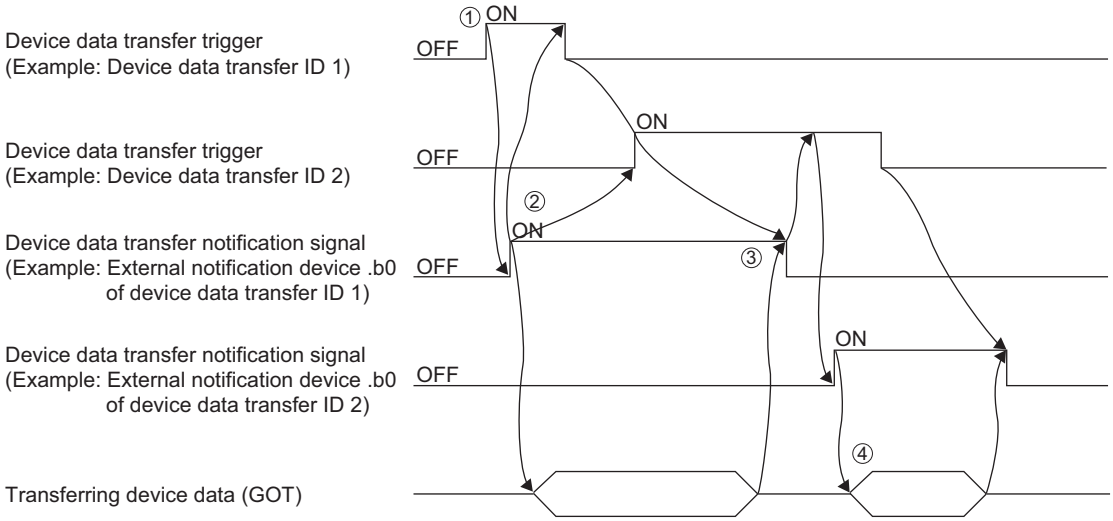
(3) When multiple trigger conditions are simultaneously met

(a) When trigger condition for another device data transfer setting is met during device data transfer

The GOT cannot detect that the trigger condition for another device data transfer setting is met.

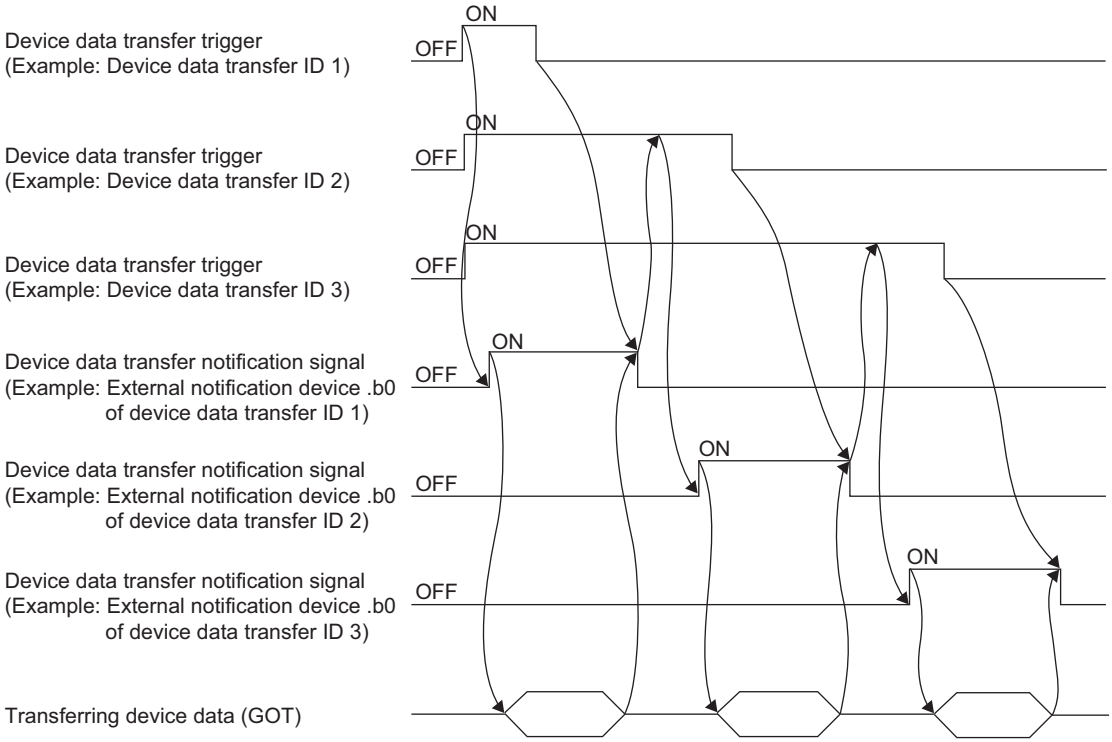



For ensuring the device data transfer, set [Trigger Type] to [Rise], and establish a handshake with the trigger device and the device data transfer notification signal.




1. Turn on the device data transfer trigger (Device data transfer ID: 1).
2. The device data transfer notification signal (Device data transfer ID: 1) turns on. Turn off the device data transfer trigger (Device data transfer ID: 1), and then turn on the device data transfer trigger (Device data transfer ID: 2) only.
3. When the device data transfer is completed and turn off the device data transfer trigger (Device data transfer ID: 1), the device data transfer notification signal (Device data transfer ID: 1) turns off.
4. The next device data transfer can be executed. The device data transfer corresponding to the device data transfer trigger (Device data transfer ID: 2) turned on in 2 is executed.

(b) When trigger conditions for different device data transfer IDs are simultaneously met
The GOT executes the device data transfer corresponding to the smallest device data transfer ID first.




(c) When trigger conditions for multiple device data transfer IDs are met after device data transfer is completed
The GOT executes the device data transfer with the smallest device data transfer ID next to the device data transfer ID for the completed device data transfer.
Example: When the device data transfer trigger conditions with the device data transfer IDs: 1, 2, 5, and 7 are met after the device data transfer with the device data transfer ID: 3 is completed
The GOT executes the device data transfer with the device data transfer ID: 5 next to the device data transfer with the device data transfer ID: 3.

(4) Using Unicode text files
For precautions for using Unicode text files, refer to the following.

☞ 2.11 Precautions for Using Unicode Text File

(5) Editing exported files
When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.
When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 12. RECIPE

Recipe is the function that the conditions required for production or other purpose can be set/changed easily.
Writing the preset value to the device of controller performs the set/change.
Also, the value can be read from the specified device.
The read values are stored in a file.
And then, it can be displayed or edited in PC.

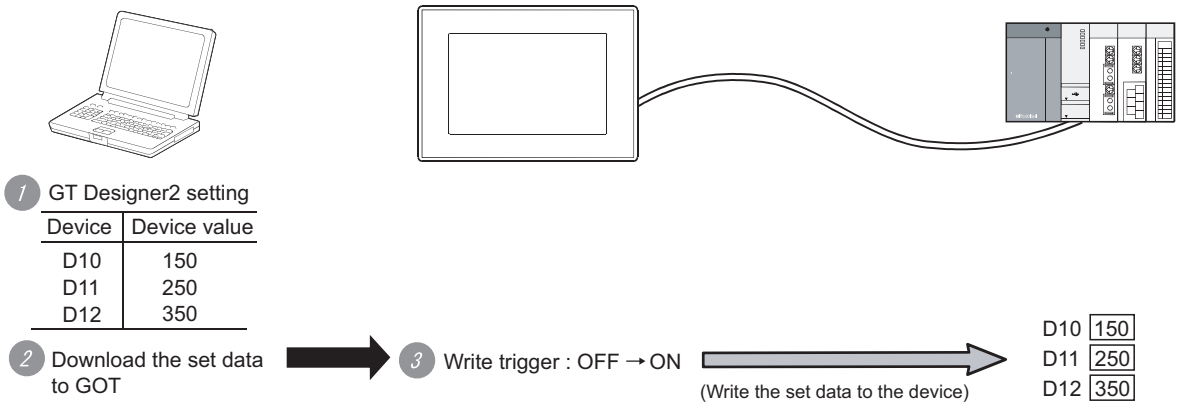
## 1 Procedure for reading/writing the device value used recipe.

(1) When not using the recipe file

The values preset with GT Designer2 are stored in the GOT internal memory (user area). And then, the set values is written to the devices of the controller depending on the status of the device (ON/OFF).

This method is used in the following cases.

- When only writing the values to the device of controller
- When it is not necessary to display or edit the values for writing in PC




1 Perform the recipe setting in GT Designer2.
In this case, set for without the recipe file.

2 Download the set data to GOT.

3 Write the values set in GT Designer2 to the device of controller with write trigger.

**Point**

To read the value from the device of controller

To read the value from the device, use the recipe file.

(☞ This section 1 (2) When using the recipe file)

When not using the recipe file, only writing depending on the status of the device (ON/OFF) is allowed.

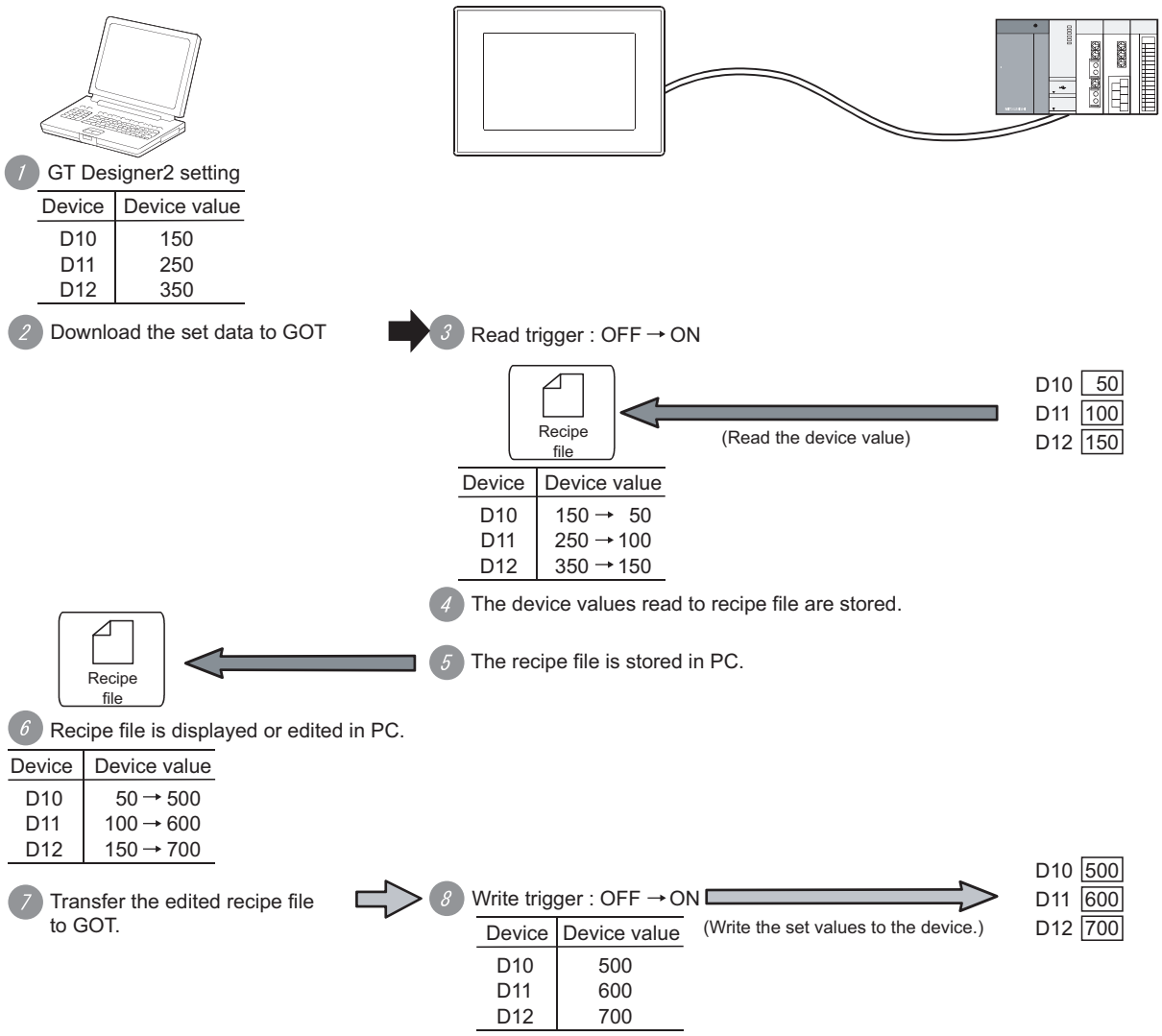
(2) When using the recipe file

Use the recipe file when reading/writing the device values.

Use read/write of the device values with the recipe file when performing project management and production management in PC.

The device values read from controller can be stored in recipe file.

Also, the data of recipe file can be written to the device.




1. Perform the recipe setting in GT Designer2.
   In this case, set for using the recipe file.
2. Download the set data to GOT.
3. The device values of controller are read with the read trigger.
4. The read values are stored in recipe file.
5. Store the recipe file in PC.
6. Display or edit the file stored at the above 5 in PC.
7. Store the edited recipe file in GOT.
8. The values are written to the device of controller with write trigger.

## 2 Recipe type

Recipe type is shown as follows.
For overview and details of each function, refer to the following.

- Recipe function ☞ Section 12.2 Recipe Function
- Advanced recipe function ☞ Section 12.3 Advanced Recipe Function

**Point**

When using GT11 or GT10

The advanced recipe function can be used only on GT16, GT15, and GT SoftGOT1000.
When using GT11 or GT10, use the recipe function.

**Remark**

Differences between the recipe function and the advanced recipe function

For difference between the recipe function and the advanced recipe function, refer to the following.

☞ Section 12.1 Differences Between the Recipe Function and the Advanced Recipe Function

# 12.1 Differences Between the Recipe Function and the Advanced Recipe Function

The differences between the recipe function and the advanced recipe function are shown below.
Select the recipe to use based on the followings.

| Item | Recipe function | Advanced recipe function | Reference |
|---|---|---|---|
| Applicable GOT | • GT16 • GT 15<br>• GT SoftGOT1000 • GT 11<br>• GT10 | • GT16 • GT15<br>• GT SoftGOT1000 | - |
| Required option function board, option OS*3 | • Option function board<br>• Option OS (Recipe) | • Option function board<br>• Option OS (Advanced recipe) | Section 12.3.5<br>2 3 |
| Max. No. of recipes | Max. 256 recipes | Max. 2048 recipes | This section<br>1 |
| Max. No. of device points | GT16, GT15, GT SoftGOT1000, GT11:<br>Max. 8192 points*1<br>GT10:Max. 4000 points*1<br>(When device type is 32 bit, calculate as 2 points for 1 device.) | When the number of record settings is 240 or less: Up to 32767 points per setting<br>When the number of record settings is 241 or more: Up to 4096 points per setting<br>(When device type is 32 bit, calculate as 2 points for 1 device.) | This section<br>1 |
| Max. No. of values in one device<br>(For each setting) | 1 (Only one record) | More than one (Up to 2000 records) | This section<br>2 |
| Applicable device type | • Signed BIN16 • Unsigned BIN16<br>• Signed BIN32 • Unsigned BIN32<br>Only one device type for each setting | • Signed BIN16 • Unsigned BIN16<br>• Signed BIN32 • Unsigned BIN32<br>• BCD16 • BCD32<br>• Bit<br>Allowed to set multiple device types for each setting. | This section<br>3 |
| Device name for each setting | Only one device name for each setting | Allowed to set multiple device names for each setting. | This section<br>3 |
| Trigger device for reading/ writing device value | • Set trigger device for each setting | • Set the trigger device for each setting<br>• Allowed to read/write all advanced recipes in common trigger device | This section<br>4 |
| Operation in utility | Not allowed | Allowed | This section<br>5 |
| Notifying the process status to the device of controller | • Reading/writing being executed | • Reading/Writing being executed<br>• Reading/Writing being completed<br>• Recipe process error<br>• Displaying the advanced recipe information in utility | This section<br>6 |
| Stored file type | For GT16, GT15, GT SoftGOT1000, GT10<br>CSV format file<br>For GT11<br>CSV format file, Binary format file | Binary format file*2 | This section<br>7 |
| Required memory area | Change depending on the setting | | Section 2.4 |

*1 Settable for each recipe setting for GT16, GT15, GT SoftGOT1000, and GT11.
Total number of points in one project for GT10.

*2 Can be converted to CSV file or Unicode text file in GT Designer2.
And then, it can be displayed or edited in PC.

*3 No option function board is required for GT16.
No option function board and option OS are required for GT SoftGOT1000 and GT10.

**Point**

For compatibility of recipe function and advanced recipe function

Setting for Recipe Function and advanced recipe function cannot be utilized. Select between recipe function and advanced recipe function before using the recipe.

**Remark**

For details of functions

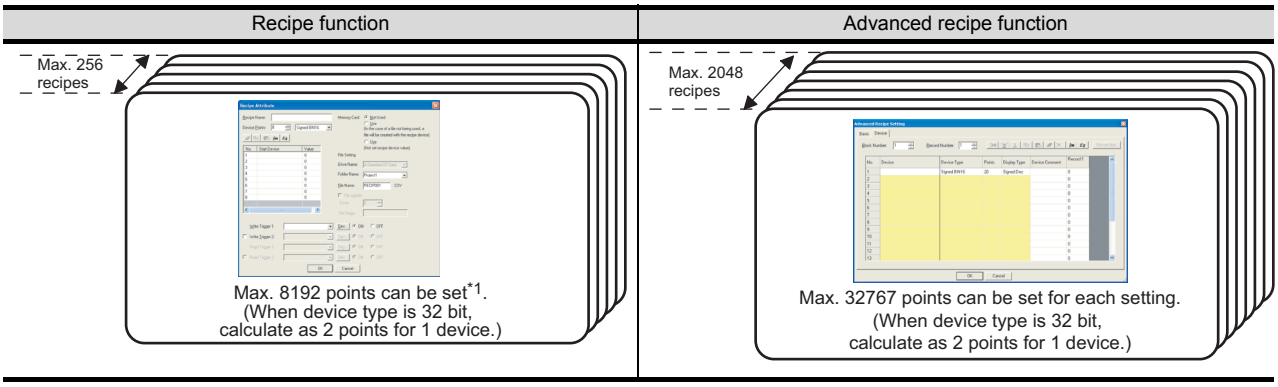
This section explains differences between recipe function and advanced recipe function.

For details of functions, refer to the following.

- Recipe function ☞ Section 12.2 Recipe Function
- Advanced recipe function ☞ Section 12.3 Advanced Recipe Function

## 1 Max. No. of recipes

Multiple recipes can be set for each setting.
Also, the setting can be managed separately for each line or line of products.
Max. No. of recipes and device points are shown as the following table.




*1 Settable for each recipe setting for GT16, GT15, GT SoftGOT1000, and GT11.
Total number of points in one project for GT10. (Max. 4000 points for GT10)

**Remark** Precautions for max. No. of device points in advanced recipe function

For details, refer to the following.

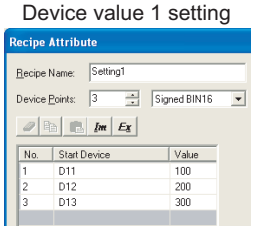
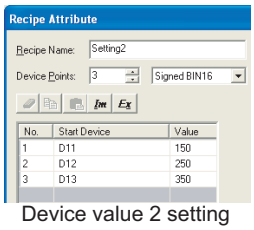
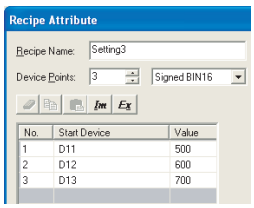
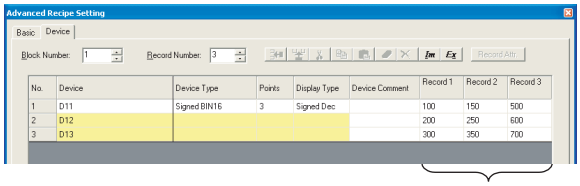
Section 12.3.1 2 (2) For the block

## 2 Max. No. of values in one device (For each setting)

Differences between recipe function and advanced recipe function when setting multiple values in one device are shown below.
Example : When setting 3 values in D11 to D13 of device,

| Device name | Device value 1 | Device value 2 | Device value 3 |
|---|---|---|---|
| D11 | 100 | 150 | 500 |
| D12 | 200 | 250 | 600 |
| D13 | 300 | 350 | 700 |

When setting the above values, the functions will be as the following table.

| Recipe function | Advanced recipe function |
|---|---|
| One value can be set in one device.<br>When setting multiple values in one device, separate the setting for each device value.<br><br>Device value 1 setting<br>  <br>  <br>Device value 2 setting<br>  <br>Device value 3 setting | Multiple values can be set in one device.<br>Multiple recipe information can be managed in one setting.<br><br>Device value 1 to 3 can be set in one device!<br>  <br>Multiple values<br>(max. 2000 records)<br>can be set in one device. |

## 3 Applicable device name and device type

Differences between recipe function and advanced recipe function when setting multiple device names and device types are shown below.

### (1) Example for setting multiple device names

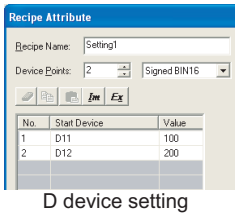
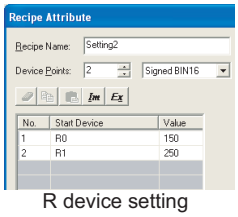
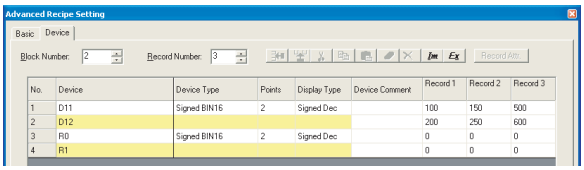
#### (a) Settings

It is explained as example for setting that is shown below.

| Device name | | Device type | Device value | Correspondence to the following setting (b) | |
|---|---|---|---|---|---|
| | | | | Recipe function | Advanced recipe function |
| D | D11 | Signed BIN16 | 100 | 1) | 3) |
| | D12 | Signed BIN16 | 200 | | |
| R | R0 | Signed BIN16 | 400 | 2) | |
| | R1 | Signed BIN16 | 500 | | |

#### (b) GT Designer2 setting

When setting above (a), GT Designer2 setting will be as the following table.

| Recipe function | Advanced recipe function |
|---|---|
| Multiple device names cannot be set in one setting.<br>Separate the setting for each device name.<br><br>1)<br>  <br>D device setting<br>2)<br>  <br>R device setting | Multiple device names can be set in one setting.<br><br>3)<br>  <br>D and R device setting can be set in one setting! |

(2) Example for setting multiple device types

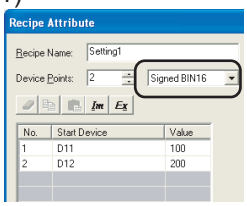
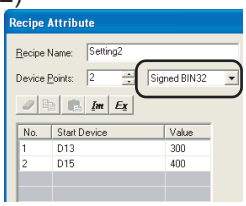
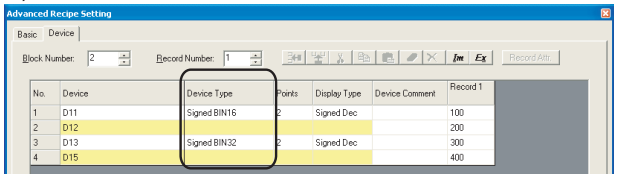
(a) Settings

It is explained as example for setting that is shown below.

| Device name | | Device type | Device value | Correspondence to the following setting (b) | |
|---|---|---|---|---|---|
| | | | | Recipe function | Advanced recipe function |
| D | D11 | Signed BIN16 | 100 | 1) | 3) |
| | D12 | Signed BIN16 | 200 | | |
| | D13 | Unsigned BIN32 | 300 | 2) | |
| | D15 | Unsigned BIN32 | 400 | | |

(b) GT Designer2 setting

When setting above (a), GT Designer2 setting will be as the following table.

| Recipe Function | Advanced recipe function |
|---|---|
| Multiple device types cannot be set in one setting.<br>Separate the setting for each device type.<br>1)  Signed BIN16 setting<br>2)  Unsigned BIN32 setting | Multiple device types can be set in one setting.<br>The setting can be put together for each line or line of products.<br>3)  The setting of signed BIN16 and unsigned BIN32 can be set in one setting! |

(3) Example for setting multiple device numbers

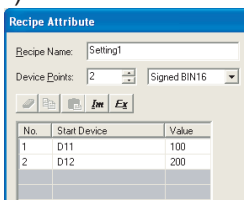
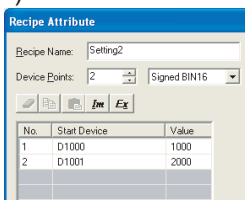
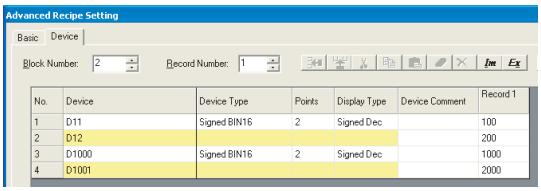
(a) Settings

It is explained as example for setting that is shown below.

| Device name | | Device type | Device value | Correspondence to the following (b) setting | |
|---|---|---|---|---|---|
| | | | | Recipe function | Advanced recipe function |
| D | D11 | Signed BIN16 | 100 | 1) | 3) |
| | D12 | Signed BIN16 | 200 | | |
| | D1000 | Signed BIN16 | 1000 | 2) | |
| | D1001 | Signed BIN16 | 2000 | | |

(b) GT Designer2 setting

When setting above (a), GT Designer2 setting will be as the following table.

| Recipe Function | Advanced recipe function |
|---|---|
| Only continuous device number can be set.<br>When the device number is not continuous, separate the setting.<br>1)  Setting of D10 to D11<br>2)  Setting of D1000 to D1001 | The random device type can be set in one setting.<br>3)  The random device number can be set in one setting! |

**Point**

When setting BCD16, BCD32 and bit device in device type

BCD16, BCD32 and Bit device (Bit specification of word device) cannot be set in recipe function.

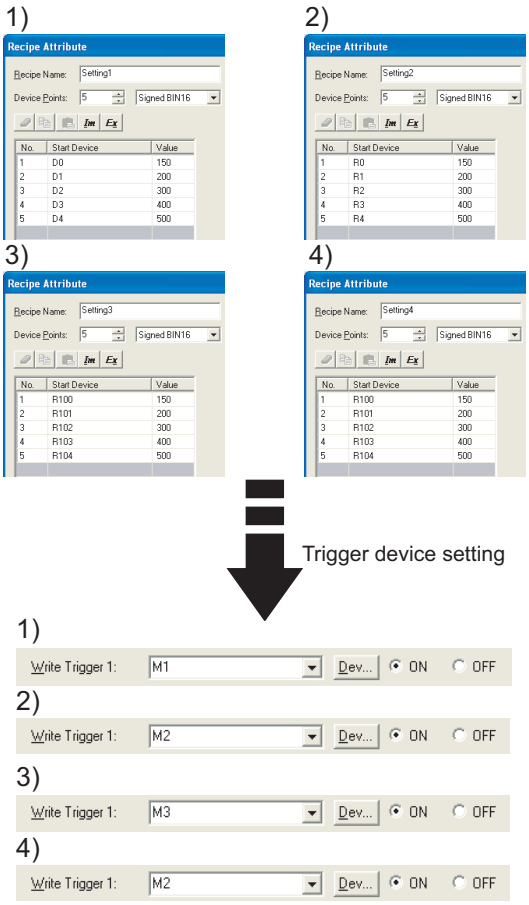
When setting them, use the advanced recipe function.

## 4 Trigger device for reading/writing device value

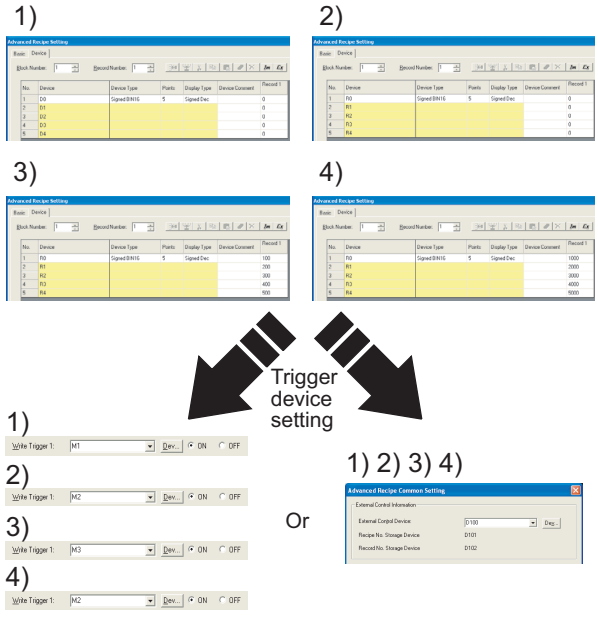
The recipe performs read/write of the device value depending on status of the trigger device (ON/OFF). When reading/writing device value, differences between recipe function and advanced recipe function at the trigger device setting are shown below.

Example : When four settings exist

| Recipe Function | Advanced recipe function |
|---|---|
| Set the trigger device for each setting. | Trigger device can be set for each setting as recipe function.<br>Also, all advanced recipes can be read/written in common trigger device.<br>For this, it is not necessary to newly set trigger device even if increasing settings. |




Set the trigger device for each setting




Set the trigger device for each setting. *1

Set the common trigger device. *2

*1 It is necessary to specify additional record No. when reading/writing device value.

(☞ Section 12.3.1 3 (2) When executing with specifying condition of writing/reading device value for each advanced recipe setting)

*2 It is necessary to specify additional recipe No. and record No. when reading/writing device value.

(☞ Section 12.3.1 3 (1) When executing read/write of the device value with specifying common trigger device)

## 5 Operation in utility

Advanced recipe function can perform the following operation in utility.

- Advanced recipe file operation
- Recipe execution
- G1P → CSV file/Unicode text file conversion

Recipe can be operated without designing dedicated screen or reading the file to PC.

**Remark** About operation in utility

For details, refer to below.

☞ Section 12.3.2 3 Operation in utility

## 6 Notifying the process status to the device of controller

Recipe can notify the status for read/write of device value with storing to the device of controller.

| Recipe function | Advanced recipe function |
|---|---|
| • Reading/writing being executed<br>(☞ Section 12.2.1 Relevant settings) | • Reading/writing being executed<br>• Reading/writing being completed<br>• Recipe process error<br>• Displaying advanced recipe function information in utility<br>(☞ Section 12.3.2 2 Output the executing status of advanced recipe function to device) |

## 7 Storing file type

Recipe can read the device value of controller and store in recipe file.
Also, the data of recipe file can write to device.
Recipe can use the file type as shown below.

| Recipe function | Advanced recipe function |
|---|---|
| CSV file*1<br>Binary format file (Only GT11) | Binary format file*2 |

*1 The stored CSV file can be displayed or edited in PC.
*2 The binary format file converts to CSV file or Unicode text file.
And then, it can be displayed or edited.

# 12.2 Recipe Function

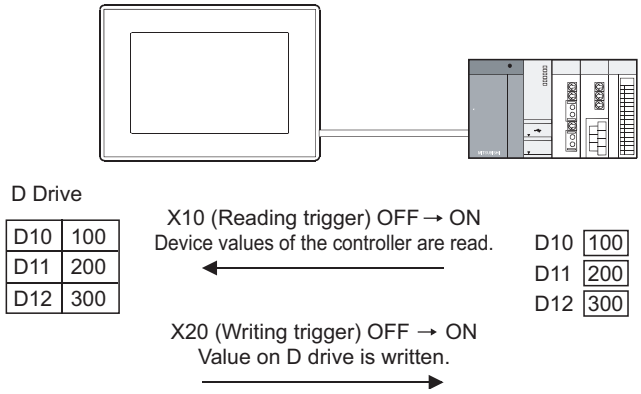
This function enables reading/writing of a value from/to the specified device according to the operation status of the device.
For read/write procedure, refer to below.

Chapter 12 1 Procedure for reading/writing the device value used recipe.

**Point**

Reading/writing procedure for GT11

When a device value read from a controller is stored to the D drive as a G1R file, editing of the stored G1R file by a personal computer is not allowed.
(The data on the D drive can be written to the controller.)
To edit the data, save the data in a CSV file on the A drive.



**Remark**

(1) CSV file saved on Memory card
Every time the recipe is set, the CSV file will be created inside the Memory card.

| Recipe name | File name (can be randomly changed) |
|---|---|
| Recipe operation 1 | RECIP001.CSV |
| Recipe operation 2 | RECIP002.CSV |
| Recipe operation 3 | RECIP003.CSV |

(2) G1R file stored on the D drive (only when using GT11)
A G1R file is created for each recipe setting on the D drive.

| Recipe name | File name (can be randomly changed) |
|---|---|
| Recipe operation 1 | RECIP001.G1R |
| Recipe operation 2 | RECIP002.G1R |
| Recipe operation 3 | RECIP003.G1R |

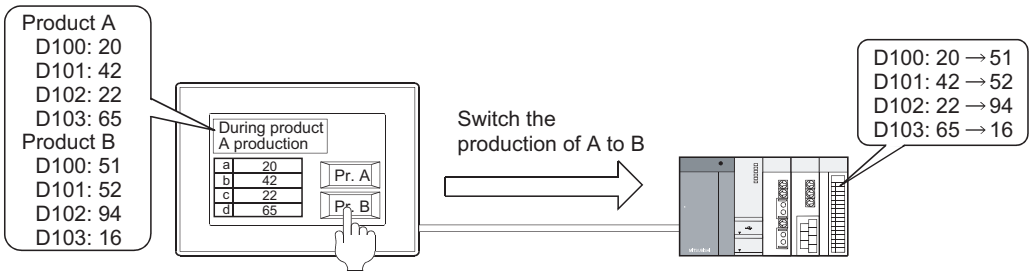
(3) Differences between recipe function and advanced recipe function
For differences between recipe function and advanced recipe function, refer to below.

☞ Section 12.1 Differences Between the Recipe Function and the Advanced Recipe Function

Example

Change the quantity of used materials according to the products

☞ Make setting in the recipe setting dialog box



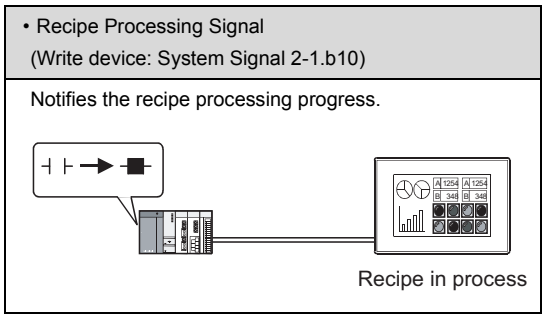
## 12.2.1 Relevant settings

For recipe, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to recipe only
··· Relevant to recipe only.

### 1 System information (☞ Section 3.6 System Information Setting)

(1) Functions relevant to recipe only




## 12.2.2 Settings

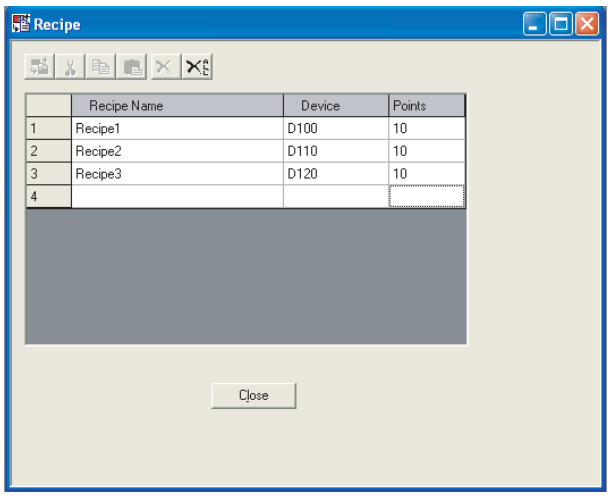
1. Select [Common] → [Recipe] from the menu.
2. As the setting dialog box will appear, make the settings with reference to the following explanation.

**Remark** When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on Recipe in the project work space.

## 12.2.3 Setting items

Set the operation details of each recipe function.

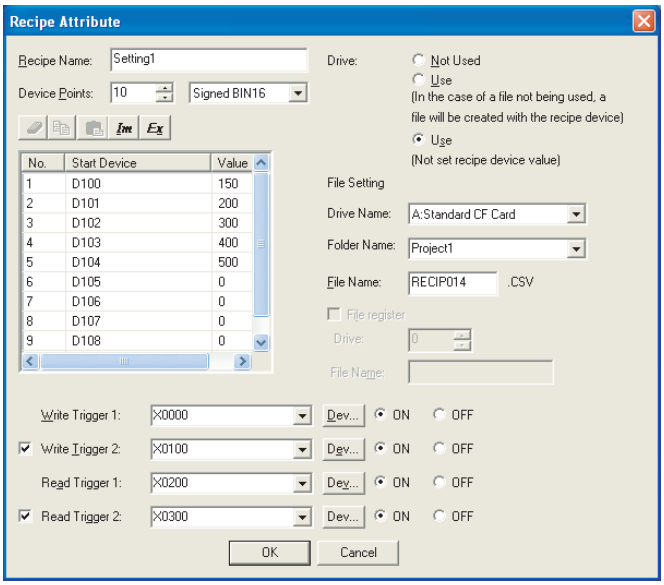



| Items | Description |
|---|---|
| Recipe operation View | Displays the list of the preset recipe function data.<br>If plural recipe functions are set, a recipe function data can be selected by clicking on the No. on the left.<br>The preset recipe function data can be edited using the following icons.<br>(Edit) *1 : Edits the operation details of the selected recipe function data<br>(Cut) : Cuts the selected recipe function data<br>(Copy) : Copies the selected recipe function data<br>(Paste) : Pastes the cut/copied recipe function data in the end of the view display<br>(Delete) : Deletes the selected recipe function data<br>(Delete all) : Deletes all the set recipe functions data |

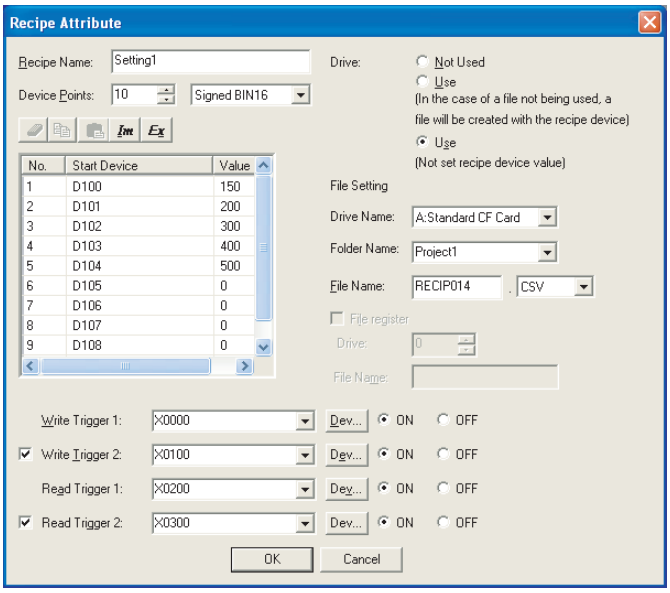
For details of *1, refer to the following.

*1 Recipe setting

Set the operation details of the recipe function.



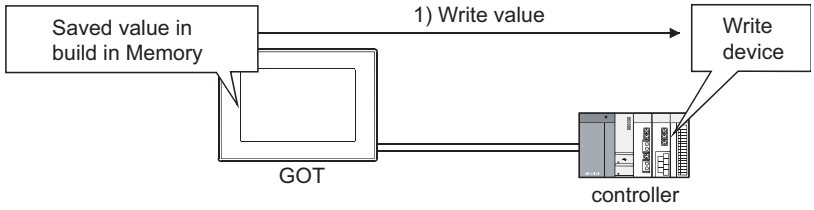
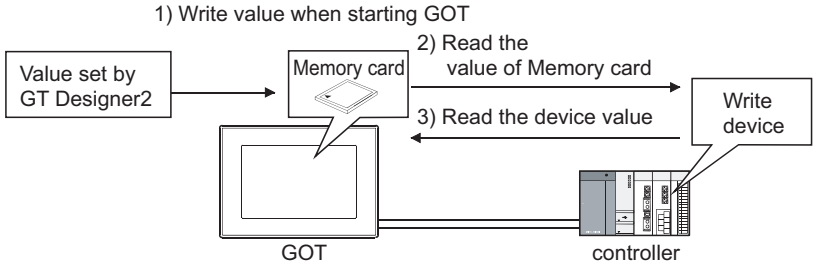
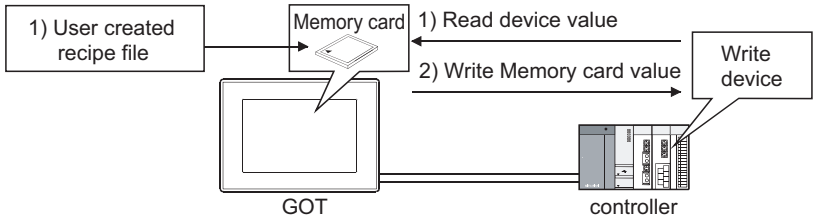

(Example: Setting screen for GT15)



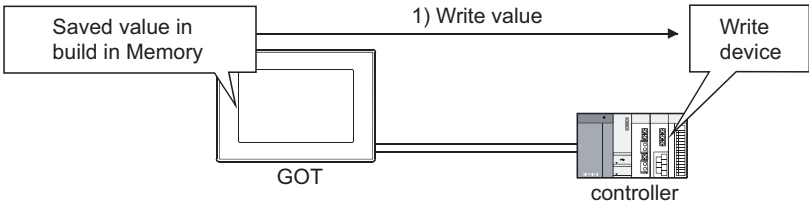
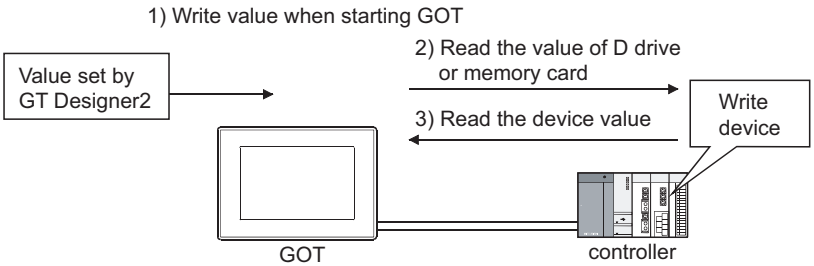
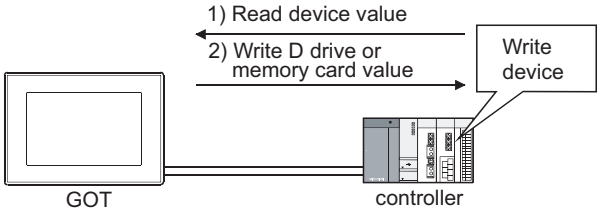

(Example: Setting screen for GT11)

| Items | | Description | Model |
|---|---|---|---|
| Recipe Name | | Set a recipe name.<br>Up to 32 characters can be entered. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Points | | Set data type and points of the device to be read and written when executing the recipe function. | |
| | Device Points | Set the points of device to be read and written.<br>Set the specified number of devices consecutively starting from the head device.<br>The points that can be set depend on the data types of devices as follows:<br>16bit (signed/unsigned) : Max 8192 points (Max. 4000 points for GT10)<br>32bit (signed/unsigned) : Max 4096 points (Max. 2000 points for GT10) | |
| | Data Type | Select the data type of the devices.<br>Signed BIN16 : Process the word device value of 16bit in signed way<br>Unsigned BIN16 : Process the word device value of 16bit in unsigned way<br>Signed BIN32 : Process the word device value of 32bit in signed way<br>Unsigned BIN32 : Process the word device value of 32bit in unsigned way | |
| Recipe Edit Button | | (erase) : Click this button to erase the column of the selected No.<br>(copy) : Click this button to copy the selected recipe function.<br>(paste) : Click this button to paste the cut or copied column to the end of the list.<br>(import) : Click this button to read out the recipe setting that has been edited in a CSV file to GT Designer2.*1<br>(export) : Click this button to save the recipe setting that has been set by GT Designer2 in a CSV file.*1 | |
| Device View | | A list of the devices that are set to read or write the recipe function data is displayed. | |
| | Start Device | Set the head device that executes read/write the recipe function data.<br>(☞ Section 5.1 Device Setting) | |
| | Value | Input the device value to be written to the PLC when the condition is satisfied.<br>Click on the column of No. and then the set values can be edited using each icon ( (erase), (copy), (paste)). | |
| Write Trigger1 | | Set a device that will execute data write and its trigger condition (ON/OFF) for the recipe function.<br>(☞ Section 5.1 Device Setting) | |
| Write Trigger2 | | Check this item to enable data write when both of two conditions are satisfied.<br>Set the device and its trigger conditions (ON/OFF)<br>(☞ Section 5.1 Device Setting)<br>With Write Trigger 1 and 2 set, data write is executed only when the both device conditions are satisfied. | |
| Read Trigger1 | | Set a device that will execute data read and its trigger condition (ON/OFF) for the recipe function.<br>(☞ Section 5.1 Device Setting) | |
| Read Trigger2 | | Check this item to enable data read when both of two conditions are satisfied.Set the device and its trigger conditions (ON/OFF).<br>(☞ Section 5.1 Device Setting)<br>With Read Trigger 1 and 2 set, data read is executed only when the both device conditions are satisfied. | |

(Continued to next page)

| Items | Description | Model |
|---|---|---|
| Drive | Select to use or not use a Memory card for the recipe function.<br><br>Not Used : Writes the value saved in the built-in Memory of GOT (the value set in GT Designer2) into the device.<br>  <br><br>Use (In the case of a file not being used, a file will be created with the recipe device).<br>: Create a recipe file with the value setting in GT Designer2 when there is not any recipe file in the Memory card at starting up.Initially, writing by the set value can be executed.<br>  <br><br>Use (Not set recipe device value)<br>: Does not create any recipe file if there is no recipe files in Memory card when starting GOT. Because the value setting in GT Designer2 is not needed, data volume transferred to GOT can be decreased and the download time can be shortened.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |

(Continued to next page)

| Items | | Description | Model |
|---|---|---|---|
| Drive | | Select whether to use the D drive, memory card (for GT11), or C drive (for GT10) when using the recipe function.<br><br>Not Used : Writes the value saved in the built-in Memory of GOT (the value set in GT Designer2) into the device.<br>  <br><br>Use (In the case of a file not being used, a file will be created with the recipe device)<br>: Creates a recipe file with the value set in GT Designer2 when there is no recipe file in the D drive/C drive or memory card at GOT startup.<br>Initially, writing by the set value can be executed.<br>  <br><br>Use (Not set recipe device value)<br>: Does not create any recipe file when there is no recipe file in the D drive/C drive or memory card at GOT startup.<br>Because the value setting in GT Designer2 is not needed, data volume transferred to GOT can be decreased and the download time can be shortened.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| File Setting | | Specify file when memory card or D drive is used. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Drive Name | Select the drive where a file is stored. | |
| | Folder Name *2 | Specify the name of folder where the file is stored.<br>Use single-byte alphanumeric characters including some symbols.<br>Default folder name is [Project Folder].<br>(☞ Section 3.1 GOT/Controller Type Setting) | |
| | File Name *2 | Specify the name of file.<br>Use single-byte alphanumeric characters including some symbols.<br>Default file name is "RECIP□." (□: Recipe number)<br>(For GT11, it is necessary to select the file format.) | |

(Continued to next page)

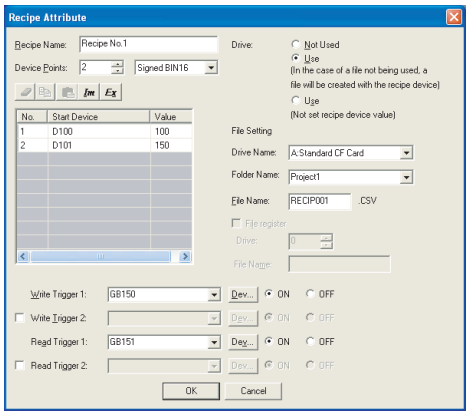
| Items | | Description | Model |
|---|---|---|---|
| File register | | Check this item to specify a file register name when a device executing read/write is set in the file register (R, ER, ZR).<br>(Only when the controller type is set as [MELSEC-QnA/Q/QS, MELDAS C6*]/[MELSEC-Q (multi.)/Q Motion] in GT Designer2)<br>When no file register has been specified, the file register with the file name specified by QCPU in the "END" process. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Drive | Select the drive No. of the controller. | |
| | File Name | Set a file name.<br>(Up to 8 characters can be input.) | |

For details of *1, *2, refer to the following.

## *1 Import/Export

The exported CSV file can be edited using such as the spreadsheet software.
The CSV file, after editing, can be imported to and opened by GT Designer2.

Example: Importing and exporting in CSV file




Exported in CSV file

| | | | |
|---|---|---|---|
| Recipe | | | |
| Device Points | 2 | Device Type | Signed BIN16 |
| | | | |
| Device | Device Value | | |
| D100 | 100 | | |
| | 150 | | |

Editing the exported file

| | | | |
|---|---|---|---|
| Recipe | | | |
| Device Points | 7 | Device Type | Signed BIN16 |
| | | | |
| Device | Device Value | | |
| D100 | 100 | | |
| | 150 | | |
| | 172 | | |
| | 341 | | |
| | 233 | | |
| | 211 | | |
| | 90 | | |

Add the setting using such as Microsoft© Excel.

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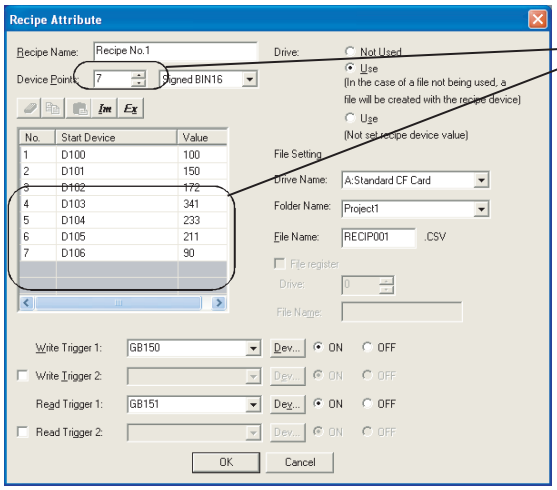
( From previous page )

Importing to GT Designer2

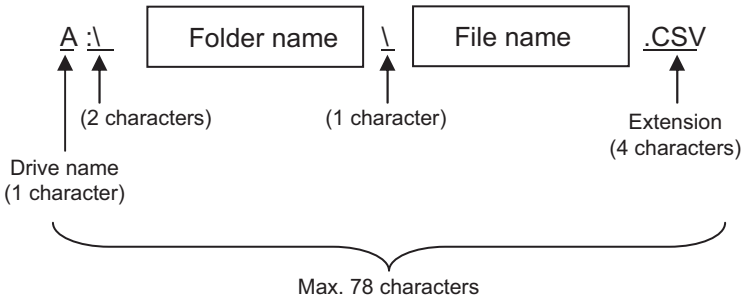



The added contents are displayed.

*2 Folder name and file name

(1) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder and file name are automatically added.)

Example: CSV file Path in memory card (for GT15)

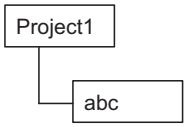



**Remark**

When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name] : Project1 \ abc



(2) Character strings that cannot be set

The following character strings cannot be used as a folder name or a file name. (They cannot be used irrespective of upper-case or lower-case characters.)

• COM1 to COM9 • LPT1 to LPT9 • AUX • CON
• NUL • PRN • CLOCK$

Also, folder and file name as shown below cannot be used.

• Folder name starting as G1
• Folder and file name starting from . (period) or \
• Folder and file name ending at . (period) or \
• Folder and file name with only . (period) or .. (two periods)

**Point**

(1) Setting items of Memory card/D drive

Available operation of the recipe function depends on the selected item.
Select the item corresponding to a desired operation of the recipe function.

<Operation of recipe function according to the selected items> ○ : Applicable × : N/A

| Items | | Recipe function operation to be used | | |
|---|---|---|---|---|
| | | Write only | Read only | Read/Write |
| Memory card/ D drive | Not used | ○ | × | × |
| | Use (In the case of a file not being used, a file will be created with the recipe device) | ○ *2 | △ *1*2 | ○ *2 |
| | Use (Not set recipe device value) | ○ *3 | ○ *3 | ○ *3 |

*1: It is advisable to select [Use (not set recipe device value)] when executing read operation only.
*2: Since value setting is necessary, GOT memory capacity for the set values is required.
*3: It is necessary for the user to create a recipe file.
(After initially reading the controller device, reuse the recipe file created in Memory card/D drive in GOT.)

(2) Memory card/D drive check when using recipe function

GOT executes the following operation according to the status of the Memory card/D drive.

(a) When recipe file is not valid or corrupted
A system alarm "351:Recipe file error. Confirm content of recipe file." occurs and recipe operation is stopped.

(b) When no Memory card is installed in the GOT
A system alarm "352:Recipe file make error. Reboot GOT after inserting memory card." occurs.

(c) If the capacity of D drive is insufficient
A system alarm, "571: Capacity shortage of user memory (RAM)" appears.

**Hint!**

Precautions when executing recipe function

(1) When many read/write devices are set

Other processing such as monitoring of other object function or key input will not be executed until the completion of the recipe function.

<Confirming the recipe function execution>

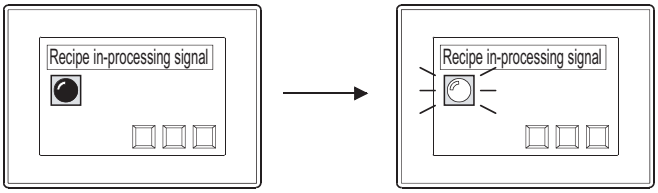
Set such as a lamp, which monitors the recipe in-processing signal of system signal 2-1, on the GOT screen, and it is possible to confirm whether the recipe function is executed or not.

☞ Section 3.6 System Information Setting

System signal 2-1

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Recipe in-processing signal




The lamp is lit while the recipe function is executed.

The lamp goes off at the completion of the recipe function.

## 12.2.4 Precautions

This section provides the precautions for using the recipe function.

### 1 Precautions for drawing

(1) Setting number of recipes in a project
Up to 256 recipes can be set in the recipe function.

### 2 Precautions for OS

When using the recipe function, install the option OS (Recipe) in the GOT.
(The option OS is not required for GT10.)

### 3 Precautions for hardware

When using the recipe function with GT15, mount the option function board on the GOT.
For GT16 and GT10, no option function board is required.
For GOTs with built-in option function boards, refer to the following.
☞ 2.13 Precautions for Option Function Board

### 4 Precautions for use

(1) Recipe file saved in Memory card/D drive
Only one recipe file can be stored in Memory card/D drive for one recipe function.
For the recipe file data, only the read data are saved and historical data are not saved.
(Old data will be overwritten.)
When historical data are necessary, save data in the computer every time the recipe function is executed.

(2) File data size
Refer to the following for the data size stored into a memory card/D drive when the recipe function is used.
☞ Section 2.4 Specifications of Available Object Functions

(3) Editing exported files
When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.
When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 12.3 Advanced Recipe Function

The following explains advanced recipe function.

**Remark** Differences between recipe function and advanced recipe function

For differences between recipe function and advanced recipe function, refer to below.

Section 12.1 Differences Between the Recipe Function and the Advanced Recipe Function

## 12.3.1 Before setting

The following explains the required settings and functions for using advanced recipe function.

### 1 Procedure for reading/writing device value with advanced recipe function

The following two methods to read/write device value of controller are shown.

- Read/write depending on status of device (ON/OFF)
- Read/write in utility

The following explains operation procedure for each method.

(1) Read/write of device value depending on status of device (ON/OFF)
Perform read/write of device value depending on status of device (ON/OFF).
Use the device to control the recipe.

(a) When not using advanced recipe file
For details, refer to the following.

☞ Chapter 12 1 (1) When not using the recipe file

**Point**

To read the value from the device of controller

To read the value from the device, use the advanced recipe file.

(☞ Chapter 12 1 (2) When using the recipe file)

When not using the advanced recipe file, only writing depending on the status of the device (ON/OFF) is allowed.

**Remark**

For overview and details for each procedure

For details, refer to the following.

(1) For setting in GT Designer2

☞ Section 12.3.4 Setting items

(2) For read/write of device value

☞ This section 3 Condition and target of reading/writing device value

(b) When using advanced recipe file
For details, refer to the following.

☞ Chapter 12 1 (2) When using the recipe file

**Point**

(1) When displaying or editing advanced recipe file in PC
Advanced recipe file is stored in binary format file (*. G1P).
After converting this file to CSV file or Unicode text file, edit it in PC.

(2) When editing the file in PC and using it in the advanced recipe function
Edit the file in PC and convert it to binary format file (*. G1P).
(☞ This section 4 (2) Conversion, storage, edit of advanced recipe file)

**Remark**

For overview and details for each procedure
For details, refer to the following.

(1) For setting in GT Designer2
☞ Section 12.3.4 Setting items

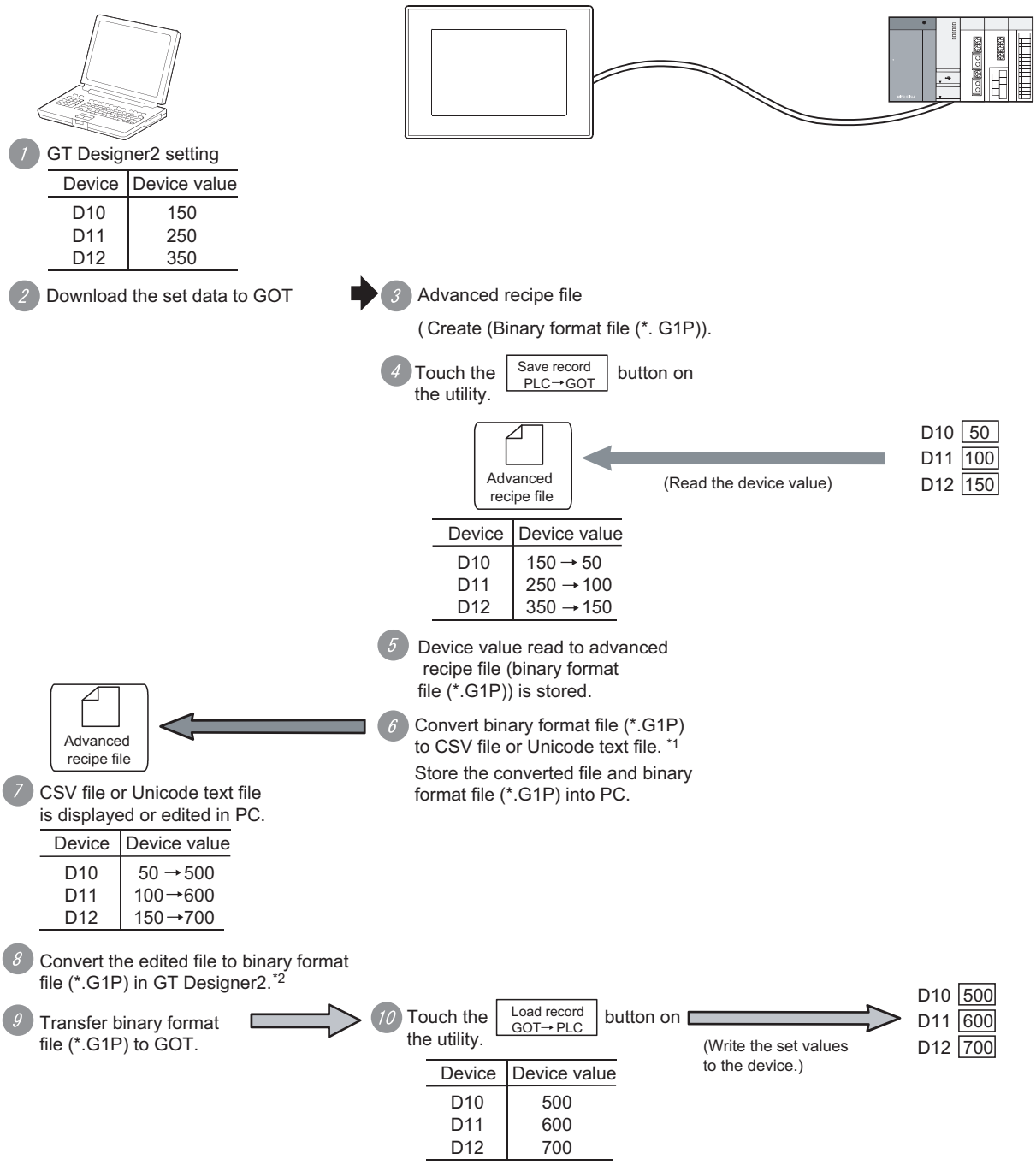
(2) For read/write of device value
☞ This section 3 Condition and target of reading/writing device value

(3) For advanced recipe file
☞ This section 4 Use of advanced recipe file

(2) Read/write of device value in utility

Operation in utility reads/writes the device value.

The advanced recipe function can be used without designing screen for this function.




*1 File can be converted with GT Designer2 or utility.
For conversion method, select depending on application of use.
(☞ This section 4 (2) Conversion, storage, edit of advanced recipe file)

*2 At conversion, binary format file (*.G1P) is required.
When G1P file does not exist, store binary format file (*.G1P) in the same hierarchy as that of CSV file/Unicode text file.

1. Set in GT Designer2.
2. Download the set data to GOT.
3. Touch the [Create G1P] button on the utility to create the advanced recipe file.
4. Touch the [Save record PLC→GOT] button on the utility to read device value of controller.
5. The read value is stored in the advanced recipe file (binary format file (*.G1P)).
6. Convert binary format file (*.G1P) to CSV file or Unicode text file.
   Store the converted file and the binary format file (*.G1P) in PC.
7. Display or edit the file stored at the above 6 in PC.
8. Convert the edited file to the binary format file (*.G1P) in the GT Designer2.
9. Store the binary format file (*.G1P) in the GOT.
10. Touch the [Load record GOT→PLC] button in the utility to write the set value to the device of controller.

**Remark**

Details for each procedure

Regarding overview and details for each procedure of 1 to 10, refer to the following.

(1) For setting in GT Designer2

☞ Section 12.3.4 Setting items

(2) For read/write of device value

☞ This section 3 Condition and target of reading/writing device value

(3) For advanced recipe file

☞ This section 4 Use of advanced recipe file

**Point**

(1) Necessity of the advanced recipe file
When reading/writing device value of controller in utility, the advanced recipe file is required.(☞ This section 4 Use of advanced recipe file)

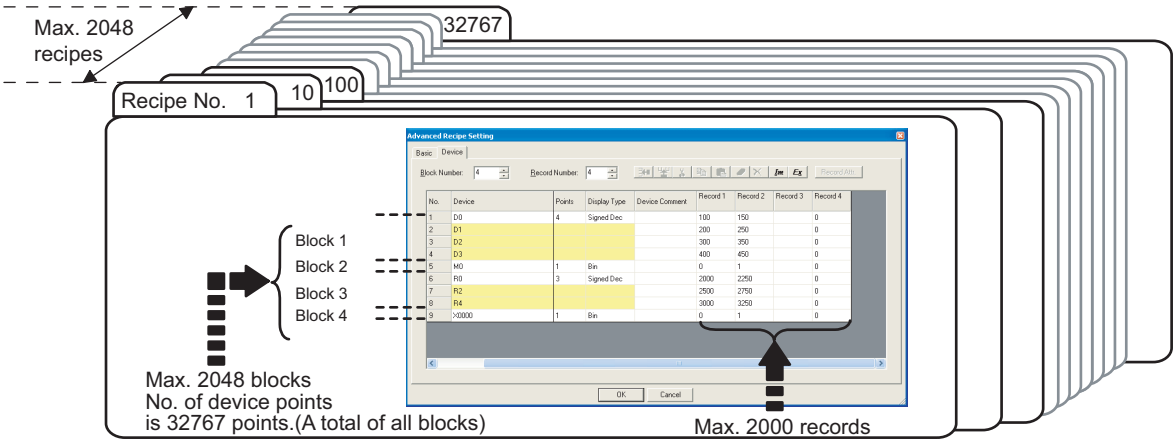
(2) When the advanced recipe file does not match with the project of the advanced recipe setting
When the advanced recipe file does not match with the project of the advanced recipe setting, the copying file, the saving/loading record, etc. cannot be operated. ([The file is invalid] is displayed in the utility.)

Match the advanced recipe file with the project of the advanced recipe setting with either of the following operations.

- Download the advanced recipe setting that matches with the advanced recipe file to the GOT.
- Create the advanced recipe file again.

## 2 Structurally setting recipe

The advanced recipe function can manage multiple recipe information in one advanced recipe setting with setting in recipe No./block/record.




The following explains recipe No./block/record.

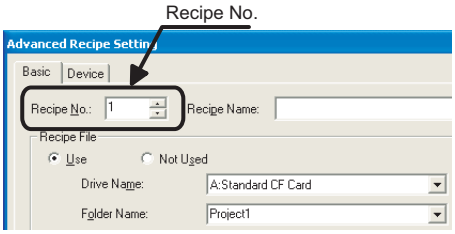
(1) For recipe No.

Recipe No. is to identify advanced recipe setting that will be a target of reading/writing the device value.

(a) Setting example

Set the recipe No. in basic tab of [Advanced Recipe Setting].

(☞ Section 12.3 2 (2) (b) Device tab)




(b) Applicable recipe No.

Recipe No. can be set in range of 1 to 32767.

However, max. No. of advanced recipe setting is 2048 settings.

(2) For the block

The block is setting unit to set random device number or different device type.

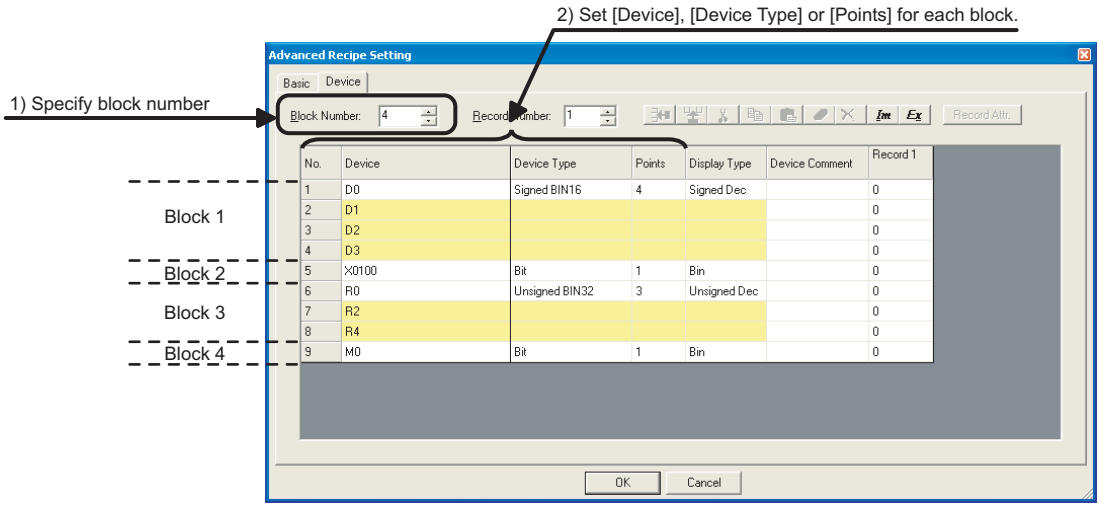
Setting for each block can perform the following setting.

- Setting that multiple device type (bit, word, etc.) exist in one setting
- Setting that continuous device number setting and random setting exist in one setting

(a) Setting example

The following explains as example of setting that bit device and word device (signed BIN16 and signed BIN32) exist in one advanced recipe setting.

(☞ Section 12.3 2 (2) (b) Device tab)




(b) Max. No. of block

Max. 2048 block settings can be set in one advanced recipe setting.

**Point**

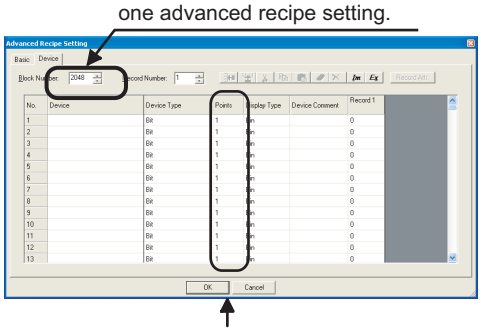
(1) For max. No. of device points
Max. No. of device points is 32767 points in total for each advanced recipe setting.
Calculate as 1 point for 1 device regardless of word device or bit device.
However, when device type is 32 bit, calculate as 2 points for 1 device.
In the case of multiple blocks, it is a total for device points of all blocks.
Example:
In the case of block 1: 500 points, block 2: 2000 points, block 3: 30000 points, a total for No. of device points will be 32500 points. (500 + 2000 + 30000 = 32500 points.)

(2) When setting random device number
Device number can be set in one block is one point.
When setting random device number, set separating block.

(3) When the device type is bit
Device can be set in one block is one point (fixed).

(4) For No. of device points when No. of device points for each block is one point
When setting one point for each block as follows, max. No. of device points will be 2048 points.
(Because max. 2048 blocks can be set in one advanced recipe setting.)
Example: When all device type is bit

Max. 2048 blocks can be set in one advanced recipe setting.




When device type is bit, one device can be set in one block.
For this, when all device type is bit, 2048 devices can be set.
(Because max. 2048 blocks can be set in one advanced recipe setting.)

(3) For the record

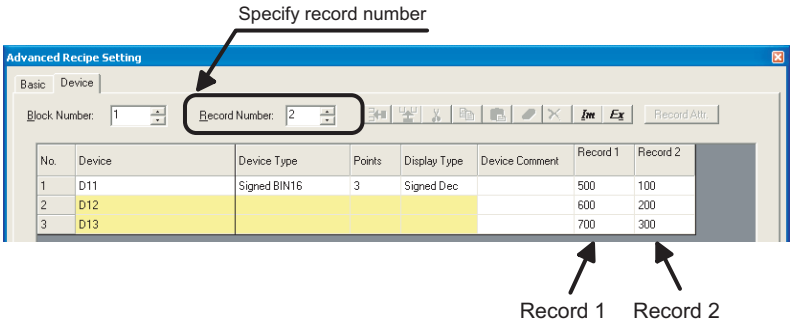
The record is setting unit for identifying a groups of device value to read/write.

Setting device value for writing to controller in record unit can set multiple values to the same device.

(a) Setting example

The following shows as example of setting two values (two records) in one device.

(☞ Section 12.3 2 (2) (b) Device tab)




(b) Max. No. of record number

Max. 2000 records can be set in one advanced recipe setting.

**Remark**

(1) For specifying method for target of reading/writing device value

For details, refer to the following.

☞ This section 3 Condition and target of reading/writing device value

(2) For record attribute setting

The attribute can be set to record.

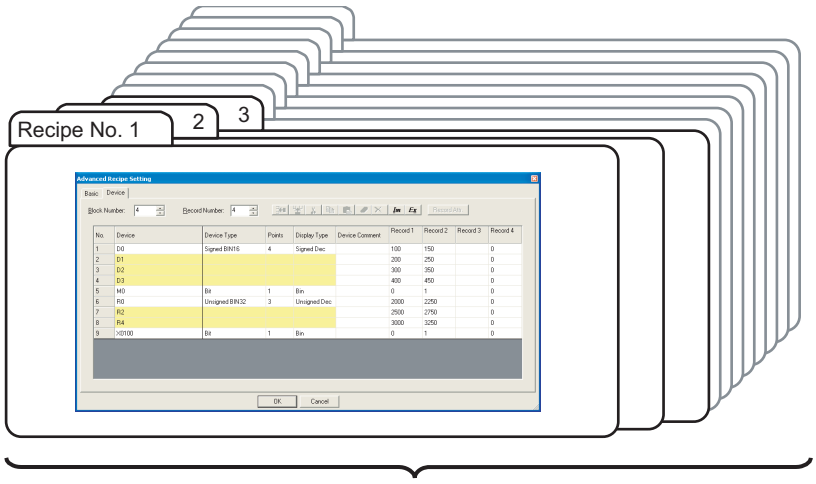
When setting the record attribute, it is available to not set the device value for each record, and to not change the device value in recipe file.

(☞ Section 12.3 1 Record attribute setting)

## 3 Condition and target of reading/writing device value

Select the condition of device value reading/writing corresponding to application of use from the following.

(1) When executing read/write of the device value with specifying common trigger device
Set the trigger device to control all advanced recipe settings.
Use the trigger device to read/write device value.




Specify conditions of recipe No., record No. and trigger conditions to read/write device value in common trigger device.

(a) Details for device

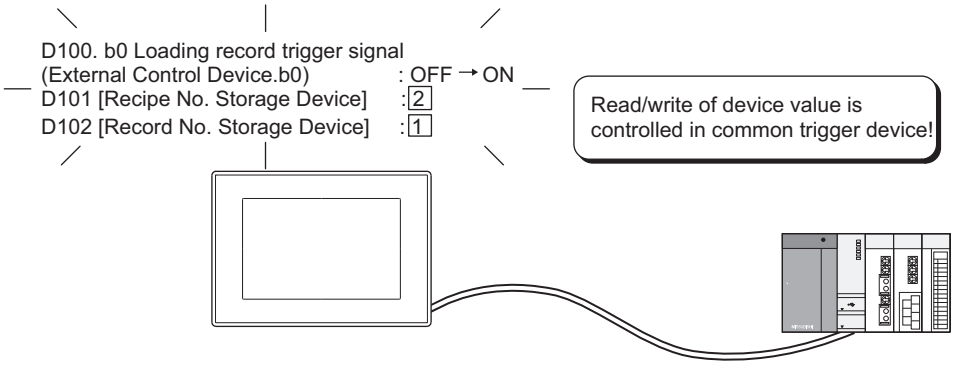
| Device | Bit No. | Signal name | Description |
|---|---|---|---|
| External Control Device*1 | | | Reading/writing device value of recipe that is specifying in [Recipe No. Storage Device] and [Record No. Storage Device] is controlled. |
| | b0 | Loading record trigger signal | ON : Values are loaded to the device of controller.<br>OFF : - |
| | b1 | Saving record trigger signal | ON : Device values of controller are saved.<br>OFF : - |
| | b2 to b7 | Must not be used | - |
| | b8 | Advanced recipe file convert signal | ON : Converts advanced recipe file.<br>OFF : - |
| | b9 to b14 | Must not be used | - |
| | b15 | Advanced recipe process error clear signal | ON : Advanced recipe process error is cleared.<br>OFF : - |
| Recipe No. Storage Device*1 | - | | Recipe No. when reading/ writing the device value in [External Control Device] is set. (Setting range: 1 to 32767) |
| Record No. Storage Device*1 | - | | Recipe No. when reading/ writing the device value in [External Control Device] is set. (Setting range: 1 to 2000) |

*1 When setting [External Control Device], [External Control Device], [Recipe No. Storage Device] and [Record No. Storage Device] is set with continuous number.

(b) Specification for target of reading/writing device value

Use the device that is shown in previous page (a) to specify target of reading/writing device value.

Example: When writing the values of recipe No.2 and record No.1 to controller device




[External Control Device] : D100
[Recipe No. Storage Device] : D101
[Record No. Storage Device] : D102

<Recipe No.1>

| Device | Record 1 | Record 2 |
|---|---|---|
| D10 | 500 | 550 |
| D11 | 600 | 650 |
| D12 | 700 | 750 |

<Recipe No.2>

| Device | Record 1 | Record 2 |
|---|---|---|
| D10 | 100 | 150 |
| D11 | 200 | 250 |
| D12 | 300 | 350 |

(Writing) →

D10 100
D11 200
D12 300

**Remark** For settings

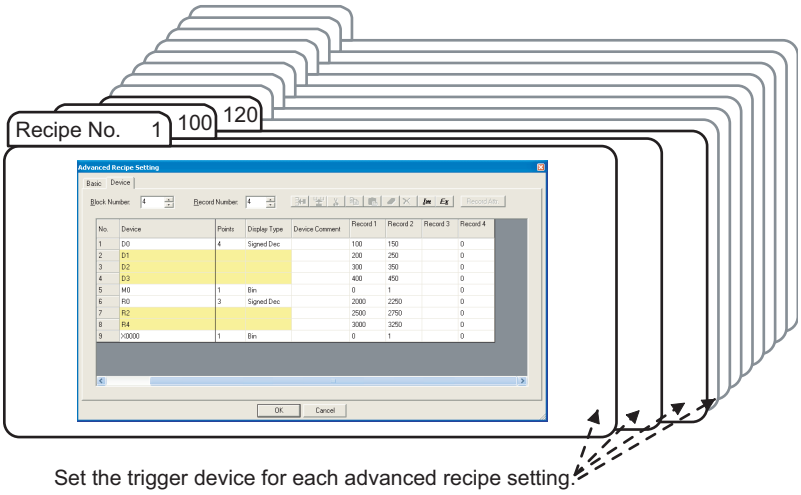
For details, refer to the following.

☞ Section 12.3 1 Advanced Recipe Common Setting

(2) When executing with specifying condition of writing/reading device value for each advanced recipe setting

Set the trigger device to read/write device value and targeted record No. in [Trigger Device] of [Advanced Recipe Setting].

To specify the trigger device for each advanced recipe setting, use the setting as follows.




(a) Details for device

- Write trigger 1, 2

  Set a trigger device that will execute data write and its trigger condition (ON/OFF) for the advanced recipe function.

  To execute write at the satisfied of two conditions (AND condition), set the two write trigger devices.

- Read trigger 1, 2

  Set a trigger device that will execute data read and its trigger condition (ON/OFF) for the advanced recipe function.

  To execute read at the satisfied of two conditions (AND condition), set the two read trigger devices.

- Record No. device

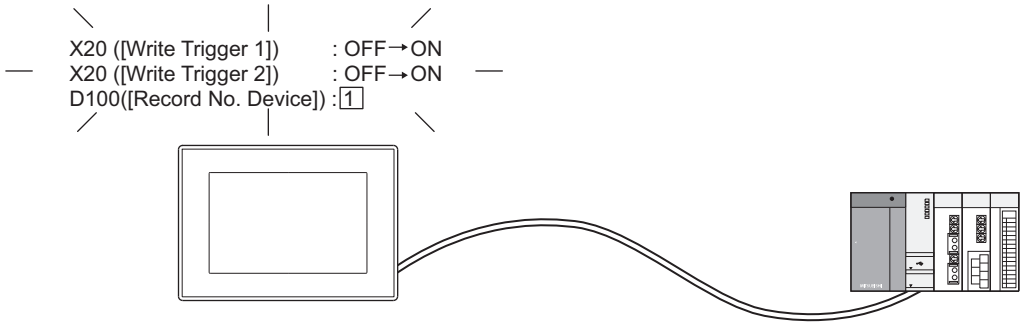
  Set the device stores record No. for target of reading/writing device value.

  (Setting range: 1 to 2000)

(b) Specification for target of reading/writing device value

Use the device that is shown in previous page (a) to specify target of reading/writing device value.

Example: When writing the values of recipe No.2 and record No.1 to controller device




<Recipe No.1>
[Write Trigger 1] : X10
[Write Trigger 2] : X11
[Record No. Device] : D0

| Device | Record 1 | Record 2 |
|---|---|---|
| D10 | 500 | 550 |
| D11 | 600 | 650 |
| D12 | 700 | 750 |

<Recipe No.2>
[Write Trigger 1] : X20
[Write Trigger 2] : X21
[Record No. Device] : D10

| Device | Record 1 | Record 2 |
|---|---|---|
| D10 | 100 | 150 |
| D11 | 200 | 250 |
| D12 | 300 | 350 |

(Write)

D10 100
D11 200
D12 300

**Remark** For settings

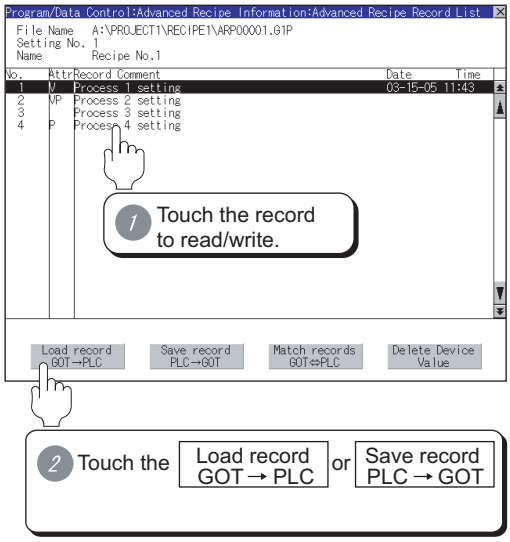
For details, refer to the following.

☞ Section 12.3 2 (2) (a) Basic tab

(3) When executing read/write of device value in utility

Specify advanced recipe file and target record No. in utility to read/write device value of controller.

Write/read the device value without designing dedicated screen.




**Remark** For operation in utility

For details, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.7 Advanced Recipe Information)

## 4 Use of advanced recipe file

When storing value read from the device in advanced recipe file, use the file for process management and production management in PC.
The device value read from controller can be stored in advanced recipe file.
Also, the value in advanced recipe file can be written to device of controller.

**Remark**

Procedure of operation with advanced recipe file

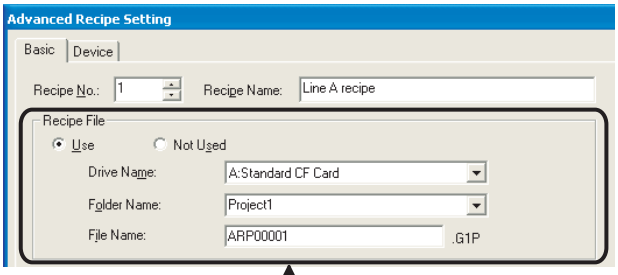
For details, refer to the following.

☞ This section 1 Procedure for reading/writing device value with advanced recipe function

(1) Creating advanced recipe file and storage area
Advanced recipe file is created based on the [Advanced Recipe Setting].
Firstly, perform the [Advanced Recipe Setting].
(☞ Section 12.3 2 Advanced recipe setting)
Storage area of advanced recipe file is set in the [Advanced Recipe Setting].
For creating, use in either of the following methods.

(a) Automatically creating when reading/writing the device value depending on the status of the device (ON/OFF)
When the advanced recipe file does not exist at the read/write of the device value, the advanced recipe file is automatically created.
As the advanced recipe file is automatically created, creating operation for the advanced recipe file is unnecessary.

1. Set [Recipe File] to [Use] on the basic tab of [Advanced Recipe Setting] in the GT Designer2.




[Recipe File] setting

2. When reading/writing the device value of controller, advanced recipe file is automatically created.

**Point**

Timing of which advanced recipe file is automatically created

The advanced recipe file is automatically created only when the advanced recipe file setting in the [Recipe File] does not exist.

The existing advanced recipe file is not overwritten.(☞ Section 12.3 4 (7) For setting change when the advanced recipe file exists already)

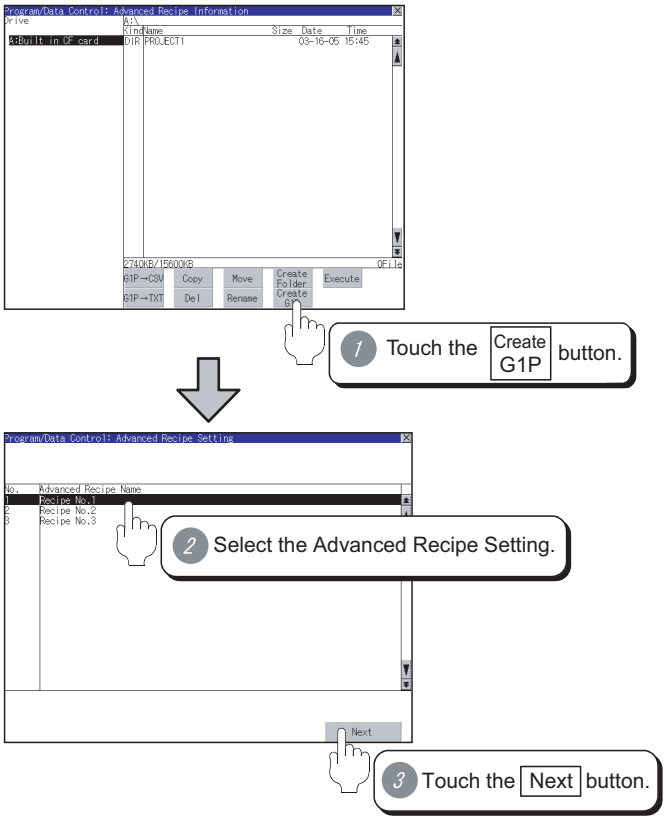
(b) Creating in utility

The following explains the procedure for previously creating the advanced recipe file when performing the Advanced Recipe Setting in GT Designer2 and reading/writing device value of controller in utility only.

1. Touch the [Create G1P] button on the Advanced Recipe Information in utility.

2. Select the Advanced Recipe Setting.

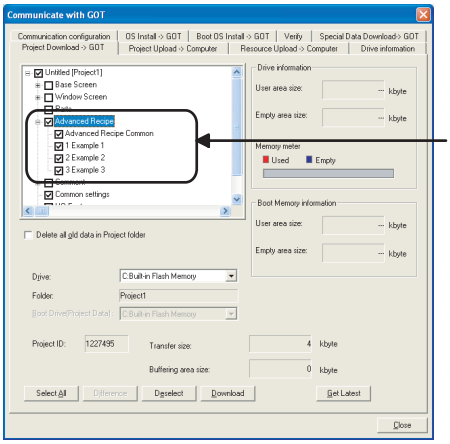
3. Touch the [Next] button to create the advanced recipe file.



**Point**

To create the advanced recipe file in utility

To create the advanced recipe file in utility, use the Advanced Recipe Setting in the GOT.
Previously perform the Advanced Recipe Setting in GT Designer2 and download to the GOT.




Project data of Advanced Recipe Setting

(2) Conversion, storage, edit of advanced recipe file

The advanced recipe file created in the advanced recipe function is binary format file (*.G1P). Convert to CSV file or Unicode text file for displaying or editing in PC.

The following explains procedure for conversion, storage, edit of advanced recipe file.

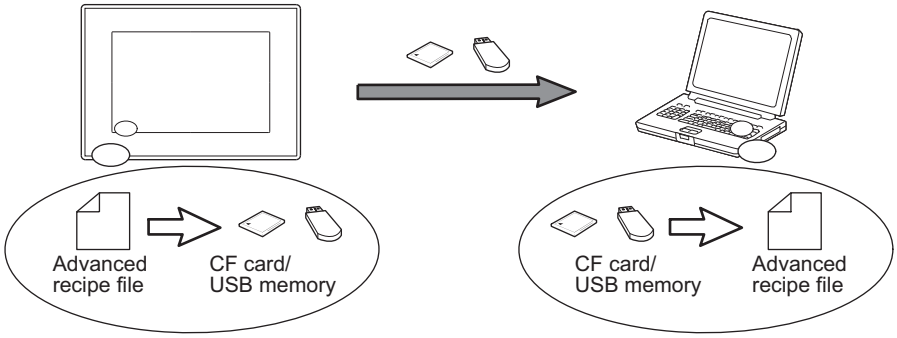
(a) Creating a CSV file / Unicode text file using GT Designer2

Convert the binary format files (*.G1P) saved in a CF card to CSV files or Unicode text files with GT Designer2.

Since the conversion is executed by GT Designer2, no load is imposed to GOT when creating a CSV file / Unicode text file.

1. Store the binary format file (*.G1P) in PC with either of the following methods.

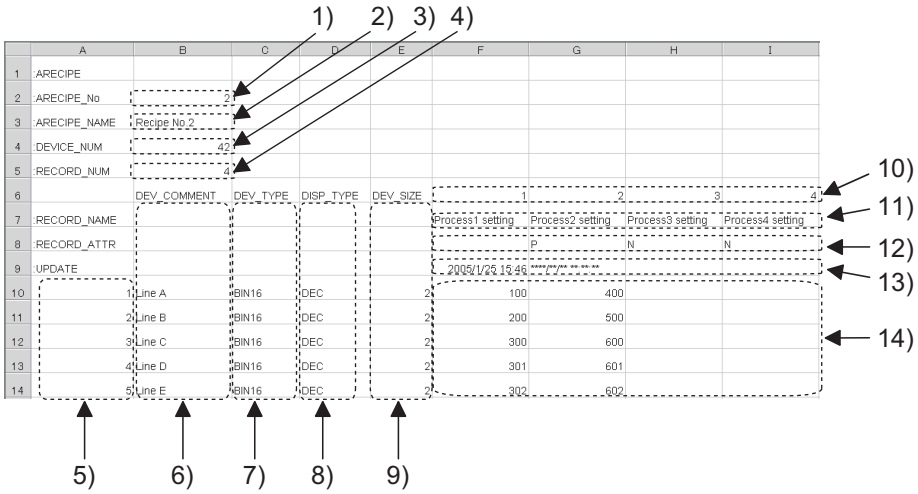
- Transferring in GT Designer2
  Transfer with Resource Upload -> Computer tab of [Communication] → [To/From GOT...] menu.
- Storing files in CF card or USB memory
  Save advanced recipe files in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer.




2. Open the conversion dialog box from the [Common] → [Advanced Recipe] → [Advanced Recipe File Convert...] menu in the GT Designer2 and convert binary format file (*.G1P) to CSV file/Unicode text file.

(Continued to next page)

❸ The converted CSV file/Unicode text file are displayed or edited in PC.
A part of which is applicable to edit in the converted CSV file/Unicode text file is only record attribute, record name and device value.




| No. | Item | Description | Applicability of edit |
|---|---|---|---|
| 1) | Recipe No. | Recipe No. is displayed. | × |
| 2) | Recipe name | Recipe name is displayed. | × |
| 3) | Setting device number | Device number is displayed. | × |
| 4) | Record number | Record number is displayed. | × |
| 5) | Line number | Line number is displayed. | × |
| 6) | Device comment | Device comment is displayed. | × |
| 7) | Device type | Device type is displayed.<br>BIT : Bit<br>BIN16 : Signed BIN16 or unsigned BIN16<br>BIN32 : Signed BIN32 or unsigned BIN32<br>BCD16 : BCD16<br>BCD32 : BCD32 | × |
| 8) | Display type | Display type is displayed.<br>BIN : Binary<br>DEC : Signed decimal<br>UNSIGNED_DEC : Unsigned decimal | × |
| 9) | Device size | Device size is displayed. (Unit: byte)<br>Bit device or word device (16 bit) : 2<br>word device (32 bit) : 4 | × |
| 10) | Record No. | Record No. is displayed. | × |
| 11) | Record comment | Record comments are displayed, and then edit record comment. | ○ |
| 12) | Record attribute | Record attribute is displayed, and then edit record attribute.<br>Blank : Applicable to edit device value*1*3<br>P : Not applicable to edit device value*1*3<br>N : No device value*2*3 | ○ |
| 13) | Record update time | Updated time is displayed. | × |
| 14) | Device value | Device values are displayed, and then edit device value. | ○ |

○ : Applicable × : Not applicable

*1 Make sure to set the value into the device value area of the above 14).
(Blank is not allowed.)
When not setting the value, error will occur at converting CSV file/Unicode text file to binary format file (*. G1P).

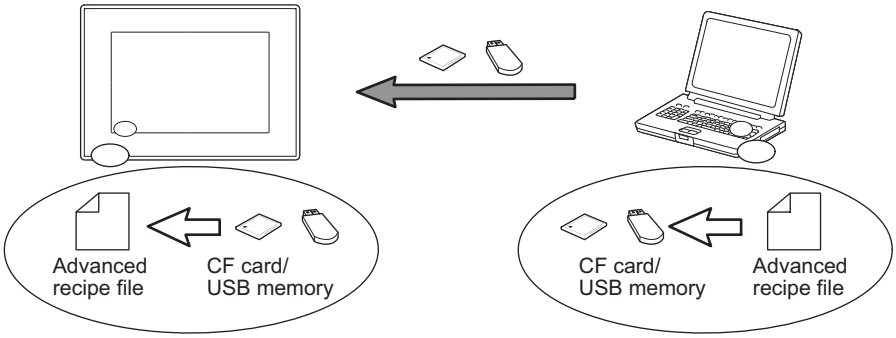
*2 Do not set the value into the device area of the above 14).
(Make the blank.)
Even if setting the value, it is cleared when converting CSV file/Unicode text file to binary format file (*. G1P).

*3 Correspondence to record attribute that is set in GT Designer2 and displayed in CSV file/Unicode text file.

☞ Section 12.3 1 Record attribute setting

When using the advanced recipe file edited in PC again, convert the CSV file/Unicode text file to the binary format file (*.G1P). (☞ To previous page 2)

4 Save the binary format files (*.G1P) in the CF card or USB memory and install the CF card or USB memory in the GOT.




**Point**

(1) Converting CSV file/Unicode text file to the binary format file (*.G1P) in GT Designer2
When converting, the binary format file (*.G1P) is required.
When the G1P file does not exist, store the binary format file (*.G1P) in the same hierarchy as that of CSV file/Unicode text file.

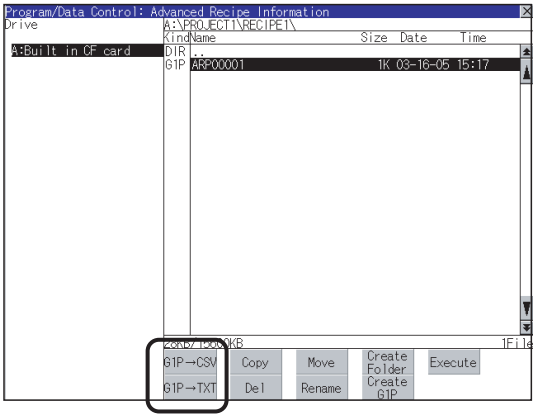
(2) For downloading advanced recipe file (PC → GOT)
The advanced recipe file cannot be downloaded in the GT Designer2.
When transferring the advanced recipe file from the personal computer to the GOT, use a CF card or USB memory.

(b) Creating a CSV file / Unicode text file using utility

Convert the binary format files (*.G1P) saved in a CF card to CSV files or Unicode text files with the utility.

A CSV file / Unicode text file can be created without using GT Designer2.

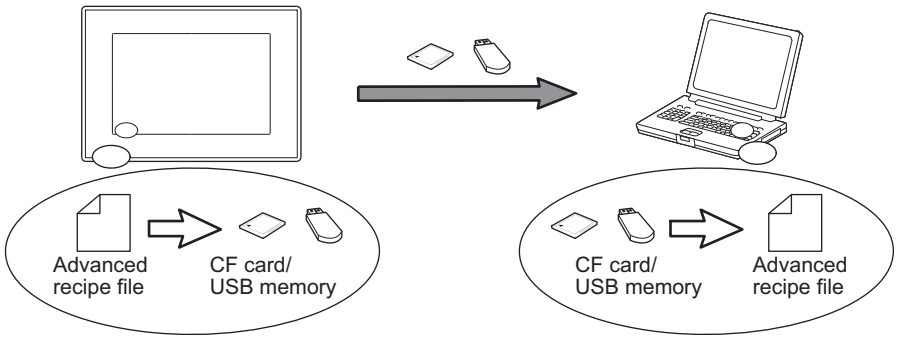
1 Select the G1P file in the [Advanced Recipe Information] of the utility and touch the GIP→CSV or GIP→TXT button to convert.




G1P→ CSV, G1P →TXT Button

2 Store the converted CSV file/Unicode text file with either of the following methods.

- Transferring in GT Designer2
  Transfer with Resource Upload -> Computer tab of [Communication] → [To/From GOT...] menu.
- Storing files in CF card or USB memory
  Save advanced recipe files in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer..




3 The converted CSV file/Unicode text file are displayed or edited in PC.

**Point**

Converting the CSV file/Unicode text file to the binary format file (*.G1P) in utility

The file cannot be converted in utility.
When editing the CSV file/Unicode text file in PC and then using it in GOT, refer to the following.

This section 4 (2) (a) Creating a CSV file / Unicode text file using GT Designer2

**Remark**

For operation in utility

For details, refer to the following.

GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.7 Advanced Recipe Information)

(c) Method to create CSV file/Unicode text file with a device

By turning on the specified device, binary format file stored in a memory card (* .G1P) can be converted to CSV file/Unicode text file.
When converting the files to CSV files or Unicode text files, the following settings are required.
After setting the following settings, convert the files to CSV files or Unicode text files with turning on b8 (Advanced recipe file convert signal) of the external control device.

- External control information (Advanced recipe common setting)
- File convert external control (Advanced recipe setting (Basic tab))

**Point**

Precautions for file conversion with external control device

Before converting an advanced recipe file, write the recipe No. for the advanced recipe to be converted into the recipe No. storage device.
Even though b8 (Advanced recipe file convert signal) of the external control device is turned on before writing the recipe No., the advanced recipe file cannot be converted to a CSV file or Unicode text file.

12.3.4 Setting items

## 5 Detection and corrective actions for advanced recipe process error

The presence/absence of error in the advanced recipe function can be checked with the [External Output Device] of the [Advanced Recipe Common Setting]. (☞ Section 12.3 2 Output the executing status of advanced recipe function to device)
When error occurs, the device value of controller cannot be read/written.

Eliminate the advanced recipe process error with the following procedure.

1. When error occurs, the advanced recipe process error notification signal (external output device. b15) turns on, and the system alarm occurs.
   Check the message of system alarm.

   (Display example)

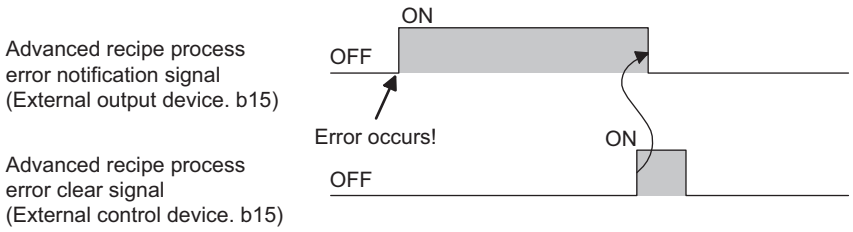
   ```
   582 Cannot generate Advanced recipe file.
   ```

2. Eliminate the causes of error according to the message of system alarm.

3. Reset the system alarm.

   ☞ • For the advanced system alarm : Section 8.3 3 Alarm restoration
   • For the system alarm display : Section 8.7 2 (2) Deletion of system alarms on GOT

4. Turn on the advanced recipe process error clear signal (external control device. b15) to perform error reset.
   When turning on the advanced recipe process error clear signal (external control device. b15), the advanced recipe process error notification signal (external output device. b15) is turned off.




**Point**

For read/write while the advanced recipe process error notification signal is ON

When the causes of the advanced recipe process error are eliminated even if the advanced recipe process error notification signal is ON, device value can be read/written.

## 12.3.2 Useful information

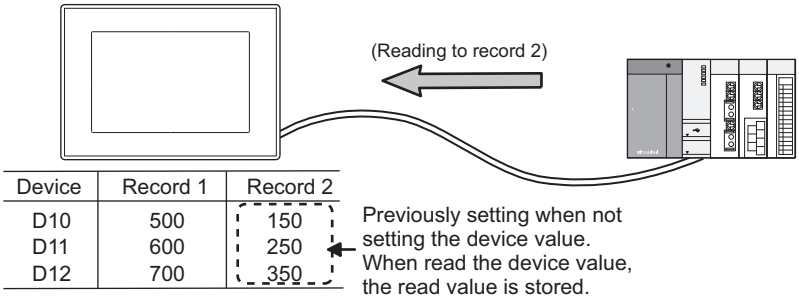
The following explains useful functions for using the advanced recipe function.

### 1 Record attribute setting

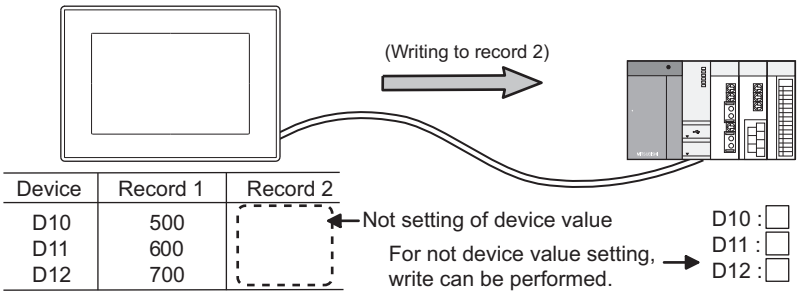
In the advanced recipe function, the presence/absence of device value setting for each record or device value in the advanced recipe file can be changed.

(1) When device values are not set ([Device Values are not set])
When previously setting this attribute to the record of which device values are not set, file capacity can be saved.

(a) For reading



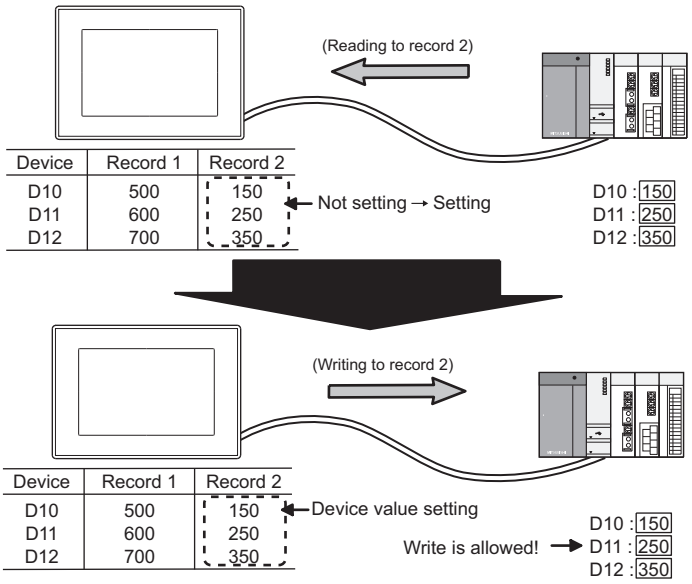

(b) For writing



**Point**

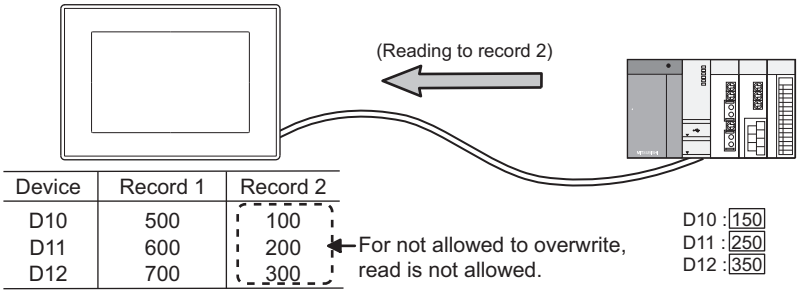
When storing the read value in the record of which the device values are not set

The record that is stored the values with reading the device values will be the status of device value setting, and write will be allowed.

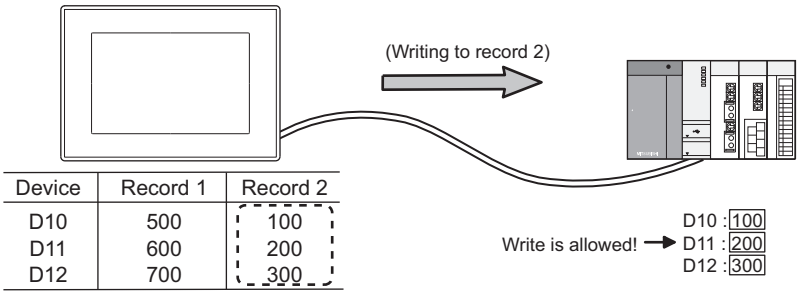


(2) When not overwriting the device value ([Device Values are not overwritten in Recipe file])
Use particular record for being dedicated to store the value for writing to controller device.

(a) For reading

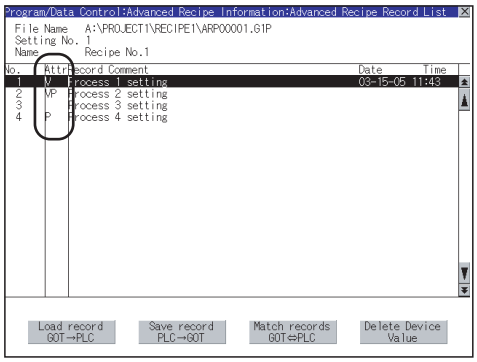



(b) For writing




**Point**

(1) For check method of record attribute
Record attribute can be checked in the advanced recipe information of the utility.




For details, refer to the following manual.

GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.7 Advanced Recipe Information)

(2) Corresponding to setting of record attribute, utility and record attribute displayed in the CSV file/Unicode text, etc.
The following explains the correspondence.

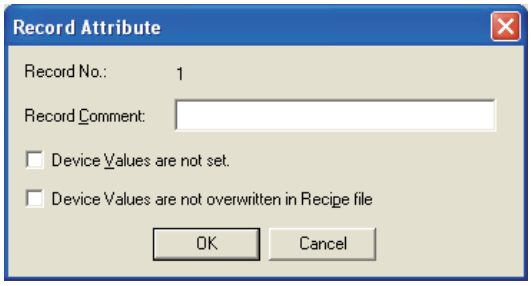
| Setting for record attribute of GT Designer2 | Record attribute displayed in utility | Record attribute displayed in CSV file/Unicode text file |
|---|---|---|
| (Not setting) | V | (Blank) |
| Device Values are not set. | (Blank) | N |
| Device Values are not overwritten in Recipe file. | VP | P |

**Remark**

For setting method of record attribute

For details, refer to the following.

Section 12.3 2 (2) (b) Device tab



## 2 Output the executing status of advanced recipe function to device

Storing the executing status into controller device can check the executing status of advanced recipe function.

### (1) Details for device

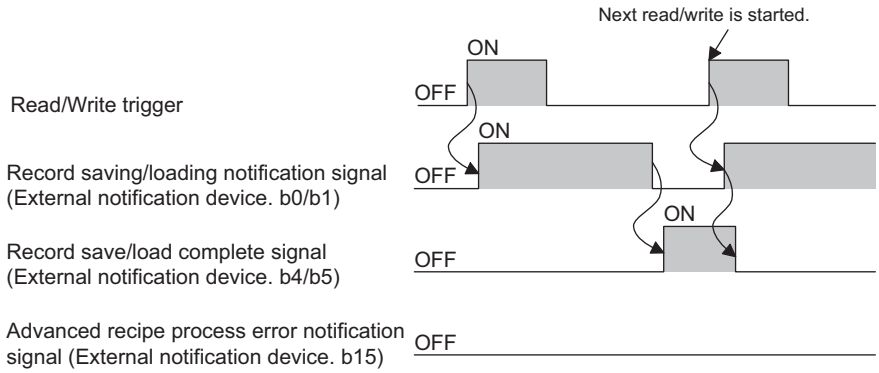
| Device | Bit No. | Signal name | Description |
|---|---|---|---|
| External Notification Device*1 | | | Set the device to store information regarding to the advanced recipe function. |
| | b0 | Record loading notification signal | ON : Writing the value to controller device<br>OFF : Completion of writing, or advanced recipe process error occurs. |
| | b1 | Record saving notification signal | ON : Reading the device value of controller<br>OFF : Completion of reading, or advanced recipe process error occurs. |
| | b2 to b3 | Must not be used | - |
| | b4 | Record load complete signal | ON : Completion of writing the value to controller device<br>OFF : At reset operation (ON to OFF) by user, or starting next read. |
| | b5 | Record save complete signal | ON : Completion of reading the device value of controller<br>OFF : At reset operation (ON to OFF) by user, or starting next read. |
| | b6 to b7 | Reserved | - |
| | b8 | Advanced recipe file converting notification signal | ON : Converting the advanced recipe file.<br>OFF : Converting the advanced recipe file is not executed. |
| | b9 to b13 | Must not be used | - |
| | b14 | Advanced recipe information displaying signal | ON : Displaying advanced recipe information in utility<br>OFF : Completion of advanced recipe information of utility |
| | b15 | Advanced recipe process error notification signal | ON : Advanced recipe process error is occurring.<br>OFF : Advanced recipe process error is not occurring.<br>Or, eliminate the causes of error and turn on the advanced recipe process error clear signal (external control device. b15).<br>(☞ This section 5 Detection and corrective actions for advanced recipe process error) |
| Recipe No. Notification Device*1 | - | | Notify the recipe No. (1 to 32767).<br>The stored Recipe No. is updated at read/write of device value. |
| Record No. Notification Device*1 | - | | Notify the recipe No. (1 to 2000).<br>The stored Recipe No. is updated at read/write of device value. |

*1 When setting [External notification Device], [External Control Device], [Recipe No. Notification Device] and [Record No. Notification Device] is set with continuous number.

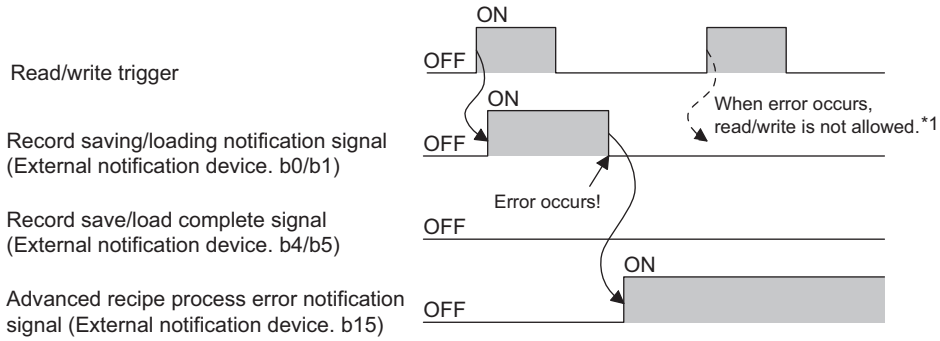
(2) Timing of ON/OFF

Timing of ON/OFF for each signal is shown.

(a) At being normally completed




(b) At being faulty completed




*1 When the causes of the advanced recipe process error is eliminated even if the advanced recipe process error notification signal turns on, read/write of device value is allowed.

**Point**

Device value reading/writing when advanced recipe information displaying signal turns on

For details, refer to the following.

☞ Section 12.3 4 (2) When multiple trigger conditions are satisfied simultaneously

**Remark**

For setting method

For details, refer to the following.

☞ Section 12.3 1 Advanced Recipe Common Setting

## 3 Operation in utility

The advanced recipe function can perform the following operation in utility.

- Creating folder
- Deleting folder
- Copying file
- Deleting file
- Renaming file
- Moving file
- Creating file
- Saving record
- Loading record
- Matching record
- Delete device value
- Converting G1P → CSV/Unicode text

The recipe can be operated without designing dedicated screen or reading the file to PC.

**Remark** For operation in utility

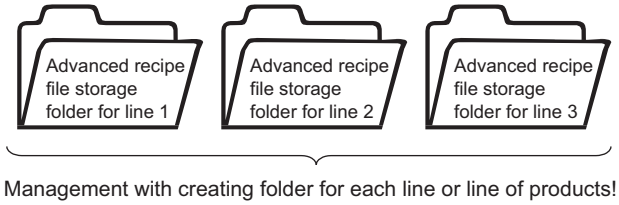
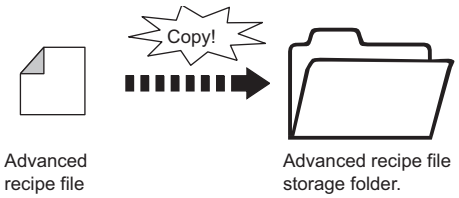
For details, refer to the following.

GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.7 Advanced Recipe Information)

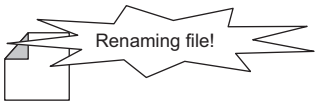
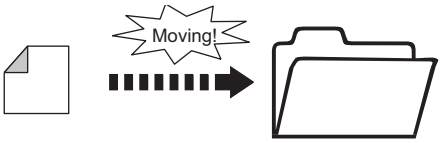
(1) Advanced recipe file operation

The following operation of advanced recipe file is allowed.

The file can be operated on GOT without reading the file to PC.

| Item | Description |
|---|---|
| Creating folder | The folder that stores the advanced recipe file is created.<br>The folder is created for each line or line of products, and the advanced recipe file can be managed.<br>  |
| Deleting folder | The folder that stores the advanced recipe file is deleted.<br> |
| Copying file | The advanced recipe file is copied.<br>Use it when the advanced recipe file is backed up.<br>  |
| Deleting file | The advanced recipe file is deleted.<br> |

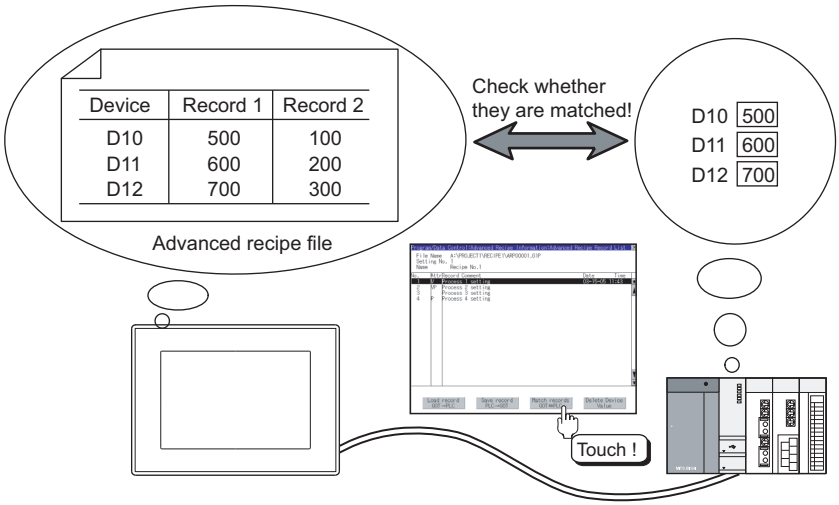
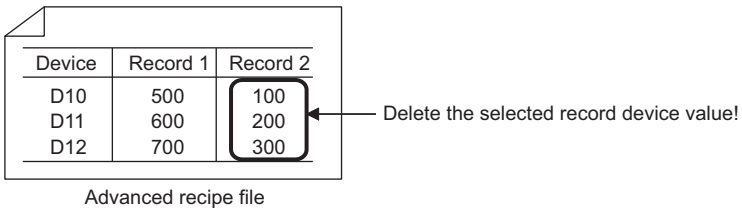
(Continued to next page)

| Item | Description |
|---|---|
| Renaming file | The advanced recipe file is renamed.<br>  <br><br>ARP00001.G1P → ARP00002.G1P |
| Moving file | The advanced recipe file is moved to other folder.<br>Use it when the advanced recipe file is made backup.<br>  <br><br>Advanced recipe file<br>Advanced recipe file storage folder. |
| Creating file | The advanced recipe file is newly created.<br>(☞ Section 12.3 4 (1) Creating advanced recipe file and storage area) |

(2) Operation for executing the recipe

The following operation for executing the advanced recipe is allowed.

The operation for the advanced recipe can be executed without designing dedicated screen.

| Item | Description |
|---|---|
| Load record<br>GOT → PLC | The device value in the advanced recipe file (selected record value) is written to controller device.(☞ Section 12.3 3 Condition and target of reading/writing device value) |
| Save record<br>PLC → GOT | The device value of controller is read and stored in the specified record.<br>(☞ Section 12.3 3 Condition and target of reading/writing device value) |
| Match records<br>GOT ⇔ PLC | This operation checks whether the device value in the advanced recipe file (selected record value) matches with the device value of controller.<br>Use it to check whether the read value is reflected to the advanced recipe file.<br>  |
| Delete device value | The device value (selected record value) in the advanced recipe file is deleted.<br>When the device value is deleted, the record attribute will be status for not setting device value.<br>(☞ This section 1 (1)When device values are not set ([Device Values are not set]))<br>  |

(3) Operation for converting G1P → CSV file/Unicode text file

Convert the advanced recipe file (binary format file (*.G1P) to CSV file or Unicode text file.

As the advanced recipe file created in the advanced recipe file is binary format, convert the file when it is displayed or edited.

**Remark**

(1) For operation in utility

For details, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)
GT15 User's Manual (Section 13.7 Advanced Recipe Information)

(2) For advanced recipe file

For details, refer to the following.

☞ Section 12.3 4 Use of advanced recipe file

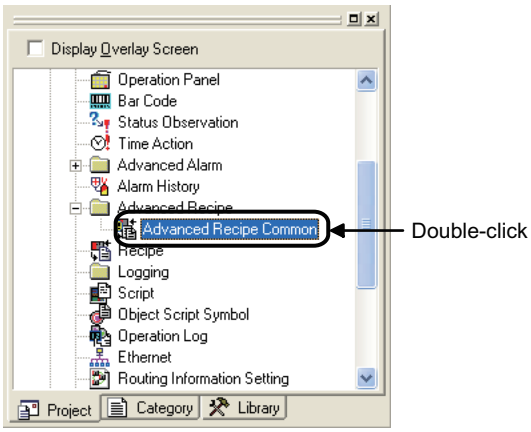
## 12.3.3 Settings

1. Perform either of the following operations
   - Select the menu of the advanced recipe
     [Common] → [Advanced Recipe] → [Advanced Recipe Common]
     [Advanced Recipe Setting]
     [Advanced Recipe File Convert...]
   - Click the icon of the advanced recipe
     (Advanced Recipe Common) (Advanced Recipe Setting)
     (Advanced Recipe File Convert)
2. As the setting dialog box will appear, make the settings with reference to the following explanation.

**Remark** When setting in Workspace(Project)

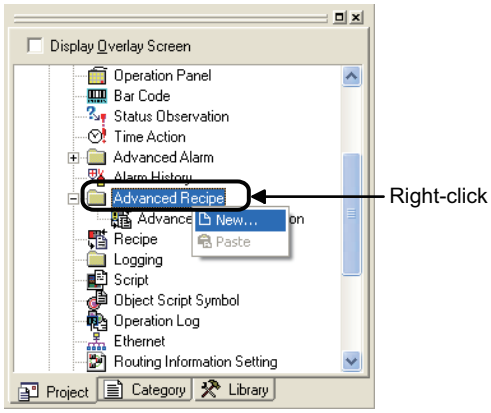
(1) Advanced recipe common

Double-click Advanced Recipe Common in Workspace (Project). The setting dialog box is displayed.




(2) Advanced recipe setting

Right-click Advanced Recipe in Workspace(Project) to select [New], and the setting dialog box will appear.



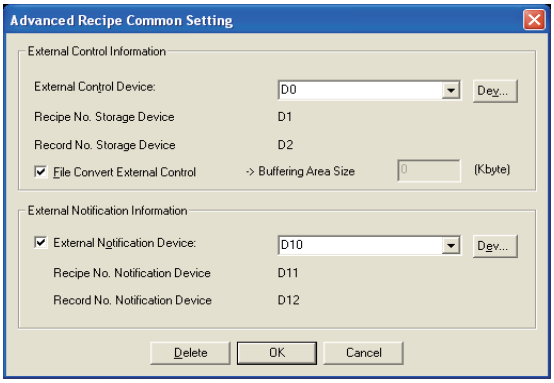

(3) Advanced recipe file convert

The advanced recipe file convert cannot be performed in the project workspace. And so, open the conversion screen from the menu.

## 12.3.4 Setting items

### 1 Advanced Recipe Common Setting

Set the device to control the advanced recipe function.




| Item | | Description | Model |
|---|---|---|---|
| External Control Information | | Specify common trigger device, and then set the device to read/write the device value.<br>When setting [External Control Device], item device that follow is automatically set in continuous.<br>(☞ Section 12.3 3 (1) When executing read/write of the device value with specifying common trigger device) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | External Control Device | Set the device to control read/write of the recipe or device value specified in [Recipe No. Storage Device] and [Record No. Storage Device]. | |
| | Recipe No. Storage Device | Recipe No. when reading/ writing the device value in [External Control Device] is set.<br>(Setting range: 1 to 32767) | |
| | Record No. Storage Device | Recipe No. when reading/ writing the device value in [External Control Device] is set.<br>(Setting range: 1 to 2000) | |
| | File Convert External Control | Check this item to control advanced recipe file conversion with a device.<br>When converting advanced recipe file, required memory is displayed in [Buffering Area Size]. | |
| External Notification Information | | Set the device that outputs the executing status for advanced recipe.<br>When set [External Notification Device], item device that follow is automatically set in continuous.<br>(☞ Section 12.3 2 Output the executing status of advanced recipe function to device) | |
| | External Notification Information | Set the device to store information regarding to the advanced recipe function. | |
| | Recipe No. Notification Device | Set the device on writing device value and for storing recipe No. (1 to 32767). | |
| | Record No. Notification Device | Set the device on writing device value and for storing recipe No. (1 to 2000). | |
| Delete | | Click the Delete button to delete settings of [Advanced Recipe Common Setting] and [Advanced Recipe Setting]. | |

## 2 Advanced recipe setting

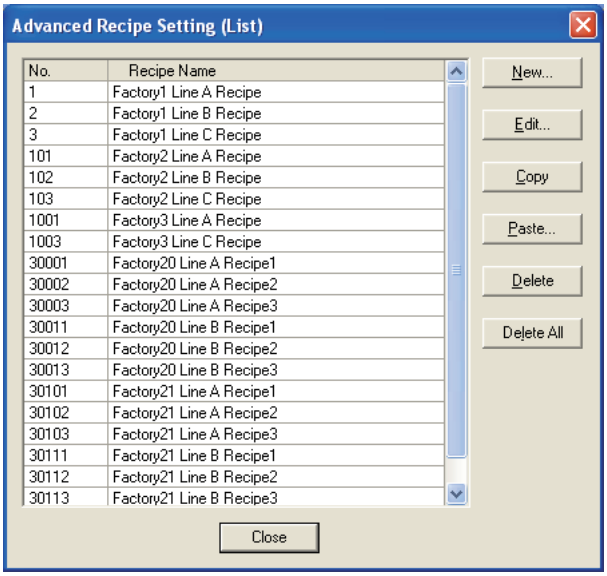
(1) Advanced recipe setting (List)

Display a list of the advanced recipe setting to manage it.

Max. 2048 advanced recipe setting can be set.

This screen is displayed only when [Common] → [Advanced Recipe] → [Advanced Recipe Setting] menu is selected.

When the setting is attempted from the project workspace, it is not displayed.

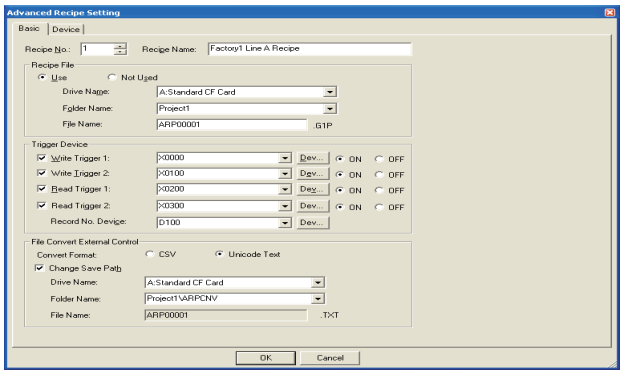



| Item | Description | Model |
|---|---|---|
| New | Click this button when setting a new advanced recipe, and the setting dialog box will appear.<br>(☞ This section 2 (2) Advanced recipe setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Edit | Click this button to when editing the selected advanced recipe setting, and the setting dialog box will appear.<br>(☞ This section 2 (2) Advanced recipe setting) | |
| Copy | Click this button to copy the selected advanced recipe setting. | |
| Paste | Click this button when pasting the copied advanced recipe setting to the advanced recipe setting list.<br>The destination of the advanced recipe setting can be set. | |
| Delete | Click this button to delete the selected advanced recipe setting. | |
| Delete All | Click this button to delete all advanced recipe setting. | |
| Close | Click this button to close the setting dialog box of advanced recipe setting (list). | |

(2) Advanced recipe setting

(a) Basic tab

Set the use/not used of advanced recipe file, and trigger device.




Basic | Device

| Item | | Description | Model |
|---|---|---|---|
| Recipe No. | | Set the recipe No. (1 to 32767) of advanced recipe to set.<br>(☞ Section 12.3 2 (1) For recipe No.) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Recipe Name | | Set a recipe name.<br>Up to 32 characters can be entered.<br>The set recipe name is displayed at creating the advanced recipe file in the utility. | |
| Recipe File | | Set the advanced recipe file setting. (☞ Section 12.3 4 Use of advanced recipe file) | |
| | Use/Not Used | Select the use/not used of advanced recipe file. | |
| | Drive Name | Select a drive where the file is stored. | |
| | Folder Name*1 | Set the name of the folder where the file is stored.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-\) can be used.<br>By default, the [Project Folder] from [Common] → [System Environment] is preset. | |
| | File Name*1 | Set the name of the file where the data are saved.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}-) can be used.<br>By default, the file name is set to ARP□□□□□. (□ is recipe No..) | |
| Trigger Device | | Set the trigger conditions to read/write.<br>☞ • Section 5.1 Device Setting<br>• Section 12.3 3 (2) When executing with specifying condition of writing/reading device value for each advanced recipe setting | |
| | Write Trigger 1 | When setting the trigger conditions to write for each advanced recipe setting, check them.<br>Set the device for executing write and its trigger conditions (ON/OFF) after checking them. | |
| | Write Trigger 2 | Check this item to enable data write when both of two conditions are satisfied.<br>Set the device and its trigger conditions (ON/OFF) | |
| | Read Trigger 1 | When setting the trigger conditions to read for each advanced recipe setting, check the device and its trigger conditions (ON/OFF) after checking. | |
| | Read Trigger 2 | Check this item to enable data read when both of two conditions are satisfied.<br>Set the device and its trigger conditions (ON/OFF). | |
| | Record No. Device | Set the device to store record No. of write/read target.<br>(Setting range: 1 to 2000)<br>(☞ Section 12.3 2 (3) For the record) | |

(Continued to next page)

Basic | Device

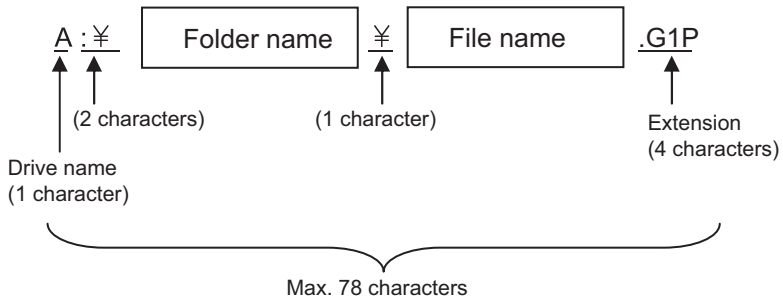
| Item | | Description | Model |
|---|---|---|---|
| File Convert External Control | | Make setting to control advanced recipe file conversion with a device.<br>Check [File Convert External Control] in Advanced Recipe Common Setting to enable file conversion with a device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Convert Format | Select a file formatÅiCSV/Unicode textÅjafter conversion. | |
| | Change Save Path | Check this item to change save destination for the converted file.<br>After the check, set the names of the drive and folder where the file is to be stored. | |

For details of *1, refer to the following.

*1 Folder name and file name

(1) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder and file name are automatically added.)

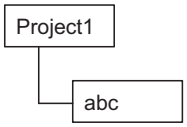
Example: G1P file Path in memory card (for GT15)




**Remark** When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

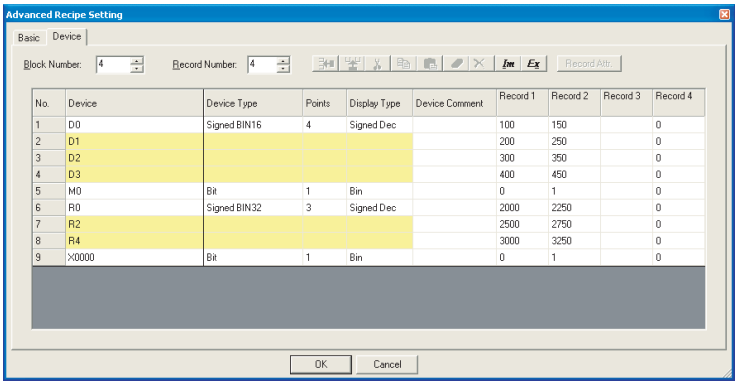
(Setting example)
[Folder Name] : Project1 \ abc




(2) Character strings that cannot be set
The following character strings cannot be used as a folder name or a file name. (They cannot be used irrespective of upper-case or lower-case characters.)
• COM1 to COM9 • LPT1 to LPT9 • AUX • CON
• NUL • PRN • CLOCK$
Also, folder and file name as shown below cannot be used.
• Folder name starting as G1
• Folder and file name starting from . (period) or \
• Folder and file name ending at . (period) or \
• Folder and file name with only . (period) or .. (two periods)

(b) Device tab

Set the device setting.




## Basic Device

| Item | Description | Model |
|---|---|---|
| Block Number | Set the block number in the advanced recipe setting.<br>(Setting range: 1 to 2048)<br>(☞ Section 12.3 2 (2) For the block) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Record Number | Set the record number in the advanced recipe setting.<br>(Setting range: 1 to 2000)<br>(☞ Section 12.3 2 (3) For the record) | |
| Advanced recipe edit button | (Insert Block) : Insert block.<br>When inserting, select the line.<br>(Insert Record) : Insert record.<br>When inserting, select the line of record.<br>(Cut) : Cut the selected item.<br>(Copy) : Copy the selected item.<br>(Paste) : Paste the cut/copied.<br>(Clear) : Make all the selected device values of record to 0.<br>(Delete) : Delete the selected record.<br>When deleting, select the column of record.<br>(Import) *1 : Reads out the advanced recipe setting that has been edited in a CSV file / Unicode text file to GT Designer2.<br>(Export) *1 : Saves the advanced recipe setting that has been set by GT Designer2 as a CSV file / Unicode text file. | |
| Record Attr*1 | Click the Record Attr button to change record attribute.<br>When changing, select the column of record. | |

(Continued to next page)

Basic **Device**

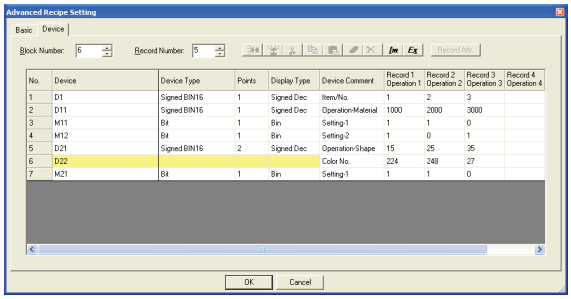
| Item | | Description | Model |
|---|---|---|---|
| Device List | | A list of the devices that are set to read or write the advanced recipe function data is displayed. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Device | Set the device that executes read/write the advanced recipe function data.<br>(☞ Section 5.1 Device Setting) | |
| | Device Type | Select the data type of the devices.(☞ Section 5.2 Numeric Data that can be Handled with GOT)<br>Bit : When reading/writing ON/OFF of bit device, select it.<br>Signed BIN16 : When reading/writing the signed 16-bit binary value, select it.<br>Unsigned BIN16 : When reading/writing the unsigned 16-bit binary value, select it.<br>Signed BIN32 : When reading/writing the signed 32-bit binary value, select it.<br>Unsigned BIN32 : When reading/writing the unsigned 32-bit binary value, select it.<br>BCD16 : When reading/writing 16-bit BCD (Binary Coded Decimal) value, select it.<br>BCD32 : When reading/writing 32-bit BCD (Binary Coded Decimal) value, select it. | |
| | Points | Set the device points to read/write in block unit.<br>The set the continuous device points from head device are set.<br>Applicable points differ depending on [Device Type].<br>Bit : 1 point<br>Signed BIN16/unsigned BIN16/BCD16 : 1 to 32767 points<br>Signed BIN32/unsigned BIN32/BCD32 : 1 to 16383 points | |
| | Display Type | Display type of data to read/write is displayed. | |
| | Device Comment | Set the device comment.<br>Device comment can be input max. 32 characters in spite of 1 byte or 2 byte characters.<br>The set device comment is displayed in the CSV file/Unicode text file. | |
| | Record | Set the value to read/write.<br>The record number can be changed in [Record Number]. | |

For details of *1, *2, refer to the following.

*1 About import and export

It is possible to edit an exported CSV file / Unicode file using such as spreadsheet software.
After editing, the CSV file / Unicode file can be read out to GT Designer2 by importing the file.

Example: Import/export of a CSV file




Exporting to a CSV format file

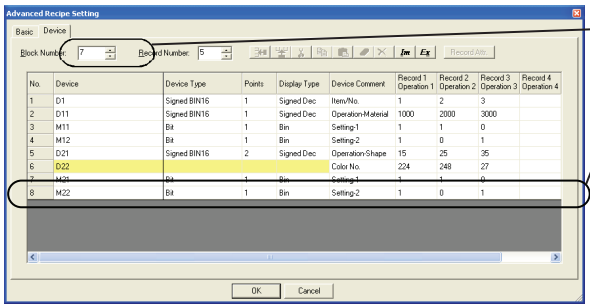
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Advanced Recipe with record attribute | | | | | | | | |
| Block Number | 6 | Record Number | 5 | | | | | |
| | | | | | | | | |
| Device | Device Type | Points | Comment | Device Value | | | | |
| | | | | 1 | 2 | 3 | 4 | 5 |
| | | | | Operation 1 | Operation 2 | Operation 3 | Operation 4 | Operation 5 |
| | | | | P | | | N | |
| D1 | Signed BIN16 | 1 | Item/No. | 1 | 2 | 3 | | 5 |
| D11 | Signed BIN16 | 1 | Operation-Material | 1000 | 2000 | 3000 | | 5000 |
| M11 | Bit | 1 | Setting-1 | 1 | 1 | 0 | | 0 |
| M12 | Bit | 1 | Setting-2 | 1 | 0 | 1 | | 0 |
| D21 | Signed BIN16 | 2 | Operration-Shape | 15 | 25 | 35 | | 55 |
| | | | Color No. | 224 | 248 | 27 | | 20 |
| M21 | Bit | 1 | Setting-1 | 1 | 1 | 0 | | 0 |

Editing the exported file

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Advanced Recipe with record attribute | | | | | | | | |
| Block Number | 7 | Record Number | 5 | | | | | |
| | | | | | | | | |
| Device | Device Type | Points | Comment | Device Value | | | | |
| | | | | 1 | 2 | 3 | 4 | 5 |
| | | | | Operation 1 | Operation 2 | Operation 3 | Operation 4 | Operation 5 |
| | | | | P | | | N | |
| D1 | Signed BIN16 | 1 | Item/No. | 1 | 2 | 3 | | 5 |
| D11 | Signed BIN16 | 1 | Operation-Material | 1000 | 2000 | 3000 | | 5000 |
| M11 | Bit | 1 | Setting-1 | 1 | 1 | 0 | | 0 |
| M12 | Bit | 1 | Setting-2 | 1 | 0 | 1 | | 0 |
| D21 | Signed BIN16 | 2 | Operration-Shape | 15 | 25 | 35 | | 55 |
| | | | Color No. | 224 | 248 | 27 | | 20 |
| M21 | Bit | 1 | Setting-1 | 1 | 1 | 0 | | 0 |
| M22 | Bit | 1 | Setting-2 | 1 | 0 | 1 | | 0 |

Adding the setting using Microsoft® Excel, etc.

Importing to GT Designer2




Addition is displayed.

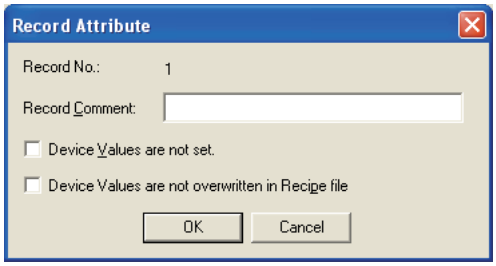
**Point**

When importing or exporting files on personal computer available for multilingual input

Importing or export the Unicode text file. With the Unicode text file, multiple languages are correctly imported or exported.

*2 Record Attribute

Change the selected record attribute. (☞ Section 12.3 1 Record attribute setting)




| Item | Description |
|---|---|
| Record No. | The selecting record No. is displayed. |
| Record Comment | Set the record comment.<br>The record comment can be input max. 32 characters regardless of 1 byte or 2 byte characters.<br>The record comment is displayed in utility at saving/loading record. |
| Device Values are not set *1 | When previously setting this attribute to the record of which device values are not set, file capacity can be saved. |
| Device Values are not overwritten in Recipe file *1 | Use particular record for being dedicated to store the value for writing to controller device. |

*1 [Device Values are not set] and [Device Values are not overwritten in Recipe file] cannot be set together.

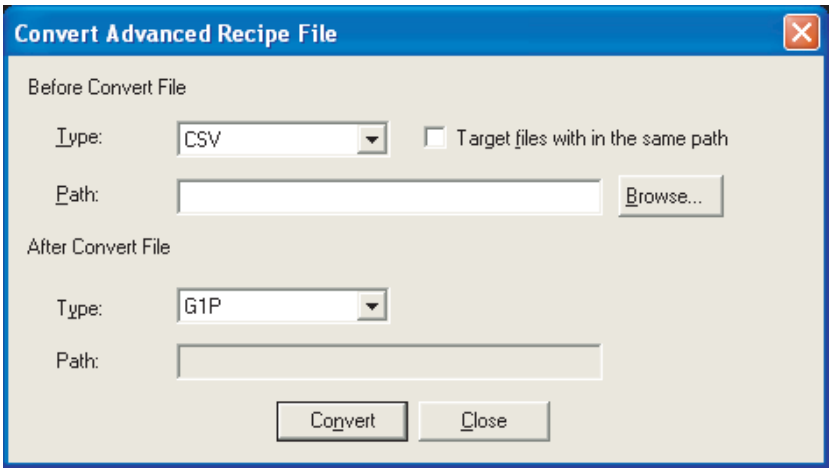
**Point**

Differences between [Clear], [Delete] and [Device Values are not set]

[Clear] makes all device values in record to 0 without deleting the record.
[Delete] deletes the selected record itself.
[Device Values are not set] makes the device value of the selected record to blank.

## 3 Advanced recipe file convert

Advanced recipe files are converted to CSV files, Unicode text files or G1P files.




| Item | | Description | Model |
|---|---|---|---|
| Before Convert File | | Type: Select the type of the conversion source file (CSV/Unicode Text/G1P).<br>Path: Specify the path of the conversion source file. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Target files with in the same path | Checking this item targets all the files (any of CSV/Unicode Text/G1P) of the same path for conversion.<br>When performing a file conversion with this item checked, the conversion log is recorded for the specified path automatically.<br>With the conversion log, the full path of the converted file, the conversion result (OK/NG), and the file creation date can be checked. | |
| After Convert File | | Type: Select the type of the conversion destination file (CSV/Unicode Text/G1P).<br>Path: Displays the path (same as the path of the conversion source file) where the conversion destination file is saved. | |

## 12.3.5 Precautions

This section provides the precautions for using the advanced recipe function.

### 1 Precautions for drawing

(1) Setting number of advanced recipes in a project
Up to 2048 recipes can be set in the advanced recipe function.

(2) For the device to set in [Advanced Recipe Common Setting]
[External Control Information] and [External Notification Information] cannot be set the same device.
Also, they cannot be overlapped with the following devices.
• Switching screen device • Switching station No. device • Device of system information

(3) Estimate of processing time
It takes processing time depending on block numbers of advanced recipe setting.
To reduce processing, decrease the block number.

(Reference value)
QCPU and CPU directly connection (device points: 32767 points setting, transmission speed: 115200bps)
• For 1 block setting : Approximately 17 seconds
• For 2048 block settings : Approximately 4 minutes

(4) Folder to store the recipe file
Do not overlap the file of other functions (advanced alarm function or other functions) with folder to store.
When performing the overlapped setting, the recipe file and the file of other functions are stored together in folder.
The file of other functions is not displayed in utility.
For it, as the file in folder cannot be deleted, deleting folder in utility will not be allowed.

(5) For using utility
When operating advanced recipe in utility, set the [Recipe Name].
When not setting the [Recipe Name], only recipe No. is displayed at creating advanced recipe file in utility.

(6) Import/export
When an advanced recipe file with more than 251 records is exported to a CSV file or Unicode text file, display the exported file with a text editor or Microsoft® Excel 2007.

(7) Precautions for setting

(a) Setting number

The advanced recipe function cannot be used when the object setting exceeds the user area of the GOT in size by the setting in the advanced recipe setting.
Therefore, any of the settings (device number, record number, etc.) may not be set at the maximum value.
Set within the free user area available for GOT.

For computing method of the setting size, refer to the following.

☞ Section 2.4 1 Object specifications

For free user area available for GOT, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(Chapter 8 TRANSFERRING DATA)

(b) Saving a file

The memory card must be larger in size than the file to be saved.
For the file size, refer to the following.

☞ Section 2.4 2 Data capacity available for storage on memory card

(c) The relationship between the device comment and the setting size

The setting size and the file size of the advanced recipe are considerably affected by the device comment.
Therefore, they get larger when the device comment is set for each device.

(d) The relationship between the record number and the setting size

When treating many data groups in the recipe, using the record to reduce the setting size is better than increasing the setting number of the advanced recipe function.

Example: Setting size when 200 data groups are treated
(1 record × 200 setting) size > (200 records × 1 setting) size

(e) Recipe device value setting

When not setting the default value of the recipe, the setting size of the advanced recipe function can be made smaller by checking [Device Values are not set] on GT Designer2. (The file size does not change.)

## 2 Precautions for OS

Be sure to install the extended function OS (Advanced recipe) to GOT when using the Advanced recipe function.

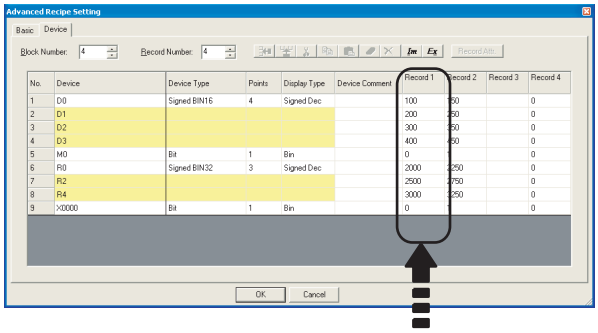
## 3 Precautions for hardware

When using the advanced recipe function with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

## 4 Precautions for use

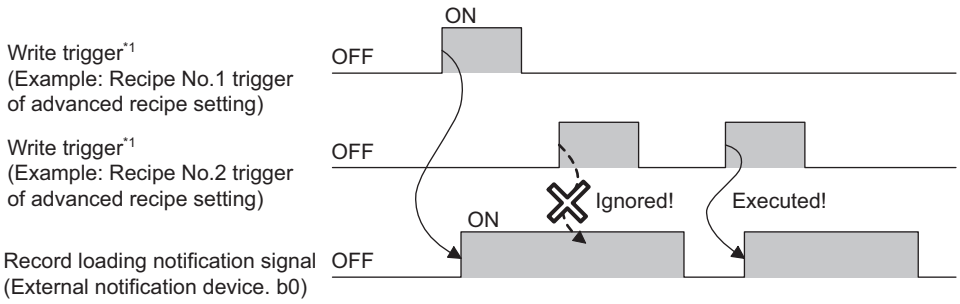
(1) Record number applicable to read/write
Record number applicable to read/write in one setting is one record.
Multiple records cannot be read/written simultaneously.




Read/write is performed
in record unit.

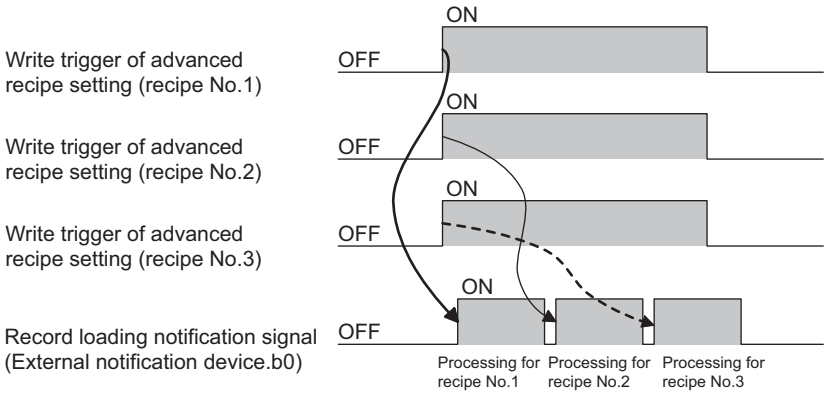
(2) When multiple trigger conditions are satisfied simultaneously

(a) When other trigger conditions are satisfied while reading/writing, the satisfied trigger conditions are ignored.

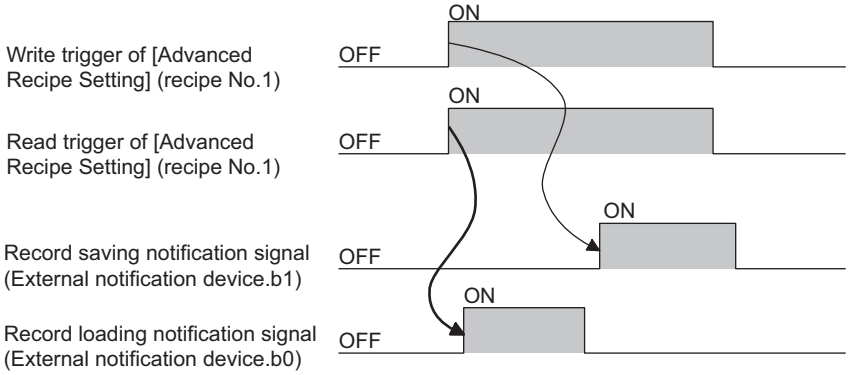



*1 Correspond to trigger are shown below.
- Read/write trigger with device set in [Advanced Recipe Common Setting]
- Read/write trigger with device set in [Advanced Recipe Setting]

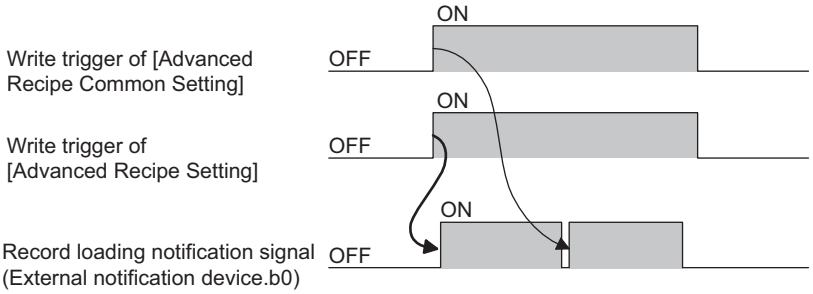
(b) When trigger conditions of different recipe No. are satisfied simultaneously
Execute reading/writing prior to recipe of small number.



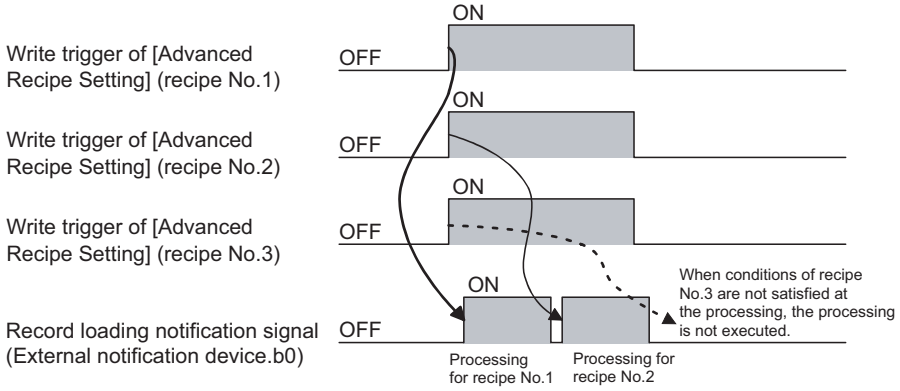

(c) When trigger conditions of read/write are satisfied simultaneously
Execute prior to read.
Execute write after completion of reading.



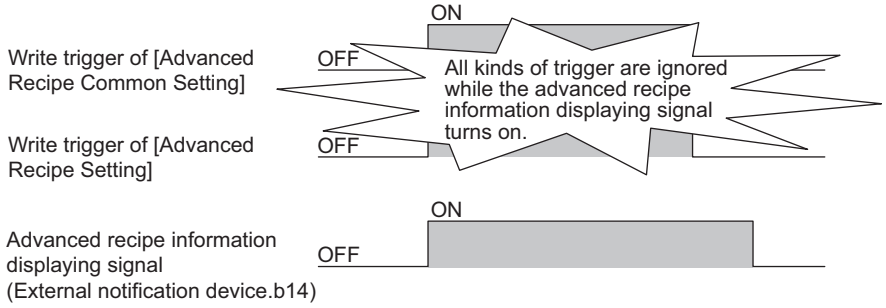

(d) When trigger conditions of [Advanced Recipe Common Setting] and [Advanced Recipe Setting] are satisfied simultaneously
Execute with prior to trigger conditions of advanced recipe setting.



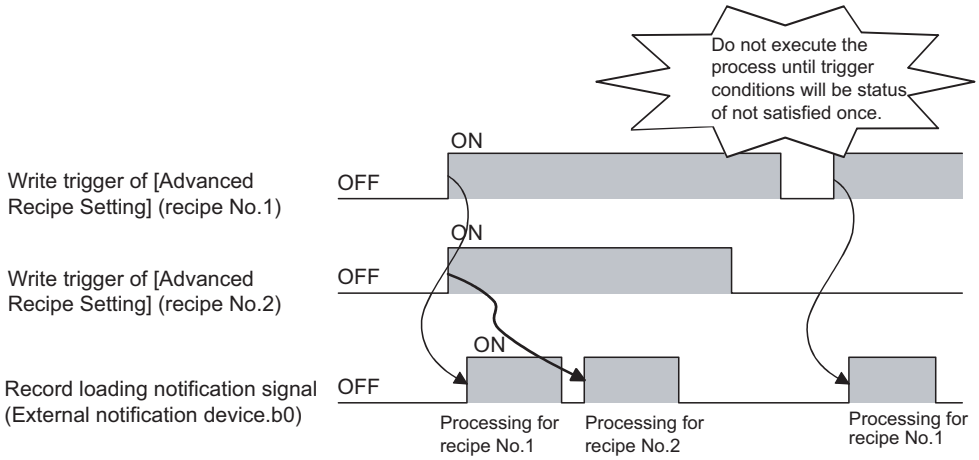
(e) When trigger conditions are not satisfied before processing turn has come
When multiple trigger conditions are satisfied simultaneously, the processing is executed because they are not satisfied before processing turn has come.




(3) When the trigger conditions are satisfied while displaying advanced recipe information in utility
The trigger conditions of [Advanced Recipe Common Setting] or [Advanced Recipe Setting] are ignored.
The presence/absence of utility operation can be checked in [External Notification Device] of [Advanced Recipe Common Setting].

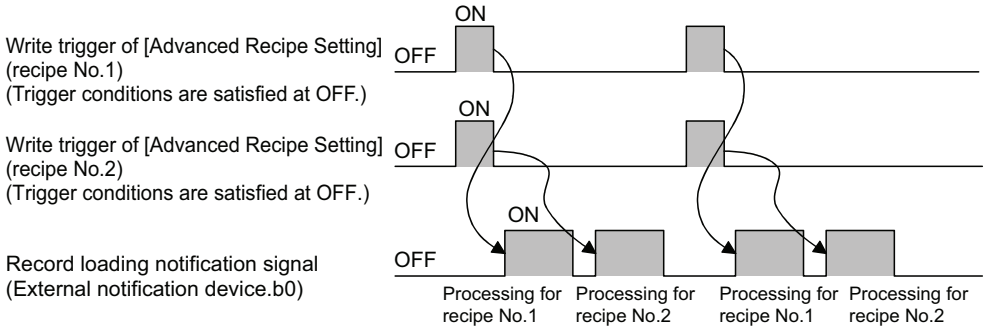



(4) For executing multiple recipes in order
Make the status of the trigger conditions satisfied until executing the processing.
When performing the process again after completion of the process, make the status of the trigger conditions to not satisfied, and then satisfied again.



**Hint!** Useful method for executing multiple recipes in order

Turn off satisfied trigger conditions (trigger conditions are satisfied at ON → OFF) in the advanced recipe setting.
Set the trigger device to OFF → ON (trigger conditions are not satisfied) → OFF at the status.




When setting the same devices to multiple trigger devices, multiple recipes can be executed depending on the status of one device (OFF → ON → OFF) in order.

(5) When changing read/write target
Change read/write target (recipe No., record No.) after record load/save complete signal turns on.
When changing before record load/save complete signal turns on, next read/write may not be normally performed.

(6) When read/write cannot be performed
When binary format file (*.G1P) of the same file name created in different project exist, device value cannot be read/written.
Read/write it after deleting binary format file (*.G1P).

(7) For setting change when the advanced recipe file exists already
When the advanced recipe file setting in [Recipe File] exists already, the change is not reflected to the advanced recipe file even if changing the setting (device value, record number, etc.) in GT Designer2.
For it, device value cannot be read/written in the changed settings.

When reading/writing device value in the changed settings, create the advanced recipe file with the following procedure again.

1. Perform either of the following operations in utility.
   - Delete the advanced recipe file.
   - Change the file name of the advanced recipe file.
   - Move the existing advanced recipe file to other area.
2. Download the changed advanced recipe setting into GOT.
3. Create the advanced recipe file.
   - When reading/writing device value depending on the status of device (ON/OFF)
     As reading/writing device value, the file is automatically create.
   - When reading/writing device value in utility
     The advanced recipe file is created in utility.

(8) For setting change when error occurs
When error occurs, recipe file may be created.
When changing the setting in GT Designer2 and reading/writing device value with the changed settings, create the advanced recipe file again.

(☞ This section 4 (7) For setting change when the advanced recipe file exists already)

(9) When reading/writing the device value in advanced recipe file moved or renamed
Match the [Recipe File] of the advanced recipe setting to the file of moved or renamed.
Download the advanced recipe setting into GOT after setting change.

(10) For Unicode text file converted in utility or GT Designer2
For the cautions for using a Unicode text file, refer to the following.

☞ 2.11 Precautions for Using Unicode Text File

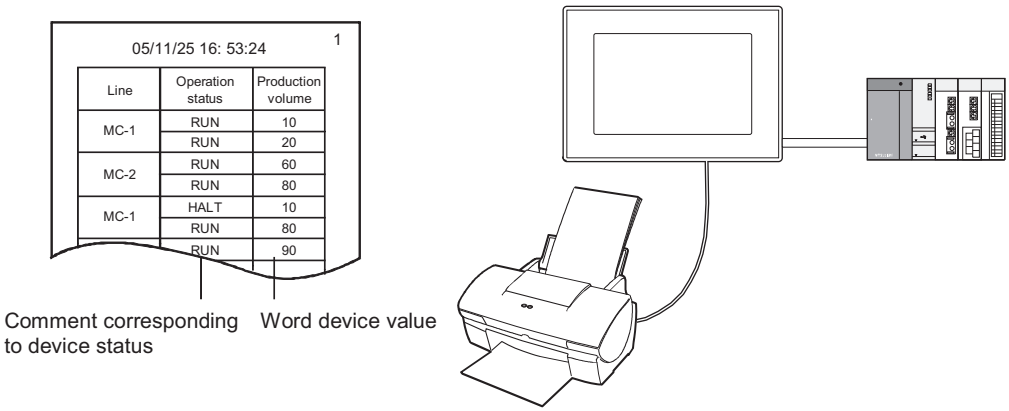
(11) Editing exported files
When the device with the first character of the device number "0" is set, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
When "0" is deleted and the file is stored, the file cannot be correctly imported into GT Designer2.
When the device with the first character of the device number "0" is set, edit files with applications, including text editors.

# 13. EXTERNAL INPUT/OUTPUT

## 13.1 Report Function

It is the function that collects and prints the data of production management and status.
Following information can be printed with this function.

- Word device value
- Comment corresponding to the device status




**Remark** Comment to be printed

The comment must be registered in advance

☞ Section 4.1 Comment Registration

To print the data using the report function, specify the data collection timing and print timing.
The collected data are stored in a memory card until the specified print timing is established.
After the timing is established, the stored data will be printed based on the page break setting.
The collected data are stored in memory card. The stored data will be printed based on the change page setting at the specified timing.

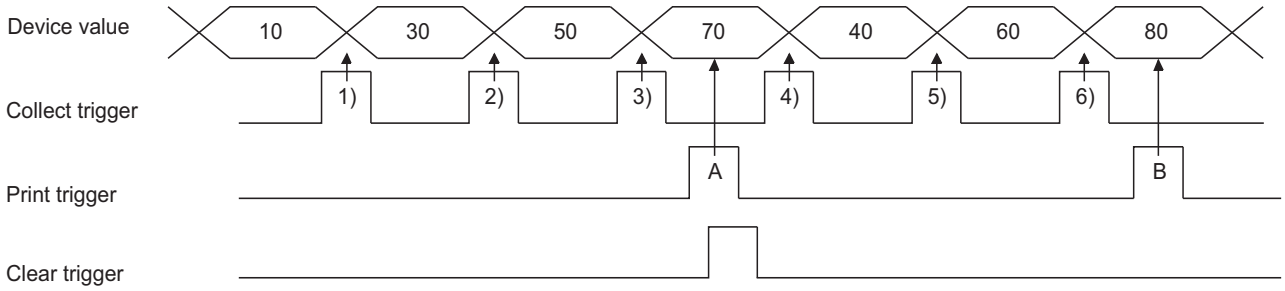
**Point**

(1) Report function for GOT1000 series
The report function for GOT1000 series is equivalent to the report function for GOT900 series with setting [Log/Page] for the report style.

(2) Report function for GT SoftGOT1000
GT SoftGOT1000 cannot directly output data to a printer.
The virtual A drive of the personal computer stores print image data (CSV files).
Print out the files.

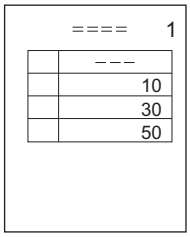
## 1 Operation of the report function

Operation of the report function is shown below.

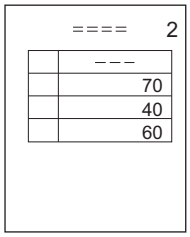



Data stored in memory card are printed at each print trigger.
Those data are deleted at each delete trigger.

A The 1st time




B The 2nd time




Print the remained data after clearing the collected data with clear trigger.

## 13.1.1 Relevant settings

There are settings relevant to the report function in addition to the settings explained below.
Make settings as necessary, referring to the following.

(1) Functions only relevant to the report function
…Functions that are relevant only to the report function

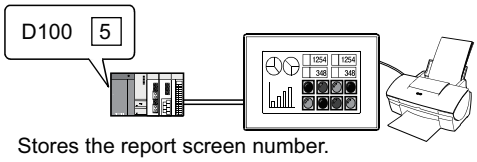
(2) Functions relevant to the report function and others
…Set these functions while confirming the relevant functions.
For the relevant functions, refer to the sections explaining the related settings.

### 1 System information (☞ Section 3.6 System Information Setting)

(1) Functions only relevant to the report function

• Printing report number
(Write device)

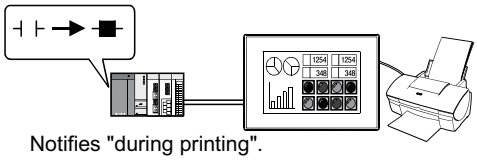
Stores the report screen number under printing.




Stores the report screen number.

• Report output signal
(Write device: System signal 2-1.b8)

Can notify the report printing state.

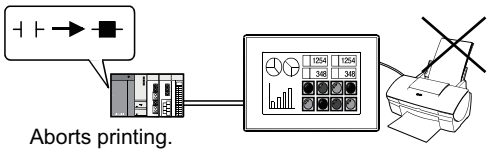


Notifies "during printing".

(2) Functions relevant to the report function and others

• Print abort signal
(Read device: System signal 1-2.b15)

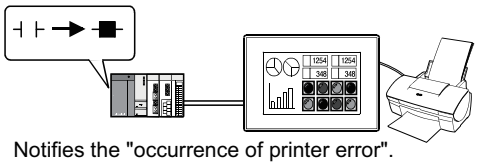
Can abort printing.



Aborts printing.

• Printer error detection signal
(Write device: System signal 2-1.b15)

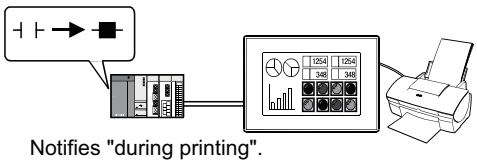
Can notify a printer error during printing.



Notifies the "occurrence of printer error".

• Print output signal
(Write device: System signal 2-2.b15)

Can notify the printing state.



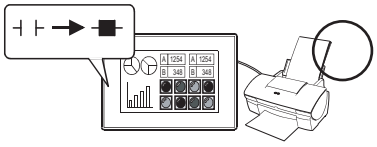
Notifies "during printing".

## 2 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

### (1) Functions relevant to the report function and others

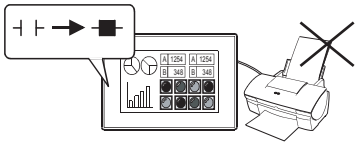
• Printer connection notification signal
(Write device: GS258.b0)

Can notify the connection state between the GOT and the printer.



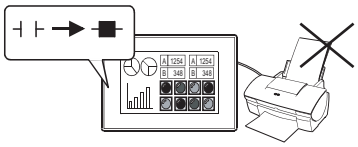
• Waning occurrence notification signal
(Write device: GS258.b1)

Can notify the occurrence of a warning level error.



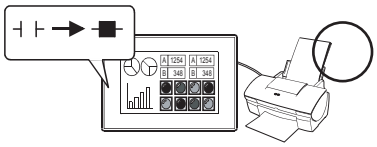
• Fatal error occurrence notification signal
(Write device: GS255.b2)

Can notify the occurrence of fatal level error.



• Print enable/disable status notification signal
(Write device: GS258.b3)

Can notify the printer status if printing is enabled or disabled.



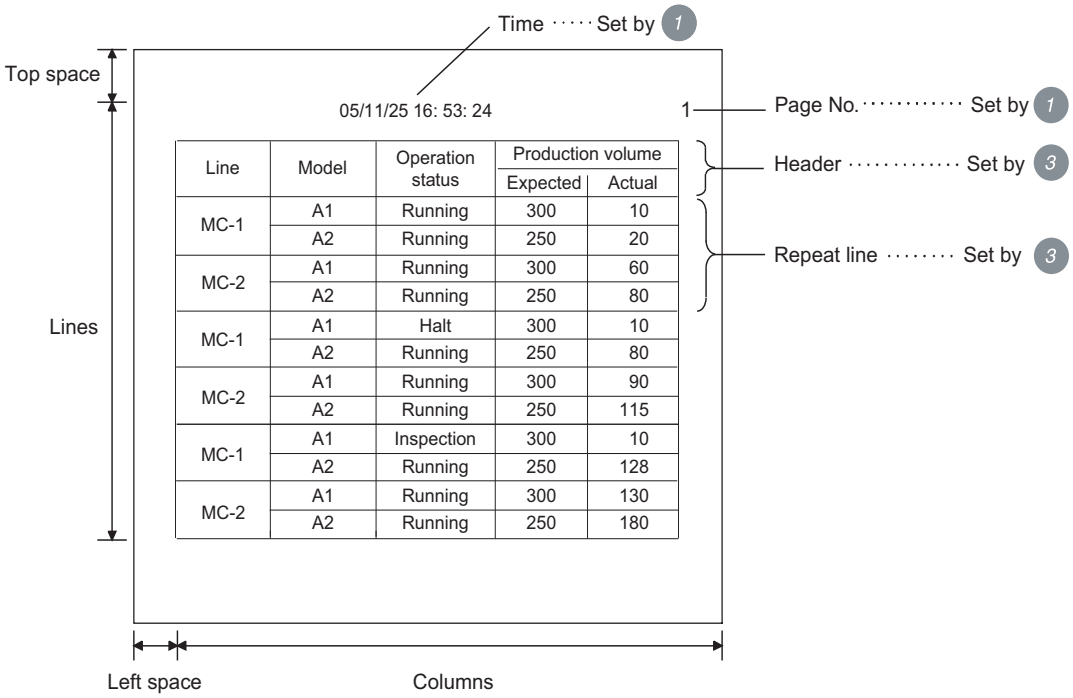
## 13.1.2 Arrangement and settings

### 1 Print format

Create the print format on the report screen. Up to 8 formats (8 screens) can be registered.
This section provides the general procedure for print format setting.

1. Create report screen (☞ Section 13.1.3 Report screen creation (screen property))
   Create a report screen and make the report function settings on that screen.

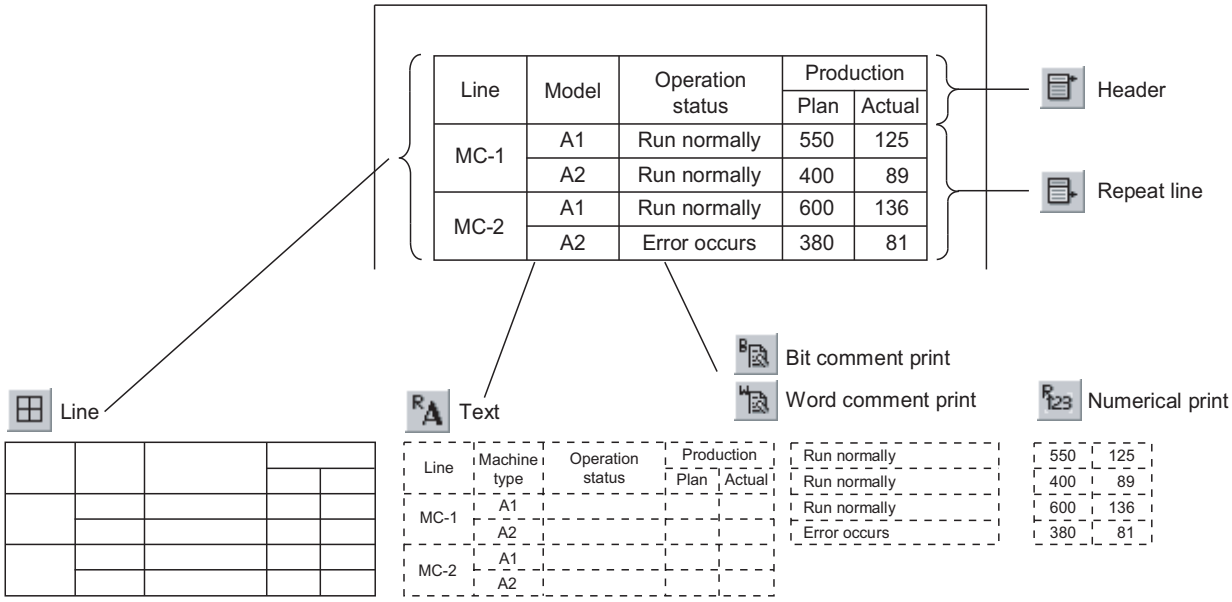
2. Set print range (☞ Section 13.1.4 Setting common to each report (report setting))
   Set on the report setting dialog box the number of lines and columns, margin, according to the printable area of the printer to be used.




| Line | Model | Operation status | Production volume | |
|---|---|---|---|---|
| | | | Expected | Actual |
| MC-1 | A1 | Running | 300 | 10 |
| | A2 | Running | 250 | 20 |
| MC-2 | A1 | Running | 300 | 60 |
| | A2 | Running | 250 | 80 |
| MC-1 | A1 | Halt | 300 | 10 |
| | A2 | Running | 250 | 80 |
| MC-2 | A1 | Running | 300 | 90 |
| | A2 | Running | 250 | 115 |
| MC-1 | A1 | Inspection | 300 | 10 |
| | A2 | Running | 250 | 128 |
| MC-2 | A1 | Running | 300 | 130 |
| | A2 | Running | 250 | 180 |

3 Set print layout (☞ Section 13.1.5 Print layout setting)

Open the created report screen to set the print layout.




| | | | |
|---|---|---|---|
| Line | Used to draw a report table. | ☞ Section 13.1.5 2 |
| Text | Used to draw fixed texts in the table. | ☞ Section 13.1.5 3 |
| Numerical print | Used to arrange the object that prints the word device value. | ☞ Section 13.1.5 4 |
| Bit comment print | Used to arrange the comment to be changed according to the ON/OFF status of bit device. | ☞ Section 13.1.5 5 |
| Word comment print | Used to arrange the comment to be changed according to word device value. | ☞ Section 13.1.5 6 |
| Header | Used to set the header part of the report table. | ☞ Section 13.1.5 7 |
| Repeat line | Used to set the part to be repeatedly printed in the report table. | ☞ Section 13.1.5 7 |

**Hint!** Edit of created report screen

As the base screen, the created report screen can be copied and deleted for each screen.

Refer to the following manual for screen editing operation.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual

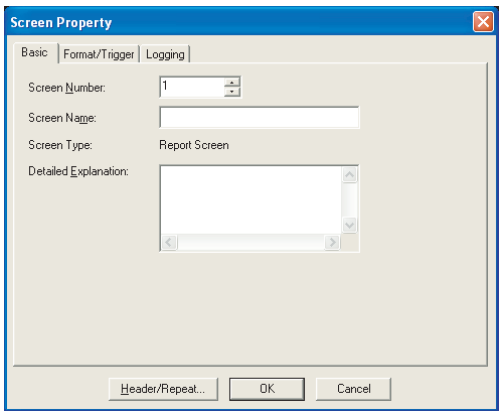
## 13.1.3 Report screen creation (screen property)

This section explains how to create a report screen.

1. Select [Screen] → [New Screen] → [Report Screen] from the menu.
2. As the setting dialog box will appear, make the settings with reference to the following explanation.
3. Click on OK button to display the set report screen.

### 1 Basic tab

Set the screen No. and screen name.

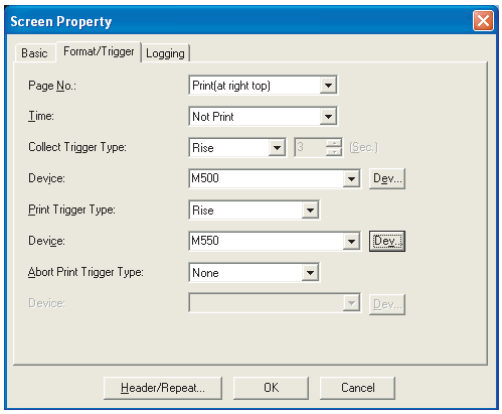



Basic | Format/Trigger | Logging

| Items | Description | Model |
|---|---|---|
| Screen Number | Select the report screen No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Screen Name | Enter the title of report screen as necessary.<br>Up to 32 characters can be entered. | |
| Detailed Explanation | Enter the explanation of the newly created report as necessary.<br>Up to 512 characters can be entered. | |
| Header/Repeat | Set the header and repeat lines.<br>(☞ Section 13.1.5 7 Set header/repeat line) | |

## 2 Format/Trigger tab

Set collect trigger and print trigger.




Basic | **Format/Trigger** | Logging

| Items | Description | Model |
|---|---|---|
| Page No. | Select whether to print page No. (upper right) on the paper. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Time *1 | Select whether to print time (at upper center/upper left/upper right).<br>Time is displayed using the format of yy(year)/mm(month)/dd(day)/hh(hour): mm(minute): sec(second).<br>02/11/24_17:38:04<br>└ Space | |
| Collect Trigger Type | Select the timing to collect data.<br>Rise : Collect when the bit device turns ON.<br>Fall : Collect when the bit device turns OFF.<br>Sampling : Collect at a fixed interval and store the data into memory card.<br>Then, set the data sampling (data collecting) interval (3 to 3600 s).<br>This setting is available only when report style is set as [Log/Page].<br>Set the bit device to be collect trigger when [Rise] or [Fall] is selected.<br>(☞ Section 5.1 Device Setting) | |
| Print Trigger Type | Select the timing to print the data stored in memory card.<br>Rise : Print when the bit device turns ON.<br>Fall : Print when the bit device turns OFF.<br>Then, set the bit device to be print trigger.<br>(☞ Section 5.1 Device Setting) | |
| Abort Print Trigger Type | Select the method used to abort printing.<br>Rise : Aborts printing when the bit device turns ON.<br>Fall : Aborts printing when the bit device turns OFF.<br>None : Does not set abort trigger (Abort print is not performed).<br>After selecting, set the device to be a trigger.<br>(☞ Section 5.1 Device Setting) | |
| Header/Repeat | Set the header and repeat lines.<br>(☞ Section 13.1.5 7 Set header/repeat line) | |

For details of *1, refer to the following.

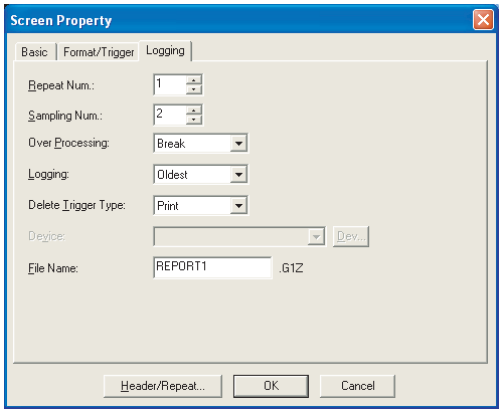
### *1 Time printing

Time printing may be unavailable according to the connection method or the PLC CPU.

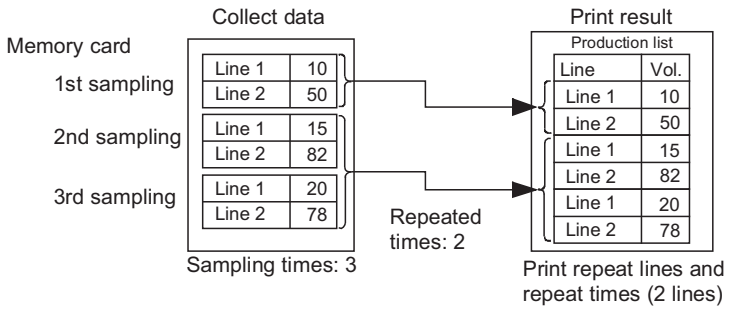
☞ Section 2.5 Clock Function

## 3 Logging tab

Make the setting of report style such as the method of storing data to memory card and the print action.




Basic | Format/Trigger | **Logging**

| Items | Description | Model |
|---|---|---|
| Repeat Num. | Set the number of times (0 to 499) for repeated printing.<br>Repeat line can be set in report screen. (☞ 13.1.5 Print layout setting)<br>When printing all the data stored in memory card, set the number, that is the result of subtracting 1 from [Sampling Num.], to [Repeat Num.].<br>Example: when the settings are [Sampling Num.: 3] and [Repeat Num.: 2]<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Sampling Num. | Set the number of times (1 to 500) to collect data.<br>Make settings according to capacity of the memory card.<br>(☞ 2.4 Specifications of Available Object Functions) | |
| Over Processing | Select the processing method when sampling data was executed more than the number of times set in [Sampling Num.].<br>Overwrite : Continue the sampling and overwrite the data in the order collected (sampled).<br>Break : Interrupt the data sampling.<br>When restarting data sampling, clear all the data stored in memory card by clear trigger. | |
| Logging | Select the order of printing the data stored in memory card.<br>Oldest : Print from the oldest data.<br>Latest : Print from the latest data. | |

(Continued to next page)

Basic | Format/Trigger | Logging

| Items | Description | Model |
|---|---|---|
| Delete Trigger Type | Select the timing to delete all the data stored in memory card.<br>Rise : Delete when bit device turns ON.<br>Fall : Delete when bit device turns OFF.<br>Power ON : Delete when GOT starts.<br>Print : Delete after printing.<br>Set the bit device as clear trigger when [Rise] or [Fall] is selected.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| File Name | Enter the file name of collected data to be stored in memory card.<br>Files can be created on each report screen.<br>Up to 8 characters, including one-byte alphabets in capitals and one-byte values (0 to 9) can be entered.<br>(Default: REPORT1.G1Z)<br>The number of the file extension characters is not counted in the file name.<br>Example) REP00001.G1Z (File name: Up to 8 characters, Extension: 3 characters) | |
| Header/Repeat Line | Set the header and repeat lines.<br>(☞ Section 13.1.5 7 Set header/repeat line) | |

## 13.1.4 Setting common to each report (report setting)

Set the common information of report function.
The setting items are common to all the report screens.

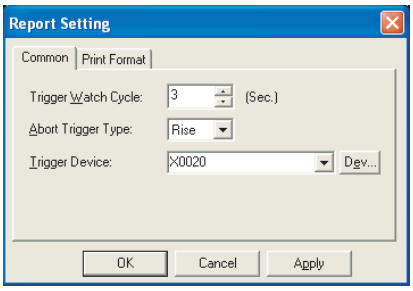
1. Select [Common] → [Report Settings] from the menu.
2. As the setting dialog box will appear, make the settings with reference to the following explanation.
3. Click on OK button to complete the setting of report function.

**Remark** When making the setting on the project work space

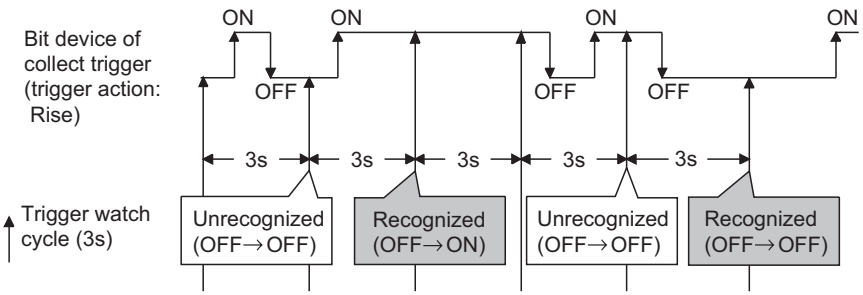
The setting dialog box can be displayed by double-clicking on Report in the project workspace.

## 1 Common tab

Set the trigger watch cycle; abort trigger type and action for changing page during printing.



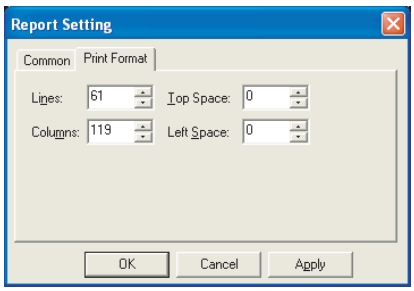

Common | Print Format

| Items | Description | Model |
|---|---|---|
| Trigger Watch Cycle | Set the cycle for GOT to monitor the device ON/OFF status that has been set in each trigger (collect trigger/abort trigger/print trigger/delete trigger).<br>Make the settings in order that the device set for each trigger will keep the ON/OFF status longer than the period set by trigger watch cycle.<br>GOT may not recognize the device ON/OFF status, if the period of device ON/OFF is shorter than the trigger sampling.<br>  <br> | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Abort Trigger Type | Select the method of interrupting the printing operation.<br>Rise : Interrupt printing when the set device turns ON.<br>Fall : Interrupt printing when the set device turns OFF.<br>None : Abort trigger is not set.<br>After selecting, set the device to be trigger.<br>(☞ Section 5.1 Device Setting) | |

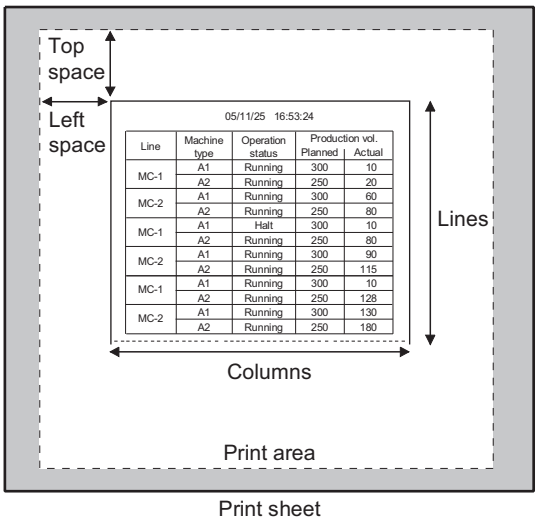
## 2 Print Format tab

Set print format (number of lines and columns, top margin, left margin), according to the printable area of the printer.

This setting defines the size of created report screen.




### Common Print Format

| Items | Description | Model |
|---|---|---|
| Lines/Columns/Top Space/ Left Space | Set the number of lines (1 to 70) and columns (1 to 124), and the space for the top (0 to 31) and the left (0 to 123) of the printout.  | GT16 GT15 SoftGOT 1000 GT11 GT10 |



| Line | Machine type | Operation status | Production vol. Planned | Production vol. Actual |
|---|---|---|---|---|
| MC-1 | A1 | Running | 300 | 10 |
| | A2 | Running | 250 | 20 |
| MC-2 | A1 | Running | 300 | 60 |
| | A2 | Running | 250 | 80 |
| MC-1 | A1 | Halt | 300 | 10 |
| | A2 | Running | 250 | 80 |
| MC-2 | A1 | Running | 300 | 90 |
| | A2 | Running | 250 | 115 |
| MC-1 | A1 | Running | 300 | 10 |
| | A2 | Running | 250 | 128 |
| MC-2 | A1 | Running | 300 | 130 |
| | A2 | Running | 250 | 180 |

**Point**

Print format setting

Refer to the following for the methods to calculate the width (number of columns + maximum set value of left margin) and length (Number of lines + maximum set value of top margin) based on the printable area of the printer.

Section 3.13 Print Format Setting

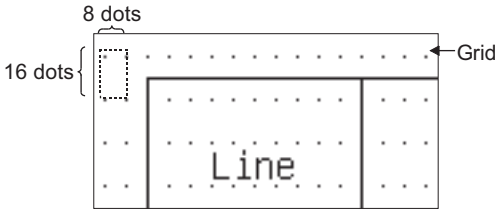
## 13.1.5 Print layout setting

Arrange figures and objects to be printed on the created report screen.

### 1 Before creating report screen

Arrange figures and objects on report screen based on grid.

Grid : Displayed in the fixed unit of 16 dots (vertical) x 8 dots (horizontal).
Space between figures/objects : Arranged in the unit of 16 dots (vertical) and 8 dots (horizontal).




**Hint!**

(1) Grid display
Set the grid color as black when the grid is indistinct.
Grid color can be changed on the [View] tab in [Preferences] dialog box (Select [Project] → [Preferences] from the menu).

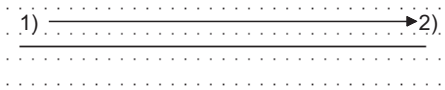
(2) Arrange the figures and objects to be printed
By using toolbar, report screen can be created more efficiently.
Report function toolbar can be displayed in [Toolbars] of [Preferences] dialog box (Select [Project] → [Preferences] from the menu).

### 2 Draw lines and quadrangle

(1) Drawing method

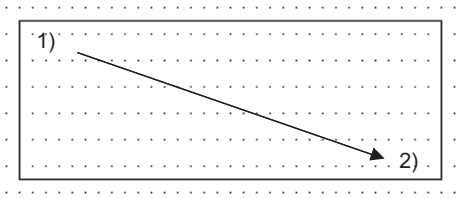
1. Carry out either of the following operations.
   - Click on [Line]
   - Select [Shape] → [Line] from the menu.
2. Drag from the starting point (1)) to the end point (2)) of line/quadrangle, release the left key on mouse, and line/ quadrangle will be displayed.

Draw line




Draw by dragging from starting point vertically/horizontally.

Draw quadrangle




Draw by dragging from starting point sideways.

**Point**

Arranging the line/quadrangle

Make sure not arrange text and line/quadrangle in order they will overlap.

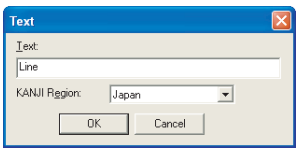
(2) Precautions

(a) Line attributes cannot be changed. (Style: Full line, Width; 1 dot, Color: Black)

## 3 Text arrangement

(1) Arrangement method

1. Carry out either of the following operations.
   - Click on [Text]
   - Select [Shape] → [Text] from the menu.
2. Click on the position to arrange text.
3. As [Text] dialog box will appear, enter text there.



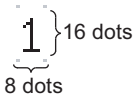

4. Click on OK button, and the entered text will be arranged in the screen.

(2) Precautions

(a) Page change cannot be done for text arranged on report screen.

(b) Text attributes (style, text color, etc.) cannot be changed.

(c) Character is displayed in the unit of 16 × 8 dots.




(d) Up to 255 characters can be printed. (When [Columns] is set to the maximum value)

## 4 Numerical print arrangement

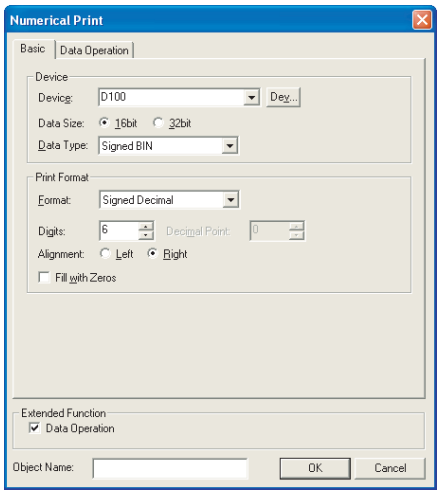
(1) Arrangement method

1. Carry out either of the following operations
   - Click on the [Numerical Print]
   - Select [Object] → [Numerical Print] from the menu
2. Click on the position to arrange numerical print object.
3. Double click on the arranged numerical print object to display [Numerical Print] dialog box. Make settings with the reference to the following explanation.

(2) Numerical print dialog box

(a) Basic tab

Set the print format and the device for printing value.




**Basic** | Data Operation

| Items | | Description | Model |
|---|---|---|---|
| Device | Device | Set the word device for printing device value.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Data Size | Select the data size (16 bits/32 bits) of the word device for printing. | |
| | Data Type | Select the data type of device.<br>Signed BIN : Treats word device value as a signed binary value.<br>Unsigned BIN : Treats word device value as an unsigned binary value.<br>Real : Treats word device value as a real.<br>(Only when [Data Size] selection is [32 bit].) | |

(Continued to next page)

Basic | Data Operation

| Items | | Description | Model |
|---|---|---|---|
| Print Format | Format | Select the print format of word device for printing.<br>Signed Decimal : Print the value in signed decimal.<br>Unsigned Decimal : Print the value in unsigned decimal.<br>Real : Print the value in floating point type real.<br>Binary : Print the value in binary.<br>Hexadecimal : Print the value in hexadecimal. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Digits | Set the number of digits for numeric value to be printed.<br>The following are the number of digits that can be set in [Form].<br>Real : 1 to 32 digits (minus ( — ), decimal point and decimal part are included)<br>Hexadecimal : 1 to 8 digits<br>Binary : 1 to 32 digits<br>Unsigned Decimal : 1 to 13 digits (minus ( — ) is included) | |
| Print Format | Decimal Point | When REAL is selected in [Print Format], set the number of digits (1 to 32) for the decimal part. | |
| | Alignment | Select how to align objects within the print area.<br>Left Alignment : Align to the left of the print area.<br>Right Alignment : Align to the right of the print area. | |
| | Fill with Zeros | When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.<br>Example (In the case of five digits)<br>5 — Zero not suppressed<br>00005 — Zero suppressed | |

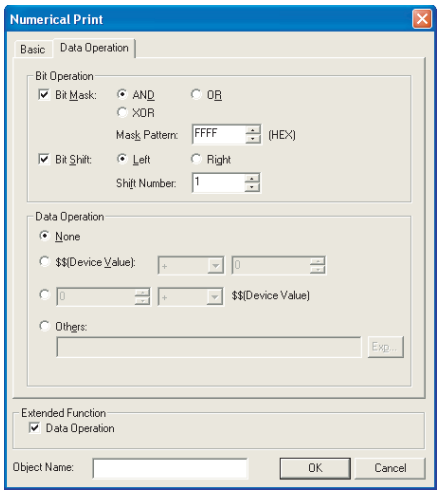
(b) Data Operation tab

Operational expression is set on this tab when monitoring the device by operating the device values.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function




## Basic Data Operation

| Items | | Description | Model |
|---|---|---|---|
| Bit Operation | Bit Mask | Check this item to enable the bit mask operation.<br>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].<br>AND :Carries out logical AND.<br>OR :Carries out logical OR.<br>XOR :Carries out exclusive logic OR. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Bit Shift | Check this item to enable bit shift operation.<br>Select the shift direction and set the number of bits to shift in [Shift Number].<br>Left :Left shift<br>Right :Right shift | |
| Data Operation | | Select an operational expression format for data operation. | |

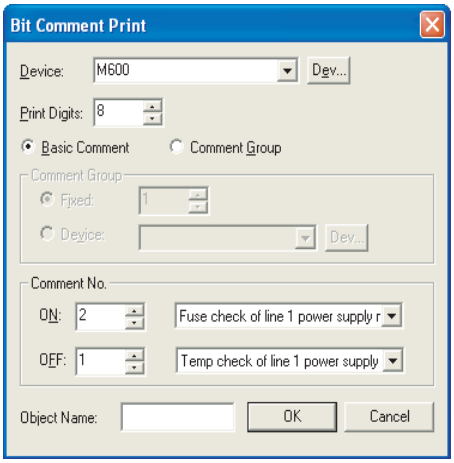
## 5 Bit comment print arrangement

(1) Arrangement method

1. Carry out either of the following operations
   - Click on [Bit Comment Print]
   - Select the [Object] → [Comment Print] → [Bit Comment] from the menu.
2. Click on the position to arrange the comment print object.
3. Double click on the arranged comment print object.
4. As the setting dialog box will appear, make the settings with reference to the following explanation.

(2) Bit Comment Print dialog box

Set the print format and the device for printing comment.



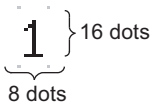

| Items | | Description | Model |
|---|---|---|---|
| Device | | Set the bit device for printing comments<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Print Digits | | Set the number of digits for the comment to be printed<br>Up to 124 digits can be set. | |
| Basic Comment/Comment Group | | Select the comment type (Basic Comment/Comment Group) used for comment printing.<br>If the selection is [Comment Group], select the comment group number.<br>Fixed : Select this to input a comment group number directly.<br>Device : Select this to display the comment group number that is identical to the device value to be used.<br>After selecting this, set the device.<br>(☞ Section 5.1 Device Setting) | |
| Comment No. | ON/OFF | Set the comment No. (0 to 32767) to be printed when the bit turns ON/OFF.<br>The comment will not be printed when setting comment No. to 0.<br>(To print comment only when the bit turns ON, set the comment No. when the bit turns OFF to 0) | |

(3) Precautions

(a) Only the first line of multi-line comment is printed.

(b) The text attribute (style, text color etc.) cannot be changed.

(c) Character is displayed in the size of 16 dots × 8 dots.




(d) Up to 124 characters can be printed. (When [Columns] is set to the maximum value)

## 6 Word comment print arrangement

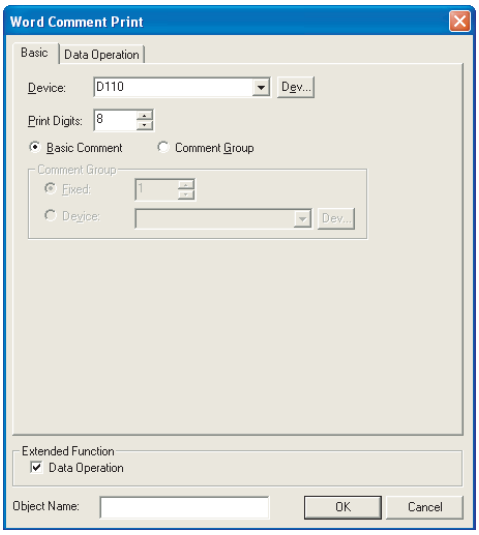
(1) Arrangement method

1. Carry out either of the following operations
   - Click on [Word Comment Print]
   - Select the [Object] → [Comment Print] → [Word Comment] from the menu.
2. Click on the position to arrange the comment print object.
3. Double click on the arranged comment print object.
4. As the setting dialog box will appear, make the settings with reference to the following explanation.

(2) Word Comment Print dialog box

(a) Basic tab

Set the print format of comment and the device to print comment.



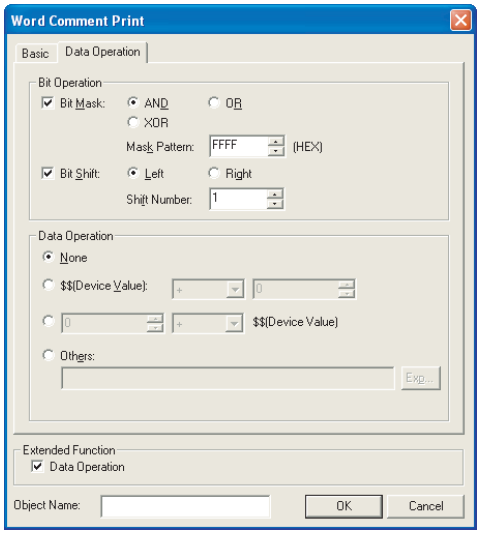

Basic | Data Operation

| Items | Description | Model |
|---|---|---|
| Device | Set the word device for printing comment.<br>Print the comment of which No. corresponding to the set word device value.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Print Digits | Set the number of digits for the comment to be printed<br>Up to 124 digits can be set. | |
| Basic Comment/Comment Group | Select the comment type (Basic Comment/Comment Group) used for comment printing.<br>If the selection is [Comment Group], select the comment group number.<br>Fixed : Select this to input a comment group number directly.<br>Device : Select this to display the comment group number that is identical to the device value to be used.<br>After selecting this, set the device.<br>(☞ Section 5.1 Device Setting) | |

(b) Data Operation tab

The setting items of data operation tab are the same as numerical print.
Refer to the following for the details of the setting items.

☞ 4 Numerical print arrangement

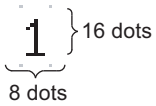



(3) Precautions

(a) Only the first line of multi-line comment is printed.

(b) The text attribute (style, text color etc.) cannot be changed.

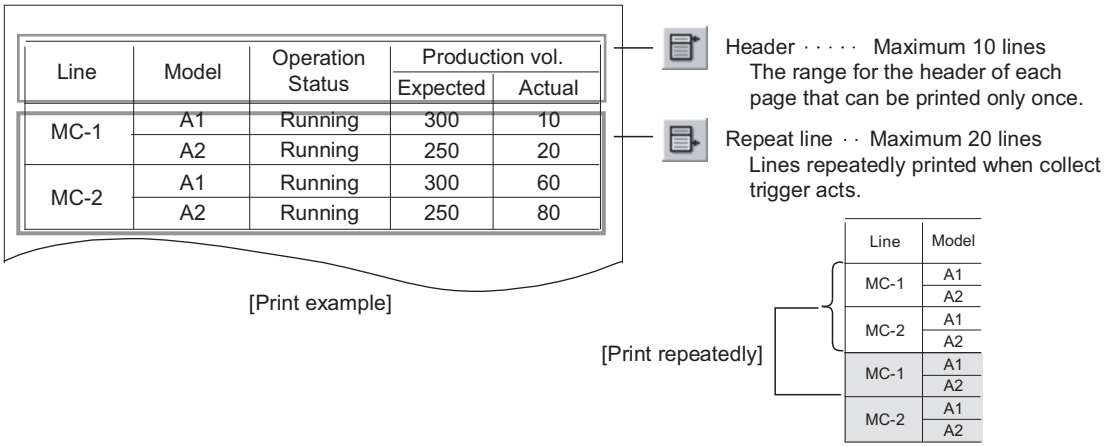
(c) Character is displayed in the size 16 dots × 8 dots.




(d) Up to 124 characters can be printed. (When [Columns] is set to the maximum value)

## 7 Set header/repeat line

Set print range (header/repeat line) on the report screen.



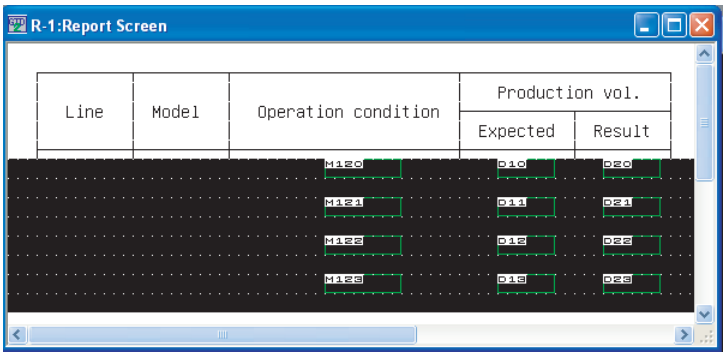

**Remark** Printable area

Number of Lines : Up to 30 lines can be printed/collected for 1 timing.
Number of Columns : Columns as many as the number set in the "Columns" of print format can be printed.

Section 13.1.4 Setting common to each report (report setting)

(1) Setting method

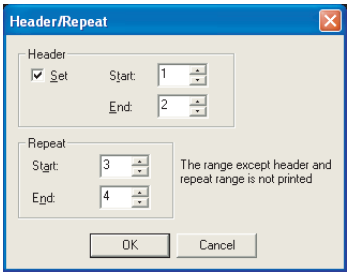
1. Carry out either of the following operations.
   - Click on the [Selection: Report Line] on the tool bar.
   - Select [Edit] → [Object of Selection] → [Report Line] from the menu.
2. Drag and select the area specified for the header and repeat line on the report screen.




3. Carry out either of the following operations.
   - When setting the header: Click on the [Header] on the tool bar
   - When setting the repeat line: Click on the [Repeat Lines] on the tool bar
4. The selected range for header and repeat line will be set.
   The header area is shown by cyan frame, and repeat line area is shown by yellow frame.

**Remark** Set the header/repeat line on the dialog box.

Header/repeat line can be set on the dialog box too.
Select the [Screen] → [Header/Repeat] to display the setting dialog box. Make the settings with reference to the following explanation.




| Items | | Description |
|---|---|---|
| Header | Set | Check this item to set the header in the report screen.<br>Uncheck it to cancel the header.<br>Set the start line and end line.<br>Up to 10 lines can be set as the header in the range of 1 to 30 lines (for whole screen). |
| Repeat | | Set the start line and end line of the repeat lines.<br>Up to 20 lines can be set as the repeat lines in the range of 1 to 30 lines (for whole screen). |

(2) Precautions

(a) Numerical print and comment print objects cannot be set within header.

## 13.1.6 Precautions

This section provides the precautions for using report function.

### 1 Precautions for drawing

(1) Maximum number of the report screens that can be set for 1 project
8 screens

(2) Maximum number of devices that can be set on one report screen
260 points (total number of the devices that are set for numerical and comment print (includes devices used for data operation), and the collect trigger and similar devices that are set on the report screen.

(3) Influence of the number of devices (on the report screen)/collection cycle over monitor display
As the number of devices (numerical print, comment print, etc.) set on the report screen increases, GOT monitoring may be delayed. If this occurs, elongate the data collection cycle time or reduce the number of devices.

(4) Arrangement of figures and objects
The figures and objects arranged on the report screen must not overlap with each other. If they overlap with each other, they may not be printed correctly.
Arranging an object or figure adjacent to the line or the line of a rectangle may also cause the object or figure to be printed incorrectly. If this occurs, allow appropriate space between the line and the object or figure when arranging it.

(5) Use of Kanji region
Objects and figures arranged on the same report screen must have the same Kanji region setting. If Kanji region setting differs among the objects and figures arranged on the same report screen, they are displayed according to the Kanji region setting made for text/comment print of the object/figure arranged the upper left end (including the header section) of the report screen. (If setting is made for both text and comment print, the Kanji region set for comment print is used.)

(6) Precautions for using comment group
When a value (column No.) that does not exist is entered in the language switching device, the comment will not be printed.

### 2 Precautions for OS

(1) Extended function OS
Make sure to install the extended function OS in GOT when using report function.

### 3 Precautions for hardware

(1) System configuration when using a printer
For the system configuration requirements for using a printer, refer to the following manual.
☞ GOT 1000 Series Connection Manual

(2) Usable printers
For applicable printers, please contact your local Mitsubishi representative.

## 4 Precautions for use

(1) When the print trigger of other object/other report screen occurs during report print.
After a report print is competed once, the other object/other report screen will be printed.
However, if the same print trigger occurs before the report print, that was executed when the former report trigger occurred, is completed, the latter print trigger will be handled as invalid.

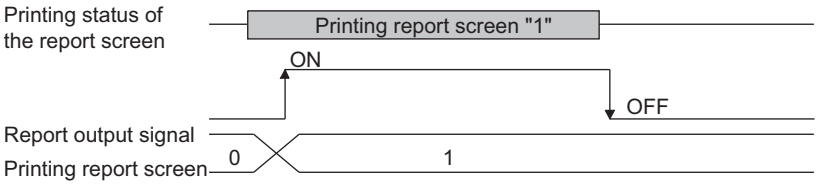
**Hint!** Check the report function operation

The printing status by report function and the printed report screen can be checked using the system information.
Controlling the relevant signals by PLC CPU prevents the overlap of print trigger occurrence timing.

☞ Section 3.6 System Information Setting

(1) Report function-relevant signals of system information
(a) Report output signal (system signal2-1(b8))
ON : Report function is printing
OFF : Printing by report function is completed or interrupted
(b) Printing report number (write device)
Write the report screen No. being printed to PLC CPU.
After printing, the written report screen No. is kept until the next report screen will be printed, instead of being cleared.

(2) Operation of the system information function when printing the report screen.

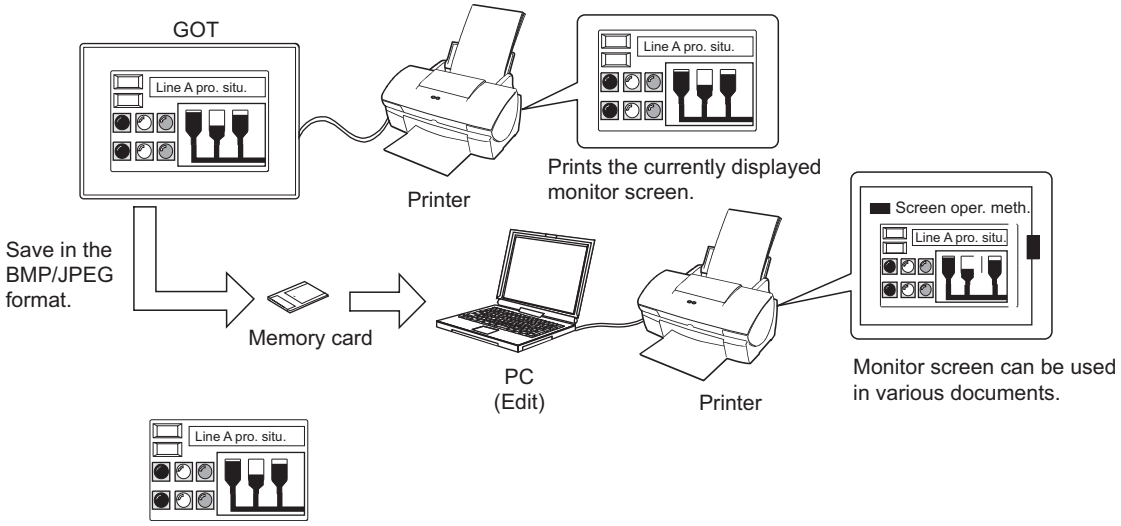



(2) When data collection timing is overlapped (Log/Page only)
After a data collection is competed once, the data of other report screen, that was delayed because its collection timing overlapped with the completed one, will be collected.
However, when the same collect trigger occurs before the data collection, that was executed when the former collect trigger occurred, is completed, the latter collect trigger will be handled as invalid.

(3) Delete trigger
Execution of the delete trigger deletes the contents of the report file but does not delete the report file. To delete the report file, do so using a personal computer or format the memory card.

# 13.2 Hard Copy

This function is used to save the currently displayed GOT monitor screen to memory card in the BMP/JPG file format and also to print it.
This function can be executed by bit device's ON/OFF or touching the touch switch (extension: Hard copy).
The BMP/JPEG files saved in memory card can be used for various documents on the computer.




**Point**

GOT status during execution of hard copy function

When the hard copy function is executed, GOT will interrupt the monitor screen display.
As the monitor display reappears after completion of the hard copy, please wait for a while.

## 13.2.1 Relevant settings

For hard copy, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to hard copy only
…Functions are relevant to the hard copy only.

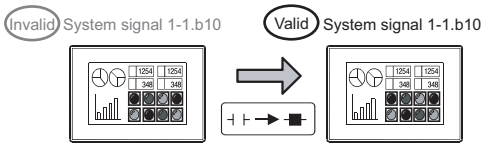
(2) Functions relevant to hard copy and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 System information (☞ Section 3.6 System Information Setting)

(1) Functions only relevant to the hard copy function

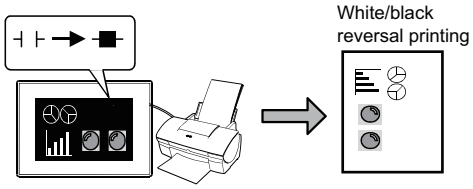
• Hard copy setting validate signal
(Read device: System signal 1-1.b10)

Enables changing of the hard copy output setting at the system information.



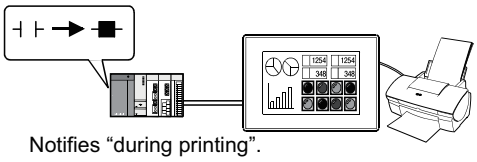

• Hard copy white/black reverse signal
(Read device: System signal 1-1.b12)

Can designate hard copy printing after reversing white/black display.




• Hard copy output signal
(Write device: System signal 2-1.b7)

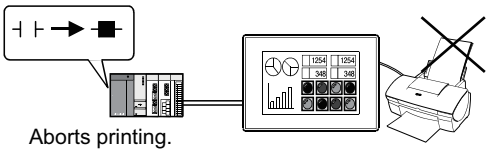
Can notify hard copy printing state.



(2) Functions relevant to the hard copy function and others

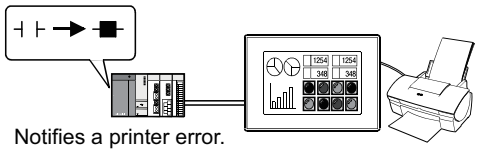
• Print abort signal
(Read device: System signal 1-2.b15)

Can abort printing.



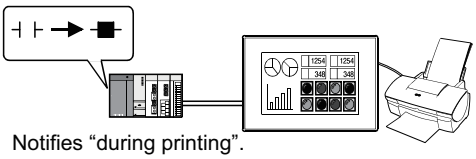

• Printer error detection signal
(Write device: System signal 2-1.b15)

Can notify a printer error during printing.



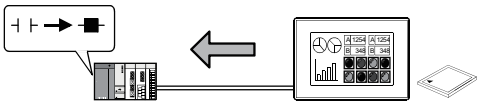

• Print output signal
(Write device: System signal 2-2.b15)

Can notify printing state.




• Hardcopy Sub-signal
(Write device: System signal 2-1.b12)

Can notify that the number of files in the memory card is close to the upper limit (9999).




## 13.2.2 Settings

1. Select [Common] → [Hard Copy] from the menu.
2. The setting dialog box will appear. Make the settings with reference to the following explanation.

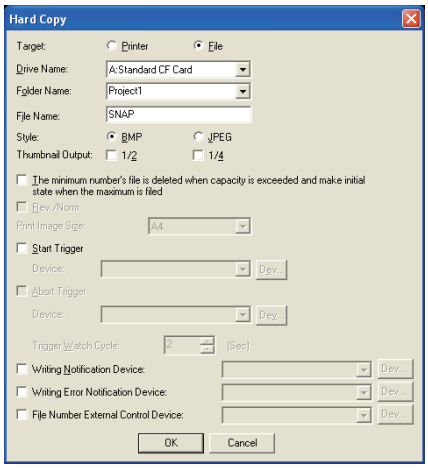
**Remark**

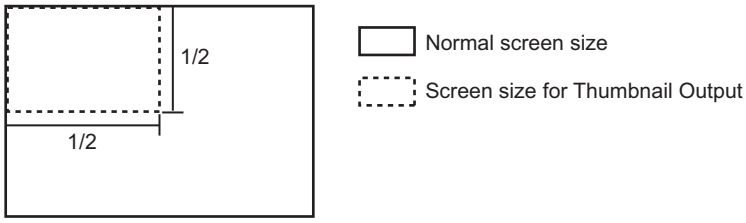
When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on Hard Copy on the project work space.

## 13.2.3 Setting items

Set the output target and the style of the hard copy.




| Items | Description | Model |
|---|---|---|
| Target | Select the output target (printer/file). | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Drive Name | Select a drive where a file is stored. | |
| Folder Name*1 | Set the name of the folder where the file is stored.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~\) can be used.<br>The current project folder name is displayed by default.<br>(☞ Section 3.1 GOT/Controller Type Setting) | |
| File Name*1 | Enter the file name.<br>Alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~\) can be used.<br>SNAP is displayed by default. | |
| Style | If [File] is selected for [Target], select the file format (BMP/JPEG). | |
| Thumbnail Output | If [File] is selected for [Target], check this item to output a small-size file for thumbnail display simultaneously.<br>A File which was output for thumbnail display can be displayed in Parts Display and Parts Movement, etc.<br>1/2 : Outputs a file whose display size is one-second of its orignal size.<br>(Output destination: Folder specified in [Folder Name]\M)<br>1/4 : Outputs a file whose display size is one-fourth of its orignal size.<br>(Output destination: Folder specified in [Folder Name]\S)<br>Example) For 1/2<br>  <br> | |

(Continued to next page)

<table>
<tr><th>Items</th><th>Description</th><th>Model</th></tr>
<tr><td>The minimum number's file is deleted when capacity is exceeded and make initial state when the maximum is filled</td><td>Select the processing method for the case in which memory card capacity is insufficient or the file of the maximum file number (9999) exists.<br>Not checked : New monitor screen will not be saved in memory card when memory card capacity is insufficient or the more than the max. number files (9999) exists.<br>Checked : Execute the following operation according to the memory card status.
<table>
<tr><th>File number in the memory card</th><th>With spare capacity in the memory card</th><th>No spare capacity in the memory card</th></tr>
<tr><td>When file No. 9999 does not exist.</td><td>Creates the file with he number next to the exiting largest file number in the memory card</td><td>Deletes the file of the smallest No. and creates a file with the number next to the largest one.</td></tr>
<tr><td>When file No. 9999 exists.</td><td colspan="2">Deletes all the data in memory card and create a new No.1 file.<br>(Data-deletion timing can be confirmed in the system information (system signal 2-1. b12).)</td></tr>
</table>
When deleting files, files that were output for thumbnail display are also deleted.</td><td rowspan="6">GT16 GT15 SoftGOT1000 GT11 GT10</td></tr>
<tr><td>Rev./Norm*2</td><td>Check to reverse and print monochrome area of the monitor screen.</td></tr>
<tr><td>Print Image Size</td><td>Select the print image size (L/Postcard/2L/A4)</td></tr>
<tr><td>Start Trigger</td><td>Set the device to start the hard copy.</td></tr>
<tr><td>Abort Trigger</td><td>Set the device used to abort printing.</td></tr>
<tr><td>Trigger Watch Cycle</td><td>Set the watch cycle of start trigger in the unit of second within a range from 2 to 60 seconds.<br>Set the bit device of the start trigger to remain on or off for the set trigger watch cycle or more.</td></tr>
<tr><td>Writing Notification Device*3</td><td>Set a device by which file writing is notified.</td><td rowspan="2">GT16 GT15 SoftGOT1000 GT11 GT10</td></tr>
<tr><td>Writing Error Notification Device*4</td><td>Set a device by which a file writing error is notified.</td></tr>
<tr><td>File Number External Control Device</td><td>If [File] is selected for [Target], check this item to control the file number (1 to 9999) with a device.<br>After the check, set the device (set "16 bit Unsigned BIN" as data format).<br>This setting is not the setting target for [The minimum number's file is deleted when capacity is exceeded and make initial state when the maximum is filed].<br>The file is not output in case of insufficient free space.<br>Even if the maximum file number (9999) exists, the file with the specified file number is output.</td><td>GT16 GT15 SoftGOT1000 GT11 GT10</td></tr>
</table>

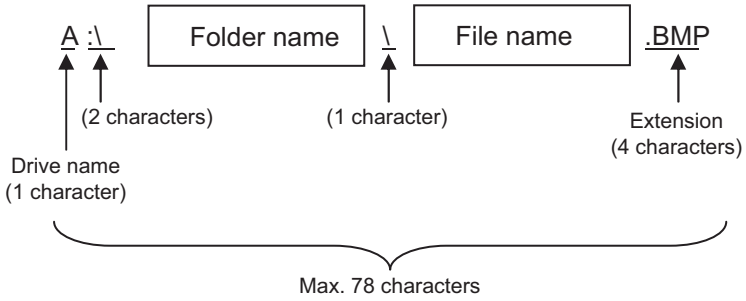
For details of *1 to *4, refer to the following.

*1 Folder Name, File Name

(1) Serial No. in file name
When a BMP/JPEG file is output to the memory card, a serial No. is appended to the set file name. The BMP/JPEG files stored on the memory card can be read out to a PC using image processing software.
Example: Storing data with the default file name (SNAP)

| No. of screens stored on memory card | File name | |
|---|---|---|
| | BMP file | JPEG file |
| 1st screen | SNAP0001.BMP | SNAP0001.JPG |
| 2nd screen | SNAP0002.BMP | SNAP0002.JPG |
| 3rd screen | SNAP0003.BMP | SNAP0003.JPG |
| : | : | : |
| 9999th screen | SNAP9999.BMP | SNAP9999.JPG |

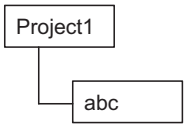
(2) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder and file name are automatically added.)
Example: BMP file Path in memory card




**Remark** When setting hierarchy to the folder

When setting [Folder Name], enter \ between folders.
(\ is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name] : Project1 \ abc



(3) Character strings that cannot be set

The following character strings cannot be used as a folder name or a file name. (They cannot be used irrespective of upper-case or lower-case characters.)

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

Also, folder and file name as shown below cannot be used.

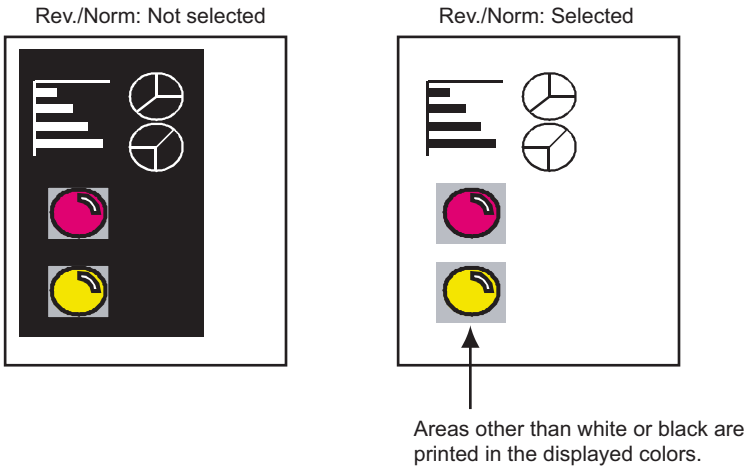
- Folder name starting as G1
- Folder and file name starting from . (period) or \
- Folder and file name ending at . (period) or \
- Folder and file name with only . (period) or .. (two periods)

(4) When setting [Thumbnail Output]

When [Thumbnail Output] is set, the folder (m or s) is created according to its file size; therefore, set the names within 76 characters.

*2 Rev./Norm

(1) Target of Rev./Norm
Rev./Norm is applied only to areas displayed in white or black.
Areas displayed in other colors (gray, red, etc.) are printed as they are.




Rev./Norm can be effectively used in the following cases.
- The screen image has large black areas and printing by white/black reverse will save printer ink.
- The screen image has large black area and printing the image as it is will be unclear to see.

(2) Changing the Rev./Norm setting using the system information
The setting for [Rev./Norm] (white/black reverse) can be changed online by changing the bit state of the following system information function devices.

- Hard copy setting validate signal (System signal 1-1.b10)
  The hard copy output setting can be changed using the system information function by turning this signal ON.
  The signal must be turned ON before executing hard copy.
  It is necessary to turn ON the signal at least about 300ms (the time taken by the GOT internal processing to recognize the changed signal state) earlier than the start of hard copy.
- Hard copy white/black reverse signal (System signal 1-1.b12)
  ON : Outputs the monitor screen after reversing white/black display.
  OFF : Outputs the monitor screen without reversing white/black display.

  (☞ Section 3.6 System Information Setting)

*3 Writing Notification Device

While file writing is being executed, the specified bit device is turned ON.
If this device is ON, writing of any other file cannot be executed. In this case, execute the writing after the device turns OFF.

*4 Writing Error Notification Device

When an error occurs in file writing, the specified bit device is turned ON.
Since this device does not automatically turn OFF even if the system is recovered from the error, turn it off manually.

## 13.2.4 Precautions

This section provides the precautions for using the hard copy function.

### 1 Precautions for drawing

(1) Number of hard copy function settings for one project
Only one hard copy function setting is available.

### 2 Precautions for use

(1) Bit device for start trigger
Be sure to turn on or off the bit device for start trigger, which is set in [Trigger Watch Cycle], for the set trigger watch cycle or more.
To use the touch switch (bit momentary), set the device with Delay setting (OFF Delay) of touch switch (bit momentary) so that it may keep ON status equal to or longer than trigger watch cycle.

(2) Hard copy during touch operation
During touch operation of the screen, the hard copy function cannot be used.

(3) If a part of GOT screen is not printed
With some models of printers, a part of GOT screen may not be printed. If this occurs, change the setting at the printer to invalidate trimming. (Note that trimming valid/invalid setting may be impossible depending on the printer model.)

(4) A printer error occurs during printing (printing may be possible if a restart button is pressed after outputting a blank sheet)
For the [Print Image Size] of the hard copy setting, set [A4] and set A4 size paper (portrait setting). *1
With some models of printers, an error occurs if the size of set paper and the set print image size do not match with each other.

*1 Even with a printer with which an error occurs if [A4] is set for [Print Image Size], printing may be possible in the print image size other than A4.
- Set [Print Image Size] at other than [A4].
- Set A4 size paper (portrait setting) in the printer.
- An error such that blank sheet is output will occur. Pressing the restart button of the printer may allow correct printing.

**Remark** Operation and setting of a printer

For the operation and setting of a printer, refer to the following manual.

☞ Manual of the printer being used

(5) If the printer power supply is OFF
If the printer power supply is OFF at the start of hard copy, the monitor screen display cannot be printed.
Turn the power supply to the printer ON.
Otherwise, a system alarm will occur (340 A printer error occurs or the power supply is OFF).
Turning the power supply ON for the printer executes printing.

(6) Hard copy execution timing
If hard copy is going to be executed while the hard copy function is being executed (when the monitor screen image is saved to the GOT internal memory or to the print/memory card), the new hard copy request is not executed. Execute the next hard copy function next after saving the monitor screen image to the print/memory card.
Whether the monitor screen image has been saved to the print/memory card can be confirmed in the system information (System signal 2-1).
☞ Section 3.6 System Information Setting

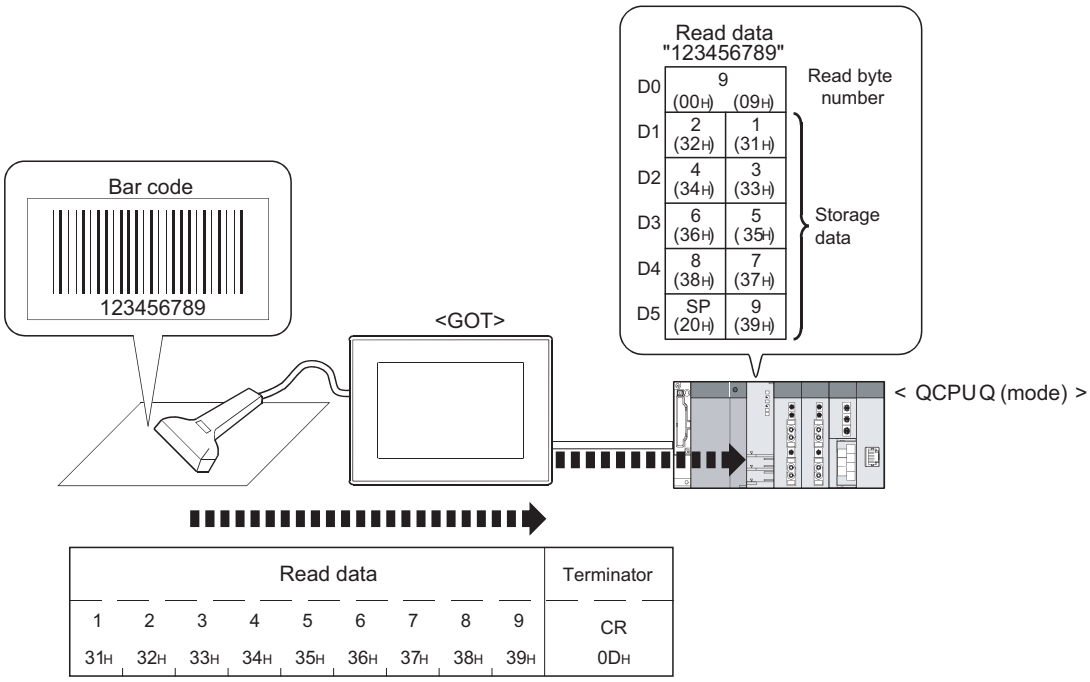
## 3 Precautions for hardware

(1) System configuration when using a printer
For the system configuration requirements for using a printer, refer to the following manual.
☞ GOT1000 Series Connection Manual

(2) Usable printers
For applicable printers, please contact your local Mitsubishi representative.

# 13.3 Bar Code Function

This function is to connect the bar code reader to GOT and write the data read by the bar code reader into controller.
The bar code reader is connected to RS-232 interface of GOT.




**Remark** Method for connecting bar code reader to GOT

For system configuration and communication setting to connect bar code reader to GOT, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter 46 Bar Code Reader Connection)

## 13.3.1 Relevant settings

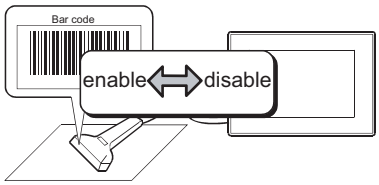
For bar code function, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description, if necessary.

(1) Functions relevant to bar code function only
…Relevant to bar code function only.

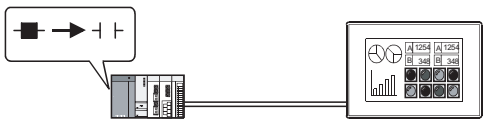
(2) Functions relevant to bar code function and others
…Confirm the relevant functions when making settings.

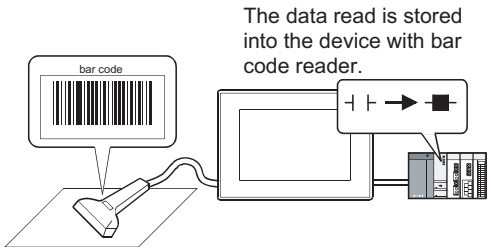
### 1 System information(☞ Section 3.6 System Information Setting)

(1) Functions relevant to bar code function only

| |
|---|
| • Bar code input disable signal (CH5 to CH8)<br>Read device:<br>System signal 1-2.b2, System signal 1-2.b5,<br>System signal 1-2.b8, System signal 1-1.b5 |
| Switch enabled/disabled of bar code function.<br>  <br> |

(2) Functions relevant to the bar code function and others

| |
|---|
| • External device I/O complete signal (CH5 to CH8)<br>Read device:<br>System signal 1-2.b3, System signal 1-2.b6,<br>System signal 1-2.b9, System signal 1-1.b6 |
| Turning on this signal turns off the external device I/O signal.<br>  <br>External device I/O complete signal turns OFF. |

| |
|---|
| • External device I/O signal (CH5 to CH8)<br>Read device:<br>System signal 2-3.b0, System signal 2-3.b1,<br>System signal 2-3.b2, System signal 2-1.b6 |
| Storing the data read with bar code reader into the specified device can be notified.<br>  <br> |

## 13.3.2 Required knowledge for setting

The following explains the required setting and function for using bar code function.

### 1 Data storage and device points read by bar code reader

(1) Device that data can be stored
The data can be stored into word device.
Word of bit device cannot be specified.

(2) Max. No. of device points
Max. 2000 points can be set.
(The data read by bar code reader can be stored in max. 1999 points of device.)

(3) Data stored in the device
Data read by the bar code reader is written into controller devices as ASCII data.
Example: Read data :F123456789
Order of writing data :low → high

(a) When the number of read data is less than the set device points
Setting (Storage device: D0, Data points: 8)

| Write device | Stored data | ASCII data |
|---|---|---|
| D0 | 0009H | - |
| D1 | 3231H | 21 |
| D2 | 3433H | 43 |
| D3 | 3635H | 65 |
| D4 | 3837H | 87 |
| D5 | 2039H | ␣9 |
| D6 | 2020H | ␣␣ |
| D7 | 2020H | ␣␣ |

␣ ? ? Space

? ? Writes the bytes that have been read

? ? Writes the read data in the order of increasing bytes

? ? If the number of bytes of the read data is smaller than the set number of device points, the data (space (20H) or NULL (00H)) to be used for filling the remaining can be selected.

(☞ 13.3.4 Setting items)

(b) When the number of the read data is more than the set device points
Setting (Storage device: D0, Data points: 4)

| Write device | Stored data | ASCII data |
|---|---|---|
| D0 | 0009H | - |
| D1 | 3231H | 21 |
| D2 | 3433H | 43 |
| D3 | 3635H | 65 |
| | | |

? ? Writes the bytes that have been read

? ? Writes the read data in order of increasing bytes

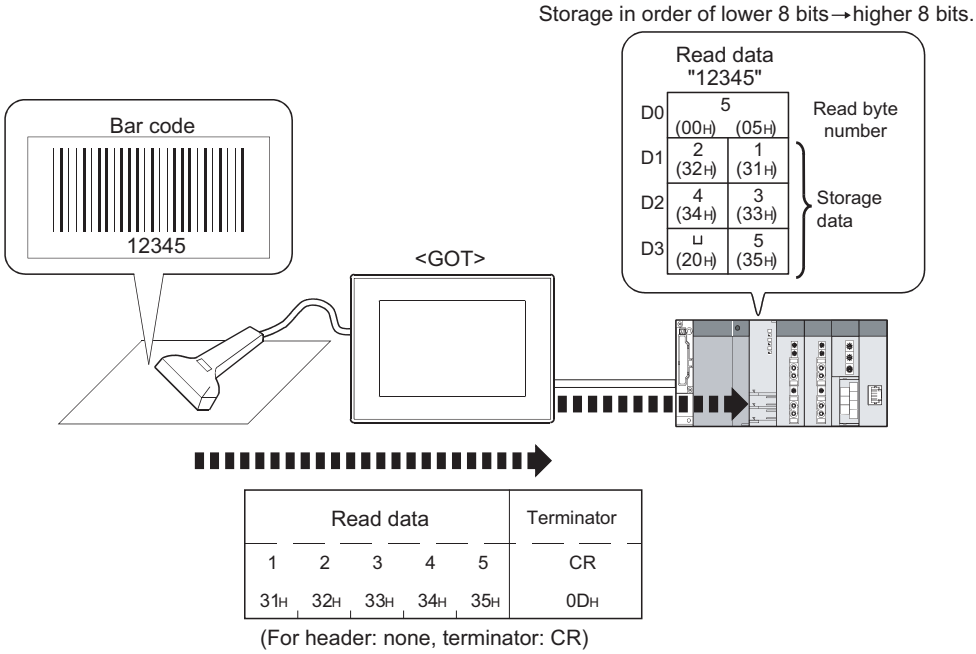
? ? Discard the data beyond the set device points

## 2 Order of writing data to controller

When writing the data read by bar code reader to controller, set the order of writing.

(1) Low → High

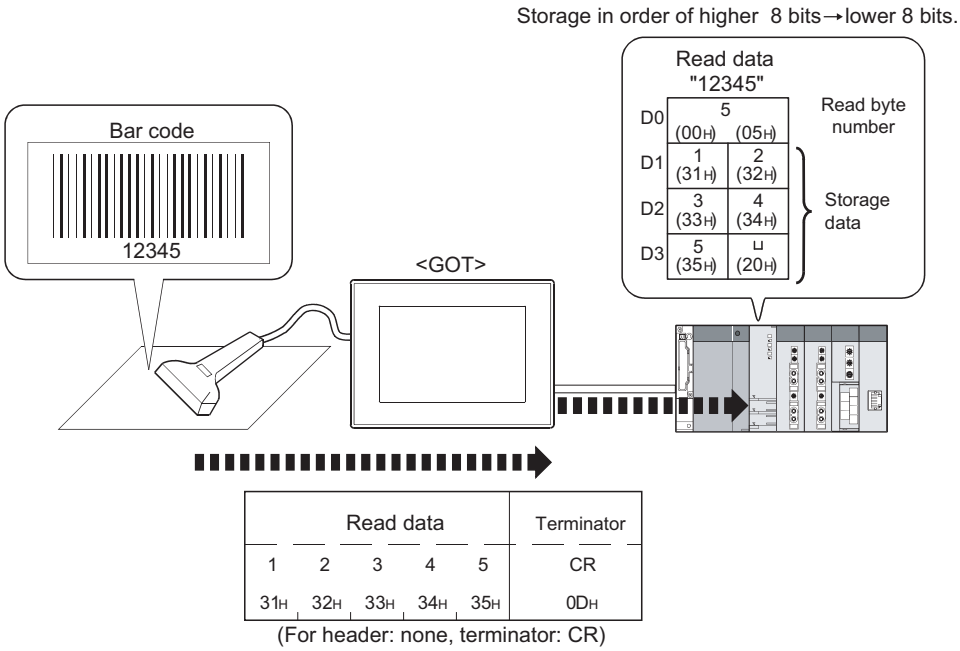
Write the data to controller device in order of lower 8 bits → higher 8 bits.




(For header: none, terminator: CR)

(2) High → Low

Write the data to controller device in order of higher 8 bits → lower 8 bits.




(For header: none, terminator: CR)

## 3 Header/terminator

The header/terminator of the bar code read by bar code reader can be set.
The following shows applicable header/terminator.

| Items | Description |
|---|---|
| Header | None (Default), STX |
| Terminator | ETX, LF, CR (Default), CR+LF |

The following explains header/terminator as example of reading "12345" by bar code reader.

(1) Header

(a) None (Default)

Set when not adding the header to the head of data.

| Read data | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 31H | 32H | 33H | 34H | 35H |

(b) STX

Set when adding the STX to the head of data.

| Header | Read data | | | | |
|---|---|---|---|---|---|
| STX | 1 | 2 | 3 | 4 | 5 |
| 02H | 31H | 32H | 33H | 34H | 35H |

(2) Terminator

(a) ETX

Set when adding the ETX to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | ETX |
| 31H | 32H | 33H | 34H | 35H | 03H |

(b) LF

Set when adding the LF to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | LF |
| 31H | 32H | 33H | 34H | 35H | 0AH |

(c) CR (Default)

Set when adding the CR to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | CR |
| 31H | 32H | 33H | 34H | 35H | 0DH |

(d) CR+LF

Set when adding the CR+LF to the end of data.

| Read data | | | | | Terminator | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | CR | LF |
| 31H | 32H | 33H | 34H | 35H | 0DH | 0AH |

## 13.3.3 Settings

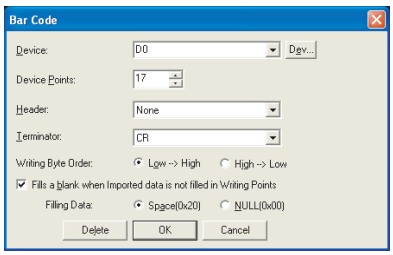
1. Select [Common] → [Bar Code] from the menu.
2. As the setting dialog box will appear, make settings with reference to the following explanations.

**Remark** When making the setting in the project workspace

The setting dialog box can be displayed by double-clicking on Bar Code in the project workspace.

## 13.3.4 Setting items

Set the device in which the data read by the bar code reader is stored.




| Items | | Description | Model |
|---|---|---|---|
| Device | | Set the head device of those used for storing the data read by the bar code reader.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Device Points | | Set the points of device used for storing the read data (2 to 2000) | |
| Header | | Set the header of bar code read by bar code reader.<br>None : No header<br>STX : Add the STX to the header. | |
| Terminator | | Set the terminator of bar code read by bar code reader.<br>ETX : Is added to the terminator.<br>LF : Is added to the terminator.<br>CR : Is added to the terminator.<br>CR+LF : Is added to the terminator. | |
| Writing Byte Order | | Set the order of writing data to controller device.<br>Low → High : The data is written to controller device in order of lower 8 bits → higher 8 bits.<br>High → Low : The data is written to controller device in order of higher 8 bits → lower 8 bits. | |
| Fills a blank when Imported data is not filled in Writing Points | | Check when filling the vacant area with space or NULL if the number of bytes of the data read by a bar code reader is smaller than the set number of device points. | |
| | Filling data | Select the data used to fill the vacant area.<br>Space : Fills vacant area with spaces ($20_H$).<br>NULL : Fills vacant area with NULLs ($00_H$). | |
| Delete | | Click the Delete button to delete the settings. | |

## 13.3.5 Precautions

This section provides the precautions for using bar code function.

### 1 Precautions for drawing

(1) Number of settable bar code function
Only one bar code function can be set for each project.

(2) Bar code that can be read
For the code that can be read, refer to the following technical news.

☞ List of valid devices applicable for GOT1000 series

**Remark** For the operation-checked models

For the operation-checked models, refer to “List of valid devices applicable for GOT1000 Series” (GOT-A-0010) separately available.
The Technical News above is available as a reference at the Information site for Mitsubishi industrial automation products.
(MELFANSweb website:http://wwwf2.mitsubishielectric.co.jp/english/index.html)

(3) System information setting

(a) System information
To connect the bar code reader to the channel No.8, set the system signal 1-1 and the system signal 2-1. To connect the bar code reader to any of the channels from No.5 to No.7, set the system signal 2-1 and the system signal 2-3.
Without setting it, the bar code function cannot be used.
Refer to the following for details of the system information.

☞ Section 3.6 System Information Setting

(b) The status of System Signal and the action of the bar code reader function
If the following system signals are ON, the data read by the bar code reader is not written to controller.
The external device I/O signal and the external device I/O complete signal can be automatically turned off by using a sequence program and others. (Refer to (c) below.)

Example: When connecting the bar code reader to the channel No.8

System signal 1-1

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

b5: Bar code input invalid signal
b6: External device I/O complete signal (CH8)

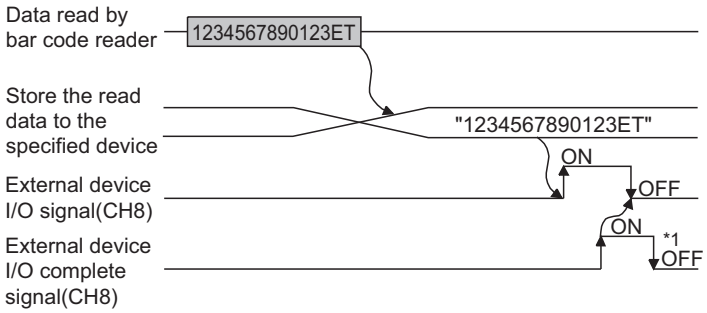
System signal 2-1

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

b6: External device I/O signal (CH8)

(c) Execution timing of the external device I/O signal and the external device I/O complete signal, and a sequence program example

- External device I/O signal (CH8) (System signal 2-1.b6)
  When the data read by the bar code reader are stored in the specified device, this signal is turned ON.
  To turn off the signal, turn on the external device I/O complete signal.
- External device I/O complete signal (CH8) (System signal 1-1.b6)
  Turning on this signal turns off the external device I/O signal.
  This signal is to be turned OFF by users.
  <Relation between bar code input and signals>



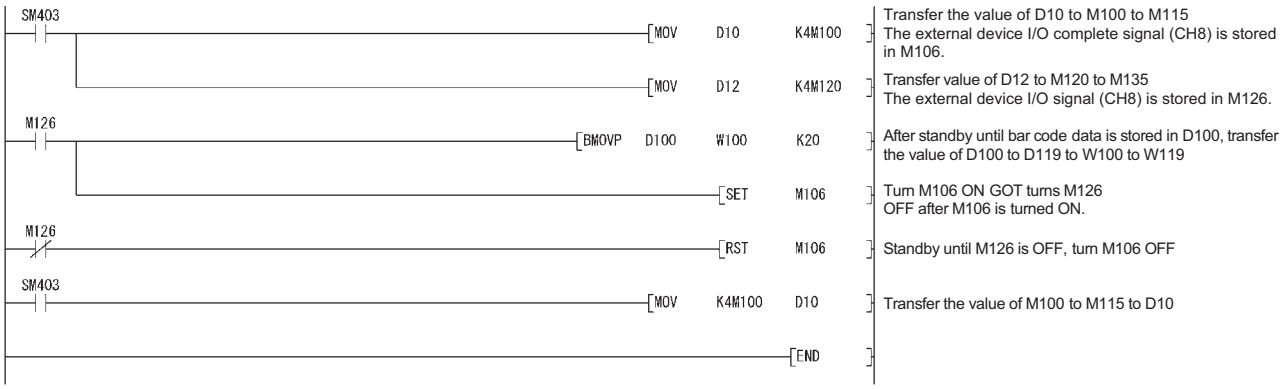

*1 After reading bar codes, make sure to turn off the external device I/O signal and the external device I/O complete signal.
Otherwise, the bar code reader will not read data next time.

<Sequence program example (When connecting the GOT to QCPU by using channel No.8)>

It is recommended to create a sequence program so that turning off the external device I/O signal turns off the external device I/O complete signal.

GT Designer2 setting
- System signal 1-1D10• DeviceD100
- System signal 2-1D12• Device points20

Signal for using in sequence program
- External device I/O complete signal (CH8) M106
- External device I/O signal (CH8) M126
- After RUN, OFF for 1 scan only SM403



## 2 Precaution for OS

To use the bar code function, install the extended function OS (bar code) in GOT.

## 3 Precaution for hardware

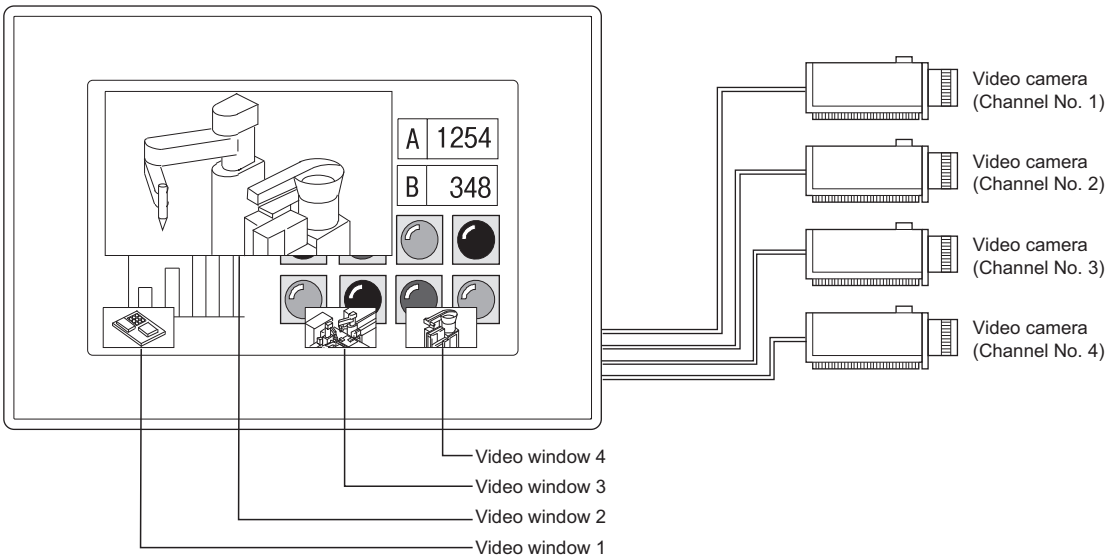
(1) System configuration

Refer to the following manuals for the system configuration for using the bar code reader.

☞ GOT1000 Series Connection Manual

# 13.4 Video Display

This section explains the function to display the image taken by a video camera on a video window.
As the video window operates independently of other screens, the base screen can be switched while leaving the video window open.




For video display, full mode (☞ This section 5) and clip mode (☞ This section 6) are provided.

<Differences between full mode and clip mode>

| Item | Full mode | | Clip mode | |
|---|---|---|---|---|
| | GT16 | GT15 | GT16 | GT15 |
| Overview | Displays the total image. | | Displays a part of the image in its original size. | |
| Video window resolution (dots) | 640 × 480 / 720 × 480 / 768 × 576 (dots) | 640 × 480 / 720 × 480 (dots) | 64 × 64 to 768 × 576 (dots) | 64 × 64 to 720 × 480 (dots) |
| Display size change | 100%, 50% or 25% of the original size | | Unchangeable (fixed at 100%) | |
| Number of screens | 4 | | 1 (video window 1 only) | |

**Point**

Selection of video image resolution and video input signal (format)

The video image resolution (640 × 480 dots, 720 × 480 dots, or 768 × 576 dots) and the video input signal (NTSC format or PAL format) can be set by the utility or the [Communication Settings] on GT Designer2.

• Utility operation

☞ GT16 User's Manual (Basic Utility) (Section 2.1 GOT Main Unit Function Settings)
GT15 User's Manual (Section 11.9 Video Unit Settings)

• About Communication Settings

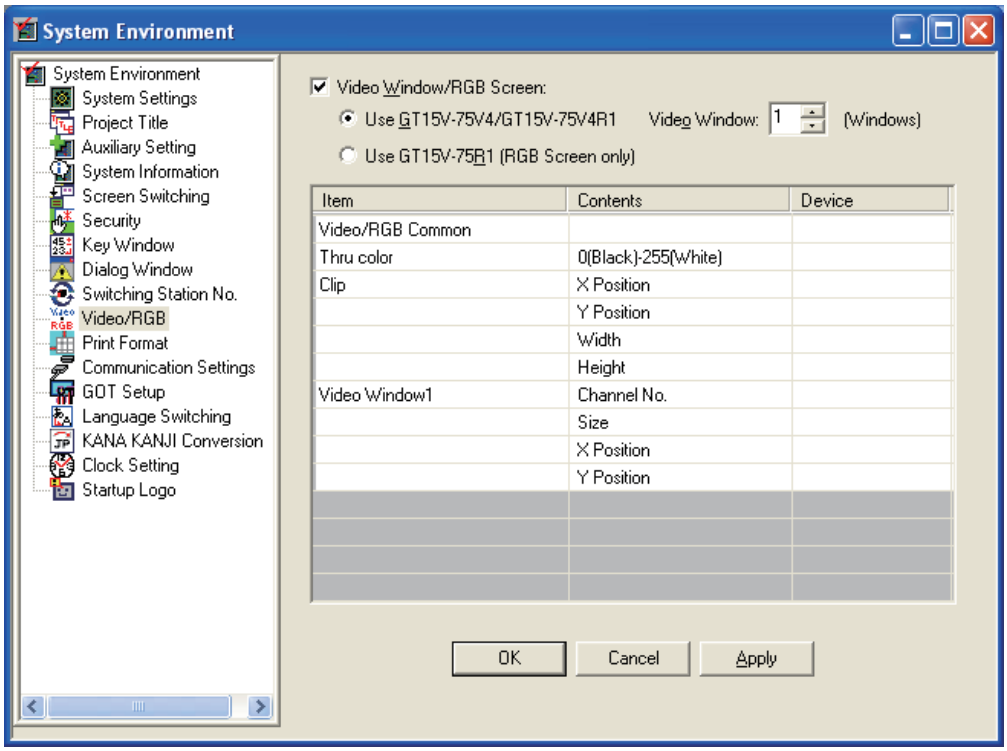
☞ Section 3.7 Communication Interface Setting (Communication Settings)

## 1 Displaying a video window

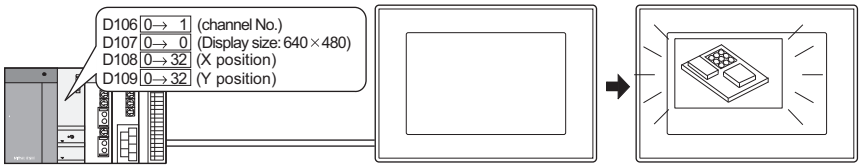
Video windows are displayed when any numbers of 1 to 4 are stored in the video window-channel No. devices.
A video window is closed when 0 is stored in the video window-channel No. device.
(There is no close button on a video window.)

Example: Displaying the image of the channel number 1 on the video window 1 for GT15

<Setting at GT Designer 2>




<Operation>




Video window 1 is displayed according to the setting for Channel No., Size, X Position and Y Position

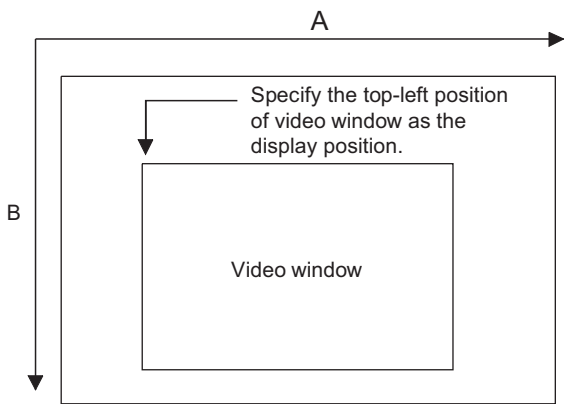
**Point**

Size and position of video window

The size and position of a video window can be controlled according to the values set at the corresponding devices (video window-size device, video window-X/Y position devices).

## 2 Display position of video window

A video window can be arranged on the base screen or overlap window 1.
The position of a video window can be specified within the range indicated below.




| GOT model | Screen type | A (dots) | B (dots) |
|---|---|---|---|
| GT1695M-X | Base screen<br>Overlap window 1 | 0 to 960 | 0 to 704 |
| GT1685M-S, GT1585V-S | | 0 to 736 | 0 to 528 |
| GT1575V-S | | 0 to 576 | 0 to 416 |

**Point**

Display of video window

(1) Setting of display position
Set the display position with a multiple of 16 (dots).
Even if the display position is set with a value other than a multiple of 16 (dots), the position is automatically adjusted to a multiple of 16 (dots).

(2) Video window arranged beyond the screen
If a video window is arranged beyond the screen, display position of the video window is automatically adjusted to fit to the screen.

(3) Order of laying video screens
A video window can be displayed over or behind overlap window (1 or 2) or a test window according to the setting for the video/RGB common device.
(☞ Section 13.4.2 Setting items)
However, the following items are displayed over a video window.
- Advanced alarm popup display
- Comment window
- Key window
- Confirmation or similar message displayed on the GOT

## 3 Method of moving video window

The move button is not provided for the video window.
To move a video window, change the device values set for the display position (X and Y coordinates).
If multiple video windows are moved frequently, an overlap window may not be moved even when the overlap window is touched.
In this case, move the overlap window by changing the device values or move it after the video window has been moved.

## 4 Placing video window on overlap window

(1) A video window can be arranged on overlap window 1 only.

(2) A window displayed over overlap window 1 will appear over a video window.
For the display order of windows, refer to the following.

☞ Section 2.1.3 Whole screen specifications

(3) When a video window is arranged on overlap window 1, transparent processing will be executed for the video window. (Refer to 8 for transparent processing.)
If figures or objects are set on overlap window, they may be visible in the background of the video window.

(4) If arrangement setting (base screen / overlap window 1) is switched while a video window is displayed, the video window is closed temporarily and then opened at the specified position (base screen / overlap window 1).

(5) The size of a video window placed over an overlap window is not changed even when the video window is touched.
To change the size of a video window, change the value of the device that has been set for window size change.

(☞ Section 13.4.2 Setting items)

## 5 Full mode

In full mode, an image taken by a video camera is displayed on the GOT as it is.
When full mode is used, up to four video windows can be displayed simultaneously.
It is also possible to display images taken by different video cameras in one video window by switching the channel No.

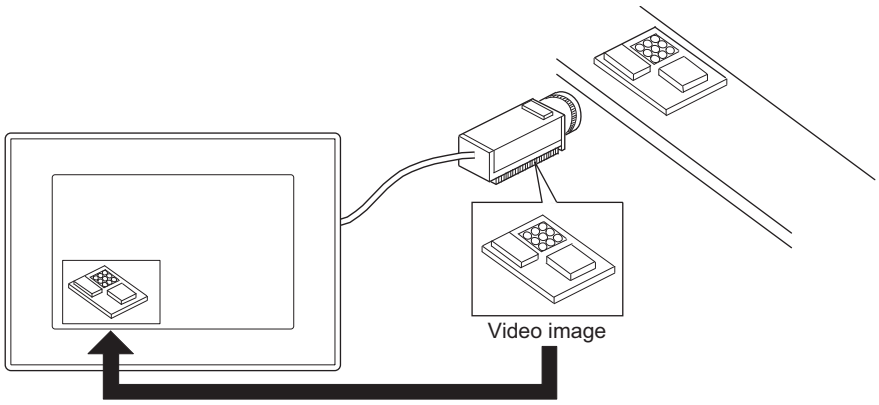



Image taken by a video camera is displayed as it is.

(1) Resolution (number of effective pixels) and display size of video window
The following shows the resolution of video windows that can be displayed in full mode.
• 640 × 480 dots • 720 × 480 dots • 768 × 576 dots
(The resolution of 768 × 576 dots is available for GT16 only.)
The display size of each video window can be changed in three levels (100%, 50%, or 25%).

| Display size | Resolution of video windows*1 | | |
|---|---|---|---|
| | Resolution of 640 × 480 dots | Resolution of 720 × 480 dots | Resolution of 768 × 576 dots |
| 100% | 640 × 480 dots | 640 × 480 dots | 768 × 576 dots |
| 50% | 320 × 240 dots | 320 × 240 dots | 384 × 288 dots |
| 25% | 160 × 120 dots | 180 × 120 dots | 192 × 144 dots |

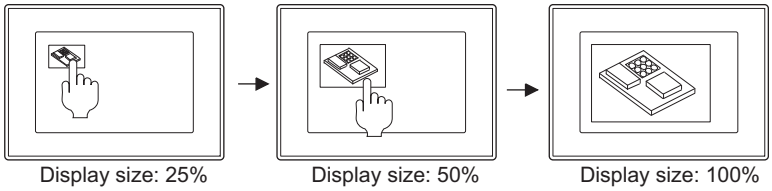
*1 The same resolution is set for 4 channels.

(2) Changing the display size

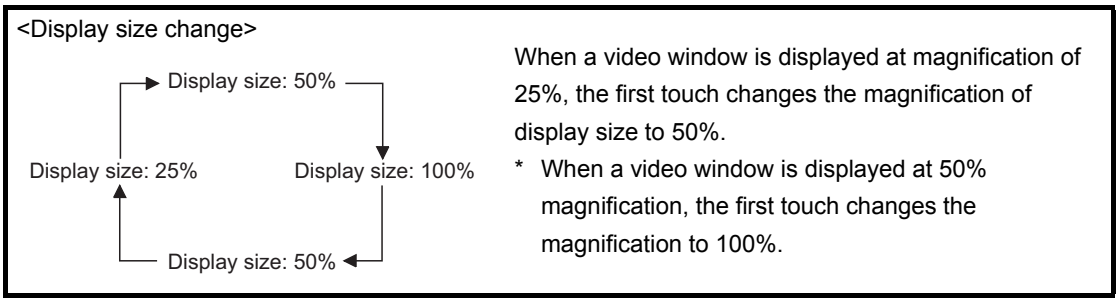
To change the display size of a video window, use the methods indicated below.

(a) Changing the size by touching the video window

(Changing the size by touching can be disabled by turning b4 of the [Video/RGB Common] device ON. (Refer to Section 13.4.2 2 ))

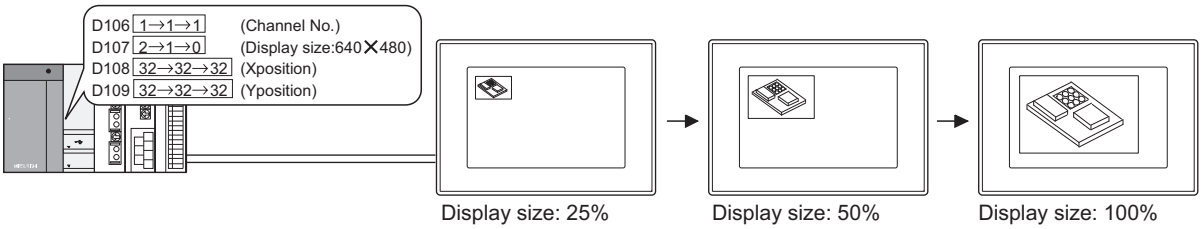



When the video window display size is changed by touching, the window size changes as follows.




(b) Changing the size by writing a value to the display size setting device

(Window display size and the value to be written ... 0: 100%, 1: 50%, 2: 25%)




(3) Display of multiple video windows

(a) The video window displayed last is located at the topmost position.

(b) The video window, of which the display position or size is changed, is displayed in the topmost position.

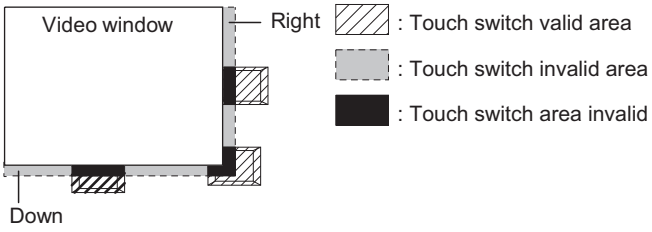
(c) When video windows are superimposed, the hidden video window is displayed in the topmost position when it is touched.

If transparent processing is executed, video windows do not operate as above.

(d) Do not display the same image (taken by the same channel) in multiple video windows.

If an attempt is made to display the same image in multiple video windows, the image is displayed only in the video window assigned with the smallest number and not displayed in other video windows.

(4) Invalid area of a touch switch around the video window
Depending on the size of displayed video window, the following areas are invalid for touch switches.




| Display size | Resolution of 768 × 576 dots | Resolution of 720 × 480 dots | Resolution of 640 × 480 dots |
|---|---|---|---|
| 100% | 768 × 576 dots (No invalid area) | 720 × 480 dots (No invalid area) | 640 × 480 dots (No invalid area) |
| 50% | 384 × 288 dots (No invalid area) | 360 × 240 dots (Invalid area: Right 8 dots) | 320 × 240 dots (No invalid area) |
| 25% | 192 × 144 dots (No invalid area) | 180 × 120 dots (Invalid area: Right 12 dots, Lower 8 dots) | 160 × 120 dots (Invalid area: Lower 8 dots) |

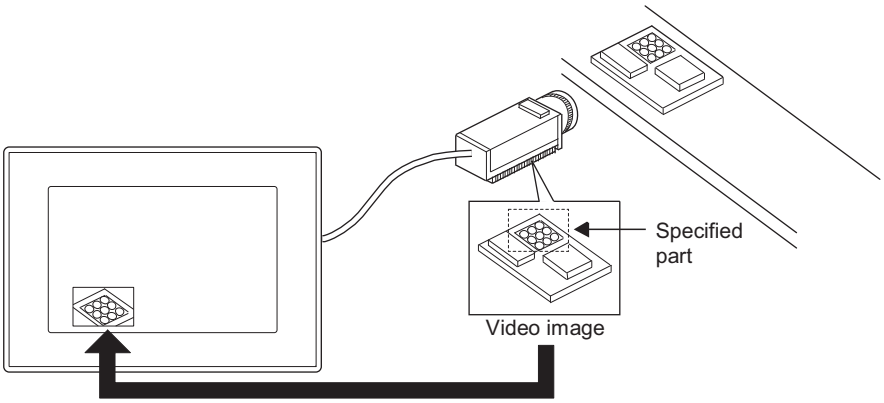
**Point**

Precautions for using the full mode

(1) When the display size of a video window is returned to the size when the video window was displayed by touch operation, the display position is also returned to the position when the video screen was displayed.
(2) If the resolution of a video image is higher than the resolution of a video window, a part of the image is not displayed in the video window.
The image display position can be adjusted by changing the setting for the video display setting items of the utility.
(3) If the resolution of a video window displayed on the GOT is higher than that of the video image, in the window area where the video image is not displayed, bright points or indefinite colors are displayed.

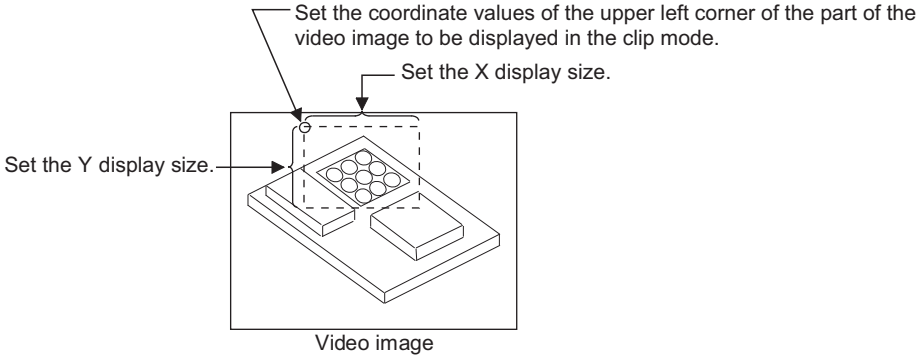
## 6 Clip mode

This mode is used to specify a part (clip area) of the image taken by a video camera and display it in the original size on the GOT.
With this mode, the video window display area can be reduced without reducing the size of the image to be displayed.
The clip mode can be used only in video window 1 and cannot be used in video windows 2 to 4.




The specified part of video image is displayed in the actual size.

(1) Selecting a clip area
When setting a clip area, specify the upper left corner of the part of the video image to be displayed by its coordinate values and specify the vertical size (Y: 64 to 768 dots) and the horizontal size (X: 64 to 576 dots).




**Point**

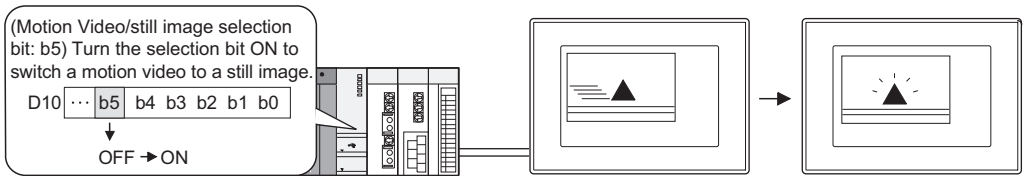
Operations of video windows 2 to 4 in clip mode

(1) When switched from full mode to clip mode
If the mode is switched from full mode to clip mode while any or all of video windows 2 to 4 are open, these video windows are erased forcibly.

(2) When switched from clip mode to full mode
When the mode is switched back from clip mode to full mode, any or all of video windows 2 to 4 are displayed according to the channel number, display position and display size specified at that timing.

## 7 Still image

The video image displayed in full or clip mode can be switched to a still image.
When multiple video windows are displayed in full mode, the video images displayed on them are all switched to still images.




**Point**

Precautions for using still images

(1) Operations that are invalid during still image display
The operations indicated below are disabled during still image display.
To enable these operations, switch the mode back to the motion video mode.
- Changing the video window channel
- Changing the display size
- Changing the display position
- Erasing the video window
- Displaying the video window

(2) Video window on overlap window
Do not move an overlap window when the image in the video window arranged on the overlap window is switched to a still image.
If the overlap window is moved, the still image is not displayed.

(3) Turning the GOT ON
When a still image is displayed (motion video/still image selection bit: ON), do not turn ON the power to the GOT.
If the power to the GOT is turned ON while the bit is ON, the video window cannot be displayed.

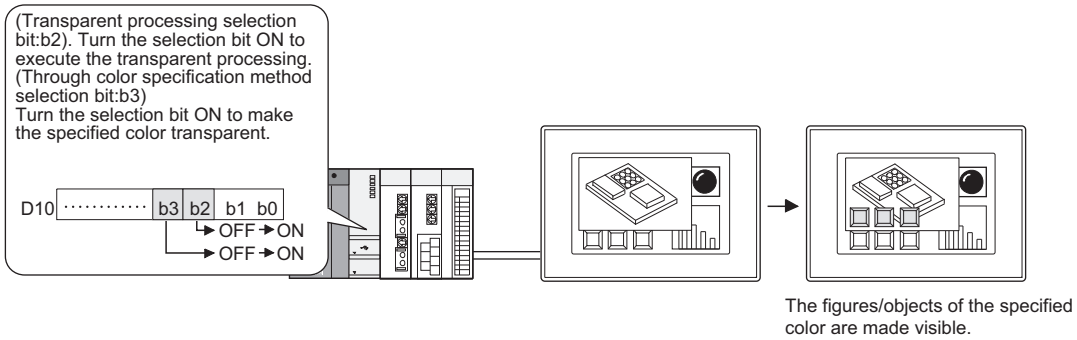
## 8 Transparent processing

(1) Transparent processing

It is possible to display the objects or figures located behind the video window by specifying the through color.

There are two processing methods: “making colors other than the specified color transparent” and “making the specified color transparent”.

When multiple video windows are displayed, transparent processing is performed on all windows.




Example:

| Through color specification method selection bit: b3 | Through color | Display |
|---|---|---|
| OFF (makes the specified color transparent) | 0 (black) | Figures or objects of colors other than black are visible on the video window. |
| ON (makes colors other than the specified color transparent) | 0 (black) | Figures or objects of black color are visible on the video window. |

**Point**

When a video window is arranged on an overlap window

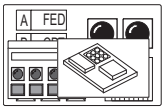
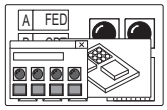
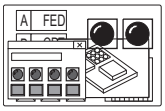
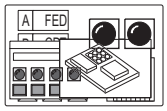
When a video window is arranged on overlap window 1, the transparent processing is automatically executed even if the transparent processing selection bit (b2) is OFF.

**Hint!**

Touch switches and numerical/ASCII inputs behind the video window

By executing the transparent processing, objects such as touch switches and numerical/ASCII input functions behind the video window are made visible.
(While the transparent processing is applied, the video window size does not change even if it is touched.)

(2) Display examples (with and without transparent processing)

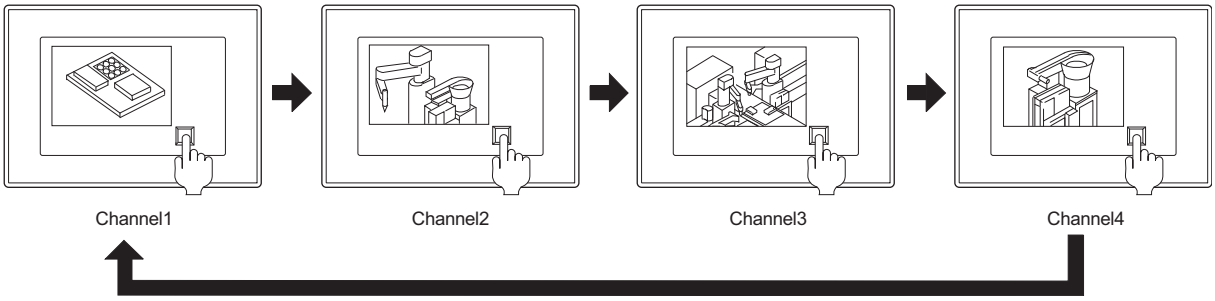
| Item | Display example | | |
|---|---|---|---|
| Transparent processing is not executed |  Front display |  Back display | A video window is displayed at the front of the base screen.<br>For overlap and test windows, it is possible to select whether a video window is arranged at the front or back of an overlap or test window. |
| Transparent processing is executed |  Transparent processing target:<br>Base screen |  Transparent processing target:<br>Base screen<br>Overlap window | A video window is displayed at the back of the base screen.<br>If the target of transparent processing is only the base screen, the overlap window is not made visible.<br>If both the base screen and an overlap window are set as the target of transparent processing, both of them are made visible. |

## 9 Application examples of video window

The following are examples of video window usage.

(1) Switching the channel by touch switch

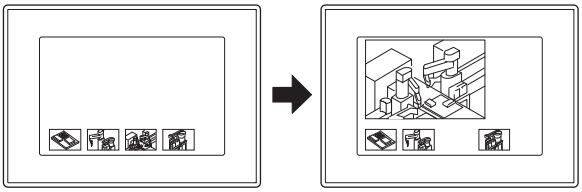
The channel displayed on video window 1 is switched each time the touch switch is touched.




| Device | Setting | Device | Setting | Device | Setting |
|---|---|---|---|---|---|
| D100 | – | D106 | 1 → 2 → 3 → 4 → 1•••Repeated (Channel No.) | D108 | 32 (X position) |
| | | D107 | 0 (size) | D109 | 32 (Y position) |

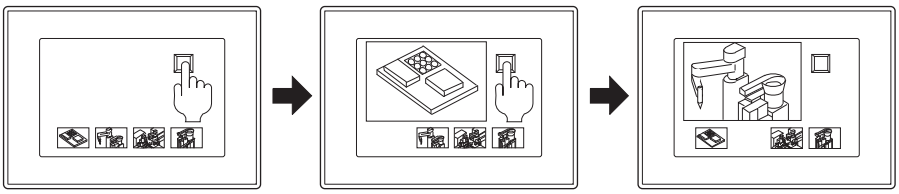
(2) Enlarging the screen as necessary

(a) In a normal state, small-size video windows are displayed at the bottom of the screen and they are enlarged when necessary. (The size is changed by the sequence program or a touch switch.)



| Device | Setting | Device | Setting | Device | Setting |
|---|---|---|---|---|---|
| D100 | – | D106 | 1 (Channel No.) | D114 | 3 (Channel No.) |
| | | D107 | 2 (Size) | D115 | 2 → 0 (Size) |
| | | D108 | 32 (X position) | D116 | 384 → 32 (X position) |
| | | D109 | 480 (Y position) | D117 | 480 → 0 (Y position) |
| | | D110 | 2 (Channel No.) | D118 | 4 (Channel No.) |
| | | D111 | 2 (Size) | D119 | 2 (Size) |
| | | D112 | 208 (X position) | D120 | 560 (X position) |
| | | D113 | 480 (Y position) | D121 | 480 (Y position) |

(b) In a normal state, small-size video windows are displayed at the bottom of the screen and they are enlarged one by one when necessary. (The size is changed by a touch switch and script.)

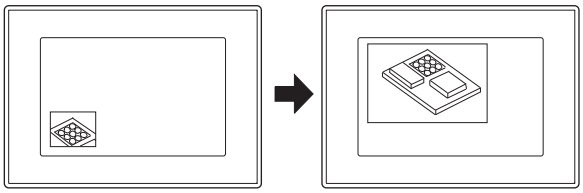


| Device | Setting | Device | Setting | Device | Setting |
|---|---|---|---|---|---|
| D100 | – | D106 | 1 (Channel No.) | D114 | 3 (Channel No.) |
| | | D107 | 2 → 0 → 2 (Size) | D115 | 2 (Size) |
| | | D108 | 32 → 32 → 32 (X position) | D116 | 384 (X position) |
| | | D109 | 480 → 0 → 480 (Y position) | D117 | 480 (Y position) |
| | | D110 | 2 (Channel No.) | D118 | 4 (Channel No.) |
| | | D111 | 2 → 2 → 0 (Size) | D119 | 2 (Size) |
| | | D112 | 208 → 208 → 32 (X position) | D120 | 560 (X position) |
| | | D113 | 480 → 480 → 0 (Y position) | D121 | 480 (Y position) |

Write a script that repeats the following operations each time a touch switch is touched.

(1) Window 1 Small → Large
(2) Window 1 Large → Small
Window 2 Small → Large
(3) Window 2 Large → Small
Window 3 Small → Large

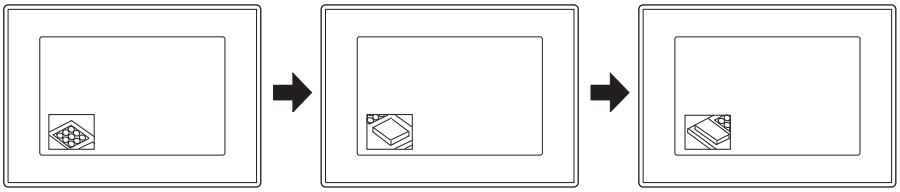
(c) In a normal state, a part of a video image is displayed at the bottom of the screen and it is switched to the display of full size when necessary. (The video display mode is switched between full mode and clip mode by the sequence program or a touch switch.)



| Device | Setting | Device | Setting | Device | Setting |
|---|---|---|---|---|---|
| D100 | Full mode / Clip mode selection<br>D100.b0 ON → OFF | D101 | 70 (X position of the clipped area) | D105 | 1 (Channel No.) |
| | | D102 | 50 (Y position of the clipped area) | D106 | 0 (Size) |
| | | D103 | 256 (Width of the clipped area) | D107 | 32 (X position) |
| | | D104 | 256 (Height of the clipped area) | D108 | 400 → 32 (Y position) |

(3) Changing the display target part of video image

A part of a video image is displayed at the bottom of the screen and the display position is switched when necessary. (The X and Y coordinates of the area to be clipped are switched by the sequence program or a touch switch.)



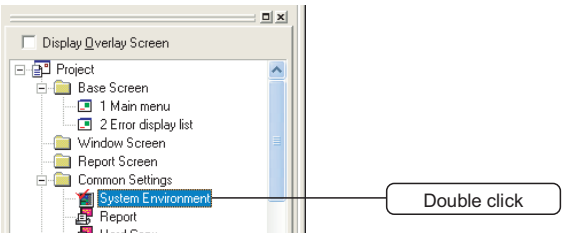
| Device | Setting | Device | Setting | Device | Setting |
|---|---|---|---|---|---|
| D100 | Clip mode selection | D101 | 70 → 90 → 80<br>(X position of the clipped area) | D105 | 1 (Channel No.) |
| | | D102 | 50 → 60 → 20<br>(Y position of the clipped area) | D106 | 0 (Size) |
| | | D103 | 256 (Width of the clipped area) | D107 | 112 (X position) |
| | | D104 | 256 (Height of the clipped area) | D108 | 112 (Y position) |

## 13.4.1 Settings

1. Select [Common] → [System Environment] from the menu.
2. Select [Video/RGB] in the System Environment dialog box.
3. The dialog box is displayed. Make setting in this dialog following the instructions given below.

**Remark** When making selection at the project workplace

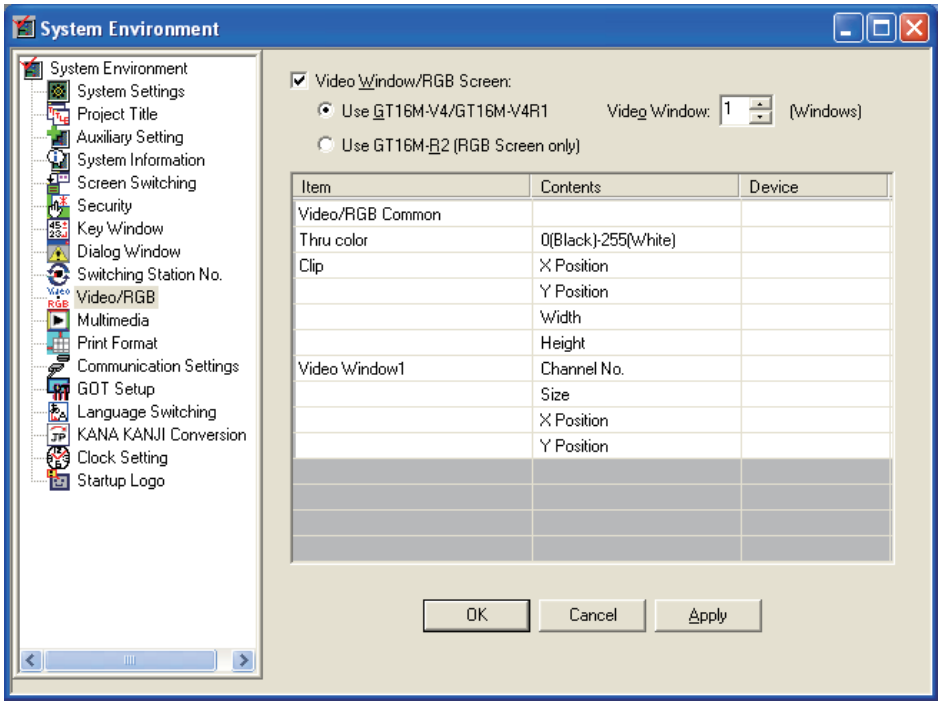
Double click on [System Environment] to display the System Environment dialog.
Double click on [Video/RGB].



## 13.4.2 Setting items

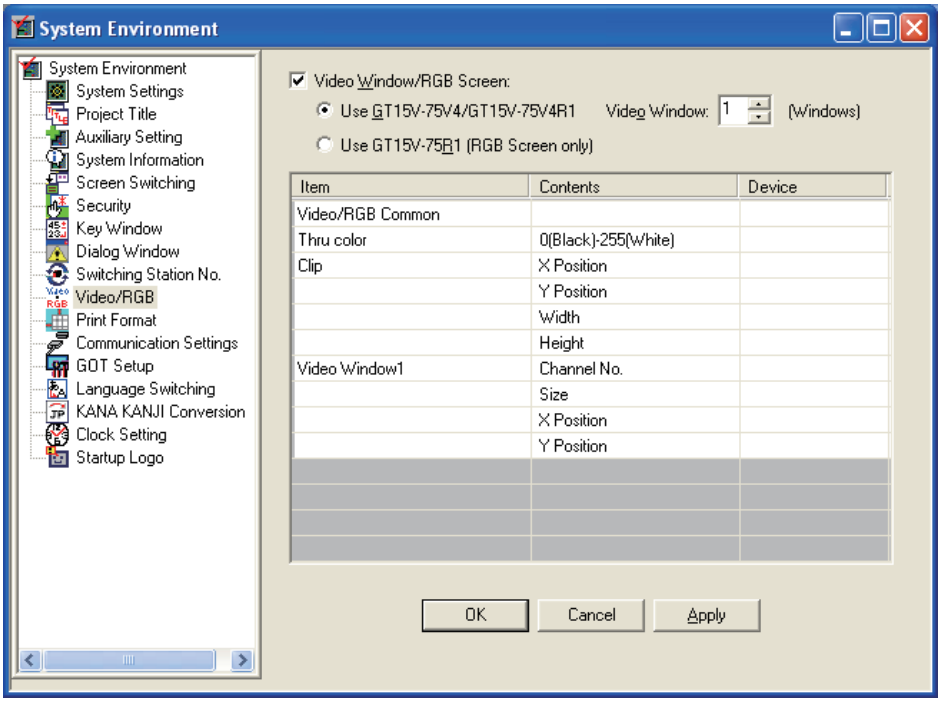
Set the device to be used for video display.
The dialog box is used in common for the video display setting and RGB display setting.

### 1 For GT16




| Item | Description | Model |
|---|---|---|
| Video Window/RGB Screen | Check this item when using the video window or the RGB screen.<br>Use GT16M-V4/GT16M-V4R1:<br>Check this item when using the video window only or both the video window and the RGB screen.<br>Then, set the number of video windows to be used for video display.<br>Use GT16M-R2 (RGB Screen only):<br>Check this item when using the RGB screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Video/RGB setting list | Set the devices that are used for video window/RGB screen display.<br>When a device is set for [Video/RGB Common], devices are automatically set for the succeeding items.<br>(When [Use GT16M-R2 (RGB Screen only)] is selected, the device is set for [Video/RGB Common] only.)<br>The values set at the devices used for video window/RGB screen display are handled as 16-bit binary values.<br>For details of the Video/RGB setting list, refer to 3 and 4 in this section. | |

## 2 For GT15




| Item | Description | Model |
|---|---|---|
| Video Window/RGB Screen | Check this item when using the video window or the RGB screen.<br>Use GT15V-75V4/GT15V-75V4R1:<br>Check this item when using the video window only or both the video window and the RGB screen.<br>Then, set the number of video windows to be used for video display.<br>Use GT15V-75R1 (RGB Screen only):<br>Check this item when using the RGB screen. | GT16 GT15 SoftGOT1000 GT11 GT10<br>*1 |
| Video/RGB setting list | Set the devices that are used for video window/RGB screen display.<br>When a device is set for [Video/RGB Common], devices are automatically set for the succeeding items.<br>(When [Use GT15V-75R1 (RGB Screen only)] is selected, setting is necessary only for the Video/RGB Common device.)<br>The values set at the devices used for video window/RGB screen display are handled as 16-bit binary values.<br>For details of the Video/RGB setting list, refer to 3 and 4 in this section. | |

*1 Applicable to only GT1585V-S and GT1575V-S.

## 3 Details of device settings to be set at GT Designer2

The table below shows the details of device settings to be set in the video/RGB setting list.

| Item | Description | Setting |
|---|---|---|
| Vide/RGB Common *1 | – | Device that controls the operation of a video window and an RGB screen<br>(For details of the device, refer to 4 .) |
| Thru color | 0 (Black) - 255 (White) | Specify a color when executing transparent processing. |
| Clip | X Position | Specify the X coordinate of the position to display a video image in clip mode. |
| | Y Position | Specify the Y coordinate of the position to display a video image in clip mode. |
| | Width | Specify the video image clipping width. |
| | Height | Specify the video image clipping height. |
| Video Window1*2 | Channel No. | Specify the channel No. of a video image to be displayed in video window 1. (0 to 4) |
| | Size*3 | Specify the size of a video window.<br>(0: 100%, 1: 50%, 2: 25%) |
| | X Position | Specify the X coordinate of the position to display a video window. |
| | Y Position | Specify the Y coordinate of the position to display a video window.. |

*1 When displaying an RGB screen, settings for other than the [Video/RGB Common] device are not required.

*2 To set multiple video windows, set video windows 2 to 4. (Setting contents are the same as those for video window 1.)

*3 When the display size of a video window is changed by touching, the value set for the corresponding device remains unchanged.

## 4 Setting items of [Video/RGB Common] device

The device specified as the [Video/RGB Common] device stores the data as indicated below.
It controls the operation of the video window / RGB screen by turning ON/OFF the bit devices.
The settings for a video window are used in common to video windows 1 to 4.

| Bit position | Description | Bit status | Remarks |
|---|---|---|---|
| b0 | Full/Clip mode selection | ON : Selects clip mode.<br>OFF : Selects full mode. | Valid when a video window is displayed.<br>Bit status can be changed while a video window is displayed. |
| b1 | Screen selection for placing a video window | ON : Selects overlap window 1.<br>OFF : Selects the base screen. | Transparent processing is executed automatically when b1 is ON. |
| b2 | Transparent processing selection | ON : Executes transparent processing.<br>OFF : Does not execute transparent processing. | Section 13.4 8 Transparent processing |
| b3 | Through color specifying method selection | ON : Makes colors other than the specified color transparent.<br>OFF : Makes the specified color transparent. | |
| b4 | Selection for whether or not the display size of video window is changed when touched | ON : Does not change the size.<br>OFF : Changes the size. | Valid when a video window is opened.<br>Bit status can be changed while a video window is displayed. |
| b5 | Selection for motion video / still image*1 | ON : Selects still image.<br>OFF : Selects motion video. | Section 13.4 7 Still image |
| b6*3 | Display priority selection for video windows<br>(When b2 (Transparent processing selection) is OFF.) | ON : Displays a video window over an overlap window or a test window.<br>OFF : Displays a video window behind an overlap window or a test window. | Valid when a video window is opened.<br>Bit status can be changed while a video window is displayed. |
| | Selection for transparent processing target screen<br>(When b2 (Transparent processing selection) is ON.) | ON : Base screen only<br>OFF : Base screen and overlap windows 1 and 2 | — |
| b7 to b12 | Must not be used | — | — |
| b13 | Display position of RGB screen | ON : Displays on the upper left side.<br>OFF : Displays on the middle side. | Valid only GT16<br>Section 13.5 RGB Display |
| b14 | Selection for display/hide of RGB screen (CH2)*2*4 | ON : Displays an RGB screen.<br>OFF : Displays a GOT monitor screen. | Valid when mounting the GT16M-R2 on GT16<br>Section 13.5 RGB Display |
| b15 | Selection for display/hide of the RGB screen*2 | ON : Displays an RGB screen.<br>OFF : Displays a GOT monitor screen. | Section 13.5 RGB Display |

*1 When this bit is turned ON with other bits at the same time, the contents of other bits are disregarded. (b5 has priority.)

*2 When a screen of the utility, system monitor function, ladder monitor function, intelligent module monitor function, network monitor function, or list editor function is displayed on the GOT, an RGB screen is not displayed even if the bit turns ON.
An RGB screen is displayed after the completion of the functions.

*3 The contents of control differ depending on the setting for b2 (Transparent processing selection).

*4 When both b14 and b15 are turned on, b15 has priority.

## 13.4.3 Precautions

This section provides the precautions to be attended to when using the video display function.

### 1 Precautions for drawing

(1) Number of video display function objects that can be set
Only one object can be set for one project.

(2) Arranging object on video window
Objects cannot be arranged on a video window.

(3) Video display, RGB screen, and multimedia screen
The simultaneous display of a video window, RBG screen, and multimedia screen is not available.

### 2 Precautions for OS

To use video display, be sure to install the extended function OS (Video/RGB) in the GOT.

### 3 Precautions for hardware

(1) GOTs that can be used
Video display can be used only on the GOT indicated below:
• GT16 • GT1585V-S • GT1575V-S

(2) System configuration for using a video camera
For the system configuration for using a video camera, refer to the following manual.

☞ GOT1000 Series Connection Manual

(3) For applicable video cameras, please contact your local Mitsubishi representative.

## 4 Precautions for use

(1) Display of video image

(a) If a video signal is not input to the specified channel due to cable disconnection or power-off of a video camera, a video image is not displayed.

(b) A video image may be given in still image or disappear temporarily when the hard copy function is executed or when a system message is displayed/cleared.

(c) A video image may be disturbed or stopped depending on the setting for [Horizontal] or [Vertical] of the utility (video display setting).
(In this case, the normal display will be restored by changing the settings to default values.)
Whether or not such a problem occurs depends on the used equipment such as a video camera.
Use values that allow normal video display.
For the operations of the utility, refer to the following manual.

☞ GT16 User's Manual (Basic Utility)
GT15 User's Manual

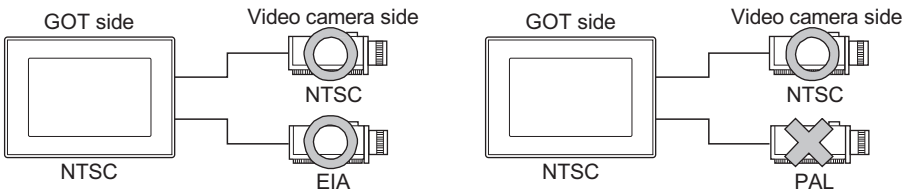
(2) Output format of video camera and video input signal setting
Set a video input signal according to an output format of the video camera to be connected as shown below.
If the setting is different, some video images may not be displayed correctly.

| Output format of video camera | Video input signal setting |
|---|---|
| NTSC format | NTSC |
| PAL format | PAL |
| EIA format | NTSC |
| CCIR format | PAL |

**Point**

When using multiple video cameras

When using multiple video cameras, refer to the above table. Select video cameras with output formats that correspond to the input signal setting of the GOT.
Only one video input signal can be set for each project.
When the output format of the video camera does not correspond to the video input signal setting of the GOT, some video images may not be displayed correctly.



# 13.5 RGB Display

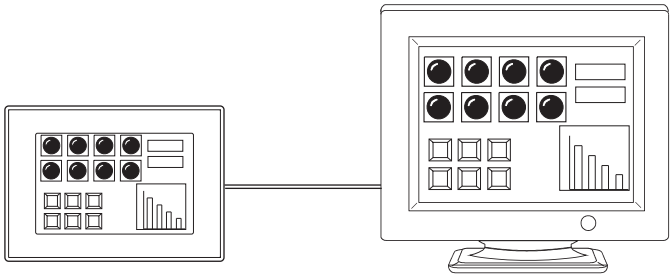
With the RGB display function, a screen of a personal computer can be displayed on the GOT.
The RGB screen can be used with the resolutions and the refresh rates shown below.

| Resolution | Refresh rate (Hz) |
|---|---|
| XGA (1024 × 768 dots)*1 | 60 |
| SVGA (800 × 600 dots) | 60/72/75 |
| VGA (640 × 480 dots) | 60/72/75/85 |

*1 Selectable for the GT16 only.

**Remark** About RGB output

Outputting (RGB output) of a GOT screen to a commercially-available display is also possible.



To execute the RGB output, set RGB output in Communication Settings.

(☞ Section 3.7 Communication Interface Setting (Communication Settings))

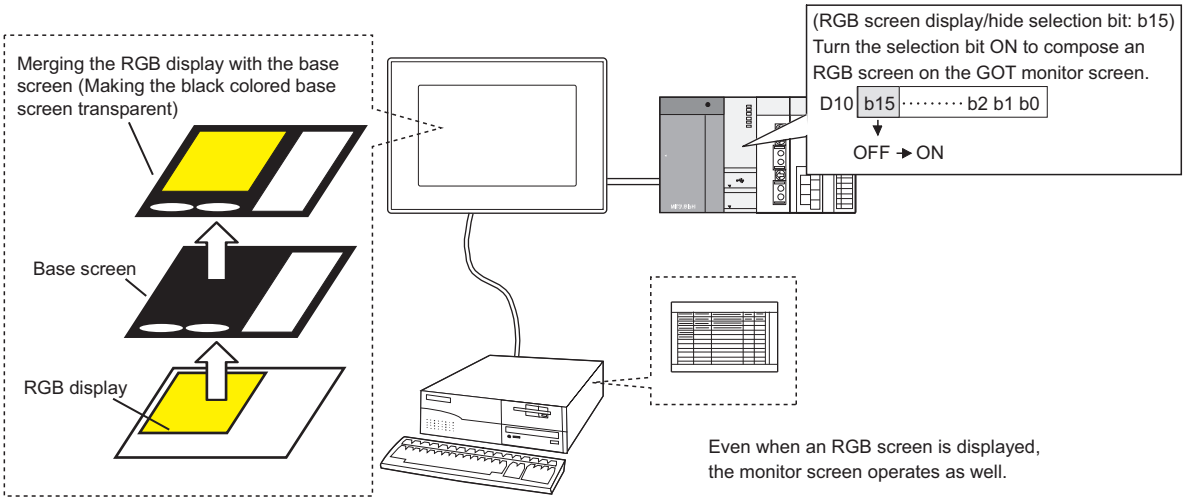
For the system configuration for using the RGB output, refer to the following manual.

☞ GOT1000 Series Connection Manual

## 1 Displaying the RGB screen

The RGB screen is composed and displayed on the monitor screen of the GOT according to the ON/OFF setting of the RGB screen display/hide selection bit (bit device in a word device).
The RGB screen is displayed through a black colored base screen by making the base screen transparent.
Set the screen color of the base screen to black.
For how to set the screen color, refer to the following.

☞ GT Designer2 Version2 Basic Operation/Data Transfer Manual
(Section 7.9 Changing Screen Property)




(1) Display position

(a) When the resolution of RGB display screen is lower than that of the GOT screen for GT16, an RGB display position can be selected for the upper left side or the middle side of the GOT.
The RGB display position is set on [Video/RGB Common] for the System Environment dialog box.
For the setting method, refer to the following.

☞ 13.5.3 Setting items

When the resolution of an RGB display screen is lower than that of the GOT screen for GT15, the RGB screen is displayed at the upper left side of the GOT.

(b) The RGB display can be performed only for the user-created screen.
Screens other than the user-created screen (such as the utility, ladder monitor screen) are not composed with the RGB screen.

(c) The display position may be out of place depending on the RGB output device.
If the display position is out of place, adjust the position at the utility ([RGB Display Settings] of [Display Position]) of the GOT.
For details of the utility, refer to the following manual.

☞ GT16 User's Manual (Basic Utility)
GT15 User's Manual

(2) Displaying a window screen
An overlap window and a test window are displayed over the RGB screen after composition.
A superimpose window is displayed as a part of the base screen.

(3) Channel switching for RGB screen

When GT16 with the GT16M-R2 is used, an input source for an RGB screen to be displayed can be selected from CH1 or CH2.

The input source channel is set for [Video/RGB Common] on the System Environment dialog box. For the setting method, refer to the following.

☞ 13.5.3 Setting items

**Hint!**

(1) To use the RGB screen efficiently

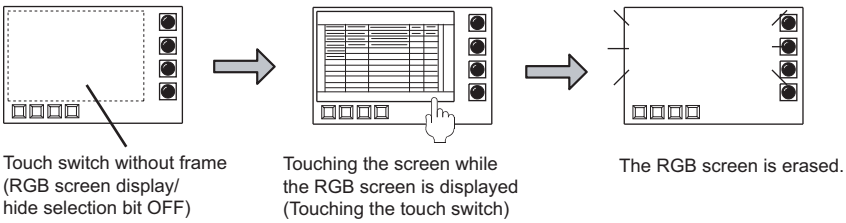
It is convenient to make a touch switch without frame at the position where the RGB screen is displayed and set the functions to display a menu for monitor screens or to hide the RGB screen to this touch switch.

- Displaying a menu for monitor screens

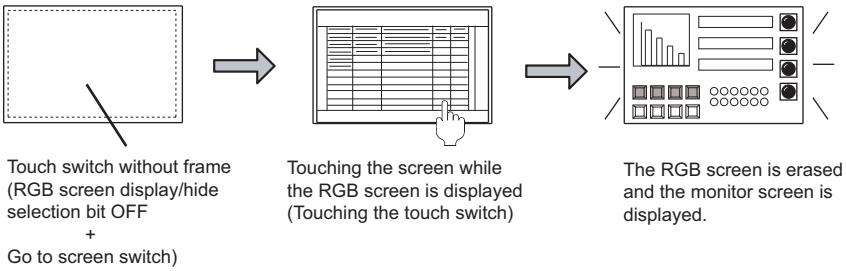
  Make the setting for displaying an overlap window to a touch switch.
- Hiding the RGB screen

  Make the setting for turning the RGB screen display/hide selection bit OFF.

Example: When hiding the RGB screen

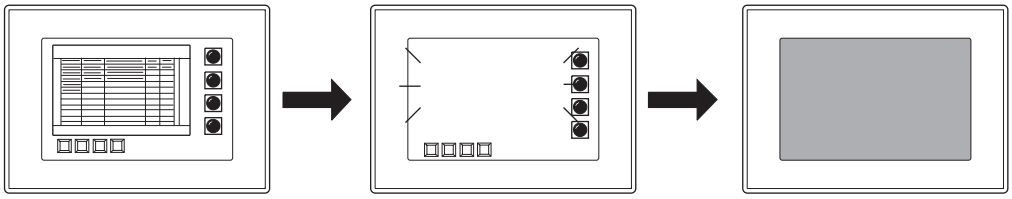



Example: When hiding the RGB screen



## 2 Screen save of the RGB screen

When the RGB screen is displayed, the screen save function of the GOT operates after the power saving function of the personal computer display operates.
While the power saving function of the personal computer display is not active, the screen save function is disabled even if it is set at the GOT.
The RGB screen is saved as indicated below.



The RGB screen is displayed.

When the GOT detects the power saving state of the personal computer display, the RGB screen is hidden and only the monitor screen is displayed.
(The GOT internal device (GS252.b15) turns on.)

When the screen save time set on GOT side has passed, GOT is in screen save status.

<Relation between personal computer statuses and validity of the GOT screen save function>

| Personal computer status | Validity of GOT screen save function |
|---|---|
| Personal computer screen displayed | Invalid<br>(Personal computer screen displayed) |
| Screen saver operating | |
| Display power saving function operating | Valid<br>(Personal computer screen → Monitor screen → GOT screen save status) |

**Remark**

(1) Screen save operation during monitoring
While the RGB screen is not displayed, the screen save function operates independent of the power saving function of the display of a personal computer.
For details of the GOT's screen save function, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Chapter 2.2 Display Settings)

GT15 User's Manual (Chapter 11 DISPLAY AND OPERATION SETTINGS (GOT SET UP))

(2) When no RGB signal is input to the GOT
When no RGB signal is input to the GOT due to cable disconnection and others, the GOT internal device (GS252.b15) turns on as with detecting the power saving state of the personal computer display.

## 13.5.1 Relevant settings

For RGB display, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

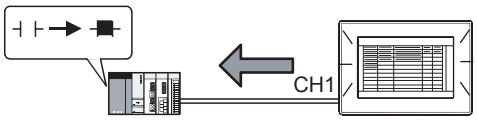
(1) Functions relevant to the RGB display only
• • • Relevant to the RGB display only

### 1 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to RGB display only

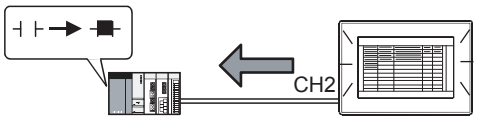
• Signal that turns on when the RGB signal (CH1) is not input
(Write device: GS252.b15)

The input status of the RGB signal can be checked.
(GT16 only)



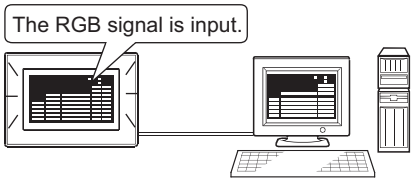

• Signal that turns on when the RGB signal (CH2) is not input
(Write device: GS252.b14)

The signal can check that the GOT recognizes the RGB signal for CH2.
(Only when using the GT16M-R2 for the RGB input unit)



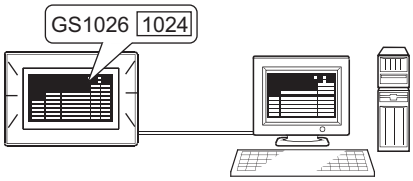

• RGB signal input status notification
(Write device: GS1025)

The input status of the RGB signal can be checked.
(GT16 only)



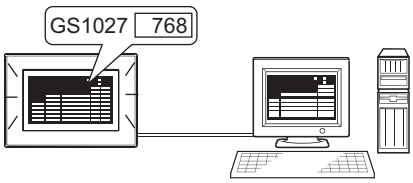

• RGB signal resolution (horizontal)
(Write device: GS1026)

The horizontal resolution of the RGB signal can be checked. (GT16 only)



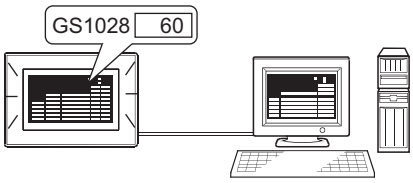

• RGB signal resolution (vertical)
(Write device: GS1027)

The vertical resolution of the RGB signal can be checked. (GT16 only)




• RGB signal refresh rate
(Write device: GS1028)

The refresh rate of the RGB signal can be checked.
(GT16 only)

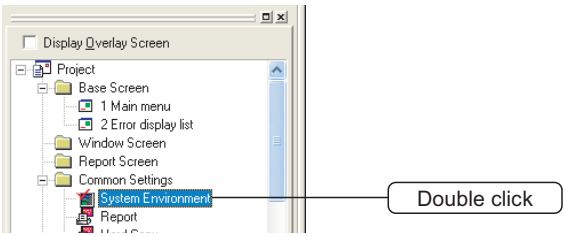


## 13.5.2 Settings

1. Select [Common] → [System Environment] from the menu.
2. Select [Video/RGB] from the tree in the System Environment dialog box.
3. The dialog box is displayed. Make settings referring to the explanation given below.

**Remark** When making settings in the project work space

Double click on [System Environment] to display the System Environment dialog box. Double click on [Video/RGB].

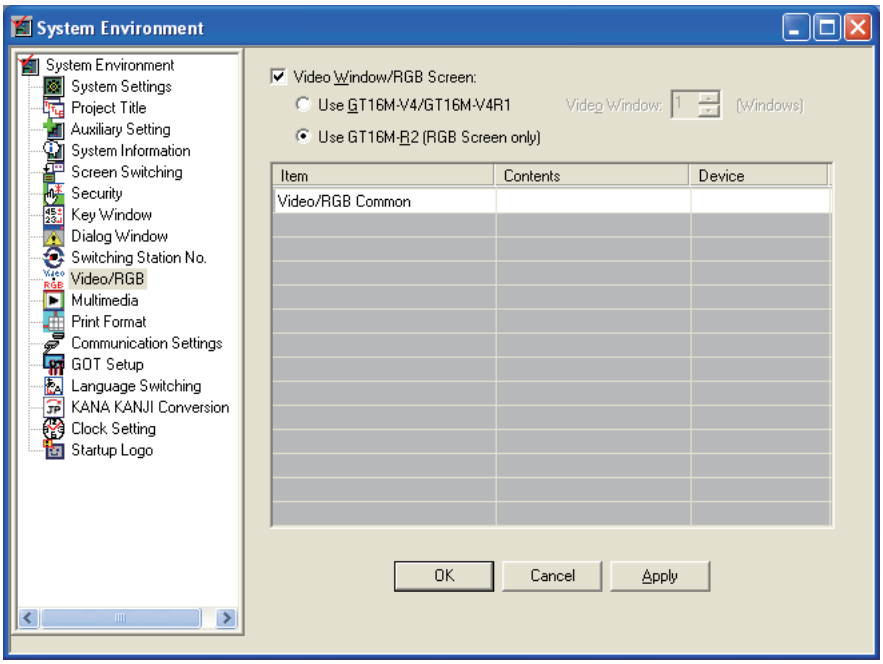


## 13.5.3 Setting items

Set the devices used for RGB display.
The dialog box is used in common to video display setting and RGB display setting.
For details of video settings, refer to the following.

☞ Section 13.4.2 Setting items

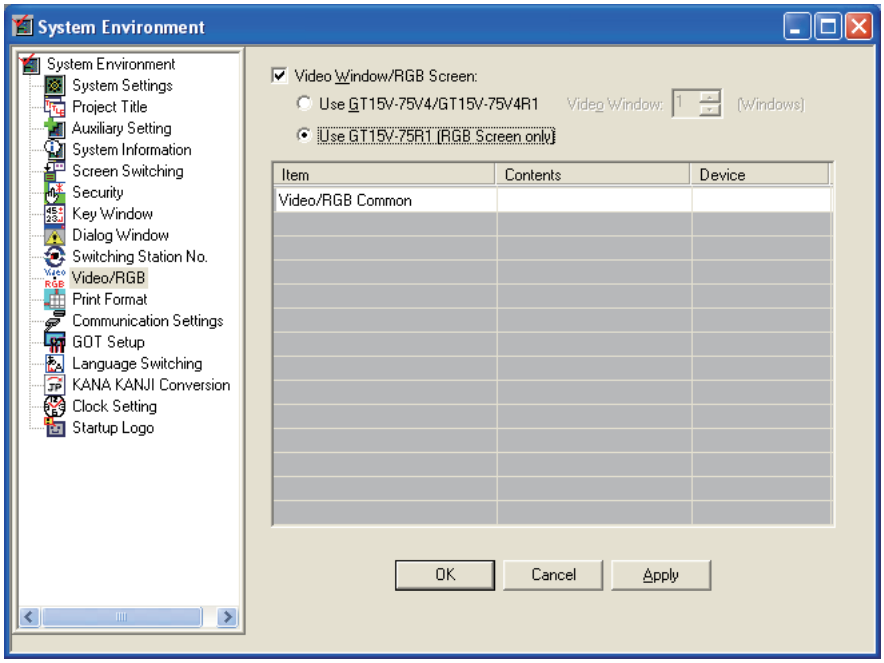
### 1 For GT16




| Item | Description | Model |
|---|---|---|
| Video Window/RGB Screen | Check this item when using the video window or the RGB screen.<br>Use GT16M-V4/GT16M-V4R1:<br>Check this item when using the video window only or both the video window and the RGB screen.<br>Then, set the number of video windows to be used for video display.<br>Use GT16M-R2 (RGB Screen only):<br>Check this item when using the RGB screen. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Video/RGB setting list | Set the devices that are used for video window/RGB screen display.<br>The values set at the devices used for video window/RGB screen display are handled as 16-bit binary values.<br>The device specified as the [Video/RGB Common] device stores the data as indicated below.<br>Turning ON/OFF the bit devices controls the RGB display operation.<br>b15 \| b14 \| b13 \| b12 to b0<br>b12 to b0: Enabled/disabled in video window<br>b13: Selecting a display position of RGB screen — ON : Displays on the middle side. OFF : Displays on the upper left side.<br>b14: Selecting a displaying/hiding of RGB screen (CH2)*1*2 — ON : Display RGB screen OFF : Display GOT monitor screen<br>b15: Selecting a displaying/hiding of RGB screen (CH1)*2 — ON : Display RGB screen OFF : Display GOT monitor screen | |

*1 Valid when mounting the GT16M-R2
*2 When both b14 and b15 are turned on, b15 has priority.

## 2 For GT15




| Item | Description | Model |
|---|---|---|
| Video Window/RGB Screen | Check this item when using the video window or the RGB screen.<br>Use GT15V-75V4/GT15V-75V4R1:<br>Check this item when using the video window only or both the video window and the RGB screen.<br>Then, set the number of video windows to be used for video display.<br>Use GT15V-75R1 (RGB Screen only):<br>Check this item when using the RGB screen. | |
| Video/RGB setting list | Set the devices that are used for video window/RGB screen display.<br>The values set at the devices used for video window/RGB screen display are handled as 16-bit binary values.<br>The device specified as the [Video/RGB Common] device stores the data as indicated below.<br>Turning ON/OFF the bit devices controls the RGB display operation.<br>b15 \| b14 to b0<br>Enabled/disabled in video window<br>Select the display/hide of RGB screen ON : Display RGB screen<br>OFF : Display GOT monitor screen | GT16 GT15 SoftGOT 1000 GT11 GT10<br>*1 |

*1 Applicable to only GT1585V-S and GT1575V-S.

## 13.5.4 Precautions

This section provides the precautions to be attended to when using the RGB display function.

### 1 Precautions for drawing

(1) Number of RGB function objects that can be set
Only one object can be set for each object.

(2) Video display, RGB screen, and multimedia screen
The simultaneous display of a video window, RBG screen, and multimedia screen is not available.

### 2 Precautions for OS

To use RGB display, be sure to install the extended function OS (Video/RGB) to the GOT.

### 3 Precautions for hardware

(1) GOTs that can be used
RGB display can be used only on the GOT indicated below:
• GT16 • GT1585V-S • GT1575V-S

(2) System configuration for using the RGB display function
For the system configuration for using the RGB display function, refer to the following manual.
☞ GOT1000 Series Connection Manual

(3) For applicable PC monitors, please contact your local Mitsubishi representative.

### 4 Precautions for use

(1) Object function when the RGB screen is displayed
All objects will operate even while the RGB screen is displayed.

(2) Personal computers for which RGB display is not possible
For the 640 × 400 dot resolution screen of the NEC PC-9800 series, RGB display is not possible on the GOT.
Change the screen resolution to other setting or change the personal computer.

(3) For applicable PC monitors, please contact your local Mitsubishi representative.

(4) Display of RGB screen

(a) The RGB screen display may be given in still image or disappear temporarily when the hard copy function is executed or when a system message is displayed/cleared.

(b) RGB display may be disabled, disturbed or stopped depending on the setting for [Horizontal] or [Vertical] of the utility (RGB display setting).
In this case, return the set values to the default values and then make re-setting within the range that allows RGB display.
For the operations of the utility, refer to the following manual.
☞ GT16 User's Manual (Basic Utility)
GT15 User's Manual

(5) Setting of resolution and refresh rate for RGB output device

When the RGB input image is incorrectly displayed, check if the resolution and the refresh rate for the RGB output device are set in the range as shown below.

When the resolution and the refresh rate are set outside the range, the RGB input image cannot be displayed correctly.

| Resolution | Refresh rate (Hz) |
|---|---|
| XGA (1024×768 dots)*1 | 60 |
| SVGA (800×600 dots) | 60/72/75 |
| VGA (640×480 dots) | 60/72/75/85 |

*1 Selectable for the GT16 only.

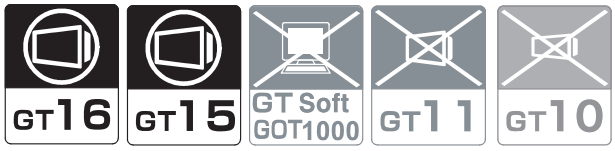
(6) Resolution of RGB input image

When the resolution of the RGB input image is higher than that of GOT, the image will be displayed only partially according to the GOT's resolution.

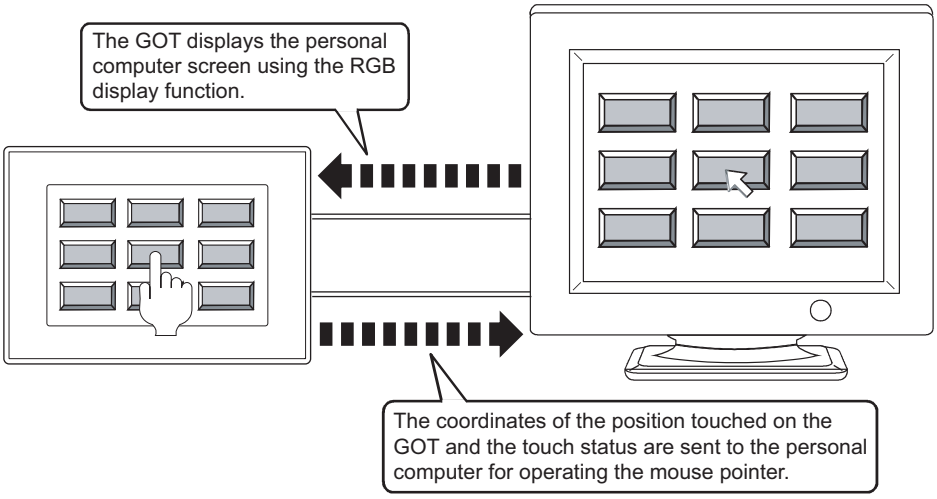
The resolution of RGB input image should be lower than that of GOT.

If you need to use an input image with the resolution higher than that of GOT, place the object you want to show in the area that can be displayed on the GOT or take other action considering the usage.

# 13.6 Remote Personal Computer Operation Function




The function enables to operate the mouse pointer on a personal computer by touching the personal computer screen displayed on the GOT using the RGB display function.




**Point**

Settings for remote personal computer operation function

(1) RGB display setting
To use the remote personal computer operation function, set the RGB display.
For how to set the RGB display, refer to the following.
- For RGB display function settings

☞ Section 13.5 RGB Display

- For system configurations and communication settings for the remote personal computer operation connection

☞ GOT1000 Series Connection Manual (Chapter 50 REMOTE PERSONAL COMPUTER OPERATION CONNECTION)

(2) Remote personal computer operation driver
To use the remote personal computer operation function, install the remote personal computer operation driver on the personal computer.
For how to install the driver, refer to the following.

☞ Section 13.6.3 Settings

(3) GT Designer2 setting
For the remote personal computer operation function, no parameter setting is required with GT Designer2.

## 13.6.1 Relevant settings

For the remote personal computer operation function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description if necessary.

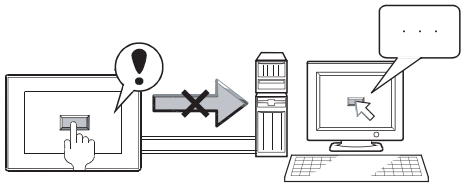
(1) Functions relevant to remote personal computer operation function only
• • • Relevant to the remote personal computer operation function only.

### 1 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to remote personal computer operation function only

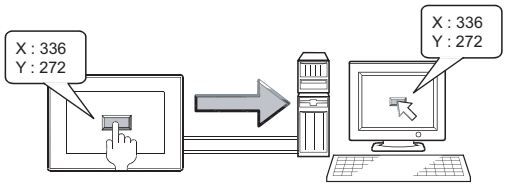
• Touch status communication control signal
(Write device: GS511.b0)

Controls whether to send the touch status to the personal computer.



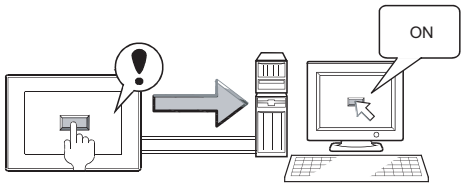

• Touch status external notification (X-coordinate, Y-coordinate)
(Write device: GS654, GS655)

Notifies the touch position (X-coordinate, Y-Coordinate).



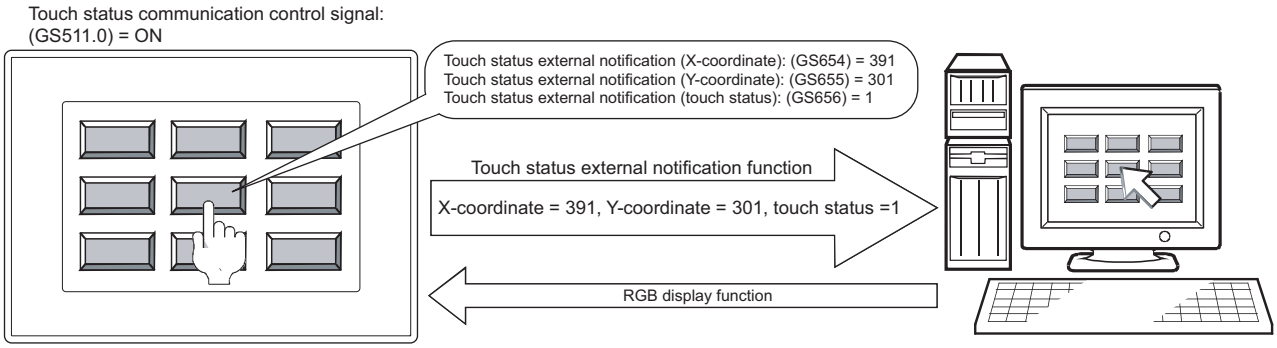

• Touch status external notification (touch status)
(Write device: GS656)

Notifies whether the screen is touched.



## 1 Operation of remote personal computer operation function

When the GOT displays the personal computer screen using the RGB display, turning on the touch status communication control signal (GS511.b0) sends the data in the touch status external notifications (X-coordinate (GS654), Y-coordinate (GS655), touch status (GS656)) to the personal computer.
The following shows operations according to each touch status.




**Point**

GOT internal devices

For the GOT internal devices, refer to the following.

Section 2.9.1 GOT internal devices

## 2 Operation of mouse pointer

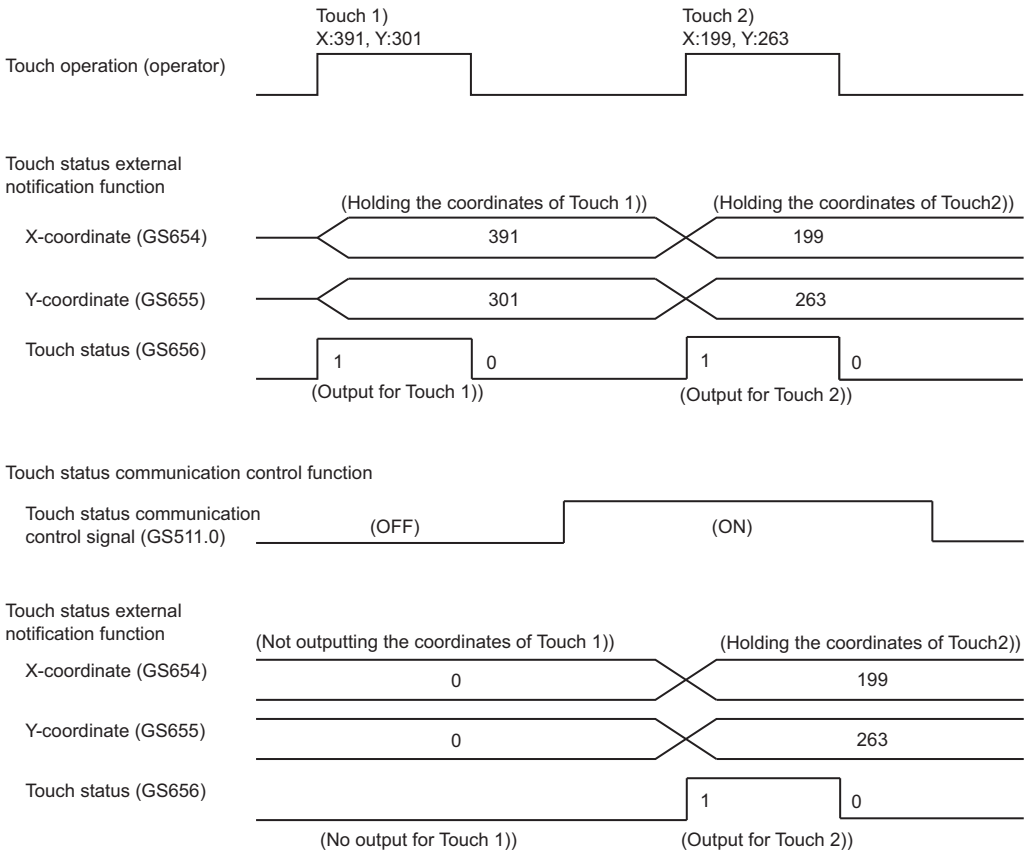
The following explains the operation of the mouse pointer according to the touch status.

(1) When touching GOT screen
When the GOT screen is touched while the touch status communication control signal is on, the data in the touch status external notifications (X-coordinate (GS654), Y-coordinate (GS655)) are sent to the personal computer and the mouse pointer moves to the corresponding position.
The value "1" in the touch status external notification (touch status)(GS656) is sent to the personal computer during touching the GOT.
As a result, the mouse pointer moves on the personal computer screen.

(2) When stopping touch operation
When the touch operation is stopped while the touch status communication control signal is on, the value "0" in the touch status external notification (touch status) (GS656) is sent to the personal computer only one time.
As a result, the mouse pointer clicks the personal computer screen one time.

(3) When turning off touch status communication control signal during touching GOT screen
When the touch status communication control signal turns off during touching the GOT screen due to cable disconnection, GOT power disconnection, and others, the touch status external notifications (X-coordinate (GS654), Y-coordinate (GS655)) hold the values right before the signal turns off.
The value "0" in the touch status external notification (touch status) (GS656) is sent to the personal computer only one time.
As a result, the mouse pointer clicks the personal computer screen one time.

The following shows the operation timing.



## 13.6.3 Settings

The following explains settings and functions required for the remote personal computer operation function.

### 1 Remote personal computer operation driver (MES_2X)

The remote personal computer operation driver is mouse emulation software for operating the mouse pointer on the personal computer with device data of the X-coordinate, Y-coordinate, and touch status sent by the GOT.
The copyright of the software belongs to DMC Co., Ltd.
Use the software under the license agreement displayed when installing the software.

(1) Software
Obtain the software with either of the following methods.
- The software is stored in the PCRemoteOperation folder in Disk 2 of the GT Works2 or GT Designer2 CD-ROM.
- Download the software from the MITSUBISHI ELECTRIC FA NETWORK SERVICE (MELFANSweb) website.
(MELFANSweb website: http://wwwf2.mitsubishielectric.co.jp/melfansweb/english/index.html)

(2) Operating environment
The following shows the operating environment for the personal computer.

| Item | Description |
|---|---|
| OS | Microsoft® Windows® 2000 Professional Operating System Service Pack 4 (English version)<br>Microsoft® Windows® XP Professional Operating System Service Pack 2 (English version)<br>Microsoft® Windows® XP Home Edition Operating System Service Pack 2 (English version) |
| Computer | • Compatible with the operating environment for the above OS.<br>• Equipped with the RS-232 serial port (9-pin). |

### 2 Setting GOT

Install the extended function OS (Video/RGB, PC Remote Operation) on the GOT, set the communication settings, and connect cables.
Display the personal computer screen on the GOT using the RGB display, and connect the GOT to the personal computer via the RS-232 connection in advance. The remote personal computer operation driver setup automatically starts after installing the driver.
For the connection for the RGB display and the RS-232 connection, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter 50 REMOTE PERSONAL COMPUTER OPERATION CONNECTION)

**Point**

Device setting

To send the touch status of the GOT screen to the personal computer, turn on the touch status communication control signal (GS511.b0).
For the touch status communication control signal (GS511.b0), refer to the following.

☞ Section 2.9.1 GOT internal devices

## 3 How to install remote personal computer operation driver (MES_2X)

To use the remote personal computer operation function, install the remote personal computer operation driver (MES_2X) on the personal computer.
Refer to the following procedures.

1. Start Install.exe.
2. The Welcome to the Touch Screen Driver MES_2X Setup Wizard screen appears, and then click the Next button.
3. The License Agreement screen appears, and read the license agreement. Select [I Agree] to accept the terms of the agreement, and then click the Next button.
4. The Select Installation Folder screen appears. Select a folder for installation. Select [Everyone] for anyone who uses the computer or [Just me] for yourself, and then click the Next button.
5. The Confirm Installation screen appears. Click the Next button to start the installation.
6. The MES_2X Driver Select screen appears. Select [RS232C] and a communication port to be used, and then click the Next button.
7. The MES_2X Driver EEPROM screen appears. Select [DO NOT USE], and then click the Next button.
8. The Hardware Installation screen appears during the installation. Click the Continue Anyway button.
9. The Found New Hardware Wizard screen appears, and then the Installation Complete screen appears. Click the Close button to exit the setup wizard.
10. After exiting the setup wizard, the Touch Panel Driver Properties screen appears. Set up the driver.
    ☞ This section 4 Setting up remote personal computer operation driver (MES_2X)

## 4 Setting up remote personal computer operation driver (MES_2X)

To calibrate the difference in the position of the coordinates between the GOT screen and the personal computer screen, set the calibration for the remote personal computer operation driver (MES_2X). Refer to the following procedures.

1. Set up the remote personal computer operation driver (MES_2X).
   Refer to either of the following.
   - Set up the driver on the Touch Panel Driver Properties screen automatically displayed after the driver installation.
   - Set up the driver on the Touch Panel Driver Properties screen opened by selecting [All Programs] → [Touch Screen Driver MES_2X] → [TPControl] from the start menu.
2. Execute the calibration on the Calibration tab in the Touch Panel Driver Properties screen.
   Select [5p] for the calibration points, and then click the Calibration button in the bottom of the screen.
   - For the calibration points, [5p] is recommended.
3. The calibration points are displayed on the personal computer. Touch the calibration points of the personal computer screen displayed on the GOT using the RGB display.
4. Click the Test button in the bottom of the Touch Panel Driver Properties screen.
   The test screen appears. Touch the [Clear] button on the test screen displayed on the GOT using the RGB display to check for the correct operation.
5. After checking, touch the left END button, and then touch the right End button to close the test screen.
6. Click the OK button in the bottom of the Touch Panel Driver Properties screen to close the screen.

## 13.6.4 Precautions

The following shows precautions for the remote personal computer operation function.

### 1 Precautions for OS

To use the remote personal computer operation function, install the extended function OS (Video/RGB, PC Remote Operation) on the GOT.

### 2 Precautions for hardware

(1) Applicable GOT
The following GOTs are applicable to the remote personal computer operation function.
• GT16 • GT1585V-S • GT1575V-S

(2) System configurations for remote personal computer operation function
For the system configurations for the remote personal computer operation function, refer to the following manual.

☞ GOT1000 Series Connection Manual

### 3 Precautions for use

(1) Drag operation
When dragging on the GOT screen, the touch status data is not correctly sent to the personal computer and the mouse pointer operation may stop.
For the remote personal computer operation function, do not use the drag operation on the GOT screen.

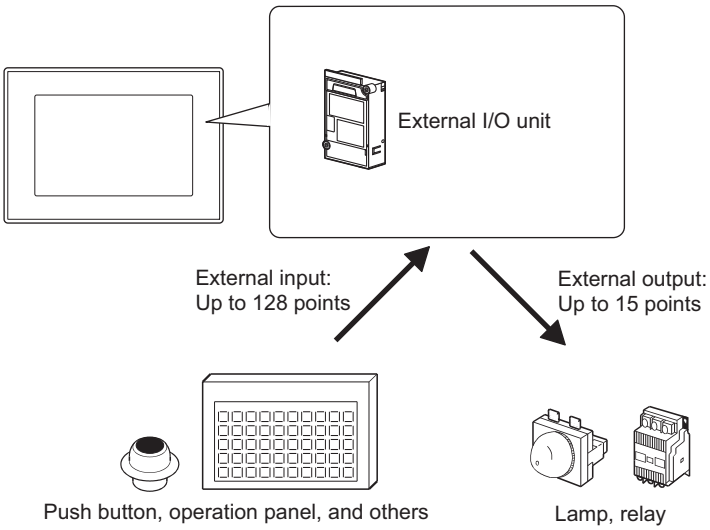
(2) Precautions for RGB display
For the precautions for the RGB display, refer to the following.

☞ Section 13.5.4 Precautions

# 13.7 External I/O/Operation Panel

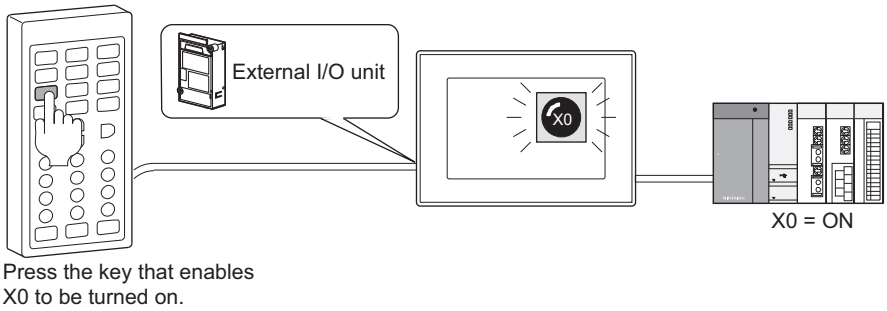
## 1 External I/O function

The function enables external inputs and external outputs (lamps and relays) with the external I/O unit.
When the external I/O function is used, no settings are required on GT Designer2.




## 2 Operation panel function

The function enables input operations with an operation panel, including touch inputs, numerical inputs, and screen switching, with the external I/O unit.
When the operation panel function is used, settings are required on GT Designer2.
For settings for the operation panel function, refer to Section 13.7.2 to 13.7.4.

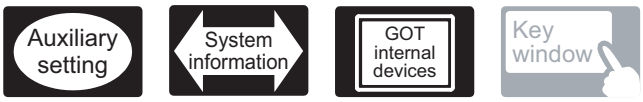


**Point**

(1) System configurations with external I/O function
For the system equipment and cable wiring methods required for the external I/O function, refer to the following manual.

☞ GOT1000 Series Connection Manual

## 13.7.1 Relevant settings




For the operation panel function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to external I/O function and operation panel function only
• • • Relevant to the external I/O function and operation panel function only

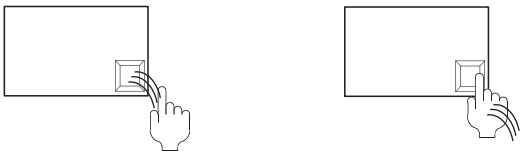
(2) Functions relevant to external I/O function, operation panel function, and others
• • • Check the relevant functions, and then set the functions.
For the relevant functions, refer to sections for related settings.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to external I/O function, operation panel function, and others

• Check the switching timing of the go to screen switch

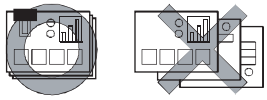
The switching timing when switching the screen by touhcing the go to screen switch can be set.



The screen is switched at a timing when the finger is released from the switch. (OFF)

The screen is switched at a timing when the finger touches the switch. (ON)

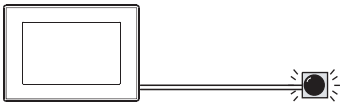
Setting for each project | Setting for each screen

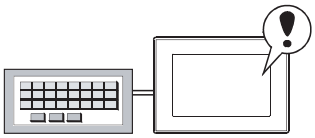


Setting item
• [Screen Switching Switch Synchronous Mode]

## 2 System information(☞ Section 3.6 System Information Setting)

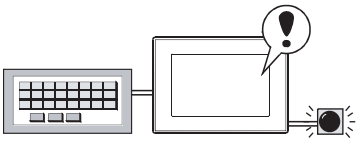
(1) Functions relevant to external I/O function, operation panel function, and others

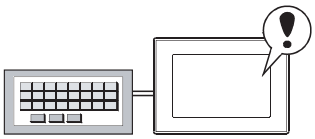
| • External I/O function/output information<br>• (Read device) |
|---|
| Executes the external output with the external I/O function.<br>  |

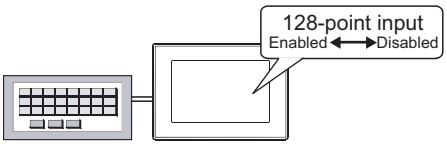
| • External I/O function/input information<br>• (Write device) |
|---|
| Notifies the external input and no power supply with the external I/O function or operation panel function.<br>  |

## 3 GOT internal devices(☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to external I/O function and operation panel function only

| • GOT internal devices for the external I/O<br>• (GB10 to GB25, GB30 to GB37, GB50 to GB57) |
|---|
| Notifies the external input and executes the external output with the external I/O function or operation panel function.<br>  |

| • Extended external input status notification signal<br>• (GS658-GS665) |
|---|
| Notifies the input status when the 128-point input is enabled with the external I/O function.<br>  |

| • External I/O function notification/external I/O control function<br>• (GS517) |
|---|
| Switches the 128-point input from enabled to disabled with the external I/O function and vice versa.<br>  |

## 13.7.2 Before setting operation panel

### 1 Applicable operation panels

For applicable operation panels, refer to the following manual.

☞ GOT1000 Series Connection Manual

### 2 Setting keys of operation panel

The action and key code can be set for a key of an operation panel.

(1) Action

Multiple actions in the following can be set per key of an operation panel.

| | | | Order of action execution priority for multiple actions *1 |
|---|---|---|---|
| Data change | : | 1 | High |
| Key code | : | 16 | |
| Word set | : | 20 | |
| Set | : | 20 | |
| Reset | : | 20 | |
| Alternate | : | 20 | |
| Momentary | : | 20 | ↓ |
| Base screen switching | : | 1 | |
| Overlap window1 | : | 1 | |
| Overlap window2 | : | 1 | |
| Superimpose window1 | : | 1 | |
| Superimpose window2 | : | 1 | |
| Station No. switching | : | 5 | Low |
| Total | : | 128 | |

*1 The order of actions except the data change and key code can be changed on the Action tab.

(2) Key code

Key codes for each object can be set. (Up to 16 key codes can be set for each operation panel key.)

- Key codes for the alphanumeric character input (Numerical input and ASCII input)
- Key codes for operating object functions

☞ Appendix1 Key Code List

(3) Other key codes

The following screens can be operated with setting a key code to an operation panel key.

| Screen | |
|---|---|
| Screen for login (Operator authentication), | Screen for changing passwords (Operator authentication) |

The following shows key codes applicable to each screen.

(a) Screens for login and changing passwords

| Key code(H) | Application |
|---|---|
| 0008H | Deletes the first character and shifts the entire characters to the right by one character. |
| 000DH | Inputs passwords. |
| 001BH | Cancel |
| 0030H to 0039H,<br>0041H to 005AH,<br>0061H to 007AH | Inputs characters*1 |
| 0088H | Deletes characters being input. |
| 0090H | Move cursor to right within object |
| 0091H | Move cursor to left within object |
| 0092H | Switch character input modes (Value) |
| 0093H | Switch character input modes (Alphabet in capital letters) |
| 0094H | Switch character input modes (Alphabet in small letters) |

*1 For key codes for characters, refer to the following.

Appendix1 Key Code List

## 13.7.3 Settings

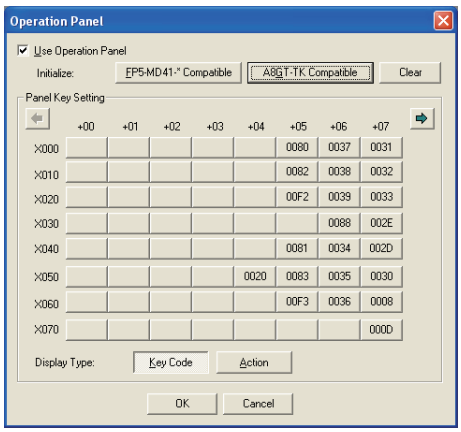
1. Select [Common] → [Operation Panel] from the menu.
2. A setting dialog box is displayed, and then set the settings in reference to the following.

**Remark** When setting in project workspace

Double-click on in the project workspace, and then the setting dialog box is displayed.

## 13.7.4 Setting items

Set actions and key codes for operation panel keys.




| Item | Description | Model |
|---|---|---|
| Use Operation Panel | Check the item for using the operation panel function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Initialize *1 | Set the panel key settings according to key arrangements of the KANADEN operation panel and A8GT-TK numeric keypad panel.<br>FP5-MD41-* Compatible : Sets the panel key settings according to the key arrangement of KANADEN operation panel.<br>A8GT-TK Compatible : Sets the panel key settings according to the key arrangement of the A8GT-TK numeric keypad panel.<br>Clear : Clears the settings. | |
| Panel Key Setting *2 | Set actions and key codes for an input signal when the input signal turns on.<br>Click a button for an input signal, and then the Edit Action/Key Code screen is displayed. Set the action, trigger, and key code.<br><br>Each of the input signals for the operation panel (X000 to X07F) is assigned to each button. The operations corresponding to each button must be assigned to each operation panel key.<br>Click the ⇦ and ⇨ buttons, and then input signals to be set (+00 to +07 ←→ +08 to +15) are switched.<br><br>Example:<br>Setting for the input signal X010<br>Setting for the input signal X005<br>+00 +01 +02 +03 +04 +05 +06 +07<br>X000 X010 X020 | |
| Display Type | Click the Key Code button or Action button, and the button displays in the panel key setting are switched for the action or key code.<br>Display for key code : The key codes assigned to keys are displayed.<br>Example: 0042<br>Display for Action : "*" is displayed on the keys that actions are set.<br>Example: * | |

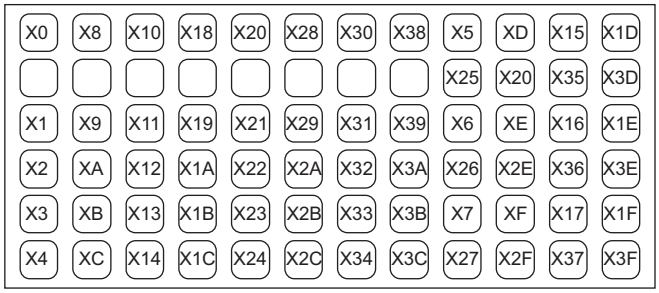
For details of *1, *2, refer to the following.

*1 Initialize

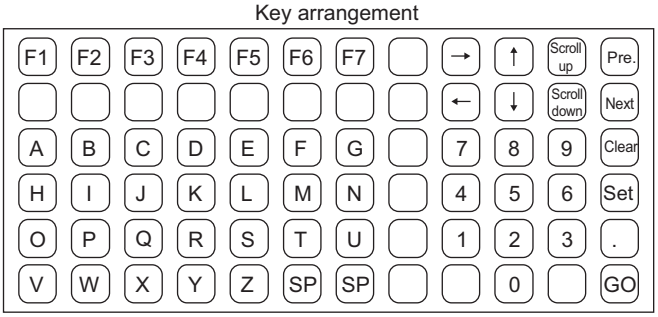
The operation panel settings are initialized according to key arrangements of the KANADEN operation panel and A8GT-TK numeric keypad panel.

KANADEN operation panel

Arrangement of input signal

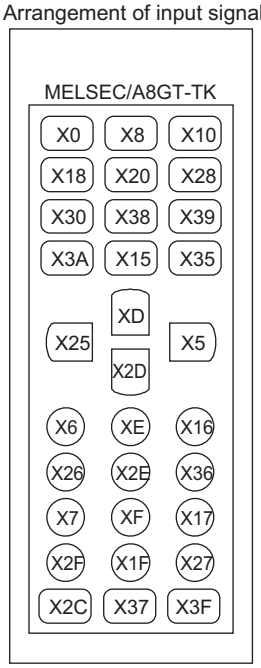



Key arrangement

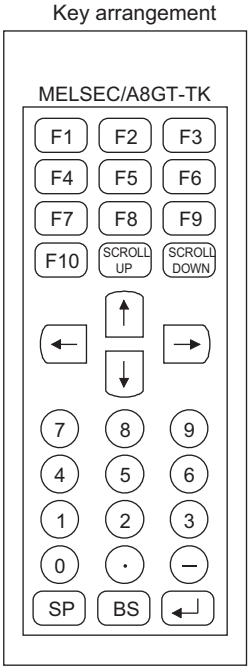



A8GT-TK numeric keypad panel

Arrangement of input signal



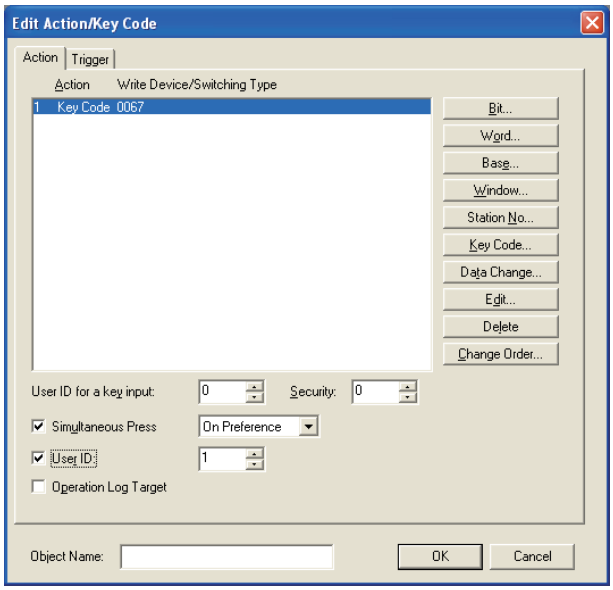

Key arrangement



*2 Edit Action/Key Code

Set the actions and triggers to be set for the operation panel keys.

(1) Action tab
Set the operations (actions and key codes) for the operation panel keys.




Action | Trigger

| Item | | Description |
|---|---|---|
| Action | | Set actions for the operation panel keys.<br>The settings of set actions are displayed in a list.<br>Setting methods and operations for each action, including the bit and word, are the same as those for touch switches.<br>(☞ Section 6.2 Touch Switch) |
| | Bit | Set the ON/OFF operation for a bit device. |
| | Word | Set the word device value change. |
| | Base | Click on the item to set the action of the base screen switching for an operation panel key. |
| | Window | Click on the item to set the action of the window screen switching for an operation panel key. |
| | Station No. | Click on the item to set the station No. switching function for an operation panel key.<br>([Dialog Window] cannot be set for [Screen Type] in [Mode] on the Action (Station No.) screen.) |
| | Key Code | Set a key code for an operation panel key. (☞ Appendix1 Key Code List) |
| | Data Change | Click on the item to set the action of a data change switch for an operation panel key. |
| | Edit | Edit a set action setting. |
| | Delete | Delete a set action setting. |
| | Change Order | Click on the item to change the order of actions. |
| User ID for a key input | | Set the ID (0 to 65535) for specifying an object for the key code input. |
| Security | | When the security function is used, set the security level (1 to 15).<br>When the security function is not used, set [Security] to "0".<br>(☞ Section 5.8 Security Function) |
| Simultaneous Press | | When other operation panel keys are pressed while an operation panel key is pressed, check the item to disable operations of other operation panel keys.<br>Check the item, and then select an operation (On Preference/Off Preference) for simultaneously pressing keys. |

(Continued to the next page)

Action | Trigger

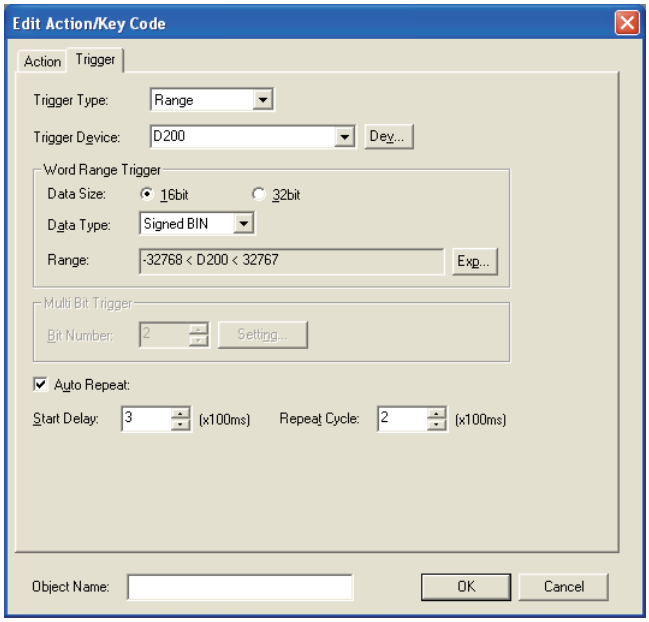
| Item | Description |
|---|---|
| User ID | Check the item to set the user ID number (1 to 65535).<br>Setting the user ID enables the following.<br>• The used operation panel key can be identified with the operation log.<br>(☞ Section 15.2 Operation Log Function) |
| Operation Log Target | Check the item to set the set object to the operation log target.<br>(☞ Section 15.2 Operation Log Function) |

(2) Trigger tab

Set operation conditions for the operation panel keys.

For details of the operation conditions, refer to the following.

☞ Section 5.5 Trigger Setting




Action | Trigger

| Item | | Description |
|---|---|---|
| Trigger Type | | Select an operation condition to operate an operation panel key.<br>・Ordinary ・ON ・OFF ・Range ・Bit Trigger |
| Trigger Device | | Specify a device for the operation condition. |
| Word Range Trigger | | When [Range] is selected for [Trigger Type], set the following to a word device set for the operation condition. |
| | Data Size | Select a data size (16bit/32bit) for the word device. |
| | Data Type | Select a data type (Signed BIN/Unsigned BIN/Real) for the word device. |
| | Range | Click the [Range] button, and then set the conditional expression for the word device range. |
| Multi Bit Trigger | Bit Number | When [Bit Trigger] is selected for [Trigger Type], select the number of bit devices (2 to 8) to be set as the trigger.<br>Set the bit number, and then click on the [Seting] button to set bit devices and execution conditions.<br>(☞ Section 5.5 Trigger Setting) |
| Auto Repeat | | Check the item to automatically repeat the operations set for an operation panel key during touching the key. |
| | Start Delay | Set time from when an operation panel key is touched until when the operation repeat starts.<br>0.1 to 2 seconds (0.1 second units) can be set. |
| | Repeat Cycle | Set the cycle for repeating the operation.<br>0.1 to 1 seconds (0.1 second units) can be set. |

## 13.7.5 Precautions

The following shows precautions for the external I/O function and operation panel function.

### 1 Precautions for drawing (Operation panel function)

(1) Applicable points for operation panel function
Only one point can be set for the operation panel function per project.

### 2 Precautions for OS (External I/O function/operation panel function)

(1) Extended function OS
When the external I/O function or operation panel function is used, be sure to install the extended function OS (External I/O / Operation Panel) on the GOT.

### 3 Precautions for hardware (External I/O function/operation panel function)

(1) System configurations for external I/O function and operation panel function
For the system configurations for the operation panel function, refer to the following manual.

☞ GOT1000 Series Connection Manual

### 4 Precautions for use (External I/O function/operation panel function)

(1) Screens operable with operation panel function
The operation panel function is enabled only with the following screens.

| Screen | |
|---|---|
| User-created screen, | Screen for login (Operator authentication) *1, |
| Screen for changing passwords (Operator authentication) *1 | |

*1 For applicable key codes for operation panel keys, refer to the following.

☞ Section 13.7.2 Before setting operation panel

OK / Cancel displayed on the GOT can be operated with Enter / ESC of an operation panel.

(2) Operations with operation panel function
(a) The actions set for keys are executed, regardless of the displays on the GOT.
(b) When a touch switch displayed on the GOT and a key of an operation panel are simultaneously pressed, both operations are enabled. The first detected operation is processed first.

(3) When using 128-point input with external I/O function
(a) Input signals (X0 to XF) for the external I/O function with the 128-point input enabled exist. When any of the signals turns on, GOT internal device(s) corresponding to an input signal (X0 to XF) with the 128-point input disabled also turn(s) on. The GOT internal devices include GB30 to GB37 and GB50 to GB57.

(4) Delay of input/output

When using the external I/O function output information or the external I/O function input information in the system information, input or output can be delayed for approximately three seconds.

To prevent the delay, do not set the external I/O function output information and the external I/O function input information. Use the GOT internal devices instead as shown below.

- Input: GB30 to GB37, GB50 to GB57
- Output: GB10 to GB25

# 13.8 Sound output

The function enables speakers connected to the GOT to output sounds.
The sound output can be used with the following functions.

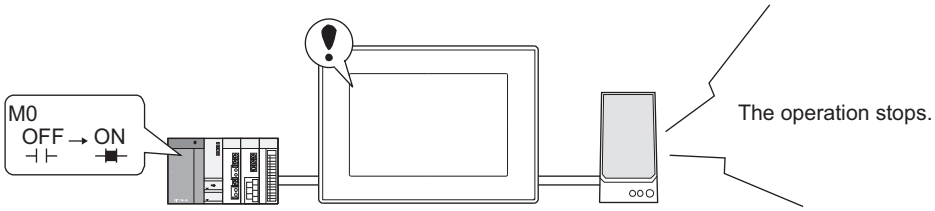
- Touch switch function
- Status observation function
- Time action function

For using the sound output function with the GOT, register sound files on the GOT with the settings in this section.

Application example

The GOT outputs a sound file to speakers when set conditions are met.

Setting with the status observation function




The GOT outputs the specified sound file to the speaker when the set condition is met (when M0 turns on).

## 13.8.1 Relevant settings

For the sound output function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

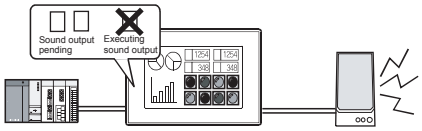
(1) Functions relevant to the sound output only
Relevant to the sound output only.

### 1 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to the sound output only

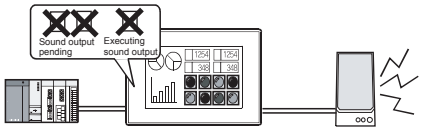
• Sound output cancel signal during play
• (GS518.b0)

Cancels the executing sound output.
(Pending sound outputs are not be cancelled.)



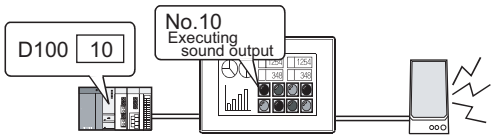

• All sound output cancel signal
• (GS518.b1)

Cancels all the sound outputs.
(Pending sound outputs are also cancelled.)



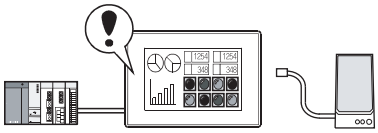

• Sound file number during play
• (GS669)

The executing sound file number is output to the device.




• Jack disconnection notification signal
• (GS668.b15)

Detects the jack disconnection of a sound output device.



## 13.8.2 Settings

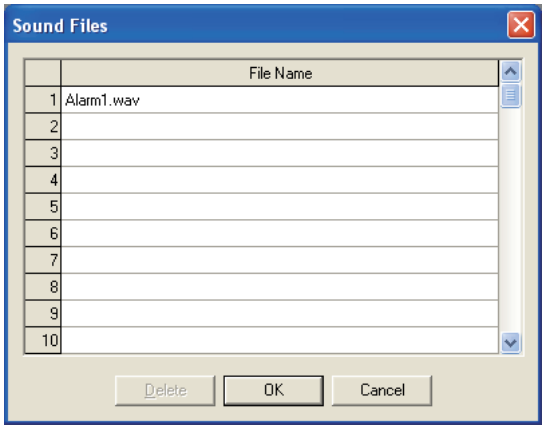
1. Select [Common] → [Sound Files] from the menu.
2. The Sound Files dialog box is displayed, and then set the settings in reference to the following.

**Remark** When setting in project workspace

Double-click on in the project workspace, and then the setting dialog box is displayed.

## 13.8.3 Setting items

Register sound files to be output with the GOT.




| Item | Description |
|---|---|
| Sound Files | Click on a cell in the column of the file name, and then select a sound file to be output.<br>Up to 100 sound files can be set. |
| Delete | Delete a selected sound file. |

## 13.8.4 Precautions

The following shows precautions for the sound output function.

### 1 Precautions for drawing

(1) Applicable points for sound output function
100 points can be set for the sound output function per project.

(2) Sound files

(a) A sound file playable on the GOT is up to eight seconds long.
The sound after eight seconds is not played.

(b) When a WAV file is set as a sound file, even though the file data is changed after the setting, the changes are not updated.
Set the WAV file with changes as a sound file again.

(c) The audio format of sound files playable on the GOT is an audio format of "8.000 kHz, 16 Bit, Mono". Most commonly used sound files are created in other audio formats.
When a commonly used sound file is used on the GOT, convert the audio format to "8.000 kHz, 16 Bit, Mono" with general-purpose sound editing software, including the sound recorder for Windows® XP.

**Hint!**

(1) Creating sound files
Record sounds in quiet places. Adjust the volume on a microphone, and then sounds from speakers do not get distorted.
It is recommended that you use the recorded sounds on the GOT after playing the sounds on a personal computer and checking the sound quality.

(2) How to convert sound files with sound recorder of Windows® XP

1. Select [All Programs] → [Accessories] → [Entertainment] → [Sound Recorder] from the [Start] menu of Windows® , and then start the sound recorder. (When [Sound Recorder] does not exist in the menu, add the sound recorder with [Add or Remove Programs] of Windows® XP.)
2. Select [File] → [Open] from the menu, and then select a sound file to be converted.
3. Select [File] → [Properties] from the menu, and then click the [Convert Now] button.
4. The Sound Selection dialog box is displayed, and then set [Attributes] to [8.000 kHz, 16 Bit, Mono].
5. Save the converted file ([Save] or [Save As]).

## 2 Precautions for OS

(1) Extended function OS
When the sound output function is used, be sure to install the extended function OS (Sound Output) on the GOT.

## 3 Precautions for hardware

(1) System configurations with sound output function
For the system configurations for the sound output function, refer to the following manual.

☞ GOT1000 Series Connection Manual

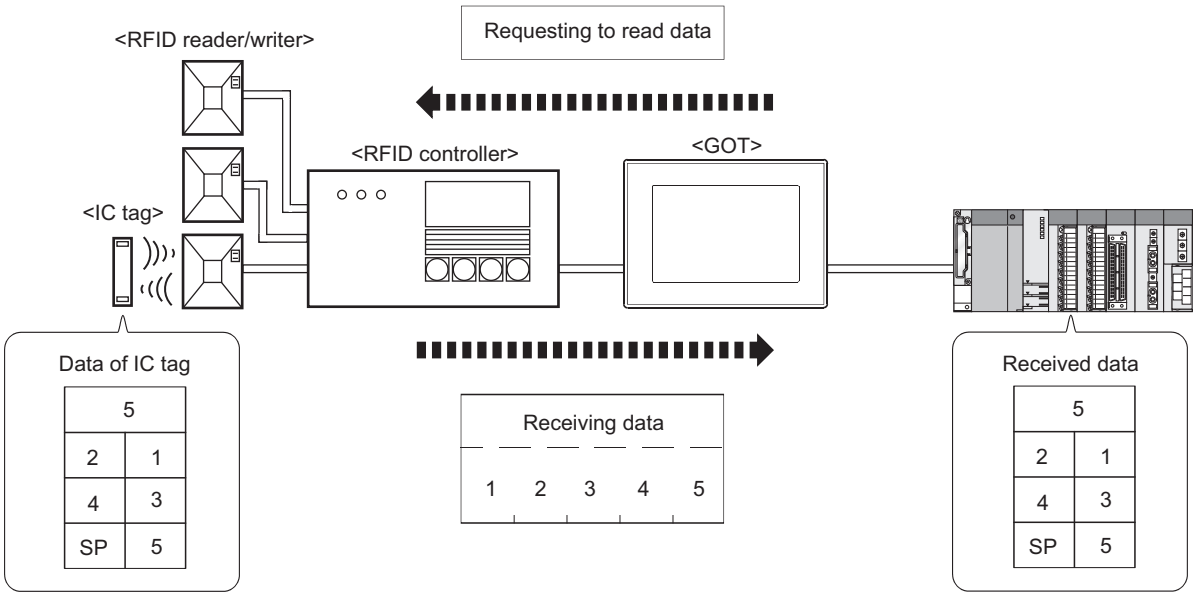
## 4 Precautions for use

(1) When other sound outputs are executed during executing a sound output
When the GOT outputs any of other sound files while a sound output is executed, the GOT holds the sound output until the executing sound output ends.
The executing sound output ends, and then the held sound output is executed.
The GOT can hold up to 16 sound outputs.

(2) When the same sound file is output
When the sound file same as the playing one is output or the sound file same as the one that the GOT already holds is output, the output sound file becomes invalid.

# 13.9 RFID Function

The function enables the GOT to write data received by a RFID reader/writer of a RFID controller connected to the GOT into devices.
Connect the RFID controller to the RS-232 interface of the GOT.



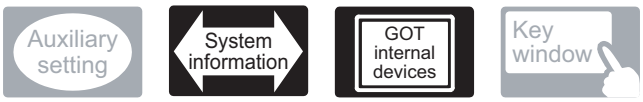

**Remark**

How to connect RFID controller to GOT

For the system configuration and communication settings for connecting a RFID controller to the GOT, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter 51 RFID Connection)

## 13.9.1 Relevant settings




For the RFID function, relevant settings are available in addition to the settings described in this section. Make the settings by referring to the following description if necessary.

(1) Functions relevant to RFID function only
• • • Relevant to the RFID function only.

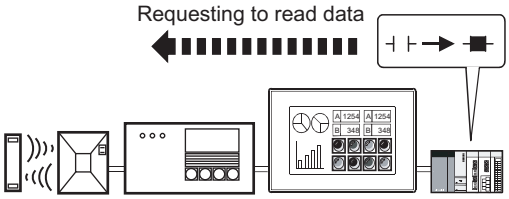
(2) Functions relevant to RFID function and others
• • • Confirm the relevant functions when making settings.

### 1 System Information (☞ Section 3.6 System Information Setting)

(1) Functions relevant to RFID function only

• RFID request signal (CH5 to CH8)
Write device:
System signal 1-2.b4, System signal 1-2.b7,
System signal 1-2.b10, System signal 1-2.b1

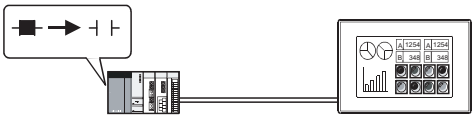
Turning on the signal requests the RFID controller to read data.




(2) Functions relevant to RFID function and others

• External device I/O complete signal (CH5 to CH8)
Read device:
System signal 1-2.b3, System signal1-2.b6,
System signal 1-2.b9, System signal1-1.b6

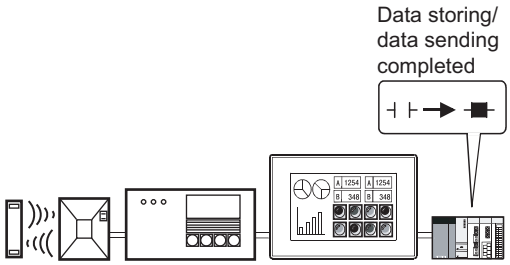
Turning on this signal turns off the external device I/O signal.



The RFID complete signal turns off.

• External device I/O signal (CH5 to CH8)
Read device:
System signal 2-3.b0, System signal 2-3.b1,
System signal 2-3.b2, System signal 2-1.b6

With the dedicated protocol, the signal notifies that data read by the RFID reader/writer are stored in the specified device.
With the nonprocedural protocol, the signal notifies that sending data to the RFID controller is completed.

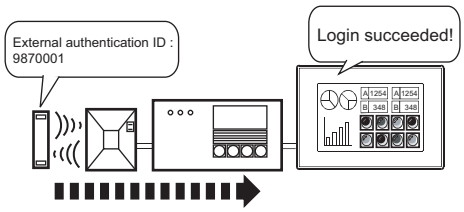


## 2 GOT internal devices (☞Section 2.9.1 GOT internal devices)

### (1) Functions relevant to security and others

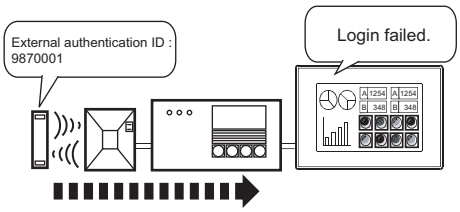
• External authentication success signal
(Read device: GS240.b0)

Notifies that the external authentication or fingerprint authentication succeeds.



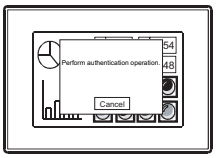

• External authentication failure signal
(Read device: GS240.b1)

Notifies that the external authentication or fingerprint authentication fails.




• External authentication reception signal
(Read device: GS240.b14)

Notifies that the login screen for the external authentication or fingerprint authentication is displayed.



## 13.9.2 Required knowledge for setting

The following explains settings and functions required for the RFID function.

### 1 Storing data read by RFID reader/writer and device points

(1) Devices that can store data
The data can be stored in word devices.
Bit devices cannot be specified as word devices.

(2) Maximum number of device points
Up to 10000 points can be set for the send data points and receive data points in total.

(3) Data to be stored in devices
The GOT writes data to be sent or received data by a RFID reader/writer into controller devices as ASCII data as below.
Example: Received data :123456789
Order of writing data :Low→High

(a) When device points for read data are less than set device points
Settings (Storage device: D1005, Data points: 8)

| Write device | Data to be stored | ASCII data |
|---|---|---|
| D1005 | 0009H | - |
| D1006 | 3231H | 21 |
| D1007 | 3433H | 43 |
| D1008 | 3635H | 65 |
| D1009 | 3837H | 87 |
| D1010 | 2039H | ␣9 |
| D1011 | 2020H | ␣␣ |
| D1012 | 2020H | ␣␣␣ |

␣ ? ? Space

? ? The GOT writes the number of read bytes.

? ? The GOT writes read data in order of byte starting from the lower byte.

? ? When the number of bytes for the read data is less than that of the set device points, fill in devices without ASCII data with spaces (20H) or NULLs (00H).

13.9.4 Setting items

(b) When device points for read data are more than set device points
Settings (Storage device: D1005, Data points: 4)

| Write device | Data to be stored | ASCII data |
|---|---|---|
| D1005 | 0009H | - |
| D1006 | 3231H | 21 |
| D1007 | 3433H | 43 |
| D1008 | 3635H | 65 |
| | | |

? ? The GOT writes the number of read bytes.

? ? The GOT writes read data in order of byte starting from the lower byte.

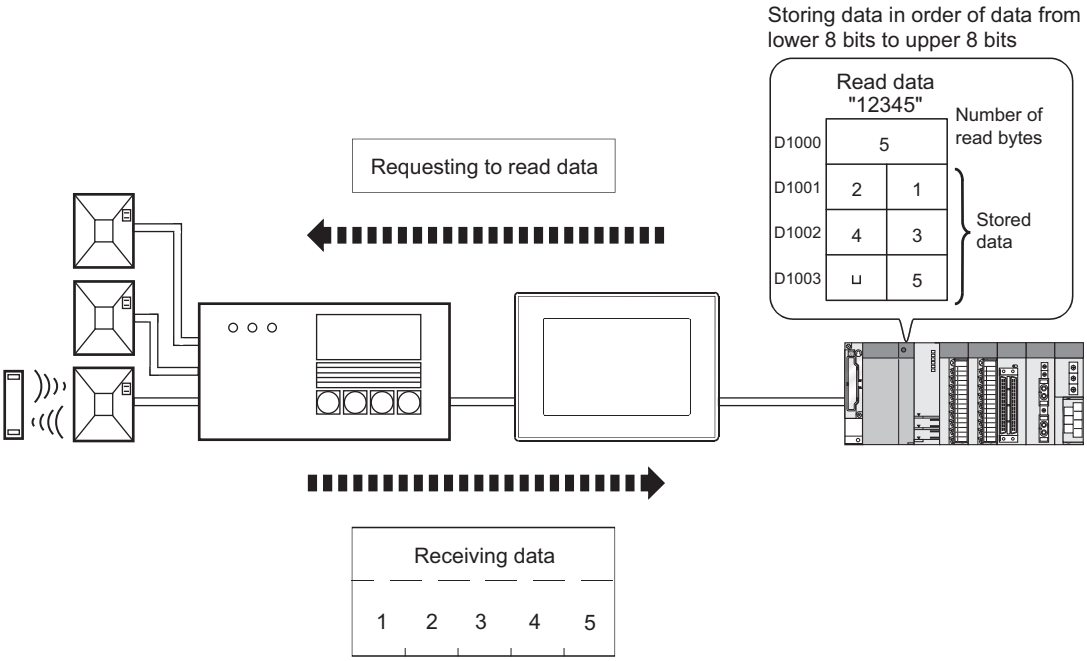
? ? When the number of device points for the read data exceeds that of the set device data, the exceeded data cannot be stored in any devices.

## 2 Order of writing data to controller

For writing data read by a RFID reader/writer into a controller device, the order of writing data can be set.

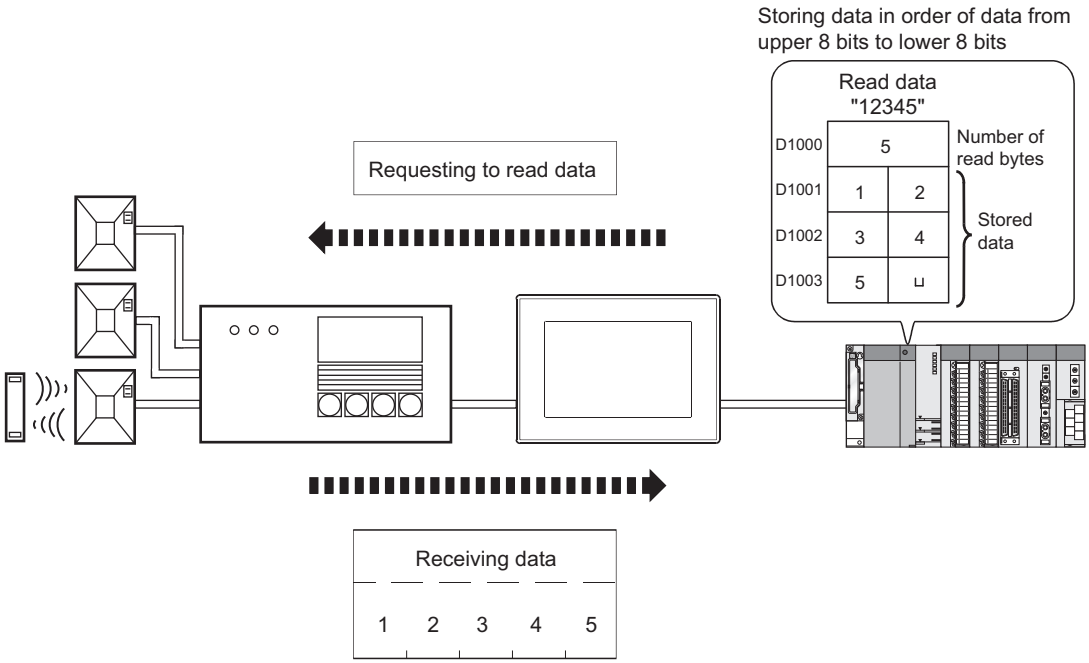
(1) Low → High

The GOT writes data into controller devices in order of data from lower 8 bits to upper 8 bits.




(2) High → Low

The GOT writes data into controller devices in order of data from upper 8 bits to lower 8 bits.



## 3 Header/terminator

Set the header and terminator suitable for the protocol of the RFID controller to be used.

(☞ Section 13.9.4 Setting items)

The following shows applicable header/terminator.

| Items | Description |
|---|---|
| Header | None (Default), STX |
| Terminator | ETX, LF, CR (Default), CR+LF |

The following explains header/terminator as example of reading "12345" by bar code reader.

(1) Header

(a) None (Default)

Set when not adding the header to the head of data.

| Read data | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 31H | 32H | 33H | 34H | 35H |

(b) STX

Set when adding the STX to the head of data.

| Header | Read data | | | | |
|---|---|---|---|---|---|
| STX | 1 | 2 | 3 | 4 | 5 |
| 02H | 31H | 32H | 33H | 34H | 35H |

(2) Terminator

(a) ETX

Set when adding the ETX to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | ETX |
| 31H | 32H | 33H | 34H | 35H | 03H |

(b) LF

Set when adding the LF to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | LF |
| 31H | 32H | 33H | 34H | 35H | 0AH |

(c) CR (Default)

Set when adding the CR to the end of data.

| Read data | | | | | Terminator |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | CR |
| 31H | 32H | 33H | 34H | 35H | 0DH |

(d) CR+LF

Set when adding the CR+LF to the end of data.

| Read data | | | | | Terminator | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | CR | LF |
| 31H | 32H | 33H | 34H | 35H | 0DH | 0AH |

## 4 RFID controller signal, send data area, and receive data area

Set the RFID controller signal for controlling data transmissions with the RFID function.
Set [Device] in the RFID dialog box, and then the RFID controller signal is automatically set.

(☞ Section 13.9.4 Setting items)

The following shows an setting example of the RFID controller signal, send data points, and receive data points.

Example: RFID settings
Device :D1000
Send data points :4
Receive data points :8

(a) RFID controller signal

| Device | Bit number | Item | Description |
|---|---|---|---|
| D1000 | b0 | RFID receive signal | With the nonprocedural protocol, the bit turns on when the GOT receives data from the RFID controller. |
| | b1 to b14 | — | — |
| | b15 | Error signal | Turns on when the GOT receives an error signal. |
| D1001 | b0 to b7 | IC tag communication time | Stores time (second) that the RFID reader/writer sends or receives data from/to an IC tag, when the dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.) is used. |
| | b8 to b15 | RFID reader/writer No. | Stores the number of the RFID reader/writer that sends or receives data from/to an IC tag, when the dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.) is used. |
| D1002 | b0 to b15 | — | — |
| D1003 | b0 to b7 | Error No. | Stores error codes when errors occur. |
| | b8 to b15 | Number of errors | Stores the number of error occurrences. |
| D1004 | b0 to b15 | RFID communication time | Stores the communication time for the RFID function.<br>• With dedicated protocol<br>The bits store the total of the send data time and receive data time.<br>• With nonprocedural protocol<br>The bits store the send data time or receive data time. |

(b) Send data area, receive data area

| Device | Item | Description |
|---|---|---|
| D1005 to D1008 | Send data area | Stores data to be sent to an IC tag.<br>The head device stores the number of bytes for data to be sent. |
| D1009 to D1016 | Receive data area | Stores received data from an IC tag.<br>The head device stores the number of bytes for the received data. |

## 5 Protocols and communication flow

The following dedicated protocol and nonprocedural protocol are available for communications between the GOT and the RFID controller.

| Protocol | Reference |
|---|---|
| Dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.) | This section 5 (1) Dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.) |
| Dedicated protocol (ICU-60S manufactured by MARS TECHNO SCIENCE Corp.) | This section 5 (2) Dedicated protocol (ICU-60S and ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) |
| Dedicated protocol (ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) | |
| Nonprocedural protocol | This section 5 (3) Nonprocedural protocol |

Select the dedicated protocol that corresponds to the RFID controller to be used.
With no dedicated protocol that corresponds to the RFID controller to be used, select the nonprocedural protocol.
For selecting a protocol, refer to the following.

☞ Section 3.7 Communication Interface Setting (Communication Settings)

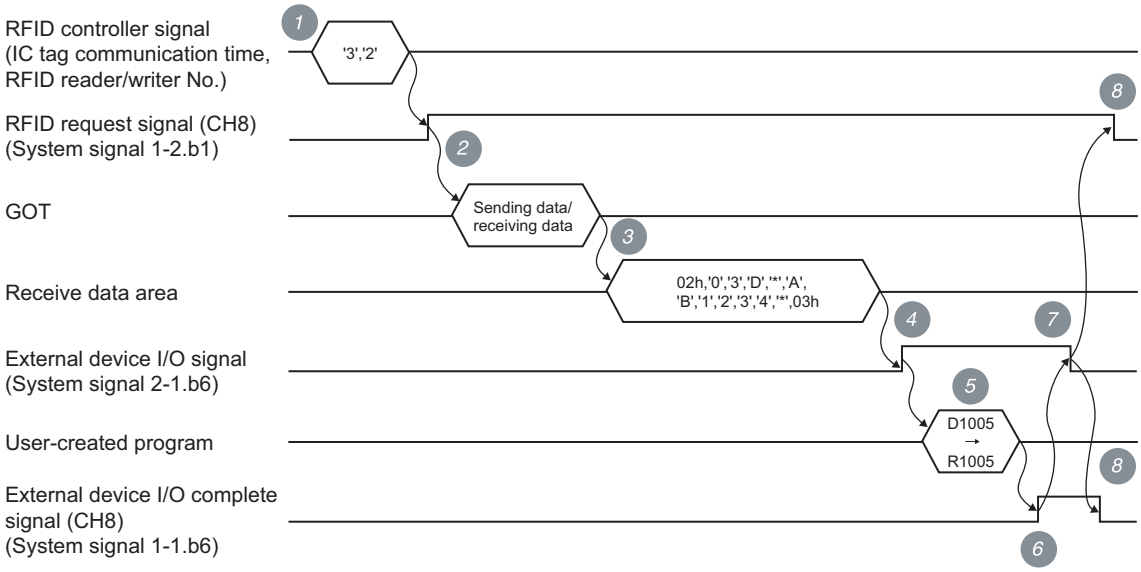
The following shows devices used for each protocol and an handshake example.

(1) Dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.)
Example: Settings with GT Designer2 (When connecting the RFID controller to the channel No.8)
- System signal 1-1: D10
- System signal 1-2: D11
- System signal 2-1: D12
- Device to be set: D1000
- Receive data points : 4 points

(a) Control devices

| Device | Item |
|---|---|
| System information | External device I/O complete signal (CH8) (System signal 1-1.b6),<br>RFID request signal (CH8) (System signal 1-2.b1),<br>External device I/O signal (CH8) (System signal 2-1.b6)<br>(☞ Section 3.6 System Information Setting) |
| RFID controller signal | IC tag communication time, RFID reader/writer No.<br>(☞ This section 4 RFID controller signal, send data area, and receive data area) |

(b) Handshake




1. Set the RFID reader/writer No. and the time that the RFID reader/writer sends data to an IC tag.
   Example) RFID reader/writer No.: 3, Time to send data to IC tag: two seconds
2. Turn on the RFID request signal, and then the RFID reader/writer communicates with an IC tag.
3. Data of the IC tag read by the RFID reader/writer is stored in the receive data area.
4. The GOT turns on the external device I/O signal (CH8).
5. Move the data stored in the receive data area to any of the other devices.
6. Check that the data is moved, and then turn on the external device I/O complete signal (CH8).
7. The GOT turns off the external device I/O signal (CH8).
8. Turn off the external device I/O complete signal (CH8) and the RFID request signal (CH8).

(c) Sequence program example (When connecting the GOT to QCPU by using the channel No.8)
After the GOT receives data from the RFID controller, make sure to turn off the external device I/O complete signal and the RFID request signal.
When those signals are on, the GOT cannot send the next data read request to the RFID controller.
Create a sequence program so that the external device I/O complete signal and the RFID request signal turn off.

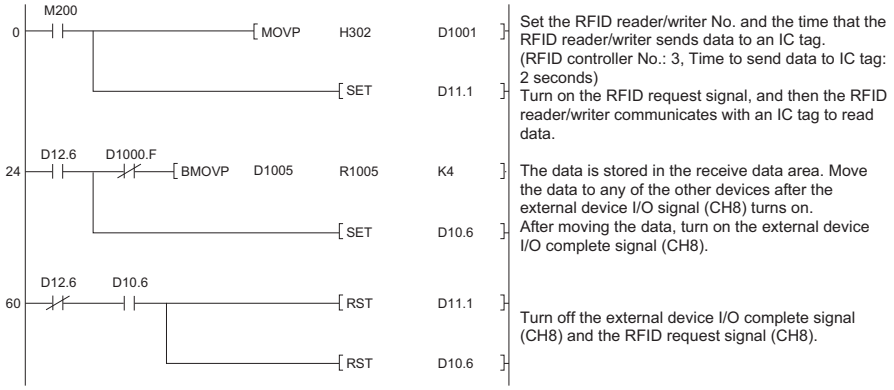
**Point**

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in sequence program

- RFID reader/writer No.3 read command: M200



(2) Dedicated protocol (ICU-60S and ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.)

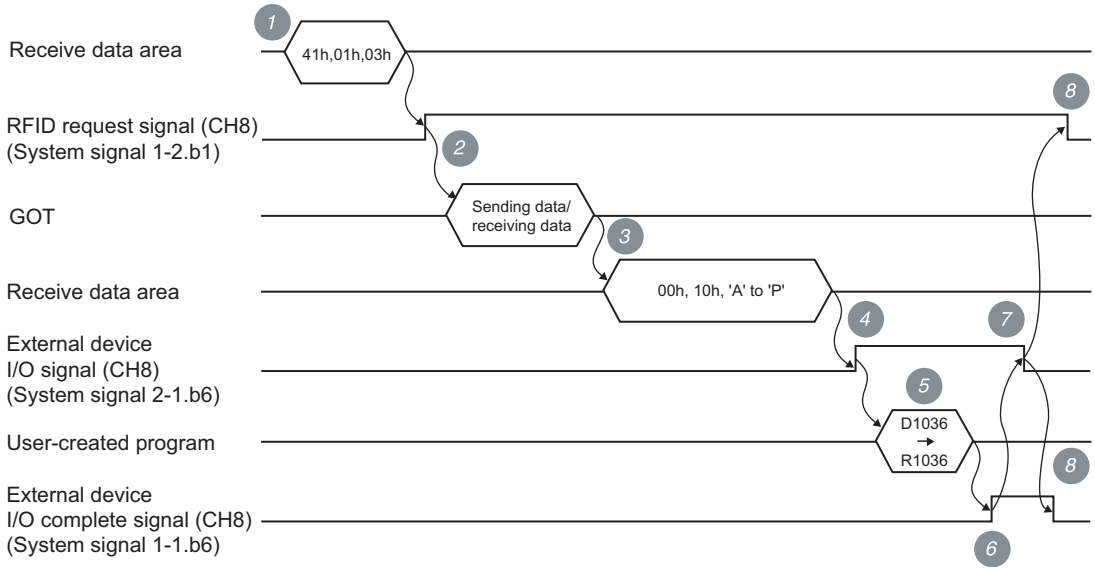
Example: Settings with GT Designer2 (When connecting the RFID controller to the channel No.8)

- System signal 1-1 : D10
- System signal 1-2 : D11
- System signal 2-1 : D12
- Device to be set : D1000
- Send data points : 30 points
- Receive data points : 30 points

(a) Controlling device

| Device | Item |
|---|---|
| System information | External device I/O complete signal (CH8) (System signal 1-1.b6),<br>RFID request signal (CH8) (System signal 1-2.b1),<br>External device I/O signal (CH8) (System signal 2-1.b6)<br>(☞ Section 3.6 System Information Setting) |

(b) Handshake




1. Set the data to be sent to the RFID controller in the send data area.
   Set the data suitable for the protocol of the RFID controller to be used.
   Example) Reading record No.3 by "rf_read" command
2. Turn on the RFID request signal, and then the RFID reader/writer communicates with an IC tag.
3. Data of the IC tag read by the RFID reader/writer is stored in the receive data area.
4. The GOT turns on the external device I/O signal (CH8).
5. Move the data stored in the receive data area to any of the other devices.
6. Check that the data is moved, and then turn on the external device I/O complete signal (CH8).
7. The GOT turns off the external device I/O signal (CH8).
8. Turn off the external device I/O complete signal (CH8) and the RFID request signal (CH8).

(c) Sequence program example (When connecting the GOT to QCPU by using the channel No.8)
After the GOT receives data from the RFID controller, make sure to turn off the external device I/O complete signal and the RFID request signal.
When those signals are on, the GOT cannot send the next data read request to the RFID controller.
Create a sequence program so that the external device I/O complete signal and the RFID request signal turn off.

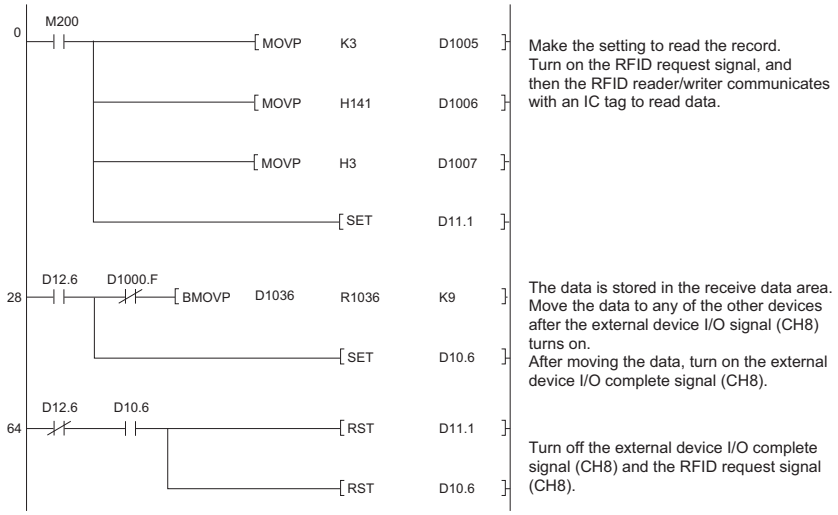
**Point**

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in sequence program

- Record No.3 read command: M200



(3) Nonprocedural protocol

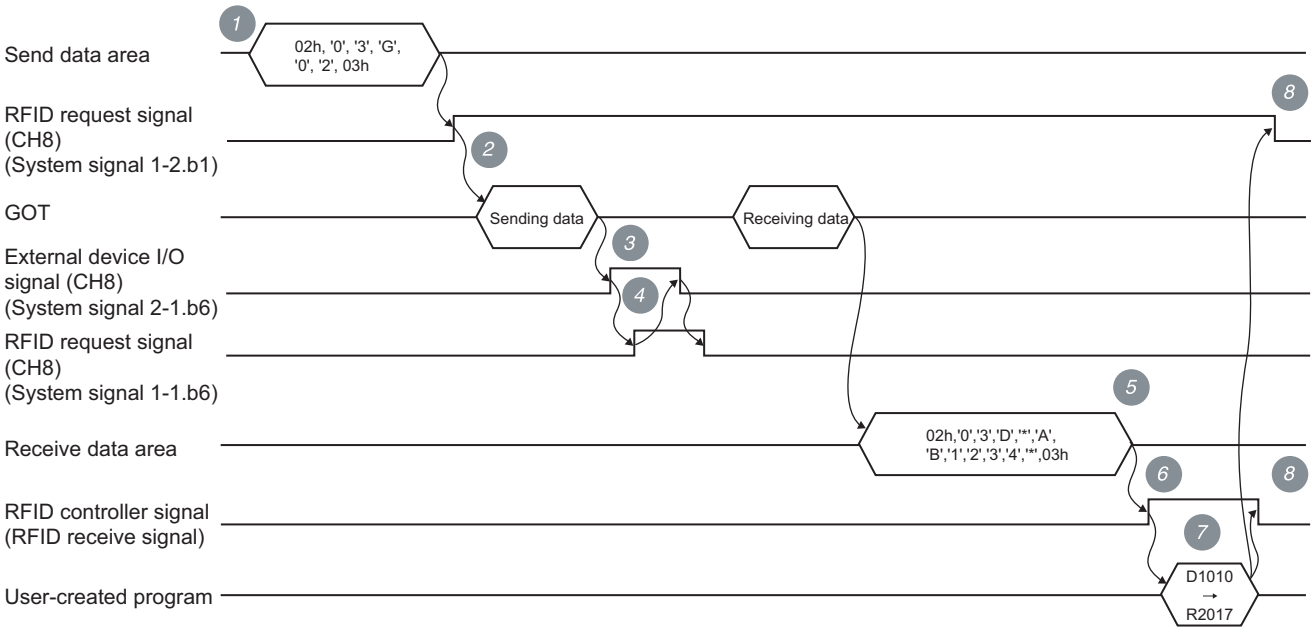
Example: Settings with GT Designer2 (When connecting the RFID controller to the channel No.8)

- System signal 1-1 :D10
- System signal 1-2 :D11
- System signal 2-1 :D12
- Device to be set :D1000
- Send data points :5 points
- Receive data points :8 points

(a) Controlling device

| Device | Item |
|---|---|
| System information | External device I/O complete signal (CH8) (System signal 1-1.b6),<br>RFID request signal (CH8) (System signal 1-2.b1),<br>External device I/O signal (CH8) (System signal 2-1.b6)<br>(☞Section 3.6 System Information Setting) |
| RFID controller signal | RFID receive signal<br>(☞ This section 4 RFID controller signal, send data area, and receive data area) |

(b) Handshake




1. Set the data to be sent to the RFID controller in the send data area.
   Set the data suitable for the protocol of the RFID controller to be used.
   Example) "02h, '0', '3', 'G', '0', '2', 03h"

2. Turn on the RFID request signal (CH8), and then the RFID reader/writer sends the data stored in the send data area to the IC tag.

3. The GOT turns on the external device I/O signal (CH8).

4. Check that the external device I/O signal (CH8) is on, and then turn on the external device I/O complete signal (CH8).
   The GOT turns off the external device I/O signal (CH8).
   Turn off the external device I/O complete signal (CH8).

5. The IC tag sends data to the RFID reader/writer, and the data is stored in the receive data area.

6. The GOT turns on the external device I/O signal (CH8).

7. Move the data stored in the receive data area to any of the other devices.

8 Turn off the RFID request signal (CH8) and the RFID receive signal.

(c) Sequence program example (For QCPU) (When connecting the GOT to QCPU by using channel No.8)

Be sure to turn off the RFID request signal and the RFID receive signal before the GOT sends the next data read request to the RFID controller.

When the RFID request signal and the RFID receive signal are on, the GOT cannot communicate with the RFID controller.

Create a sequence program so that the RFID request signal and the RFID receive signal turn off.

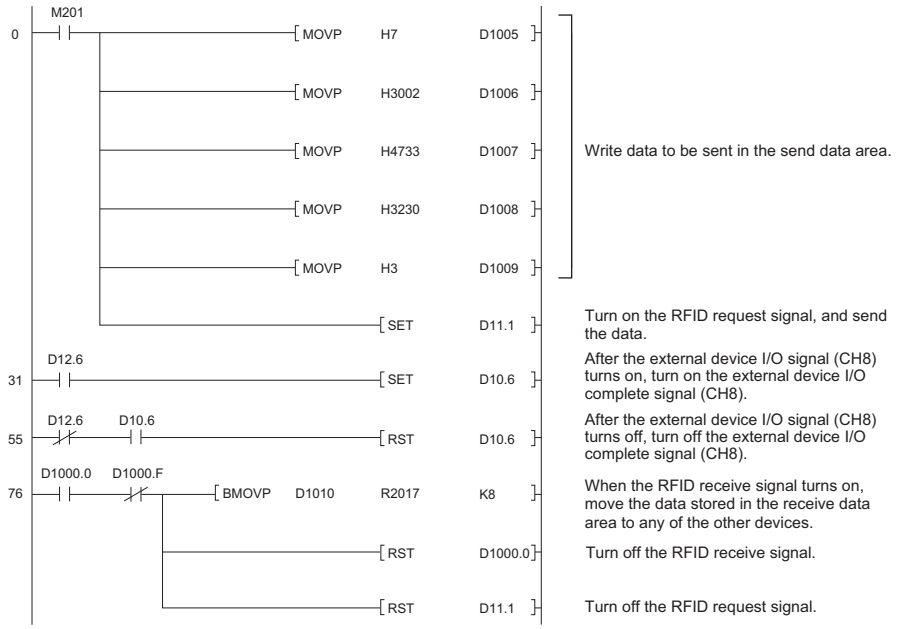
**Point**

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in sequence program

- Data send command:M201



## 6 Errors during communications

The GOT detects errors when the errors occur while the GOT communicates with the RFID controller. For the RFID controller signal, refer to the following.

☞ This section 4 RFID controller signal, send data area, and receive data area

(1) With dedicated protocol (LSRF manufactured by LS Industrial Systems Co., Ltd.)

When an error occurs, the error signal of the RFID controller signal turns on, the number of error occurrences is counted, and an error code is stored in the error No.

Check if an error occurs with the error signal of the RFID controller signal.

The following shows error codes to be stored in the error No.

| Error code | Description | Corrective action |
|---|---|---|
| FFH | Time out | Check if the cable is unplugged and check the RFID controller status. Take the following corrective actions.<br>• Connect the cable again.<br>• Correctly wire the cable.<br>• Turn on the RFID controller. |
| FEH | SIO error | Check the communication settings and communication environments surrounding controllers. Set the communication settings for the RFID controller suitable for those for the GOT. |
| FDH | Send setting error | Set the station No. and time within the setting ranges. |
| FCH | Receive overflow | Set the receive data area suitable for the received data size. |
| 14H | Time out or no IC tags | Make the GOT send a data read request when communications are available between a RFID controller and an IC tag. |

For error codes and corrective actions other than the above, refer to the manual for the RFID controller.

After removing error causes, manually turn off the error signal and send data again.

(2) With dedicated protocol (ICU-60S or ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) or nonprocedural protocol
When an error occurs, an error code is stored in the receive data area or the error No. of the RFID controller signal.

(a) When GOT receives error reply from RFID controller
When the GOT receives an error replay from the RFID controller, an error code is stored in the receive data area.
Check if errors occur with data stored in the receive data area.
For errors and corrective actions, refer to the manual for the RFID controller. After removing error causes, send data again.

(b) When GOT receives no error reply from RFID controller
When the GOT receives no error reply from the RFID controller, the GOT turns on the error signal of the RFID controller signal, and the error code is stored in the error No.
Check if an error occurs with the error signal of the RFID controller signal.
The following shows error codes to be stored in the error No.

| Error code | Description | Corrective action |
|---|---|---|
| FFH | Time out | Check if the cable is unplugged and check the RFID controller status. Take the following corrective actions.<br>• Connect the cable again.<br>• Correctly wire the cable.<br>• Turn on the RFID controller. |
| FEH | SIO error | Check the communication settings and communication environments surrounding controllers. Set the communication settings for the RFID controller suitable for those for the GOT. |
| FDH | Send setting error | Set the station No. and time within the setting ranges. |
| FCH | Receive overflow | Set the receive data area suitable for the received data size. |

After removing error causes, manually turn off the error signal and send data again.

## 13.9.3 Setting

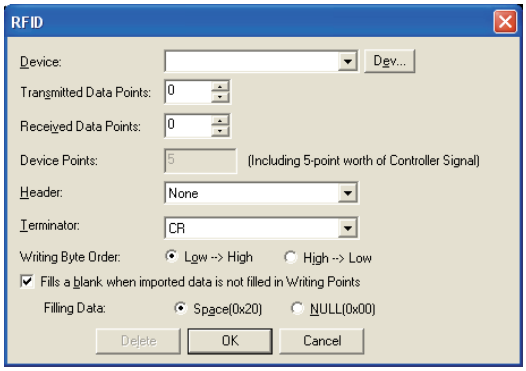
1. Select [Common] → [RFID] from the menu.
2. As the setting dialog box will appear, make the settings with reference to the following explanation.

**Remark** When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on RFID in the project workspace.

## 13.9.4 Setting items

Set control devices, devices for storing data to be sent and received data, and others for the RFID function.




| Item | | Description | Model |
|---|---|---|---|
| Device | | Select a device to be used for the RFID function.<br>Devices equivalent to 5 points starting from the selected device are set as the RFID controller signal.<br>(☞ Section 5.1 Device Setting) | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Transmitted Data Points | | Set the item with the dedicated protocol (ICU-60S or ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) or the nonprocedural protocol.<br>Set the device points for data to be sent (0 to 10000).<br>Set the item so that the device points for [Transmitted Data Points] and [Received Data Points] in total are 10000 points or less. | |
| Received Data Points | | Set the device points for received data (0 to 10000).<br>Set the item so that the device points for [Received Data Points] and [Transmitted Data Points] in total are 10000 points or less. | |
| Device Points | | Displays the total device points of [Transmitted Data Points], [Received Data Points], and the RFID controller signal (5 points). | |
| Header | | Set the item with the nonprocedural protocol.<br>(☞ Section 3.7 Communication Interface Setting (Communication Settings))<br>Select either of the following suitable for the protocol of the RFID controller.<br>None : No header<br>STX : The STX header is added to the data. | |
| Terminator | | Set the item with the nonprocedural protocol.<br>(☞ Section 3.7 Communication Interface Setting (Communication Settings))<br>ETX : The ETX terminator is added to the data.<br>LF : The LF terminator is added to the data.<br>CR : The CR terminator is added to the data.<br>CR+LF : The CR and LF terminator is added to the data. | |
| Writing Byte Order | | Select an order of writing data into controller devices.<br>Low → High : The GOT writes data into controller devices in order of data from lower 8 bits to upper 8 bits.<br>High → Low : The GOT writes data into controller devices in order of data from lower 8 bits to lower 8 bits. | |
| Fills a blank when Imported data is not filled in Writing Points | | Check the item to fill in devices without data with spaces or NULLs when the number of bytes for the data received by the RFID reader/writer is less than that of bytes equivalent to the set device points set for [Received Data Points]. | |
| | Filling Data | Select a data to fill in devices without data.<br>Space : Fills devices without data with spaces (20H).<br>NULL : Fills devices without data with NULLs (00H). | |
| Delete | | Click the Delete button to delete the settings. | |

## 13.9.5 Precautions

The following shows precautions for the RFID function.

### 1 Precautions for drawing

(1) Maximum number of RFID settings
Only one RFID setting is available for one project.

(2) Connecting RFID controller for operator authentication
To use the RFID controller for the operator authentication, the controller can be connected to only the RS-232 interface built in the GOT.
Set the channel No.8 for connecting the RFID controller.

(3) Applicable RFID controller
For applicable RFID controllers, refer to the following TECHINICAL BULLETIN.
☞ List of valid devices applicable for GOT1000 series

**Remark** For the operation-checked models

For the operation-checked models, refer to “List of valid devices applicable for GOT1000 Series” (GOT-A-0010) separately available.
The Technical News above is available as a reference at the Information site for Mitsubishi industrial automation products.
(MELFANSweb website:http://wwwf2.mitsubishielectric.co.jp/english/index.html)

(4) Setting system information

(a) System information
To connect the RFID controller to the channel No.8, set the system signal 1-1 and the system signal 2-1. To connect the RFID controller to any of the channels from No.5 to No.7, set the system signal 2-1 and the system signal 2-3.
The RFID function is unavailable without the settings.
For details of the system information, refer to the following.
☞ Section 3.6 System Information Setting

(b) Operation of RFID function with control device status
Depending on the status of the control device to be used, the GOT may not send or receive data to/from the RFID controller.
For control devices for each protocol, refer to the following.
☞ Section 13.9.2 5 Protocols and communication flow

### 2 Precautions for OS

For using the RFID function, install the extended function OS (RFID) on the GOT.

## 3 Precautions for hardware

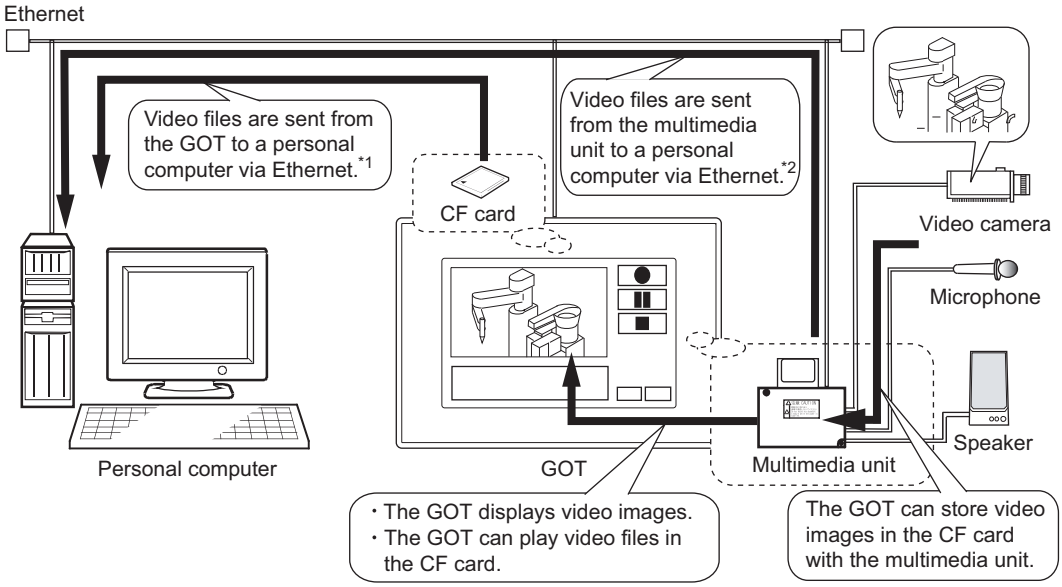
(1) System configuration with RFID controller
For the system configuration with the RFID controller, refer to the following manual.

☞ GOT1000 Series Connection Manual

(2) Communication in multiple RFID readers/writers connection
When connecting multiple RFID readers/writers, some controllers may communicate with each RFID reader/writer.
For communicating the RFID controller with the each RFID reader/writer, set an interlock so that the RFID controller does not communicate with RFID readers/writers until the executing communication is completed.

# 13.10 Multimedia Function

This function enables to display or record video images taken by a video camera connected to a multimedia unit and play video files stored in a CF card.
Recorded video images can be stored in the CF card with the multimedia unit.
Stored video files are sent from the GOT or multimedia unit to a personal computer via Ethernet.




*1 For sending video files via Ethernet, insert a CF card in the GOT.
When video files are sent from the GOT to the personal computer, the files are temporarily stored in the CF card.

*2 For sending video files together with advanced user alarm data to the personal computer, insert a CF card in the GOT.
The advanced user alarm data are stored in the CF card, and then the data are sent from the multimedia unit.

**Point**

(1) System configuration and communication settings
For the system configuration and communication settings for using the multimedia function, refer to the following manual.

☞ GOT1000 Series Connection Manual
(Chapter 48 Multimedia Connection)

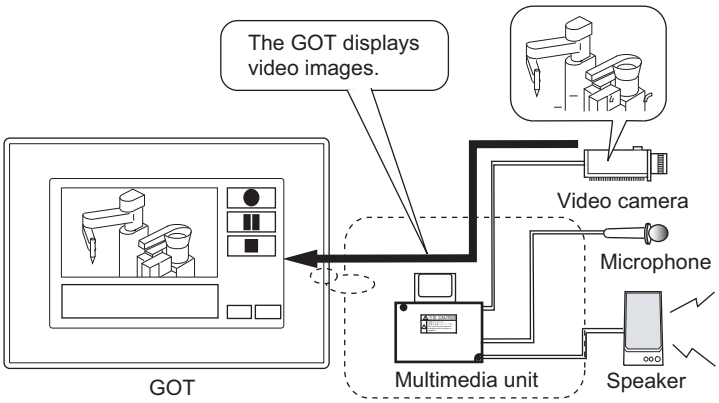
(2) CF card
Required number of CF cards varies depending on the usage.
- To send no video files to the personal computer
  One CF card is required for the multimedia unit.
- To send only video files from the multimedia unit to the personal computer
  One CF card is required for the multimedia unit.
- To send only video files from the GOT to the personal computer
  Two CF cards are required for the GOT and the multimedia unit.
- To send video files together with advanced alarm log files of the advanced user alarm to the personal computer
  Two CF cards are required for the GOT and the multimedia unit.

(3) Multimedia interaction tool
To send video files from the GOT to the personal computer, the multimedia interaction tool must be installed on the personal computer.
To send video files from the multimedia unit to the personal computer, the multimedia interaction tool and the multimedia interaction FTP service must be installed on the personal computer.

☞ 13.10.4 Multimedia interaction tool

## 1 Displaying video image

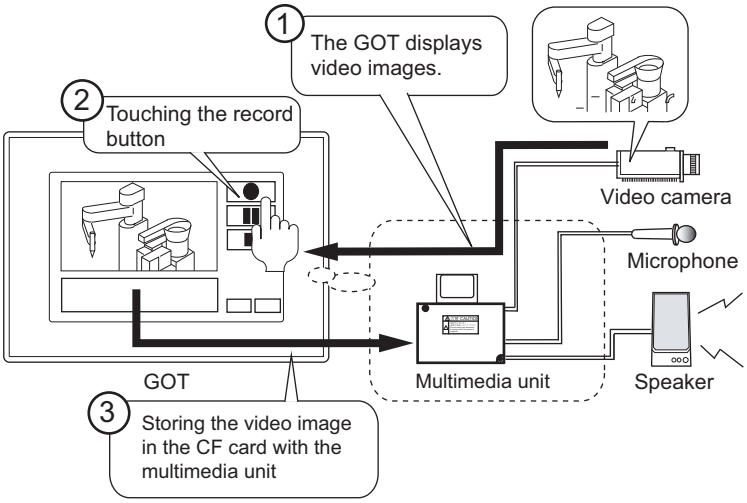
By connecting a video camera, a microphone, and a speaker to the multimedia unit, the GOT can display a video image with sound on the multimedia screen.




## 2 Recording video image

By connecting a video camera and a microphone to the multimedia unit, the GOT can record a video image with sound.
The following shows the recording methods.

(1) Recording currently displayed video image
The GOT records a video image currently displayed on the multimedia screen by the user operation.



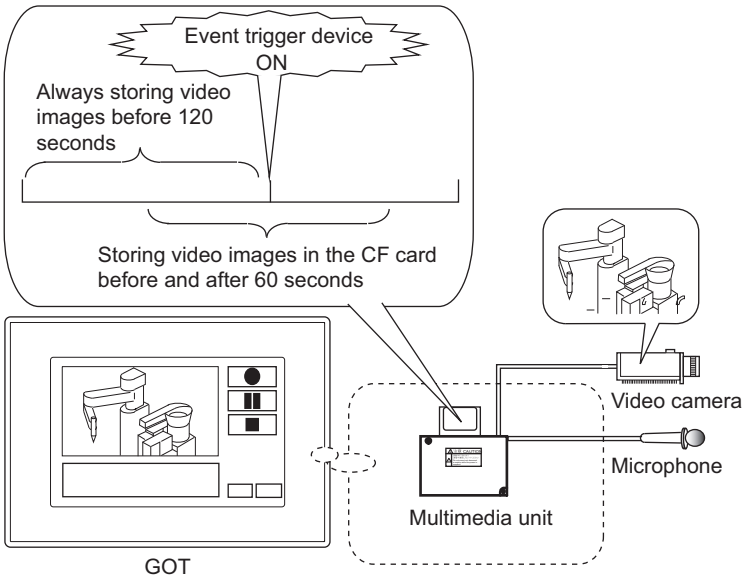
(2) Recording before and after event

The total time for recording a video image is at most before and after 120 seconds when an event trigger device turns on.

When the setting for recording before and after event are enabled, the multimedia unit always stores video images before 120 seconds.

When the event trigger device turns on, a video image recorded before and after the device turns on is stored in the CF card.

Example) Storing video images before and after 60 seconds when an event trigger device turns on

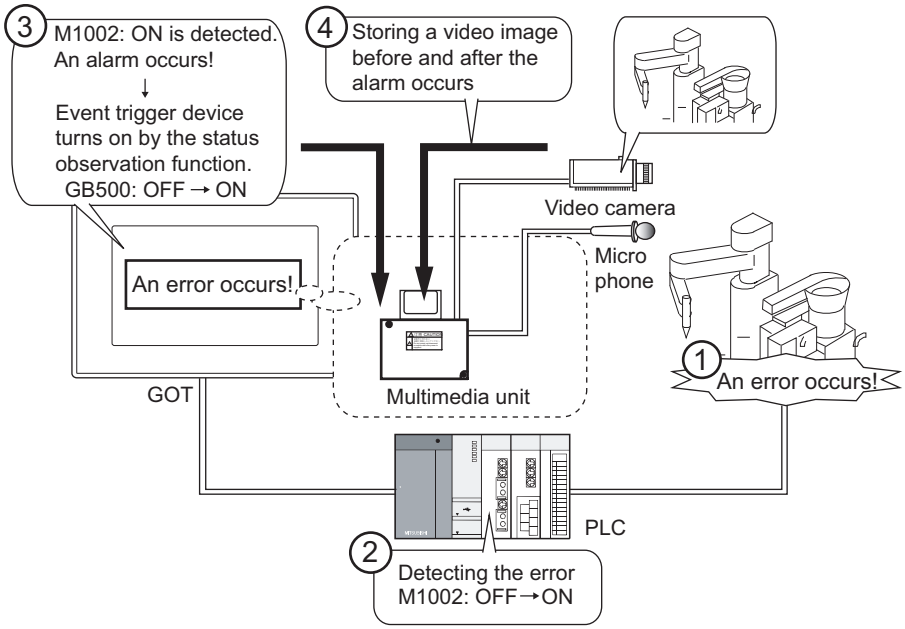



**Hint!** Using advanced user alarm together

When using the advanced user alarm together, a video image can be recorded before and after an alarm occurs.

When detecting an advanced user alarm, the event trigger device is set to turn on with the status observation function and the script function.

Example) Storing a video image before and after an alarm specified by the user




GOT settings:

- Setting M1002 for the trigger device of the advanced user alarm
- Setting GB500 for the event trigger device
- Setting GB500 to turn on when M1002 turns on with using the status observation function

PLC setting:

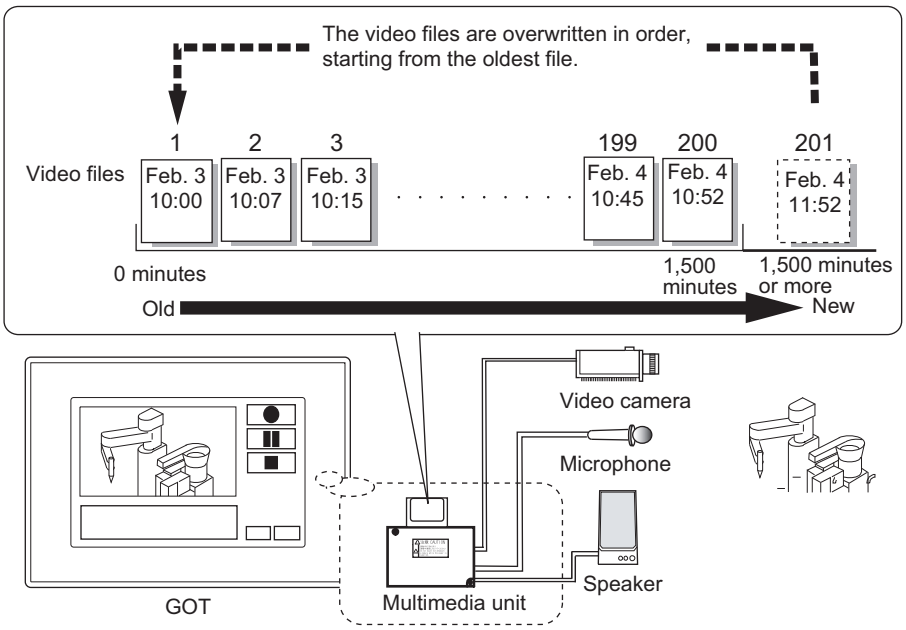
- Setting M1002 to turn on when an error occurs

(3) Long time recording

By setting the long time recording, the GOT can record video images for approximately 1,500 minutes (200 video files).

By setting the recording loop mode, recorded video files are overwritten in order starting from the oldest file, and the GOT can continue recording after 1,500 minutes (200 files).

In the recording loop mode, the GOT continues recording until the user stops recording.




**Remark**

Recording time and data size per file

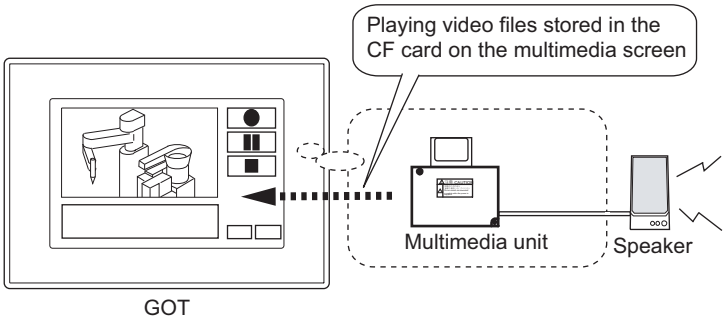
With the long time recording, the GOT can record a video image for approximately 7 minutes and 30 seconds per video file (approximately 20MB).

The GOT records a video image for a minimum of 7 minutes and 30 seconds.

Even if a video image is recorded for more than the minimum recording time, the data size does not differ significantly from the data size of a seven-and-half-minute video image.

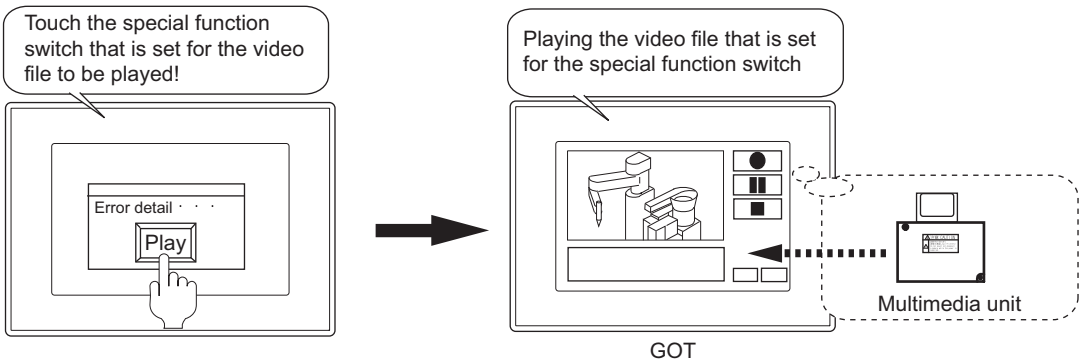
## 3 Playing video file

The GOT can play video files stored in the CF card with the multimedia unit on the multimedia screen. Sound of video files are output from the speaker that is connected to the multimedia unit.



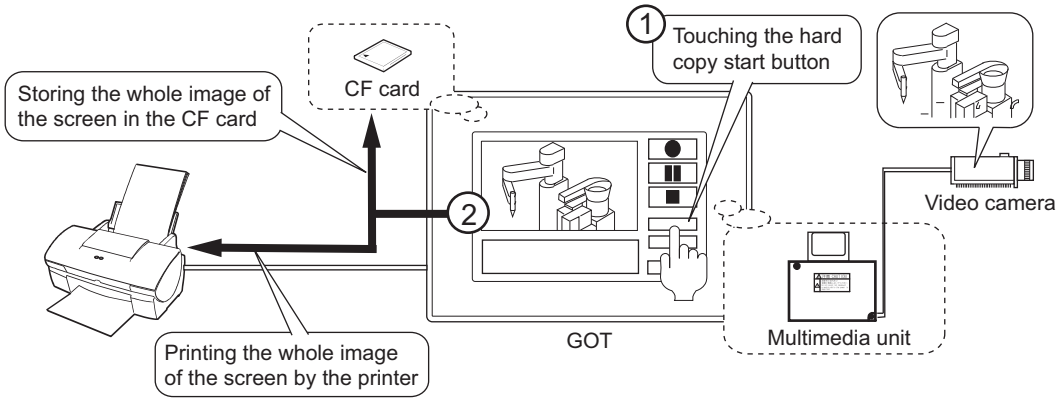

**Hint!** Playing video files on monitor screen

When setting a file name in the special function switch, video files can be played directly on the monitor screen with the touch switch.




## 4 Hard copy

The GOT can print the displayed image including currently displayed video image in the CF card with the BMP/JPEG file format.

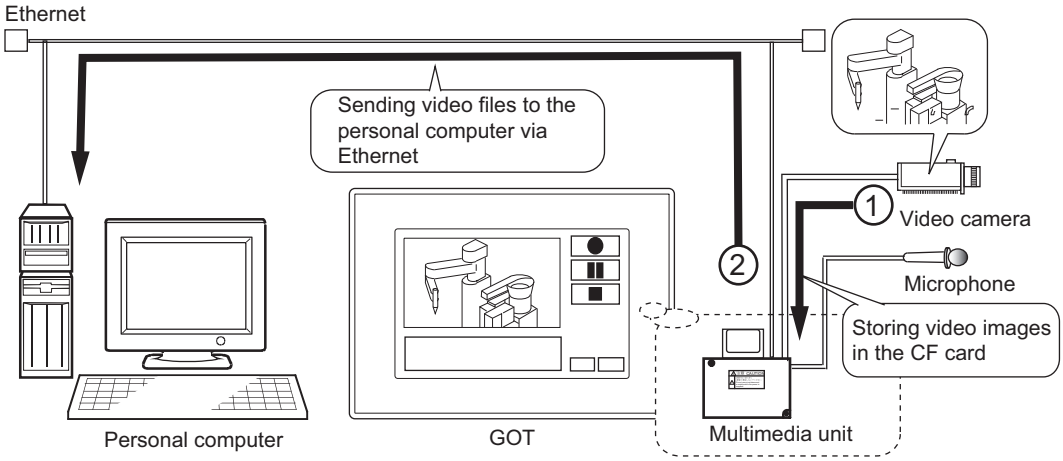


## 5 Interaction with personal computer

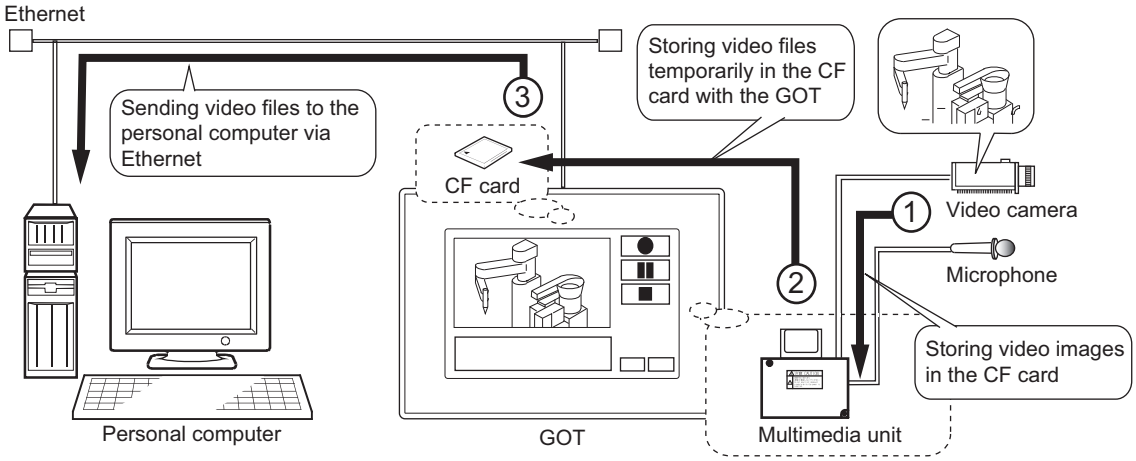
By using the multimedia interaction tool, the personal computer can receive video files or alarm log files sent from the GOT or multimedia unit.
Received video files and alarm log files can be displayed as a list or searched on the same screen.

(1) Sending video file
The GOT or the multimedia unit can send video files to the personal computer via Ethernet.
For a video file that is recorded before and after the event, an alarm log file for the advanced user alarm can be sent together with the video file.

(a) Sending files from multimedia unit to personal computer
Connect the multimedia unit to Ethernet, and send video files to the personal computer.
To send alarm log files to the personal computer, insert a CF card in the GOT.

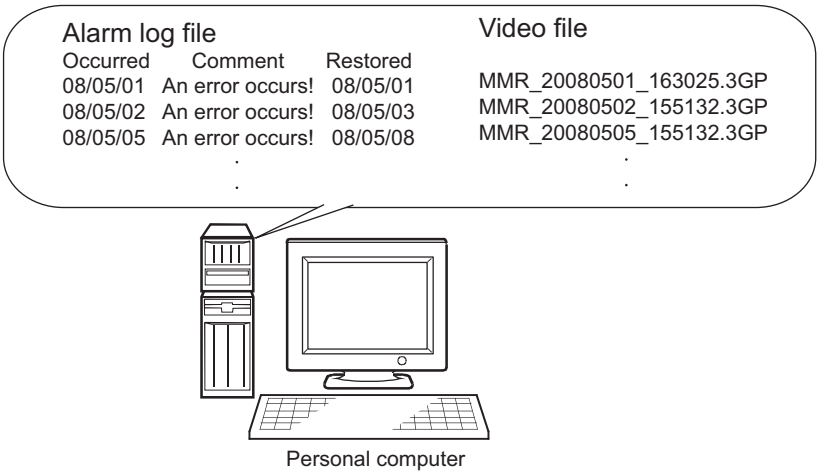



(b) Sending files from GOT to the personal computer
Connect the GOT to Ethernet, and send video files to the personal computer.
To send the files from the GOT to the personal computer, insert a CF card in the GOT.
When sending video files, the files are temporarily stored in the CF card.



(2) Displaying video file list or searching for video file

Received video files and alarm log files can be displayed as a list or searched for on the same screen.



## 13.10.1 Before setting

The following explains for the required information and preparations before the settings.

### 1 Specifications

(1) Video display

The following table explains the specifications of displaying and recording video images.

(a) Display specifications

| GOT | Video input signal | Display size on GOT |
|---|---|---|
| GT1695M-X,<br>GT1685M-S,<br>GT1675M-S | NTSC format | 640 × 480 dots |
| | PAL format | 672 × 504 dots |
| GT1675M-V,<br>GT1665M-V | NTSC format | 480 × 360 dots |
| | PAL format | |

(b) Recording specifications

- When the recording mode is set to [Standard]

| Recording size of video images | Video input signal | Available frame rate (fps) | Recording bit rate |
|---|---|---|---|
| VGA<br>(640 × 480) | NTSC format | 15 | 1Mbps |
| | PAL format | 12.5 | |
| QVGA<br>(320 × 240) | NTSC format | 15 | 384Kbps |
| | | 30 | 768Kbps |
| | PAL format | 12.5 | 384Kbps |
| | | 25 | 768Kbps |

- When the recording mode is set to [Extended]

| Recording size of video images | Video input signal | Available frame rate (fps) | Recording bit rate |
|---|---|---|---|
| QVGA(320 × 240) | NTSC format | 15 | 384Kbps |
| | PAL format | 12.5 | |

(c) Storing place for video file

Recorded video files are stored in a CF card with the multimedia unit with the 3GPP file format. When checking [Save to File Server] or [Save record file to File Server] in [Multimedia] for the System Environment dialog box, video files can be stored in the CF card and sent to a personal computer via Ethernet simultaneously.

For how to send video files to the personal computer via Ethernet, refer to the following.

☞ This section 4 Interaction with personal computer

(2) Playing video file
The following explains the specifications of playing video files.

(a) Format of video files that can be played
The GOT can play video files using the following formats.
- 3GPP file format
- MP4 file format

(b) Profile for MP4 file
When playing a MP4 file, use the MP4 file created by MPEG-4 Simple Profile.
MP4 files created by the profile other than above cannot be played.

(c) Video file editing software
When editing video files, use QuickTime 7 Pro.
Edited video files other than above software may not be played.
QuickTime 7 Pro is software for editing video files.
The software can be obtained from the website of Apple Inc. for a fee.
The software is the copyright of Apple Inc.
Use the software under the license agreement that appears when installing.

(d) Playing sound included in video file
Only images can be played for video files.
A sound cannot be played even when video files include the sound.

## 2 Multimedia screen

The multimedia screen enables to use the multimedia function on the GOT.
The following operations are available for the multimedia screen.
- Displaying or recording video images taken by a video camera connected to a multimedia unit
- Playing video files
- Displaying or deleting video file lists

For how to operate the multimedia screen, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 2.1 GOT Main Unit Function Settings)

(1) How to start multimedia screen
The multimedia screen is started from the special function switch.
For settings of the special function switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

## 3 Hard copy

Before printing the hard copy for the multimedia screen, set the following.

(1) Installing extended function OS
For printing the multimedia screen, install the extended function OS (Printer) in the GOT.

(2) Settings for output target of hard copy
For setting the output target of the hard copy (CF card or printer), select [Common] → [Hard Copy].
For how to set, refer to the following.

☞ Section 13.2 Hard Copy

## 4 Interaction with personal computer

Set up the following before connecting the GOT to the personal computer.

(1) On personal computer

(a) Installing and setting up software

Install the multimedia interaction tool on the personal computer.
To connect the multimedia unit to Ethernet, also install the multimedia interaction FTP service.
After the installation, set up the multimedia interaction tool.
For how to install and set up the multimedia interaction tool, refer to the following.

☞ Section 13.10.4 Multimedia interaction tool

(b) Connecting personal computer to Ethernet

Connect the personal computer to Ethernet.
For the connection method, refer to the following.

☞ GOT1000 Series Connection Manual (Chapter 48 Multimedia Connection)

(2) On GT Designer2

(a) Setting up multimedia function

Set [Multimedia] for the System Environment dialog box.
To send recorded files to the personal computer, check the following item.

- In the recording setting or the before-after event recording setting on the Recording Setting tab
  [Save to File Server]

For the setting method, refer to the following.

☞ Section 13.10.2 Settings

(b) Communication settings

Configure the communication settings for connecting the GOT or multimedia unit to the personal computer.
For the setting method, refer to the following.

☞ Section 13.10.2 Settings

Section Communication Interface Setting (Communication Settings)

(c) Setting advanced user alarm

Set the following before sending alarm log files of the advanced user alarm for recording before and after the event.

- Set same [Alarm ID] in the advanced user alarm observation as the alarm ID set in [Multimedia] for the System Environment dialog box.
- Check [File Convert External Control Setting] for the advanced alarm common setting.
- Check [Save Alarm Log File] in the File Save tub for the advanced user alarm observation.

For how to set the advanced user alarm, refer to the following.

☞ Section 8.2 Advanced Alarm Observation (Advanced User Alarm)

(d) Enabling FTP server function

To connect the GOT to Ethernet, enable the FTP server function of the GOT.
For the setting method, refer to the following.

☞ GOT1000 Series Gateway Functions Manual (Chapter 6 FTP Server Function)

(3) On GOT

(a) Inserting CF card

Insert a CF card in the GOT in the following cases.

- To send video files from the GOT to the personal computer
  When sending video files, the "G1MMR" folder is created in the root folder of the CF card in the GOT, and the video files are temporarily stored in the "G1MMR" folder.
  When no CF card is inserted in the GOT, video files are not temporarily stored. Therefore, the video files cannot be sent to the personal computer.
- To send video files together with advanced user alarm data from the multimedia unit to the personal computer
  The advanced user alarm data are stored in the CF card in the GOT.
  When no CF card is inserted in the GOT, advanced user alarm data cannot be sent to the personal computer.

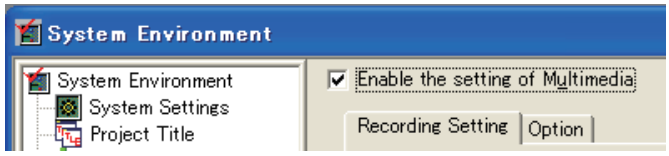
(b) Connecting to Ethernet

To send video files from the GOT to the personal computer, connect the GOT to Ethernet.
To send video files from the multimedia unit to the personal computer, connect the multimedia unit to Ethernet.
For how to connect, refer to the following.

☞ GOT1000 Series Connection Manual (Chapter 48 Multimedia Connection)

## 13.10.2 Settings

1. Select [Common] → [System Environment] from the menu.
2. Select [Multimedia] in the tree for the System Environment dialog box.
3. The setting dialog box appears.
   Checking [Enable the setting of Multimedia] enables the setting.

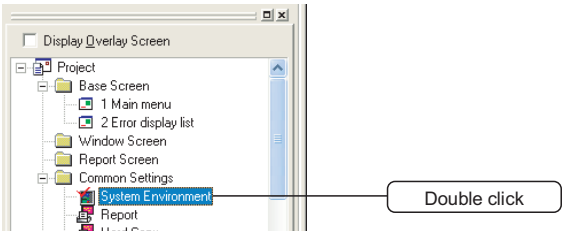



For the setting, refer to the following.

☞ Section 13.10.3 Setting items

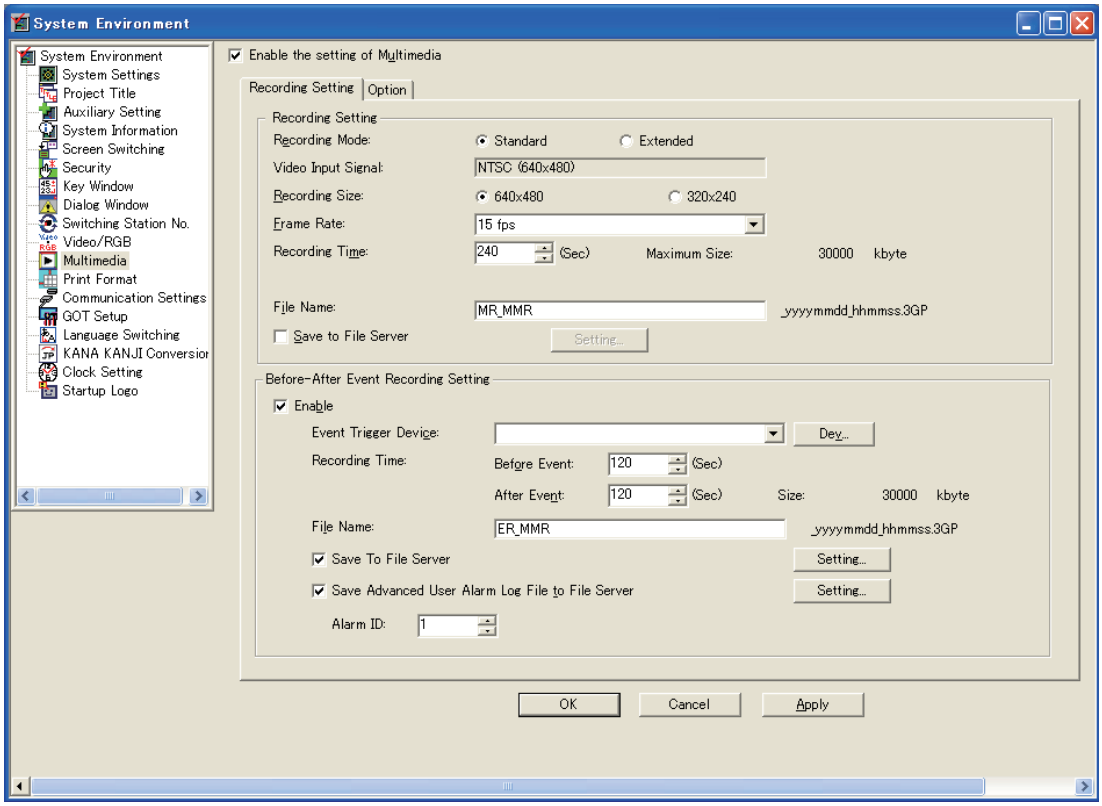
**Remark** When making settings in the project workspace

Double-click [System Environment] to display the System Environment dialog box, and then double-click [Multimedia].

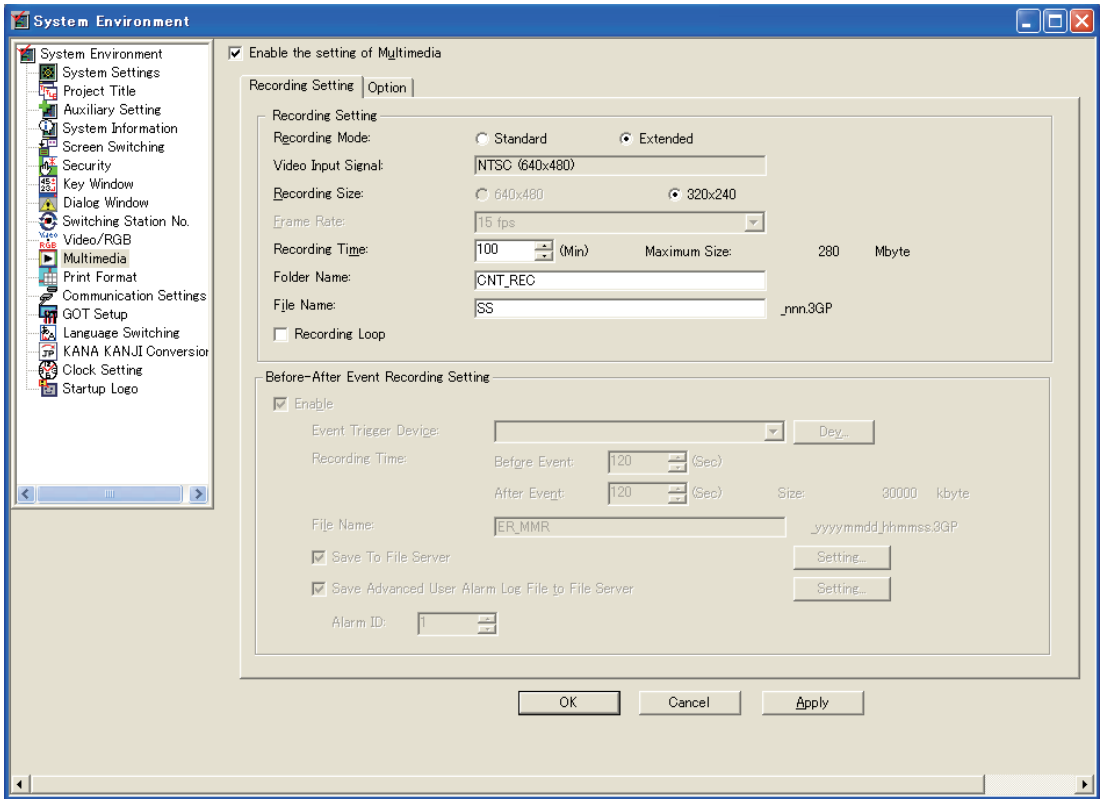


## 13.10.3 Setting items

### 1 Recording Setting tab




(When the recording mode is set to [Standard])




(When the recording mode is set to [Extended])

## Recording Setting

Option

| Item | Description | Model |
|---|---|---|
| Recording Setting | Configure the setting regarding video image recording. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Recording Mode | Set the recording mode.<br>• Standard:<br>Check this item to select the standard mode.<br>In the standard mode, the recording size and the frame rate can be set.<br>The maximum recording time is 900 seconds.<br>• Extended:<br>Check this item to select the long time mode.<br>In the long time mode, the recording size and the frame rate cannot be set.*1<br>The maximum recording time is 1,500 minutes. | |
| Video Input Signal | Displays the current format of the video input signal.<br>The video input signal can be set in the communication detail settings.<br>For the setting method, refer to the following.<br>☞ Section 3.7 Communication Interface Setting (Communication Settings) | |
| Recording Size | Select a resolution for recording.<br>Setting range<br>When the recording mode is set to [Standard] : 640×480/320×240<br>When the recording mode is set to [Extended] : 320×240 | |
| Frame Rate | Select a frame rate for recording.<br>This item can be set only when the recording mode is set to [Standard].<br>The setting range differs depending on the video input signal and recording size.*1 | |
| Recording Time | Set the recording time.<br>Setting range<br>When the recording mode is set to [Standard]:<br>The setting range differs depending on the recording mode, the video input signal, and the frame rate.*1<br>When the recording mode is set to [Extended]: 15 to 1,500 minutes (Default: 100 minutes) | |
| Folder Name | Set the folder name for storing recorded video files.*2<br>This item can be set only when the recording mode is set to [Extended]. (Default: "CNT_REC") | |
| File Name | Set the file name when storing a recorded video image as a video file.*2<br>When the recording mode is set to [Standard] : (Default: "MR_MMR")<br>When the recording mode is set to [Extended] : (Default: "SS") | |
| Recording Loop | When the recording mode is set to [Extended], check this item to continue recording by overwriting old files after the recording time. | |
| Before-After Event Recording Setting | Set the before-after event recording settings.<br>This item can be set only when the recording mode is set to [Standard]. | |
| Enable | Check this item for recording before and after the event. | |
| Event Trigger Device | Set a trigger device to start recording before and after the event.<br>Clicking the Dev... button can set a device.<br>☞ Section 5.1 Device Setting | |
| Recording Time | Set a recording time of before and after the event.<br>• Recording time of before the event: 10 to 120 seconds (Default: 120 seconds)<br>• Recording time of after the event: 10 to 120 seconds (Default: 120 seconds) | |
| File Name | Set a file name of the video file recorded before and after the event.*2<br>(Default: ER_MMR) | |

(Continued to next page)

Recording Setting | Option

| Item | | Description | Model |
|---|---|---|---|
| | Save to File Server | Check this item to send recorded video images to the personal computer.<br>After checking the item, clicking the Seting button displays the File Server Connection Setting dialog box.*3<br>Configure the setting for connecting the personal computer with the GOT or the multimedia unit. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Save Advanced User Alarm Log File to File Server | Check this item for recording images and sending alarm log files to a personal computer simultaneously.<br>Set [Alarm ID] of the advanced user alarm observation to be stored.<br>After checking the item, clicking the Seting button displays the File Server Connection Setting dialog box.*3<br>Configure the setting for connecting the personal computer with the GOT or the multimedia unit. | |

For *1 to *3, refer to the following.

*1 Setting range of frame rate and available recording time

- When the recording mode is set to [Standard]

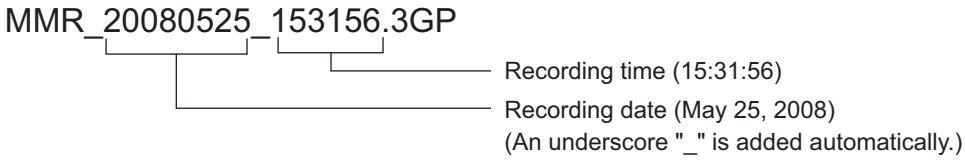
| Recording size | Video input signal | Frame rate (fps) | Available recording time (Second) |
|---|---|---|---|
| VGA(640×480) | NTSC format | 15 | 10 to 240 |
| | PAL format | 12.5 | |
| QVGA(320×240) | NTSC format | 15 | 10 to 900 |
| | | 30 | 10 to 450 |
| | PAL format | 12.5 | 10 to 900 |
| | | 25 | 10 to 450 |

- When the recording mode is set to [Extended]

| Recording size | Video input signal | Frame rate (fps) | Available recording time (Minute) |
|---|---|---|---|
| QVGA(320×240) | NTSC format | 15 | 15 to 1500 |
| | PAL format | 12.5 | |

*2 Folder name and file name

- When the recording mode is set to [Standard]
  A file name can be set up to 44 characters using one-byte alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}?\).
  For a video file recorded on the multimedia screen, the recording date and time are added to the end of the file name when storing the file.
  For the video file recorded on the before-after event recording, the event occurred date and time are added to the end of the file name when storing the file.
  Example: "MMR" is set for [File Name] and recorded at 15:31:56 on May 25, 2008.

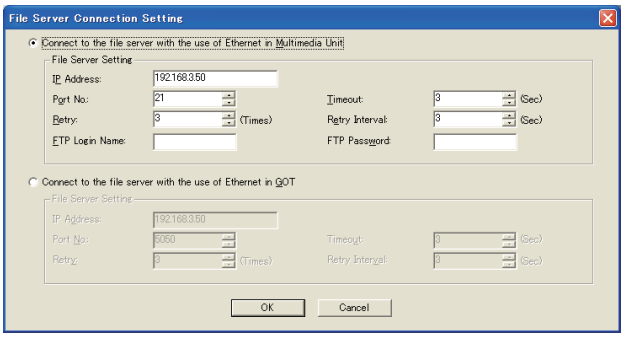


- When the recording mode is set to [Extended]
  For a folder name and a file name, one-byte alphanumeric characters and some symbols (#$%&'()+-.=@[]^_{}~) are available.
  The total number of characters for a folder name and a file name must be 56 or less.
  When storing a file, a serial number that indicates the recording order is automatically added to the end of the file name.

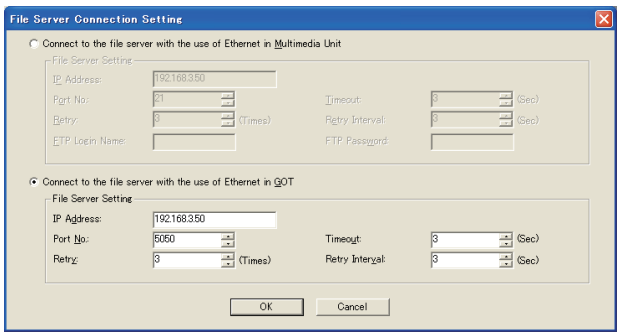
CRT_REC\SS_001.3GP

Number indicating the recording order

*3 File Server Connection Setting dialog box



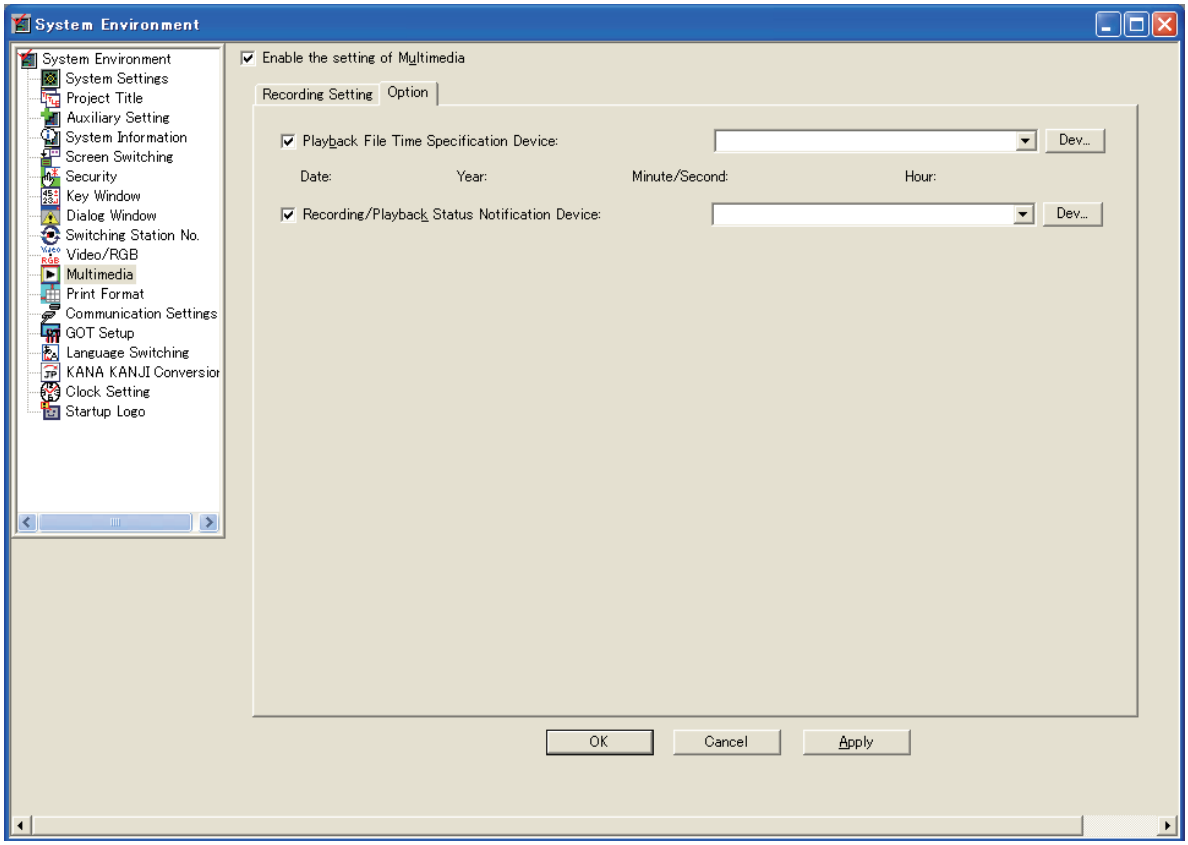

When connecting the multimedia unit to Ethernet




When connecting the GOT to Ethernet

| Item | Description | Model |
|---|---|---|
| Connect to the file server with the use of Ethernet in Multimedia Unit | Check this item to send video files to the file server via Ethernet by using the Ethernet interface built in the multimedia unit.<br>[Connect to the file server with the use of Ethernet in GOT] cannot be set. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Connect to the file server with the use of Ethernet in GOT | Check this item to send video files to the file server via Ethernet by using the Ethernet interface built in the GOT.<br>[Connect to the file server with the use of Ethernet in Multimedia Unit] cannot be set. | |
| File Server Setting | Configure the setting for connecting the personal computer with the GOT or the multimedia unit. | |
| IP Address | Set the IP address of the personal computer.<br>Setting range: 0.0.0.0 to 255.255.255.255 (Default: 192.168.3.50) | |
| Port No. | Set the port No. for the GOT or the multimedia unit.<br>Setting range:<br>When connecting the multimedia unit to Ethernet: 0 to 1024 (Default: 21)<br>When connecting the GOT to Ethernet: 1024 to 5010, 5014 to 65534 (Default: 5050) | |
| Timeout | Set time for the communication to time out.<br>Setting range: 3 to 120 seconds (Default: 3 seconds) | |
| Retry | Set the number of retries when the communication times out.<br>With no response after retries, the communication times out.<br>Setting range: 0 to 10 times (Default: 3 times) | |
| Retry Interval | Set time for the next retry after a retry.<br>Setting range: 0 to 300 seconds (Default: 3 seconds) | |
| FTP Login Name | Set the login name of the file server. | |
| FTP Password | Set the password of the file server. | |

## 2 Option tab




| Item | Description | Model |
|---|---|---|
| Playback File Time Specification Device | Set a device to store the recording data and recording time of the video file to be played.<br>Section 5.1 Device Setting<br>For the playback file time specification device, the 16-bit unsigned BIN word device can be set.<br>Sets four points of devices starting from the head device specified by the user.<br>First device: Date, Second device: Year,<br>Third device: Minute/Second, Fourth device: Hour<br>The device value of the device is added to the file name when playing video files on the special function switch.*1<br>For how to set the special function switch, refer to the following.<br>Section 6.2.5 Setting items of special function switch | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Recording/Playback Status External Notification Device | Set a device to notify the status during playing video files.<br>Settable device: 16-bit unsigned BIN word device*2<br>Section 5.1 Device Setting | |

For *1 to *2, refer to the following.

*1 Device value of playback file time specification device

Only when [Add date to playback files] is checked for the settings of the special function switch, the device value is added to a file name to be played.
Example: When setting "MMR" for the file name of video file to be played

MMR_20080525_153156.3GP

The device value of the playback file time specification device is added.
(An underscore "_" is added automatically.)

For how to set the special function switch, refer to the following.

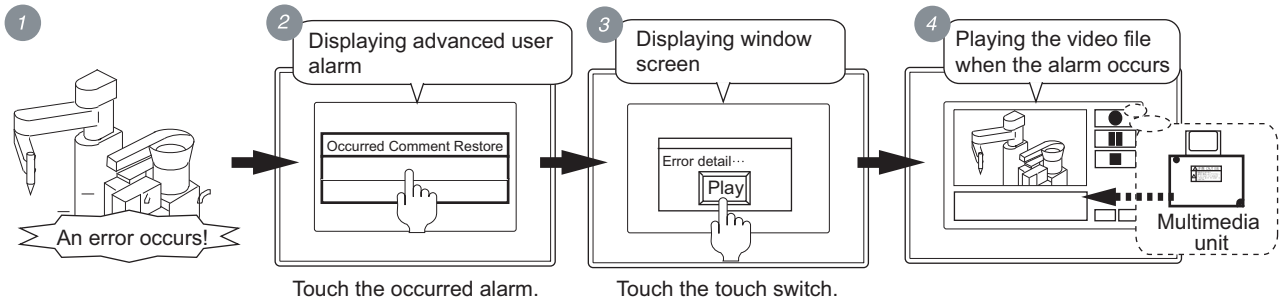
☞ Section 6.2.5 Setting items of special function switch

*2 Recording/playback status notification device

| Bit | Item | Description |
|---|---|---|
| b0 | Recording status | ON :Recording<br>OFF :Stopping recording |
| b1 | Enabling or disabling recording before and after event | ON :Enabling recording before and after the event<br>OFF :Disabling recording before and after the event |
| b2 | Recording before and after event status | ON :Recording before the event<br>OFF :Records after the event. |
| b3 | - | Use prohibited |
| b4 to b6 | Playing video file status | 000 :Stopping playing<br>001 :Playing<br>010 :Pause<br>Other than above: Disabling |
| b7 to b15 | - | Use prohibited |

## 3 Example of setting for recording before and after event

Using the function for recording before and after the event with the advanced user alarm enables to record a video image before and after the event. The video image can be played when an alarm occurs by using the advanced user alarm display.
The following shows the example of the setting items and using method for playing the recorded video file when an alarm occurs.




(1) Setting items
The following shows each setting item.

| Setting item | Settings | Reference |
|---|---|---|
| Multimedia | - | Section 13.10.2 Settings |
| Before-After event recording setting | Enabling | |
| File name | ER_MMR | |
| Event trigger device | X1000 | |
| Playback file time specification device | GD501 to GD504 | |
| Advanced user alarm observation | - | Section 8.2 Advanced Alarm Observation (Advanced User Alarm) |
| Alarm ID | 5 | |
| Trigger device | X1000 | |
| Advanced user alarm display | - | Section 8.4 Advanced Alarm Display (Advanced User Alarm/ Advanced System Alarm) |
| Alarm ID | 5 | |
| External output device | Alarm ID: GD500<br>Occurred date: GD501 to GD502<br>Occurred time: GD503 to GD504 | |
| Screen switching device (Overlap window 1) | GD500 | Section 3.2 Switching Screen Device Setting |
| Window screen | Set the special function switch.<br>Settings for the special function switch<br>Switch action : Multimedia<br>Initial display screen : Video Playback<br>File name : ER_MMR<br>Add date to playback files: Checked | Section 6.2.5 Setting items of special function switch<br>GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 7.5 Creating a New Screen) |
| Screen number | 5 | |
| Screen type | Window screen | |

**Hint!**

For settings

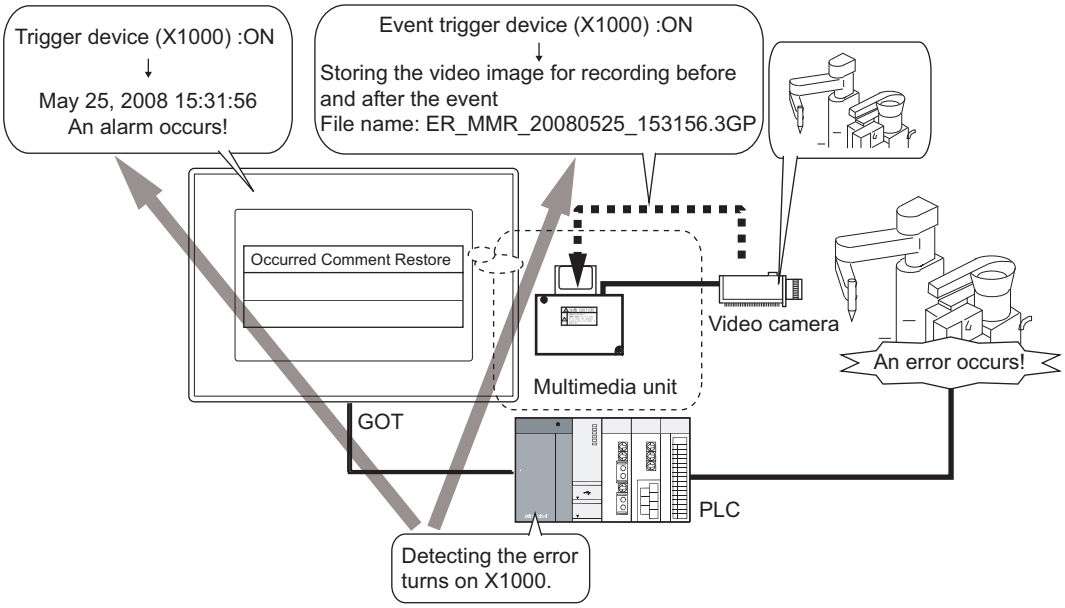
(1) Settings for trigger device
For recording before and after the event when an alarm occurs, set the same device for the following items. (X1000)
- [Event Trigger Device] for the multimedia
- The trigger device for the advanced user alarm

(2) Adding occurred date and time
For adding the alarm occurred data and time to the video file name in the special function switch, set the same device for the following items.
(GD501 to GD504)
- [Playback File Time Specification Device] for the multimedia
- [Occurred Date (2 Points)] and [Occurred Time (2 Points)] for the external output device

(3) Settings for screen switching device
For displaying the same number of [Alarm ID] for the occurred alarm as that of window screen when touching the advanced user alarm display, set the same device for the following items. (GD500)
- Screen switching device
- [Alarm ID] for the external output device

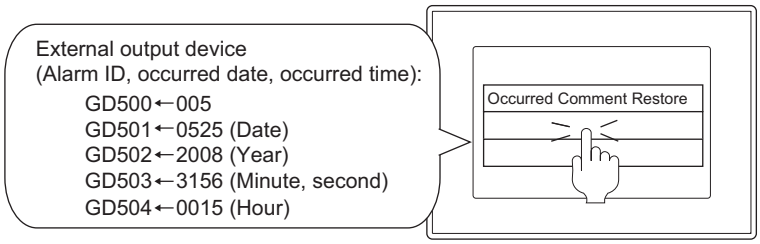
(2) Actions

1 When a PLC detects an error, X1000 turns on.
The GOT detects that the trigger device for the advanced user alarm and the event trigger device turns on.
(When an alarm occurs, a video image is stored for recording before and after the event.)

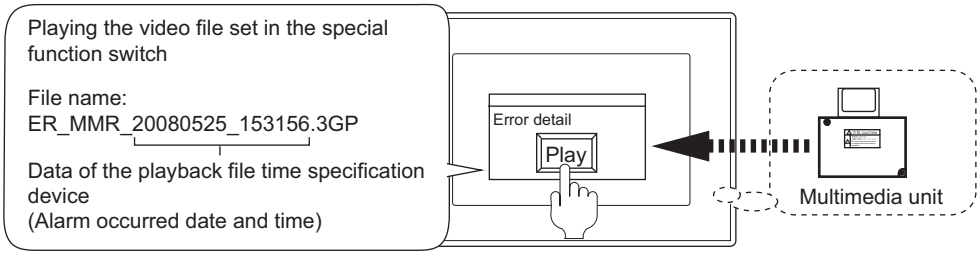


❷ When an alarm occurs, the advanced user alarm appears.
When touching the data of the occurred alarm, the following data are written in the external output device.

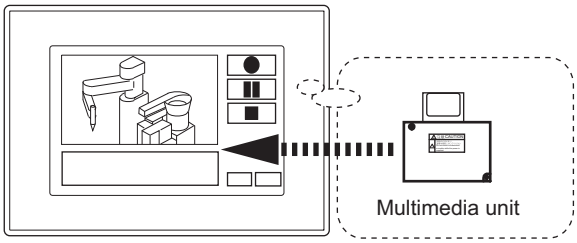
- Alarm ID
- Occurred date
- Occurred time




❸ The data of the alarm ID is written in the screen switching device, and then the window screen is called.
Touch the special function switch arranged on the window screen.
Touching the special function switch plays the set video file.
The data of the playback file time specification device (alarm occurred date and time) are added to the file name of the video file to be played.




❹ The video file for the occurred alarm is played on the multimedia screen.



## 13.10.4 Multimedia interaction tool

The multimedia interaction tool on the personal computer receives or controls video files and alarm log files sent from the GOT or the multimedia unit via Ethernet.

### 1 How to obtain software

Obtain the software with either of the following methods.

- The software is stored in the GT Works2 or GT Designer2 CD-ROM.
- Download the software from the the MITSUBISHI ELECTRIC FA NETWORK SERVICE (MELFANSweb) website.
  (MELFANSweb website:
  http://wwwf2.mitsubishielectric.co.jp/melfansweb/english/index.html)

### 2 Operating environment

The following shows the operating environment.

| Item | Description |
|---|---|
| OS | Microsoft® Windows® 2000 Professional Operating System SP4 (English version)*1<br>Microsoft® Windows® XP Professional Operating System SP3 (English version)*2 *4 *5<br>Microsoft® Windows® XP Home Edition Operating System SP3 (English version)*2 *4 *5<br>Microsoft® Windows Vista® Ultimate Operating System SP1 (English version)*3 *4 *5<br>Microsoft® Windows Vista® Enterprise Operating System SP1 (English version)*3 *4 *5<br>Microsoft® Windows Vista® Business Operating System SP1 (English version)*3 *4 *5<br>Microsoft® Windows Vista® Home Premium Operating System SP1 (English version)*3 *4 *5<br>Microsoft® Windows Vista® Home Basic Operating System SP1 (English version)*3 *4 *5 |
| Computer | Compatible with the operating environment for the above OS.*6 |
| Hard disk space | For installation: 1MB or more (Excluding setting data, alarm log files, and video files)<br>For execution: 500MB or more (For QVGA size, 15fps, and receiving 10 video files of 900 seconds with the data size around 42.2MB)*7 |
| Disk drive | CD-ROM drive |
| Display color | True Color or more |
| Display | Resolution of 800 × 600 dots or more |
| Network connection | Ethernet 100Base-TX |
| Video file format | 3GPP file format |
| Others | The mouse, keyboard, printer, and CD-ROM driver must be compatible with the above OS.<br>Internet Explorer Ver5.0 or more must be installed.<br>QuickTimePlayer7 must be installed.*8 |

*1: Administrator authority is required for installing the multimedia interaction tool.
*2: Administrator authority is required for installing and using the multimedia interaction tool.
*3: Administrator authority is required for installing the multimedia interaction tool.
A standard user or Administrator account is required for using the multimedia interaction tool.
*4: The following functions are not supported.
- "Compatibility mode"
- "Fast user switching"
- "Change your desktop themes (fonts)"
- "Remote desktop"

*5: Only the 32-bit OS is available.
*6: For the operating environment for each OS, refer to the following.
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
*7: The required hard disk space differs depending on the data volume of alarm log files and video files.
*8: The required version differs depending on the OS.
- For Windows 2000: QuickTime 7.1.6 (final version)
- For Windows XP SP3/Vista: QuickTime 7.4.5 or later

## 3 How to install

(1) Installation procedures

Software to be installed varies depending on how to connect the GOT to Ethernet.

(a) To connect the GOT by using the Ethernet interface of the GOT
Install the multimedia interaction tool.

(b) To connect the GOT by using the Ethernet interface of the multimedia unit
Install the multimedia interaction tool and the multimedia interaction FTP service.

(c) When one system has a GOT connected by using the Ethernet interface of the GOT and a GOT connected by using the Ethernet interface of the multimedia unit
Install the multimedia interaction tool and the multimedia interaction FTP service.

For how to install the multimedia interaction tool and the multimedia interaction FTP service, refer to the following.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual

(2) Firewall setting

After the installation, configure the Windows® firewall setting to allow communications with the following software.
Failure to do so cannot send video files to the personal computer.

(a) To send video files from the GOT to the personal computer
Set "GTMMDataConnector.exe" to an exception.

(b) To send video files from the multimedia unit to the personal computer
Set "GTMMFtpService.exe" to an exception.

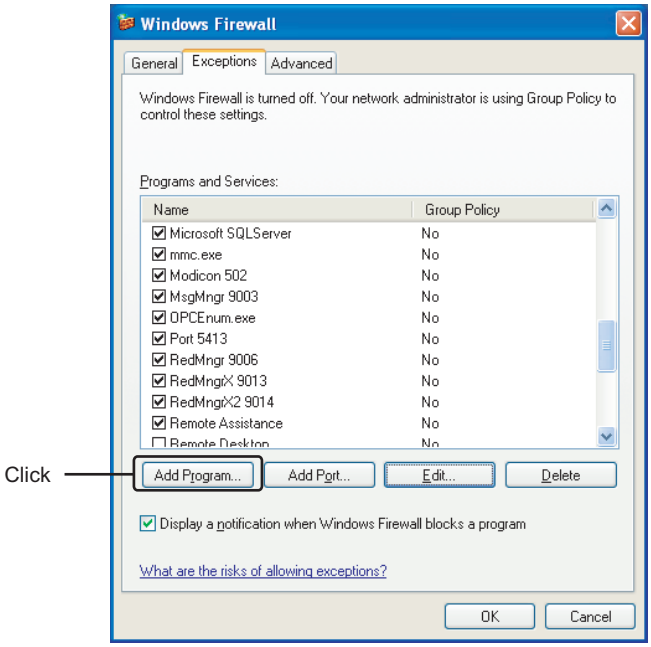
(c) To send video files from the GOT and the multimedia unit to the personal computer when multiple GOTs are connected to Ethernet
Set "GTMMDataConnector.exe" and "GTMMFtpService.exe" to exceptions.

1 Display the Windows Firewall dialog box by the following operations.

- Microsoft® Windows® XP:
  Select [Control Panel]→[Security Center]→[Windows Firewall] from the menu.
- Microsoft® Windows Vista® :
  Select [Control Panel]→[Security]→[Windows Firewall] from the menu.

The following shows an setting example by using the Microsoft® Windows® XP screens.
Select the Exceptions tab in the Windows Firewall dialog box.

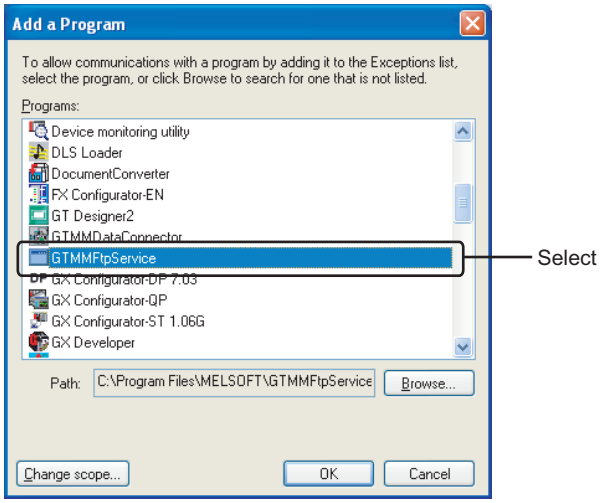
2 Click the Add Program... button.



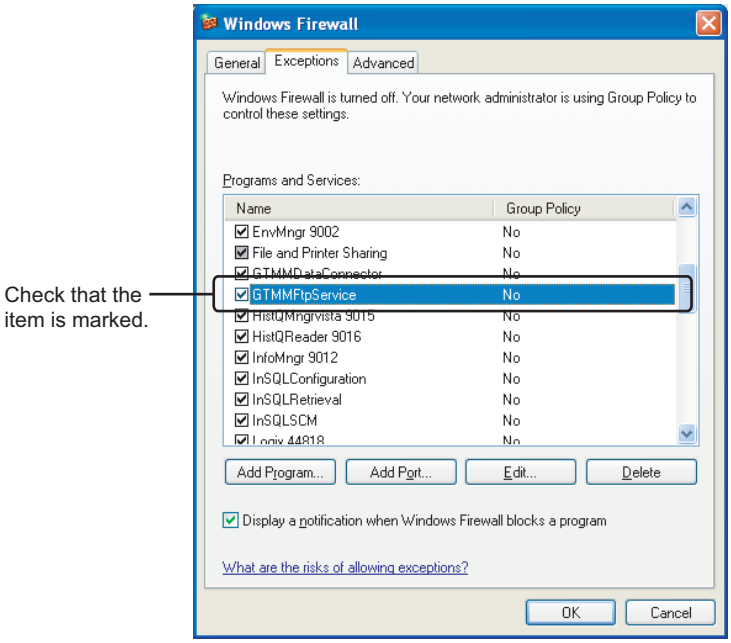

3 Select the software from the program list.

If "GTMMDataConnector.exe" or "GTMMFtpService.exe" is not displayed in the program list, directly specify the path by clicking the Browse... button.

After the selection, click the OK button.



4 The screen returns to the Windows Firewall dialog box.
Check that "GTMMDataConnector.exe" or "GTMMFtpService.exe" is marked in the list of [Programs and Services], and then click the OK button.




## 4 How to start

The following shows how to start the multimedia interaction tool.

1. Select [Start] → [All Programs] → [MELSOFT Application] → [GT MMDataConnector].
2. The multimedia interaction tool starts.

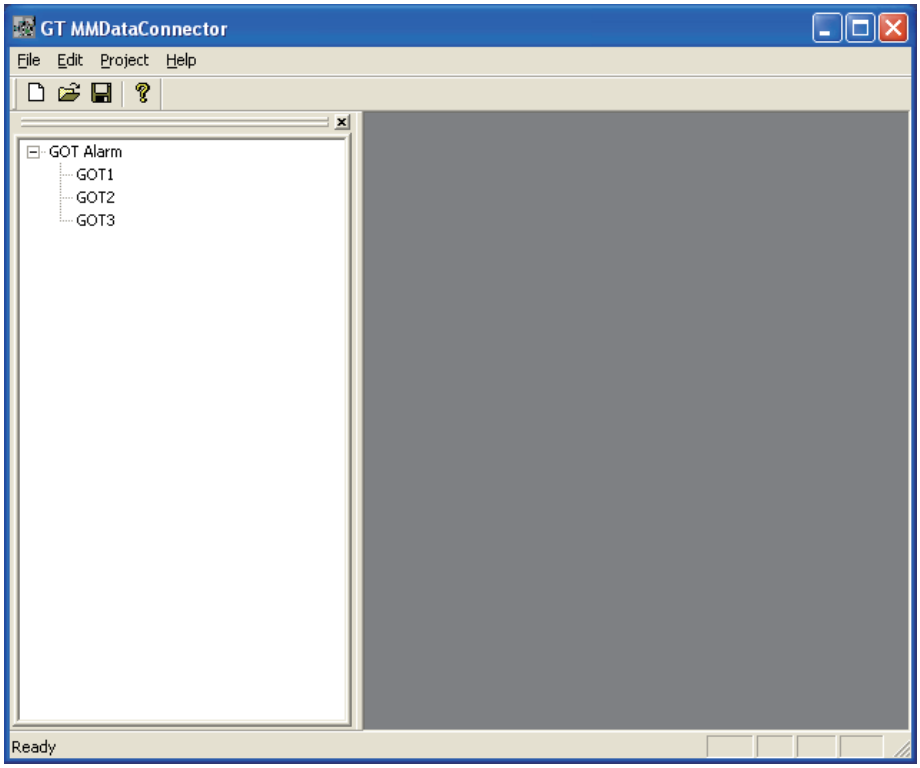
## 5 Screen configurations

The screens of the multimedia interaction tool are configured as shown below.

(a) Main window

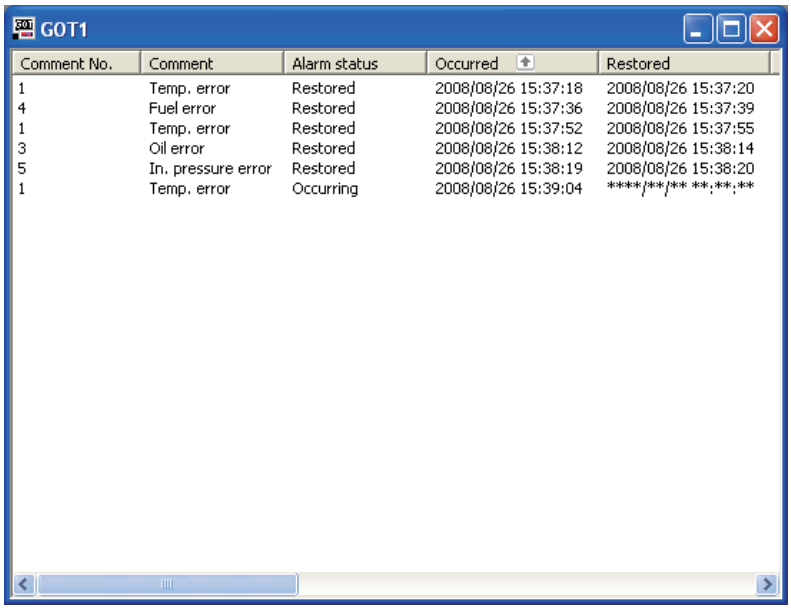
The main window displays the menu for executing each function of the tool and the GOT alarm list for selecting or displaying.

The main window appears when starting the multimedia interaction tool.



(b) GOT alarm list window

The GOT alarm list window displays the alarm data and video files sent from the GOT as a list. Video files can be selected in the GOT alarm list and played.



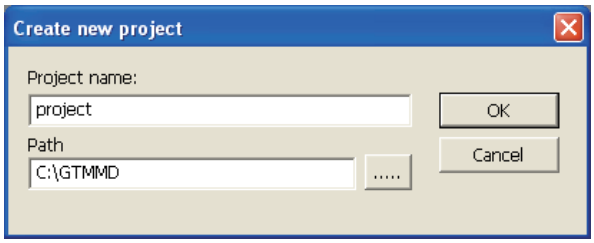

| Comment No. | Comment | Alarm status | Occurred | Restored |
|---|---|---|---|---|
| 1 | Temp. error | Restored | 2008/08/26 15:37:18 | 2008/08/26 15:37:20 |
| 4 | Fuel error | Restored | 2008/08/26 15:37:36 | 2008/08/26 15:37:39 |
| 1 | Temp. error | Restored | 2008/08/26 15:37:52 | 2008/08/26 15:37:55 |
| 3 | Oil error | Restored | 2008/08/26 15:38:12 | 2008/08/26 15:38:14 |
| 5 | In. pressure error | Restored | 2008/08/26 15:38:19 | 2008/08/26 15:38:20 |
| 1 | Temp. error | Occurring | 2008/08/26 15:39:04 | ****/**/** **:**:** |

The GOT alarm list window appears when double-clicking the GOT alarm list in the left side of the main window.

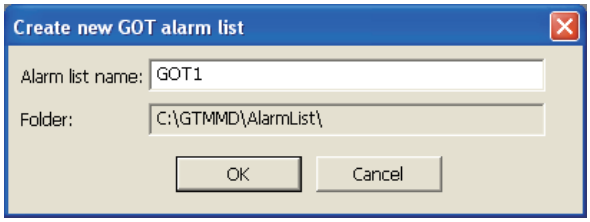
## 6 Settings

Before receiving the alarm data or video files from the GOT, set the following.
For settings, refer to the following procedures.

1. Start the multimedia interaction tool, and then select [File] → [Create new project] to display the following dialog box.
   Input a storage project name in [Project name] and a storage folder path in [Path name], and then click the OK button.
   Clicking the OK button creates a project file.




2. Select [Project] → [Create new GOT alarm list] to display the following dialog box.
   Input the name of the GOT alarm list in [Alarm list name] and the storage folder in [Folder].
   After inputting, click the OK button to create the GOT alarm list.



❸ Select [Edit] → [Environment setting] to display the following dialog box.

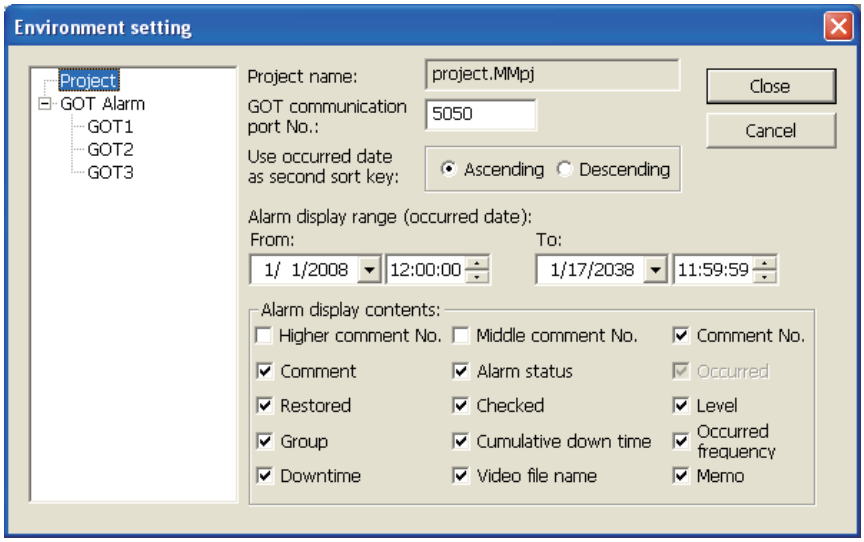
Input the setting items, and then click the OK button.

Check the following information before setting.

- GOT IP address
- FTP user name
- FTP password
- GOT communication port No.

For how to check the FTP user name and the FTP password, refer to the following.

☞ GOT1000 Series Gateway Functions Manual (Chapter 6 FTP Server Function)

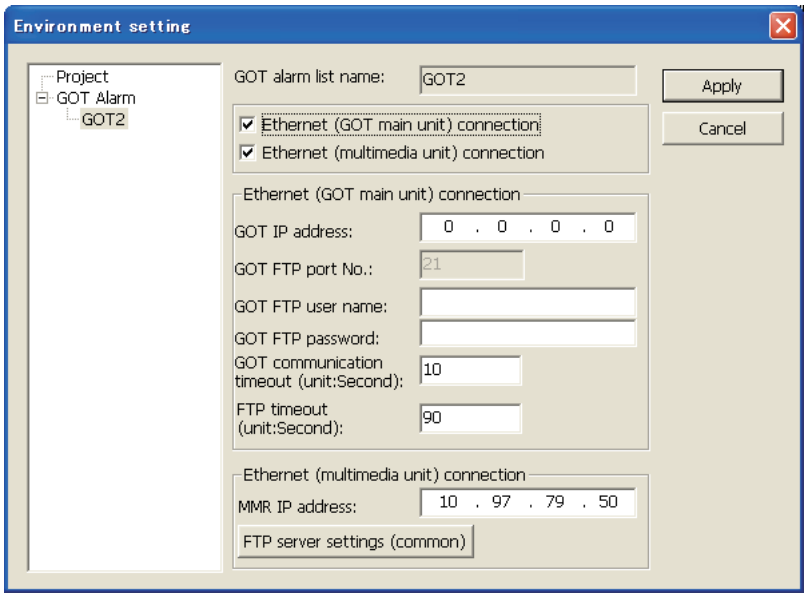



| Item | Description |
|---|---|
| Project | Click this item when setting the display conditions for the project. |
| GOT alarm | Displays the GOT alarm list as the tree structure.<br>When clicking the GOT alarm list in the tree structure, the settings for connecting to each GOT are available.*1 |
| Project name | Displays the project file name for the environment setup. |
| GOT communication port No. | Input the GOT communication port No.. |
| Use occurred date as second sort key | When sorting data of the GOT alarm list other than the occurred date, select the ascending or descending order for the second sort key (occurred date).*2 |
| Alarm display range (occurred date) | Set the alarm display range (occurred date) to be displayed on the GOT alarm list. |
| Alarm display contents | Check items to be displayed on the GOT alarm list. |

For *1, refer to the following.

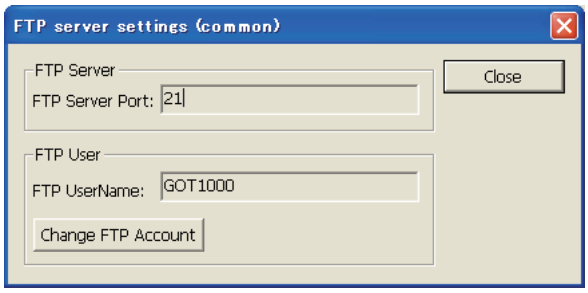
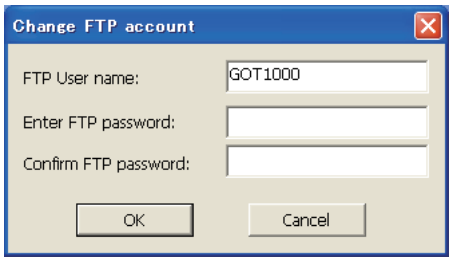
*2 When sorting the data of the GOT alarm list other than the occurred date, the second sort key is set to the occurred date.

*1 Settings for connecting to each GOT




| Item | | Description |
|---|---|---|
| GOT alarm list name | | Displays the set GOT alarm list name. |
| Ethernet (GOT main unit) connection | | Check this item to set the connection with the GOT. |
| | GOT IP address | Set the GOT IP address. |
| | FTP user name | Set the FTP user name. |
| | FTP password | Set the FTP password. |
| | GOT communication timeout (unit:Second) | Set time required for the communication time out to the GOT. |
| | FTP timeout (unit:Second) | Set time required for the communication time out with the FTP server function. |
| Ethernet (multimedia unit) connection | | Check this item to set the connection with the multimedia unit. |
| | MMR IP address | Set the IP address of the multimedia unit. |

(Continued to next page)

| Item | | Description |
|---|---|---|
| | FTP server settings (common) | Click this button to check the FTP server setting of the multimedia interaction FTP service.<br>Clicking the button displays the following dialog box.<br>  <br><br>To change the FTP account, click the Change FTP Account button.<br>Clicking the button displays the Change FTP account dialog box.<br>  <br><br>Input a new FTP user name for [FTP User name] and a password for [Enter FTP password].<br>Input the same password as [Enter FTP password] for [Confirm FTP password].<br>Clicking the OK button changes the FTP account. |

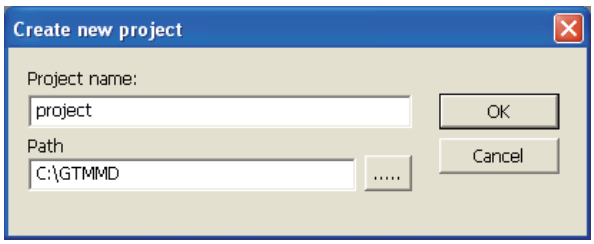
## 7 How to operate

(1) Operating project file

(a) Creating new project file

When creating a new project file, select [File] → [Create new project] on the main window.
The following dialog box appears.
Input a storage project name in [Project name] and a folder path for the storage project in [Path name].

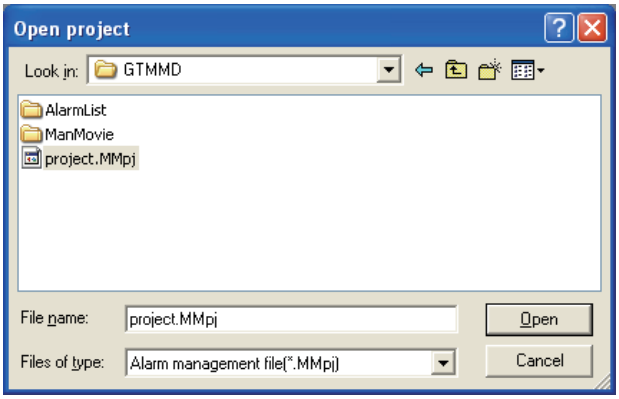
Clicking the OK button creates a project file.




(b) Opening project file

When opening the project file, select [File] → [Open project] in the main window. The following dialog box appears.
Select the project to be opened.

Clicking the Open button opens the project file.




(c) Storing project file

When storing the project file, select [File] → [Save project].
After selecting, the project file is overwritten.

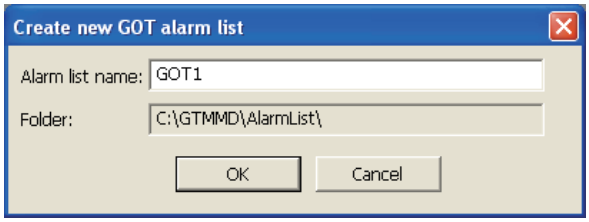
(2) Operating GOT alarm list

The alarm data that are sent from each GOT are displayed in the GOT alarm list.
The GOT alarm list is created for each GOT to be connected to a personal computer.

(a) Creating new GOT alarm list

Select [Project] → [Create new GOT alarm list] to display the following dialog box.
Input a GOT alarm list in [Alarm list name] and a storage folder in [Folder].

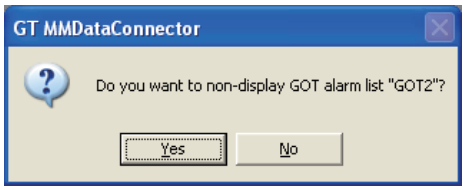
Clicking the [OK] button creates the GOT alarm list.




(b) Non-display GOT alarm list

Select the GOT alarm list to be hidden from the GOT alarm tree, and then select [Project] → [Non-display GOT alarm list].
The following dialog box appears.

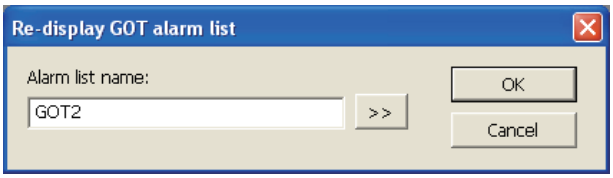
Clicking the [Yes] button hides the GOT alarm list from the GOT alarm tree.




(c) Re-display GOT alarm list

Select [Project] → [Re-display GOT alarm list].
The following dialog box appears.
Input the GOT alarm list that are hidden from [Alarm list name].

Clicking the [OK] button displays the GOT alarm list again in the GOT alarm tree.



(3) Receiving alarm data or video file

The multimedia interaction tool can receive alarm data or video files of multiple GOTs connected to Ethernet.

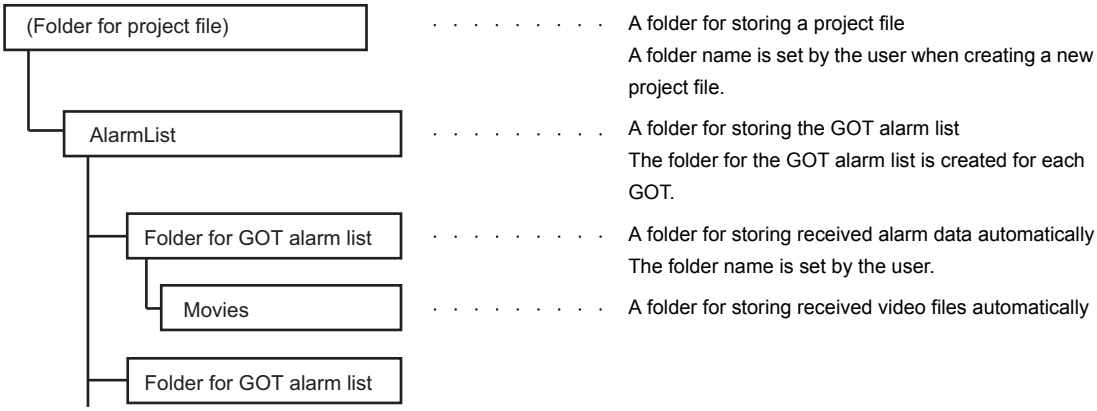
Received alarm data or video files are stored in a personal computer automatically.

The storage data can be checked in the GOT alarm list.

**Point**

Folder structure of project file

The following shows the folder structure of the project file for the multimedia interaction tool.

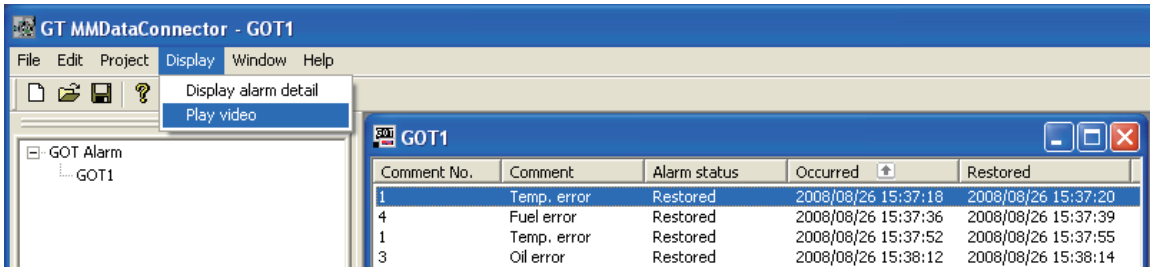


(4) Playing video file

The following shows the procedure for playing a video file in the GOT alarm list.

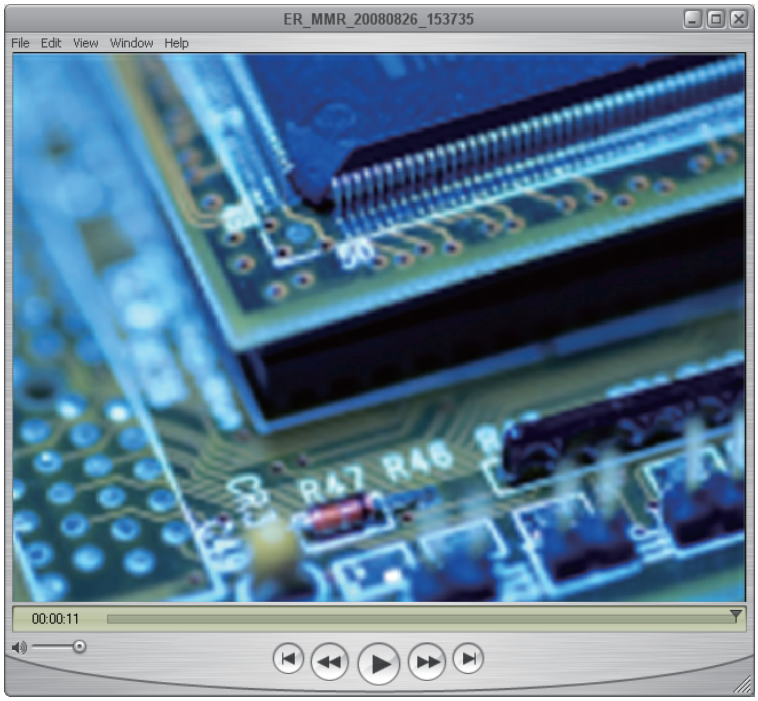
1 Select a video file to be played in the GOT alarm list.

2 Select [Display] → [Play video].




3 Quick Time Player starts.

Clicking the ▶ button plays the video file.




(5) Searching for alarm data

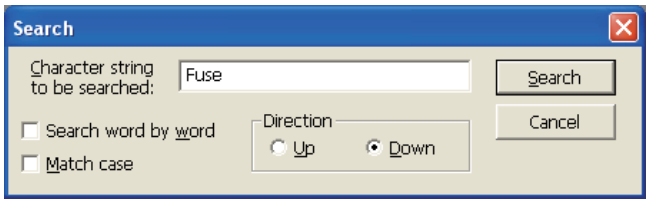
The GOT alarm data is searched for using the GOT alarm list.

When the GOT alarm list is displayed, select [Edit] → [Search].

The following dialog box appears.

Input searching conditions, and then click the Search button. All displayed items becomes searching targets.

Select [Edit] → [Search next], and then the next alarm data is searched for.

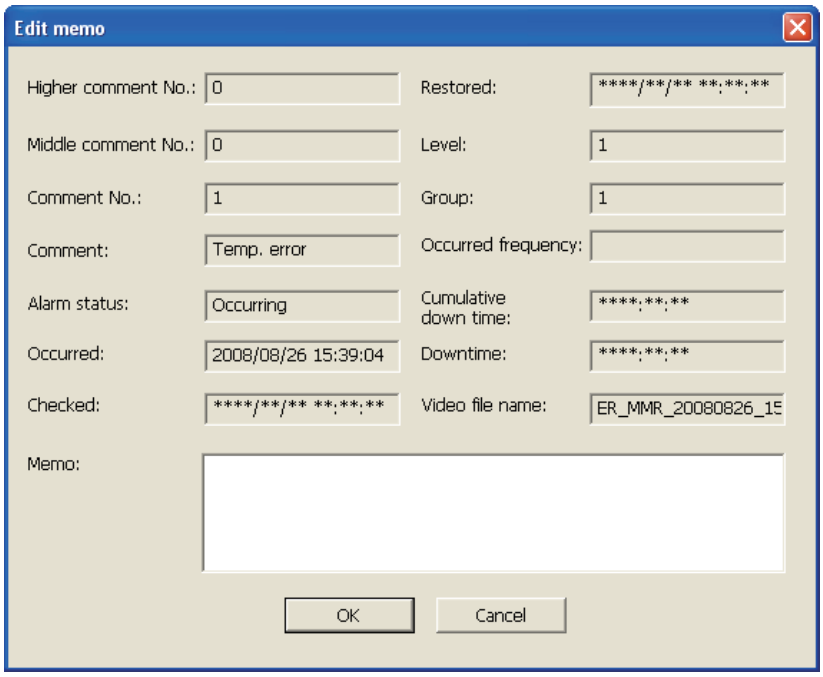


(6) Editing memo

The memo for the alarm data can be edited.

Select the alarm data to be edited in the GOT alarm list, and then select [Edit] → [Edit memo]. The following dialog box appears.

Input a text to [Memo], and then click the OK button. The input text is displayed in the GOT alarm list.



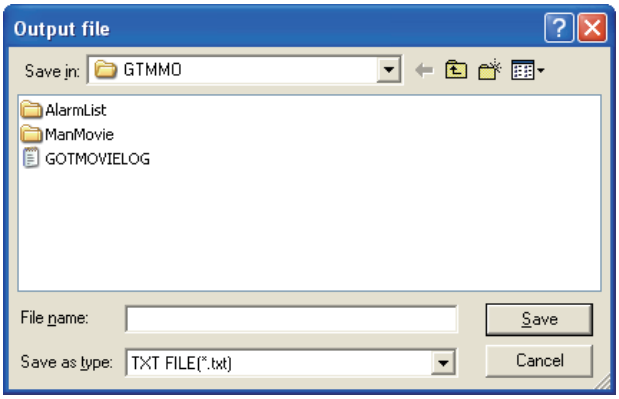

(7) Exporting GOT alarm list

The GOT alarm list can be exported in the CSV file format.

The following shows the procedures for exporting.

1. Select the GOT alarm list in the GOT alarm tree to be exported.
2. Select [File] → [Export] to display the following dialog box.

   Select a storage area, and then click the Save button. The GOT alarm list is exported.



## 8 Error messages

The following shows the error messages of the multimedia interaction tool.

| Error message | Cause | Corrective action |
|---|---|---|
| Failed to initialize Windows socket. | Failed to initialize the communication processing. | • Check that network cables are connected correctly.<br>• Check that the network setting is set correctly. |
| Failed to open project file "*****". | Either of the project file (*.Mpj), video file definition file (*.Mmd), or alarm data file (*.Mai) is prohibited to write or deleted. | • Check that a folder or file for the target project is enabled to write.<br>• Check that a folder or file for the target project are not deleted. |
| Failed to create project file "*****". | A new project is not created in the folder specified by the user for the following causes.<br>• The hard disk space is insufficient.<br>• Writing the data in the folder specified by the user is prohibited. | • Check that the hard disk space for the personal computer is sufficient.<br>• Check that the folder specified by the user is not prohibited to write. |
| Failed to save project file. | The project cannot be stored by the following causes.<br>• The hard disk space is insufficient.<br>• Writing the data in the folder specified by the user is prohibited. | • Check that the hard disk space for the personal computer is sufficient.<br>• Check that the existing folder or file is not prohibited to write. |
| Failed to create GOT alarm list "*****". | A new GOT alarm list cannot be created by the following causes.<br>• The hard disk space is insufficient.<br>• Writing the data in the folder specified by the user is prohibited. | • Check that the hard disk space of the personal computer is sufficient.<br>• Check that the existing folder or file is not prohibited to write. |
| Failed to re-display GOT alarm list "*****". | The GOT alarm list cannot be created by the error of the alarm data file (*.Mai). | • Check that the hard disk space of the personal computer is sufficient.<br>• Check that the existing folder or file is not prohibited to write. |
| Failed to upload video file "*****" in GOT alarm list "*****". | For recording before and after the event, the video file cannot be uploaded because the advanced user alarm log file is not formatted. | • Use a Unicode text file to output the advanced user alarm log file. |
| Project "*****" already exists. | When creating a new project, the project name that already exists is input. | • Input another project name. |
| GOT alarm list "*****" already exists. | When creating a new GOT alarm list, the GOT alarm list name that already exists is input. | • Input another name. |
| GOT alarm list "*****" is already displayed. | The displayed GOT alarm list is input for [Re-display GOT alarm list]. | • Select a GOT alarm list that is not displayed. |
| Invalid path. Please enter again. | When creating a new project, the invalid path is specified for the project. | • Input a valid path. |
| Invalid project name. Please enter again. | When creating a new project, a project name is not input. | • Input a project name. |
| Invalid FTP user name.<br>Please enter user name. | When changing the FTP account in the environment setting, nothing or 13 or more characters are input for the FTP user name. | • Set the FTP user name with 1 to 12 characters. |

(Continued to next page)

| Error message | Cause | Corrective action |
|---|---|---|
| Invalid FTP user password.<br>Please enter password again. | When changing the FTP account in the environment setting, nothing or nine or more characters are input for the FTP password. | • Set the FTP password with 1 to 8 characters. |
| Password entry does not match confirmation entry.<br>Please enter password again. | When changing the FTP account in the environment setting, different passwords are input for [Enter FTP password] and [Confirm FTP password]. | • Input the same password for [Enter FTP password] and [Confirm FTP password]. |
| Cannot connect to GTMMFtpService.<br>Ethernet (multimedia unit) connection settings are disabled. | The multimedia interaction FTP service is not installed. | • Uninstall or disable the other FTP server software, and then install the multimedia interaction FTP service. |

## 13.10.5 Precautions

The following shows precautions for using the multimedia function.

### 1 Precautions for drawing

(1) Simultaneous display of multimedia screen, video display, and RGB screen
The simultaneous display of a multimedia screen, video window, and RBG screen is not available.

### 2 Precautions for OS

For using the multimedia function, install the extended function OS (Multimedia) on the GOT.
For sending video files from the GOT to the personal computer, also install the option OS (Gateway (FTP)).
For sending video files from the multimedia unit to the personal computer, the option OS (Gateway (FTP)) is not required.

### 3 Precautions for hardware

(1) Applicable GOT
The following GOT are applicable to the multimedia function.
GT16

(2) CF card for GOT
For interacting with a personal computer, ensure the sufficient free space in a CF card with the GOT.
For sending video files, the files are temporarily stored in the CF card with the GOT.
When the sufficient free space is not ensured, video files cannot be sent to the personal computer.

(3) CF card for multimedia unit

(a) Format type
The FAT32 format is recommended to a CF card with the multimedia unit.
When the FAT16 formatted CF card is inserted, the following may occur.
- Requiring time to read, write, or store the video file.
- When playing a video file, the video seems to stop temporarily.

(b) Operation during accessing CF card
When turning on the CF card access switch, the multimedia unit checks the status of the CF card.
During checking, the multimedia screen may not be operated correctly.
For operating the multimedia screen, operate after the CF card access LED turns off.

(c) Storage video files
The number of video files to be stored in the CF card is up to 512.
When storing more than 512 video files, the multimedia screen cannot display some video files.
In the following cases, some video files may not be displayed even if the number of video files is up to 512.
- When a video file that has a long file name exists
- When a video file that uses 2-byte characters for a file name exists
- When the data other than a video file exists in the CF card

(d) Inapplicable characters
Do not use 2-byte characters for a path or a file name.
Failure to do so may operate the multimedia unit incorrectly.

(4) Unit software version of multimedia unit
Before using the multimedia function, check that the unit software version of the multimedia unit is 02.00.** or later.
The multimedia function is supported when the unit software version of the multimedia unit is 02.00.** or later.
For how to check and update the unit software version, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 2.1.5 Multimedia setting)

(5) Ethernet interface of multimedia unit
The Ethernet interface of the multimedia unit is used for communication with the multimedia interaction tool only.
To connect the GOT to Ethernet, use the Ethernet interface built in the GOT.

(6) System configuration for using the multimedia function
For the system configuration for using the multimedia function, refer to the following manual.

☞ GOT1000 Series Connection Manual (Chapter 48 Multimedia Connection)

**Remark** For the operation-checked models

For the operation-checked models, refer to "List of valid devices applicable for GOT1000 Series" (GOT-A-0010) separately available.
The Technical News above is available as a reference at the Information site for Mitsubishi industrial automation products.
(MELFANSweb website:http://wwwf2.mitsubishielectric.co.jp/english/index.html)

## 4 Precautions for playing video file and editing software

(1) Required software
To use the multimedia interaction tool, install Quick Time Player or QuickTime 7 Pro.
The software is the copyright of Apple Inc.
Use the software under the license agreement that appears when installing.

(a) Quick Time Player
Quick Time Player is the software to play video files.
The software can be obtained from APPLE Inc. free of charge.

(b) QuickTime 7 Pro
QuickTime 7 Pro is the software to edit video files.
The software can be obtained from the website of Apple Inc. for a fee.

(2) Editing video file
The multimedia interaction tool does not have the editing function for video files.
To edit video files, use Quick Time 7 Pro.
Video files edited by other than the above software may not be played.

(3) Playing software for video file
To play the 3GPP/MP4 file format video files on a personal computer, set Qick Time Player.
When playing a video file, the multimedia interaction tool starts the playing software for the file set on the personal computer.

## 5 Precautions for use

(1) Display of video image

(a) If a video signal is not input to the specified channel due to cable disconnection or power-OFF of the camera, a video image is not displayed.

(b) A video image may be given in still image or disappear temporarily when the hard copy function is executed or when a system message is displayed/cleared.

(c) A video image may be disturbed or stopped depending on the setting for [Horizontal] or [Vertical] of the utility (video display setting).
(In this case, the normal display will be restored by changing the settings to default values.)
Whether or not such a problem occurs depends on the used equipment such as a video camera.
Use values that allow normal video display.
For the operations of the utility, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 2.1 GOT Main Unit Function Settings)

(2) Settings for video input signal
Set the input signal accoding to the output format etc. of the video camera to be connected as shown below.
If the setting is different, the video image may not be displayed correctly.

| Output format of video camera etc. | Input signal setting |
|---|---|
| NTSC format | NTSC |
| PAL format | PAL |
| EIA format | NTSC |
| CCIR format | PAL |

(3) Playing video file during recording
Video files cannot be played during recording video images.
After recording, play video files.

(4) Playing sound included in video file
Only images can be played for video files.
A sound cannot be played even when video files include the sound.

(5) Installing multimedia interaction FTP service
To connect the multimedia unit to Ethernet, install the multimedia interaction FTP service on the personal computer in addition to the multimedia interaction tool.
For how to install the multimedia interaction FTP service, refer to the following.

☞ Section 13.10.4 Multimedia interaction tool

# 14. DEBUG

In this manual, the overview of the debuggingfunction and the operation procedure until displaying the screen are described.
The following shows the debug functions.

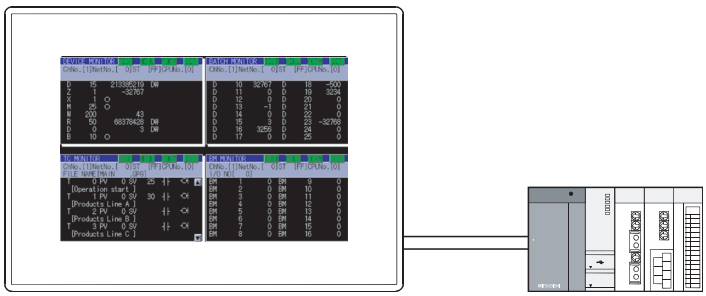
| Debug | Description | Reference |
|---|---|---|
| System monitor | The device of PLC CPU and buffer memory of intelligent function module can be monitored or tested. | 14.1 |
| Device monitor | For a controller connected to the GOT, forcibly turning on or off devices of the controller and changing the set value or present value are available. | 14.2 |
| Ladder monitor | The program of PLC CPU can be monitored in ladder format. | 14.3 |
| A list editor | The sequence program of ACPU can be list edited. | 14.4 |
| FX list editor | The sequence program of FXCPU can be list edited. | 14.5 |
| Intelligent unit monitor | Buffer memory in the intelligent function module can be monitored or the data can be changed on the dedicated screen.<br>And the signal status of I/O modules can be monitored. | 14.6 |
| Network monitor | The network status of the MELSECNET/H, MELSECNET/10, MELSECNET(II), and CC-Link IE controller network can be monitored. | 14.7 |
| Motion monitor | The servo monitoring and parameter settings of the motion controller CPU (Q series) are available. | 14.8 |
| Servo amplifier monitor | Various monitor functions, parameter change, test operation, etc. of the servo amplifier are available. | 14.9 |
| CNC monitor | Functions equivalent to the MELDAS dedicated display, such as Position Display Monitor, Alarm Diagnosis Monitor, Tool Offset/ Param, and Program Monitor, are available. | 14.10 |
| Backup/restoration | Executing backups, executing restorations, and deleting backup data are possible. | 14.11 |
| CNC Data I/O | Machining programs, parameters, and others of the CNC connected to the GOT can be copied or deleted. | 14.12 |
| SFC Monitor | The GOT can monitor and display SFC programs of the PLC CPU in the SFC diagram format (MELSAP3 or MELSAP-L format). | 14.13 |
| Ladder editor | A sequence program of the PLC CPU can be edited. | 14.14 |

This manual only explains the debug function overview and the required settings for starting the function.
For display contents, the operation method, and precautions for use of each debug function, refer to the following manuals.

| Debug | Reference |
|---|---|
| Device monitor | GT10 User's Manual (Chapter 15 GOT DEBUG) |
| Other than above | GOT1000 Series Extended/Option Functions Manual |

# 14.1 System Monitoring

The device of a PLC CPU and buffer memory of an intelligent function module can be monitored or tested with a dedicated screen.
Users do not have to prepare a debugging screen for checking devices.



## 1 How to start system monitor

The system monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

GT11 User's Manual (Chapter 13 GOT SELF CHECK (DEBUG & SELF CHECK))

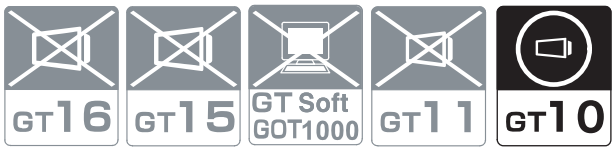
## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

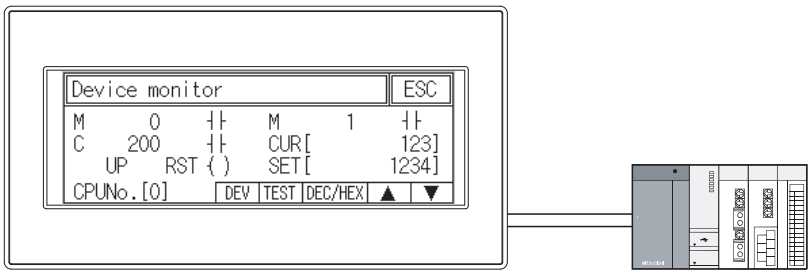
☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the system monitoring function, install Extended function OS (System monitor) to the GOT.

# 14.2 Device monitor function




For a controller connected to the GOT, forcibly turning on or off devices of the controller and changing the set value or present value are available.




## 1 How to start device monitor

The device monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

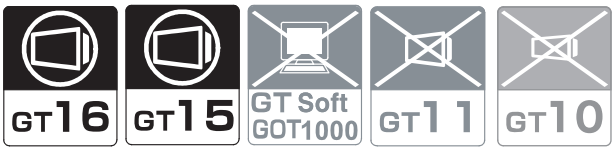
☞ GT10 User's Manual (Chapter 15 GOT DEBUG)

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

# 14.3 Ladder Monitoring Function




The sequence program of a PLC CPU can be monitored in ladder format with a dedicated screen.
By using the ladder monitoring function, error causes can be investigated on a GOT.

## 1 How to start ladder monitor

The ladder monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Setting for ladder monitor

When using the ladder monitor, the following setting is required.

| Setting | Reference |
|---|---|
| Setting a storage location for the ladder data*1 | • Setting on GT Designer2<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)<br>• Setting on the utility<br>☞ GT16 User's Manual (Basic Utility) (Section 4.2 Debug Setting)<br>GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor) |

*1 The setting is only required when storing the ladder data on the GOT for the Q/QnA ladder monitor.

## 3 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the ladder monitoring function, install Option OS (Ladder monitor for MELSEC-Q/QnA/A/FX) to the GOT.

(3) Precautions for hardware

(a) GOT

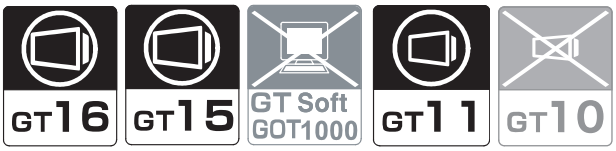
The GT1555-Q and GT1550-Q are not applicable to the ladder monitor.

(b) Option function board

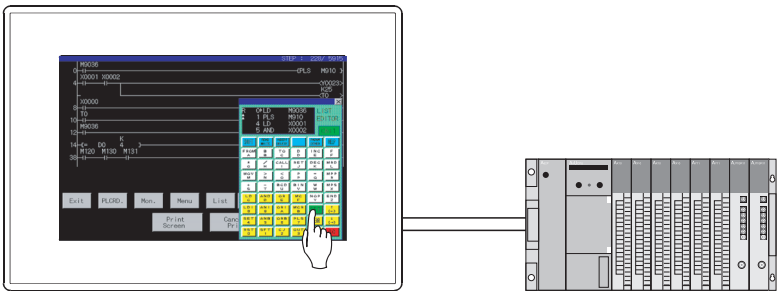
When using the ladder monitor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.4 List Editor for A




The sequence program of the ACPU can be edited in list format.
Program changes at worksite can be performed on a GOT easily.



## 1 How to start MELSEC-A list editor

The MELSEC-A list editor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

GT11 User's Manual (Chapter 13 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

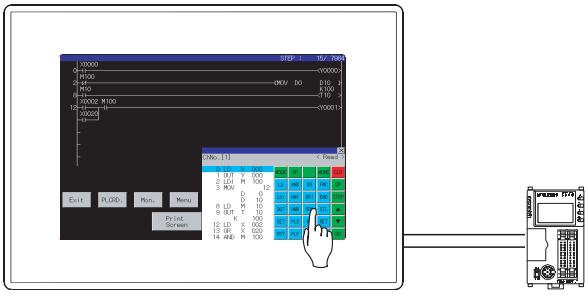
(2) Precautions for OS
When using the MELSEC-A list editor, install the option OS (List editor for MELSEC-A) on the GOT.

(3) Precautions for hardware
When using the MELSEC-A list editor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.5 List Editor for FX

The sequence program of the FXCPU can be edited in list format.
Program changes at worksite can be performed on a GOT easily.



## 1 How to start MELSEC-FX list editor

The MELSEC-FX list editor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

GT11 User's Manual (Chapter 13 GOT SELF CHECK (DEBUG & SELF CHECK))

GT10 User's Manual (Chapter 15 GOT DEBUG)

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the MELSEC-FX list editor, install the option OS (List editor for MELSEC-FX) on the GOT.

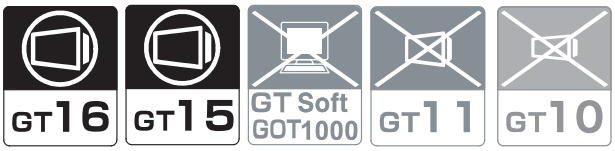
(3) Precautions for hardware

(a) GOT
The GT1030 and GT1020 are not applicable to the MELSEC-FX list editor.

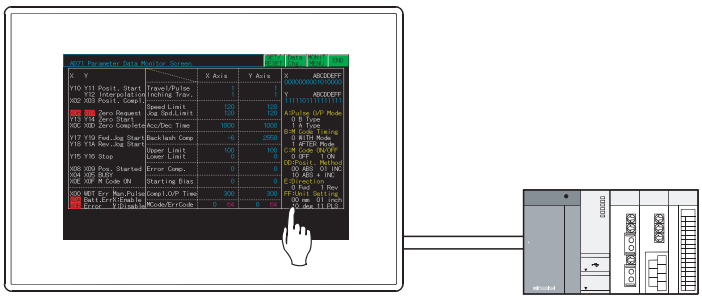
(b) Option function board
When using the MELSEC-FX list editor, mount the option function board on the GOT. (No option function board is required for GT16 and GT10.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.6 Intelligent Module Monitor




Buffer memory of an intelligent function module can be monitored with a dedicated screen. Changing the data is also possible.
Signal status of I/O modules can be monitored as well.



## 1 How to start intelligent module monitor

The intelligent module monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the intelligent module monitor, install the option OS (Intelligent module monitor) on the GOT.

(3) Precautions for hardware

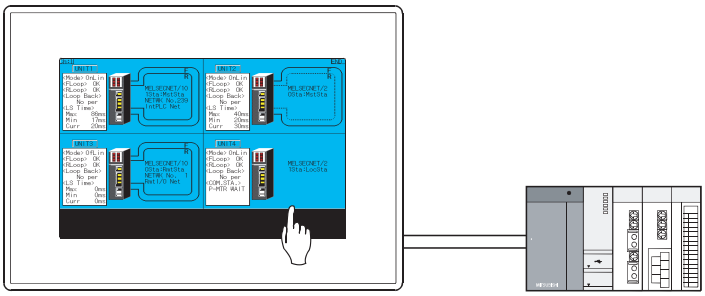
(a) GOT
The GT1555-Q and GT1550-Q are not applicable to the intelligent module monitor.

(b) Option function board
When using the intelligent module monitor, mount the option function board on the GOT.(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.7 Network Monitor

The status of MELSECNET/H, MELSECNET/10, MELSECNET(II), and CC-Link IE controller networks can be monitored with a dedicated screen.



## 1 How to start network monitor

The network monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the network monitor, install the option OS (Network monitor) on the GOT.

(3) Precautions for hardware
When using the network monitor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.8 Q Motion Monitor

Servo monitoring and parameter setting of motion controller CPU (Q series) are possible with a dedicated screen.

## 1 How to start Q motion monitor

The Q motion monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

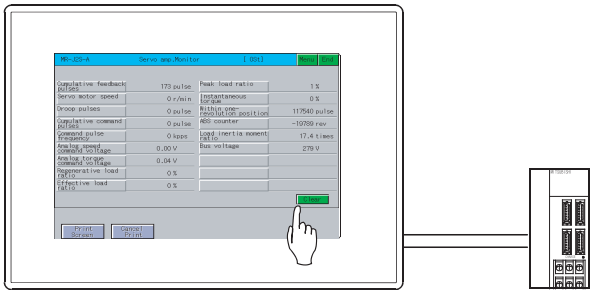
(2) Precautions for OS
When using the Q motion monitor function, install optoin OS (Q motion monitor) to the GOT.

(3) Precautions for hardware
When using the Q motion monitor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.9 Servo Amplifier Monitor

Monitoring, parameter changing and testing of a servo amplifier are possible with a dedicated screen.



## 1 How to start servo amplifier monitor

The servo amplifier monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

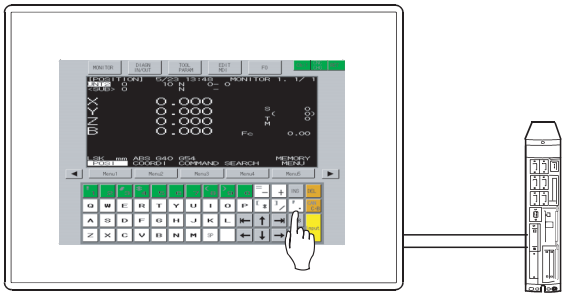
(2) Precautions for OS
When using the servo amplifier monitor, install the option OS (Servo amplifier monitor) on the GOT.

(3) Precautions for hardware
When using the servo amplifier monitor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.10 CNC Monitor Function

With a dedicated screen, position display monitor, alarm diagnosis monitor, tool offset/parameter monitor and program data monitor are as at the same level as possible with the MELDAS dedicated display unit.



## 1 How to start CNC monitor

The CNC monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
When using the CNC monitor, install the option OS (CNC monitor) on the GOT.

(3) Precautions for hardware

(a) GOT
Only the models indicated below can use The CNC monitor function.

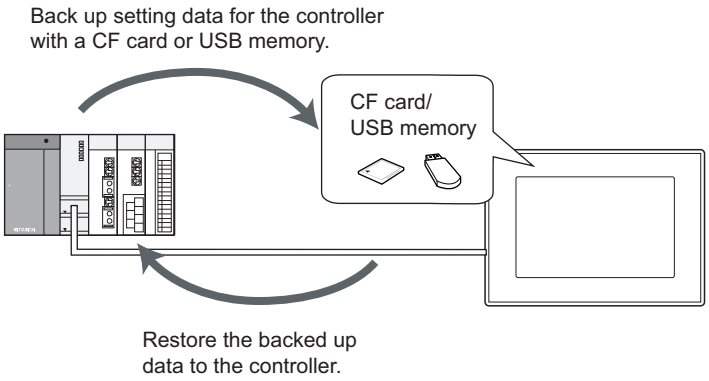
| GOT | | | | | | |
|---|---|---|---|---|---|---|
| GT1695M-X, | GT1685M-S, | GT1595-X, | GT1585V-S, | GT1585-S, | GT1575V-S, | GT1575-S |

(b) Option function board
When using the CNC monitor, mount the option function board on the GOT.
(No option function board is required for GT16.)
No option function board is required for GOTs with built-in option function boards.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

# 14.11 Backup/restore

Setting data, including sequence programs and parameters, for a controller connected to the GOT can be saved (backed up) in a CF card or USB memory in the GOT. The saved data can be restored to the controller if required. The GOT can automatically back up the data by setting the trigger device or the days and time.




## 1 How to start backup/restore

The backup/restore can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Setting for backup/restore

When using the backup/restore, the following must be set.

| Setting | Reference |
|---|---|
| Setting a storage location for the backup data | • Setting on GT Designer2<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)<br>• Setting on the utility<br>☞ GT16 User's Manual (Basic Utility) (Section 4.2 Debug Setting)<br>GT15 User's Manual (Chapter 13 FILE DISPLAY AND COPY (PROGRAM/DATA CONTROL)) |

## 3 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

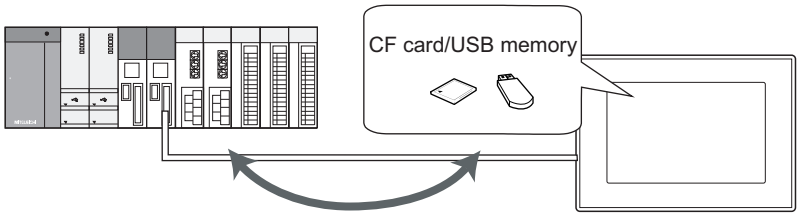
(2) Precautions for OS
For using the backup/restore function, install the extended function OS (Backup/Restore) on the GOT.

(3) Precautions for hardware

When using the backup/restore, install a CF card or USB memory in the GOT. (The USB memory can be used with GT16 only.)

# 14.12 CNC Data I/O

Machining programs, parameters, and others of the CNC connected to the GOT can be copied or deleted.




Copy or delete the CNC data.

## 1 How to start CNC data I/O

The CNC data I/O can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Precautions

(1) Precautions for drawing
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(2) Precautions for OS
For using the CNC data I/O, install the extended function OS (CNC Data I/O, GOT Platform Library) on the GOT.

(3) Precautions for hardware

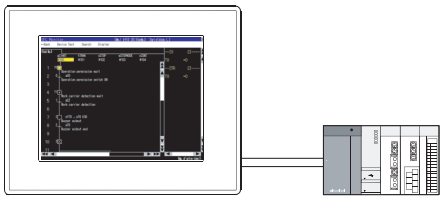
(a) GOT
The CNC data I/O is applicable to the following models only.

| GOT | | | | | | |
|---|---|---|---|---|---|---|
| GT1695M-X, | GT1685M-S, | GT1595-X, | GT1585V-S, | GT1585-S, | GT1575V-S, | GT1575-S |

(b) CF card or USB memory
When using the CNC data I/O, install a CF card or USB memory in the GOT. (The USB memory can be used with GT16 only.)

# 14.13 SFC Monitor

The GOT can monitor and display SFC programs of the PLC CPU in the SFC diagram format (MELSAP3 or MELSAP-L format) with a dedicated screen.With the SFC monitor function, investigating the causes of errors in PLC systems is available with the GOT.



## 1 How to start SFC monitor

The SFC monitor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Setting for SFC monitor

When using the SFC monitor, the following must be set.

| Setting | Reference |
|---|---|
| Setting a storage location for the ladder data | • Setting on GT Designer2<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)<br>• Setting on the utility<br>☞ GT16 User's Manual (Basic Utility) (Section 4.2 Debug Setting)<br>GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor) |

## 3 Precautions

(1) Precautions for drawing

(a) When setting a touch switch
For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(b) When a locus display is set for a line graph (GT15 only)
When [Locus] is set for the line graph, the SFC monitor cannot be used.
When using the SFC monitor, do not set [Locus] for the line graph.

(2) Precautions for OS
When using the SFC monitor, install the extended function OS (GOT Platform library) and the option OS (SFC Monitor, GOT Function Expansion Library) on the GOT.

(3) Precautions for hardware

(a) GOT

The GT1555-Q and GT1550-Q are not applicable to the SFC monitor.

(b) Option function board

When using the SFC monitor, mount the option function board with add-on memory on the GOT.

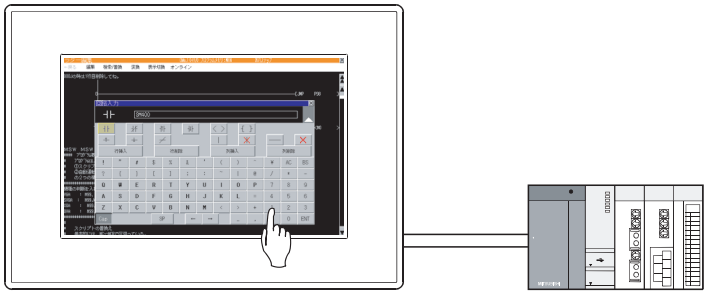
(No option function board is required for GT16.)

(c) CF card or USB memory

When using the SFC monitor, insert a CF card in the GOT.

# 14.14 Ladder Editor

A sequence program in the ladder diagram format in the controller can be edited with a dedicated screen.



## 1 How to start ladder editor

The ladder editor can be started with a touch switch or the utility.
For how to set the touch switch, refer to the following.

☞ Section 6.2.5 Setting items of special function switch

For how to start this function with the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Chapter 4 DEBUG)

GT15 User's Manual (Chapter 14 GOT SELF CHECK (DEBUG & SELF CHECK))

## 2 Setting for ladder editor

When using the ladder editor, the following must be set.

| Setting | Reference |
|---|---|
| Setting a storage location for the ladder data | • Setting on GT Designer2<br>☞ Section 3.8 Setting of GOT Display and Operations (GOT Setup)<br>• Setting on the utility<br>☞ GT16 User's Manual (Basic Utility) (Section 4.2 Debug Setting)<br>GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor) |

## 3 Precautions

(1) Precautions for drawing

(a) When setting a touch switch
For precautions for setting the touch switch, refer to the following. For precautions for setting the touch switch, refer to the following.

☞ Section 6.2.11 Precautions

(b) When a locus display is set for a line graph (GT15 only)
When [Locus] is set for the line graph, the ladder editor cannot be used.
When using the ladder editor, do not set [Locus] for the line graph.

(2) Precautions for OS

When using the ladder editor, install the extended function OS (GOT Platform library) and the option OSs (Ladder editor, GOT Function Expansion Library) on the GOT.

(3) Precautions for hardware

(a) GOT

The GT1555-V, GT1555-Q, and GT1550-Q are not applicable to the ladder editor.

(b) Option function board

When using the ladder editor, mount the option function board with add-on memory on the GOT.

(No option function board is required for GT16.)

(c) CF card or USB memory

When using the ladder editor, insert a CF card in the GOT.

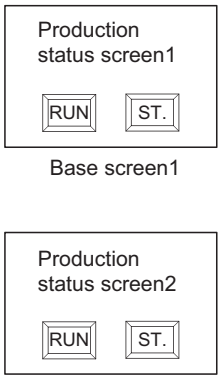
# 15. OTHERS

## 15.1 Set Overlay Screen Function

Other base screens or window screens can be called to be placed on a basic screen and displayed in a single screen by using this function.
Setting the same objects onto multiple screens can save memory capacity.

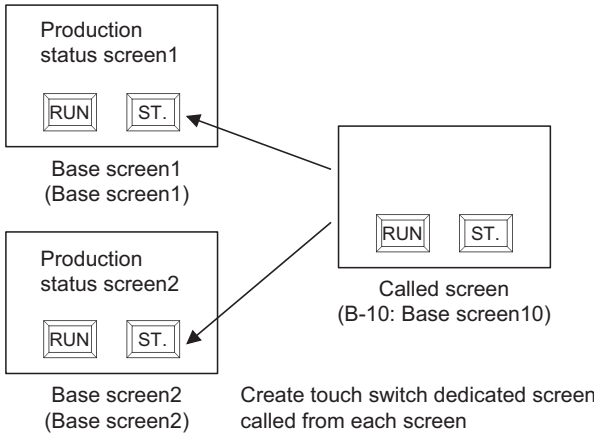
<When not using the set overlay screen function>

Set four touch switches. (2 on production status screen1 and 2 on production status screen2)



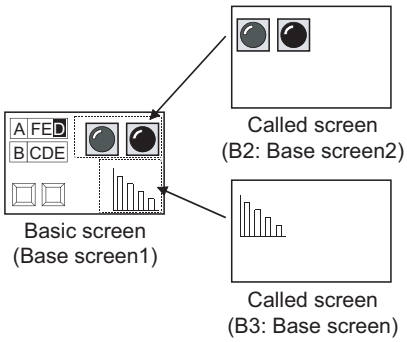

<When using set overlay screen function>

Set two touch switches. (2 on the set overlay screen)Touch switch setting is not required for production status screen1 and 2 because these touch switches have already been registered on the called screen.



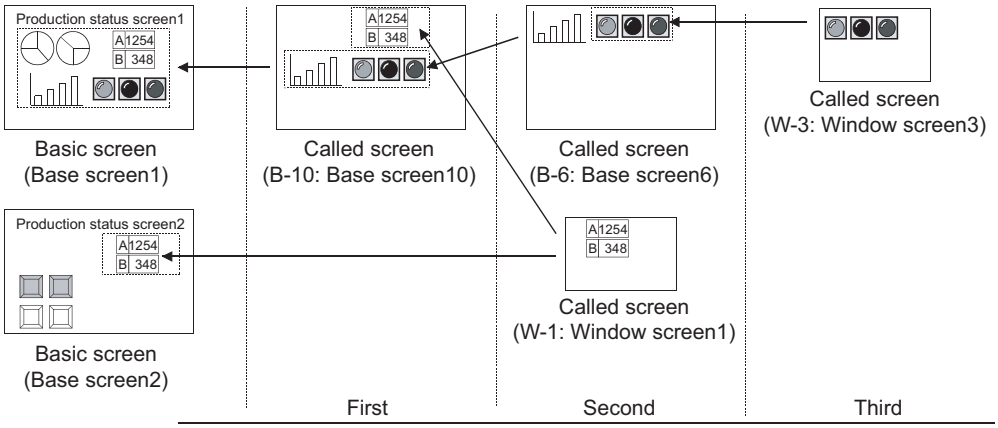

### 1 Multiple called screens can be displayed

Multiple called screens can be displayed on one basic screen.



## 2 Up to the 16th nesting can be called

As up to the 16th nesting can be set, screen setting with high flexibility can be realized.



## 15.1.1 Relevant settings

For the set overlay screen function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relevant to the set overlay screen function only
…Relevant to screen calling only.

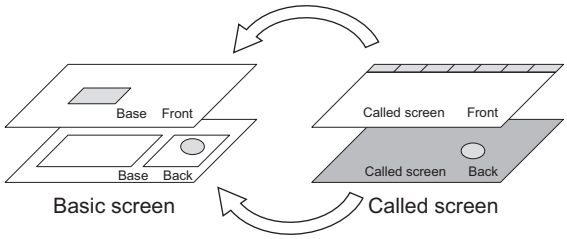
(2) Functions relevant to the set overlay screen function and others
…Confirm the relevant functions when making settings.
For those functions, refer to the corresponding sections.

### 1 Auxiliary settings (☞ Section 4.4 Auxiliary Settings)

(1) Functions relevant to the set overlay screen function only

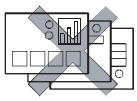
• Placement position of called screens

When calling a screen, the placement position (Front/Back) of the called screen to the basic screen can be set.




Setting for each project

Setting for each screen

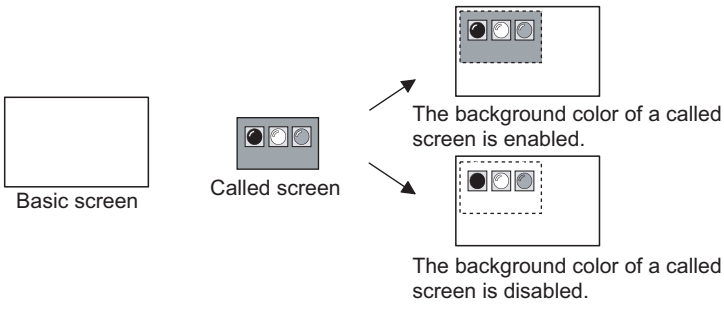


Setting items

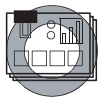
- [Place the overlay screen under the basic screen]

• Enabling/disabling background color of called screen

When the set overlay screen function is used, the background color of a called screen can be set to enabled or disabled per basic screen.




Setting for each project



Setting for each screen

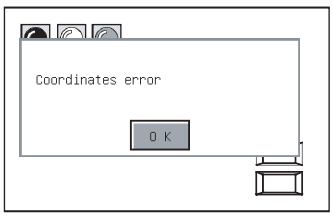
Setting items

- [Disable background colors of overlay screen when setting an overlay screen]
- [Use screen color]

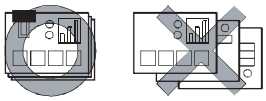
## (2) Functions relevant to the set overlay screen function and others

**• Check for overlapping objects**

If objects are overlapping each other, a message is displayed on the GOT.
As GOT may not display the overlapping objects correctly, correct the monitor screen data.




Setting for each project | Setting for each screen

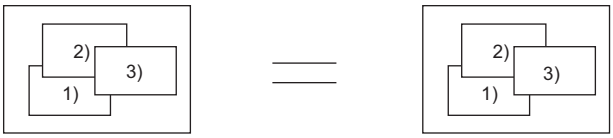


Setting items
- [Carry out check for overlapping objects within GOT]

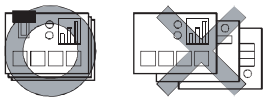
**• Setting the order of displaying objects on the GOT**

The order of displaying objects on the GOT can be adjusted to that of the overlapped objects on GT Designer2.

<Order of overlapped objects on GT Designer2> <Order of displaying objects on the GOT>



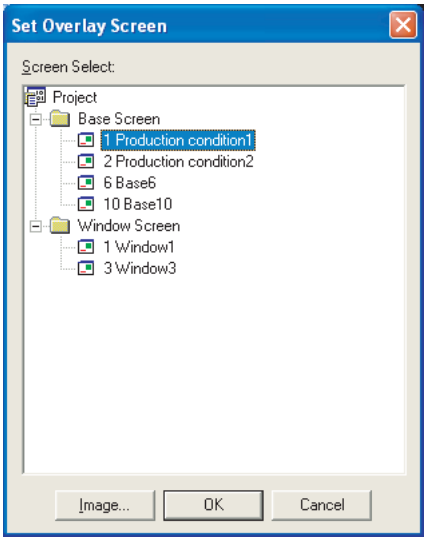

Setting for each project | Setting for each screen



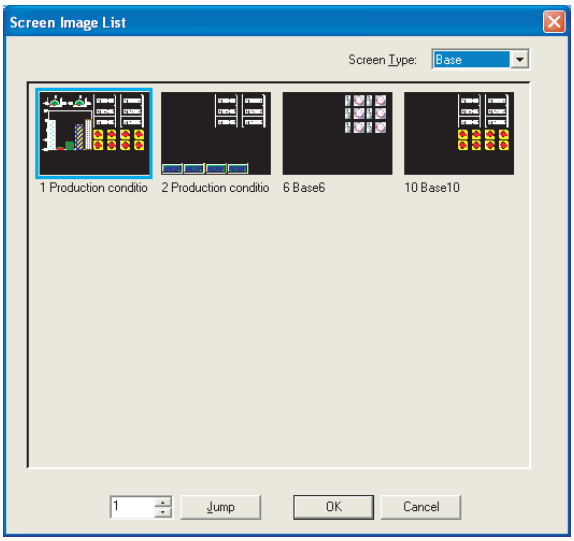
Setting items
- [Adjust object display order in GOT to the one in GT Designer2]

## 15.1.2 Arrangement and settings

1. Activate the basic screen.
2. Select [Object] → [Set Overlay Screen] from the menu.
3. In the Set Overlay Screen dialog box, select the screens to call up and click on the OK button. (Click on the Image button to display the Screen Image List dialog box.)

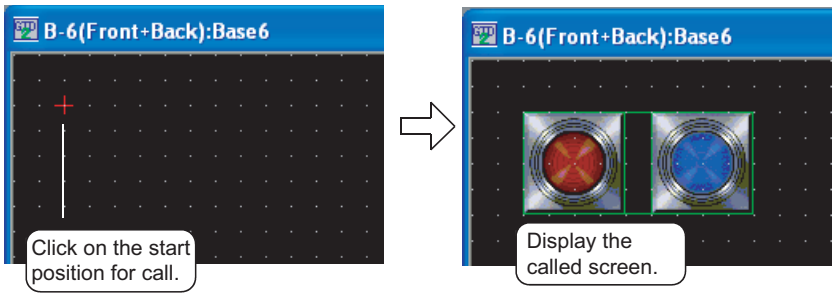



Set Overlay List




Screen Image List

4. Arrange the called screen on the basic screen.

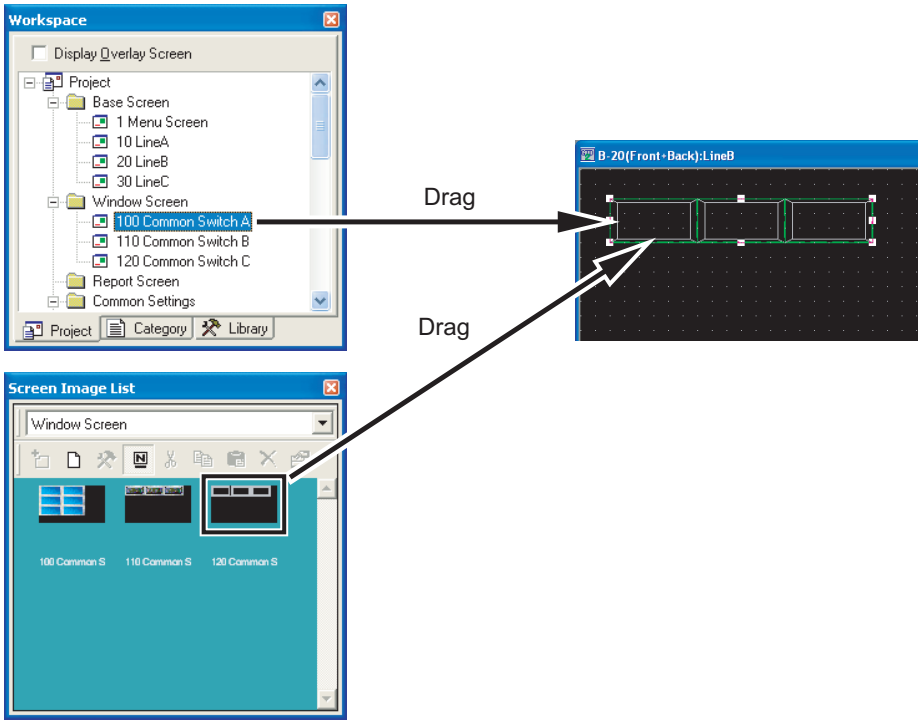


**Hint!**

(1) Editing of called screens
By double-clicking a called screen placed on the basic screen, the called screen can be opened to be edited.

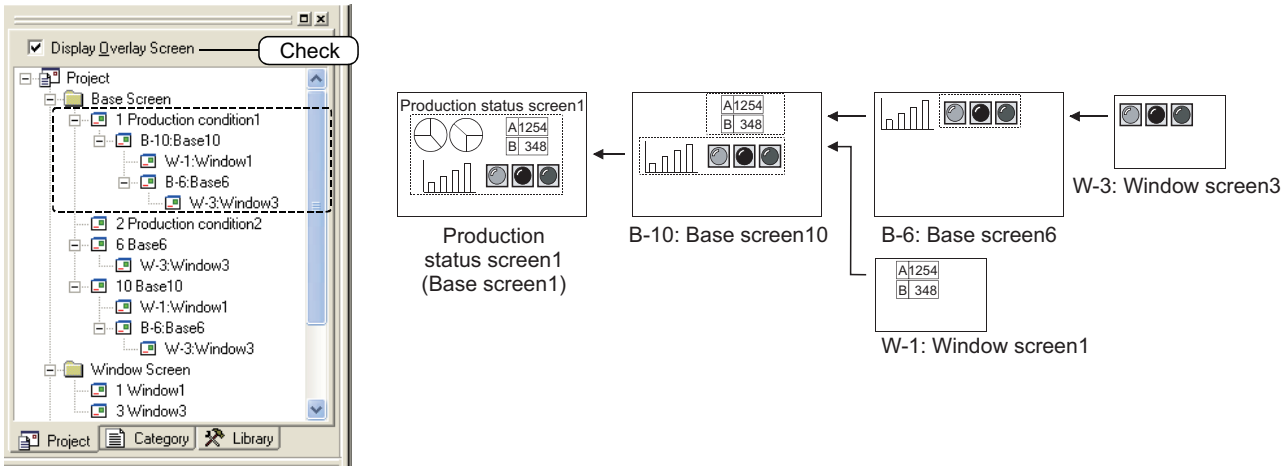
(2) Easy setting method
The set overlay screen function can also be set by dragging the screen from the workspace or the Screen Image List window.
For details of the workspace or the Screen Image List window, refer to the following manual.

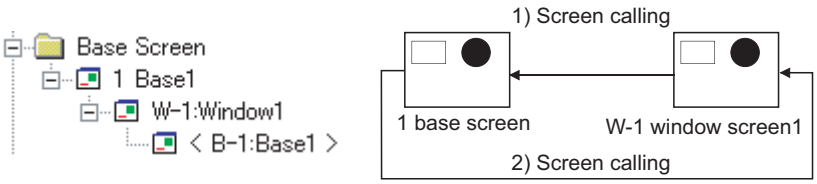
☞GT Designer2 Version □ Basic Operation/Data Transfer Manual



## 15.1.3 Check of the settings

The screen calling set details can be checked in the project work space.

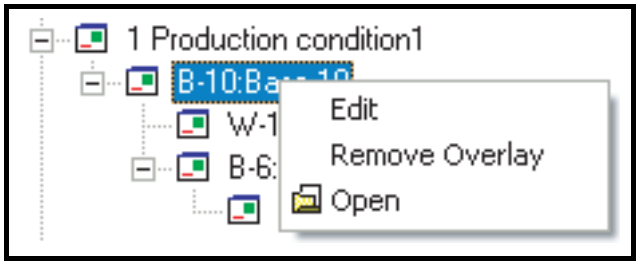



| Items | Description |
|---|---|
| Display Overlay Screen | Check this item to display the setting of the display overlay screen.<br>When this is set, the called screen names will be displayed in a tree structure.<br>Click on [+] or [−] to display or hide the called screen of the lower level.<br>Right click on the called screen name to display the right-click menu*1.<br><br>When the screen name is enclosed with "<>", the display overlay screen is set as a functional loop; therefore any screens after this point will not be called.<br><br>  <br> |

Refer to the following for the details of *1.

### *1 Right-click menu

The following table explains the menu items displayed when right clicking the called screen name.




| Items | Description |
|---|---|
| Edit | Displays the Display Overlay Screen dialog box and allows changing of the screen calling setting. |
| Remove Overlay | Deletes the screen calling setting. |
| Open | Opens the screen. |

## 15.1.4 Precautions

This section provides the precautions for using the set overlay screen function.

### 1 Precaution for drawing

(1) Screen that can be called
Base screen, window screen
(For GT10, only the base screen can be called.)

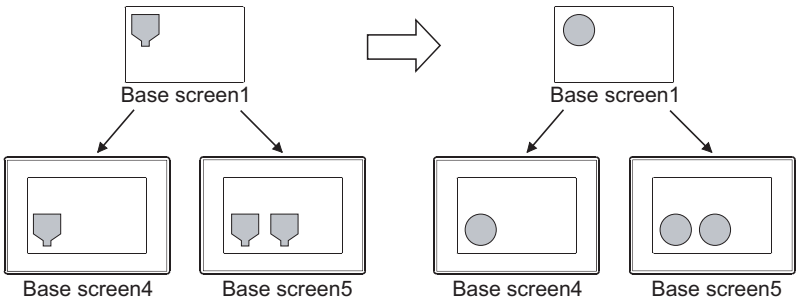
(2) Maximum number of called screens (The number of screens that can be called and displayed on the basic screen)
Up to 2047 called screens can be placed (set).
(Up to 5 screens for GT10)

(3) Maximum nesting number (nesting of further call to the called screen)
16 (Excluding the basic screen, up to 1 level for GT10)

(4) Edit of called screen

(a) The called screen cannot be edited on the basic screen.
Edit must be done on the called screen.

(b) Once the called screen is edited, it will be reflected to all of the basic screens where the edited screen is called.




(5) Displaying figures and objects placed in temporary area
When figures and objects are placed in the temporary area of the called screen, the GOT does not display the objects.
The GOT displays the figures only.

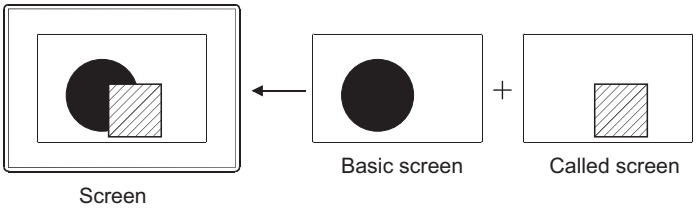
(6) When cascading shapes and objects

The following are examples of cascading on the same layer.

For cascading of shapes and objects, read the descriptions below.

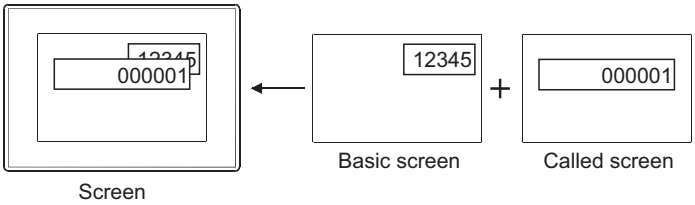
☞ Section 2.6 Superimposition Settings

(a) Figure data



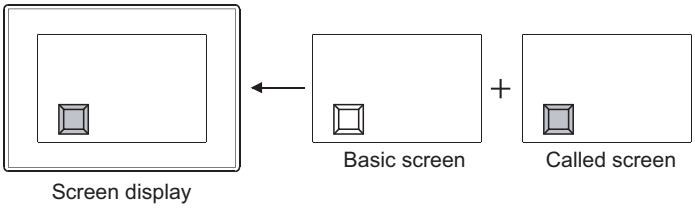

The figure of called screen is displayed in the front.

(b) Object data




Among the objects of basic screen and called screen, the one whose value is changed will be displayed in the front.

(c) Touch switch




Initially, the touch switch corresponding to the latest screen will be displayed in the front.After, the screen where touch switch trigger has changed will be displayed.

**Remark** Overlapping touch switches

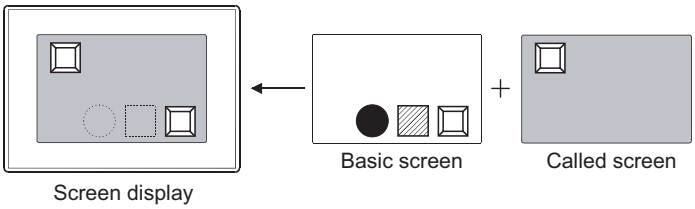
Without using the screen calling, multiple operations can be set to one touch switch.

☞ Section 6.2 Touch Switch

(d) Screen background

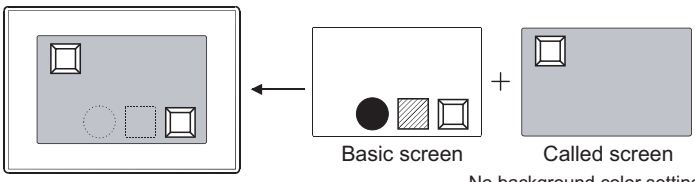
The background color of the called screen will be displayed in the front.

When the background color and the basic screen shape color are overlapped, the shape will not be displayed.




The shape of basic screen will not be displayed.

If no background color is set for the called screen or if "No pattern" is set in "Pattern" of the background color, that of the basic screen is displayed.

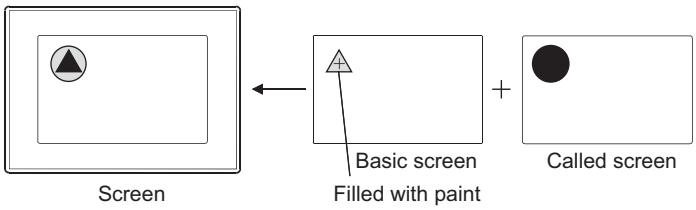


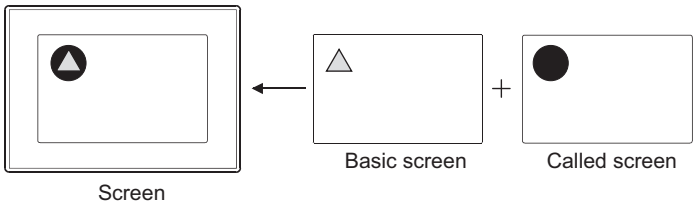

No background color setting or "No pattern" set in "Pattern" of the background color

**Point**

When the figure is filled with paint

If the paint has been set to the figure on the basic screen and when the figure is overlapped with another on the called screen, the colors may not be displayed correctly.
If this occurs, fill in the figure on the basic screen.



(7) When exclusive objects (which only one setting is allowed per each screen) are overlapped
Do not cascade such objects created by the data list function and the alarm history function.
Otherwise, the set numbers of objects are displayed, however, they cannot be displayed correctly because of the function restrictions.

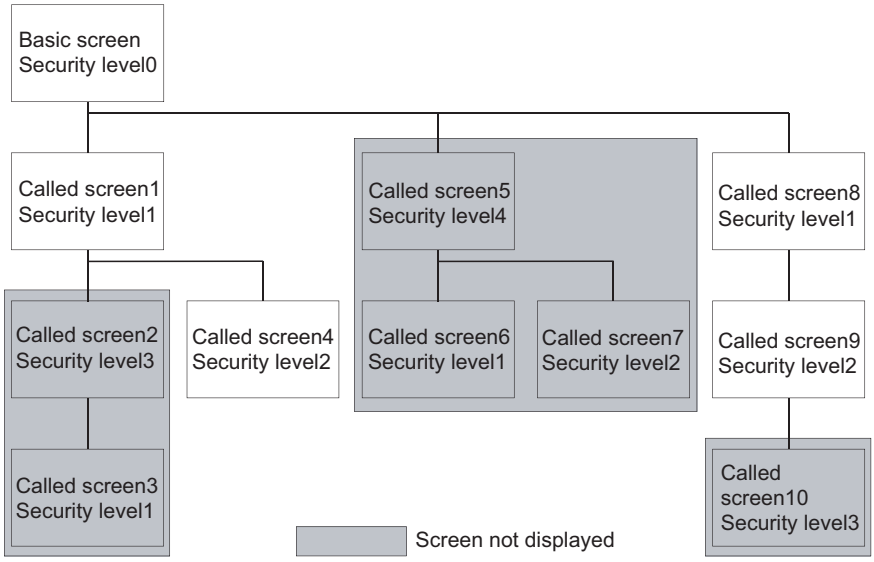
(8) Display/hide called screen according to the security level and nesting of called screen
The security level set in each called screen is valid.
The cautions for security setting in each called screen are as follows.

(a) The called screen will not be displayed when the security level of the called screen is higher than that of the password input on the basic screen.

(b) The screen display using the nesting structure cannot be called from the screen with security settings enabled.

(c) The status observation function and the script function set to the called screen that is not displayed cannot be executed.

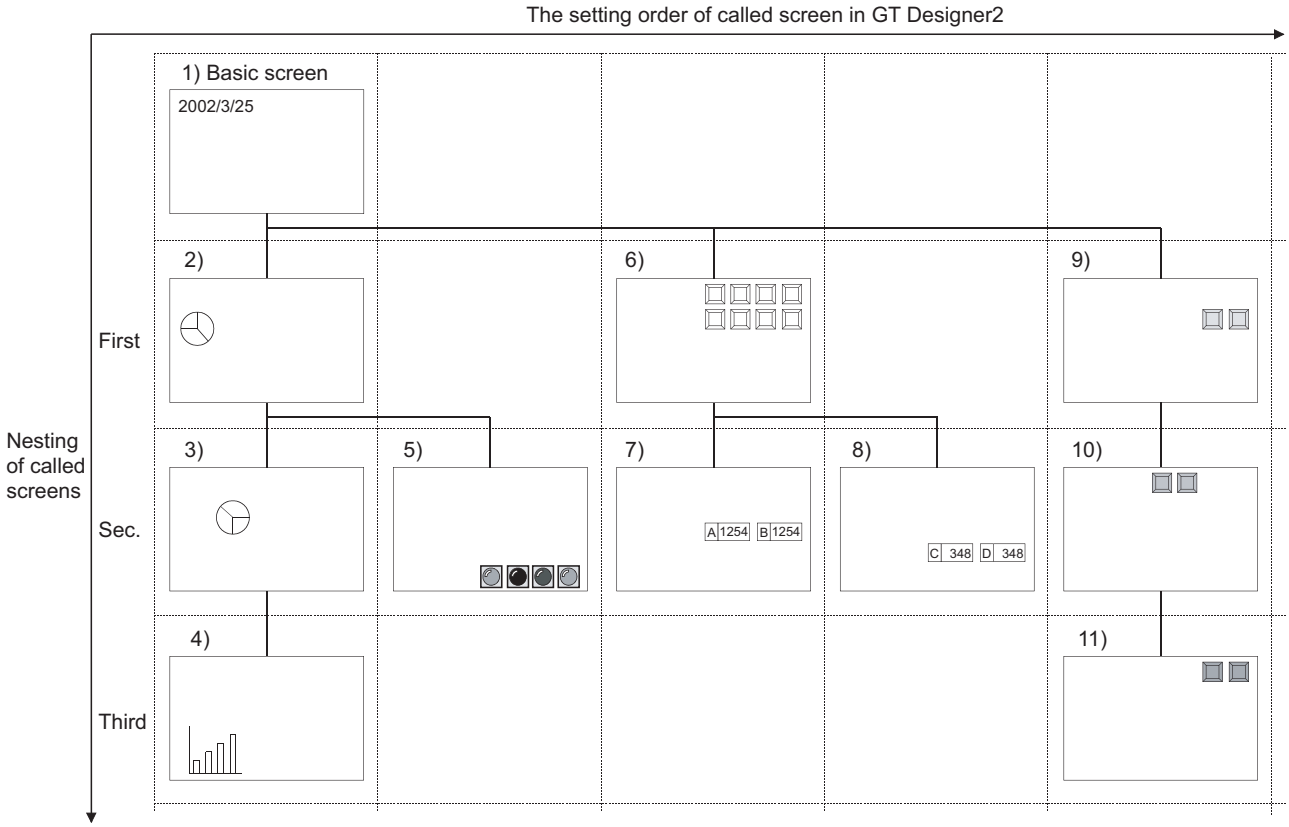
Example: Called screens that can be displayed by password of security level2



(9) Displaying order for calling multiple screens
When multiple called screens have been set on one screen, they are displayed in the order of setting in GT Designer2 or called screen nesting.
Since the current screen is displayed on the previous screen, the screen with the lowest order will be displayed in the front most.

- Precedence for display priority
  1. When multiple called screens are set, they are displayed in the order set in GT Designer2.
  2. For called screens that have been nested, the screen with deeper nesting will be displayed in the front most.
  3. If the above conditions 1 and 2 are both applied, priority is given to the nested called screen.

Example: When setting multiple called screens including nested called screens ( 1) to 11): Display order)




**Point**

(1) Security function, status observation function and script function of called screen
The security function, status observation function and script function set for each called screen are processed in the same order as the called screen display.

(2) Check methods of nesting and setting order
Nesting can be checked in the project workspace.

☞ Section 15.1.3 Check of the settings

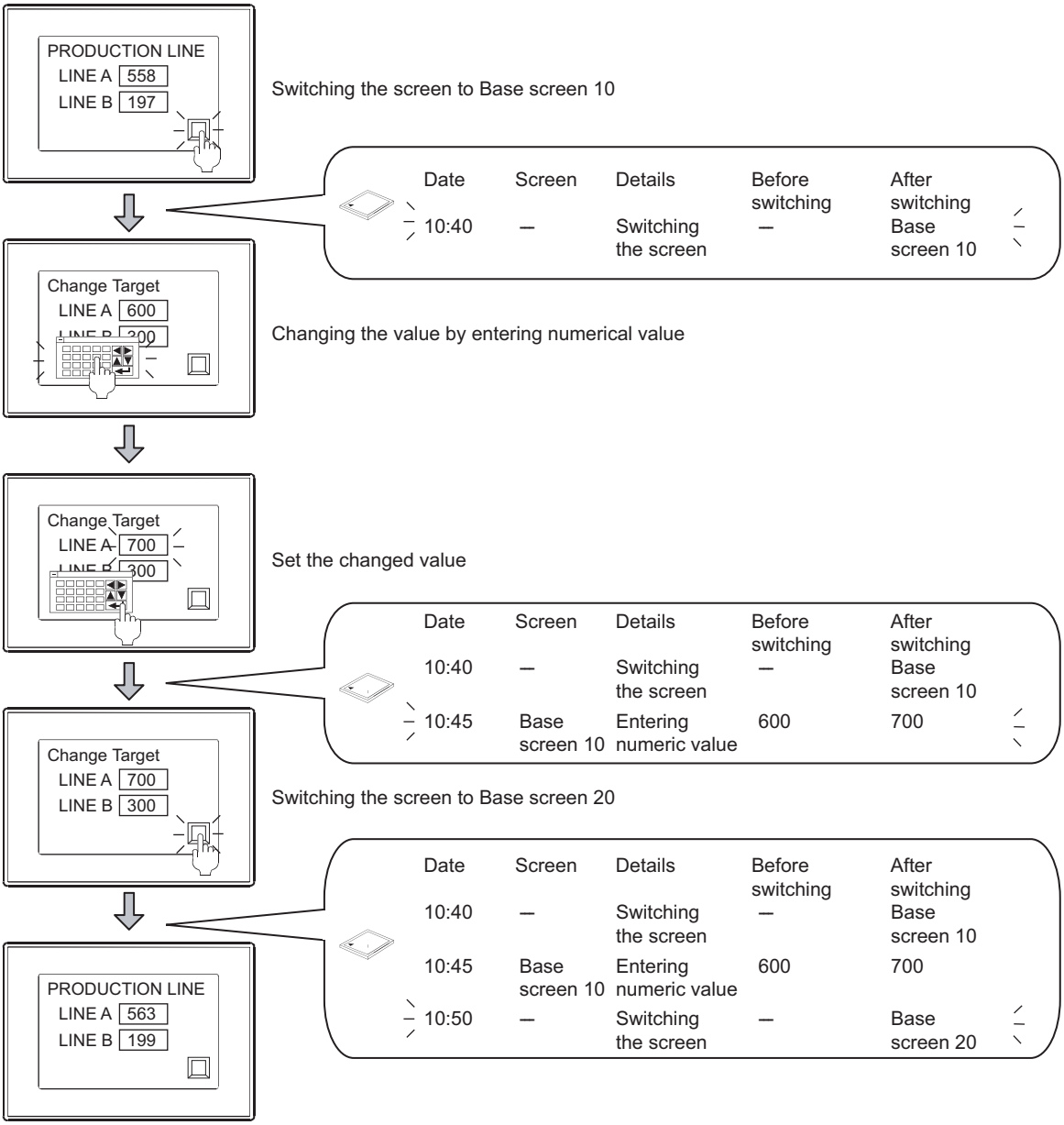
The set order can be checked in the data view. (Data are displayed in the order of setting in the data view.)
Refer to the following manual for the data view.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 12 USEFUL FUNCTIONS)

# 15.2 Operation Log Function

Operations performed at the GOT can be saved to a memory card as the operation history.
If a trouble occurs at the production site, the operation history can be used to locate the cause of the trouble.

The saved history can be confirmed by the operation indicated below.
• Displaying the operation history using the GOT utility
• Saving the operation history in a CSV file or Unicode text file and displaying it on a personal computer



## 15.2.1 Before setting the operation log function

### 1 Items that can be recorded by the operation log function

The operation log function can record the items indicated below.

For details of the items that can be recorded, refer to 5 in this Section.

| Item | | Recording timing |
|---|---|---|
| GOT startup | | Operation log is recorded at the timing when the GOT is started up. (The log of GOT startup is always recorded.)<br>Operation log is not recorded for the restart of GOT by reset operation. |
| Application switching | | Operation log is recorded when the screen is switched to any of the following.<br>• Monitor screen (project data)<br>• Utility<br>• Logging information, advanced recipe information and operation log information of the utility<br>• Monitor functions such as system monitor and ladder monitor, Backup/restore |
| | | Operation log is recorded when an OS is installed or the project data is downloaded. |
| Clock data changing | | Operation log is recorded when the adjust setting is made at the GOT. |
| | | Operation log is recorded when the clock of the GOT is set by the utility. |
| System language switching | | Operation log is recorded when the language used for displaying the system message is switched by the utility. |
| Operator authentication | | Operation log is recorded when logging in or logging out of the GOT. |
| Security level authentication | | Operation log is recorded when the security level is changed with the security level authentication selected.<br>(Changing the password and/or security level device) |
| Screen switching | | Operation log is recorded when the base screen is switched or a window screen is displayed. |
| Station No. switching | | Operation log is recorded when the station No. is switched. |
| Language switching | | Operation log is recorded when the language (language switching device) is switched. |
| Object | Touch switch | Operation log is recorded at the timing when a touch switch is touched.<br>(Operation log is not recorded for the operation (touch) of a key code switch and a data change switch.)<br>When auto repeat setting is made, operation log is recorded immediately before and after completion of operation. |
| | Numerical input | Operation log is recorded at the timing when a numerical input is executed. |
| | | Operation log is recorded at the timing when a value is written to a write device. |
| | | Operation log is recorded at the timing when the write check device turns ON. |
| | ASCII input | Operation log is recorded at the timing when an ASCII input is executed. |
| | Alarm history | Operation log is recorded when an alarm or all alarms are deleted. |
| | | Operation log is recorded when an alarm is reset. |
| | Advanced alarm display | Operation log is recorded when an alarm or all alarms are deleted. |
| | | Operation log is recorded when an alarm is reset. |
| Operation panel | | Operation log is recorded at the timing when an operation panel key is touched.<br>(Operation log in not recorded for key code switches and data change switches.)<br>When the auto repeat is set, operation log is recorded immediately before the operation and after the completion of the operation. |
| Object script | | Operation log is recorded when an object script operates. |
| Log discard information | | If an operation log could not be recorded due to some reason (such as failure in access to a memory card, insufficient available area), this operation log is recorded at the timing when the recording of the operation log is enabled. |

**Remark**

Operation log for objects and operation panel keys

(1) Selection of objects and operation panel keys
Recording operations of all the objects and operation panel keys (per project) or recording operations of a part of the objects and operation panel keys (per object) can be selected.

(2) Distinction of operated objects and operation panel keys
The operated objects and operation panel keys can be distinguished with setting [Object Name] for each object and operation panel key.

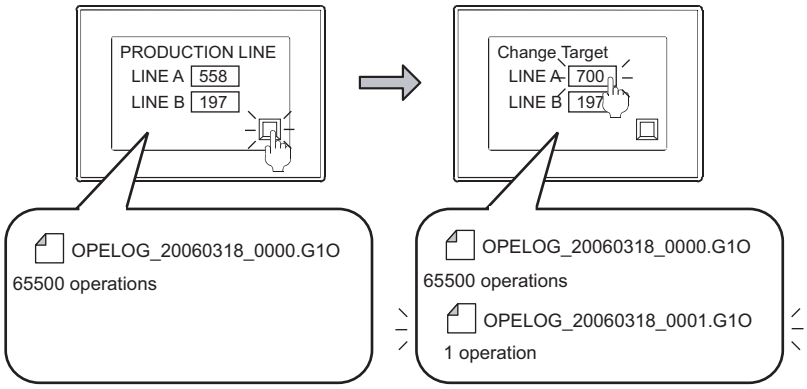
## 2 Saving and managing recorded data

(1) Saving the operation log

The data recorded by the operation log function is created in drive A (standard CF card) as a binary format file (*.G1O).

One log file has the capacity to record up to 65500 operations.

If the number of operations exceeds 65500 times, a new operation log file is created. (File names of operation log files include sub-numbers.)




(2) Management of operation log files

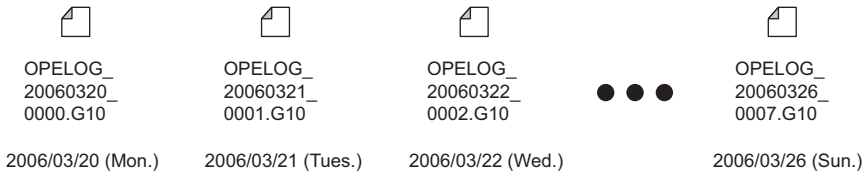
(a) File saving intervals

Operation log files can be saved in daily or weekly.

The saved operation log file can be deleted automatically after storing it for a specified period

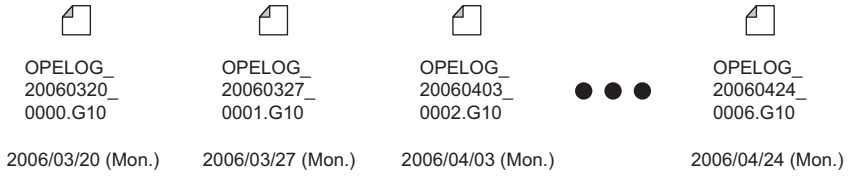
- Setting for daily saving

  A file is created daily.




- Setting for weekly saving

  A file is created weekly.




(b) Setting the operation log file saving size

The size of area in memory card to save operation log files (total size of all operation log files) can be set.

If the set size is exceeded, the oldest operation log file is automatically deleted.

**Remark** Sub-number in operation log file name

The sub-number in the name of the first created operation log file is "0000". The sub-number increases by one every time an operation log file is created.

The next sub-number of "9999" is "0000".

## 3 Using operation log files

Display and operation indicated below are possible for the created operation log files.

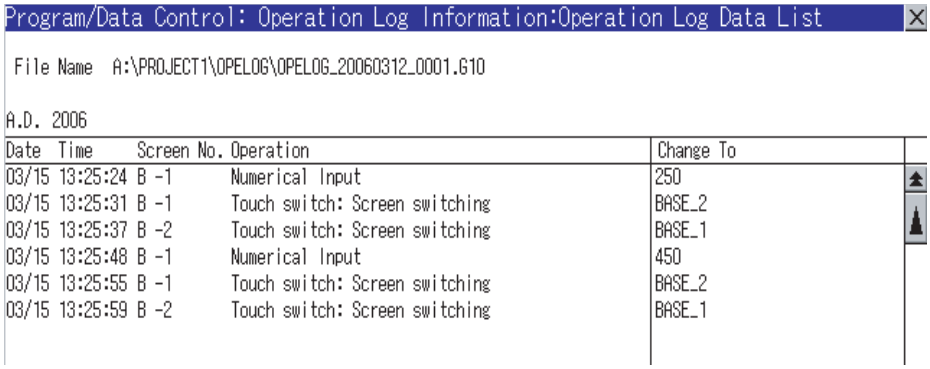
(1) Displaying by the utility

Operation log contents can be checked and operation log files can be managed by [Operation log information] of the utility.

For the operations of the utility, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)

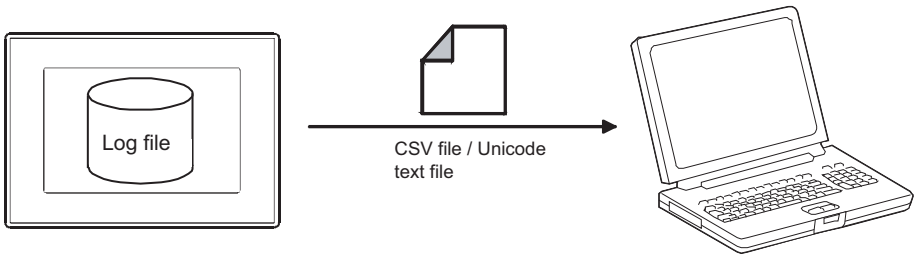
GT15 User's Manual (Section 13.11 Operation Log Information)




(2) Saving the log file in CSV file/Unicode text file and displaying it on a personal computer

The created operation log file is saved in a binary format file (*.G1O).

This binary format file (*.G1O) can be converted to a CSV file or a Unicode text file to be displayed on a personal computer.




**Point**

When displaying operation log files on personal computer available for multilingual input

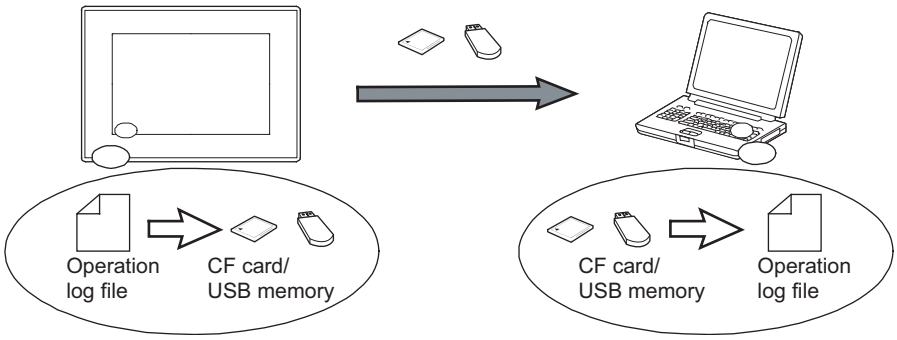
For displaying operation log files, use the Unicode text file.

With the Unicode text file, multiple languages are correctly displayed.

Either of the following methods can be used to create a CSV file / Unicode text file.

(a) Creating a CSV file / Unicode text file by GT Designer2
Convert a binary format file (*.G1O) saved in a CF card into a CSV file or Unicode text file by GT Designer2.

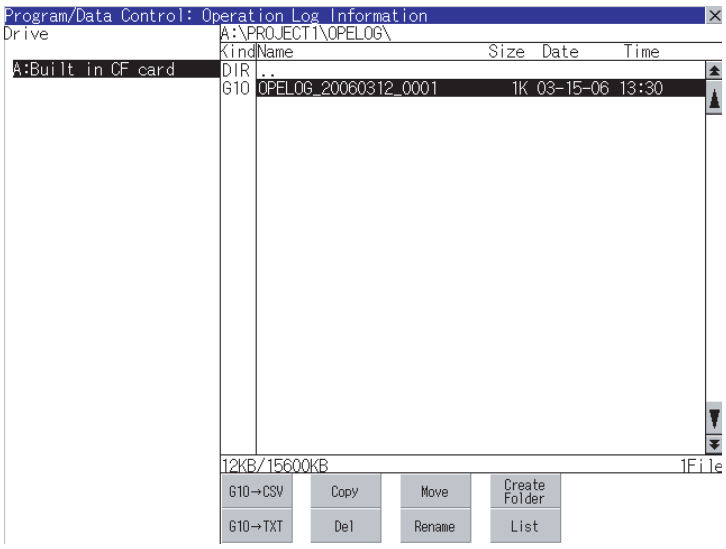
1. Store a binary format file (*.G1O) in the personal computer using either of the methods below.
   - Transferring by GT Designer2
     Transfer the file to the personal computer using the Resource Upload -> Computer tab which is displayed by selecting the menu [Communication] → [To/From GOT...].
   - Storing the file in a CF card or USB memory
     Save the operation log file in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer.




2. On GT Designer2, select [Common] → [Operation Log] → [Operation Log File Convert] to open the Convert dialog box. In this dialog, convert the binary format file (*.G1O) into a CSV file / Unicode text file.

(b) Creating a CSV file / Unicode text file by the utility
Convert a binary format file (*.G1O) saved in a CF card into a CSV file or Unicode text file by the utility.
This method creates a CSV file / Unicode text file without using GT Designer2.

1. In [Operation log information] of the utility, select a G1O file and touch the G1O→CSV or G1O→TXT button to convert the file.




(Continued to next page)

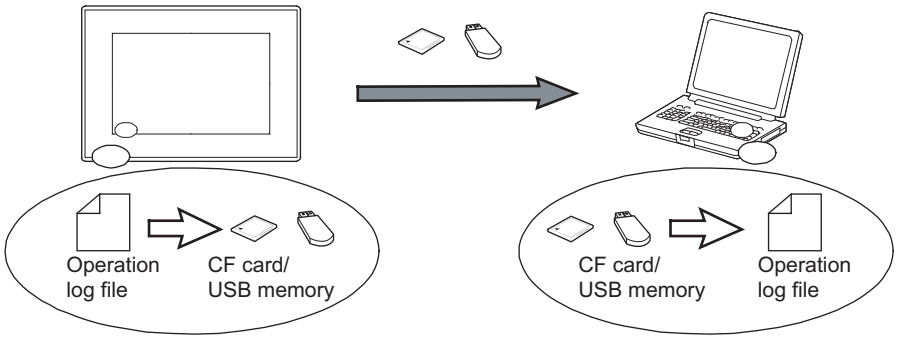
❷ Store the converted file (CSV file / Unicode text file) to the personal computer using either of the following methods.

- Transferring by GT Designer2

  Transfer the file to the personal computer using the Resource Upload -> Computer tab which is displayed by selecting the menu [Communication] → [To/From GOT...].

- Storing the file in a CF card or USB memory

  Save the operation log file in a CF card or USB memory, and read the data saved in the CF card or USB memory using the personal computer.




(c) Method to create CSV file/Unicode text file with a device

By turning on the specified device, binary format file stored in a memory card (* .G1O) can be converted to CSV file/Unicode text file.

☞Section 15.2.3 Setting items

## 4 Operation by the utility

For the operation log function, the following operations are available in the utility.

- Folder creation
- Folder deletion
- File copy
- File deletion
- File rename
- File move
- Search
- G1O → CSV/Unicode text conversion

Management of operation log files is possible on the GOT without using a personal computer.

**Point**

Copied, renamed or moved file

An operation log file, which was copied, renamed or moved, is excluded from the files that are subject to automatic deletion due to the setting for [Log File Save Period] or [Action when a memory card does not have enough space].
For the kinds of setting that will be automatic deleted, refer to the following.

☞ Section 15.2.3 Setting items

**Remark**

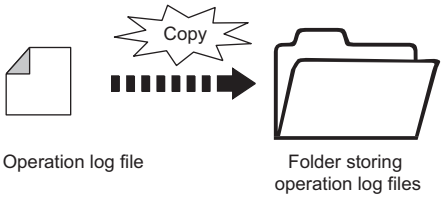
Operation of utility

For details, refer to the following manual.

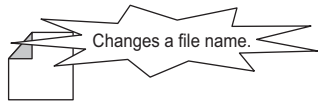
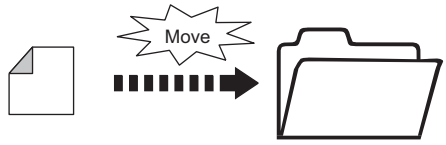
☞ GT16 User's Manual (Basic Utility) (Section 6.2 Various Data Control)

GT15 User's Manual (Section 13.11 Operation Log Information)

The following operations are possible for an operation log file.
File operation is possible on the GOT without reading out a file to a personal computer.

| Item | Description |
|---|---|
| Creating folder | Creates a folder where operation log files are stored.<br>This allows management of operation log files by creating folders by date or period.<br> <br><br>Allows management of files by creating folders by date or period. |
| Deleting folder | Deletes a folder that stores operation log files.<br> <br> |
| Copying file | Copies an operation log file.<br>This operation is used to make a backup file of an operation log file.<br>  <br> |

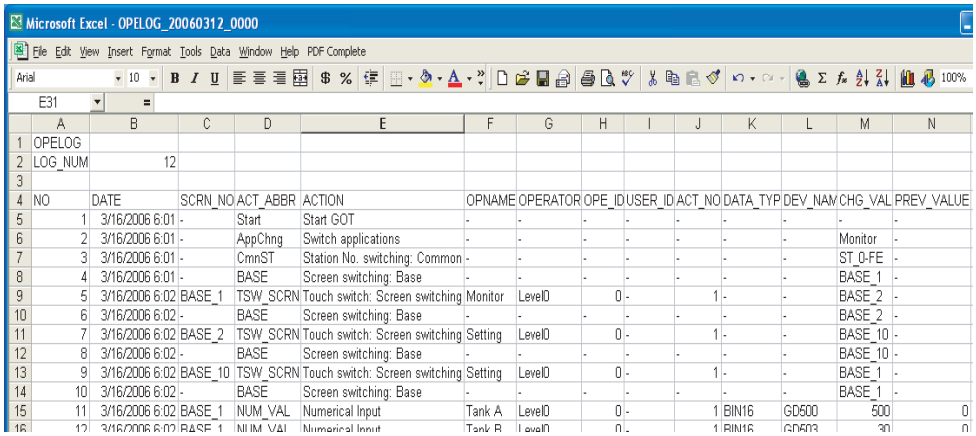
(Continued to next page)

| Item | Description |
|---|---|
| Deleting file | Deletes an operation log file.<br> <br> |
| Renaming file | Renames an operation log file.<br>  <br><br>LOG00001_0001.G10 → LOG00002_0001.G10 |
| Moving file | Moves an operation log file to another folder.<br>This operation is used to make a backup file of an operation log file.<br>  <br> |
| G1O → CSV / Unicode text conversion | Converts a binary format file (*.G1O) to a CSV file / Unicode text file.<br>( This section 3 (2) (b) Creating a CSV file / Unicode text file by the utility) |
| Search | Searches for an operation log in an operation log file using the log creation date or time as a key.<br>2006/04/10 09:30 BASE_10 NUM_VAL Numerical input<br>2006/04/10 10:28 BASE_10 ASC_VAL ASCII input<br>2006/04/10 10:45 BASE_10 NUM_VAL Numerical input<br>2006/04/10 11:06 BASE_10 TSW_SCRN Touch switch: Switching screen |

## 5 Display example and details of operation log file

An operation log file, after conversion, is displayed on a personal computer as shown below.

Example: Display in Microsoft Excel



Microsoft Excel - OPELOG_20060312_0000

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OPELOG | | | | | | | | | | | | | |
| 2 | LOG_NUM | 12 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | NO | DATE | SCRN_NO | ACT_ABBR | ACTION | OPNAME | OPERATOR | OPE_ID | USER_ID | ACT_NO | DATA_TYP | DEV_NAM | CHG_VAL | PREV_VALUE |
| 5 | 1 | 3/16/2006 6:01 | - | Start | Start GOT | - | - | - | - | - | - | - | - | - |
| 6 | 2 | 3/16/2006 6:01 | - | AppChng | Switch applications | - | - | - | - | - | - | - | Monitor | - |
| 7 | 3 | 3/16/2006 6:01 | - | CmnST | Station No. switching: Common | - | - | - | - | - | - | - | ST_0-FE | - |
| 8 | 4 | 3/16/2006 6:01 | - | BASE | Screen switching: Base | - | - | - | - | - | - | - | BASE_1 | - |
| 9 | 5 | 3/16/2006 6:02 | BASE_1 | TSW_SCRN | Touch switch: Screen switching | Monitor | Level0 | 0 | - | 1 | - | - | BASE_2 | - |
| 10 | 6 | 3/16/2006 6:02 | - | BASE | Screen switching: Base | - | - | - | - | - | - | - | BASE_2 | - |
| 11 | 7 | 3/16/2006 6:02 | BASE_2 | TSW_SCRN | Touch switch: Screen switching | Setting | Level0 | 0 | - | 1 | - | - | BASE_10 | - |
| 12 | 8 | 3/16/2006 6:02 | - | BASE | Screen switching: Base | - | - | - | - | - | - | - | BASE_10 | - |
| 13 | 9 | 3/16/2006 6:02 | BASE_10 | TSW_SCRN | Touch switch: Screen switching | Setting | Level0 | 0 | - | 1 | - | - | BASE_1 | - |
| 14 | 10 | 3/16/2006 6:02 | - | BASE | Screen switching: Base | - | - | - | - | - | - | - | BASE_1 | - |
| 15 | 11 | 3/16/2006 6:02 | BASE_1 | NUM_VAL | Numerical Input | Tank A | Level0 | 0 | - | 1 | BIN16 | GD500 | 500 | 0 |
| 16 | 12 | 3/16/2006 6:02 | BASE_1 | NUM_VAL | Numerical Input | Tank B | Level0 | 0 | - | 1 | BIN16 | GD503 | 30 | 0 |

* "-" is displayed if there are no corresponding outputs.

Contents displayed for each item differ depending on the function for which the operation log has been recorded.
The following shows the contents displayed for each item by function.

**Point**

Display differences with authentic method

The display details for some items differ depending on the set authentic method.
The following shows the items that the display details differ.

| Item | Display details | |
|---|---|---|
| | Operator authentication | Security level authentication |
| OPERATOR | Displays the operator name when the operation is executed. | Displays the level when the operation is executed. |
| OPE_ID | Displays the operator ID when the operation is executed. | Displays the level when the operation is executed. |

(1) GOT startup

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "Start". | DATA_TYPE | No data is displayed. |
| ACTION | Displays "Start GOT". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | No data is displayed. |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

(2) Application switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "AppChng". | DATA_TYPE | No data is displayed. |
| ACTION | Displays "Switch applications". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the type of screen after change*1. |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

*1 Switching to each menu in the utility is recorded as an operation on the utility.

### (3) Clock data changing

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Dispalys a log No. | OPE_ID | No data is displayed*1.<br>Displays the operator ID or level*2. |
| DATE | Dispalys the date on which the operation log was collected (date before changing the clock data). | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Dispalys "GetTime" or "SetTime" *1.<br>Dispalys "ChngTime" *2. | DATA_TYPE | No data is displayed. |
| ACTION | Dispalys "Adjust (External device)" or "Adjust (GS)" *1.<br>Dispalys "Change clock" *2. | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the time after change. |
| OPERATOR | No data is displayed*1.<br>Displays the operator name or level*2. | PREV_VALUE | Displays the time before change. |

*1 When the clock of the GOT was adjusted.
*2 When the clock of the GOT was changed by the utility.

### (4) System language switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the operator ID or level.*2 |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "SysLang". | DATA_TYPE | No data is displayed. |
| ACTION | Displays "Switch system languages". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the language after switching. |
| OPERATOR | Displays the operator name or level.*2 | PREV_VALUE | No data is displayed. |

### (5) Security setting (Operator authentication)

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the operator ID.*1 |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays [Login], [LoginNG], [Logout], or [ALogout]. | DATA_TYPE | No data is displayed. |
| ACTION | Displays [Login], [Login failed], [Logout], or [Automatic logout]. | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | No data is displayed. |
| OPERATOR | Displays the operator name. | PREV_VALUE | No data is displayed. |

*1 Applicable only with the login, login failed, and logout

### (6) Security setting (Security level authentication)

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed*1. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "ScrtPwd"*1 or "ScrtLv"*2. | DATA_TYPE | No data is displayed. |
| ACTION | Displays "Change security levels (password)" or "Change levels (device)". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the level after change. |
| OPERATOR | Displays the level at which the operation was executed*1. | PREV_VALUE | No data is displayed. |

*1 Only when the security level was changed using the password of the utility.
*2 Only when the level device was changed.

### (7) Screen switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays the screen switching type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Displays the screen switching type. | DEV_NAME | No data is displayed. |
| OPNAME | Displays the screen title. | CHG_VALUE | Displays the screen No. after switching. |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

### (8) Station No. switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays the station No. switching type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Displays the station No. switching type. | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays "ST_" + "Station No. after switching" (network No. and PLC station No.). |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

(9) Language switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "DispLang". | DATA_TYPE | No data is displayed. |
| ACTION | Displays "Switch languages". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the column No. after switching. |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

(10) Touch switch

(a) Bit SET, bit RST, bit ALT, bit momentary, and word SET

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Dispalys the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. (For operation panel keys, [PNL_1] is displayed.) | ACT_NO | Dispalys the execution order number if multiple actions are set. |
| ACT_ABBR | Displays the action type in an abbreviation (alphanumeric). | DATA_TYPE | Dispalys the data type. |
| ACTION | Displays the action type. | DEV_NAME | Dispalys the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Dispalys the value written to the device. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

### (b) Application swtiching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Dispalys a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Dispalys the date on which the operation log was collected. | USER_ID | Dispalys the user ID. |
| SCRN_NO | Dispalys the screen No. on which the object is set. (For operation panel keys, [PNL_1] is displayed.) | ACT_NO | Dispalys the execution order number if multiple actions are set. |
| ACT_ABBR | Dispalys the action type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Dispalys the action type. | DEV_NAME | No data is displayed. |
| OPNAME | Dispalys the object name. | CHG_VALUE | No data is displayed. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

### (c) Screen switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Dispalys a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Dispalys the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Dispalys the screen No. on which the object is set. (For operation panel keys, [PNL_1] is displayed.) | ACT_NO | Displays the execution order number if multiple actions are set. |
| ACT_ABBR | Dispalys the action type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Dispalys the action type. | DEV_NAME | No data is displayed. |
| OPNAME | Dispalys the object name. | CHG_VALUE | Displays the screen No. after switching. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

### (d) Station No. switching

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. (For operation panel keys, [PNL_1] is displayed.) | ACT_NO | Displays the execution order number if multiple actions are set. |
| ACT_ABBR | Displays the action type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Displays the action type. | DEV_NAME | No data is displayed. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the "Station switching type (abbreviation in alphanumeric)" + "Station No. after switching (Network No. + PLC station No.)". |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

### (e) Start/end auto repeat

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log number. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Dispalys the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays [TSW_REPB][*1]or [TSW_REPE][*2]. | DATA_TYPE | No data is displayed. |
| ACTION | Displays [Touch switch: Start auto repeat][*1]or [Touch switch: End auto repeat][*2]. | DEV_NAME | No data is displayed. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the number of auto repeats.[*2] |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

## (11) Numerical input

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | Displays the execution order number if multiple actions are set. |
| ACT_ABBR | Displays "NUM_VAL". | DATA_TYPE | Displays the data type. |
| ACTION | Displays "Numerical Input". | DEV_NAME | Displays the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the value after change. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | Displays the value before change. |

### (a) Write device

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Dispalys the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | Displays the execution order number if multiple actions are set. |
| ACT_ABBR | Displays "NUM_WDEV". | DATA_TYPE | Displays the data type. |
| ACTION | Displays "Numerical Input (Write device)". | DEV_NAME | Displays the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the value written to the device. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

(b) Write complete device

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | Displays the execution order number if multiple actions are set. |
| ACT_ABBR | Displays "MUM_WCHK". | DATA_TYPE | Displays the data type. |
| ACTION | Displays "Numerical Input (Write check)". | DEV_NAME | Displays the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the value written to the device. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

(12) ASCII input

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "ASC_VAL". | DATA_TYPE | Displays whether the input data is ASCII or SJIS. |
| ACTION | Displays "Ascii Input". | DEV_NAME | Displays the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the character string after change. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | Displays the character string before change. |

(13) Alarm history and advanced alarm (user alarm / system alarm)

(a) In delete or all delete operation

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays the action type in an abbreviation (alphanumeric). | DATA_TYPE | No data is displayed. |
| ACTION | Displays the action type. | DEV_NAME | No data is displayed. |
| OPNAME | Displays the object name. | CHG_VALUE | No data is displayed. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

(b) In reset operation

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays the action type in an abbreviation (alphanumeric). | DATA_TYPE | Displays the data format*1. |
| ACTION | Displays the action type. | DEV_NAME | Displays the device name and device No. *1. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the value written to the device*1. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

*1 Not displayed for an advanced alarm (system alarm).

(14) Object script

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | Displays the level at which the operation was executed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | Displays the user ID. |
| SCRN_NO | Displays the screen No. on which the object is set. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "ObScr". | DATA_TYPE | Displays the data type. |
| ACTION | Displays "Object Script". | DEV_NAME | Displays the device name and device No. |
| OPNAME | Displays the object name. | CHG_VALUE | Displays the value written to the device. |
| OPERATOR | Dispalys the level at which the operation was executed. | PREV_VALUE | No data is displayed. |

(15) Log discard information

| Item | Description | Item | Description |
|---|---|---|---|
| NO | Displays a log No. | OPE_ID | No data is displayed. |
| DATE | Displays the date on which the operation log was collected. | USER_ID | No data is displayed. |
| SCRN_NO | No data is displayed. | ACT_NO | No data is displayed. |
| ACT_ABBR | Displays "LostLog". | DATA_TYPE | No data is displayed. |
| ACTION | Displays "LostLog". | DEV_NAME | No data is displayed. |
| OPNAME | No data is displayed. | CHG_VALUE | Displays the number of operation logs that could not be recorded. |
| OPERATOR | No data is displayed. | PREV_VALUE | No data is displayed. |

## 15.2.2 Settings

The setting method for the operation log function is explained below.
When recording the operation log of objects, the setting method differs depending on the recording method.

- When recording all operation logs of the objects for which the operation log recording is possible
  Refer to 1 below.
- When recording the operation log only for the specified objects
  Refer to 2 below.

All settings other than objects are made in 1.

### 1 Operation log function setting method (to record the operation log of all corresponding objects)

1. Perform either of the following operations.
   - Select the operation log function menu.
     [Common] → [Operation Log Setting]
     [Operation Log File Convert]
   - Click the operation log function icon
     (Operation Log Setting) (Operation Log File Convert)
2. The dialog box is displayed. Make setting in this dialog following the instructions given below.

**Remark**

When making settings in the project work space

(1) Operation log setting

Double click Operation Log in the project workspace, and the setting dialog box is displayed.

(2) Operation log file conversion

Operation log file conversion is not performed from the project workspace.
Open the conversion screen from the menu.

### 2 Recording the operation log only for the specified objects

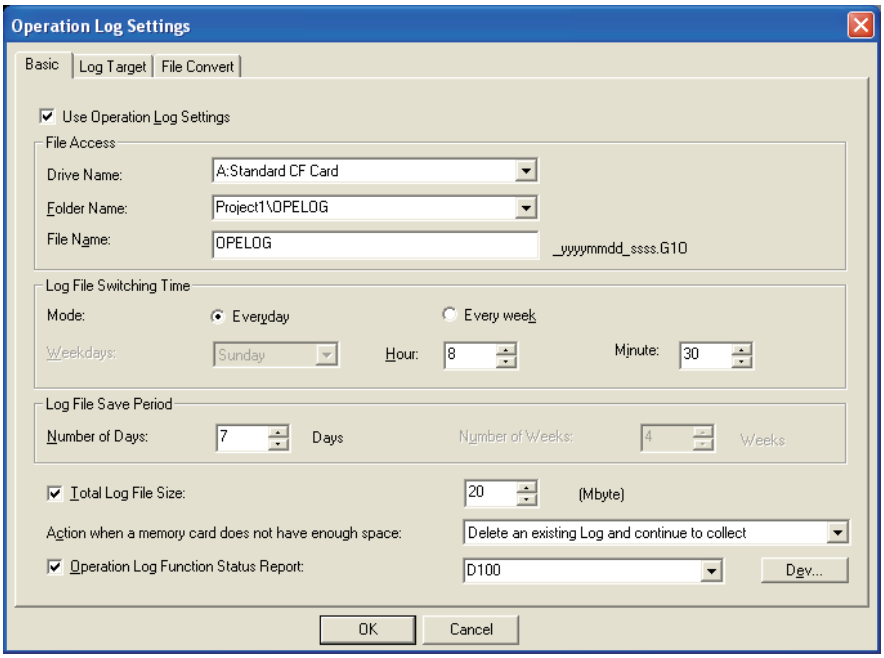
In the setting for each object, check [Operation Log Target].
For the items to be set, refer to the explanation on the setting items of the object to be used.

## 15.2.3 Setting items

### 1 Operation log setting

(1) Basic tab

Set items such as save location, collection start time, or saving period.




Basic | Log Target | File Convert

| Item | | Description | Model |
|---|---|---|---|
| Use Operation Log Settings | | Check this item when using the operation log function. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| File Access | Drive Name | Displays the save destination drive name. | |
| | Folder Name*1 | Set the name of the folder where a file is saved.<br>Set the folder name with alphabets, numeric values and several symbols (#$%&'()+-.=@[]^_{}?\).<br>The default folder name is set at [Project Folder] on the screen displayed by selecting the menu [Common] → [System Environment]. | |
| | File Name*1 | Set the name of a file to be saved.<br>Set the folder name with alphabets, numeric values and several symbols (#$%&'()+-.=@[]^_{}?).<br>Default file name is OPELOG.<br>Date and sub-number are automatically appended to a file name. | |
| Log File Switching Time | Mode | Select the operation log collection mode (Everyday / Every week).<br>After selecting the mode, set the operation log collection start time ([Hour], [Minute]).<br>When selecting [Every week], set [Weekdays] to specify the day of the week to start the collection. | |
| Log File Save Period | | Set the operation log file keeping period.<br>Files having been stored exceeding the keeping period are deleted.<br>Number of Days : Set the number of days (7 to 100) during which the file should be kept when [Everyday] is selected for [Mode].<br>Number of Weeks : Set the number of weeks (4 to 53) during which the file should be kept when [Every week] is selected for [Mode]. | |

(Continued to next page)

Basic | Log Target | File Convert

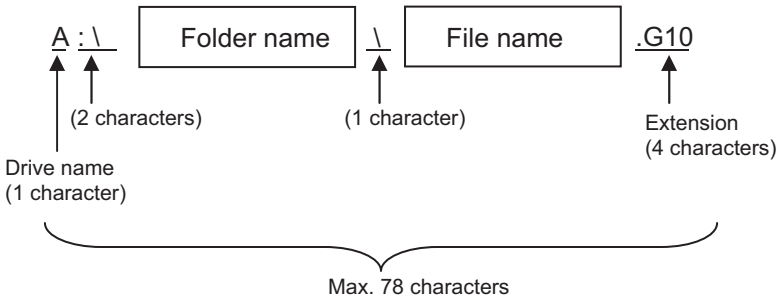
| Item | Description | Model |
|---|---|---|
| Total Log File Size | Set the total size (10 to 256) of the operation log files to be stored in memory card.<br>If the size of operation log files stored in the memory card exceeds the set value, the oldest operation log file is deleted. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Action when a memory card does not have enough space | Select the processing to be taken if the size of available area in the memory card is insufficient.<br>Delete an existing Log and continue to collect: Continuously collects the operation log by deleting the oldest log file.<br>Stop to collect: Ends collection of operation log. | |
| Operation Log Function Status Report*2 | Check this item to notify the device of the operation log collecting status.<br>After checking this item, set the device.<br>(☞ Section 5.1 Device Setting) | |

For details of *1, *2, refer to the following.

*1 Folder name and file name

(1) Number of characters used in folder and file names
The GOT recognizes file location by the path indicated below.
Set the folder and file names so that the total number of characters in the path is 78 or less characters.
In a path, a user can set only the folder and file names.
(In the designation of a path, those other than folder and file names are automatically appended.)

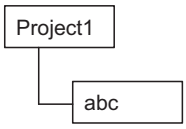
Example: Path of G1O file saved in memory card




**Remark** When setting hierarchy to folders

When setting [Folder Name], enter "\" between folder names.
(Note that "\" is counted as one character.)
The maximum number of hierarchy levels for creating folders is 20.

(Setting example)
[Folder Name]: Project1\abc



(2) Character strings that cannot be set

The following character strings cannot be used for folder and file names. (They cannot be used irrespective of upper-case or lower-case characters.)

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

Folder names or file names as shown below cannot be used.

- Folder name starting with "G1"
- Folder or file name starting with "." (period) or "\"
- Folder or file name ending with "." (period) or "\"
- Folder or file name consisting of only "." (one period) or ".." (two periods)

*2 Operation Log Function Status Report

This function notifies the specified device of the status of the operation log function in bit units.

b0 : Turns ON if operation logs cannot be collected.
(This automatically turns OFF when collecting of operation logs is enabled.)

b1 to b7 : Must not be used.

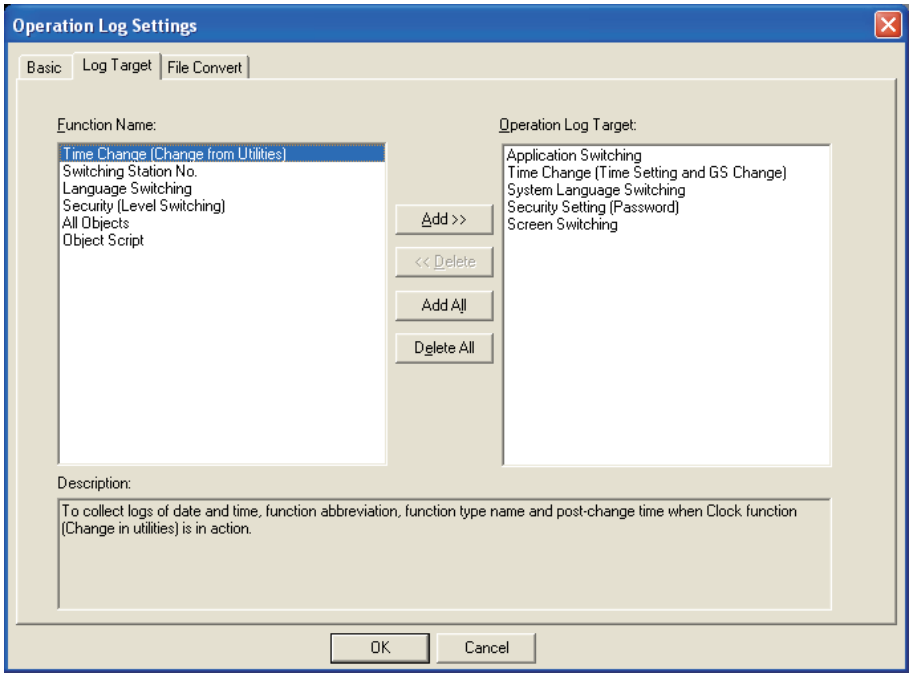
b8 : Turns ON when operation log file is being converted from binary file to CSV/Unicode text file.
Turns OFF automatically when the conversion terminates.

b9 : Turns ON when operation log file is being converted with Log File Auto Convert.
Turns OFF automatically when the conversion terminates.

b10 to b15 : Must not be used.

(2) Log Target tab

The target items for recording the operation log are selected.

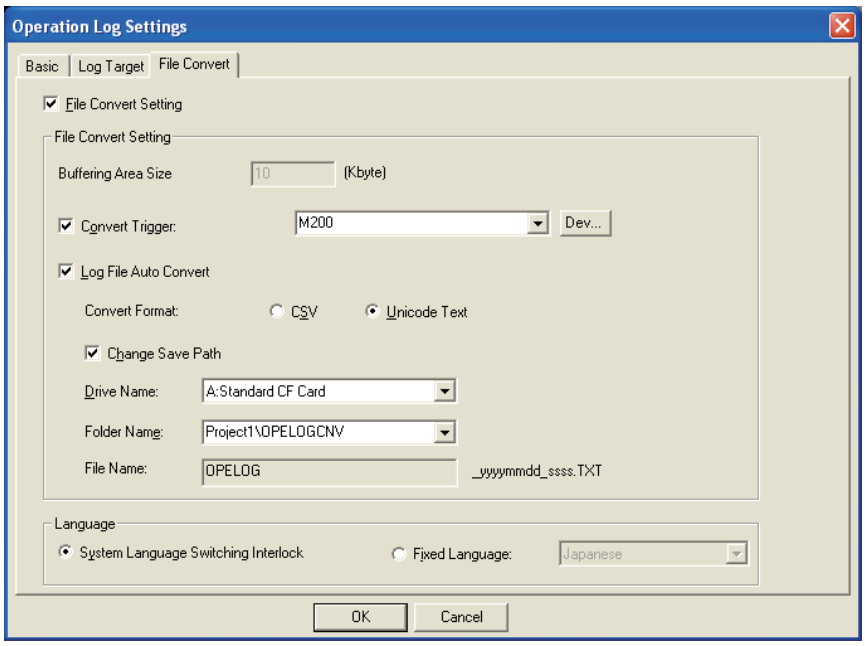



Basic | **Log Target** | File Convert

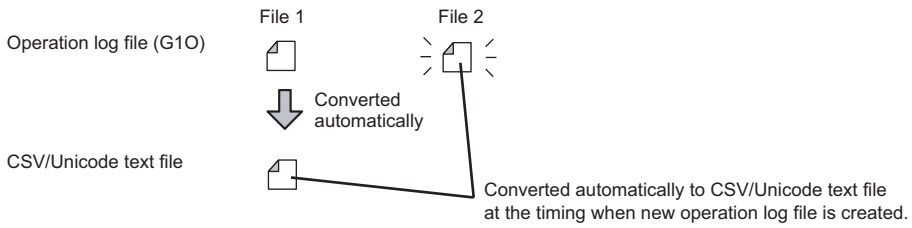
| Item | Description | Model |
|---|---|---|
| Function Name | Displays the list of functions for which operation logs are recorded. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Operation Log Target | Displays the target items of the operation log. | |
| Add | Click this button after selecting an item to be set for the target of the operation log function from the list of [Function Name].<br>Clicking this button moves the selected item to the list of [Operation Log Target]. | |
| Delete | Click this button after selecting an item to be excluded from the target of the operation log function from the list of [Operation Log Target].<br>Clicking this button moves the selected item to the list of [Function Name]. | |
| Add All | Moves all items in the list of [Function Name] to the list of [Operation Log Target]. | |
| Delete All | Moves all items in the list of [Operation Log Target] to the list of [Function Name]. | |
| Description | Shows the explanation on the currently selected function. | |

(3) File Convert tab

Make setting to control operation log file conversion with a device.

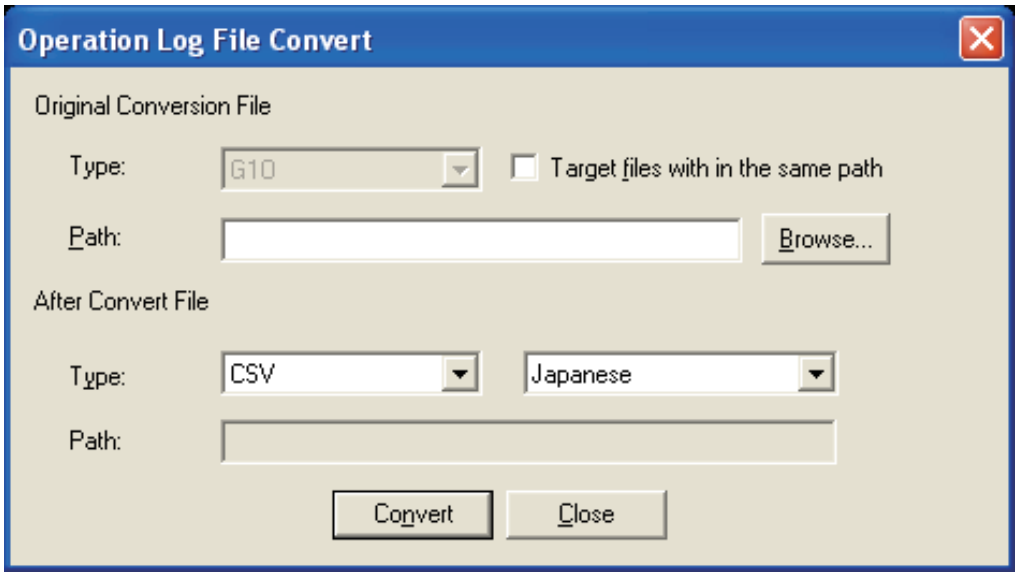



Basic | Log Target | **File Convert**

| Item | Description | Model |
|---|---|---|
| File Convert Setting | Check this item to control operation log file conversion with a device. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Buffering Area Size | Displays the memory capacity required for operation log file conversion. | |
| Convert Trigger | Set trigger device for file conversion. | |
| Log File Auto Convert | Check this item to convert from binary file to CSV/Unicode text file automatically after the record of operation log file (at the timing when the next operation log file is created).<br>  <br> | |
| Convert Format | Select a file formatÅiCSV/Unicode textÅjafter conversion. | |
| Change Save Path | Check this item to change save destination for the converted file.<br>After the check, set the names of the drive and folder where the file is to be stored. | |
| Language | Set system language used for file conversion.<br>System Language Switching Interlock: Select this item to convert a file in system language displayed on the GOT.<br>Fixed Language : Select this item to convert a file in specified language. After the selection, specify the language. | |

## 2 Operation log file convert

The dialog is used to convert an operation log file to a CSV file / Unicode text file.




| Item | | Description | Model |
|---|---|---|---|
| Original Conversion File | | Type : Displays the type of a conversion source file.<br>Path : Specify the path of the conversion source file. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| | Target files with in the same path | Checking this item targets all the files (G1O files only) of the same path for conversion.<br>When performing a file conversion with this item checked, the conversion log is recorded for the specified path automatically.<br>With the conversion log, the full path of the converted file, the conversion result (OK/NG), and the file creation date can be checked. | |
| After Convert File | | Type : Select the type of the conversion destination file (CSV / Unicode Text) and language.<br>Path : Displays the path (same as the path of the conversion source file) where the conversion destination file is saved. | |

## 15.2.4 Precautions

This section provides the precautions to be attended to for using the operation log function.

### 1 Precautions for drawing

(1) When recording operation logs in object units
On the Log Target tab, in the Operation Log Settings dialog box, do not select [All Objects].
If [All Objects] is selected, all objects are set as the target of the operation log function.
To record operation logs in object units, check the [Operation Log Target] item in the setting of each object.

(2) When recording operation logs in operation panel key units
Do not set [All Objects] in the Log Target tab on the Operation Log Settings dialog box.
When [All Objects] is set, the operation log function is enabled for all the operation panel keys.
For recording operation logs in operation panel key units, check [Operation Log Target] in the settings for each operation panel key.

(3) When recording operation logs of object script

(a) The following two items must be set.
- In the setting of the object to be recorded, the [Operation Log Target] item is checked.
- On the Log Target tab, in the Operation Log Settings dialog box, the [Object Script] item is selected

(b) To record a device value for the operation log of object script, use the device of the controller.
If an internal device of the GOT is used, operation logs are not recorded.

(c) Operation logs are recorded only when the script execution trigger is set to [Key Code Input], [Input Fixation], or [Device Writing].
For details of the display trigger and action trigger, refer to the following.
☞ Section 5.5 Trigger Setting

(4) Functions to be set as the operation log target
Do not select the functions that are not set by GT Designer2 as the targets of operation log.
Even for a function that is not set by GT Designer2, if such a function is selected as the target of operation log, an operation log may be recorded due to internal action of the GOT.

### 2 Precautions for OS

To use the operation log function, install the following OS to the GOT.
- Option OS (Operation Log)
- Extended function OS (Device name converter)

### 3 Precautions for hardware

(1) Option function board
To use the operation log function with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.
☞ Section 2.13 Precautions for Option Function Board

(2) Memory card
Operation logs are not recorded unless the memory card is set in the GOT.

## 4 Precautions for use

(1) When using the alarm history or advanced alarm (user alarm / system alarm)

(a) About alarm operation log

For alarms, an operation log is recorded only when an operation (delete, delete all, or reset) is made to the alarm that has occurred.

When an alarm that has been restored is selected or when operation is made without selecting an alarm, any operation log is not recorded. (Since the attempted operation is an invalid operation, any log is not recorded.)

Also note that an operation log is not recorded for resetting operation in the upper or middle hierarchy.

(b) Operation log regarding alarm deletion

Alarm deletion with [History Clear] in Alarm History and [Buffer Clear] in Advanced Alarm is not recorded to an operation log

To record the operation in operation log, execute [Clear the selected alarm data] and [Display date/time of all data] in key code switch.

(2) When using numerical input

If the offset function is set for a numerical input object, the device name of the device that is offset by the value set in the offset device is recorded in the operation log.

For details of the offset function, refer to the following.

☞ Section 5.7 Offset Function

(3) Saving files

(a) To save files, a memory card that has available area larger than the size of files to be saved is necessary.

For the file size that can be saved in memory card, refer to the following.

☞ Section 2.4 2 Data capacity available for storage on memory card

(b) Operation logs are not recorded if memory card is not set in the GOT or when the CF card access switch of the GOT is OFF.

(c) The operation log file size cannot be calculated in advance.

If the memory card is also used for other functions, it is recommended to limit the memory size used for operation log files by setting the [Total Log File Size] item of GT Designer2.

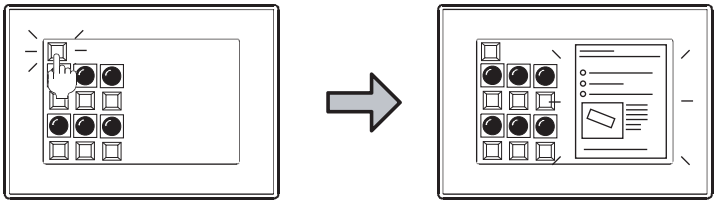
(4) Using the Unicode text file

For the precautions for using Unicode text files, refer to the following.

☞ Section 2.11 Precautions for Using Unicode Text File

# 15.3 Document Display Function

The document display function displays a document created on a personal computer (such as Microsoft® Word, Microsoft® Excel, etc.).
Since a document such as the specifications and manuals can be displayed on the GOT, it is possible to use a document on the troubleshooting screen or display an operation document during monitoring.



Displays a document that explains such as switch operation on the GOT.

## 15.3.1 Before using the document display function

### 1 Documents that can be displayed

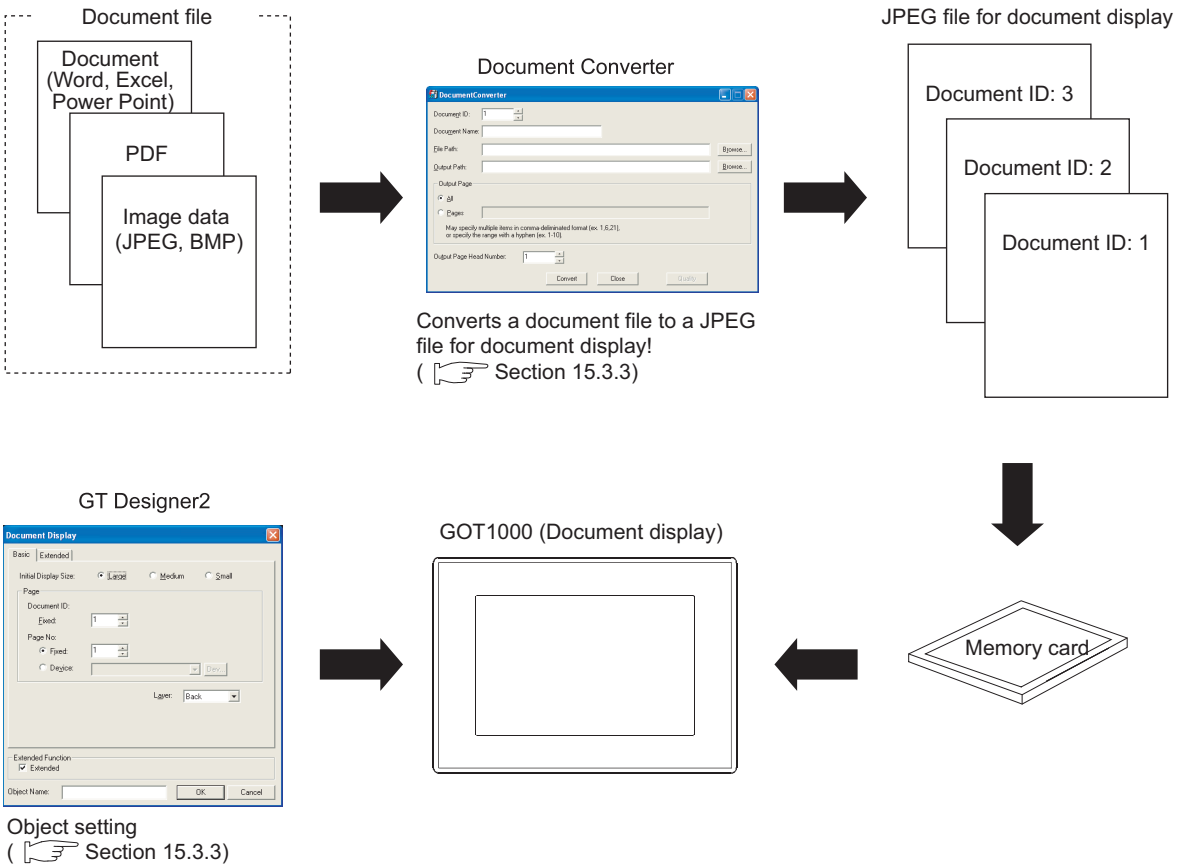
The document display function can display a document created using the following data.

- Microsoft® Word
- Microsoft® Excel
- Microsoft® PowerPoint
- PDF data
- Image file (JPEG, BMP)

## 2 Operation flow to display a document

Series of operation from document file conversion to storing the converted document file into memory card is shown below.
Document Converter is necessary to convert a document file.

(☞ Section 15.3.3 Document conversion using Document Converter)




**Remark** About sample image used for document display

When GT Designer2 is installed, document display sample image files (files indicated below) are also installed in the folder in which GTD2.exe is stored.

IMG00000L.JPG (Large size 816 × 1168)
IMG00000M.JPG (Medium size 656 × 928)
IMG00000S.JPG (Small size 400 × 584)

For the sample images, preview that shows how they are displayed when the object is arranged is given. (In the preview, the size conforms to the setting for initial display size.)
It is possible to display other image data in preview by replacing the sample images with the desired images. For this purpose, assign the file name of the present sample image to the desired image.

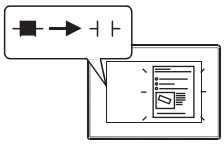
## 15.3.2 Relevant settings

For the document display function, relevant settings are available in addition to the settings described in this section.
Make the settings by referring to the following description, if necessary.

(1) Functions relavant to document display only
• • • These functions are relevant only with document display.

### 1 GOT internal devices (☞ Section 2.9.1 GOT internal devices)

(1) Functions relevant to document display and others

| • Document display status notification signal (Write device: GS276.b0) |
|---|
| Allows the check for whether a document is displayed.  |

## 15.3.3 Document conversion using Document Converter

The following explains the procure used for converting the document to be displayed on the GOT by Document Converter and storing the converted document to a memory card.

### 1 Opearating environment required for using Document Converter

The OS and the size of available area in the hard disk required for using Document Converter are as follows:

OS:Microsoft® Windows® 2000 Professional Operating System (English Version)
Microsoft® Windows® XP Professional Operating System (English Version)
Microsoft® Windows® XP Home Edition Operating System (English Version)
Microsoft® Windows Vista® Ultimate Operating System (English Version)
Microsoft® Windows Vista® Enterprise Operating System (English Version)
Microsoft® Windows Vista® Business Operating System (English Version)
Microsoft® Windows Vista® Home Premium Operating System (English Version)
Microsoft® Windows Vista® Home Basic Operating System (English Version)

Available area in the hard disk:

For installation : 10 MB minimum

During execution : Depends on the size of the document to be converted (the values below are for reference).

| | |
|---|---|
| Word (10 pages, 892 KB) | : 30 MB minimum |
| Excel (10 pages, 150 KB) | : 25 MB minimum |
| PowerPoint (10 pages, 1032 KB) | : 45 MB minimum |
| PDF (10 pages, 638 KB) | : 15 MB minimum |

If conversion is not possible, increase the available area and then convert the document again.

For details other than OS and the size of available area in the hard disk (performance needed for the personal computer), refer to the following manual.

☞ GT Designer2 Version Basic Operation/Data Transfer Manual (Section 1.4 Operating Environment)

### 2 Before using Document Converter

Install the software indicated below before using Document Converter.

- Document Converter (Install using the CD-ROM of GT Works2/GT Designer2)
- Ghost script GPL8.50*2 or more (Free software)
- PostScript printer driver supplied with Windows®*1
- Microsoft® Office® 2000, Microsoft® Office® XP and Microsoft® Office® 2003*1

*1 Only when a file created using the Microsoft® Word, Microsoft® Excel, or Microsoft® PowerPoint is used.
*2 Ghost script GPL8.50 has been concluded by Mitsubishi to be applicable.

(1) Installing Document Converter

For the Document Converter installation procedure, refer to the following manual.

☞ GT Designer2 Version Basic Operation/Data Transfer Manual (Section 2.2 Installing the Software Programs)

(2) Installing Ghost script (free software)
Download Ghost script from the home page indicated below.
http://www.ghostscript.com/
(Please note that the web site above is subject to change without notice.)

(a) Downloading procedure
- Select [sourceforge.net.] from [Ghostscript can be downloaded from cs.wisc.edu and sourceforge.net.] on the above website.
- In [Latest] of [GPL Ghostscript], select the one whose type is [.exe (32-bit Windows)] and download it.

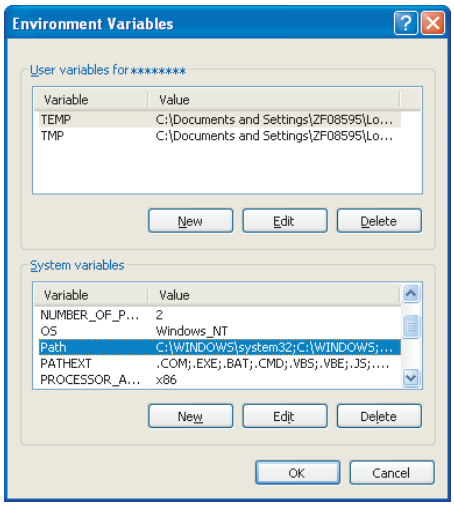
(b) Installation
- Double click the downloaded file (.exe) and select [Setup].
- Check the [Use WindowsTrueType fonts for Chinese, Japanese and Korean] item.
- Select [Install] to execute installation.

(c) Adding environment variables
When "C:\gs" is set for the installation location, add "C:\gs******\bin" and "C:\gs******\lib" to the path of the environmental variables.

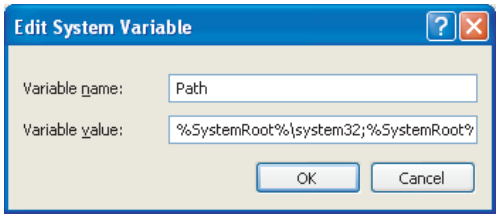
******: Enter 6-digit characters including the upper 5 digits of install execution file name and a decimal point.

Follow the procedure below for setting the environment variables.

1. Select [Start] → [Control Panel] and then select [Performance and Maintenance] → [System].
2. Display the Advanced tab and select [Environment Variables].
3. Select [Path] in [System variables], and execute [Edit].




4. Add a variable value.



5 When the environment variables are changed, restart the personal computer.
The changed environment variables are not enabled without restarting the personal computer.

**Point**

Adding path to system variables

For adding a path to the system variables, separate paths with a semicolon ";".

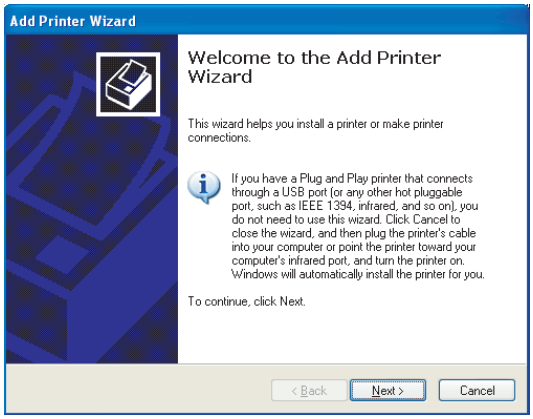
(3) PostScript printer driver

The following explains the procedure for installing the PostScript printer driver.

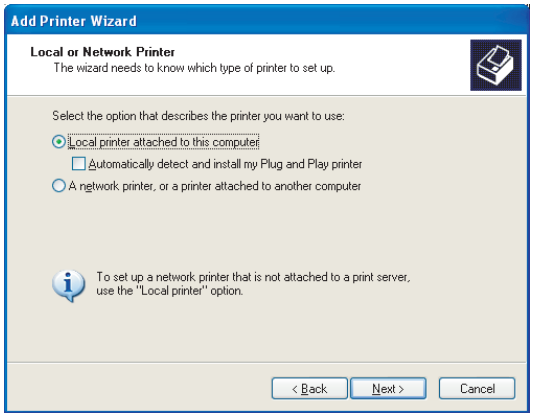
(For Windows® XP Professional or Windows® XP Home Edition)

For details of the operation of Windows®, refer to the manual and help information of Windows®.

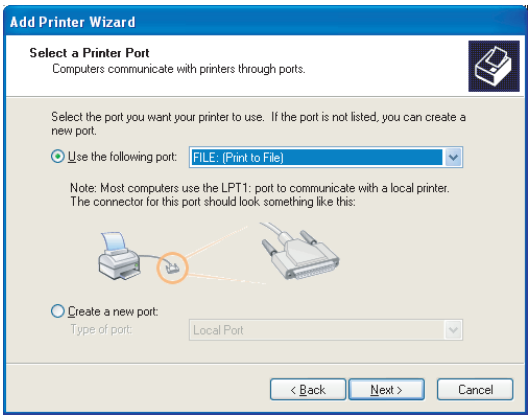
1 Select [Start] → [Control Panel] and in the [Control Panel] menu, select [Printers and Other Hardware] → [Printers and Faxes], and then select [Add a printer].



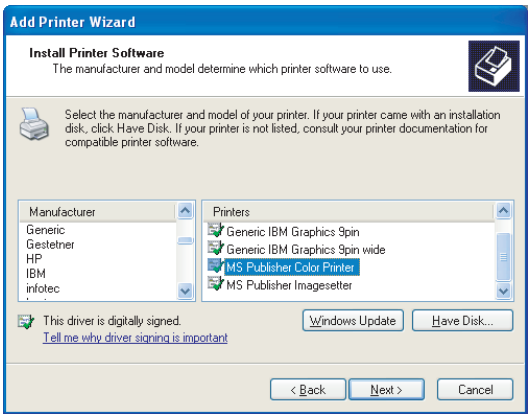

2 Check the [Local printer attached to this computer] item.



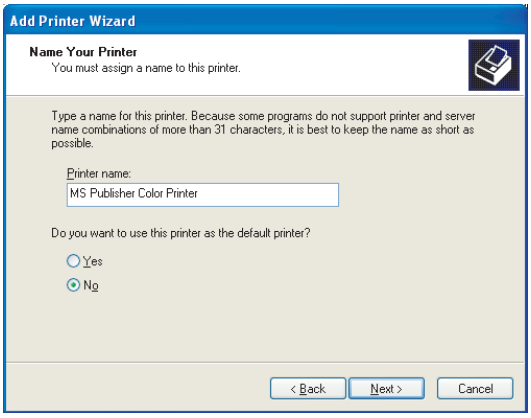
3 Check the [Use the following port] item, and select [FILE: (Print to File)].



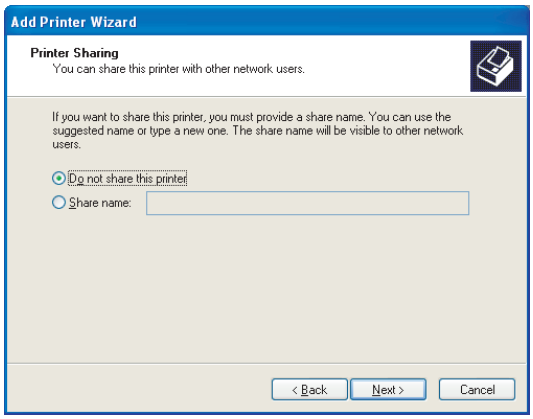

4 Select the PostScript printer driver (Generic, MS Publisher Color Printer) supplied with Windows®.



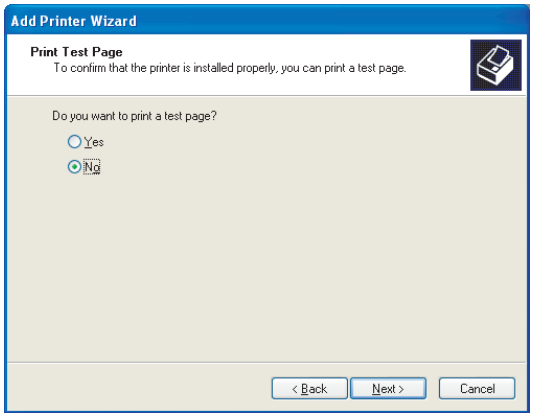

5 For the [Do you want to use this printer as the default printer?] item, select [No].



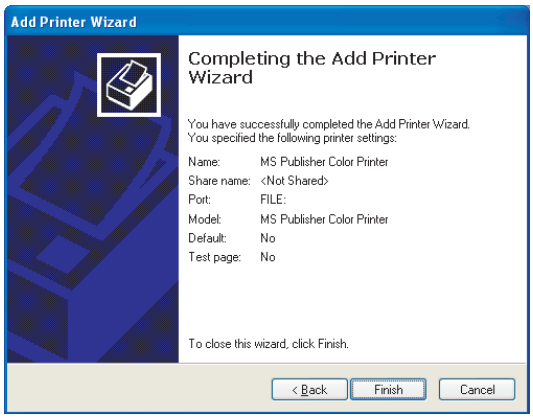
6 Check the [Do not share this printer] item.




7 For the [Do you want to print a test page?] item, select [No].



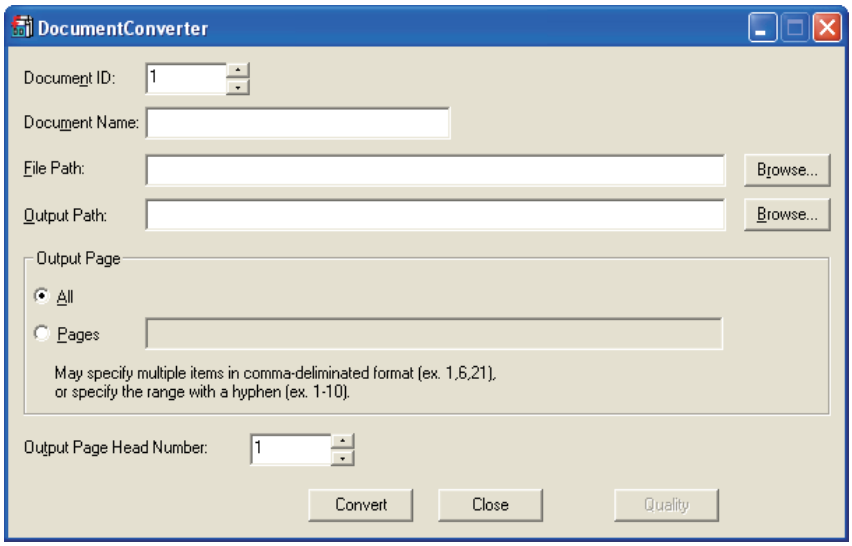

8 After confirming the set contents, exit the Add Printer Wizard.



## 3 Converting a document file

1. Start Document Converter.
   For the procedure for starting Document Converter, refer to the following manual.
   ☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Section 2.4 Starting the Software)

2. Set the items explained below and click the Convert button. Document conversion starts. After the conversion, three JPEG files (large, middle and small) are created for one page of document.




| Item | Description | Model |
|---|---|---|
| Document ID | Set the document ID (1 to 255) to be assigned to the document after conversion. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Document Name | The document name can be changed meeting the purpose.<br>Up to 32 characters can be input. | |
| File Path | Specify the path name of the file to be converted by clicking the [Browse...] button. | |
| Output Path | Specify the path in the personal computer for outputting the converted file by clicking the Browse button.<br>The converted file is output in the following folder structure.<br>\DOCIMG\(Document ID)\(Output size: L/M/S)\IMG*****.JPG<br>For the output size, L, M, and S stand for large, middle, and small, respectively.<br>*****: Page number (serial number)<br>Example) Document ID: 1, output size: L (large)<br>Output path\DOCIMG\001\L\IMG00001.JPG | |
| Output Page | Specify the pages to be converted.<br>(This is required only for the Word, Excel, PowerPoint and PDF files.) | |
| Output Page Head Number | Specify the page number to be assigned to the first page of the converted file.<br>(Specify "20" for example to assign Page 20 to the first page.) | |
| Convert | Starts converting of the document. | |
| Close | Exits Document Converter. | |
| Quality*2 | Adjusts the image quality of the converted document.<br>(Executable after document conversion) | |

For details of *1, refer to the next page.

**Point**

JPEG file after conversion

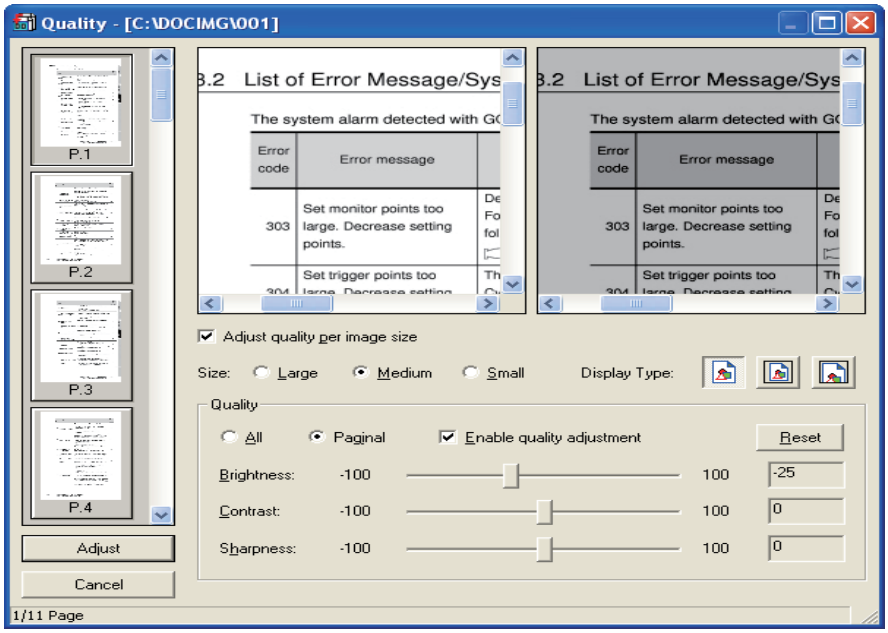
(1) JPEG file size
When a document of A4 size is converted, the size of JPEG files (large, middle and small) obtained is as follows.
Large: 816 × 1168  Middle: 656 × 928  Small: 400 × 584

(2) Folder structure of JPEG file storage location (DOCIMG) after conversion
Do not change the folder structure of DOCIMG.
Doing so causes the GOT not to recognize the file.

(3) Storing files in CF card
For storing converted files in a CF card, store the DOCIMG folder containing the files in the root directory.
When the DOCIMG folder is stored in a folder other than the root directory, the GOT does not recognize the files.

*1 Quality

The image quality of the converted document can be adjusted.




| Item | Description |
|---|---|
| Preview screen | Displays the screen images before and after adjustment. (Left: Before adjustment, Right: After adjustment)<br>Select a page for adjusting image quality on the thumbnail located in the left side of the dialog box. |
| Adjust quality per image size | Check this item when adjusting image quality for each image size.<br>(When this item is not checked, image quality of all the image sizes [Large], [Medium], and [Small] of [Size] is adjusted.)<br>After checking, select the image size of image quality adjusting target in [Size]. |
| Display Type | Select how to display the image in the preview screen. |
| Quality | Performs image quality adjustment.<br>It is selectable whether image adjustment is performed for all pages or each page.<br>Clicking the Reset button restores the settings to default values.<br>All : Select this item when applying the same image quality adjustment for all pages.<br>Paginal : Select this item when applying image quality adjustment for each page.<br>After selecting, check [Enable quality adjustment] for the image quality adjusting target page and execute image quality adjustment. |
| Adjust | Executes the image quality adjustment set.<br>Note that the image quality cannot be restored after execution of image quality adjustment. |
| Cancel | Cancels the set image quality adjustment and closes the screen. |

## 15.3.4 Placement and settings

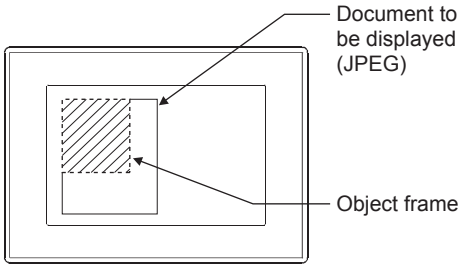
1. Perform either of the operations below.
   - Click (Document Display).
   - Select [Object] → [Document Display] from the menu.
2. Click at the position where the document should be displayed. This completes the arrangement for the document display object.
   (After arranging the document display object, cancel the arrangement mode by right click of the mouse or by pressing the ESC key.)
3. Double click the arranged document display object and the setting dialog box is displayed. Make necessary settings referring to the explanation below.

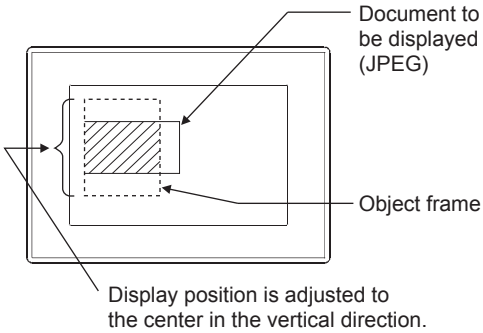
**Hint!** Convenient setting

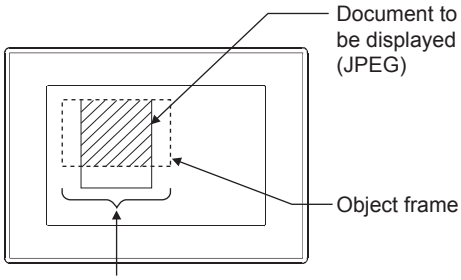
With the property sheet, direct setting of object is allowed on the sheet.

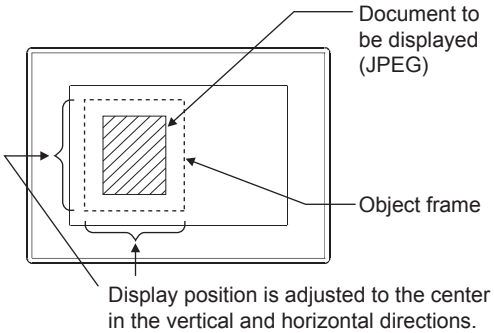
GT Designer2 Version □ Basic Operation/Data Transfer Manual
( Section 12.1.1 Batch setting of multiple objects/figures on the same screen (Propertysheet))

A document is displayed in the manner as shown below depending on the relationship between the size of an object (object frame) arranged in steps 1 to 3 and the size of a document to be displayed (Size of the JPEG file converted by Document Converter).
(The shaded area shows the actual area where the document is displayed.)



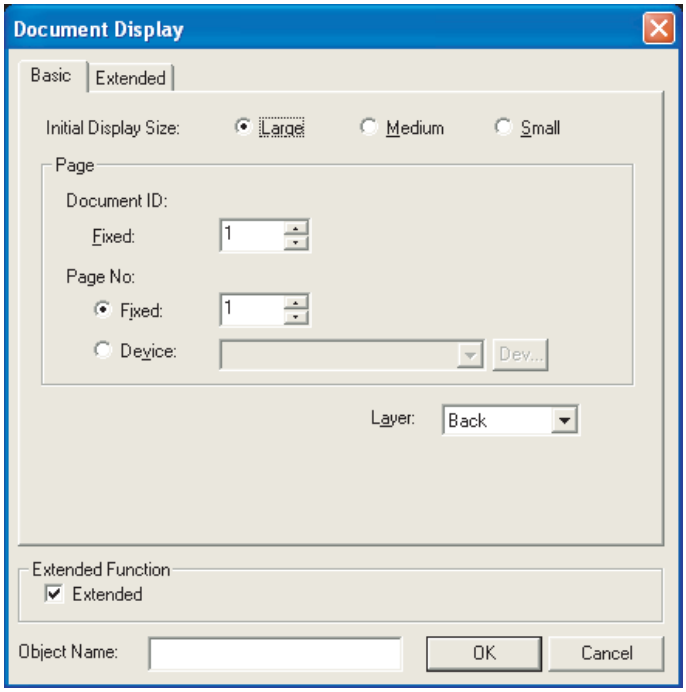



## 15.3.5 Setting items

### 1 Basic tab

Set the initial display size and page.




Basic | Extended

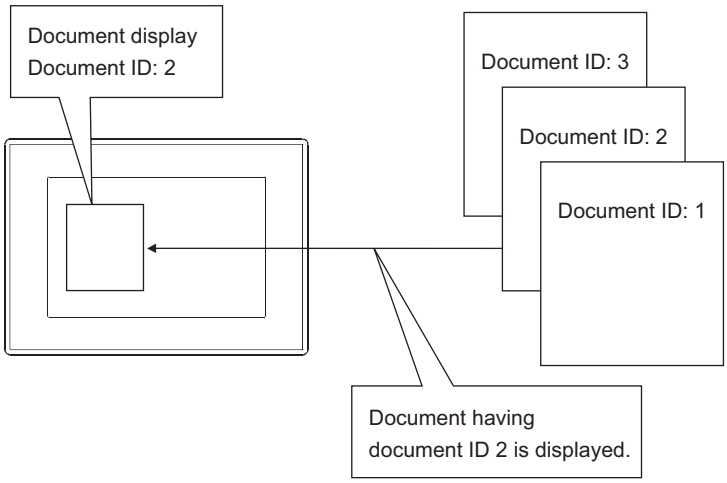
| Item | | Description | Model |
|---|---|---|---|
| Initial Display Size | | Select the size (L/M/S) of the document displayed for the first time when the screen is switched.<br>Large: 816 × 1168<br>Middle: 656 × 928<br>Small: 400 × 584 | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Page | Document ID (Fixed) | Set the document ID of the document to be displayed when the screen is switched in a fixed value (1 to 255).<br>If a document ID that does not exist in the memory card is set, document is not displayed. | |
| | Page No.*1 | Select the method (Fixed/Device) to set the page number of the document to be displayed when the screen is switched.<br>If a page number that does not exist or "0" is set, document is not displayed.<br>Fixed : Select this item when setting a page number in a fixed number (0 to 65535).<br>Device : Select this item when setting a page number by specifying a device.<br>In the default setting, device values are treated as unsigned 16-bit BIN data.<br>To set a page number in other data format (unsigned 16-bit BCD), change the setting for [Data Type] by opening the Extended tab. | |
| Layer | | When setting an object without superimposing it, set the object by default (Back).<br>When setting an object with superimposing it, the object has to be set to Front or Back place.<br>(☞ Section 2.6 Superimposition Settings) | |
| Object Name | | The object name being set can be renamed to meet the purpose of use.<br>The changed object name is displayed in the GT Designer2 (such as Data View, Propertysheet)<br>This Object Name item is displayed in other than the Basic tab.<br>Up to 30 characters can be input. | |

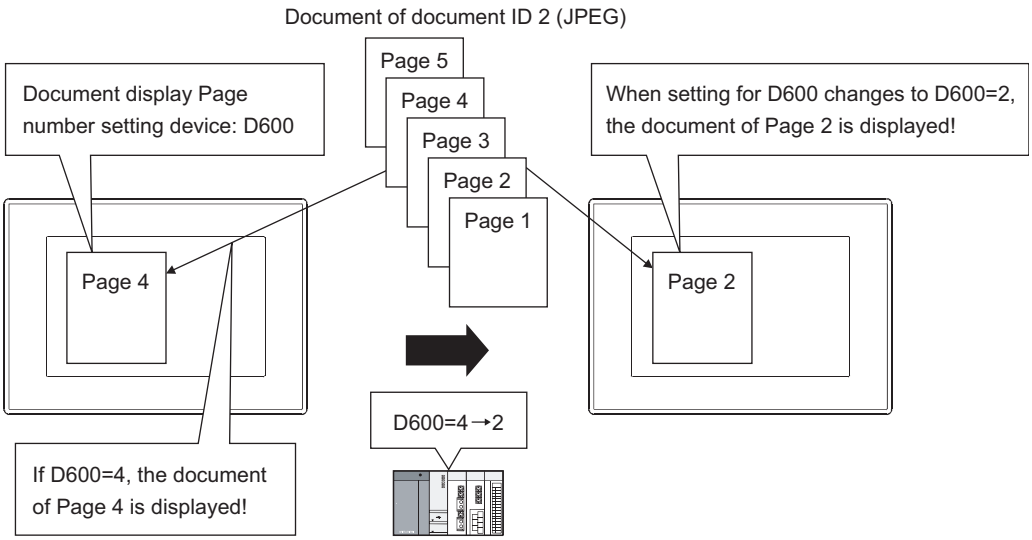
For details of *1, refer to the following.

*1 Changing the page by setting a page number

To change the display page of the document, set a page number at the device.

Example: Document ID: 2, Page number setting device: D600




**Point**

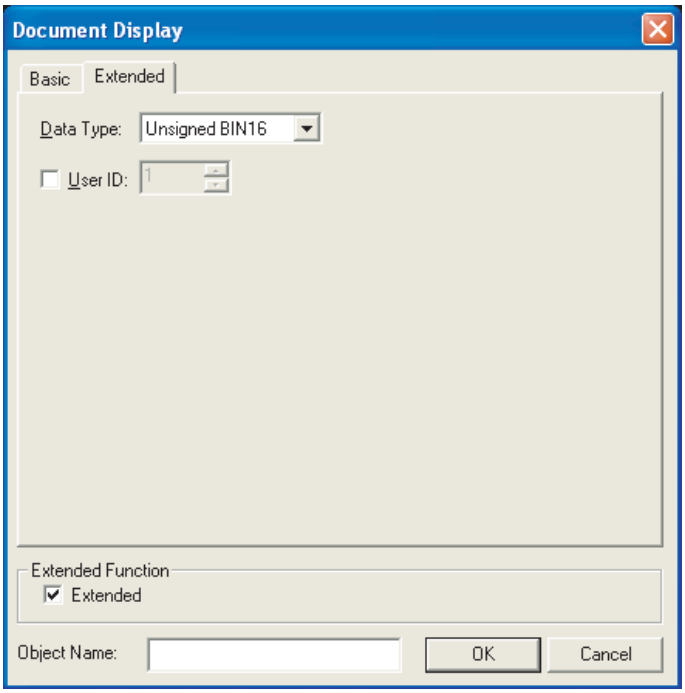
If a page that does not exist is specified

If a page that does not exist is specified when changing the page of the displayed document, document is not displayed.
In this case, the document display status notification signal (GS276.b0) turns ON.

(☞ Section 2.9 3 GOT special register (GS))

## 2 Extended tab

Set the data type and user ID.




Basic **Extended**

| Item | Description | Model |
|---|---|---|
| Data Type | Select the data format of a document to be displayed.<br>Unsigned BIN16 : The value set at a word device is treated as unsigned binary.<br>BCD16 : The value set at a word device is treated as BCD. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| User ID*1 | Set the user ID (1 to 65535) of document display. | |

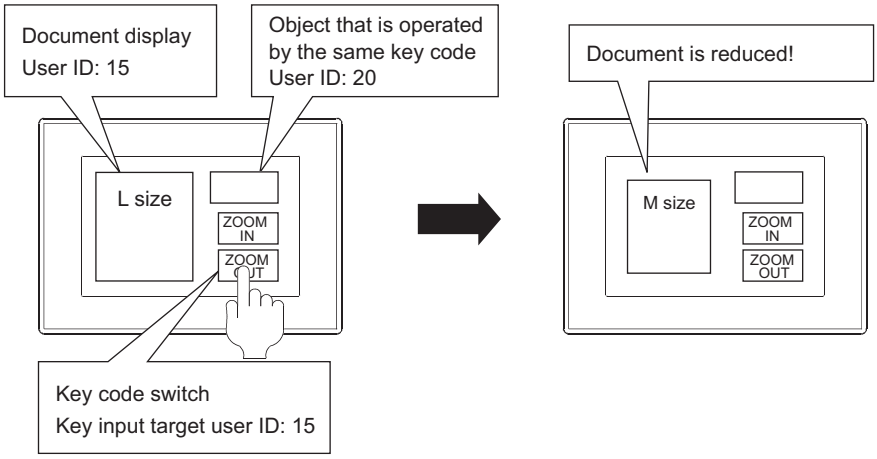
For details of *1, refer to the following.

*1 User ID

(1) Cases that require setting of user ID

When there are several objects that are operated by the switches of the same key code on the screen, expected action may not be achieved even if a switch is touched.

By setting a user ID so that each object has unique ID (user ID), it is made possible to specify the ID (object) to be operated by a touch switch. This enables switch operation as expected.



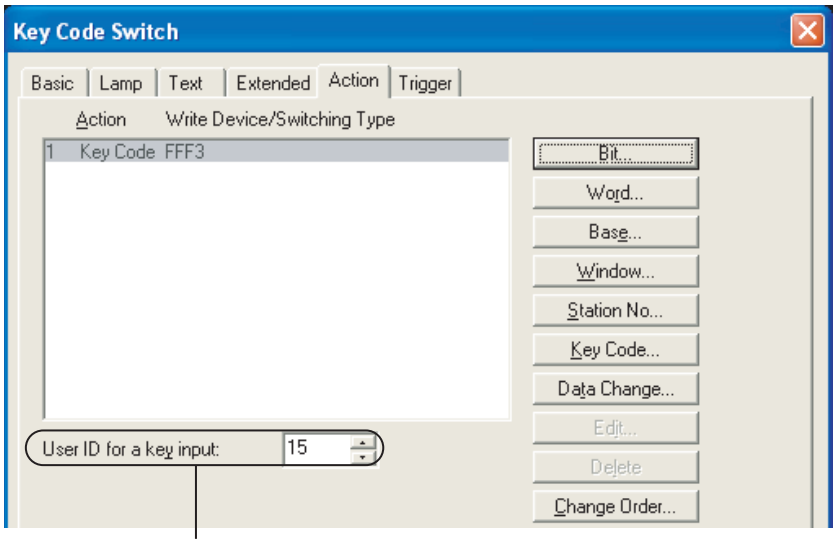

(2) Setting for a touch switch

Input the user ID that has been set in this user ID setting to [User ID for a key input].

For details of key code switch, refer to the following.

( ☞ Section 6.2.9 Setting items of key code switch)

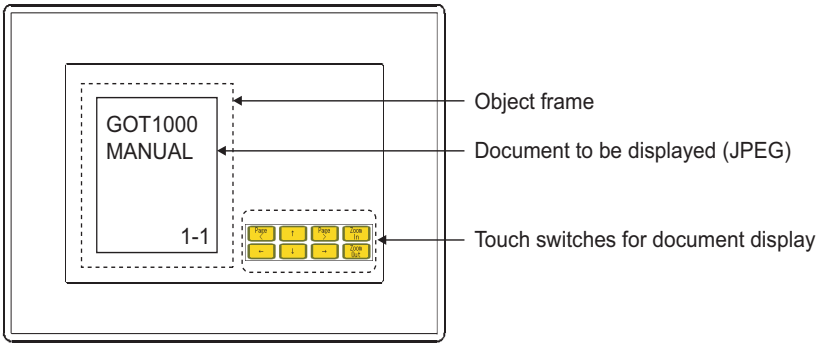
Setting for a touch switch (Action tab)

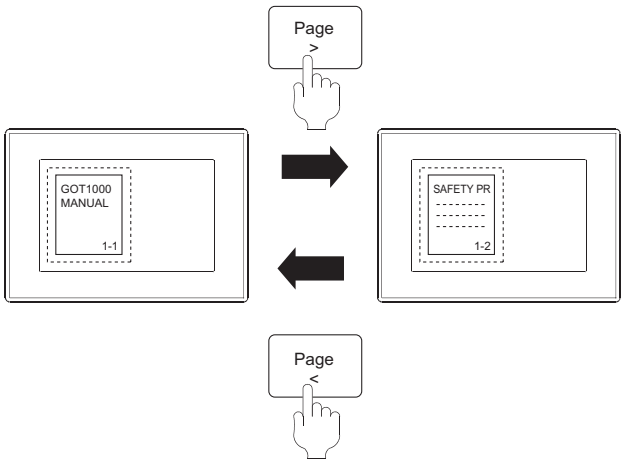
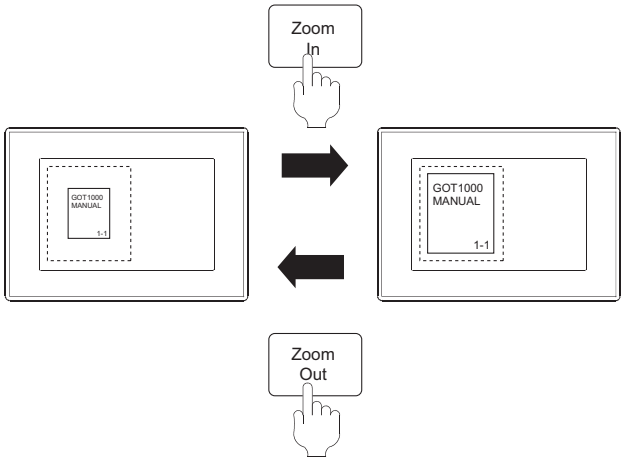



Set the user ID that has been set at the object side.

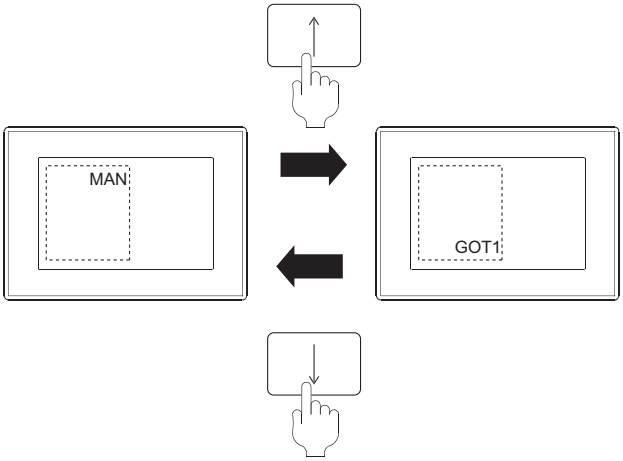
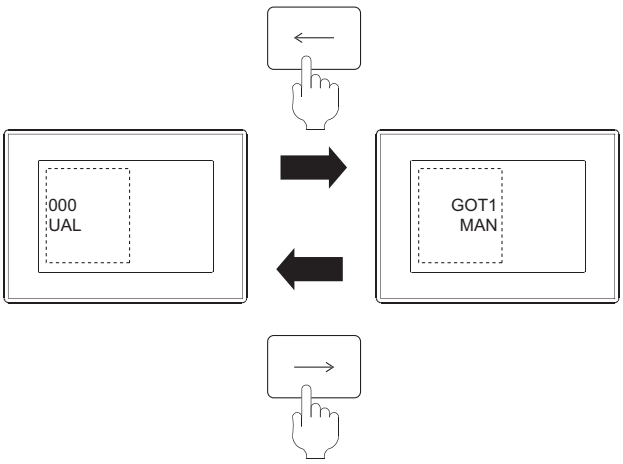
## 15.3.6 Description on touch switches for document display

Touch switches for document display can be read from the library of GT Designer2.
Also, text on a touch switch and touch switch shape can be changed by the user as desired.
A document display touch switch can be created by setting a key code to a touch switch.




| Touch switch | Key code | Description |
|---|---|---|
| Next Page | $FFE0_H$ | Advances / returns the document to the next / previous page.   When the page number of the document to be displayed is specified using a device, the specified device value is updated in synchronization with the operation of the keys Page > / Page <. |
| Previous Page | $FFE1_H$ | |
| Expansion | $FFE2_H$ | Enlarges or contracts the displayed document (in three steps of L / M / S).   |
| Reduction | $FFE3_H$ | |

(Continued to next page)

| Touch switch | Key code | Description |
|---|---|---|
| Up Scroll ↑ | $FFE4_H$ | Scrolls up / down the displayed document.<br>  <br><br>• The ↑ / ↓ key is inoperative when the displayed document is at the upper / lower end, respectively.<br>• When the vertical size of the document to be displayed is smaller than the object frame (position is adjusted (centering) in the vertical direction), ↑ and ↓ keys are inoperative. |
| Down Scroll ↓ | $FFE5_H$ | |
| Left Scroll ← | $FFE6_H$ | Scrolls left / right the displayed document.<br>  <br><br>• The ← / → key is inoperative when the displayed document is at the left / right end, respectively.<br>• When the horizontal size of the document to be displayed is smaller than the object frame (position is adjusted (centering) in the horizontal direction), ← and → keys are |
| Right Scroll → | $FFE7_H$ | |

## 15.3.7 Precautions

Precautions to be attended to when using the document display function are indicated below.

### 1 Precautions for drawing

(1) Number of objects that can be displayed on a screen
The document display function allows only one object setting on a screen.

(2) Number of objects that can be displayed
For the document display function, only one object can be displayed simultaneously.
Displaying of another document on an overlap window or a superimpose window or with the set overlay screen function is invalid.

### 2 Precautions for OS

Install the option OS (Document Display) to the GOT to use the document display function.

### 3 Precautions for hardware

(1) Option function board
To use the document display function, the option function board is required according to the GOT.
The following shows option function boards required for each GOT.

| GOT | Option function board |
|---|---|
| GT16 | Not required |
| GT15 | GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M |

For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

Use one of the following option function boards. (The GT15-FNB is not applicable.)
• GT15-QFNB • GT15-QFNB16M • GT15-QFNB32M • GT15-QFNB48M • GT15-MESB48M

(2) CF card
Insert a CF card in the drive specified for [Default Drive Name] in [System Settings].

### 4 Precautions for use

(1) If document is not displayed
Document display is disabled in the following cases.
- Memory card is not installed.
- The CF card access switch is OFF.
- The document to be displayed does not exist (A document ID or a page number that does not exist has been set)
- The specified file is not an image file or it is damaged.

In such cases, system alarm occurs and an error message is displayed.
For details of system alarm, refer to the following manual.

☞ GT16 User's Manual (Hardware) (Section 10.3 ERROR MESSAGE AND SYSTEM ALARM)
GT15 User's Manual (Section 20.3 ERROR MESSAGE AND SYSTEM ALARM)

At the same time, the document display status notification signal (GS276.b0) is turned ON.

(☞ Section 2.9 3 GOT special register (GS))

(2) About Word, Excel and PowerPoint files

Files that can be opened and printed on the personal computer in which Microsoft® Office® 2000, Microsoft® Office® XP or Microsoft® Office® 2003 is installed, can be displayed.

(3) About PDF files

If the font used in the PDF file is in the following state, display of such PDF file is not possible.

- Font does not exist in the execution environment (on Windows®).
- Font data is not embedded to the PDF file.

In such cases, an error occurs when a file is converted by Document Converter.
For the pages that cannot be converted by Document Converter, use the procedure indicated below to convert them.

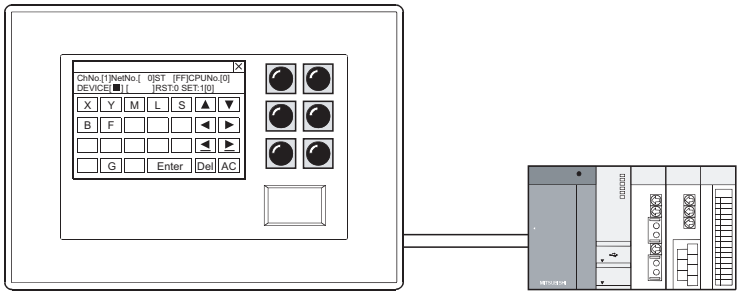
1. Convert the document page by selecting [Page] in [Output Page].
2. Check the pages that cannot be converted from the display of an error message.
3. Capture the image of the page that was not converted and save it as an image file (JPEG, BMP).
4. Convert the saved image file (JPEG, BMP) by Document Converter.

# 15.4 Test Function

This section explains the test function that displays test window on monitor screen and changes device value.
This function is applicable for maintenance and inspection using monitor screen, providing the following functions.
Test function provides following operations.

- Bit device ON/OFF
- Change the set value of timer/counter
- Change the word device
- Change the buffer memory

Arrange touch switch (special function switch) to set the test function.



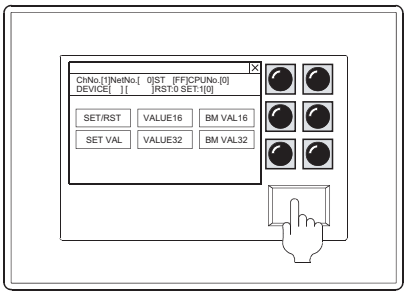

**Remark** Test except when the monitor screen is displayed

The test window can be displayed to change the device value, as well when the ladder monitor function or system monitor function is used.
Refer to the following manuals for the test methods of various functions.

☞ GOT1000 Series Extended / Option Functions Manual

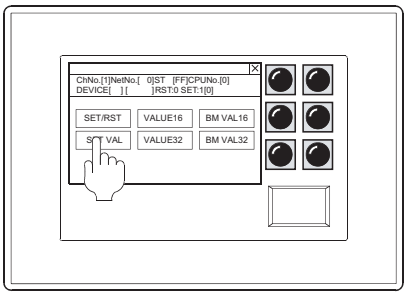
## 1 Method of operating test window

This section explains how to operate the test window.




1 Touch the touch switch to display the test window.

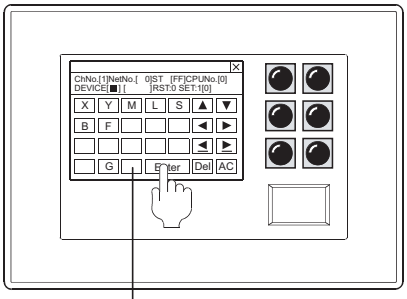
↓




2 Select the device type to be changed

- SET/RST : Set/reset the bit device.
- Current value 16/Current value 32 : Change the current value of word device.
- Set value : Change the set value of T.C.
- BIN Value 16/BIN Value 32 : Change the current value of buffer memory.

↓




Change keys according to input area.

3 Specify the network No., device and value of the device of which value is to be changed.

Change the input area by ◀, ▶ keys.

- In the case of data link system
  - Ch No. : Set the channel No.of the GOT interface.
  - Net No. : 0
  - ST : FF (host), 0 (master station)
    1 to 64 (local station)
- In the case of network system
  - Ch No. : Set the channel No.of the GOT interface.
  - Net No. : 0 (self loop), 1 to 255 (specified loop)
  - ST : FF (host), 0 (control station),
    1 to 64 (normal station)

4 Define the value change by the definition key

## 15.4.1 Arrangement and settings

Refer to the following section for arrangement and settings of the touch switch.

☞ Section 6.2.2 Arrangement and settings

## 15.4.2 Setting items

Refer to the following section for setting items of the touch switch.

☞ Section 6.2.5 Setting items of special function switch

## 15.4.3 Precautions

This section provides the precautions for using test function.
Refer to the following section for the precautions other than described in this section.

☞ Section 6.2.11 Precautions

### 1 Precautions for drawing

(1) Line graph with locus display setting
For GT15, GT SoftGOT1000, GT11, and GT10, the test window cannot be displayed on the base screen that has a line graph with the locus display setting.

(2) Windows that cannot be displayed on the same screen
The test window and overlap window 2 cannot be displayed on the same screen.

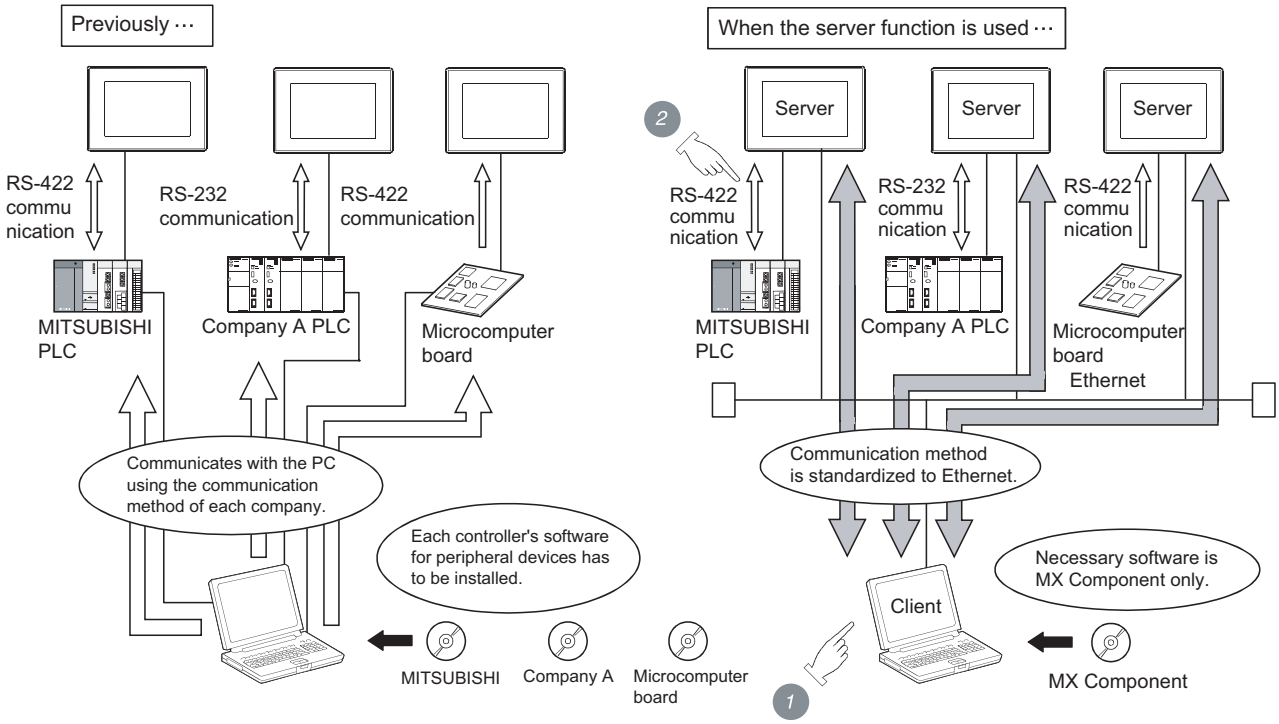
### 2 Precautions for use

(1) Control of the controller control
Executing test function may affect the control of the controller.
Make sure to fully confirm the security before executing the test function.

# 15.5 Gateway Function

Various makers' controllers can be monitored on a GOT or a personal computer, or alarms that occurred in the GOT can be sent by e-mail.
Remote watching and remote maintenance of a production site from an office is supported.

Example: When using the server function




<The process of writing from a PC to the device of a controller>

1. Execute the user program created by the MX Component to write data to the gateway device in the GOT (Server).
2. The data is written to the device of the controller assigned on the gateway device.

**Point**

For the details of the gateway function, refer to the following manual.

(1) The description and setting of the function, and precautions for use

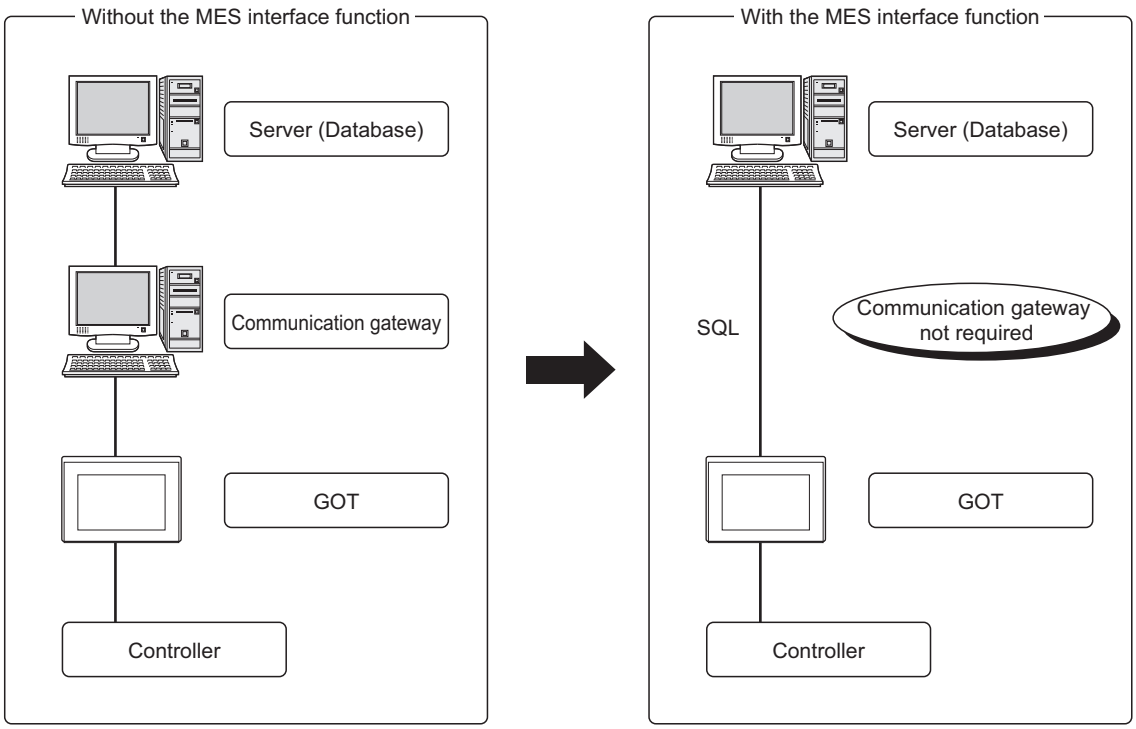
☞ GOT1000 Series Gateway Functions Manual

(2) Connecting devices to the GOT and preparing for monitoring a controller

☞ GOT1000 Connection Manual

# 15.6 MES Interface Function

The MES interface function is a function that sends SQL text to a database in server computer connected to the GOT via Ethernet, writes the device values of the GOT to a database, reads database values, and set them to the GOT devices.
Since the GOT does not require communication gateway equipment by directly communicating with server computer, reduction of maintenance cost and improvement of credibility can be realized.




**Point**

For details of the MES interface function, refer to the following manual.

(1) Details for the function, precautions for setting and use

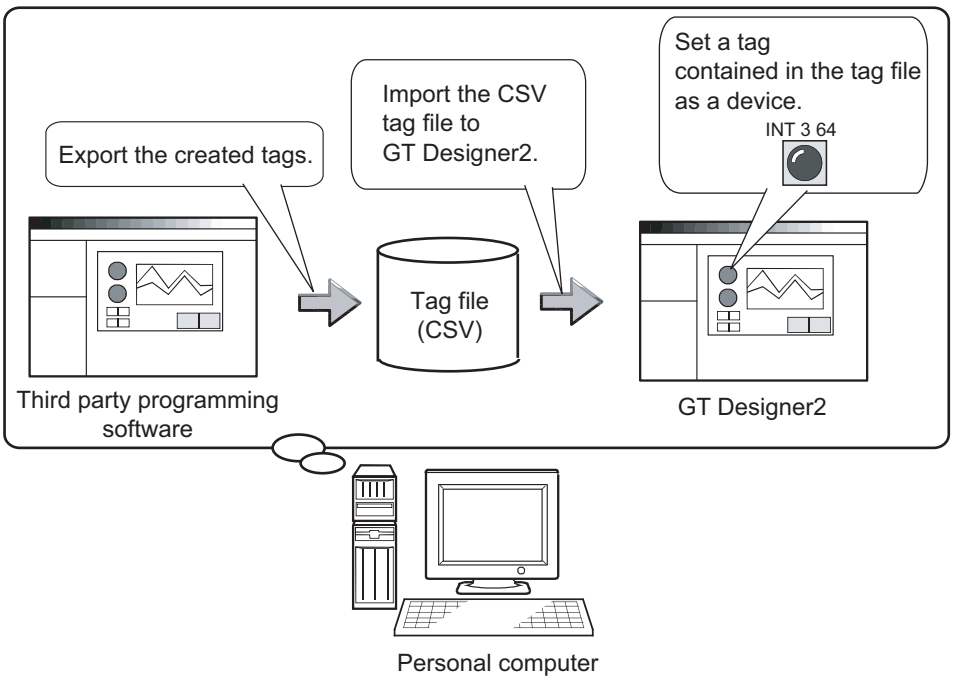
☞ GOT1000 Series MES Interface Function Manual

(2) Procedure from connecting each deviceto the GOT to monitoring controllers

☞ GOT1000 Series Connection Manual

# 15.7 Tag Import Function

With the tag import function, GT Designer2 can import a tag file created by the third party programming software.
The imported tag can be set as a device.




## 1 Specifications

(1) Applicable PLCs
GT Designer2 can import tag files that are created for the following PLCs.

| Type | | Model | | | | |
|---|---|---|---|---|---|---|
| ALLEN-BRADLEY PLC | ControlLogix series | 1756-L, 1756-L62, 1756-L55M16, | 1756-L1M1, 1756-L63, 1756-L55M22, | 1756-L1M2, 1756-L55M12, 1756-L55M23, | 1756-L1M3, 1756-L55M13, 1756-L55M24 | 1756-L61, 1756-L55M14, |
| | CompactLogix series | 1769-L31, | 1769-L32E, | 1769-L32C, | 1769-L35E, | 1769-L35CR |

(2) Applicable software
GT Designer2 can import tag files that are created by the following third party programming software.

| Manufacturer | Software |
|---|---|
| Rockwell Automation, Inc. (ALLEN-BRADLEY) | RSLogix5000 |

## 15.7.1 Before setting the tag import function

### 1 Operating procedures

The following shows the operating procedures to set a tag as a device.

| | |
|---|---|
| Create tags by the third party programming software. | For how to create tags, refer to the following.<br>☞ This section 2 Creating tag files<br>Manual or help for the third party programming software used |
| ↓ | |
| Create a tag file in the CSV format. | Create a tag file in the CSV format by exporting the tags created with the third party programming software.<br>For how to export the tags, refer to the following.<br>☞ Manual or help for the third party programming software used |
| ↓ | |
| Import the tag file to GT Designer2. | Import the CSV tag file to GT Designer2.<br>(☞ Section 15.7.2 Settings) |
| ↓ | |
| Set a tag as a device. | Set a tag contained in the imported tag file as a device.<br>(☞ Section 5.1 Device Setting) |
| ↓ | |
| End | |

### 2 Creating tag files

Create tag files to be imported to GT Designer2 by the third party programming software.
For how to create tags and tag files by the third party programming software, refer to the following.

☞ Manual or help for the third party programming software used

The following shows requirements to create tag files according to programming software.

(1) RSLogix5000

(a) Tag mapping
Map the created tags.
The tags without mapping cannot be set as devices with GT Designer2.

(b) Tag file format
Create tag files in the CSV format.
GT Designer2 cannot import tag files in formats other than the CSV format.

(c) Tag file setting

To import a tag file to GT Designer2, the following settings are required for the tag file.
Set the following fields with RSLogix5000.

| Field | Description | Input example |
|---|---|---|
| TYPE | Set the type of the target record.<br>GT Designer2 can import the tag files with the type "TAG" only.<br>Setting range: TAG | TAG |
| SCOPE | Leave blank. | - |
| NAME | Set the tag name.<br>Setting range: 0 to 40 characters | tagBOOL |
| DESCRIPTION | Set the comment of the tag in ASCII characters.<br>Setting range: 0 to 120 characters | $0050$004C$0043 |
| DATATYPE | Set the data type and the element number*1.<br>Setting range: INT[0 to 1000]/DINT[0 to 1000]/<br>REAL[0 to 1000]/BOOL[0 to 32000] | BOOL[10] |
| SPECIFIER | Leave blank | - |
| ATTRIBUTES | Set the tag attribute.<br>Setting range: RADIX PLCMappingFile*2<br>PLC2Mapping | (PLCMappingFile := 100) |

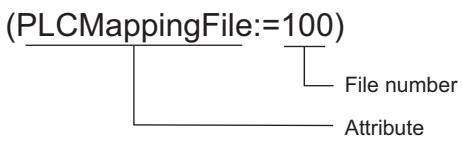
*1 Setting range of element number

Set the element number within the following range.
The element number outside the following range cannot be set for the device with GT Designer2.

| Data type | Element number range |
|---|---|
| INT, DINT, REAL | 0 to 1000 |
| BOOL | 0 to 32000 |

*2 File number of PLCMappingFile

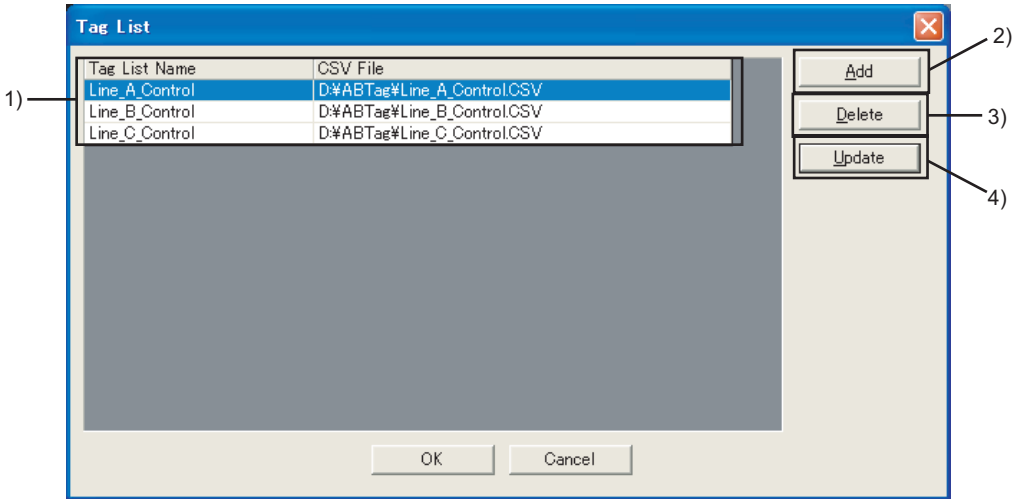
When the tag attribute is set to PLCMappingFile, set the file number.
The file number must be set within the range from 0 to 999.
The file number outside the range cannot be set with GT Desinger2.




(Example) PLCMappingFile setting

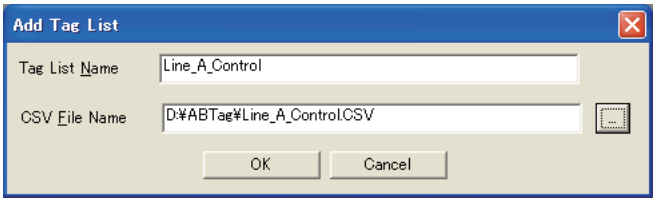
## 15.7.2 Settings

1. Select [Project] → [Import RSLogix5000 Tags] from the menu.
2. The following dialog box appears. Add, delete, or update tag files, and then click the OK button.



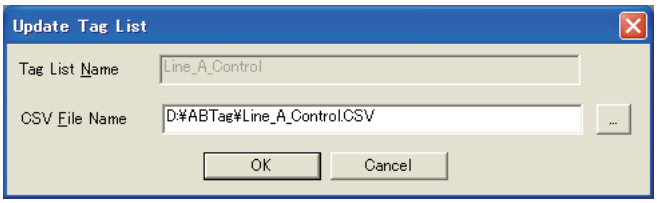

| No. | Item | | Description |
|---|---|---|---|
| 1) | Tag file list | | Displays a list of tag files imported to GT Designer2. |
| | | Tag List Name | Displays the tag file names. |
| | | CSV File | Displays the paths of the tag files. |
| 2) | Add | | Click this button to import a tag file to GT Designer2.<br>Clicking this button displays the Add Tag List dialog box*1.<br>Input the information of the tag file to be added. |
| 3) | Delete | | Click this button to delete the selected tag file. |
| 4) | Update | | Click this button to update the selected tag file.<br>After selecting a tag file, clicking this button displays the Update Tag List dialog box*2.<br>Input the latest path of the tag file. |

*1 Add Tag List dialog box




| Item | Description |
|---|---|
| Tag List Name | Input the name of the tag file to be added to the tag file list. |
| CSV File Name | Input the path of the tag file to be added.<br>By clicking the ... button, the path can be specified in the Open dialog box. |

*2 Update Tag List dialog box




| Item | Description |
|---|---|
| CSV File Name | Input the path of the tag file to be updated.<br>By clicking the ... button, the path can be specified in the Open dialog box. |

## 15.7.3 Precautions

### 1 Precautions for use

(1) Tag file format
To export tags by the third party programming software, the tags must be exported in the CSV format.
GT Designer2 cannot import tag files in formats other than the CSV format.

(2) Storage location of tag file
When the storage location of a tag file is changed after importing the file, set the path of the new storage location in the Update Tag List dialog box.
(☞ Section 15.7.2 Settings)
Failure to do so does not display the tag file in the tag file list at the device setting.

# 16. SCRIPT FUNCTION

## 16.1 Overview

The script functions are designed to control the GOT display with the GOT's original programs (hereafter abbreviated to "script").
Controlling the GOT display with the GOT side script drastically reduces the load on the system side (e.g. controller, microcomputer) display.
In addition, the specifications, GT Designer2 settings, program example and troubleshooting of the script functions are explained in this chapter.

### 16.1.1 Features

#### 1 Ease of system maintenance

As the necessary programs can be created and assigned to GOT with the script functions in advance, the system side handles only machine control programs, facilitating system maintenance.

#### 2 Various screen controls by GOT alone

Using the script functions enables the following operations that could not be achieved by GOT alone.

(1) Various object functions are available

(a) A single lamp represents multiple bit device statuses.

(b) A specific part is displayed if any of multiple bit devices is ON, and is erased if they are all OFF.

(c) At the same time as a numeric value is input, a part indicating "Already input" is pasted to the place adjacent to the input value display frame.

(d) A single touch switch can make multiple operations corresponding to multiple statuses.

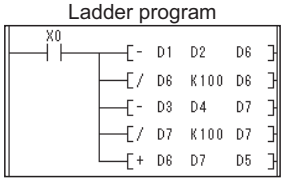
(e) At the same time as the alarm list (system alarm) function detects an error (*1), the corresponding troubleshooting screen appears automatically.

*1 If an error occurs in the alarm list (system alarm), error contents are stored to [GOT Error Code] of [System Information].

(2) Processing of complicated arithmetic

(a) A polynomial operation can be more simply represented on a single line as compared with ladder program.

Ladder program




Script

```
[w:D5] = ([w:D1] - [w:D2])/100+[w:D3]-[w:D4])-100;
```

(b) Not only four fundamental operations but also various application arithmetic functions, such as trigonometric and exponential functions, can be used optionally.

(3) Expanded applicable fields

(a) The date is calculated by entering the start date (month, day and year) and the duration (number of days) after that date.
What is the date 345 days after May 20, 2000? → April 30, 2001

(b) The day of the week is calculated by entering the corresponding date (month, day and year).
Which day of the week falls on February 21, 1961? → Tuesday

## 3 Easy programming language

Script can be created with entry-level programming knowledge, as it is C language-like program.

## 4 Compatibility with commercially-available programming editors

Commercially-available text editors (e.g. Microsoft® Windows® -standard memo pad, Wordpad) are applicable for programming to improve program productivity.

## 5 Execution condition selectable for each script

Any of various conditions (ordinary, periodic, bit Rise/Fall, during bit ON/OFF, periodic during bit ON/OFF) can be selected as a trigger to execute each script, which enables script execution scheduling.
In addition to the above conditions, an object script can be executed in synchronization with object input / display and touching of a touch switch.

## 6 Fully useful debugging functions

Since a script is C language-like program, the general C language compiler or debugger (e.g. Microsoft® Visual C++) can be used for its simulation by making slight corrections. This is effective for debugging a complicated script that includes many control statements.
The system monitor function is useful for hardware debugging using GOT.
The test and device monitor functions are available to check conditional branching in a script. By monitoring the GOT special registers (GS), error information and a script in execution can be easily confirmed.

## 7 Check the validity of the syntax for the created scripts

The validity of the syntax for the created scripts can be checked using GT Designer2 before executing on GOT, which increases the programming efficiency.

## 8 The script language created on digital package is convertible

It is possible to convert the script language (D script/global D script) created on Digital package in order to operate it on GOT.

**Remark**

(1) Execution condition setting and syntax validity check
Make "execution condition setting" and "syntax validity check" on GT Designer2 at the time of monitor screen creation.
For details, refer to the following.

☞ Project script and screen script ..... 16.2.6 Setting items

☞ Object script ..... 16.3.6 Setting items

(2) Converting script language created on Digital package
Convert the script language created on Digital package using GT Converter2.
Refer to the following for details of convertible data and conversion method.

☞ GT Converter2 Version □ Operating Manual

## 9 Script functions types

There are three types of script functions as below.

(1) Project script

GT16 GT15 Soft GOT1000 GT11 GT10

(a) Target of setting/action
Project script means the script function that is set / operated for the project as a whole.

(b) GOT status that enables execution of a project script
A project script can be executed any time while the GOT is online.

(c) Script execution condition
A script is executed when the condition is established.

(d) Allowable number of scripts
Up to 256 scripts can be set for a project.

**Hint!**

Application of project scripts

Since a project script operates for a project as a whole, it can be conveniently used in such as the case shown below.
Example: To call up the troubleshooting screen automatically at the same time that the alarm list (system alarm) detects an error

**Point**

Precautions for setting a project script

Devices monitored by project scripts are always operating.
Therefore, if monitor target devices increase, display on the monitor screen will be delayed.

(2) Screen script

GT16 GT15 Soft GOT 1000 GT11 GT10

(a) Target of setting/action

Screen script means the script function that is set / operated for the screens indicated below.

- Base screen *1 *2
- Window screen*1, *2 (Superimpose windows, overlap swindows)

*1 The called screen by the set overlay screen function is also the target of a screen script.

*2 The screen displayed by the parts display function is not the target of a screen script.

(b) GOT status that enables execution of a screen script

A screen script can be executed when two conditions below are satisfied.

- GOT is online.
- The target screen is displayed.

(c) Script execution condition

A script is executed when the condition is established.

(d) Allowable number of scripts

Up to 256 scripts can be set in a screen (including the called screens by the set overlay screen function)

**Point**

Precautions for setting a screen script

If the number of monitor devices of screen scripts increase, display on the monitor screen will be delayed.

(3) Object script

GT16 GT15 Soft GOT 1000 GT11 GT10

(a) Target of setting/action

Object script means the script function that is set / operated for the objects indicated below.

| Setting/Operation Target of Object Script Function | | |
|---|---|---|
| Lamp display, | Touch switch (multi-action switch only), | |
| Numerical display, | Numerical input, | ASCII display, |
| ASCII input, | Clock display (date display, time display), | Comment display, |
| Parts display, | Parts movement, | Panelmeter display, |
| Level display, | Trend graph, | Line graph, |
| Bar graph, | Statistics graph, | Scatter graph |

(b) GOT status that enables execution of an object script

An object script function can be executed when four conditions below are all satisfied.

- GOT is online.
- The screen where arranged target object is displayed.
- The target object is displayed/operating.
- Target object operating is not restricted by the security function.

(c) Execution condition for script function
A script is executed when the condition is established. Execution of a script is also triggered by object input / display and touch operation of a touch switch.

(d) Allowable number of script function
Numerical input and ASCII input allows the setting of input object script and display object script for one object.
For objects other than numerical input and ASCII input, one script can be set for one object.

**Point**

Precautions for setting an object script

If number of monitor devices on object scripts increase, display on the monitor screen will be delayed.

## 16.1.2 Precautions for use

This section provides the cautions required for using script function.

### 1 Applicable range of the script functions

Since script functions are designed to control the GOT display, do not use them for machine control that requires the severe timing for execution.
When changing the data within PLC from GOT, create an interlock circuit in a sequence program to ensure that the whole system will operate safely.

### 2 Stop of the script processing

Any of the following cases disables the corresponding script to be processed, resulting in an error.

- A numerator is divided by a denominator of 0
- A monitor device value cannot be handled as BCD when "16-bit BCD" or "32-bit BCD" is selected as a script data format.
  Example: [D0]=[D1]: Current value of D1 is "0x991A"
- An operation result is outside the BCD range when "16-bit BCD" or "32-bit BCD" is selected as a script data format.
  Example: 16-bit: Other than 0 to 9999
  32-bit: Other than 0 to 99999999
- As the write target device of the while statement, a temporary device area (TMP) is not used but the PLC CPU device or GOT internal device (GD) is used.

For details, refer to the following.

- Applicable data range

☞ Section 16.2.3 Applicable data and representation methods

- Details of while statement

☞ Section 16.2.2 Control structure

- Corrective actions to be taken when script processing has stopped

☞ Section 16.4 Troubleshooting

### 3 Differences in processing result between data formats

Note that any of the following cases will result in an unintended processing.

- When other than "16-bit BCD" and "32-bit BCD" has been selected as script data format, the constant is described that is outside the selected format range.
- When "16-bit unsigned BIN" or "32-bit unsigned BIN" has been selected as the script data format, the negative constant is described.
- When other than "real number" has been selected as script data format, the constant with a decimal point is described.

For details on data format, refer to the following.

☞ Section 16.2.3 Applicable data and representation methods

## 4 Instructions for monitor device description

Some controller includes the monitor devices of which Nos. have to be described in the specific number of digits.
Failure to observe this instruction may cause a malfunction.
For details on describing method, refer to the following.

☞ Section 16.2.3 Applicable data and representation methods

## 5 Instructions for assignment delay

(1) For assignment delay
When a script function writes the operation result to a device at the end of script execution, writing to a device (assignment) can be delayed with some devices.
The table below shows if such assignment delay occurs for each kind of devices.

Synchronized: Operation result is written to a device in synchronization with script.
Delay: Assignment delay occurs.

| Device and Temporary Device Area | Script | | |
|---|---|---|---|
| | Project Script | Screen Script | Object Script |
| Controller's devices | Delay | | |
| GB | Delay*1 | | Synchronized |
| GD | | | |
| GS | Delay | | |
| TMP | Synchronized | | |

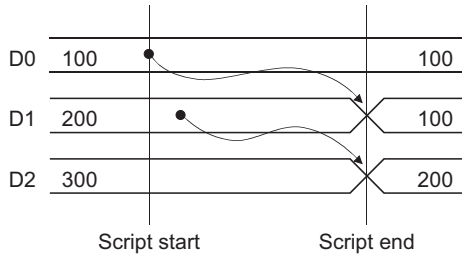
*1 It is possible to write the operation result to a device in synchronization with the execution of script by setting [Disable Internal Device (GD/GB) Assignment Delay] at GT Designer2.
For the setting at GT Designer2, refer to the following.

☞ 16.2.6 4 Option tab

Therefore, performing assignment processing as "Example 1" causes a write delay.
Describe a script as "Example 2" and "Example 3" to reduce the frequency of communications with the PLC CPU and avoid influence on monitor processing.

Example 1: Assignment processing using PLC CPU devices

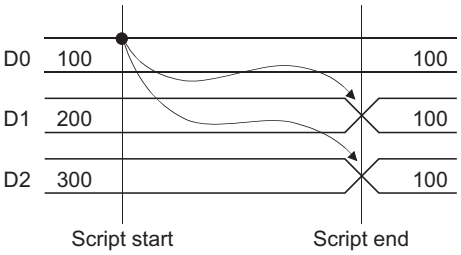
```
[w:D1] = [w:D0];        //substitutes D0 into D1.
[w:D2] = [w:D1];        //substitutes D1 into D2.
```




In this script, the D0 value is not reflected on D2 immediately, causing a write delay.
This status persists until this script is processed.

Example 2: Assignment processing using temporary device areas

```
[w:TMP0001] = [w:D0];          //substitutes D0 into TMP0001.
[w:D1] = [w:TMP0001];          //substitutes TMP0001 into D1.
[w:D2] = [w:TMP0001];          //substitutes TMP0001 into D2.
```




Using the temporary device areas designed for script functions prevents a write delay.
For details on temporary device areas, refer to the following.

☞ Section 16.2.3 Applicable data and representation methods

Example 3: Assignment processing using GOT internal devices (GD, GB)

```
[w:GD1] = [w:D0];          //substitutes D0 into GD1.
[w:D1] = [w:GD1];          //substitutes GD1 into D1.
[w:D2] = [w:GD1];          //substitutes GD1 into D2.
```

Using GOT internal devices (GD, GB) enables the same processing timing as temporary device areas and prevents a write delay.
With project scripts and screen scripts, setting of [Disable Internal Device (GD/GB) Assignment Delay] is necessary at GT Designer2.
For the setting at GT Designer2, refer to the following.

☞ 16.2.6 4 Option tab

**Point**

When GOT internal device is used.

When GOT internal device (GD, GB) assignment delay is cancelled, a link scan will be made on each line including the GOT internal device (GD, GB).
Note that the monitor processing of the GOT may delay when GOT internal devices (GD, GB) are used in many places.

(2) Assignment delay with offset function

(a) When reading values from devices

For using the offset function in scripts, when devices for controllers and GOT internal devices (GB, GD) are used as base devices, assignment delays occur and scripts might not operate correctly even though values of offset devices are changed.

Example 1) Incorrect operations with offset function (R200 = 10)

```
[w:TMP0000] = [w:R200];
[w:TMP0001] = [w:R100[w:TMP0000]];          The value of R100 cannot be read.
```

Offset device

Base device

With the above example, the offset device (TMP000) keeps the value before the assignment.
When device numbers are out of the base device (R) numbers, an error occurs.

For no assignment delays, use the temporary device area or GOT internal devices as both base devices and offset devices.
For using GOT internal devices, check [Disable internal device (GD/GB) assignment delay].

( ☞ 16.2.6 4 Option tab)

Example 2) No assignment delays with temporary device area (R200 = 10)

```
bmov([w:R100],[w:TMP0100],11)
[w:TMP0000] = [w:R200];
[w:TMP0001] = [w:TMP0100[w:TMP0000]];          The value of TMP110 can be read.
```

Assign the values of base devices to the temporary device area with the bmov control statements in advance, and then the inoperative operations in Example 1 work.

**Point**

Notes for Example 2

For Example 2, the range of the offset device (R200) is 0 to 10, and values of 11 devices starting from the base device (R100) are assigned to the temporary device area.
As a result, the number of devices to be assigned to the temporary device area must be changed depending on the range of offset devices.

(b) When writing values to devices
No restrictions as reading values from devices exist. (Refer to the following Example 1.)
When devices for controllers and GOT internal devices (GB, GD) are used as base devices, the values of offset devices with the while control statements cannot be changed repeatedly as shown in Example 2.
Use the temporary device area or GOT internal devices as both base devices and offset devices as with reading values from devices, and the values of offset devices with the while control statements can be changed repeatedly.
For using GOT internal devices, check [Disable internal device (GD/GB) assignment delay].

( ☞ 16.2.6 4 Option tab)

Example 1) Using offset function for write devices (Enabled)

```
[w:TMP0000] = 10;
[w:R100[w:TMP0]] = [w:TMP1];          A value can be assigned to R110.
```

Offset device

Base device

Example 2) Using offset function for write devices with while control statements (Disabled)

```
[w:TMP0000] = 10;
while ([w:TMP0000] < 20) {
[w:R100[w:TMP0000]] = [w:TMP0001];    An error occurs.
[w:TMP0000] = [w:TMP0000]+2;
}
```

Example 3) No assignment delays using offset function for write devices with while control statements

```
bmov ([w:R110],[w : TMP0110],10);
[w:TMP0000] = 10;
while ([w:TMP0000] < 20) {
[w:TMP0100 [w:TMP0000]] = [w:TMP0001];    No error occurs.
[w:TMP0000] = [w:TMP0000]+2;
}
bmov ([w:TMP0110],[w:R110],10;
```

Assign the values assigned to the temporary device area to base devices with the bmov control statements after operations with the temporary device area, and then the inoperative operations in Example 2 work.

## 6 Precautions for converting script language created using digital package

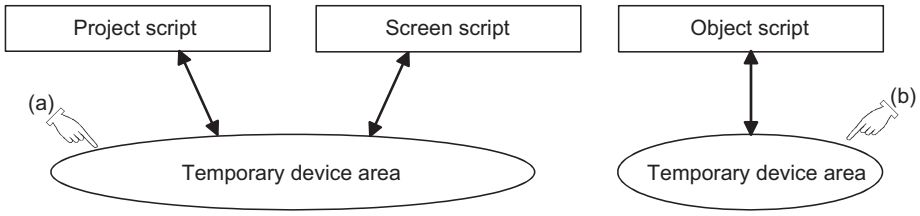
The LS devices described within the script language that is created using Digital package are designed to be free from an assignment delay.

Therefore, when Digital-based script language including LS devices as shown in "Example 1" in 5 (1) is converted, this may result in different operation on GOT.

As shown in "Example 2" in 5 (1), use temporary device areas in Digital-based script language including LS devices to prevent an assignment delay.

## 7 Precautions for exchanging data between scripts using the temporary device area

Project scripts and screen scripts share the same temporary device area, while object scripts use the independent temporary device area.
Accordingly, data exchange between an object script and a project script / screen script using the temporary device area is not possible.




(An image showing the case where the access is made to the temporary device area of the same number)

To exchange the data between a project script / screen script and an object script, use GOT internal devices GD or GB.

# 16.2 Project Script, Screen Script

## 16.2.1 Before setting

This section explains how to execute the Project script, Screen script.

### 1 Execution conditions

When an execution condition is satisfied, the Project script, Screen script executes the corresponding script and writes the result to the PLC CPU.
Execution condition is set when the monitor screen is created using GT Designer2.
There are following execution conditions.

- Ordinary
- Rise/Fall
- ON/OFF
- ON/OFF Sampling
- Sampling (1s increments)

### 2 Execution unit

Project script, Screen script executes scripts one by one.
If the execution conditions of multiple scripts are satisfied, they are not processed concurrently.

## 3 Execution sequence

The project script and screen script are executed in the following order.

| Function executing Order | Screen Setting Order | Screen Calling Function Laying Order | Script Executing Order Set with GT Designer2 | Max. Execution Count | Execution Sequence |
|---|---|---|---|---|---|
| Project script | — | — | Script A | 256 | 1) |
| | | | Script B | | |
| | | | ⋮ | | |
| Screen script | Base | Base | Script A | 256 | 2) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | Superimpose window 1 | Superimpose window 1 | Script A | 256 | 3) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | Superimpose window 2 | Superimpose window 2 | Script A | 256 | 4) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |

(Continued to next page)

| Function executing Order | Screen Setting Order | Screen Calling Function Laying Order | Script Executing Order Set on GT Designer2 | Max. Execution Count | Execution Sequence |
|---|---|---|---|---|---|
| Screen script | Overlap window 1 | Overlap window 1 | Script A | 256 | 5) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | Overlap window 2 | Overlap window 2 | Script A | 256 | 6) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | Overlap window 3 | Overlap window 3 | Script A | 256 | 7) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | Overlap window 4 | Overlap window 4 | Script A | 256 | 8) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |

(Continued to next page)

| Function executing Order | Screen Setting Order | Screen Calling Function Laying Order | Script Executing Order Set on GT Designer2 | Max. Execution Count | Execution Sequence |
|---|---|---|---|---|---|
| Screen script | Overlap window 5 | Overlap window 1 | Script A | 256 | 9) |
| | | | Script B | | |
| | | | ⋮ | | |
| | | First called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |
| | | ⋮ | | | |
| | | 16th called screen | Script A | | |
| | | | Script B | | |
| | | | ⋮ | | |

## 4 Execution status

The following table describes the script statuses and the corresponding processings to be performed.

| Script Status | Processing |
|---|---|
| Waiting for turn | • A script waits its processing turn in accordance with the execution sequence.<br>• When its turn has come, the script "waits for execution". |
| Waiting for execution | • Processing changes depending on the execution condition status.<br>Enabled : The corresponding script is "executed".<br>Disabled : The corresponding script "waits its turn" and the next script "waits for execution". |
| Execution | • When the script ends, the processing result is written to the PLC CPU and the corresponding script "waits its turn".<br>And, the next script "waits for execution".<br>• If an error occurs, the corresponding script "stops" and the next script "waits for execution".<br>• If a screen is changed when the screen script is used, the scripts set on the corresponding screen are all "executed" and then the next script "waits for execution". |
| Stop | • The script is kept "stopped" until the error history is cleared. |

## 16.2.2 Control structure

This section explains the control structure of the script functions.
The following commands (control statements, operators, functions, etc.) are used to program scripts.
Nesting is allowed in if, while and switch statements.
A return statement is used to end a script.

- 1 Control statement
- 2 Operator
- 3 Variables
- 4 Function
- 5 Others

### 1 Control statement

| Control statement | Description | |
|---|---|---|
| if | Statement example | if (conditional expression) {set of expressions} |
| | Function | Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions}. |
| | Point | An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence. |
| if to else | Statement example | if (conditional expression) {set of expressions 1} else {set of expressions 2} |
| | Function | Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions 1}, or if false (0), executes the {set of expressions 2}. |
| | Point | An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence. |
| while<br>break | Statement example | while (continuous conditional expression) {set of expressions} |
| | Function | Evaluates the (continuous conditional expression), and if its result is true (other than 0), repeats execution of the {set of expressions}.<br>Processing exits the "while" statement, in the following cases:<br>• If the evaluation result of "continuous condition" is false (0).<br>• If a "break" statement exists in the "set of expressions". |
| | Point | • A while statement is used to perform given processing for up to a specific purpose.<br>(For example, the statement is repeated until the device value becomes "0".)<br>Making the continuous conditional expression always true (other than 0) results in an infinite loop.<br>• A temporary device area must be used as the write target device. |
| switch<br>case<br>default<br>break | Statement example | switch (term)<br>{<br>case constant: set of expressions;break;<br>case constant: set of expressions; break;<br>default: set of expressions;<br>} |
| | Function | Creates a control statement using four reserved words of switch, case, break and default.<br>In either of the following cases, executes the "sets of expressions" following the case and default statements.<br>• The (term) value matches the "constant"<br>• It does not match the case statement and there is a default statement<br>In either of the following cases, escapes from { } of switch without execution.<br>• There is a break statement within a script<br>• There are no case statements including the "constants" corresponding to the (term) and no default statement.<br>Note that there may be no break and default statements in the control statement. |
| | Point | The switch statement is used when a given variable value requires different processings to be performed. |

(Continued to next page)

| Control statement | Description | |
|---|---|---|
| return | Statement example | return; |
| | Function | Ends a script. |
| | Point | A single script can have multiple returns. |
| ; | Statement example | ; |
| | Function | Represents the end of a single statement.<br>This symbol is necessary at the end of a single statement. |

## 2 Operator

### (1) Logic

| Operator | Description | |
|---|---|---|
| && | Statement example | if ((relational operation expression) && (relational operation expression)) {.....} |
| | Function | If two (relational operation expressions) are both true, resulting in 1; if either is false, resulting in 0.<br>(Logical AND operator) |
| \|\| | Statement example | if ((relational operation expression) \|\| (relational operation expression)) {.....} |
| | Function | If either of relational operation expressions is true, resulting in 1; if both are false, resulting in 0.<br>(Logical OR operator) |
| ! | Statement example | if (!(relational operation expression)) {.....} |
| | Function | If the relational operation expression is 0, resulting in 1; otherwise, resulting in 0.<br>(Logical NOT operator) |

### (2) Relation

| Operator | Description | |
|---|---|---|
| < | Statement example | <Term 1> < <term 2> |
| | Function | <Term 1> is less than <term 2>. (Left inequality operator) |
| <= | Statement example | <Term 1> <= <term 2> |
| | Function | <Term 1> is less than or equal to <term 2>.<br>(Equivalence left inequality operator) |
| > | Statement example | <Term 1> > <term 2> |
| | Function | <Term 1> is greater than <term 2>. (Right inequality operator) |
| >= | Statement example | <Term 1> >= <term 2> |
| | Function | <Term 1> is greater than or equal to <term 2>.<br>(Equivalence right inequality operator) |
| != | Statement example | <Term 1> != <term 2> |
| | Function | <Term 1> is not equal to <term 2>. (Non-equivalence operator) |
| == | Statement example | <Term 1> == <term 2> |
| | Function | <Term 1> is equal to <term 2>. (Equivalence operator) |

### (3) Arithmetic

| Operator | Description | |
|---|---|---|
| + | Statement example | <Term> + <factor> |
| | Function | Adds <factor> to <term>. (Addition operator) |
| — | Statement example | <Term> — <factor> |
| | Function | Subtracts <factor> from <term>. (Subtraction operator) |
| * | Statement example | <Term> * <factor> |
| | Function | Multiplies <term> by <factor>. (Multiplication operator) |
| / | Statement example | <Term> / <factor> |
| | Function | Divides <term> by <factor>. (Division operator) |
| | Point | If <factor> is 0, script operation stops. |
| % | Statement example | <Term> % <factor> |
| | Function | Finds a remainder derived from division of <term> by <factor>.<br>(Remainder operator) |
| | Point | If <factor> is 0, script operation stops. |

### (4) Bit device

| Operator | Description | |
|---|---|---|
| & | Statement example | <Term> & <factor> |
| | Function | Finds the logical product (AND) of <term> and <factor>.<br>(Bit accumulation operator) |
| \| | Statement example | <Term> \| <factor> |
| | Function | Finds the logical add (OR) of <term> and <factor>.<br>(Bit addition operator) |
| ~ | Statement example | ~ <bit> |
| | Function | Negates (inverts) <bit>. (Complement operator) |
| ^ | Statement example | <Term> ^ <factor> |
| | Function | Finds the exclusive logical add (XOR) of <term> and <factor>.<br>(Bit difference operator) |
| << | Statement example | <Term> << <factor> |
| | Function | Shifts <term> to the left by <factor>. (Left shift operator) |
| >> | Statement example | <Term> >> <factor> |
| | Function | Shifts <term> to the right by <factor>. (Right shift operator) |

### (5) Assignment

| Operator | Description | |
|---|---|---|
| = | Statement example | <Device> = <term> |
| | Function | Stores <term> into <device>. (Assignment operator) |

## 3 Variables

| Variable | Description |
|---|---|
| Device and temporary device area | Statement example: [w : GD150]<br>Function: Represents a PLC CPU device, GOT internal device or temporary device area.<br>Refer to the following for details of the devices and temporary device areas.<br>☞ Section 16.2.3 Applicable data and representation methods |

## 4 Function

### (1) Device operation

| Function | Description |
|---|---|
| set | Statement example: set (<bit device>)<br>Function: SETs <bit device>. |
| rst | Statement example: rst (<bit device>)<br>Function: RSTs <bit device>. |
| alt | Statement example: alt (<bit device>)<br>Function: Inverts <bit device>. |

### (2) Continuous device operation

| Function | Description |
|---|---|
| bmov | Statement example: bmov (<word device 1>, <word device 2>, <integer>)<br>Function: Batch-transfers the number of devices specified at <integer>, starting from <word device 1>, to the number of devices specified at <integer>, starting from <word device 2>. |
| fmov | Statement example: fmov (<word device 1>, <word device 2>, <integer>)<br>Function: Transfers <word device 1> to the number of devices specified at <integer>, starting from <word device 2>. |

### (3) Application arithmetic operation

| Function | Description |
|---|---|
| sin | Statement example: sin (<word device or constant>)<br>Function: Calculates the sine of the specified <word device or constant>. (Sine)<br>Specify <word device or constant> in radian units. |
| cos | Statement example: cos (<word device or constant>)<br>Function: Calculates the cosine of the specified <word device or constant>. (Cosine)<br>Specify <word device or constant> in radian units. |
| tan | Statement example: tan (<word device or constant>)<br>Function: Calculates the tangent of the specified <word device or constant>. (Tangent)<br>Specify <word device or constant> in radian units. |
| asin | Statement example: asin (<word device or constant>)<br>Function: Calculates the arcsine of <word device or constant>. (Arcsine)<br>Specify <word device or constant> in radian units. |

| Function | Description | |
|---|---|---|
| acos | Statement example | acos (<word device or constant>) |
| | Function | Calculates the arccosine of <word device or constant>. (Arccosine)<br>Specify <word device or constant> in radian units. |
| atan | Statement example | atan (<word device or constant>) |
| | Function | Calculates the arctangent of <word device or constant>. (Arctangent)<br>Specify <word device or constant> in radian units. |
| abs | Statement example | abs (<word device or constant>) |
| | Function | Calculates the absolute value of <word device or constant>.<br>(Absolute value) |
| log | Statement example | log (<word device or constant>) |
| | Function | Calculates the power (base e) of <word device or constant>. (Natural logarithm) |
| log10 | Statement example | log10 (<word device or constant>) |
| | Function | Calculates the logarithm (base 10) of <word device or constant>.<br>(Common logarithm) |
| exp | Statement example | exp (<word device or constant>) |
| | Function | Calculates the power (base e) of<word device or constant>. (Exponent) |
| 1dexp | Statement example | 1dexp (<word device 1 or constant 1>, <word device 2 or constant 2>) |
| | Function | Multiplies <word device 1 or constant 1> by 2 to the power of <word device 2 or constant 2> .<br>(Exponential product) |
| sqrt | Statement example | sqrt (<word device or constant>) |
| | Function | Calculates the square root of <word device or constant>. (Square root) |

### (4) File operation

| Function | Description | |
|---|---|---|
| file_getlist | Statement example | file_getlist (<folder name>, <file name>, <storage device>, <offset>, <number of files>, <maximum number of characters>) |
| | Function | Obtains file names equivalent to <number of files>, starting from the <offset>th file when <file name> in <folder name> is set as the head file. <Maximum number of characters> of each file name is stored in <storage device> and subsequent devices. |
| | Return value | Normal : Number of obtained files<br>Error : -1 |
| file_read | Statement example | file_read (<folder name>, <file name>, <storage device>, <offset>, <number of read bytes>) |
| | Function | Reads data equivalent to <number of read bytes>, starting from the <offset>th byte, from <file name> in <folder name>, and stores the read data in <storage device> and subsequent devices. |
| | Return value | Normal : Number of read data (bytes)<br>Error : -1 |

| Function | Description | |
|---|---|---|
| file_write | Statement example | file_write (<folder name>, <file name>, <storage device>, <offset>, <number of write bytes>, <mode>) |
| | Function | Writes data with the method specified for <mode>.<br>• New : 0<br>Newly creates <file name> in <folder name> that contains data equivalent to <number of write bytes> in <storage device> and subsequent devices.<br>When <file name> already exists, the existing file is deleted and a new file is created.<br>• Addition : 1<br>Adds data equivalent to <number of write bytes> in <storage device> and subsequent devices to the end of <file name> in <folder name>.<br>When no <file name> exists, a new file is created.<br>• Overwrite : 2<br>Overwrites the <offset>th byte and subsequent bytes of <file name> in <folder name> with data equivalent to <number of write bytes> in <storage device> and subsequent devices. |
| | Return value | Normal : Number of written data (bytes)<br>Error : -1 |
| file_rename | Statement example | file_rename (<folder name>, <file name>, <renamed file name>) |
| | Function | Renames <file name> in <folder name> to <renamed file name>. |
| | Return value | Normal : 0<br>Error : -1 |
| file_delete | Statement example | file_delete (<folder name>, <file name>) |
| | Function | Deletes <file name> in <folder name>. |
| | Return value | Normal : 0<br>Error : -1 |
| file_copy | Statement example | file_copy (<copy source folder name>, <copy source file name>, <copy destination folder name>, <copy destination file name>, <copy mode>) |
| | Function | Copies <copy source file name> in <copy source folder name> to <copy destination folder name> with renaming the file name to <copy destination file name>.<br>By using <copy mode>, whether to overwrite the file can be specified.<br>When no <copy destination folder name> exists, a folder is created and the file is copied to the folder.<br>A zero-byte file can be copied. A file cannot be copied in one drive. |
| | Return value | Normal: 0<br>Error: -1 |
| file_xcopy | Statement example | file_xcopy(<copy source folder name 1>, <copy source folder name 2>, <copy destination folder name 1>, <copy destination folder name 2>, <copy mode>) |
| | Function | Copies files in <copy source folder name 1> and <copy source folder name 2> to <copy destination folder name 1> and <copy destination folder name 2>.<br>By using <copy mode>, whether to overwrite the files and folders and whether to copy subfolders can be specified. Files and folders cannot be copied in one drive. |
| | Return value | Normal: 0<br>Error: -1 |
| #pragma folder_name_length | Statement example | #pragma folder_name_length (<maximum number of folder name characters>) |
| | Function | Sets <maximum number of folder name characters> when specifying a folder name with devices. |
| #pragma file_name_length | Statement example | #pragma file_name_length (<maximum number of file name characters>) |
| | Function | Sets <maximum number of file name characters> when specifying a file name with devices. |

For arguments used for the file operation functions, refer to the following.

☞ Section 16.2.3 Applicable data and representation methods

**Remark** Folder/file name character number specification functions (#pragma folder_name_length, #pragma file_name length)

(1) Application
The folder/file name character number specification functions are used for specifying a file or folder name with devices.
The functions are invalid for specifying the folder or file name with any character string.

(2) Maximum number of folder/file name characters without functions
Up to 12 characters are available for a folder or file name without the folder/file name character number specification functions.

## 5 Others

| Item | Description | |
|---|---|---|
| Constant | Statement example | 1234 |
| | Function | Represents a constant (decimal / hexadecimal / BCD / real number / character strings).<br>Refer to the following for details of constants.<br>☞ Section 16.2.3 Applicable data and representation methods |
| Comment | Statement example | // (comment) |
| | Function | A comment for a script can be described in (comment). |

## 16.2.3 Applicable data and representation methods

### 1 Script data formats

Any of the following seven different data formats can be selected for the script functions.
Note that the selected data format is fixed for each script.
Select the data format using GT Designer2 when the monitor screen is created.

- 16-bit, signed BIN
- 16-bit, unsigned BIN
- 32-bit, signed BIN
- 32-bit, unsigned BIN
- 16-bit BCD
- 32-bit BCD
- 32-bit real number

**Hint!**

To operate different types of data

Device value of integral number can be calculated as real number by using integral number ↔ real number conversion function for each script.

☞ This section 8 Integer ↔ Real number conversion function

## 2 Applicable constants and representation methods

The following four different constants are applicable for the script functions.

| Constant | Representation Method |
|---|---|
| Decimal number | 124 |
| Hexadecimal number | 0xFF12, 0x14AC67F1 |
| Real number | 32.124, 3.2124e + 10 |
| BCD | 344 |

Note that the data format of each script determines the applicable constants and data ranges as shown below.

| Data Format | Usable Constant | Applicable Data Range |
|---|---|---|
| 16-bit, signed BIN | Decimal number | -32768 to 32767 |
| | Hexadecimal number | 0 to FFFF |
| 16-bit, unsigned BIN | Decimal number | 0 to 65535 |
| | Hexadecimal number | 0 to FFFF |
| 32-bit, signed BIN | Decimal number | -2147483648 to 2147483647 |
| | Hexadecimal number | 0 to FFFFFFFF |
| 32-bit, unsigned BIN | Decimal number | 0 to 4294967295 |
| | Hexadecimal number | 0 to FFFFFFFF |
| 16-bit BCD | BCD | 0 to 9999 |
| | Hexadecimal number | 0 to 270F |
| 32-bit BCD | BCD | 0 to 99999999 |
| | Hexadecimal number | 0 to 5F5E0FF |
| 32-bit real number | Real number | Signed 13-digit representation (Representation with a decimal point only) |
| | Hexadecimal number | 0 to FFFFFFFF |

*1 The real number precision is given below dicimal point to the 6th digit. The 7th and later digits are illegal. For examples of display of a number having 7th and later digits, refer to the following.

☞ Section 5.2 Numeric Data that can be Handled with GOT

## 3 Applicable devices and representation methods

The devices available for the script functions are the same as those of the other monitor functions. The following table shows the device representations by device type; a station No.-specified device is represented differently from others.

| Device Type | Statement Example | Representation Example | Model |
|---|---|---|---|
| Word device | [w: device No. *2] | [w: D100] | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Bit device | [b: device No. *2] | [b: X100] | |
| Specified bit of word device | [b: device No.*2. bit position] | [b: D100.01] | |
| Specified word of bit device | [w: device No. *2] | [w: X100] | |
| Station No.-specified device *1 | [Network No.-station No.: w: device No. *2] | [0-FF: w: D100] | |
| Multiple CPU No. specification*5 | [Network No.-station No./CPU No.: w: device No.] | [0-FF/1: w: D100] | |
| Specification of extension file register block No.*6 | [w: ER block No.-device No.] | [w: ER255-100] | |
| Specification of buffer memory head I/O No.*7 | [w: BM buffer memory head I/O No.-device No.] | [w: BM1E-100] | |
| Channel No.-specified device *3 *4 | [@Channel.:w:device No.] | [@3:w:D100] | GT16 GT15 SoftGOT1000 GT11 GT10 |

*1: When the QCPU, QnACPU or ACPU is used, omitting the network No. and station No. monitors the devices of the host station (0-FF).

*2: Depending on the PLC CPU device monitored, the device No. must be described in the following number of digits.

| PLC CPU | Device Name | Number of Described Digits (Digits) | | Representation Example | Remarks |
|---|---|---|---|---|---|
| | | Word specified | Bit specified | | |
| OMRON PLC | .. | – | 2 | [b:..2303] | As the channel + relay format is used, the relay part is described in 2 digits. |
| | LR, AR, HR, WR | – | 2 | [b: HR207] | |
| Allen-Bradley PLC | B | 6 | 7 | [w: B000003]<br>[b: MB02343] | The file No. is described in 3 digits, the element No. in 3 digits, and the bit position in 1 digit. |
| | N, TP, TA, CP, CA | 6 | – | [w: N007255] | The file No. is described in 3 digits, and the element No. in 3 digits. |
| | TT, TN, CU, CD, CN | – | 6 | [b: TT004255] | |
| SIEMENS PLC | D | – | 9 | [w: D000100000] | The data block (DB) is described in 4 digits, and the data word (DW) in 5 digits. |

*3: When specifying both channel No. and station No., specify the channel No. first. (Example: [@3:0-FF:w:D100])

*4: When specifying a device at channel No. 1, designation of a channel No. ("@Channel.:) can be omitted. (In the case of [@1:w:D100], representation of [w:D100] is allowed by omitting "@1:".)

*5: Even if the target PLC is set to the host station (0-FF), be sure to specify the station No. in statements.

*6: The block No. of the extension file register can be specified only with ER devices.

*7: The head I/O No. of the buffer memory can be specified only with BM devices.

**Remark** Devices that can be monitored on the GOT

Devices that can be monitored on the GOT depend on the monitor target PLC CPU.

☞ Section 2.9 Supported Devices

## 4 Applicable arguments and representation methods

The following shows arguments applicable to the file operation functions.

| Argument | Expression example | Applicable Data Range |
|---|---|---|
| Folder name/copy source folder name | For specifying with character string<br>: "A:\\Project1\\"<br>For specifying with devices<br>:[w:D0001] | Available drives are the drive A, B, D (for GT11 only), and E (for GT16 and SoftGOT1000 only).<br>For specifying with character string*3:<br>folder name + file name: 78 characters or less<br>For specifying with devices:<br>Applicable devices<br>☞ This section 3 Applicable devices and representation methods |
| File name/copy source file name | For specifying with character string<br>: “FILE00001.CSV”<br>For specifying with devices<br>: [w:D0001] | |
| Renamed file name | For specifying with character string<br>:"FILE00001.BAK"<br>For specifying with devices<br>:[w:D0001] | |
| Storage device*1 | [w:GD200] | Applicable devices<br>☞ This section 3 Applicable devices and representation methods |
| Number of files | 1 | 1 to 32 |
| Offset*2 | 0 | 16 bits : 0 to 65535<br>32 bits : 0 to 2147483647<br>• For using the offset in the file name obtaining function (file_getlist), only 16 bits can be specified.<br>• For the file write function (file_write), the offset is applicable only when the mode is set to "2" (Overwrite).<br>When the mode is set to any other than "2", set the offset to "0". |
| Maximum number of characters | 8 | 1 to 78 |
| Number of read bytes | 16 | 1 to 2048 |
| Number of write bytes | 16 | 1to2048 |
| Mode | 0 | New: 0<br>Addition: 1<br>Overwrite: 2<br>The operation of the file write function (file_write) for each mode, refer to the following. |
| Copy destination folder name | For specifying with character string<br>: "A:\\Project1\\"<br>For specifying with devices<br>: [w:D0001] | Available drives are the drive A, B, D (for GT11 only), and E (for GT16 and SoftGOT1000 only).<br>For specifying with character string*3:<br>copy destination folder name + copy destination file name: 78 characters or less<br>For specifying with devices:<br>Applicable devices<br>(☞ This section 3 Applicable devices and representation methods) |
| Copy destination file name | For specifying with character string<br>: "FILE00001.CSV"<br>For specifying with devices<br>: [w:D0001] | |

(Continued to next page)

| Argument | Expression example | Applicable Data Range |
|---|---|---|
| Copy source folder name 1 | For specifying with character string<br>: "A:\\Project1\\"<br>For specifying with devices<br>: [w:D0001] | Available drives are the drive A, B, D (for GT11 only), and E (for GT16 and SoftGOT1000 only).<br>For specifying with character string*3:<br>copy source folder name 1 + copy source folder name 2: 78 characters or less<br>For specifying with devices:<br>Applicable devices<br>( This section 3 Applicable devices and representation methods) |
| Copy source folder name 2 | For specifying with character string<br>: "A:\\Project1\\"<br>For specifying with devices<br>: [w:D0001] | |
| Copy destination folder name 1 | For specifying with character string<br>: "A:\\backup\\"<br>For specifying with devices<br>: [w:D0001] | Available drives are the drive A, B, D (for GT11 only), and E (for GT16 and SoftGOT1000 only).<br>For specifying with character string*3:<br>copy destination folder name 1 + copy destination folder name 2: 78 characters or less<br>For specifying with devices:<br>Applicable devices<br>( This section 3 Applicable devices and representation methods) |
| Copy destination folder name 2 | For specifying with character string<br>: "A:\\backup\\"<br>For specifying with devices<br>: [w:D0001] | |
| Copy mode | For specifying with character string<br>: 3<br>For specifying with devices<br>: [w:D0001] | For specifying with character string :<br>• Bit 0<br>File overwrite prohibited : 0<br>File overwrite permitted : 1<br>• Bit 1<br>Subfolders not copied : 0<br>Subfolders copied : 1<br>For specifying with devices:<br>Applicable devices<br>( This section 3 Applicable devices and representation methods) |
| Maximum number of folder name characters | 12 | 1 to 78 |
| Maximum number of file name characters | 12 | 1 to 78 |

*1 Bit devices cannot be specified as word devices.

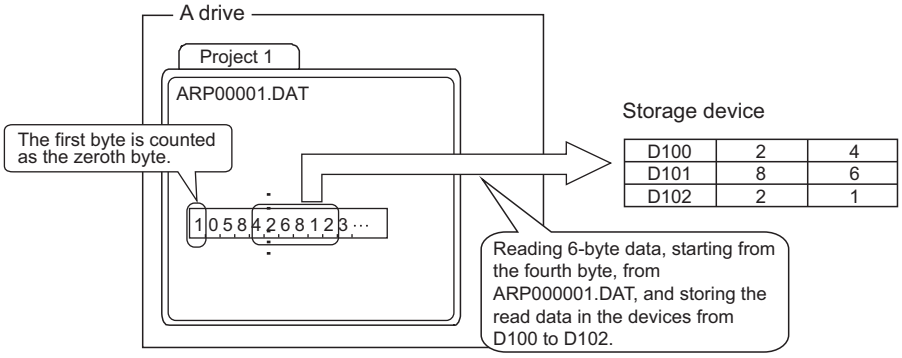
For *2 and *3, refer to the next page.

*2 How to use offset

The offset is an argument that represents the storage position of the target data in a folder or file.
For representing the storage position of the target data with an offset, the first byte of a folder or file is recognized as the zeroth byte.
The following shows the offset example using the file read function (file_read).

Example: For reading data equivalent to <number of read bytes> (6 bytes), starting from the <offset>th byte (4th byte), from <file name> (ARP00001.DAT), and for storing the read data in <storage device> (D100) and subsequent devices

```
[s16:D500] = file_read("A:\\Project1\\", "ARP00001.DAT", [w:D100], 4, 6);          // Reading file
```




*3 Folder name and file name

(1) How to use delimiter "Y"
For specifying a folder name with a character string, set "\\" as a directory delimiter in a path.
In the file operation functions, the first delimiter "\" is recognized as a control character.
Therefore, fialure to set "\\" causes an error due to incorrect path specification.

Example: "A:\Project\" (Actual path) "A:\\Project\\" (Path as argument)

For specifying a folder name with a device, do not set "\\" as a directory delimiter in a path.
Doing so causes an error due to incorrect path specification.

(2) Restrictions on folder name and file name

(a) Characters
Only the ASCII codes are applicable to folder names and file names.
However, the following ASCII codes are not applicable.

| | | | |
|---|---|---|---|
| \, | "AC, | (Comma), | !, |
| ?, | ;, | <>, | *, |
| /, | :, | \| | |

("*" is applicable as a wild card.)

(b) Character strings
The following character strings are not applicable to folder names and file names, regardless of upper or lower case.

| | | |
|---|---|---|
| COM1 to COM9, | LPT1 to LPT9, | AUX, |
| CON, | NUL, | PRN, |
| CLOCK$ | | |

(c) Folder names and file names
The following folder names and file names are not applicable.
Folder name starting with "G1",
Folder name that has a lower-case drive name,
Folder or file name starting with "." (Period) or "\",
Folder or file name ending with "." (Period) or "\"

(3) Wild card specification

File names can be specified with a wild card only when the file name obtaining function (file_getlist) is used.

Use the wild card under the following conditions.

- The symbol that can be used as the wild card is "*" only.
  - Applicable example : "ARP*.DAT"
  - Inapplicable example : "ARP?????.DAT"
- Only one "*" can be used in one argument.
  Only "*.*" without characters can be set as an exception.
  - Applicable example : "*.DAT"
  - Inapplicable example : "ARP*.*"
- For using "*" for the file name part in <file name>, "*" can be set right before "." (Period) only.
  - Applicable example : "ARP*.DAT"
  - Inapplicable example : "ARP*01.DAT"
- For using "*" for the extension in <file name>, only "*" can be set.
  - Applicable example : "ARP00001.*"
  - Inapplicable example : "ARP00001.*AT"

**Hint!** Wild card

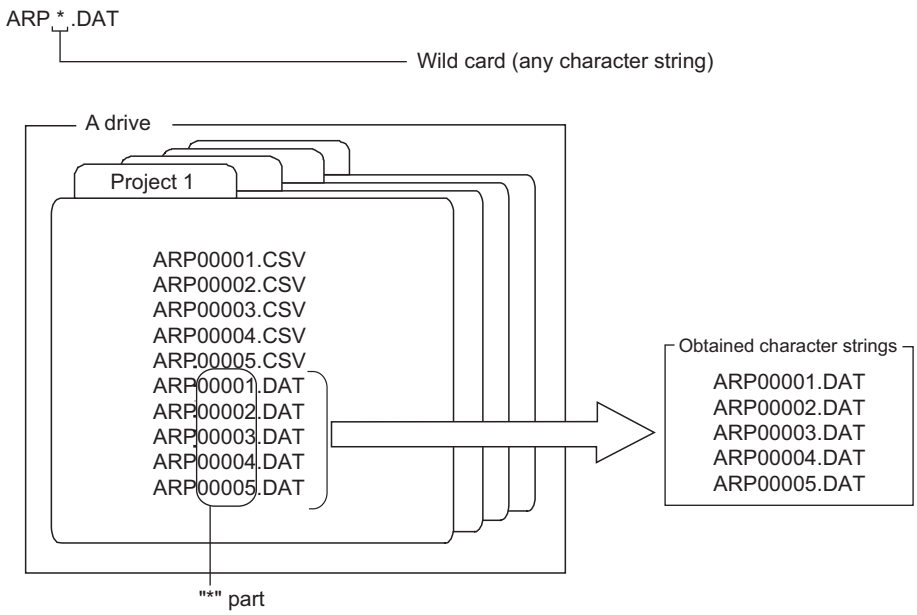
A wild card is a symbol that treats an unknown part in a file name as any character string.

The part specified with the wild card can be any character string.

The following shows an example of using the wild card.

Example : For obtaining file names starting with "ARP" and ending with ".DAT" from the "A:\\Project1\\" folder.

```
[s16:D500] = file_getlist("A:\\Project1\\", "ARP*.DAT", [w:GD100], 0, 5, 12);          //Obtaining file name
```



## 5 Applicable temporary device areas and representation methods

For temporary device area, 1024 points of from TMP0 to TMP1023 are applicable.
One variable is handled as 32 bits, and stores 0 at power-on of the GOT.
Read/write of the temporary device area is possible from multiple scripts created by the project script and screen script.
The temporary device area representation changes with the specified device type as indicated below.

| Device Type | Statement Example | Representation Example |
|---|---|---|
| Word device | [w: temporary device area No.] | [w:TMP0001] |
| Bit device | [b: temporary device area No. bit position] | [b:TMP1023.01] |

temporary device areas are used in the following cases.

Example 1: Prevention of a write delay in assignment processing of the PLC CPU (☞ Section 16.1.2 Precautions for use)

Example 2: Write target device of while statement (☞ Section 16.2.2 Control structure)

Example 3: Variable for operation
When assigning a D0 + 1 value to D1 and assigning a D1 + 1 value to D2

```
[w:TMP0001] = [w:D0]+1;          //substitutes D0+1 into TMP0001.
[w:D1] = [w:TMP0001];            //substitutes TMP0001 into D1.
[w:D2] = [w:TMP0001]+1;          //substitutes TMP0001+1 into D2.
```

**Point**

Temporary device area

The temporary device area is a 32-bit global variable.
Note that a correct value cannot be read in either of the following cases.

- A value is read in the script of which data format is different from that of the script used to write the value to the temporary device area.
  Example: Script A (data format: 16-bit unsigned)
  [w: TMP0000] = 0x1234;
  Script B (data format: 32-bit unsigned)
  [w: GD0000] = [w: TMP0000];

- A value is read in the script represented (as word device/bit device) differently from the script used to write the value to the temporary device area.
  Example: Script C (data format: 16-bit unsigned)
  [w: TMP0000] = 0x3;
  if( [b: TMP0000.b0] == ON) {• • •

Make sure to write and read a value to and from one temporary device area in the same data format and representation.

## 6 Representing bit device (system define)

Bit devices can be represented as indicated below.

(1) When performing relational operation of bit device
A device value, which is normally represented as "1" or "0", can also be represented as "ON" or "OFF".

```
if([b:X100]==1){[w:D0]=100;}                    //if X100 is ON, D0 is 100.
```

↓

```
if([b:X100]==ON){[w:D0]=100;}                   //if X100 is ON, D0 is 100.
```

(2) When performing assignment processing of bit device
A bit device, which is normally represented by assigning "1" or "0", can be also represented by assigning "ON" or "OFF".

```
set([b:X100]);                                  //X100 turns ON.
```

```
[b:X100]=1;                                     //X100 turns ON.
```

↓

```
[b:X100]=ON;                                    //X100 turns ON.
```

## 7 Replacing devices and constants (user define)

A device or constant used in a script can be replaced with any character string.
Make user define setting in the script symbol setting of GT Designer2.
For details of the setting method, refer to the following.

☞ Section 16.2.6 3 Script symbol tab

Example: When replacing "b:X100" with "LS1_ERROR" using GT Designer2

```
if(LS1_ERROR==1){[w:D0]=100;}                   //if X100(LS1_ERROR) is ON, D0 is 100.
```

## 8 Device offset

The device offset can be specified.
This specification is allowed only in screen script.

(1) Format
Example: When D200 is 5, store 48 in D105.

```
[ w:D100[ w:D200] ] = 48;
```

Offset device
Base device

(2) Applicable device

(a) Base device
The controller device, GOT internal device, gateway device, and temporary device area can be specified.
Only word device is applicable. (Word specification by bit device is not applicable)

(b) Offset device
The controller device, GOT internal device, gateway device, and temporary device area can be specified.
Only word device is applicable. (Word specification by bit device is applicable*1)

*1 Please set device as the multiple of 16.

(3) Example
Switch the parameter according to operation mode.

- D10 : for switching operation mode
- D100 to D900 : for storing parameter value
- GD500 : base device
- TMP100 : offset device

(a) Script 1 (specify parameter value)

```
[w:GD500]=10;          //parameter value of operation mode1
[w:GD501]=11;
[w:GD502]=12;
    :
[w:GD600]=20;          //parameter value of operation mode2
[w:GD601]=21;
[w:GD602]=22;
    :
[w:GD700]=30;          //parameter value of operation mode3
[w:GD701]=31;
[w:GD702]=32;
    :
```

(b) Script 2 (offset value is determined by the device value for switching operation mode)

```
switch( [w: D10] ){
        case 1:[w:TMP100]=0;break;        //when D10 is 0, offset value is 0.
        case 2:[w:TMP100]=100;break;      //when D10 is 2, offset value is 100
        case 3:[w:TMP100]=200;break;      //when D10 is 3, offset value is 200
}
```

(c) Script 3 (write parameter according to offset value)

```
bmov([w:GD500[w:TMP100]],[w:D100],10); //write the device value of (GD500+TEM100) to D100 to D109.
```

**Point**

When script (b) and script (c) are executed simultaneously or in a single script, the offset switching is delayed, causing the system to operate abnormally.

(4) Precautions

When a device for a controller is used as the base device, the processing is delayed and the operation can be incorrectly executed even though the offset device value is changed.
When offset cannot be performed normally, use temporary device area or GOT internal device.

Section 16.1.2 5 Instructions for assignment delay

When GOT internal device is used, check [Enable internal device (GD/GB) assignment delay].

Section 16.2.6 4 Option tab

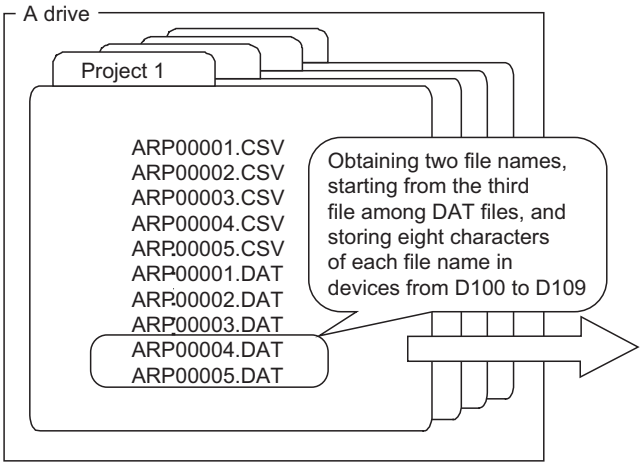
## 9 Example of using file operation functions

The following shows examples of using the file operation functions.

(1) File list obtaining function (file_getlist)

For obtaining two file names, starting from the third file among DAT files in the "Project1" folder of the A drive, and for storing eight characters of each file name in devices from D100 to D109, the statement is as shown below.

```
[s16:D500]=file_getlist("A:\\Project1\\", "*.DAT", [w:D100], 3 ,2 ,8);
                                    // Obtaining file list
```



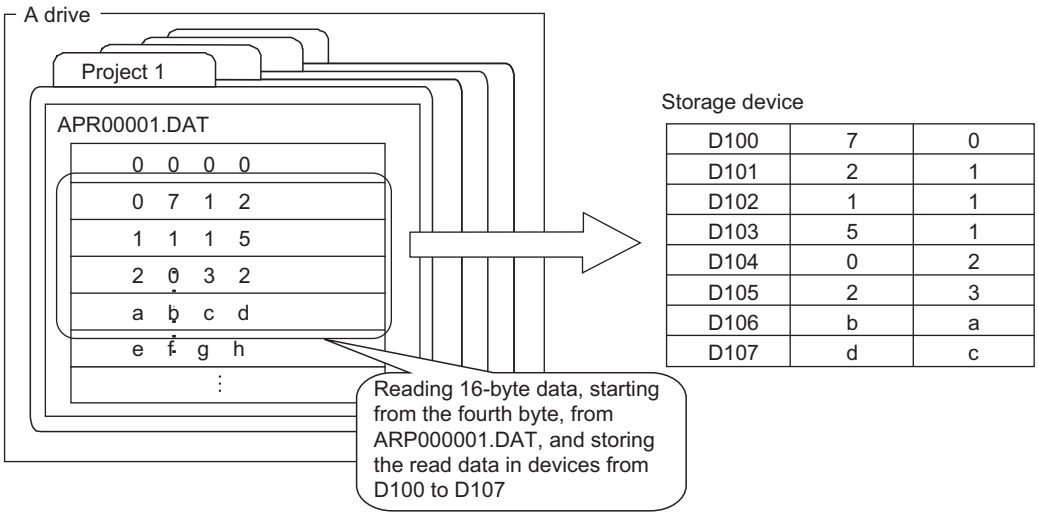

Storage device

| | | |
|---|---|---|
| D100 | R | A |
| D101 | 0 | P |
| D102 | 0 | 0 |
| D103 | 4 | 0 |
| D104 | \0 | \0 |
| D105 | R | A |
| D106 | 0 | P |
| D107 | 0 | 0 |
| D108 | 5 | 0 |
| D109 | \0 | \0 |

(2) File read function (file_read)

For reading 16-byte data, starting from the fourth byte, from "ARP00001.DAT" in the "Project1" folder of the A drive, and for storing the read data in devices from D100 to D107, the statement is as shown below.

```
[s16:D500]=file_read("A:\\Project1\\", "ARP00001.DAT", [w:D100], 4,16);
                                        // Reading file
```

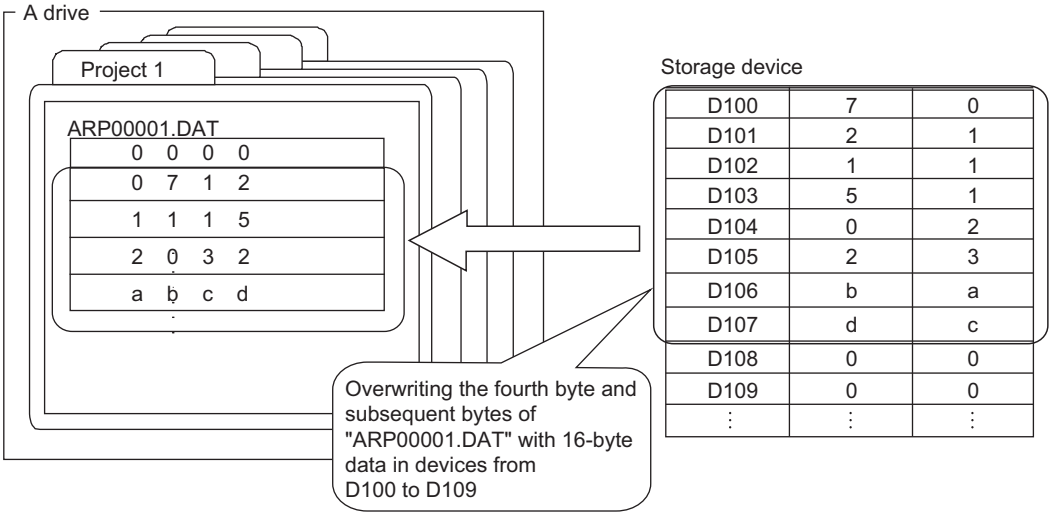



| | | |
|---|---|---|
| D100 | 7 | 0 |
| D101 | 2 | 1 |
| D102 | 1 | 1 |
| D103 | 5 | 1 |
| D104 | 0 | 2 |
| D105 | 2 | 3 |
| D106 | b | a |
| D107 | d | c |

(3) File write function (file_write)

For overwriting the fourth byte and subsequent bytes of "ARP00001.DAT" in the "Project1" folder of the A drive with 16-byte data in devices from D100 to D109, the statement is as shown below.

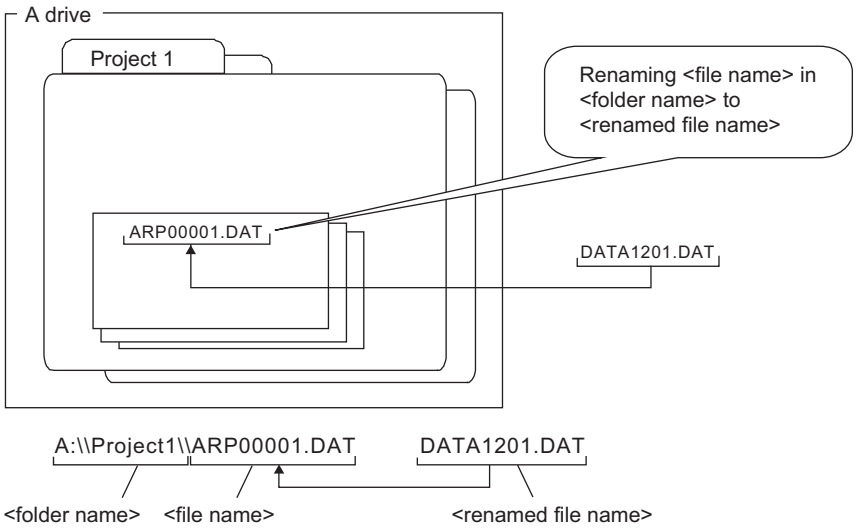
```
[s16:D500]=file_write("A:\\Project1\\", "ARP00001.DAT", [w:D100], 4, 16, 2);
                                        // Writing to file
```




| | | |
|---|---|---|
| D100 | 7 | 0 |
| D101 | 2 | 1 |
| D102 | 1 | 1 |
| D103 | 5 | 1 |
| D104 | 0 | 2 |
| D105 | 2 | 3 |
| D106 | b | a |
| D107 | d | c |
| D108 | 0 | 0 |
| D109 | 0 | 0 |
| ⋮ | ⋮ | ⋮ |

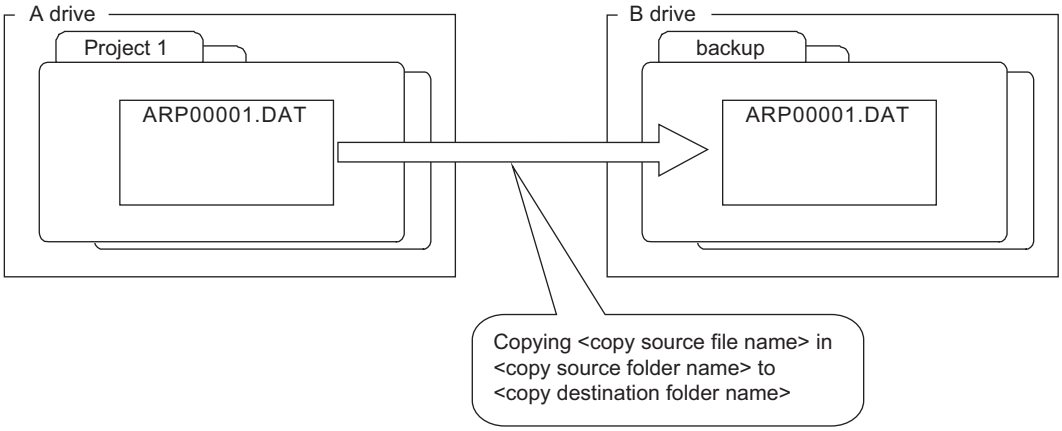
(4) File rename function (file_rename)
For renaming the file name of "ARP00001.DAT" in the "Project1" folder of the A drive to "DATA1201.DAT", the statement is as shown below.

```
[s16:D500]=file_rename("A:\\Project1\\", "ARP00001.DAT", "DATA1201.DAT");
                                    // Renaming file
```



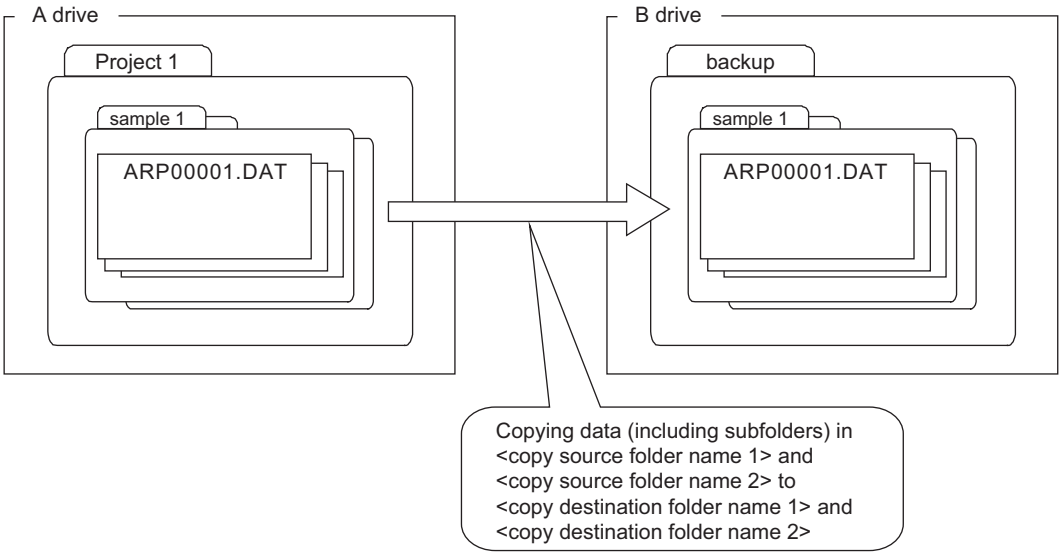

(5) File copy function (file_copy)
For copying "ARP00001.DAT" in the "Project1" folder in the C drive to the "backup" folder in the A drive, the statement is as shown below.

```
[s16:D500] =file_copy("C:\\Project1\\","ARP00001.DAT","A:\\backup\\","",1);//Copying file
```



(6) Folder copy function (file_xcopy)
For copying data (including subfolders) in the "Project1" folder in the C drive to the "backup" folder in the A drive, the statement is as shown below.

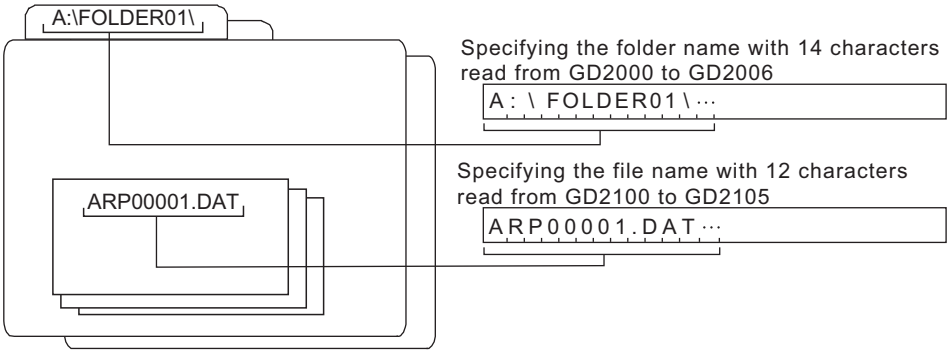
```
[s16:D500] =file_xcopy("C:\\Project1\\","","A:\\backup\\","",3);//Copying folder
```




(7) Folder/file name character number specification functions
(#pragma folder_name_length, #pragma file_name_length)
For setting the maximum number of folder name characters to 14 and that of file name characters to 12, the statements for reading data from a file are as shown below.

GD2000 to GD2006 :Storing a folder name of “A:\FOLDER01\"
GD2100 to GD2105 :Storing a file name of "ARP00001.DAT"
GD3000 to GD3015 :Storing data read from the file

```
#pragma folder_name_length(14);
                    // Setting the maximum number of folder name characters to 14
#pragma file_name_length(12);
                    // Setting the maximum number of file name characters to 12
[s16:D500]=file_read([w:GD2000],[w:GD2100],[w:GD3000],0,32);
                    // Reading 32-byte data from the specified file
```



## 10 Integer ↔ Real number conversion function

In script function, the data type is selected for each script. Once it is set, it cannot be changed (fixed). However, the integer device value can be calculated as real number by using integer ↔ real number conversion function.

(1) Conversion method

Integer ↔ real number conversion is executed by taking GOT internal device (GD) as conversion target.

Integer ↔ real number conversion can be executed by specifying the following devices.
Maximum 4096 devices can be converted once.
For details about GOT internal device, refer to the following.

☞ Section 2.9.1 GOT internal devices

**Point** Device that can be the target of integer ↔ real number conversion

Integer ↔ real number conversion can only be executed by GOT internal devices (GD). To convert the device value of controller, transmit the device value of controller to GOT internal device (GD) by script (bmov instruction).

(a) Read device

| Device | Function | Description |
|---|---|---|
| GS460 | Conversion start instruction | Specify the conversion start and conversion method by each bit.<br>b0 : 16 bit unsigned BIN → 32 bit real number<br>b1 : 16 bit unsigned BIN → 32 bit real number<br>b2 to b3 : Disabled<br>b4 : 32 bit real number → 16 bit unsigned BIN<br>b5 : 32 bit real number → 16 bit singed BIN<br>b6 to b14 : Disabled<br>b15 : Execute conversion when it is turned ON. |
| GS461 | Number of conversion devices | Number of devices |
| GS462 | Conversion source head device No. | Specify the head device No. of GOT internal device (GD) that stores the value before conversion. |
| GS463 | Conversion destination head device No. | Specify the head device No. of GOT internal device (GD) that stores the value after conversion. |
| GS464 | Storage error value | When error occurs, specify the device value to be stored in the conversion source device. (Useful for error recognition) |

(b) Write device

| Device | Function | Description |
|---|---|---|
| GS260 | Status | Store the conversion completion notification and error occurrence status into each bit.<br>When conversion start instruction (GS460.b15) is turned OFF (0), each bit becomes 0.<br>b0 to b13 : Disabled<br>b14 : It is turned ON when error occurs during conversion processing by GOT. (Store error code in GS261)<br>b15 : It is turned ON when conversion is completed by GOT. |
| GS261 | Error code *1 | Store the error during conversion.<br>Store 0 when the conversion is completed normally. |

For details of *1, refer to the following.

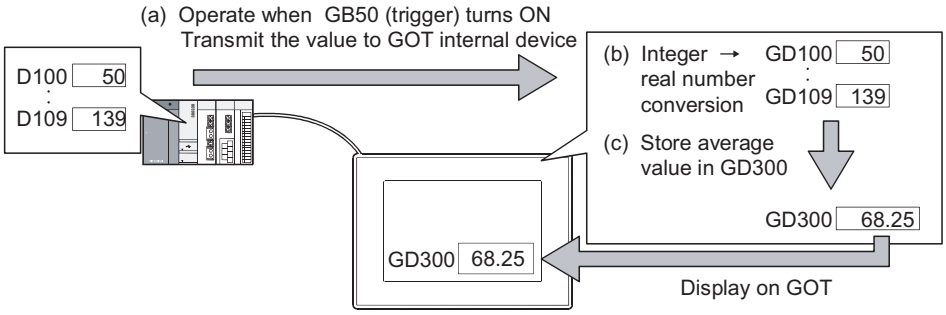
*1 Error code

Error codes stored in GS261 and the error information are as follows:

| Error code | Description | Remark |
|---|---|---|
| 1 | Conversion start instruction is not initialized | Conversion processing is not executed. |
| 2 | Conversion start instruction is not set correctly. | |
| 3 | Number of devices is set out of the range. | |
| 4 | Device is out of range. | |
| 5 | Conversion source overlaps with conversion destination. | |
| 6 | Not used | – |
| 7 | Conversion error (overflow, ect.) | Conversion processing continues. |

(2) Example

Display the average value of the data (16 bit signed BIN) stored in controller device as real number on GOT.




(a) Script 1 (conversion start processing)

Transmit the devices (D100 to D109) value of controller to GOT internal devices (GD100 to GD109) and execute integer → real number conversion.

After conversion is started, script 2 starts.

- Data type: 16 bit signed BIN
- Trigger: GB50 is ON

```
bmov ([w: D100], [w: GD100], 10;
[w: GS461]=10;          //Number of object devices to be converted
[w:GS462]=100;          //Conversion source head device No.
[w: GS463]=200;         //Conversion destination head device No.
[w: GS460]=0X8002;      //Conversion starts
set ([b: GB1001];       //Script 2 starts
```

(b) Script 2 (conversion completion monitor processing)

Wait the completion of integer → real number conversion.

If error does not occur after conversion is completed, clear the conversion start instruction device simultaneously when starting script 3.

- Data type: 16 bit singed BIN
- Trigger: GB100 is ON

```
if ([b: GS260.15]=1)
{                                   //Conversion completed.
  if ([b: GS260.14]=0)
  [
      set([b: GB101]):                  //Conversion is completed normally (script 3 starts).
}
  [w: GS460]=0;                     //Clear conversion start.
  rst([b:GB100]);                   //Clear the start of script 2.
}
```

(c) Script 3 (Average calculating processing)

After converting to real number, calculate the average value of GOT internal device and store in GD300.

- Data type: 32 bit real number
- Trigger: GB101 is ON

```
[w: TMP001]=0
[w: TMP001]= [w: TMP001] + [w: GD200];
[w: TMP001]= [w: TMP001] + [w: GD202];
[w: TMP001]= [w: TMP001] + [w: GD204];
[w: TMP001]= [w: TMP001] + [w: GD206];
[w: TMP001]= [w: TMP001] + [w: GD208];
[w: TMP001]= [w: TMP001] + [w: GD210];
[w: TMP001]= [w: TMP001] + [w: GD212];
[w: TMP001]= [w: TMP001] + [w: GD214];
[w: TMP001]= [w: TMP001] + [w: GD216];
[w: TMP001]= [w: TMP001] + [w: GD218];
[w: GD300]=[w:TMP001]/10;           //Store the average in GD300 (real number)
rst([b: GB101]);                    //Clear start of script 3.
```

(3) Precautions

(a) Turn the conversion start instruction (GS460) OFF after conversion completion.

When the device is ON, the conversion cannot be executed even if conversion start instruction is executed.

(b) During integer → real number conversion, figures after the decimal point will be rounded off. (1.53 → 1)

(When it is out of the real number range, error code will be displayed during operation and the conversion cannot be executed.)

## 11 Data type conversion function

The GOT can calculate integer device values as real numbers easier with the data type conversion function than with the integer ↔ real number conversion function.
The function allows reading / writing of a word device value after converting the value into the specified data type.
The data type to which a device value should be converted is specified when reading / writing the device value.
The table below shows the list of the data types that can be specified by the data type conversion function.

| Data type after conversion | Expression example | Representation Method | |
|---|---|---|---|
| 16-bit signed BIN | [s16:device] | [s16:D0]=[w:GD0]; | // Referencing GD0 as the data type of "data type",<br>// converts the device value into 16-bit signed BIN,<br>// and substitutes it to D0. |
| 16-bit unsigned BIN | [u16:device] | [w:GD0]=[u16:D0]; | // Referencing the value of D0 as 16-bit unsigned BIN,<br>// coverts the value into the type specifed by "data<br>// type", and substitutes it to GD0.. |
| 32-bit signed BIN | [s32:device] | if([s32:TMP0]<0){ | //Referencing the value in TMP0 to TMP1 as 32-bit<br>// signed BIN, compares it with "0". |
| 32-bit unsigned BIN | [u32:device] | [u32:GD10]=[w:GD0]*[w:GD1]; | // Referencing the value in GD0 and GD1 in the data<br>// type of "data type", executes calculation,<br>// converts the result of calculation into 32-bit<br>// unsigned BIN, and substitutes it to GD10 and GD11. |
| 16-bit BCD | [d16:device] | [d16:GD0]=[w:D0]&0x000F; | // Referencing the value in D in the data type of "data<br>// type", executes calculation and converts the result<br>// of calculation into 16-bit BCD, and substitutes it to<br>// GD0. |
| 32-bit BCD | [d32:device] | [w:GD0]=[d32:D0]; | // Referencing the value in D0 and D1 as the 32-bit<br>// BCD data, converts it into the data type of "data<br>// type", and substitutes the result of conversion to<br>// GD0. |
| 32-bit real | [flt:device] | [flt:D100]=log([w:D200]); | // Referencing the value in D200 in the data type of<br>// "data type", executes calculation and converts the<br>// result of calculation into 32-bit real, and substitutes<br>// it to D100 and D101. |

Example 1: Substituting the average of device values when 16-bit signed BIN is set as the data type

```
[flt:D10]=([w:D20]+[w:D30]+[w:D40]+[w:D50]+[w:D60])/5;
```

Example 2: Writing a real device value in 32-bit signed BIN after dropping the fractional portion of the device value

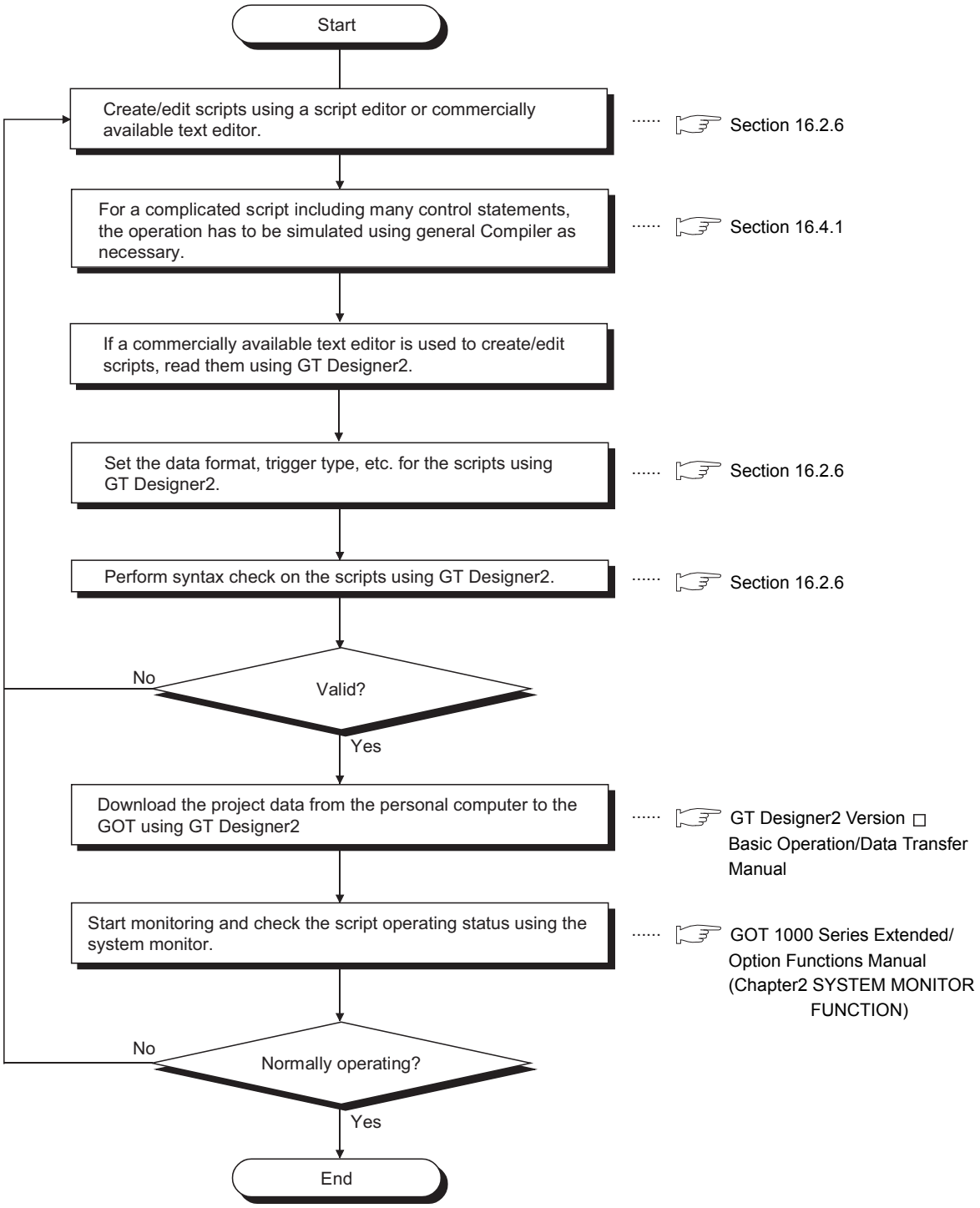
```
[s32:D100]=[flt:D200];
```

Example 3: Writing a real device value in 32-bit signed BIN after rounding off the device value

```
[s32:D100]=[flt:D200]+0.5;
```

## 16.2.4 Settings and procedure for execution

This section provides the settings and procedure for executing the script.



## 16.2.5 Settings

1. Select [Common] → [Script] from the menu.
2. The setting dialog box will appear. Make the settings with reference to the following explanation.

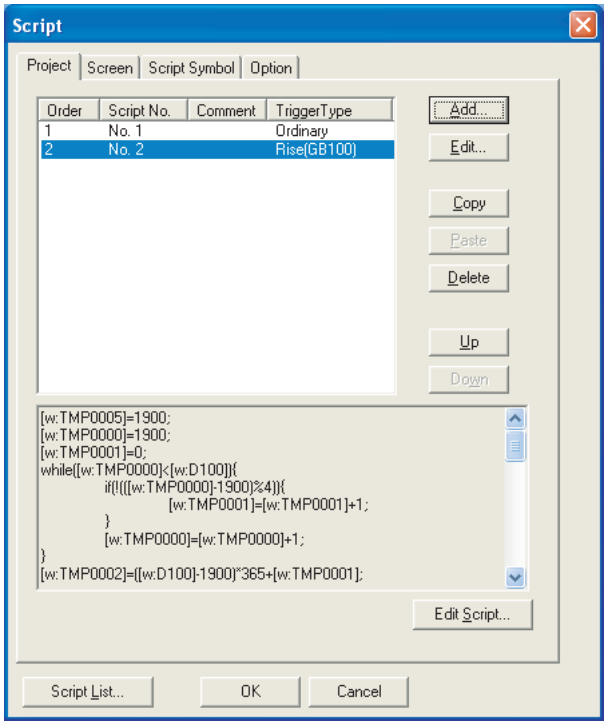
**Remark** When making the setting on the project work space.

The setting dialog box can be displayed by double-clicking on [Script] on the project work space.

## 16.2.6 Setting items

### 1 Project tab

Set the Project script applicable for the whole projects.

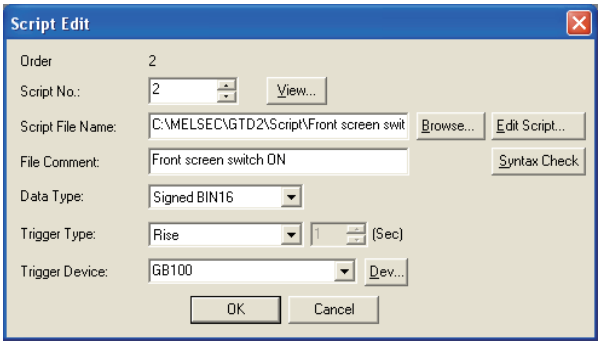



Project | Screen | Script Symbol | Option

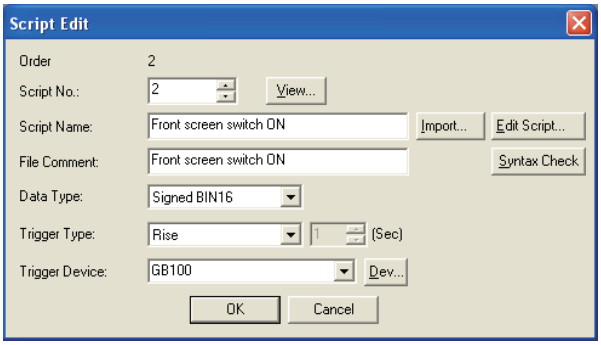
| Items | Description | Model |
|---|---|---|
| Script setting list | Display the set script settings in list format.<br>The script for the selected script setting is shown below the script setting list. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Add *1 | Adds a new script setting.<br>Click on this item to display [the Script Edit] dialog box.<br>The order of executing script functions will be set according to the order in which they are added. | |
| Edit *1 | Edits the selected script setting. | |
| Copy | Copies the selected script setting. | |
| Paste | Pastes the copied script setting to the last line of the list. | |
| Delete | Deletes the selected script setting. | |
| Up | Changes the order of executing selected script settings. | |
| Down | | |
| Edit Script | Used to edit the selected project script by the editor selected at [Select Script Editor] in the Option tab.<br>For details of the Option tab and script editor, refer to the following.<br>☞ • Option tab - - - - - - - - -This section 4 Option tab<br>• Script Editor - - - - - - - -This section 1 Project tab | |
| Script List | Displays the registered script in list format.<br>Script can be added, registered and edited on the list.<br>(☞ This section 5 Script list) | |

For details of *1, refer to the following.

## *1 Script Edit




(When [External File] is selected in the Option tab)




(When [Project Data] is selected in the Option tab)

| Items | Description | Model |
|---|---|---|
| Order | Display the order of the script under editing. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Script No. | Register the script No. for the current script which is being edited.<br>Click on the [View] button to confirm the registration No. of other script files.<br>(☞ This section 5 Script list) | |
| Script File Name<br>(When [External File] is selected in the Option tab) | Display the drive and folder that include the script file to be executed.<br>If the script file is not registered, click on the [Browse] button to specify the script file to be executed. | |
| Script Name<br>(When [Project Data] is selected in the Option tab) | Set the name of the script to be executed.<br>Click on the [Import] button and the script edited in a text file is read out to GT Designer2.<br>When importing the script file, the file name with the extension (".TXT") eliminated from the script file name is displayed at [Script Name]. | |
| Edit Script | Used to edit the script selected by [Script File Name] or [Script Name] using the editor selected at [Select Script Editor] in the Option tab.<br>For details of the Option tab and script editor, refer to the following.<br>☞ • Option tab - - - - - - - - -This section 4 Option tab<br>• Script editor - - - - - - - -This section 1 Project tab | |
| File Comment | Input the comment of the script being edited. | |
| Syntax Check | Checks the validity of the syntax for the script selected in [Script File Name].<br>The applicable device type and device range are also checked.<br>(☞ Section 16.4.2 Message displayed during syntax check) | |
| Data Type | Select the data type of script to be executed.<br>Signed BIN 16/32 : Treats script data as 16/32 bits signed binary value.<br>Unsigned BIN 16/32 : Treats script data as 16/32 bits unsigned binary value.<br>BCD 16/32 : Treats script data as 16/32 bits BCD (binary coded decimal) value.<br>Real : Treats script data as floating decimal point real number. | |
| Trigger Type | Select the trigger for operating the script.<br>When [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the cycle (1 to 3600 s) in 1-second unit. *2<br>(☞ Section 5.5 Trigger Setting)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • ON Sampling • OFF Sampling | |
| Trigger Device | When [ON], [OFF], [Rise], [Fall], [ON Sampling] or [OFF Sampling] is selected, click on the [Dev...] button to set the device to be used for the trigger.<br>(☞ Section 5.1 Device Setting) | |

For details of *2, refer to the following.

*2 Update timing when the trigger type is set to [Sampling], [ON Sampling] or [OFF Sampling]

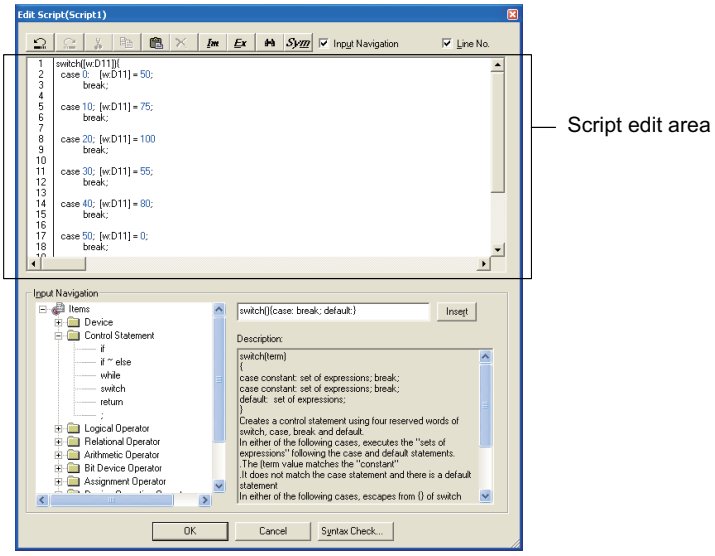
The sampling cycle counting is started when the trigger condition is satisfied.
When the trigger type is set to [ON Sampling] and the sampling cycle is set to 10 seconds, for example, the script will be executed 10 seconds after the device set at [Trigger Device] turns on. (When the trigger device turns off after 10 seconds, the script will not be executed.)
When the trigger condition is not satisfied, counting of the sampling cycle will be reset.

**Hint!**

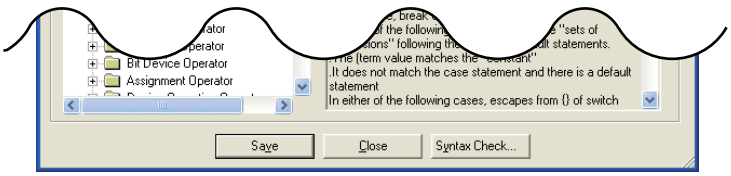
(1) Script file name
A file name of a script file (excluding extension ".TXT") must be within 32 characters independent of the character type (1-byte character or 2-byte character).
The file name is used for [Script Name] when converting the script data with [Project Data] selected in the Option tab.
If a specified file name is longer than 32 characters, the first 32 characters are taken for the file name and the rest are disregarded.

(2) [Script Name]
Set a unique script name.
The script name set at [Script Name] is used as the script file name when converting the file with [External File] selected in the Option tab.
Therefore, if the script name already existing is assigned, it is necessary to change the file name.

(1) Script editor
The script editor is used for editing and importing/exporting scripts.




(When [Project Data] is selected in the Option tab)




(When [External File] is selected in the Option tab)

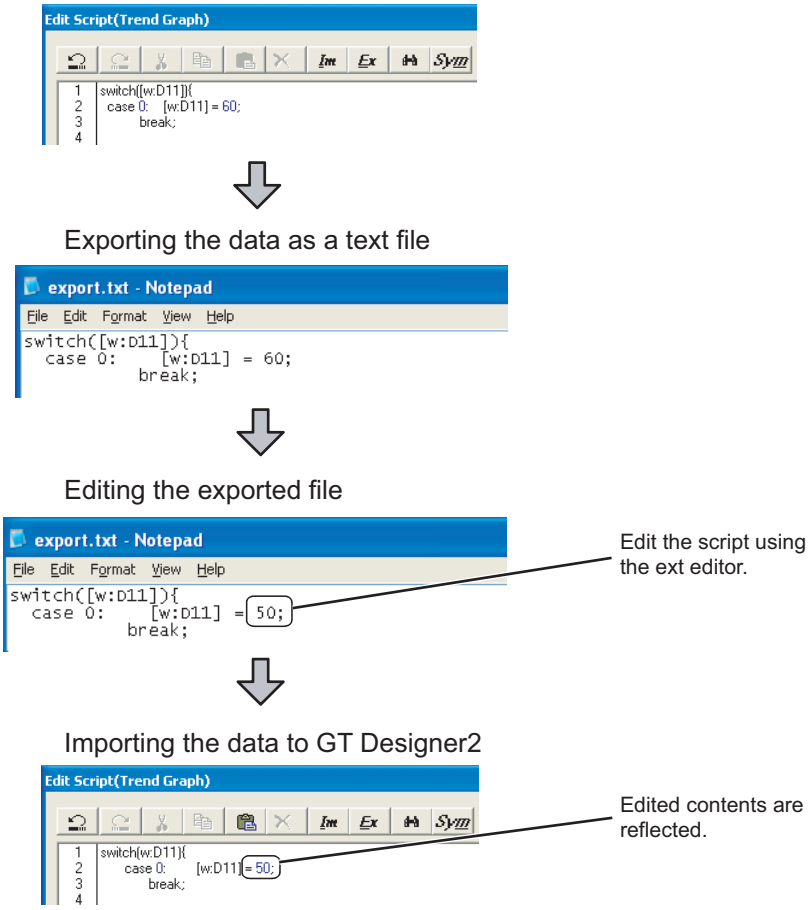
| Items | Description | Model |
|---|---|---|
| Script edit area | Scripts can be edited directly.<br>(Undo) : Returns the script edit operation one step.<br>(Redo) : Redoes returned operation.<br>(Cut) : Cuts the selected character string.<br>(Copy) : Copies the selected character string.<br>(Paste) : Pastes the copied or cut character string.<br>(Delete) : Deletes the selected character string.<br>(Import) : Reads out the script edited in a text file to GT Designer2. *1<br>(Export) : Saves the script edited by GT Designer2 in a text file. *1<br>(Search) : Displays the search dialog box.<br>Input the search target texts and click the Find Next button after selecting the search direction (upward/downward), and the input texts are searched for.<br>(Symbol) : Set script symbols. *2<br>Input Navigation : Checking this item displays [Input Navigation] in the Edit Script dialog box.<br>Line No. : Checking this item displays the line numbers in the script. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Save<br>(When [External File] is selected in the Option tab) | Overwrites the script file with the project script and save it. | |
| Close<br>(When [External File] is selected in the Option tab) | Closes the script editor. | |
| Input Navigation | Functions, devices, etc. that are inserted to a script can be selected from the tree.<br>An example of how to used [Input Navigation] is shown below.<br>This section 1 (1) (a) Use example of input navigation | |
| Syntax Check | Checks the syntax, device type and device range.<br>(Section 16.4.2 Message displayed during syntax check) | |

For details of *1, *2, refer to the following.

*1 Import / export

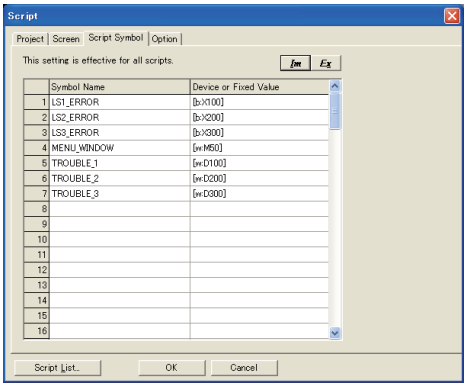
Even if a script is stored in the project data, the exported text file can be used for simulating the operation using a commercially-available general-purpose C compiler and editing the script using a commercially-available text editor.
The edited text file can be imported to GT Designer2 to be read.

Example: When editing the script data stored in the project data using a commercially-available text editor



*2 Script symbols

A script can be described using a character string, instead of a device or fixed value.
This is possible by setting a device or fixed value to each character string in the Script Symbol window
(Even when a character string is described in the script, the script operates on GOT.)
This setting is valid to project scripts and screen scripts.

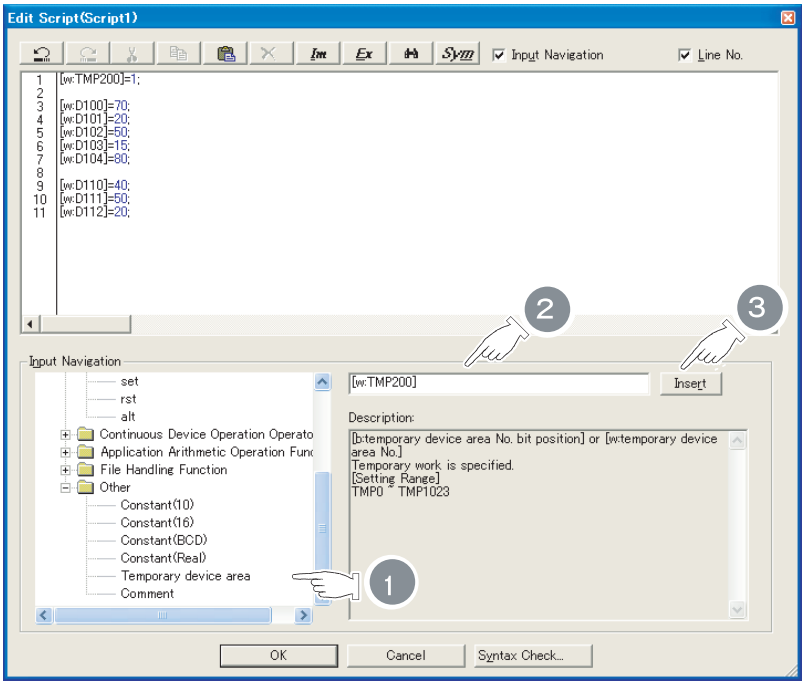



| Items | Description |
|---|---|
| Symbol Name | Setting contents are the same as that made in the Script Symbol tab.<br>For details of the setting, refer to the following.<br>☞ This section 3 Script symbol tab |
| Device or Fixed Value | |
| Im (Import) | |
| Ex (Export) | |

(a) Use example of input navigation

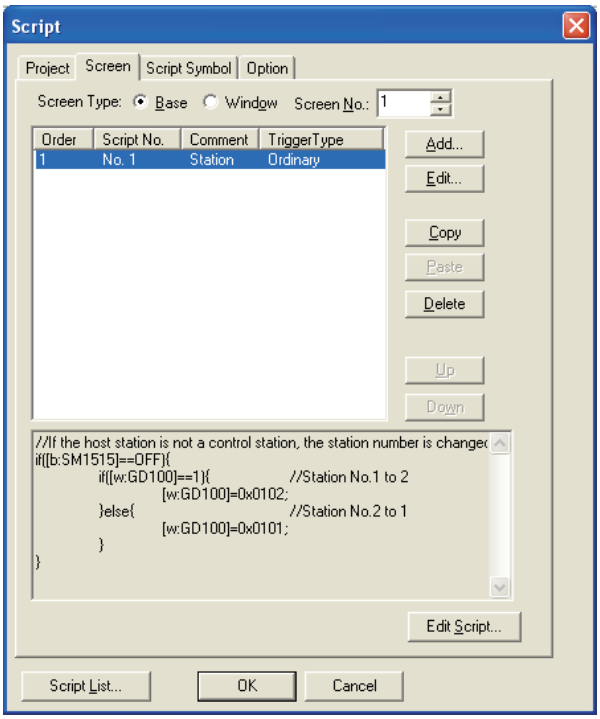
How the input navigation is used is explained below using an example of inserting an assignment statement of the temporary device area to a script.

1. Select [Items] → [Other] → [Temporary device area] from the tree.
2. Edit the temporary device area number, assignment operator, etc. referring to [Description].
3. Click the Insert button, and the assignment statement in the temporary device area is inserted to the cursor position in the [Script edit area].



## 2 Screen tab

Set the Screen script to be executed for each screen.




Project | **Screen** | Script Symbol | Option

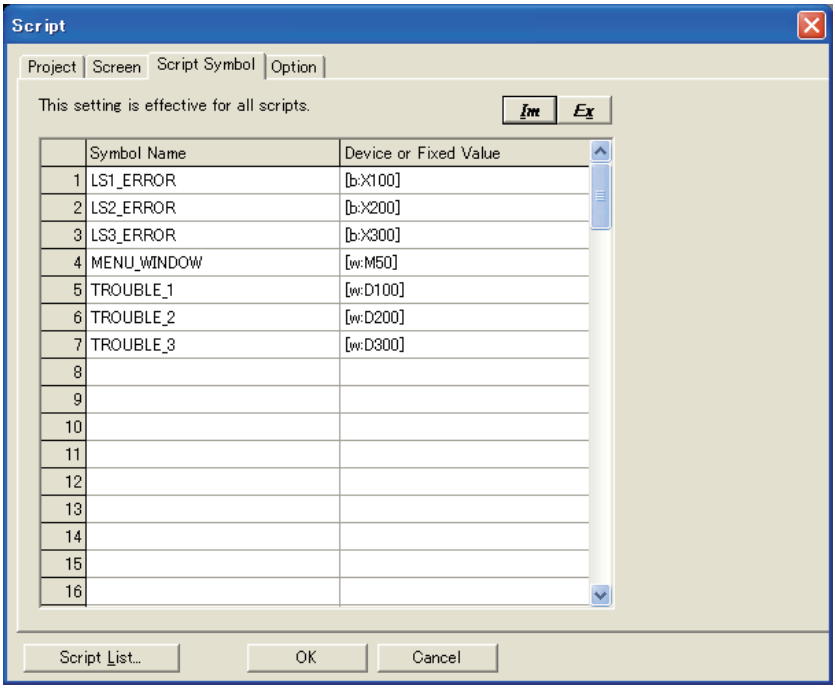
| Items | Description | Model |
|---|---|---|
| Screen Type | Set the screen (Base/Window) on which the script function will operate and the screen No. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Script setting list | Displays the set script settings in list format.<br>The script for the selected script setting list is shown below the script setting list. | |
| Add *1 | Adds a new script setting.<br>Click on this item to display [the Script Edit] dialog box.<br>The order of executing script functions will be set according to the order in which they are added. | |
| Edit *1 | Edits the selected script setting. | |
| Copy | Copies the selected script setting. | |
| Paste | Pastes the copied script setting to the last line of the list. | |
| Delete | Deletes the selected script setting. | |
| Up | Changes the order of executing selected script settings. | |
| Down | | |
| Edit Script | Used to edit the selected screen script using the editor selected at [Select Script Editor] in the Option tab.<br>For details of the Option tab and script Editor, refer to the following.<br>☞ • Option tab - - - - - - - - -This section 4 Option tab<br>• Script editor - - - - - - - -This section 1 Project tab | |
| Script List | Displays the registered script in list format.<br>Script can be added, registered and edited on the list.<br>(☞ This section 5 Script list) | |

For details of *1, refer to the following.

☞ This section 1 *1 Script Edit

## 3 Script symbol tab

A script can be described using the character string, instead of the device or fixed value.
This method is available by setting a device or fixed value to each character string in this tab screen.
(Even when a script is described using character strings, the scrip operates on GOT.)
This setting is made for Project script and Screen script.




Project | Screen | **Script Symbol** | Option

| Items | Description | Model |
|---|---|---|
| Symbol Name | Input the character string to be described in script (Up to 32 characters).<br>Up to 100 words can be set.<br>"#" cannot be used. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Device or Fixed Value | Input the device or character string for the symbol name, i.e., character string (Up to 32 characters).<br>Up to 100 words can be set. | |
| Im (Import)*1 | Reads out the script symbol settings that have been edited in a CSV file / Unicode text file to GT Designer2. | |
| Ex (Export)*1 | Saves the script symbol settings that have been set by GT Designer2 as a CSV file / Unicode text file. | |
| Script List | Displays the registered script in list format.<br>Script can be added, registered and edited on the list.<br>(☞ This section 5 Script list) | |

For details of *1, refer to the following.

*1 Import/Export

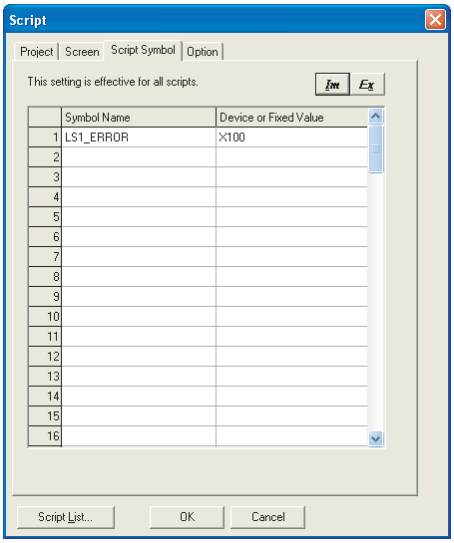
The exported CSV file can be edited using such as the spreadsheet software.
The CSV file, after editing, can be imported to and opened by GT Designer2.

**Point**

Editing exported files

When "0" is used as the first character of symbol names and device or field values, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
Pay attention to the above for editing exported files.

Example: Importing and exporting in CSV file




Exported in CSV file

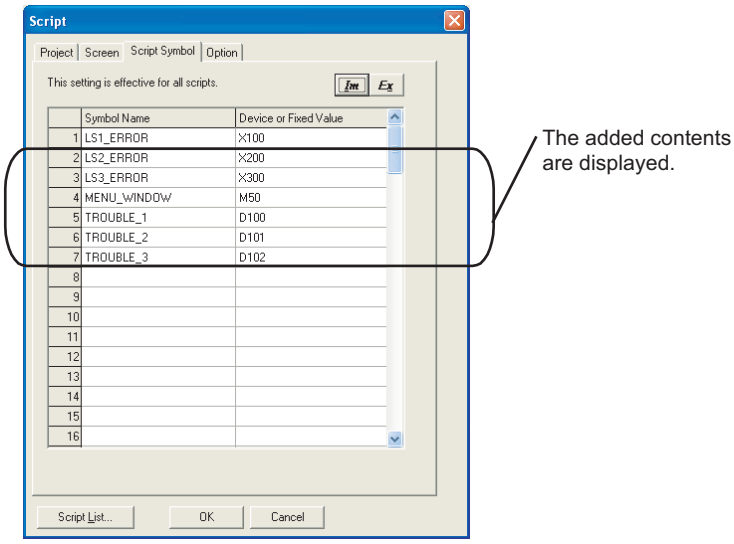
| | | |
|---|---|---|
| 1 | LS1_ERROR | X100 |

Editing the exported file

| | | |
|---|---|---|
| 1 | LS1_ERROR | X100 |
| 2 | LS2_ERROR | X200 |
| 3 | LS3_ERROR | X300 |
| 4 | MENU_WINDOW | M50 |
| 5 | TROUBLE_1 | D100 |
| 6 | TROUBLE_2 | D101 |
| 7 | TROUBLE_3 | D102 |

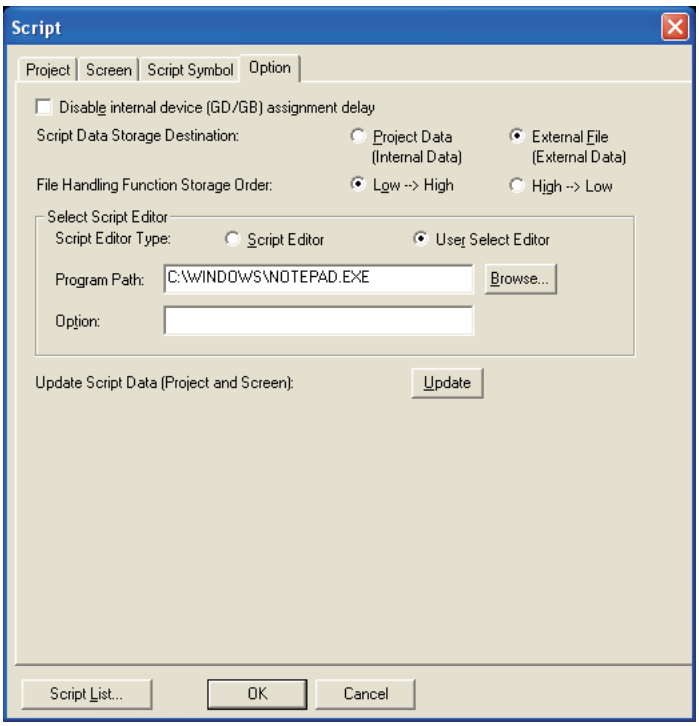
Add the setting using applications such as Microsoft® Excel.

Importing to GT Designer2



## 4 Option tab

Set the script data storing area, the text editor used for editing a script and the processing when an internal device is used.




Project | Screen | Script Symbol | **Option**

| Items | Description | Model |
|---|---|---|
| Disable internal device (GD/GB) assignment delay | Check this item to avoid substitution delay, which occurs when Project script or Screen script is used, by using the GOT internal device (GD, GB).<br>Refer to the following for cautions about substitution delay.<br>(☞ Section 16.1.2 5 Instructions for assignment delay) | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Script Data Storage Destination | Select the area where the script data of project scripts and screen scripts are stored.<br>Project Data : Stores the script data in the project data.<br>If the setting is changed from [External File] to [Project Data], the script data is converted from the script file to the project data. *1<br>External File : Stores the script data in the script file.<br>If the setting is changed from [Project Data] to [External File], the script data is converted from the project data to the script file. *2 | |
| File Handling Function Storage Order | Select an order of storing data with file_read or file_write.<br>[Low-->High] : Data are stored in the order of lower to upper data.<br>[High-->Low] : Data are stored in the order of upper to lower data. | |

(Continued to next page)

Project | Screen | Script Symbol | **Option**

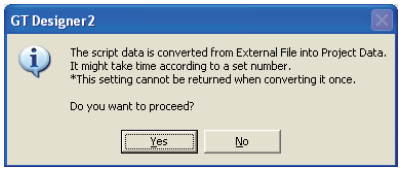
| Items | | Description | Model |
|---|---|---|---|
| Select Script Editor | | Select and set the editor used to edit project scripts and screen scripts. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| | Script Editor Type | Select the editor used to edit project scripts and screen scripts.<br>Script Editor : Select this item to use the built-in script editor of GT Designer2 to edit project scripts and screen scripts.<br>User Select Editor : Select this item to use the text editor specified by the user to edit project scripts and screen scripts.<br>Selection of [User Select Editor] is possible only when [External File] is selected for [Script Data Storage Destination]. | |
| | Program Path | When [User Select Editor] is selected for [Script Editor Type], specify the file (such as Notepad (NOTEPAD.EXE) or WordPad (WORDPAD.EXE) of Windows® ) used to open the text editor. | |
| | Option | Specify the options used on the text editor when [User Select Editor] is selected for [Script Editor Type]. | |
| Update Script Data (Project and Screen) | | Update the script data that is read by GT Designer2. | |
| Script List | | Displays the registered script in list format.<br>Script can be added, registered and edited on the list.<br>(☞ This section 5 Script list) | |

For details of *1, *2, refer to the following.

*1 Converting the script data from script file to project data

To convert the script data from script file to project data, follow the steps indicated below.

1. When the selection for [Script Data Storage Destination] is changed from [External File] to [Project Data], the dialog box as shown below is displayed.

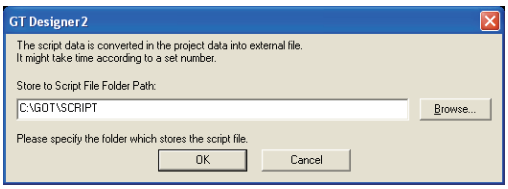



2. Click the [Yes] button and the script data is converted to the project data.

*2 Converting the script data from project data to script file

To convert the script data from project data to script file, follow the steps indicated below.

1. When the selection for [Script Data Storage Destination] is changed from [Project Data] to [External File], the dialog box as shown below is displayed.

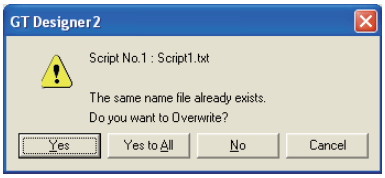



2. For [Store to Script File Folder Path], specify the folder where the script is saved.
3. Click the [OK] button, and the script data is converted to a script file.

**Point**

File name of the converted script file

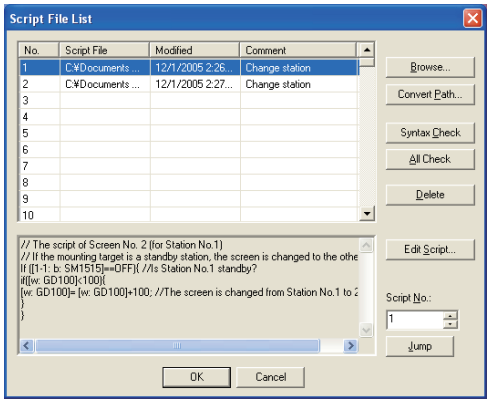
When the script data in the project data is converted to a script file, the script file name before conversion is used as the file name of the script file (extension is ".TXT").
If the script name already exists, the dialog box as shown below is displayed.



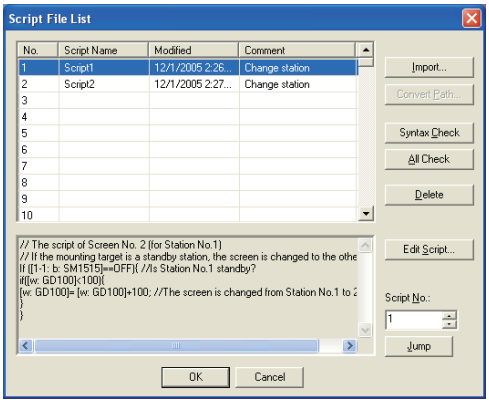

If the dialog box as above is displayed, click the [No] button and change the file name.

## 5 Script list

The registered scripts are displayed in a list, where scripts are added or edited.




(When [External File] is selected in the Option tab)



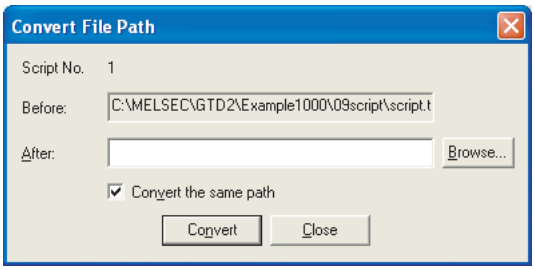

(When [Project Data] is selected in the Option tab)

| Items | Description | Model |
|---|---|---|
| Script List | Displays the registered scripts in a list (script file/script name *1, modified date and comment).<br>The script file specified in the [Script Edit] dialog box is reflected in this dialog box.<br>A comment can be directly input in the Comment column of the list.<br>The contents of the selected script are displayed in the area below the list. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Browse<br>(When [External File] is selected in the Option tab) | Registers the selected script. | |
| Import<br>(When [Project Data] is selected in the Option tab) | Reads out the script edited in a text file to GT Designer2. | |
| Convert Path *2<br>(When the selection in the Extended tab is [External File]) | Changes the path name of the selected script file.<br>Click on [Convert Path] button to specify the path name to be changed. | |
| Syntax Check | Checks the validity of the syntax for the selected script or all the registered script.<br>When an error occurs, the error line No. and its details are displayed.<br>The applicable device type and device range are also checked.<br>(☞ Section 16.4.2 Message displayed during syntax check) | |
| All Check | | |
| Delete | Deletes the selected script | |
| Edit Script | Used to edit the selected script using the editor selected at [Select Script Editor] in the Option tab.<br>For details of the option tab and script editor, refer to the following.<br>☞ • Option tab - - - - - - - - -This section 4 Option tab<br>• Script Editor - - - - - - - -This section 1 Project tab | |
| Jump | Makes the script set in [Script No.] selectable. | |

*1 When [External File] is selected in the Option tab, the path name is displayed. When [Project Data] is selected in the Option tab, the script name is displayed.

For details of *2, refer to the following.

*2 Convert File Path




| Items | Description |
|---|---|
| Before | Display the old path name of the script file. |
| After | Clicking on the Browse button to specify the path name of the script file after the conversion. |
| Convert the same path | Check this item to convert all the files that have the same path name except for the file to be changed. |

**Hint!**

Registered script path name

Register script file into the project data folder of GT Designer2. This will update the script path name automatically when the project data folder is moved to other drive/ path, which eliminates the necessity to modify the path name.

## 16.2.7 Program examples

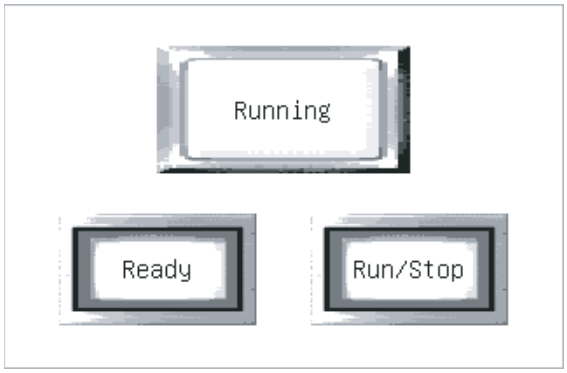
This section explains script program with examples.

### 1 Touch switches with interlock function

(1) Operation

When the Ready and Run/Stop keys turn ON, the Running lamp is lit.

The system operation is controlled synchronously with the Running lamp.

| Screen Image | Part Operation Definition |
|---|---|
|  | Running lamp : Indicates the operating status of the system.<br>Ready key : Acts as an interlock for the Run/Stop key.<br>Run/Stop key : Used to switch the operating status (run/stop) of the system. |

(2) Monitor screen settings

| Part Name | Object Type | Setting Item | Setting |
|---|---|---|---|
| Ready key | Touch key function (bit) | Monitor device | M0001 |
| | | Operation setting | Bit ALT |
| Run/Stop key | Touch key function (bit) | Monitor device | M0002 |
| | | Operation setting | Bit ALT |
| Running lamp | Lamp indication function (bit) | Monitor device | M0003<br>(System operation controlling device) |

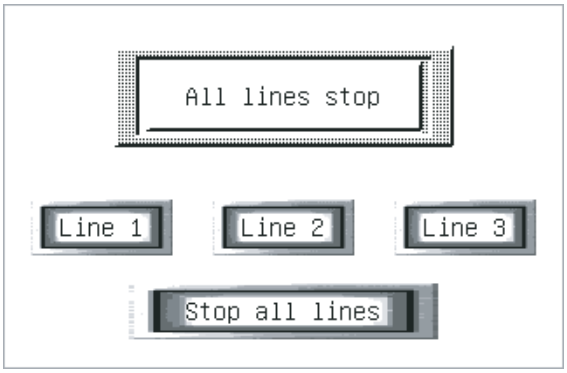
(3) Program example

| Item | Description |
|---|---|
| Data format | 16-bit, signed BIN |
| Trigger type | Ordinary |
| Script | if ([b: M0001]&[b: M0002]==1){ //if the ready and run/stop keys both turn ON<br>set([b: M0003]); //the running lamp is lit and the system starts operating.<br>}<br>else{ //if not<br>rst([b: M0003]); //the running lamp turns off and the system is stopped.<br>} |

## 2 Lamps which change the display attributes under multiple conditions

(1) Operation

The operation of each line is controlled with a touch key and the control statuses of three lines are represented by one lamp.

| Screen Image | Part Operation Definition |
|---|---|
|  | Control status lamp : The lamp color and comment are changed according to the operating statuses of the lines.<br>Line 1 key : Used to control the operation of line 1.<br>Line 2 key : Used to control the operation of line 2.<br>Line 3 key : Used to control the operation of line 3.<br>Stop all lines key : Used to stop all lines. |

(2) Monitor screen settings

| Part Name | Object Type | Setting Item | Setting |
|---|---|---|---|
| Control status lamp | Lamp display function (word) | Monitor device | D10 |
| | | Display method (word) | Display range : $V==0 Lamp color: 182<br>Text : All lines stop |
| | | | Display range : $V==1 Lamp color: 3<br>Text : Line 1 running |
| | | | Display range : $V==2 Lamp color: 224<br>Text : Line 2 running |
| | | | Display range : $V==3 Lamp color: 227<br>Text : Line 3 running |
| | | | Display range : $V==4 Lamp color: 28<br>Text : Lines 1, 2 running |
| | | | Display range : $V==5 Lamp color: 31<br>Text : Lines 1, 3 running |
| | | | Display range : $V==6 Lamp color: 252<br>Text : Lines 2, 3 running |
| | | | Display range : $V==7 Lamp color: 162<br>Text : Lines 1, 2, 3 running |
| Line 1 key | Touch key function (bit) | Monitor device | X1 |
| | | Operation setting | Bit ALT |
| Line 2 key | Touch key function (bit) | Monitor device | X2 |
| | | Operation setting | Bit ALT |
| Line 3 key | Touch key function (bit) | Monitor device | X3 |
| | | Operation setting | Bit ALT |
| Stop all lines key | Touch key function (bit) | Monitor device | X0 |
| | | Operation setting | Bit SET |

### (3) Program example

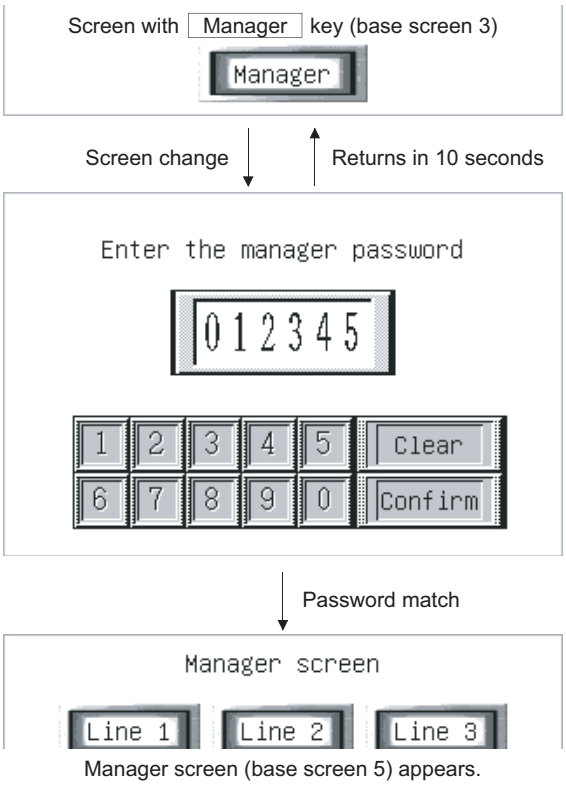
| Item | Description |
|---|---|
| Data format | 16-bit, signed BIN |
| Trigger type | Ordinary |
| Script | |

```
if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==OFF)){          //if line 1, 2 and 3 are all OFF
    [w:D10]=0;                                             //stores 0 into D10.
}

if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==OFF)){            //if line 1 is ON and line 2 and 3 are OFF.
    [w:D10]=1;                                             //stores 1 into D10
}

if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==OFF)){            //if line 2 is ON and line 1 and 3 are OFF.
    [w:D10]=2;                                             //stores 2 into D10
}

if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==ON)){            //if line 3 is ON and line 1 and 2 are OFF.
    [w:D10]=3;                                             //stores 3 into D10
}

if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==OFF)){             //if line 1 and 2 are ON and line 3 is OFF.
    [w:D10]=4;                                             //stores 4 into D10
}

if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==ON)){             //if line 1 and 3 are ON and line 2 is OFF.
    [w:D10]=5;                                             //stores 5 into D10
}

if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==ON)){             //if line 2 and 3 are ON and line 1 is OFF.
    [w:D10]=6;                                             //stores 6 into D10
}

if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==ON)){              //if line 1, 2 and 3 are ON.
    [w:D10]=7;                                             //stores 7 into D10
}

if ([b:X0]==ON){                                           //if all lines stop turns ON
    rst([b:X1]);                                           //turns OFF line 1.
    rst([b:X2]);                                           //turns OFF line 2.
    rst([b:X3]);                                           //turns OFF line 3.
    rst([b:X0]);                                           //turns OFF all lines stop.
}
```

## 3 Password input screen with time limit function

(1) Operation

The password enter screen returns to the previous screen if a correct password is not entered within 10 seconds after it appeared.

| Screen Image | Part Operation Definition |
|---|---|
|  <br>Manager screen (base screen 5) appears. | Manager button : Used to shift to the password enter screen (base screen 4).<br>Password enter : Password entered with 1 to 0 keys appears.<br>1 to 0 keys : Used to enter a value.<br>Clear key : Used to clear the entered value.<br>Confirm key : Used to confirm the entered value. |

(2) Monitor screen settings

| Part Name | Object Type | Setting Item | Setting |
|---|---|---|---|
| Manager button | Touch key function | Operation setting | Switching to base screen 4 |
| Password enter | Numerical input function | Monitor device | D10 |
| 1 key | Touch key function | Operation setting | Key code [0031H] |
| 2 key | Touch key function | Operation setting | Key code [0032H] |
| 3 key | Touch key function | Operation setting | Key code [0033H] |
| 4 key | Touch key function | Operation setting | Key code [0034H] |
| 5 key | Touch key function | Operation setting | Key code [0035H] |
| 6 key | Touch key function | Operation setting | Key code [0036H] |
| 7 key | Touch key function | Operation setting | Key code [0037H] |
| 8 key | Touch key function | Operation setting | Key code [0038H] |
| 9 key | Touch key function | Operation setting | Key code [0039H] |
| 0 key | Touch key function | Operation setting | Key code [0030H] |
| Clear key | Touch key function | Operation setting | Key code [0088H] |
| Confirm key | Touch key function | Operation setting | Key code [000DH] |

(3) Program example

| Item | Description |
|---|---|
| Data format | 16-bit, signed BIN |
| Trigger type | Ordinary |
| Script | if([b: GS1.01]==ON){ //only when the password input screen has appeared<br>[w: TMP0001]=[w:GS7]; //assigns GS7 to TMP0001.<br>}<br><br>if([w: D10]==3238){ //when the correct password is entered<br>[w:D0]=5; //switches to the manager screen (base screen 5).<br>[w: D10]=0; //clears the password.<br>}<br><br>if([w: GS7]-[w: TMP0001]>=10){ //if more than 10 seconds have elapsed after the password enter screen had appeared<br>[w: D0]=3; //returns to the screen with manager button (base screen 3).<br>} |

**Point**

About this program example.

This program example uses GOT special registers (GS).
The GOT special registers (GS) store the GOT's internal data, communication status, script error data and others.
A wide variety of operations can be achieved by correctly using the GOT special registers (GS) together with the script functions.
For details on GOT special registers (GS), refer to the following.

☞ Section 2.9.1 GOT internal devices

## 16.2.8 Precautions

This section provides the precautions for using Project script or Screen script.

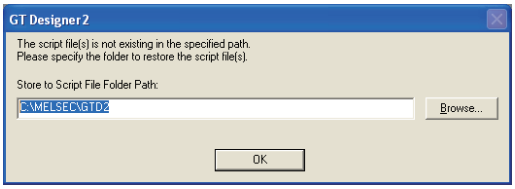
### 1 Precautions for drawing

(1) Number of script functions that can be set in one project/on one screen
Up to 256 script functions can be set.

(2) Number of script that can be registered
Up to 32767 script can be registered.

(3) When editing script
GT Designer2 cannot be operated while editing a script file by a script editor or a text editor after clicking the Edit Script button in the setting dialog box.
During script editing, GT Designer2 seems to have been frozen. The operation is restored when the script editor or text editor is exited.

(4) Restoration of a script file
When the project for which [External File] has been set in the Option tab is opened, if the script file does not exist in the set path, GT Designer2 restores the script file.
In this case, set the folder where a script file should be restored at the dialog box as shown below.



## 2 Precautions for writing a script

(1) Precautions for operations

Do not write a script that causes the operation result to exceed the allowable range of a device value.

Script operation is executed internally by double-precision real numbers.

Therefore, when judgment is made using such as an IF statement, results of judgment can differ depending on the operation method.

Example: Judgment for the difference between GD100 and D100 using an IF statement (for signed 16-bit BIN)
When GD100=-32758 and D100=32767

(a) When operation is executed in evaluation expression

```
if ( ( [w:GD100] - [w:D100] ) >= 10 ) { // If difference between GD100 and D100 is 10 or larger,
[w:D200] = 0; //"0" is written to D200.
}
```

The calculation result of "GD100 - D100" ("-32758" - "32767") is "-65525", meaning that the condition is not met.

(b) When processing the script after substitution

```
[w:GD200] = [w:GD100] - [w:D100]; // Substitutes the value of "GD100 - D100" to GD200.
if ( [w:GD200] >= 10) { // When the value of GD200 is 10 or larger,
[w:D200] = 0; //"0" is written to D200.
}
```

When "-65525" which is the calculation result of "GD100 - D100" ("-32758" - "32767") is substituted to GD200 in signed 16-bit BIN, GD200 becomes "10", meaning that the condition is met.

(Since a value that cannot be handled by a variable (device) is substituted as the result of operation, the result differs from that obtained in (a).)

(2) Precautions for using bmov and fmov instructions

(a) Data type

For using the bmov or fmov instructions, make sure that the data types for the word device 1 and the word device 2 are the same.

When the data types differ, errors occur with the syntax check.

☞ Section 16.2.6 Setting items

(b) Data type for [w:device]

The data type for [w:device] is set to the data type specified in the Script Edit dialog box.

For using [w:device] in the bmov or fmov instruction, make sure that the data types for the word device 1 and the word device 2 are the same.

Example: When setting [Signed BIN16] for the data type in the Script Edit dialog box

bmov([w:GD200],[flt:GD201],10);

Because the data type for GD200 is the signed BIN16 and the data type for GD201 is the real number, errors occur with the syntax check.

**Point**

Precautions for syntax check

When the syntax check is executed in the Script File List dialog box, the data type is processed as [Signed BIN16].

For executing the syntax check with the arbitrary data type, set the data type in the Script Editor dialog box, and then execute the syntax check in the dialog box of the script editor.

(3) Precautions for using file operation functions

(a) Data type

For using the file operation functions, do not specify BCD data for the data types of the storage devices.

Doing so cannot detect errors with the script.

(☞ Section 16.2.6 Setting items)

(b) Data type for [w:device]

The data type for [w:device] is set to the data type specified in the Script Edit dialog box.

For using [w:device] in any file operation function, do not specify BCD data for the data types of the storage devices.

**Point**

Precautions for syntax check

When the syntax check is executed in the Script File List dialog box, the data type is processed as [Signed BIN16].

For executing the syntax check with the arbitrary data type, set the data type in the Script Editor dialog box, and then execute the syntax check in the dialog box of the script editor.

(c) Operations while files are read or written

The following file operation functions cannot be executed while the target file is accessed with the other functions.

Execute the following functions after accessing the target file with the other functions is completed.

- During reading: file_read, file_write, file_delete
- During writing: file_read, file_write, file_rename, file_delete

(d) Precautions for using file rename function (file_rename)

When the full path to the file is specified in <folder name>, be sure to set <file name>.
Failure to do so cannot rename the file name correctly.

Example: When specifying full path to file in <folder name> without setting <file name>

```
[s16:D500] =file_rename("A:\\Project1\\ARP00001.DAT","","DATA-15-JAN-08.DAT");// Renaming file name
```

The folder name and file name are renamed from "A:\\Project1\\ARP00001.DAT" to "A:\\Project1\\ARP00001.DATDATA-15-JAN-08.DAT".

When the full path to the file is specified in <file name>, specify the full path to the file in <renamed file name>.
Failure to do so change the file name and the path.
Therefore, the file is stored in a different storage area.

Example: When specifying full path to file in <file name> without setting <folder name>

```
[s16:D500] =file_rename("","A:\\Project1\\ARP00001.DAT","DATA-15-JAN-08.DAT");// Renaming file name
```

The folder name and file name are renamed from "A:\\Project1\\ARP00001.DAT" to "A:\\DATA-15-JAN-2008.DAT".

(e) Precautions for using file copy function (file_copy)

- When no folder specified in <copy destination folder name> exists, a folder is created and the file is copied in the folder.
  Make sure to add "YY" to the end of <copy destination folder name>.
  Failure to do so copies the file with renaming the file to the folder name specified in <copy destination folder name>.

Example: When no folder specified in <copy destination folder name> exists and "YY" is not added to the end of <copy destination folder name>

```
[s16:D200] =file_copy("C:\\Project1\\ARP00001.DAT","A:\\backup","",1);//Copying file
```

When the "backup" folder does not exist in the A drive, "ARP00001.DAT" is copied in "A:YY" with renaming the file name to "backup".

- Do not create a folder with the same name as the file specified in <copy source file name> in the copy destination drive.
  Doing so cannot copy the file correctly.

(f) Precautions for using folder copy function (file_xcopy)

- When an error occurs during a copy process, the copy stops.
  For files copied before the copy stops, the copy processing is completed.
- Do not create a folder with the same name as the file specified in <copy source file name> in the copy destination drive.
  Doing so cannot copy the file correctly.

(g) How to use folder/file name character number specification functions (#pragma folder_name_length, #pragma file_name length)

Use the folder/file name character number specification functions only one time at the head of a script.
Failure to do so cannot specify folder/file names correctly.

(h) Precautions for specifying folder/file names with devices

Do not set values that exceed the numbers of actual folder/file name characters in the folder/file name character number specification functions (#pragma folder_name_length, #pragma file_name length).

For specifying folder/file names with devices, the GOT reads device data equivalent to the numbers of characters specified in the folder/file name character number specification functions.

When the values specified in the functions exceed the actual numbers of the file/folder name characters, the GOT reads unnecessary data.

Reading unnecessary data increases loads on communication processing. As a result, updating screens and executing scripts may take a longer time than those without reading unnecessary data.

Example: When maximum number of file name characters is set to 22 and number of actual file name characters is 16

D100 to D110 : Storing a folder name of "A:\\folder-001\\"

D200 to D210 : Storing a file name of "DATA-15-JAN-2008"

GD100 : Storage device

```
#pragma folder_name_length(22);        // Setting the maximum number of folder name characters to 22
#pragma file_name_length(22);          // Setting the maximum number of file name characters to 22
[s16:D500]=file_read([w:D100],[w:D200],[w:GD100],0,16);
                                       // Reading 16-byte data from the specified file
```

| | | | | | | |
|---|---|---|---|---|---|---|
| D100 | : | A | | D200 | A | D |
| D101 | \ | \ | | D201 | A | T |
| D102 | o | f | | D202 | 1 | - |
| D103 | d | l | | D203 | - | 5 |
| D104 | r | e | | D204 | A | J |
| D105 | 0 | - | | D205 | - | N |
| D106 | 1 | 0 | | D206 | 0 | 2 |
| D107 | \ | \ | | D207 | 8 | 0 |
| D108 | | | | D208 | | |
| D109 | | | | D209 | | |
| D110 | | | | D210 | | |

12-byte unnecessary data

## 16.2.9 Precautions for using bmov

If using the bmov instruction (many times) in Project script or Screen script to read device values from the controller into the GOT internal devices, this may cause the performance of the GOT display refresh and screen change by use of the touch switch to slow down considerably.
This Section provides guidelines for using the GOT in order to improve the monitoring performance by reducing the number of times to communicate with the controller using the bmov instruction.

**Point** How to read device values from controllers without bmov instruction

The GOT can read device values with the device data transfer function instead of the bmov instruction.
With the device data transfer function, the GOT communicates with controllers only when trigger conditions are met. Therefore, the GOT has no communication loads by always monitoring the device used for the script function.
For the device data transfer function, refer to the following.

☞ Section 11.4 Device Data Transfer Function

### 1 Reducing the communication time when using bmov instruction

With Project script or Screen script, the GOT only reads*2 a batch of device values from the controller direct address*1, regardless of script execution condition, or conditional 'if' or 'switch' statements.
Also, when using the bmov instruction to read devices from the controller, communication with the controller from the GOT is done one or more times for each instruction*2, depending on the amount of data.
Therefore, in order to reduce the communication time, it is recommend to read a batch of values from the source devices into a TMP (Temporary device area) area before transferring the data to the GOT internal devices.

*1 When device offset is specified, the offset device becomes the direct device address.
*2 The Screen script applies only to the currently displayed screen on the GOT.

The following counter measures should be taken into consideration.

(1) The batch of divided blocks are read from the controller to the GOT internal memory during one communication processing. The script is then customized as to split the batch of devices into separate blocks and transferred to the temporary device area and then to the GOT internal devices, such as GD.

☞This section 2 (1) Reading a batch of device values into temporary device area

(2) The batch of divided blocks (for each 'if' and 'switch' statement) are read from the controller to the GOT internal memory during one communication processing.
The script is then customized as to split the batch of devices according to the 'if' and 'switch' statements and transferred to the temporary device area and then to the GOT internal devices, such as GD.

☞This section 2 (2) Reading bmov in a batch of steps within a script

(3) When reading a batch of devices from the controller to the temporary device area, make sure the devices fall within the specified range, as shown in the table below.
If the number of words is greater than the specified reference, the number will be automatically divided and then transferred.

| Connected controller | Number of words transferred by bmov for each communication processing |
|---|---|
| QCPU (bus connection only) | 960 words |
| Motion controller CPU (Q mode) | |
| QCPU (other than bus connection) | 480 words |
| QnACPU | |
| Motion controller CPU (A mode) | |
| ACPU | 64 words |
| FXCPU | |

## 2 Script solution examples

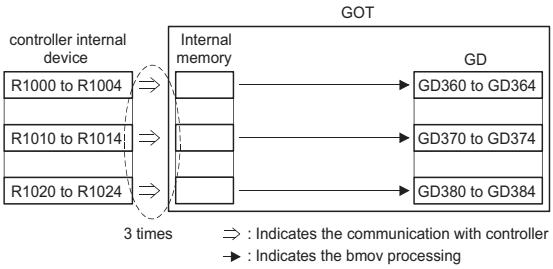
(1) Reading a batch of device values into temporary device area
This solution saves the communication time by reducing the communication between GOT internal memory and the controller down to just once, where it took 3 times to do the same processing before.
(When transferring from the temporary device area to GOT internal devices (e.g., GD), the internal memory*1 does not communicate with the controller.)

*1 System area used for communication processing. The user is not permitted access to this area.

[Normal process]

(a) Processing outline
Device values are transferred from R1000 to R1004, R1010 to R1014 and R1020 to R1024 into GD360 to GD364, GD370 to GD374 and GD380 to GD384, respectively.

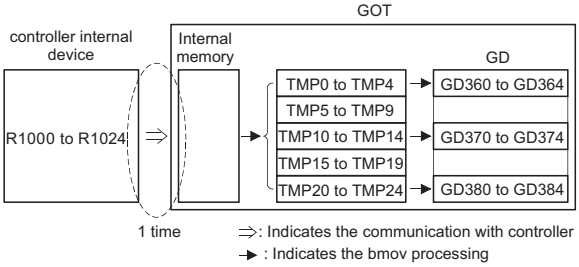
(b) Script description
bmov([w:R1000],[w:GD360],5);
bmov([w:R1010],[w:GD370],5);
bmov([w:R1020],[w:GD380],5);




[Solution applied]

(a) Processing outline
Device values are transferred from R1000 to R1024 into TMP0 to TMP24 within GOT at once. Then they are transferred from TMP0 to TMP24 into GD360 to GD364, GD370 to GD374 and GD380 to GD384, respectively, as shown below.

(b) Script description
bmov([w:R1000],[w:TMP0],25);
bmov([w:TMP0],[w:GD360],5);
bmov([w:TMP10],[w:GD370],5);
bmov([w:TMP20],[w:GD380],5);



(2) Reading bmov in a batch of steps within a script

This solution saves the communication time by reducing the communication between GOT internal memory and the controller to just once, where it took 10 times to do the same processing before. (When reading internal devices within the controller in 'if' or 'switch' statement, the internal memory communicates with the controller regardless of the execution condition. When transferring from the temporary device area to GOT internal devices (e.g., GD), the internal memory does not communicate with the controller.)

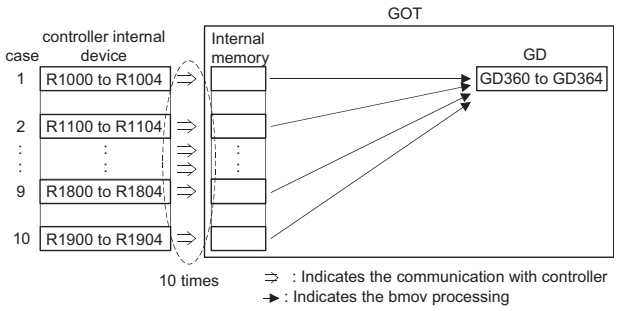
[Normal process]

(a) Processing outline

Device values are transferred from R1000 to R1004, ... and R1900 to R1904 into GD360 to GD364 depending on the amount of data.

(b) Script description

```
switch([w:D1000]){
    case 1:bmov([w:R1000],[w:GD360],5);
            break;
    case 2:bmov([w:R1100],[w:GD360],5);
            break;
        :
    case 9:bmov([w:R1800],[w:GD360],5);
            break;
    case 10:bmov([w:R1900],[w:GD360],5);
              break;
}
rst([b:GB1000]);
```



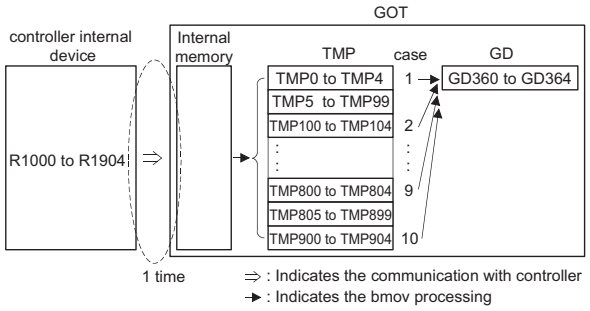

[Solution applied]

(a) Processing outline

A batch of device values is transferred from R1000 to R1904 into TMP0 to TMP904 within GOT once, and then it is transferred from TMP0 to TMP904 into GD360 to GD364 depending on the amount of data.

(b) Script description

```
bmov([w:R1000],[w:TMP0],905);
switch([w:D1000]){
    case 1:bmov([w:TMP0],[w:GD360],5);
            break;
    case 2:bmov([w:TMP100],[w:GD360],5);
            break;
        :
    case 9:bmov([w:TMP800],[w:GD360],5);
            break;
    case 10:bmov([w:TMP900],[w:GD360],5);
              break;
}
rst([b:GB1000]);
```



# 16.3 Object Script

This section describes object script that operates for each object.

## 16.3.1 Before setting

### 1 Object script types

Three types of object script are available as shown in (1) to (3) below.

(1) Input object script

Input object script is executed for objects where input numerical, etc.

(a) Target objects

Objects for which an input object script can be executed are shown below.

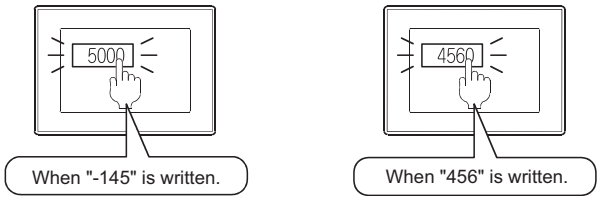
| Target objects | |
|---|---|
| Numerical input*1, | ASCII input*1 |

*1 Numerical input and ASCII input allow the execution of both input object scripts and display object scripts.

(b) Application examples

The value to be written to a device is changed according to the input value.

(☞ Section 16.3.7 1 Data calculation by numerical input script)



(2) Display object script

Display object script is executed for objects where display characters, lamps, etc.

(a) Target objects

Objects for which a display object script can be executed are shown below.

| Target objects | | | |
|---|---|---|---|
| Lamp display, | Numerical display, | Numerical input*1, | ASCII display, |
| ASCII input*1, | Clock display (Date display / Time display), | | Comment display, |
| Parts display, | Parts movement, | Panelmeter, | Level display, |
| Trend graph, | Line graph, | Bar graph, | Statistics graph, |
| Scatter graph | | | |

*1 Numerical input and ASCII input allow the execution of both input object scripts and display object scripts.

(b) Application examples

To notify that device value update is stopped, the script changes numerical value display color and makes it blink when a numerical value has not been updated for 5 seconds.

(☞ Section 16.3.7 2 To start blinking after the elapse of set time)

(3) Switch object script

Switch object script is executed for touch switch (multi-action switch only).

(a) Target object

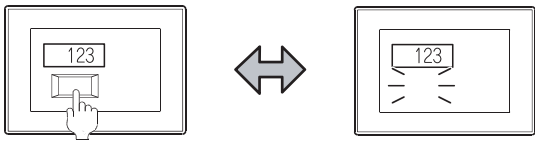
Object for which a switch object script can be executed is shown below.

| Target object |
|---|
| Touch switch (multi-action switch only) |

(b) Application examples

The script shows or hides a touch switch so that a switch can be touched only when the operation is necessary.

(☞ Section 16.3.7 3 Showing / hiding the input / touch operation object)



## 2 Object script functions

(1) Object internal variables

Object internal variables mean the variables allocated to inputs/outputs of an object, etc.
Using an object internal variable, it is possible to calculate a monitored device value of an object and display the results of calculation in the object.

For details of object internal variables, refer to the following.


- Object internal variable kinds . . . . . Section 16.3.2 1 (1) Object internal variables
- Use of object internal variables. . . . . Section 16.3.3 4 Object internal variables


(2) Object properties

For object properties, the settings of objects drawn by GT Designer2 can be read / changed (written).
It is possible to change object setting dynamically on the screen by changing object properties during monitoring.

For details of object properties, refer to the following.


- Reading / writing . . . . . Object script tab of each object
- Setting . . . . . Section 16.3.2 1 (2) Object properties
- Representation method . . . . . Section 16.3.3 5 Object properties


(3) Free figure drawing function

Figures (line, rectangle, circle, character, etc.), comments and others can be drawn on an object.
For the settings of free figure drawing function, refer to the following.

Section 16.3.2 2 (1) Free figure drawing

**Point**

Execution condition for the free figure drawing function not to execute drawing

To use the free figure drawing function, execute an object script with execution conditions other than those indicated below.
When executed the free figure drawing function using the execution conditions shown in the below, a figure is not drawn and any errors do not cause.

| Execution condition that do not invoke the free figure drawing function | | |
|---|---|---|
| • Key code input | • Input fixation | • Device write |

(4) Screen control function

The screen control function controls redrawing / erasing of screens and objects.
For the available kinds of screen control function, refer to the following.

Section 16.3.2 2 (2) Screen control

(5) Script user ID

A script user ID means an arbitrary number that is set to an object script.
If an error occurs with an object script, the script user ID of that object script is stored to a GOT special register (GS).

**Hint!** Setting a script user ID

By setting a unique value for script user ID of respective object scripts, it is possible to identify an object script involved with an error.

(6) Execution condition of scripts
An object script can be executed in response to object input / display or touching of a touch switch, according to the object script kind.
It is also possible to execute an object script using a trigger other than input/display of object or touch switch operation.
For the execution conditions of object scripts, refer to the following.

☞ Section 5.5 Trigger Setting

## 3 Execution conditions

An object script is executed when all of the triggers (1) to (4) below are satisfied.
It is not executed if any of these triggers is not satisfied.

(1) On GOT, the screen arranged a target object is displayed.
The screen arranged a target object must be displayed with a controller connected to GOT.

(2) The object is displayed / operating.
The target object must be displayed / operating.

(3) The object is not restricted by the security function of GOT.
When the security function is used, the object with an object script set in higher security level must not be restricted during display / operation.

(4) The execution condition of the script is established.
An object script can be executed when the execution condition set for it is established.
For details of execution conditions of scripts, refer to the following.

☞ Section 5.5 Trigger Setting

## 4 Execution units

Object scripts are executed in order in script units.
If the condition of multiple scripts are established, scripts are not executed simultaneously.

## 5 Execution sequence

Object scripts are executed in the order of object IDs.

## 6 Execution status

Object scripts execute the processing as indicated below depending on the script status.

| Script status | Processing |
|---|---|
| Waiting for turn | • A script waits for its processing turn in accordance with the execution sequence.<br>• When its turn has come, the script enters the "waiting for execution" status. |
| Waiting for execution | • Processing changes depending on the execution condition status.<br>Enabled : The target script enters the "execution" status.<br>Disabled : The target script enters the "waiting for run" status and the next script enters the "waiting for execution" status. |
| Execution | • When the execution of a script finishes, the processing result is written to the PLC CPU, and it enters the "waiting for run" status.<br>At the same time, the next script enters the "waiting for execution" status.<br>• If a fatal error occurs, execution of a script stops and the script enters the "stop" status. *1<br>• If an execution error occurs, execution of a script stops and the script enter the "waiting for run" status. *1 |
| Stop | • The script retains the "stop" status until the error history is cleared. |

*1 For details of fatal errors and execution errors, refer to the following.

Section 16.4.3 3 Error category of object script and operation at the occurrence of error

## 16.3.2 Control structure

An object script can use the control structure of project scripts / screen scripts (with exceptions of the following function) as well as the control structure explained in this section.

| Project script / screen script functions that cannot be used by object scripts | |
|---|---|
| Classification | Name |
| Successive device operation function | bmov |
| | fmov |

For the control structure of project scripts / screen scripts, refer to the following.

☞ Section 16.2.2 Control structure

For the control structure of object scripts, refer to the following.

☞ • This section 1 Variables and properties

• This section 2 Functions

### 1 Variables and properties

(1) Object internal variables

(a) Input object script

| Variable | Description | |
|---|---|---|
| $$ | Statement example | [w:D100] = $$ |
| | Function | References when processing a monitor device value by a script.<br>Substitution is not possible. |
| | Data format | Data type set at the script setting |
| | Point | Script execution is interrupted if "$$" is used before an object displays the monitor device value. (This does not cause an error.)<br>If an object is displaying a monitor device value when a succeeding script is executed, "$$" is read out. |
| $K | Statement example | [w:D100] = $K |
| | Function | References when processing the latest key code input from a touch key by a script.<br>Substitutes when writing a key code to an object. |
| | Data format | 16-bit unsigned BIN |
| | Hint | Gets 0xFFFF if referenced when a key code has not been input. |
| $W | Statement example | [w:D100] = $W |
| | Function | References when processing the value input with a fix touch key by a script.<br>Substitutes when writing a value to an object. |
| | Data format | Data type set at the script setting |
| | Hint | Gets 0 if referenced when an input has not been made using the Enter key. |

Some of object internal variable can be used by the combinations of object script / object / trigger type.
Usability of object internal variables is indicated below.

RW: Reference/substitution possible, R: Reference possible, W: Substitution possible, -: Cannot be used

| Object | Trigger Type | Variable | | | |
|---|---|---|---|---|---|
| | | $$ | $K | $W | $V |
| Numerical input | Ordinary, ON / OFF, Rise / Fall, Sampling, ON Sampling / OFF Sampling | R | - | - | - |
| | Key code input | R | RW | - | - |
| | Input fixation | R | - | RW | |
| ASCII input | Ordinary, ON / OFF, Rise / Fall, Sampling, ON Sampling / OFF Sampling | - | - | - | - |
| | Key code input | - | RW | - | - |
| | Input fixation | - | - | - | - |

(b) Display object script

| Variable | Description | |
|---|---|---|
| $$ | Statement example | [w:D100] = $$ |
| | Function | References when processing a monitor device value by a script.<br>Substitution is not possible. |
| | Data format | Data type set at the script setting |
| | Point | Script execution is interrupted if "$$" is used before an object displays the monitor device value. (This does not cause an error.)<br>If an object is displaying a monitor device value when a succeeding script is executed, "$$" is read out. |
| $V | Statement example | $V = [w:D100] |
| | Function | Reference is not possible.<br>Substitutes when changing a value to be displayed by an object. |
| | Data format | Data type set at the script setting |

Some of object internal variable can be used by the combinations of object script / object / trigger type.
Usability of object internal variables is indicated below.

RW: Reference/substitution possible, R: Reference possible, W: Substitution possible, -: Cannot be used

| Object | Trigger Type | Variable | | | |
|---|---|---|---|---|---|
| | | $$ | $K | $W | $V |
| Numerical display, numerical input, comment display, parts display, parts movement, lamp display, level display | Ordinary, Synchronize Display Trigger | R | - | - | W |
| | ON/OFF, Rise/Fall, Sampling, ON Sampling/OFF Sampling | R | - | - | - |
| | View Change | R | - | - | W |
| Lamp display, panel meter display | Ordinary | R | - | - | W |
| | ON/OFF, Rise/Fall, Sampling, ON Sampling/OFF Sampling | R | - | - | - |
| | View Change | R | - | - | W |
| ASCII display, ASCII input, clock display (date display, time display), trend graph, line graph, bar graph, statistics graph, scatter graph | Ordinary, ON/OFF, Rise/Fall, Sampling, ON Sampling/OFF Sampling, View Change, Synchronize Display Trigger *1 | - | | | |

*1 For a clock display (date display, time display), [Synchronize Display Trigger] cannot be set for [Trigger Type].

(c) Switch object script

| Variable | Description | |
|---|---|---|
| $W | Statement example | $W = [w:D100] |
| | Function | Reference is not possible.<br>Substitutes when a value processed by a script is used as the value to be written using a touch switch. |
| | Data format | Data type set using the script setting |

Some of object internal variable can be used by the combinations of object script / object / trigger type.
Usability of object internal variables is indicated below.

RW: Reference/substitution possible, R: Reference possible, W: Substitution possible, -: Cannot be used

| Object | Trigger Type | Variable | | | |
|---|---|---|---|---|---|
| | | $$ | $K | $W | $V |
| Touch switch<br>(multi-action switch only) | Ordinary, ON / OFF, Rise / Fall, sampling, ON sampling / OFF sampling, device write | - | - | W | - |

**Point**

Using object internal variables that cannot be confirmed by syntax check

Syntax check cannot check the use of internal variables indicated below

- Referencing an object internal variable that cannot be referenced
- Substituting an object internal variable that cannot be substituted

When creating a script, use an object internal variable correctly.

(2) Object properties

For the read / write correspondence of object properties, refer to the following.

☞Object script tab of respective objects

For the timing that the set object property is reflected to screen display, refer to the following.

☞ This section 1 (2) (a) Timing when the property changes are reflected to screen display

Object property list is indicated below.

| Property | Description | |
|---|---|---|
| active | Statement example | my.active = 1 |
| | Function | Specifies whether or not the object itself is updated.<br>"1" : Updates the object itself.<br>"0" : Does not update the object itself.<br>Object is not updated even if the display condition is established. |
| | Point | When "0" is specified before the object is displayed on the screen had been switched, the object itself is not displayed. |
| x | Statement example | my.x = 0 |
| | Function | Specifies the X coordinate of object itself move position in dots. (Range: "0" to "32767")<br>"0": Left end of the screen |
| | Point | For a parts movement object, this property is valid only when [Line] is selected for [Move Way] of [Movement Type] by GT Designer2. |
| | Hint | When a position out of the screen size is specified, the object itself is not displayed. |
| Y | Statement example | my.y = 0 |
| | Function | Specifies the Y coordinate of object move position in dots. (Range: "0" to "32767")<br>"0": Upper end of the screen |
| | Point | For a parts movement object, this property is valid only when [Line] is selected for [Move Way] of [Movement Type] by GT Designer2. |
| | Hint | When a position out of the screen size is specified, the object itself is not displayed. |
| width | Statement example | [w:D100] = my.width |
| | Function | Obtains the width of the object frame. (Range: "1" to "2000") |
| height | Statement example | [w:D100] = my.height |
| | Function | Obtains the height of the object frame. (Range: "1" to "1600") |
| decimal_point | Statement example | my.decimal_point = 1 |
| | Function | Specifies the number of digits after the decimal point. (Range: "0" to "32") |
| | Point | This property is enabled only when [Real] is selected for [Format] of [View Format] in the numerical display or numerical input setting. |

(Continued to next page)

| Property | Description |
|---|---|
| blink*2 | Statement example: my.blink = 0<br>Function: Specifies the blink interval and target.<br>"0" : Does not blink.<br>"1" : Blinks numerical values / characters (1 second intervals).<br>"2" : Blinks numerical values / characters (0.5 second intervals).<br>"3" : Blinks numerical values / characters (0.2 second intervals).<br>"128" : Does not blink.<br>"129" : Blinks numerical values / characters and a plate (1 second intervals).<br>"130" : Blinks numerical values / characters and a plate (0.5 second intervals).<br>"131" : Blinks numerical values / characters and a plate (0.2 second intervals).<br>(Designation of a number, "129" or later, is allowed only for numerical display / numerical input / ASCII display / ASCII input /comment display.)<br>Hint: Reading out my.blink after writing "128" causes the script to get "0". |
| highlight*2 | Statement example: my.highlight = 0<br>Function: Specifies highlighting of the object itself.<br>"0" : Does not highlight the object.<br>"1" : Highlights the object. |
| part_no*2 | Statement example: my.part_no = 1<br>Function: Specifies the part number of the part to be displayed.<br>(Range: "0" to "32767") |
| mark_color*2 | Statement example: my.mark_color = 255<br>Function: Specifies the color, to be changed from white, when a part is displayed as a mark.<br>(Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| frame_color | Statement example: [w:D100] = my.frame_color<br>Function: Gets the frame color. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| plate_color*2 | Statement example: my.plate_color = 255<br>Function: Specifies the plate color of a shape.<br>(Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| graph_color*2 | Statement example: my.graph_color = 255<br>Function: Specifies the color for specifies the Level Color/Needle Color of Needle/Fill Attribute. / level. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| back_color*2 | Statement example: my.back_color = 0<br>Function: Specifies the color for specifies the background color/BG Color of Meter Panel Attribute. / background. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |

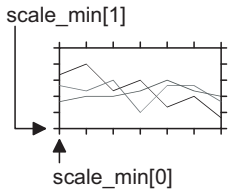
(Continued to next page)

| Property | Description |
|---|---|
| pattern*2 | Statement example: my.pattern = 1<br>Function: Specifies the pattern.<br>"0" : Does not use a pattern.(Must not be used when panelmeter is used.)<br>"1" : , "2" : , "3" : , "4" : ,<br>"5" : , "6" : , "7" : , "8" : ,<br>"9" : , "10" : , "11" : , "12" : ,<br>"13" : , "14" : , "15" : , "16" : ,<br>"17" : , "18" : , "19" : , "20" : ,<br>"21" : , "22" : , "23" : , "24" : ,<br>"25" : , "26" : , "27" : , "28" : ,<br>"29" : , "30" : , "31" : , "32" : ,<br>"33" : , "34" : , "35" : , "36" : ,<br>"37" : |
| pattern_bg_color | Statement example: my.pattern_bg_color = 255<br>Function: Specifies the Fill Color of Meter Panel Attribute. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| fill_color | Statement example: my.fill_color = 255<br>Function: Specifies the Fill Color of Needle/Fill Attribute. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| fill_bg_color | Statement example: my.fill_bg_color = 255<br>Function: Specifies the BG Color of Needle/Fill Attribute. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| fill_pattern | Statement example: my.fill_pattern = 1<br>Function: Specifies the Pattern of Needle/Fill Attribute. (Range: "1" to "37")<br>"0" : Must not be used.<br>"1" : , "2" : , "3" : , "4" : ,<br>"5" : , "6" : , "7" : , "8" : ,<br>"9" : , "10" : , "11" : , "12" : ,<br>"13" : , "14" : , "15" : , "16" : ,<br>"17" : , "18" : , "19" : , "20" : ,<br>"21" : , "22" : , "23" : , "24" : ,<br>"25" : , "26" : , "27" : , "28" : ,<br>"29" : , "30" : , "31" : , "32" : ,<br>"33" : , "34" : , "35" : , "36" : ,<br>"37" : |
| core_color | Statement example: my.core_color = 255<br>Function: Specifies the Fill Color of Core Attribute. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |

(Continued to next page)

| Property | Description |
|---|---|
| core_bg_color | Statement example: my.core_bg_color = 255<br>Function: Specifies the BG Color of Core Attribute. (Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| core_pattern | Statement example: my.core_pattern = 1<br>Function: Specifies the Pattern of Core Attribute. (Range: "1" to "37")<br>"0" : Must not be used.<br>"1" : , "2" : , "3" : , "4" : ,<br>"5" : , "6" : , "7" : , "8" : ,<br>"9" : , "10" : , "11" : , "12" : ,<br>"13" : , "14" : , "15" : , "16" : ,<br>"17" : , "18" : , "19" : , "20" : ,<br>"21" : , "22" : , "23" : , "24" : ,<br>"25" : , "26" : , "27" : , "28" : ,<br>"29" : , "30" : , "31" : , "32" : ,<br>"33" : , "34" : , "35" : , "36" : ,<br>"37" : |
| text_color*2 | Statement example: my.text_color = 255<br>Function: Specifies the color of numbers / characters to be displayed.<br>(Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| text_width | Statement example: my.text_width = 1<br>Function: Specifies the scaling factor (width) of numbers and characters the object itself displays.<br>"0" : 0.5 times<br>"1" to "8" : 1 to 8 times<br>Hint: For HQ characters, designation of only "2", "4", 6" and "8" is possible. |
| text_height | Statement example: my.text_height = 1<br>Function: Specifies the scaling factor (height) of numbers and characters the object itself displays.<br>"0" : 0.5 times<br>"1" to "8" : 1 to 8 times<br>Hint: For HQ characters, designation of only "2", "4", 6" and "8" is possible. |
| arrange | Statement example: my.arrange = 1<br>Function: Selects the arranging type of character strings in multiple lines.<br>"0" : Left flush<br>"1" : Right flush<br>"2" : Centering<br>AAAA BB CCCC — Left flush; AAAA BB CCCC — Right flush; AAAA BB CCCC — Centering |
| scale_max[0], scale_max[1]*1 | Statement example: my.scale_max[0] = 255<br>Function: Specifies the upper limit value of scale.<br>scale_max[0] and scale_max[1] specify the upper limit value in the horizontal direction and that in the vertical direction, respectively.<br>(Range: Range of the monitor devices)<br>scale_max[1] → scale_max[0] |

(Continued to next page)

| Property | Description |
|---|---|
| scale_min[0], scale_min[1]*1 | Statement example: my.scale_min[0] = 0<br>Function: Specifies the lower limit value of scale. scale_min[0] and scale_min[1] specify the lower limit value in the horizontal direction and that in the vertical direction, respectively.<br>(Range: Range of the monitor devices)<br>  |
| security | Statement example: my.security = 0<br>Function: Sets the security level of an object.<br>(Range: "0" to "15")<br>Hint: For the object that allows the setting of security level for both input and display, this sets the security level for display. |
| input_security | Statement example: my.input_security = 0<br>Function: For the object that allows the setting of security level for both input and display, this sets the security level for input. (Range: "0" to "15") |
| draw_mode | Statement example: my.draw_mode = 0<br>Function: Specifies the drawing mode<br>• For numerical and comment display<br>"0" : Transparent<br>"1" : XOR<br>• For parts display<br>"0" : Replace<br>"1" : XOR<br>"2" : Overwrite<br>Setting for the draw mode is the same as with the setting at the setting dialog box of GT Designer2. |
| delay | Statement example: my.delay = 5<br>Function: Specifies the delay time in unit of second, for the object itself takes an action after the touch.<br>(Range: "0" to "5")<br>If "0" is set, the object itself takes an action immediately after the touch. |
| beep | Statement example: my.beep = 0<br>Function: Specifies beep length and timing.<br>"0" : One shot<br>"1" : One short (only when the execution condition is established)<br>"2" : No beeps<br>"128" : While a key is pressed<br>"129" : While a key is pressed (only when the execution condition is established) |

*1 For the object indicated below, only scale_max[0]/scale_min[0] can be specified.
Designation of scale_max[1]/scale_min[1] is not allowed.
• Panelmeter

*2 When an object has multiple conditions, including the ON/OFF state of the bit and the state, the object property is reflected only for the normal case (when the bit is off or the state is set to "0").
When the bit is on or the state is set to any other than "0", the object property is not reflected.

**Point**

Valid duration of changed object property

Changes of the object property are retained until executing the operation below.

- Turning ON/OFF or resetting of GOT
- Downloading of project data

(a) Timing when the property changes are reflected to screen display

After the setting of an object property, the setting is reflected to the screen display in any of the timings 1 to 5 indicated below.

1. The display changes to the specified one at the same time changed the object property.
2. The specified action is executed at the next action after changing the object property.
3. The display/action changes to the specified one at any of the timing indicated below.
   - The timing when redraw_object() is executed (☞ This section 2 (2) Screen control)
   - The timing when the display condition / execution condition of the object itself is established
4. The display/action changes to the specified one at any of the timing indicated below.
   - The timing when redraw_screen() is executed (☞ This section 2 (2) Screen control)
   - The timing when switching screen is executed
5. The display/action changes to the specified one at any of the timing indicated below.
   - The timing when redraw_object() / redraw_screen() is executed

     (☞ This section 2 (2) Screen control)
   - The timing when switching screen is executed

The timing (1 to 5) when changing the object script is reflected to the screen display varies depending on the object and object property kind.
For the correspondence between the object and object property kind, and the reflection timing, refer to the following.

☞Object property tab of respective objects

**Hint!**

(1) Use of redraw_object()

To reflect the setting of multiple object properties to the screen by specifying redraw_object(), use one redraw_object() for multiple object properties to reduce the number of times the objects are redrawn.

```
my.text_height=2;
redraw_object();
my.arrange=1;
redraw_object();
```

⇨

```
my.text_height=2;

my.arrange=1;
redraw_object();
```

(2) Display / action until the setting is reflected to the screen display

An object may not be displayed or fail to act correctly until the setting is reflected to the screen.

## 2 Functions

(1) Free figure drawing

For the arguments of the free figure drawing function, refer to the following.

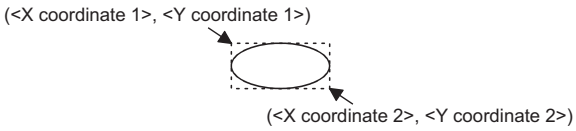
☞ This section 2 (1) (a) Argument

| Functions | Description | |
|---|---|---|
| d_line | Statement example | d_line(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>) |
| | Function | Draws a line. |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| d_rectangle | Statement example | d_rectangle(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>) |
| | Function | Draws a rectangle. |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| d_circle | Statement example | d_circle(<X coordinate>, <Y coordinate>, <Radius>, <Line type>, <Line width>, <Line color>) |
| | Function | Draws a circle. |
| d_ellipse | Statement example | d_ellipse(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>) |
| | Function | Draws an ellipse. |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| p_rectangle | Statement example | p_rectangle(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>, <Pattern>, <Pattern color>, <Pattern background color>) |
| | Function | Draws a rectangle (fill). |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| p_circle | Statement example | p_circle(<X coordinate 1>, <Y coordinate 1>, <Radius>, <Line type>, <Line width>, <Line color>, <Pattern>, <Pattern color>, <Pattern background color>) |
| | Function | Draws a circle (fill). |
| p_ellipse | Statement example | p_ellipse(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>, <Pattern>, <Pattern color>, <Pattern background color>) |
| | Function | Draws an ellipse (fill). |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| d_textout | Statement example | d_textout(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Character X scaling factor>, <Character Y scaling factor>, <Character attribute>, <Character color>, <Character shadow color>, <Characters>) |
| | Function | Draws characters. |
| | Hint | Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |

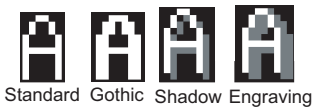
(Continued to next page)

| Functions | Description |
|---|---|
| d_commentout | Statement example: d_commentout(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Character X scaling factor>, <Character Y scaling factor>, <Character attribute>, <Comment group No.>, <Comment No.>)<br>Function: Displays a comment in a comment group.<br>Hint: Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>). |
| screen_draw | Statement example: screen_draw(<screen draw flag>)<br>Function: Specifies the area in which drawing is executed by the free figure drawing function.<br>Hint: If the drawing area is not specified by screen_draw, drawing is executed in the object area.<br>Object drawing area is the same as the data list of GT Designer2. |

(a) Argument

| Argument | Description |
|---|---|
| <X coordinate 1>,<Y coordinate 1><br><X coordinate 2>,<Y coordinate 2> | Specifies the area (the area defined by two points of (<X coordinate 1>,<Y coordinate 1>) and (<X coordinate 2>,<Y coordinate 2>) in which a figure is drawn in dots. (Range: "-32768" to "32767")<br>(0, 0) indicates the coordinates of the upper left position of an object.<br>Example: Ellipse (d_ellipse())<br>  <br> |
| <X coordinate>, <Y coordinate> | Specifies the coordinates of the center of a figure in dots. (Range: "-32768" to "32767") |
| <Radius> | Specifies the radius of a circle in dots. (Range: "1" to "32767") |
| <Line type> | Selects the line type from those shown below.<br>"0" :<br>"1" :<br>"2" :<br>"3" :<br>"4" : |
| <Line width> | Specifies the line width in dots. (Range: "1" to "5" and "7") |
| <Line color>, <Character color>,<br><Pattern color>,<br><Pattern background color>,<br><Character shadow color> | Specifies the color of line / character / pattern / background of pattern / background of character by a code number.<br>(Range: "0" to "255")<br>The correspondence between colors and color code numbers is the same as that in the designation of figure colors by GT Designer2. |
| <Pattern> | Select the fill pattern from the following.<br>"1" : , "2" : , "3" : , "4" : ,<br>"5" : , "6" : , "7" : , "8" : ,<br>"9" : , "10" : , "11" : , "12" : ,<br>"13" : , "14" : , "15" : , "16" : ,<br>"17" : , "18" : , "19" : , "20" : ,<br>"21" : , "22" : , "23" : , "24" : ,<br>"25" : , "26" : , "27" : , "28" : ,<br>"29" : , "30" : , "31" : , "32" : ,<br>"33" : , "34" : , "35" : , "36" : ,<br>"37" :<br>The patterns above indicate the case where white and black are specified for the pattern color and pattern background color, respectively. |
| <Character X scaling factor >,<br><Character Y scaling factor > | Specifies the scaling factor of characters.<br>Specify "2", "4", "6" or "8" when HQ characters are set <Character attribute>.<br>Designation of "0" and "1" to "8" is allowed when HQ characters are not set.<br>If "0" is specified, scaling factor is 0.5.<br>A Character Y scaling factor<br>Character X scaling factor |

(Continued to next page)

| Argument | Description |
|---|---|
| <Character attribute> | Specifies the display attribute of characters.<br>The explanation below assumes binary notation. When specifying in a script, change the representation meeting the applicable notation of the script, such as hexadecimal number.<br><br>b12 \| b11 to 10 \| b9 \| b8 \| b7 \| b6 to 5 \| b4 to 3 \| b2 \| b1 to 0<br><br>b1 to b0 : Select the display type of characters.<br>These bits can be used only for d_textout().<br>Specify "00" (fixed) for other functions.<br>"00": Standard<br>"01": Bold<br>"10": Shadow<br>"11": Engraving<br>  <br>Standard Gothic Shadow Engraving<br><br>b2 : "0" (fixed)<br>b4 to b3 : Select the arranging type of character strings of multiple lines.<br>"00": Left flush<br>"01": Right flush<br>"02": Centering<br>"11": Reserved<br> <br>Left flush Right flush Centering<br><br>b6 to b5 : "0" (fixed)<br>b7 : Select whether or not HQ characters are used.<br>This bit can be used only for d_commentout().<br>Specify "0" (fixed) for other functions.<br>"0": Does not use HQ characters.<br>"1": Uses HQ characters.<br>b8 : "0" (fixed)<br>b9 : Specify font size.<br>"0": 16 dots<br>"1": 12 dots<br>b11 to b10 : Specify Kanji region.<br>"00": Japanese<br>"01": Chinese (GB)<br>"10": Chinese (Big5)<br>"11": Reserved<br>b12 : Specify the face.<br>This bit can be used only when the use of HQ characters is specified (b7=1).<br>Specify "0" (fixed) when HQ characters are not used.<br>"0": Mincho<br>"1": Gothic |
| <Character> | Specify character sting in up to 256 characters. |
| <Comment group No.> | Specify a comment group No. (Range: 1 to 255) |
| <Comment No.> | Specify a comment No. |
| <Screen draw flag> | Specifies the area in which drawing is executed by the free figure drawing function.<br>"0" : After the execution of screen_draw(), a figure is drawn in the object area. Object area is the same as the area defined by the coordinates shown in the data list of GT Designer2.<br>"1" : After the execution of screen_draw(), a figure is drawn in the entire screen size. |

**Remark** Drawing results of circle / ellipse

To use the circle / ellipse drawing function (d_circle(), d_ellipse(), p_circle(), p_ellipse()), set solid line for line type and 1 dot for line width.
If designation is other than the combination of solid and 1 dot, a circle / ellipse is drawn as shown below.

Drawing example) The figure below shows the results of ellipse drawn by setting dashed line and 4 dots for line type and line width, respectively.

(2) Screen control

| Functions | Description |
|---|---|
| redraw_object | Statement example: redraw_object()<br>Function: Executes processing as indicated below for the object itself.<br>1 Clears the figure drawn using the free figure drawing function.<br>2 Re-draws the object itself. |
| clear_object | Statement example: clear_object()<br>Function: Clears the items indicated below.<br>• Data (number/character, etc.) displayed by the object itself<br>• Figure drawn by the free figure drawing function of the object script of the object itself<br>If a state is set, display changes to the ordinary state (state 0). |
| redraw_screen | Statement example: redraw_screen()<br>Function: Executes processing as indicated below for the entire screen.<br>1 Clears all figures drawn by the free figure drawing function.<br>2 Re-draws all objects. |

## 16.3.3 Applicable data and representation methods

With object scripts, the data and representation methods explained below can be used in addition to the data and representation methods applicable to project scripts / screen scripts.

For details of data and representation methods with project scripts / screen scripts, refer to the following.

☞ Section 16.2.3 Applicable data and representation methods

### 1 Applicable constants and representation methods

With object scripts, constants explained below can be used in addition to the constants that can be used for project scripts / screen projects.

| Constant | Representation Method |
|---|---|
| Text | "To be enclosed by double quotations" |

### 2 Object internal variables

Object internal variables mean the variables allocated to inputs/outputs of an object, etc.
Processing as shown below is possible by using object internal variables.

- Can process the monitor device value by referencing it. ($$)
- Can change the object display to the processing result of the script. ($V)
- Can substitute the processing result of the script by the operation of a touch switch. ($W)

For reading / writing of an object internal variable, refer to the following.

☞ Section 16.3.2 1 (1) Object internal variables

Example: To add the device value (GD0) to the monitor device value ($$) and display ($V) the result at an object in numerical display

```
$V=$$+[w:GD0];
```

**Point**

Automatic adjustment of decimal point

When using automatic adjustment of decimel point, the processing as below is executed.

- When a value is substituted to $V
  The value substituted to $V is substituted to the object as it is.
- When a value is substituted to $W
  The decimal point of the value substituted to $W is shifted left by the value set for [Decimal Point Range] and substituted to a monitor device.

Example: When adjust decimal point range is used by setting "2" for [Decimal Point Range]

- When "$V=1" is executed, "1.00" is displayed in Numerical Input.
- When "$W=1;" is executed, the substituted value is multiplied by $10^2$ and "100" is written to the monitor device.

## 3 Object properties

For object properties, settings of the objects drawn by GT Designer2 can be referenced / changed (substituted).
For details of object properties, refer to the following.


☞ • Reference / Substitution . . . . . Object script tab of each object

• Setting . . . . . Section 16.3.2 1 (2) Object properties


(1) Format

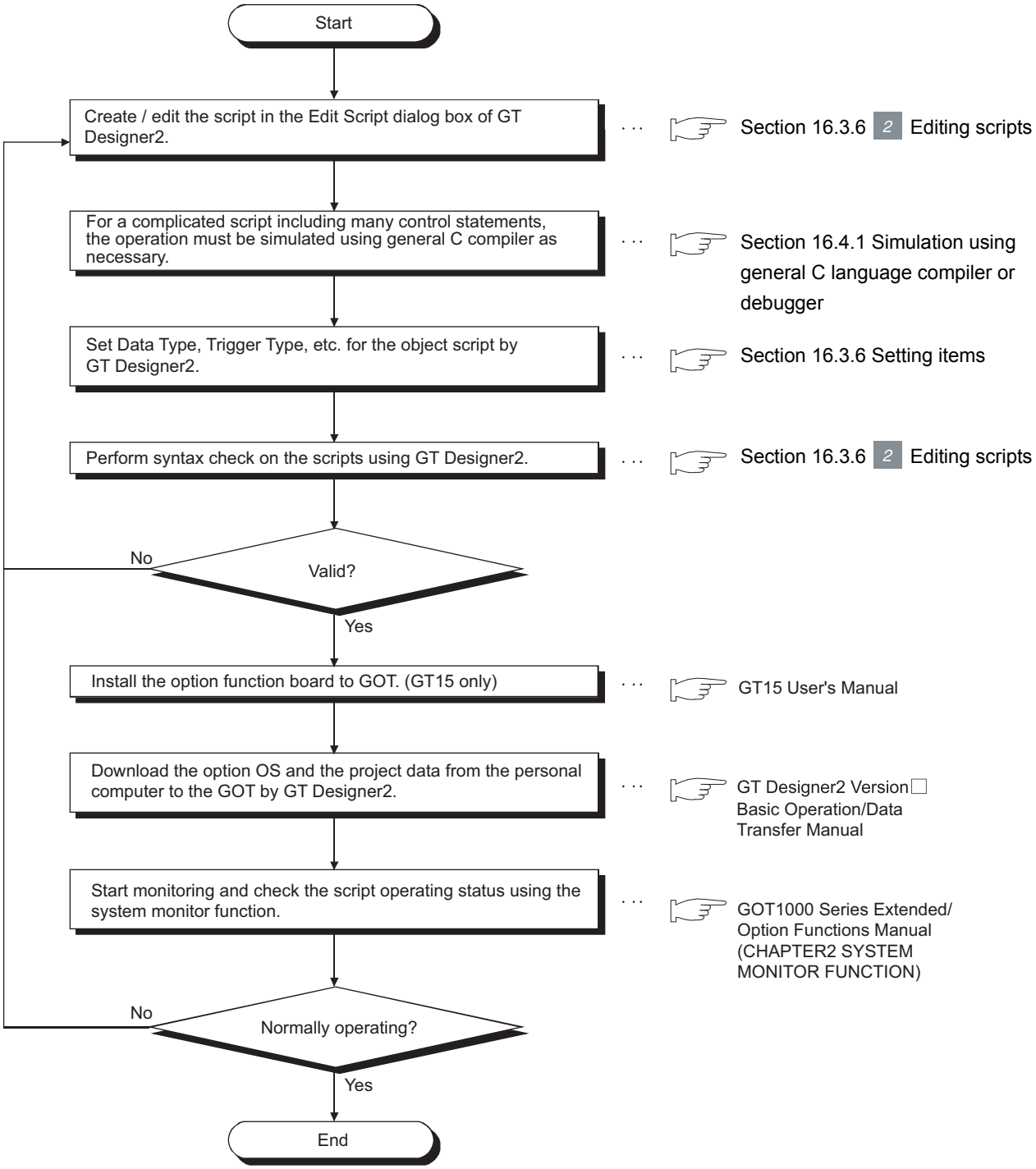
When describing an object property in a script, specify "my." preceding the object property name.

Example: For changing text colors and blink display corresponding to the object security level

```
if(5<=my.security){          // If object security level is 5 or higher
    my.text_color=224;       // changes text color to red (224).
    my.blink=1;              // blinks the object display at a low speed.
}else{                       // If object security level is lower than 5
    my.text_color=255;       // changes text color to white (255).
    my.blink=0;              // does not blink the object display.
}
```

## 16.3.4 Settings and procedure for execution

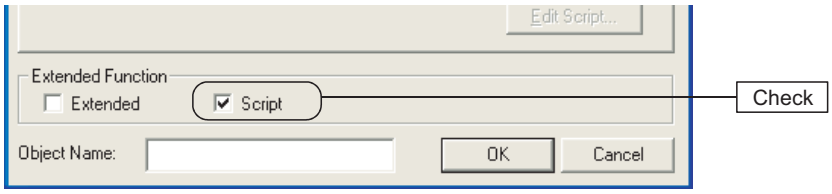
Settings and the procedure before executing object scripts are explained below.



## 16.3.5 Settings

1. Double click an object arranged on the screen created by GT Designer2, and the Setting dialog box is displayed.

2. Check the Script check box to display the Object Script tab and set by following the explanation below.




## 16.3.6 Setting items

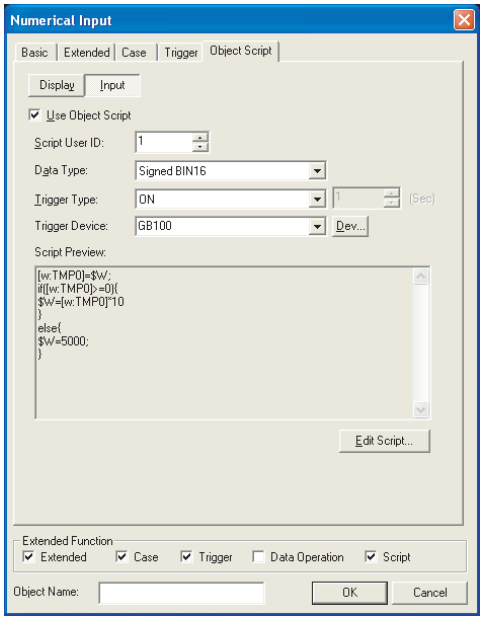
### 1 Object script tab

Set for using object scripts.
The items to be set in the Object Script tab vary depending on the object kind.
For details of setting items displayed in the Object Script tab, refer to the following.

| Object Script | Object | | Refer to |
|---|---|---|---|
| Input object script | Numerical input*1, | ASCII input*1 | This section 1 (1) |
| Display object script | Lamp display,<br>Numerical input*2,<br>ASCII input*2,<br>Comment display,<br>Parts movement,<br>Level display,<br>Line graph,<br>Statistics graph, | Numerical display,<br>ASCII display,<br>Clock display (Date display, time display),<br>Parts display,<br>Panel meter,<br>Trend graph,<br>Bar graph,<br>Scatter graph | This section 1 (2) |
| Switch object script | Touch switch (multi-action switch only) | | This section 1 (3) |

*1 When setting input object scripts
*2 When specifying display object scripts

(1) Object script tab of input object scripts




(Screen for input object script setting in Numerical Input)

| Item | Description | Model |
|---|---|---|
| Display | Click the Display button to set display object scripts.<br>When clicking the Display button, the tab changes to the object script tab of display object scripts.<br>( This section 1 (2) Object Script tab of display object scripts)<br>This button is displayed only for the following objects.<br>• Numerical input • ASCII input | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Use Object Script | Check this item when using object scripts. | |
| Script User ID | Set a script user ID No.<br>The script user ID No. must be unique.<br>By setting unique numbers, it is possible to identify the object script that caused an error. | |
| Data Type | Select the device data type to be used by a script.<br>Signed BIN 16 / 32 : Device data is treated as 16/32-bit signed binary.<br>Unsigned BIN 16 / 32 : Device data is treated as 16/32-bit unsigned binary.<br>BCD 16 / 32 : Device data is treated as 16/32-bit BCD (binary coded decimal).<br>Real : Device data is treated as 32-bit floating point type real. | |
| Trigger Type*1 | Select the execution condition of a script.<br>When [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the sampling cycle (1 to 3600 seconds) by the second.<br>( Section 5.5 Trigger Setting)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • ON Sampling • OFF Sampling<br>• Key Code Input • Input Fixation | |
| Trigger Device | Set the trigger device by clicking the Dev... button when [ON], [OFF], [Rise], [Fall], [ON Sampling] or [OFF Sampling] is selected for [Trigger Type].<br>( Section 5.1 Device Setting) | |
| Script Preview | Allows confirmation of the script contents. | |
| Edit Script | Opens the script editor dialog box.<br>( This section 2 Editing scripts) | |

For details of *1, refer to the following.

*1 When an object script cannot be executed correctly at the set sampling cycles

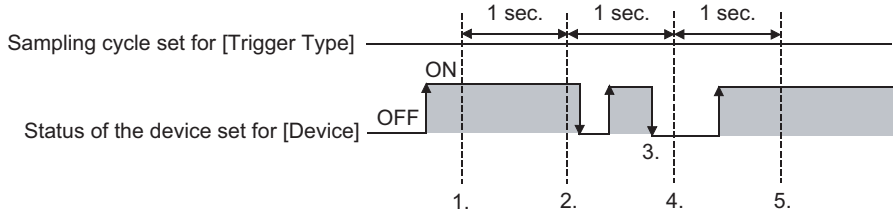
(1) Execution timing when sampling cycle is set in [ON Sampling] or [OFF Sampling]

(a) Execution timing

Device status is checked in sampling cycles set for [Trigger Type]

If the condition is not established when checked, the object script is not executed.

(When sampling cycle is set at 1 second, with [ON Sampling] set for [Trigger Type])




The object script is executed at the timing of "1.".

The object script is executed at the timing of "2.".

At the timing of "3.", the object script is not executed since the timing is not the condition check sampling cycle.

At the timing of "4.", the object script is not executed since the device condition is not established.

The object script is executed at the timing of "5.".

(b) To start counting of a sampling cycle when the device condition is established

The sampling cycle set for [Trigger Type] does not depend on the device status. (Sampling cycle does not change when the device is turned ON/OFF.)

To start counting of a sampling cycle, make settings as below.

1. Set [Rise] or [Fall] for [Trigger Type]
2. Make a sequence program so that the device turns ON / OFF at the timing when an object script should be executed.

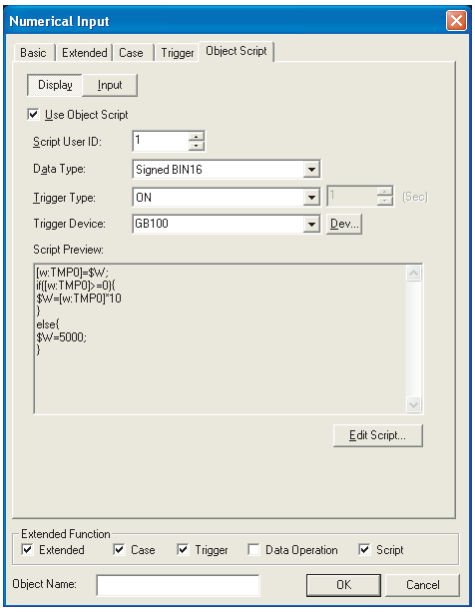
(2) About execution timing when sampling cycle is set in [Sampling], [ON Sampling] or [OFF Sampling]

Counting of a sampling cycle starts and is reset at the timing indicated below.

- The object itself is displayed (display in response to switching of the screen, changing of the security level, etc.).
- At language switching
- At station No. switching
- At security level changing

After the execution of any of the events above, the object script is executed at the time that the set sampling cycle is reached.

(2) Object Script tab of display object scripts



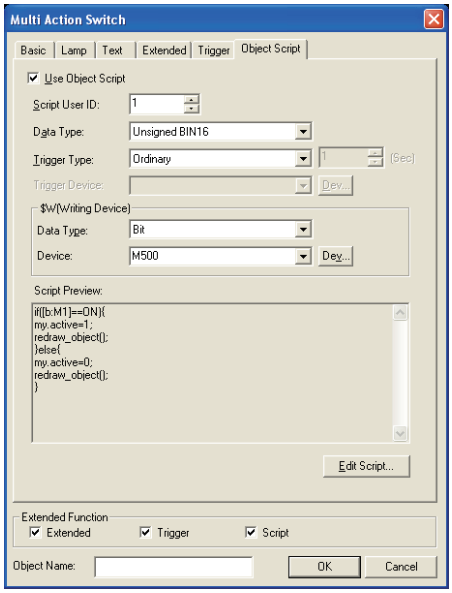

(Screen for display object script setting in Numerical Input)

| Item | Description | Model |
|---|---|---|
| Input | Click the Input button to set input object scripts.<br>When clicking the Input button, the tab changes to the object script tab of input object scripts.<br>(☞ This section 1 (1) Object script tab of input object scripts)<br>This button is displayed only for the following objects.<br>• Numerical input • ASCII input | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Use Object Script | Check this item when using object scripts. | |
| Script User ID | Set a script user ID No.<br>The script user ID No. must be unique.<br>By setting unique numbers, it is possible to identify the object script that caused an error. | |
| Data Type | Select the device data type to be used by a script.<br>Signed BIN 16 / 32 : Device data is treated as 16/32-bit signed binary.<br>Unsigned BIN 16 / 32 : Device data is treated as 16/32-bit unsigned binary.<br>BCD 16 / 32 : Device data is treated as 16/32-bit BCD (binary coded decimal).<br>Real : Device data is treated as 32-bit floating point type real. | |
| Trigger Type*1 | Select the execution condition of a script.<br>When [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the sampling cycle (1 to 3600 seconds) by the second.<br>(☞ Section 5.5 Trigger Setting)<br>• Ordinary, • ON, • OFF • Rise<br>• Fall, • Sampling, • ON Sampling, • OFF Sampling<br>• View Change, • Synchronize Display Trigger*2 | |
| Trigger Device | Set the trigger device by clicking the Dev... button when [ON], [OFF], [Rise], [Fall], [ON Sampling] or [OFF Sampling] is selected for [Trigger Type].<br>(☞ Section 5.1 Device Setting) | |
| Script Preview | Allows confirmation of the script contents. | |
| Edit Script | Opens the script editor dialog box.<br>(☞ This section 2 Editing scripts) | |

For details of *1, refer to *1 of 1 (1) Object script tab of input object scripts in this section.

*2 Cannot be used for lamp, clock display and panel meter.

(3) Object Script tab of switch object scripts

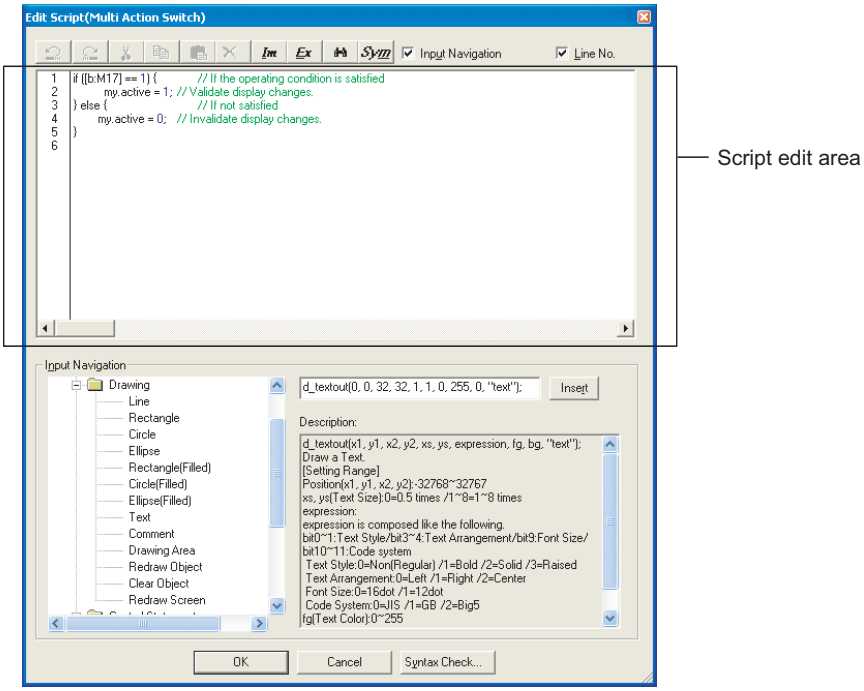



| Item | | Description | Model |
|---|---|---|---|
| Use Object Script | | Check this item when using object scripts. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Script User ID | | Set a script user ID No.<br>The script user ID No. must be unique.<br>By setting unique numbers, it is possible to identify the object script that caused an error. | |
| Data Type | | Select the device data type to be used by a script.<br>Signed BIN 16 / 32 : Device data is treated as 16/32-bit signed binary.<br>Unsigned BIN 16 / 32 : Device data is treated as 16/32-bit unsigned binary.<br>BCD 16 / 32 : Device data is treated as 16/32-bit BCD (binary coded decimal).<br>Real : Device data is treated as 32-bit floating point type real. | |
| Trigger Type*1 | | Select the execution condition of a script.<br>When [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the sampling cycle (1 to 3600 seconds) by second.<br>(☞ Section 5.5 Trigger Setting)<br>• Ordinary • ON • OFF • Rise<br>• Fall • Sampling • ON Sampling • OFF Sampling<br>• Device writing | |
| Trigger Device | | Set the trigger device by clicking the [Dev...] button when [ON], [OFF], [Rise], [Fall], [ON Sampling] or [OFF Sampling] is selected for [Trigger Type].<br>(☞ Section 5.1 Device Setting) | |
| $W (Writing Device) | | When substituting the value processed by the script to a device in response to the operation of a touch switch, set the target device. | |
| | Data Type | Select the data type of object internal variable $W (write device).<br>Bit : Data is treated as a bit device.<br>Signed BIN 16 / 32 : Data is treated as 16/32-bit signed binary.<br>Unsigned BIN 16 / 32 : Data is treated as 16/32-bit unsigned binary.<br>BCD 16 / 32 : Data is treated as 16/32-bit BCD (binary coded decimal) value.<br>Real : Data is treated as 32-bit floating point type real. | |
| | Device | Set the object internal variable $W (write device).<br>(☞ Section 5.1 Device Setting) | |
| Script Preview | | Allows confirmation of the script contents. | |
| [Edit Script] | | Opens the script editor dialog box.<br>(☞ This section 2 Editing scripts) | |

For details of *1, refer to *1 of 1 (1) Object script tab of input object scripts in this section.

## 2 Editing scripts

The Edit Script tab is used for editing and importing/exporting scripts.



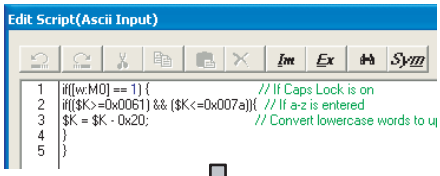

| Item | Description | Model |
|---|---|---|
| Script edit area | Scripts can be edited directly.<br>(Undo) : Returns the script edit operation one step.<br>(Redo) : Redoes returned operation.<br>(Cut) : Cuts the selected character string.<br>(Copy) : Copies the selected character string.<br>(Paste) : Pastes the copied or cut character string.<br>(Delete) : Deletes the selected character string.<br>(Import) : Reads out the edited text file / Unicode text file to GT Designer2. *1<br>(Export) : Saves the script edited by GT Designer2 as a text file / Unicode text file. *1<br>(Search) : The search dialog box is displayed.<br>Input the search target text and click the Search Next button after selecting the search direction (upward/downward), and the input text is searched for.<br>(Symbol) : Set object script symbols.<br>(☞ This section 3 Object script symbol)<br>Input Navigation : Check this item to display [Input Navigation] in the [Edit Script] dialog box.<br>Line No. : Check this item to display the line numbers of the script. | GT16 GT15 SoftGOT 1000 GT11 GT10 |
| Input Navigation | Function / device/ property, etc. that is inserted to a script can be selected from the tree.<br>An example of how to use [Input Navigation] is shown below.<br>☞ This section 2 (1) Use example of input navigation | |
| Syntax Check | Checks script syntax. Device type and device range are also checked.<br>(☞ Section 16.4.2 Message displayed during syntax check) | |

For details of *1, refer to the following.

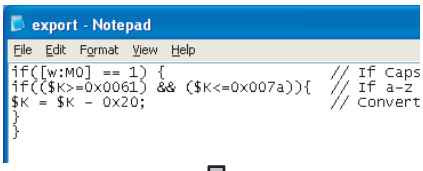
*1 About import / export

For the exported text file / Unicode text file, operation simulation is possible using general C compiler. It is also possible to edit scripts using general text editor.
The edited text file / Unicode text file can be read out to GT Designer2 by importing.

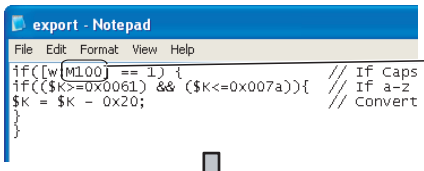
Example: Editing a script by text editor




Exporting to a text file / Unicode text file

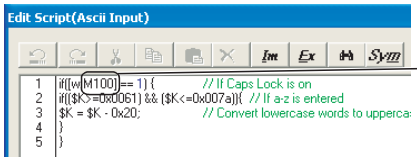



Editing the exported file




Edit the script using the text editor.

Importing to GT Designer2




Edited contents are reflected.

**Remark** About Unicode text file

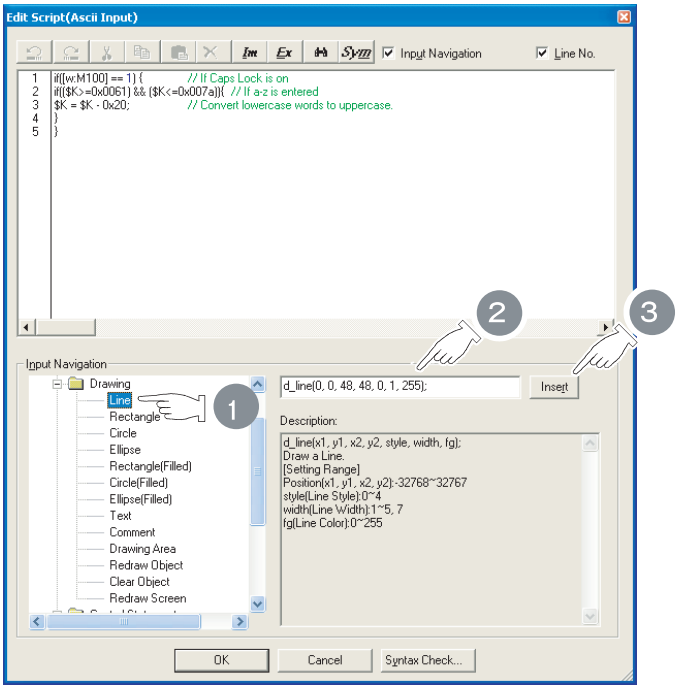
Unicode text file is used for importing / exporting in the multilanguage environment.
For multilanguage input, refer to the following manual.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual

(1) Use example of input navigation

How the input navigation is used is explained below using the operation to insert the line drawing function (d_line()) to a script as an example.

1. Select [Items] → [Drawing] → [Line] in the tree.
2. Edit the arguments of d_line() referring to [Description].
3. Click the Insert button and "d_line()" is inserted to the cursor position in the script edit area.

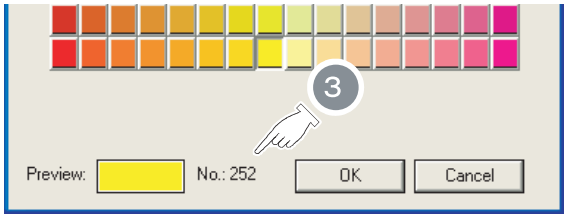



**Hint!**

(1) Setting colors

Check a color code number in explained below and set it to a script.

1. Close the [Edit Script] dialog box and the object setting dialog box.
2. Draw an appropriate figure on the screen and open the setting dialog box.
3. Open the color setting dialog box and check the code number of the color to be used.




4. Close the color setting dialog box and then the figure setting dialog box. After that clear the figure drawn in 2 .
5. Open the object setting dialog box and the [Edit Script] dialog box, and then set the color code number checked in 3 .

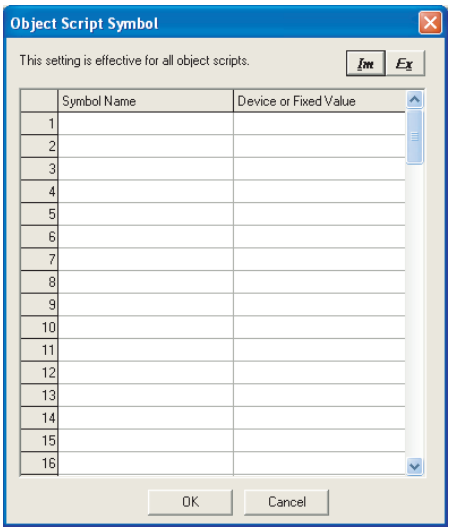
(2) Setting Line Type / Pattern

For the setting values of Line Type / Pattern, refer to the following.

Section 16.3.2 2 (1) (a) Argument

## 3 Object script symbol

Devices, constants, etc. to be described in a script may be an arbitrary character string.
To use an arbitrary character string in a script, set a device or constant that corresponds to the character string in this setting. (The script operates on GOT even if a character string is described in a script.)
The object script symbol setting is valid only to object scripts.




| Item | Description | Model |
|---|---|---|
| Im (Import) *1 | Reads out the object script symbol setting, edited in a CSV file / Unicode text file, to GT Designer2. | GT16 GT15 SoftGOT1000 GT11 GT10 |
| Ex (Export)*1 | Saves the object script symbol setting, made by GT Designer2, in a CSV file / Unicode text file. | |
| Symbol Name | Input an arbitrary character string to be described in script. (Up to 32 characters)<br>Up to 100 words can be set.<br>In a symbol name, "#", control statements, operators, etc. cannot be used. | |
| Device of Fixed Value | Input the device or constant that corresponds to symbol name. (Up to 32 characters)<br>Up to 100 words can be set. | |

For details of *1, refer to the following.

**Hint!** Displaying the Object Script Symbol screen

The Object Script Symbol screen is displayed when any of the operations below is performed.

- Clicking the Sym button in the [Edit Script] dialog box.
- Selecting [Common] → [Object Script Symbol] menu.
- Double clicking (object script symbol) in the project workspace.

*1 About import / export

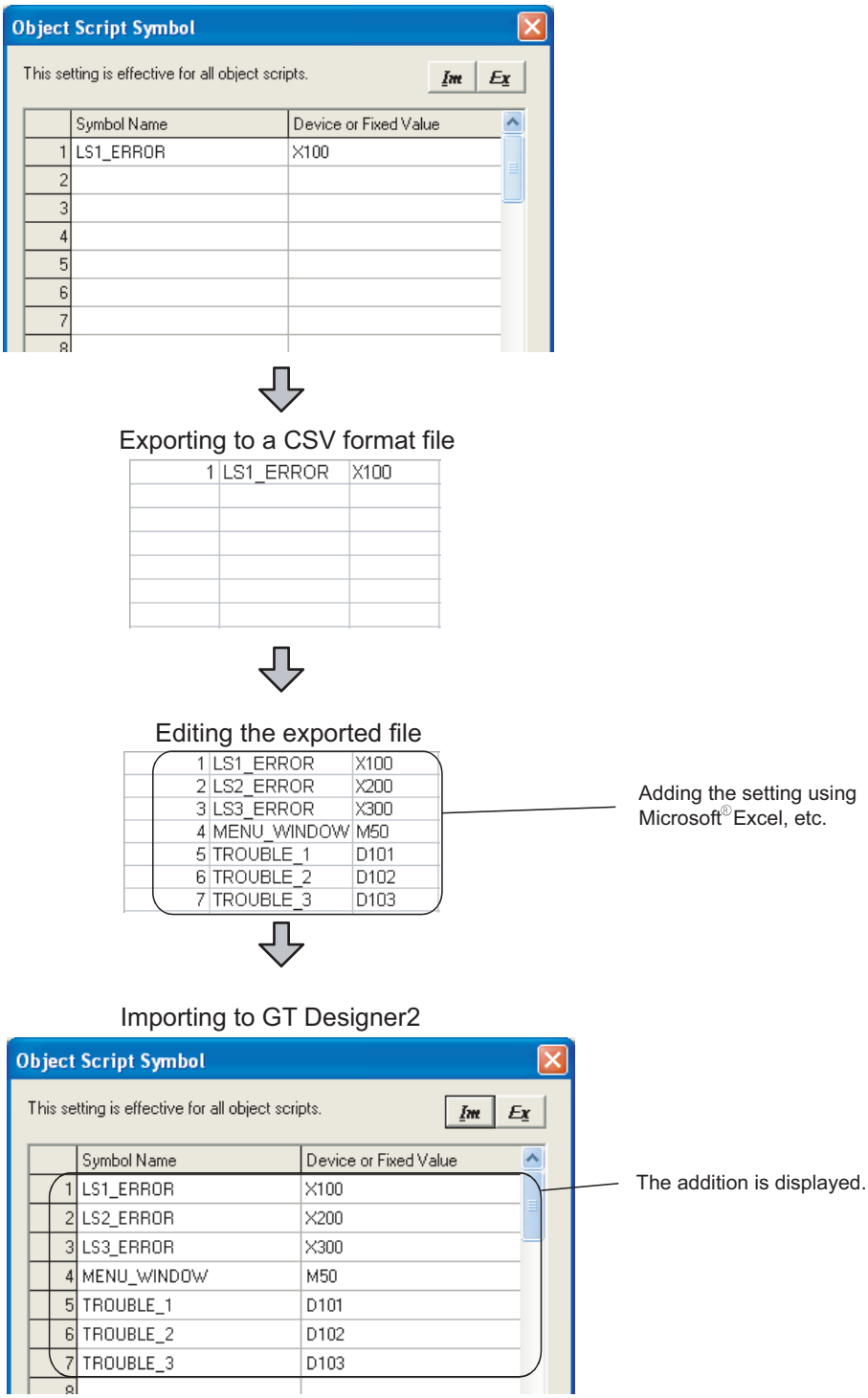
It is possible to edit an exported CSV file / Unicode file using such as spreadsheet software.
After editing, the CSV file / Unicode file can be read out to GT Designer2 by importing the file.

**Point**

Editing exported files

When "0" is used as the first character of symbol names and device or field values, "0" can be deleted with application functions for editing files, including Microsoft® Excel.
Pay attention to the above for editing exported files.

Example: Import/export to a CSV file



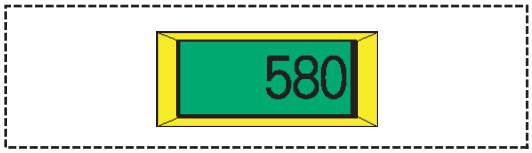
## 16.3.7 Program examples

This section explains program examples of object script program.

### 1 Data calculation by numerical input script

(1) Operation

Data calculation is executed when a device value is written.

| Screen image | Parts operation |
|---|---|
|  | Numerical input : When the write value is "0" or larger, the write value is multiplied by 10.<br>When the write value is smaller than "0", the write value is set as "5000". |

(2) Program examples

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Input fixation |
| Script | [w:TMP0] = $W; // Stores the write value to the temporary area.<br>if([w:TMP0] >= 0) { // If the write value is "0" or larger,<br>$W = [w:TMP0] * 10; // the write value is multiplied by 10.<br>}else{ // If the write value is less than "0",<br>$W = 5000; // the write value is set as "5000".<br>} |

## 2 To start blinking after the elapse of set time

### (1) Operation

The displayed value (monitored device value) blinks when it does not change for the set time.
This feature can be used to give a caution after the elapse of a set time.

| Screen image | Parts operation |
|---|---|
| | Numerical Display: If the displayed value (monitored device value) does not change for 5 seconds, the characters blink in red. |

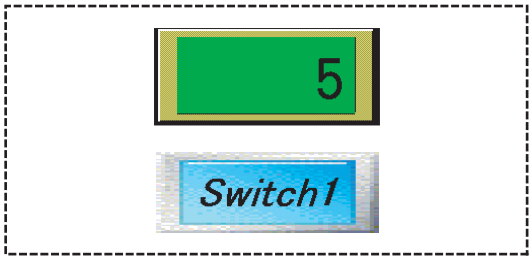
### (2) Program examples

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Sampling (1 second) |
| Script | `if([w:TMP0002] != $$){` // When the displayed value changes,<br>`  [w:TMP0001] = 5;` // counting starts (sets time (seconds) for staring blinking).<br>`  [w:TMP0002] = $$;` // saves the displayed value.<br>`  my.blink = 0;` // sets "does not blink".<br>`  my.text_color = 0xFF;` // changes the character color to white.<br>`}else{` // When the displayed value does not change,<br>`  if([w:TMP0001] > 0){` // If the count is not "0",<br>`  [w:TMP0001] = [w:TMP0001] - 1;` // reduces the count value.<br>`  if([w:TMP0001] == 0){` // When the count value reaches "0",<br>`  my.text_color = 0xE0;` // changes the character color to red.<br>`  my.blink = 3;` // starts high-speed blinking.<br>`  }`<br>`  }else{`<br>`  [w:TMP0001] = 5;`<br>`  }`<br>`}`<br>`redraw_object();` // reflects property. |

## 3 Showing / hiding the input / touch operation object

(1) Operation

The script controls "show / hide" of the specific objects for input / touch operation corresponding the execution condition at switching screen.
Since an object used for input / touch operation is displayed only when necessary, this feature can be used to avoid inputting error.

| Screen image | Parts operation |
|---|---|
|   | Numerical Input : Numerical input is displayed when M0 turns ON.<br>Numerical Input is hidden when M0 turns OFF.<br>Switch 1 Switch : The touch switch is displayed when M1 turns ON.<br>The touch switch is hidden when M1 turns OFF. |

(2) Monitor screen settings

| Part Name | Object Type | Setting item | | Setting |
|---|---|---|---|---|
| Numerical input | Numerical input | Display / Trigger | Trigger Type | ON |
| | | | Device | M0 |
| Switch 1 | Touch switch<br>(Multi-action switch) | Trigger | Trigger Type | ON |
| | | | Device | M1 |

(3) Program examples

(a) Numerical input

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Ordinary |
| Script | if([b:M0] == ON){<br>my.active = 1; // Euables update.<br>redraw_object(); // Updates the object.<br>}else{<br>my.active = 0; // Disables update.<br>clear_object(); // Clears the object.<br>} |

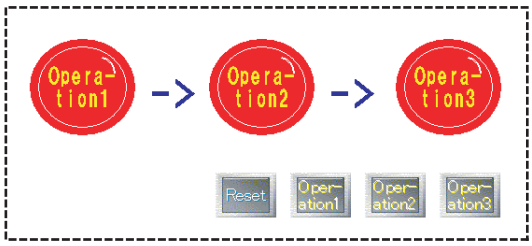
(b) Switch 1 switch

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Ordinary |
| Script | if([b:M1] == ON){<br>my.active = 1; // Euables update.<br>redraw_object(); // Updates the object.<br>}else{<br>my.active = 0; // Disables update.<br>clear_object(); // Clears the object.<br>} |

## 4 Drawing responding to a device value

(1) Details of operation

A figure is drawn on the screen corresponding to the device value.

| Screen image | Parts operation |
|---|---|
|  | Operation 1 lamp : Turns ON when D500 is "1" and a circle is drawn around the lamp.<br>Operation 2 lamp : Turns ON when D500 is "2" and a circle is drawn around the lamp.<br>Operation 3 lamp : Turns ON when D500 is "3" and a circle is drawn around the lamp.<br>Reset switch : Resets Operation 1 to Operation 3.<br>Operation 1 lamp switch: Starts Operation 1.<br>Operation 2 lamp switch: Starts Operation 2.<br>Operation 3 lamp switch: Starts Operation 3. |

(2) Monitor screen settings

| Part Name | Object Type | Setting item | | Setting |
|---|---|---|---|---|
| Operation 1 lamp | Word lamp | Device | | D500 |
| | | Text | | Operation 1 |
| | | State 0 | Lamp color | Red |
| | | State 1 | Device range | $V < 1 |
| | | | Lamp color | Black |
| Operation lamp 2 | Word lamp | Device | | D500 |
| | | Text | | Operation 2 |
| | | State 0 | Lamp color | Red |
| | | State 1 | Device range | $V < 2 |
| | | | Lamp color | Black |
| Operation 3 lamp | Word lamp | Device | | D500 |
| | | Text | | Operation 2 |
| | | State 0 | Lamp color | Red |
| | | State 1 | Device range | $V < 3 |
| | | | Lamp color | Black |
| Reset switch | Data write switch | Device | | D500 |
| | | Set value (fixed value) | | 0 |
| | | Text | | Reset |
| Operation 1 lamp switch | Data write switch | Device | | D500 |
| | | Set value (fixed value) | | 1 |
| | | Text | | Operation 1 |
| Operation 2 lamp switch | Data write switch | Device | | D500 |
| | | Set value (fixed value) | | 2 |
| | | Text | | Operation 2 |
| Operation 3 lamp switch | Data write switch | Device | | D500 |
| | | Set value (fixed value) | | 3 |
| | | Text | | Operation 3 |

(3) Program examples

(a) Operation 1 lamp

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Ordinary |
| Script | if ([w:D500] == 1){ // When D500 is "1",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 224); // draws a circle.<br>}else{ // When D500 is not "1",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 255); // clears a circle. (draws a circle in the same color as the<br>} // background color) |

(b) Operation lamp 2

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Ordinary |
| Script | if ([w:D500] == 2){ // When D500 is "2",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 224); // draws a circle.<br>}else{ // When D500 is not "2",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 255); // clears a circle. (draws a circle in the same color as the<br>} // background color) |

(c) Operation 3 lamp

| Item | Description |
|---|---|
| Data Type | Signed BIN16 |
| Trigger Type | Ordinary |
| Script | if ([w:D500] == 3){ // When D500 is "3",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 224); // draws a circle.<br>}else{ // When D500 is not "3",<br>  screen_draw(1); // sets the drawing area on the entire screen.<br>  d_circle(57, 52, 65, 0, 2, 255); // clears a circle. (draws a circle in the same color as the<br>} // background color) |

## 16.3.8 Precautions

### 1 Precautions for OS

Install the option OS (object script) to GOT to use object scripts.

### 2 Precautions for hardware

To use the object script with GT15, mount the option function board on the GOT.
For GT16, no option function board is required.
For GOTs with built-in option function boards, refer to the following.

☞ Section 2.13 Precautions for Option Function Board

### 3 Precautions for objects

(1) Changing from Numerical Input / ASCII Input to Numerical Display / ASCII Display

When the setting dialog box is closed by clicking the OK button after changing from Numerical Input / ASCII Input to Numerical Display / ASCII Display, the input object script settings are cleared. Display object settings are not cleared.

### 4 Precautions for the object script execution condition

(1) Functions that cannot be set simultaneously

Object scripts cannot be used when any of the functions below is set.
To use object scripts, do not set the functions indicated below.

- Data Operation
- Store memory
- Locus display (line graph only)

(2) Object status

Object script cannot be executed when the object is in the status indicated below.

- The object is not displayed / operating since it is out of the screen.
- The object is not displayed / operating since a monitor device has not been set.

(3) Execution of object scripts on the same screen

When a multiple display of the same screen is given due to overlap window / superimpose window / screen overlay, only the object script in the screen displayed first is executed.
While the object script on the screen displayed first is executed, the object scripts on the same screens displayed later are not executed.
The object script displayed in the same screen is executed when the object script displayed in the first screen has been executed.

(4) When "device write" is set for the execution condition

Set the write device to the object for which a script is set.
The script is not executed if a write device is not set.

## 5 Precautions for devices

(1) The number of write enabled devices
When writing data to the following devices, writing is possible only for one device with one script.
To execute writing to multiple devices, use multiple object scripts.
- Devices of connected controllers
- GOT special register (GS)

When writing data to the following devices, writing is possible for multiple devices with one script.
- Temporary device area (TMP)
- GOT bit register (GB)
- GOT data register (GD)

(2) Operation programmed by object script during write device
- Execution of an object script is interrupted.
  Interrupted operation restarts after the completion of write device.
- Object display is not updated.
  Object display is updated after the completion of write device.
- Input is disabled even when touch an object on the screen.
  Input is enabled after the completion of write device.

## 6 Precautions for object property

(1) Movements of numerical display / comment display whose level display are superimposed
When drawing with level display superimposed on GT Designer2, numerical display / comment display can move only in the area inside of level display.
When numerical display / comment display moves to out of the level display area, numerical display / comment display is not displayed correctly.

When drawing without superimposing on GT Designer2, superimposing processing is not executed even when numerical display / comment display is moved to the inside of the level display area.

(2) Properties that are valid only when set on GT Designer2
Among the setting items of objects, those which are valid only when they are set on GT Designer2 (such as the settings which are not valid unless a certain item is checked), cannot be referenced / changed by object property.

## 7 Precautions for free figure drawing function

(1) Drawing while an object is blinking
While an object is blinking, the figure drawn using the free figure drawing function blinks together with the object.

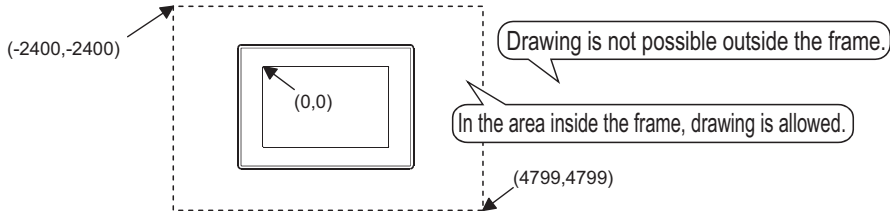
(2) Superimposing of drawing figure and an object
If a figure drawn using the free figure drawing function is superimpose to an object, the figure in the superimposed area may disappear.

(3) Drawing when execution condition other than [View Change] and [Synchronize Display Trigger] is set when the execution condition is other than [View Change] and [Synchronize Display Trigger], the object itself overwrites the figure drawn by the free figure drawing function. Therefore, the figure drawn by the free figure drawing function may be cleared.

(4) When [Key Code Input], [Input Fixation] or [Device Write] is set for action trigger
Drawing is not executed.
In this case, any errors do not occured.
When using the free figure drawing function, set the execution condition other than [Key Code Input], [Input Fixation] and [Device Write].

(5) Maximum number of settings
Concerning figures to be drawn by the free figure drawing function, the drawing is possible for up to 40 points by a single object.

(6) Drawing area
With the upper left corner of GOT screen set as (0, 0), it is not possible to draw a figure outside of the area from (-2400, -2400) to (4799, 4799).
Specify the coordinates to draw inside of the area from (-2400, -2400) to (4799, 4799).




## 8 Precautions for writing a script

Do not write a script that causes the operation result to exceed the allowable range of a device value.
Script operation is executed internally by double-precision real numbers.
Therefore, when judgment is made using such as an IF statement, results of judgment can differ depending on the operation method.

Example: Judgment for the difference between GD100 and D100 using an IF statement (for signed 16-bit BIN)
When GD100=-32758 and D100=32767

(a) When operation is executed in evaluation expression

```
If ( ( [w:GD100] - [w:D100] ) >= 10 ) { // If difference between GD100 and D100 is 10 or larger,
[w:D200] = 0; //"0" is written to D200.
}
```

The calculation result of "GD100 - D100" ("-32758" - "32767") is "-65525", meaning that the condition is not met.

(b) When processing the script after substitution

```
[w:GD200] = [w:GD100] - [w:D100]; // Substitutes the value of "GD100 - D100" to GD200.
if ( [w:GD200] >= 10) { // When the value of GD200 is 10 or larger,
[w:D200] = 0; //"0" is written to D200.
}
```

When "-65525" which is the calculation result of "GD100 - D100" ("-32758" - "32767") is substituted to GD200 in signed 16-bit BIN, GD200 becomes "10", meaning that the condition is met.
(Since a value that cannot be handled by a variable (device) is substituted as the result of operation, the result differs from that obtained in (a).)

# 16.4 Troubleshooting

The script function does not display an error message at the time of error.
It stops the script in error to prevent the other scripts and various monitor functions from stopping.
Therefore, each script must be debugged without fail by reference to the followings.

## 16.4.1 Simulation using general C language compiler or debugger

Since a script is C language-like program, the general C language compiler or debugger (e.g. Microsoft® Visual C++) can be used for its simulation by making slight corrections.
This is effective for debugging a complicated script that includes many control statements.
Observe the following procedure to perform simulation using the general C language compiler or debugger.

### 1 Project script, Screen script

**Changing file extension**

text1.txt → text1.c

↓

**Additional description of main and include**

```
Additional description →  #include<stdio.h>
Additional description →  main(){
                            [w:TMP0001]=0;
                            while([w:TMP0000]<[w:D100]){
                                    if(!(([w:TMP0000]-1900)%4)){
                                      [w:TMP0001]=[w:TMP0001]+1;
                                      ......(Omitted)......
                            [w:TMP0010]=[w:TMP0002]+[w:TMP0003]
                                      +[w:TMP0004]-1;
                            [w:D200] = [w:TMP0010]%7;
Additional description →  }
```

↓

**Changing device (variable) describing method**

```
                          #include<stdio.h>
Description change →      main(){
Description change →        _wTMP0001__=0;
Description change →        while(_wTMP0000__<_wD100__){
Description change →                if(!((_wTMP0000__-1900)%4)){
                                      _wTMP0001__=_wTMP0001__+1;
                                      ......(Omitted)......
Description change →        _wTMP0010__=_wTMP0002__+_wTMP0003__
Description change →                +_wTMP0004__-1;
Description change →        _wD200__=_wTMP0010__%7;
                          }
```

↓

(To the next page)

1. Change the script file (extension ".txt") created for the GOT into a C language source file (extension ".c").

2. Open the C language source file with a commercially-available text editor and create a frame with "main(){}". Also, describe "#include<stdio.h>" at the beginning.

3. Change the device (variable) describing method from that for script function to that for C language.
Changing the variables into for C language based on the following definition enables smooth restoration to the GOT script.

Definition 1 "[w:" → "_w"
Definition 2 "[b:" → "_b"
Definition 3 "]" → "_ _"

Using the batch replacement function of the commercially available text editor is convenient to make changes.

(From the preceding page)

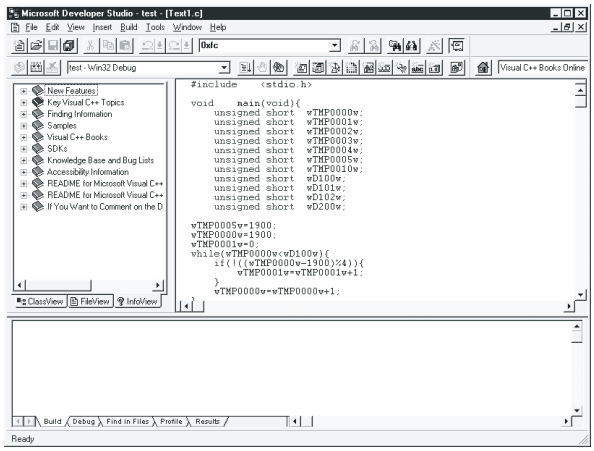
↓

**Variable definition (auto variable declaration)**

| | |
|---|---|
| Description change → | #include<stdio.h> |
| | void main(void){ |
| Addition → | unsigned short _wTMP0000__; |
| Addition → | unsigned short _wTMP0001__; |
| Addition → | unsigned short _wTMP0002__; |
| Addition → | unsigned short _wD100__; |
| | .....(Omitted)..... |
| | _wTMP0001__=0; |
| | while(_wTMP0000__<_wD100__){ |
| | if(!((_wTMP0000__-1900)%4)){ |
| | _wTMP0001__=_wTMP0001__+1; |
| | .....(Omitted)..... |
| | _wTMP0010__=_wTMP0002__+_wTMP0003__ |
| | +_wTMP0004__-1; |
| | _wD200__ = _wTMP0010__%7; |
| | } |

↓

**Execution of simulation**




4 For C language, the variables must be defined prior to use.
As only one data format can be selected for one script, the variable types of the C language must be set all the same.
Being conscious of the script data format, assign the variables as indicated below.

| Script Data Format | Variable Type |
|---|---|
| Signed BIN16 | short |
| Unsigned BIN16 | unsigned short |
| Signed BIN32 | long |
| Unsigned BIN32 | unsigned long |
| Real | float |
| BCD32/BCD16*1 | — |

*1 Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation with the general C language compiler or debugger.

5 Perform simulation with the general C language compiler or debugger.
(The example shown on the left uses Microsoft® Developer Studio.)
The step run, variable watch and other functions specific to debugger are usable.

On completion of debugging, execute the steps 1 to 4 in reverse order to restore the GOT script file.

## 2 Object script

**Changing file extension**

text1.txt → text1.txt

↓

**Additional description of main and include**

```
Additional description →  #include<stdio.h>
Additional description →  main(){
                           [w:TMP0001]=0;
                           while([w:TMP0000]<[w:D100]){
                                 if(!(([w:TMP0000]-1900)%4)){
                                    [w:TMP0001]=[w:TMP0001]+1;
                                    my.x = 200;
                                    my.scale_max[0] = 500;

                                    ......(Omitted)......

                           [w:TMP0010]=[w:TMP0002]+[w:TMP0003]
                                 +[w:TMP0004]-1;
                           $W = [w:TMP0010]%7;
Additional description →  }
```

↓

**Changing device (variable) describing method**

```
                           #include<stdio.h>
                           main(){
Description change →        _wTMP0001__=0;
Description change →        while(_wTMP0000__<_wD100__){
Description change →              if(!((_wTMP0000__-1900)%4)){
Description change →                 _wTMP0001__=_wTMP0001__+1;
Description change →                 my_x = 200;
Description change →                 my_scale_max_0__ = 500;
                                     ......(Omitted)......
Description change →        _wTMP0010__=_wTMP0002__+_wTMP0003__
Description change →              +_wTMP0004__-1;
Description change →        device_write = _wTMP0010__%7;
                           }
```

↓

(To the next page)

1. Exports the object script, created by GT Designer2, to text file / Unicode text file (extension ".txt") and change exported script file into a C language source file (extension ".c").
2. Open the C language source file with a commercially-available text editor and create a frame with "main(){}". Also, describe "#include<stdio.h>" at the beginning.
3. Change the device (variable / property) describing method from that for script function to that for C language. Changing the variables into those for C language, based on the following definition, enables smooth restoration to the GOT script.

| | |
|---|---|
| Definition 1 | "[w:" → "_w" |
| Definition 2 | "[b:" → "_b" |
| Definition 3 | "]" → "__" |
| Definition 4 | "my." → "my_" |
| Definition 5 | "$W" → "device_write" |
| Definition 6 | "$V" → "device_value" |
| Definition 7 | "$$" → "monitor_ device" |
| Definition 8 | "$K" → "key_input" |
| Definition 9 | "[" → "_" |

Using the global replacement function of the commercially-available text editor is convenient to make changes.

(From the preceding page)

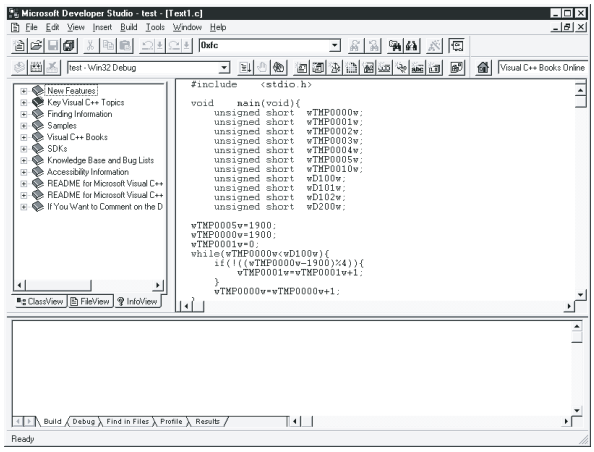
↓

**Variable definition (auto variable declaration)**

| | |
|---|---|
| | #include<stdio.h> |
| Description change → | void main(void){ |
| Addition → | unsigned short _wTMP0000__; |
| Addition → | unsigned short _wTMP0001__; |
| Addition → | unsigned short _wTMP0002__; |
| Addition → | unsigned short _wD100__; |
| Addition → | short my_c; |
| Addition → | unsigned sort my_scale_max_0__; |
| Addition → | unsigned sort device_write; |
| | .....(Omitted)..... |
| | _wTMP0001__=0; |
| | while(_wTMP0000__<_wD100__){ |
| | if(!((_wTMP0000__-1900)%4)){ |
| | _wTMP0001__=_wTMP0001__+1; |
| | my_x = 200; |
| | my_scale_max_0__ = 500; |
| | .....(Omitted)..... |
| | _wTMP0010__=_wTMP0002__+_wTMP0003__ |
| | +_wTMP0004__-1; |
| | device_write = _wTMP0010__%7; |
| | } |

↓

**Execution of simulation**




4 For C language, the variables must be defined prior to use.
As only one data format can be selected for one script, the variable types of the C language must be set all the same.
Being conscious of the script data format, assign the variables as indicated below.

(1) Device

| Script Data Format | Variable Type |
|---|---|
| Signed BIN16 | short |
| Unsigned BIN16 | unsigned short |
| Signed BIN32 | long |
| Unsigned BIN32 | unsigned long |
| Real | float |
| BCD32/BCD16*1 | — |

*1 Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation with the general C language compiler or debugger.

(2) Property
Select the data format according to the property range.

(3) Internal variable
Assign the same variable type as the script data type.

5 Perform simulation with the general C language compiler or debugger. (The example shown on the left uses Microsoft® Developer Studio.)
The step run, variable watch and other functions specific to debugger are usable.

**Point**

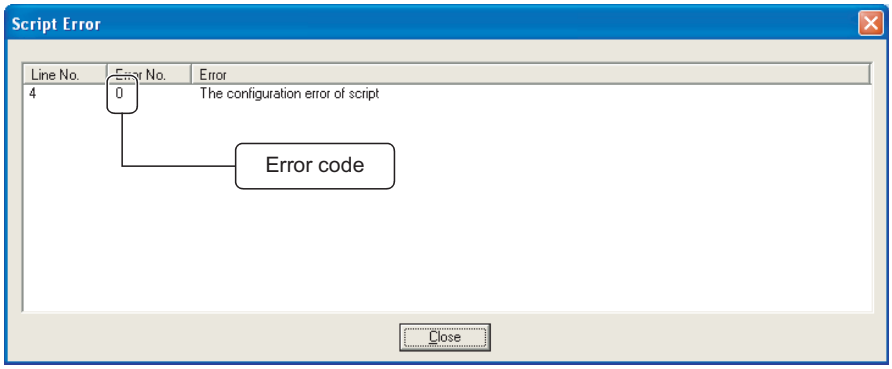
(1) Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation with the general C language compiler or debugger.
(2) As dedicated for the script functions, the set, rst, alt, bmov and fmov statements cannot be simulated with the general C language compiler or debugger.Use assignment of 1 or 0 instead of the set or rst statement.
(3) When the system define (ON, OFF description) of the GOT is used unchanged, the define must be added to the C language source file.
(4) The assignment delay does not occur during simulation with the general C language compiler or debugger, although it occurs when a script is executed on GOT. Therefore, take the possibility of assignment delay occurrence into consideration when performing simulation.
(5) By applying the above, a new program created using C language can be used as a GOT script after being debugged.
(6) Offset designation of a device cannot be used in the above debugging.
If debugging of the offset designated device is required, it is necessary to set the corresponding device in advance.

## 16.4.2 Message displayed during syntax check

### 1 The dialog box displayed during syntax check

The following dialog box will be displayed during syntax check.
If there is an error in script, the error code will be displayed in the dialog box.

When the error code is displayed, refer to 2 Error code list for the troubleshooting.




**Point**

About errors that cannot be checked by syntax check

There are errors that cannot be checked by syntax check.
If a script includes an error that cannot be checked by syntax check, an error occurs when a script is executed on GOT.
For the errors detected during script execution on GOT and the corrective action, refer to the following.

☞ Section 16.4.3 Errors and corrective actions for script execution on GOT

## 2 Error code list

The following list provides the error codes that may be displayed in the script error dialog box.

| Error code | Causes of error occurrence |
|---|---|
| 0 | The configuration error of script. |
| 1 | The address of device is not an even number. |
| 2 | Extended file register (ER) setting error. (inter-block settings) |
| 3 | The bit device made word access. |
| 4*2 | Out of the range of device No. (displayed in HEX. number) |
| 5*2 | Out of the range of device No. (displayed in DEC. number) |
| 6 | Out of the range of device No. (displayed in OCT. number address) |
| 7 | The setting is not executed with the multiple of 16 when specifying the bit device word. |
| 8 | The setting is not within the range of 0 to 15 when specifying word device bit. |
| 9 | The set device is out of the range or does not exist. |
| 11 | Out of the range of device No. |
| 14 | Access to the device disabling word accessibility by using bit. |
| 15 | Access to the device disabling bit accessibility by using bit. |
| 16 | Octal device are set with odd number. |
| 17 | The setting is not executed with the multiple of 16 when specifying the bit device word. |
| 20 | The specified CPU does not exist. |
| 21 | The specified Word type does not exist. |
| 22 | A CPU not included with network settings has been specified. |
| 25 | No expression exit between {and}. |
| 26 | The operator type of expressions table flow. |
| 27 | The control type table overflew. |
| 28 | The switch statement includes no "case". |
| 29 | "Default" exist although there is no switch statement. |
| 30 | There are multiple "default" settings in switch statements. |
| 31 | There are too many switch "case" statements. |
| 32 | There are too many "switch break" statements. |
| 33 | Switch nest is deep. |
| 34 | System memory is insufficient. |
| 35 | Parenthesis nest is deep. |
| 36 | Regarded as invalid statement. |
| 37 | No semicolon. |
| 38 | There are invalid characters. |
| 39 | File input is not specified. |
| 40 | The specified input file does not exist. |
| 41 | The nest of if/while is deep. |
| 45 | The CPU incompatible with multi-CPU is specified as multi-CPU. |
| 46 | The multi-specified station No. is incorrect. |
| 47 | Network specification or station No. specification is incorrect. |
| 48 | Set network in GOT internal devices. |
| 101 | No closed parenthesis. |
| 111 | The bit device is specified for the device with indirect specification. |

(Continued to next page)

| Error code*1 | Causes of error occurrence |
|---|---|
| 112 | The controller type for any channel number (1 to 4) is not specified or the GOT cannot communicate with the specified controller. |
| 113 | Channel number is illegal. |
| 114 | Channel designation is not allowed for a common device. |
| 115 | Write is attempted for a read-only internal variable. |
| 116 | Read is attempted for a write-only internal variable. |
| 117 | Write is attempted for a read-only property. |
| 118 | Read is attempted for a write-only property. |
| 119 | A character string does not end with "". |
| 120 | EOF is used in a character string. |
| 121 | A character string includes too many characters. |
| 122 | Unicode conversion error of a character string. |
| 123 | EG device cannot be used in an object script. |
| 124 | Data type conversion function cannot be used. |
| 125 | An unusable internal variable is used. |
| 126 | An unusable property is used. |
| 127 | An unusable function is used. |
| 136 | The data types for the word device 1 and the word device 2 in the bmov or fmov function differ. |

*1 The same error code may be displayed twice when station No. setting of a device is incorrect.

*2 For devices (such as coil (MB) of YASKAWA PLC CP-9200SH) that have mixed representation (decimal and hexadecimal) of a device number, error code "4" occurs when a number outside the address range is specified.

## 16.4.3 Errors and corrective actions for script execution on GOT

### 1 Error checking method

The error data of the script functions is stored into the GOT special registers (GS).
Check the stored data using the system monitor function and various object functions (numerical display, lam indication and others) of the GOT.

- Details of GOT special registers

  ☞ Section 2.9.1 GOT internal devices

- Details of system monitor function

  ☞ GOT1000 Series Extended/Option Functions Manual

(1) The following types of GOT special register (GS) are provided for Project script/Screen script.

| Address | Item Name | Description |
|---|---|---|
| GS14 | Script common information (read only) | Stores the data of error occurrence.<br>GS14.00 :Turns ON at error occurrence.<br>GS14.07 :Turns ON at BCD error occurrence.<br>GS14.08 :Turns ON at zero division error occurrence.<br>GS14.12 :Turns ON at communication error occurrence (including access to out-of-range device). |
| GS15 | Script error pointer | Stores the pointer where the latest error code is stored.<br>The latest error code is stored in a 2-word area within the script error data (GS16 to GS47).<br>The value at GS15 cycles as shown below each time an error occurs.<br>"-1" → "16" → "18" → ..... → "46" (cycles back to "16".)<br>The relationships between the GS15 value and the latest error code storing area are shown below.<br><table><tr><th>GS15</th><th>Area where the latest error code is stored</th></tr><tr><td>16</td><td>GS16 to GS17</td></tr><tr><td>18</td><td>GS18 to GS19</td></tr><tr><td>...</td><td>...</td></tr><tr><td>46</td><td>GS46 to GS47</td></tr></table> |
| GS16 to 47*1 | Script error data | Stores the script No. of error occurrence and the corresponding error codes in due order, starting from the higher addresses of the storage area.<br>When an error occurs, the script No. and error code are stored in 2-word unit as a history.<br>Note that if 15 or more errors occur, the higher addresses are overwritten in order. |

(Continued to next page)

| Address | Item Name | Description |
|---|---|---|
| GS48 | Script execution pointer | Stores the pointer where the latest script execution number is stored.<br>The latest script execution number is stored in a 1-word area within the script execution numbers (GS49 to GS79).<br>The value at GS48 cycles as shown below each time a project script/screen script is executed.<br>"-1" → "49" → "50" → ..... → "79" (cycles back to "49".)<br>The relationships between the GS48 value and the latest script execution number storing area are shown below.<br><br>GS48 / Area where the latest error code is stored<br>49 / GS49<br>50 / GS50<br>... / ...<br>79 / GS79 |
| GS49 to 79 | Script execution number | Stores the script Nos. of the scripts executed as a history. |
| GS154 | File operation function information (write only) | Notifies the execution statuses of the file operation functions.<br>GS154.00 : Turns on during executing a file operation function. The bit turns off when the file operation function is completed.<br>GS154.15 : Turns on when an error occurs with a file operation function. The bit turns off when the next file operation function is completed normally. The bit does not turn off even if the script error clear signal (GS384.0) turns on. |
| GS384 | Script common control (write only) | GS384.0 :When ON, clears Script error data (GS16 to 47).<br>GS384.1 :Re-executes the script that has been suspended due to error when turned ON. |
| GS385 | Script monitoring time | Sets the monitor time of one script in second unit.<br>If a script does not end the preset time after its start, script processing is stopped. (Error code: 15)<br>The initial setting of "0" is processed as 10 seconds.<br><br>Setting Example / Monitor Time<br>0 (default) / 10 seconds<br>1 / 1 seconds<br>10 / 10 seconds<br>11 / 11 seconds |

(Continued to next page)

<table>
<tr><th>Address</th><th>Item Name</th><th>Description</th></tr>
<tr><td>GS386</td><td>Screen script initial operation</td><td>Sets whether initial operation will be performed or not when any of the following conditions is satisfied.<br>• The screen script is used.<br>• The execution condition (trigger type) selected is "Rise/Fall".<br>• Switched to the screen including scripts.<br>• Security switching<br>• Language switching<br>• Switching station No.<br>• Offset switching
<table>
<tr><th>Setting Example</th><th>Trigger Type</th><th>Bit Value of Trigger</th><th>Initial Operation</th></tr>
<tr><td rowspan="2">0</td><td>Rise</td><td>ON</td><td rowspan="2">Performed</td></tr>
<tr><td>Fall</td><td>OFF</td></tr>
<tr><td rowspan="2">Other than 0</td><td>Rise</td><td>ON</td><td rowspan="2">Not performed</td></tr>
<tr><td>Fall</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>GS390</td><td>File operation function data storage order (read only)</td><td>Select an order of storing data with file_read or file_write.<br>[Low-->High]: Data are stored in the order of lower to upper data.<br>[High-->Low]: Data are stored in the order of upper to lower data.<br>The order of storing data for the file operation functions can be set with GT Designer2.<br>When "1" or "2" is set for GS390, the order of storing data set with GT Designer2 is disabled.
<table>
<tr><th>GS390</th><th>Action</th></tr>
<tr><td>0</td><td>Storing data in the order set with GT Designer2</td></tr>
<tr><td>1</td><td>Low-->High</td></tr>
<tr><td>2</td><td>High-->Low</td></tr>
<tr><td>3 or more</td><td>Storing data in the order set with GT Designer2</td></tr>
</table></td></tr>
</table>

*1 According to the error, script No. may be "0".
For the script function error, refer to the following.

☞ This section 2 Error code list

(2) The following types of GOT special register (GS) are provide for Object script.

| Address | Item Name | Description |
|---|---|---|
| GS80 | Object script common information (read only) | Stores the data of error occurrence.<br>GS80.00 :Turns ON at error occurrence.<br>GS80.07 :Turns ON at BCD error occurrence.<br>GS80.08 :Turns ON at zero division error occurrence.<br>GS80.12 :Turns ON at communication error occurrence (including access to out-of-range device). |
| GS81 | Object script error pointer | Stores the pointer where the latest error code is stored.<br>The latest error code is stored in a 2-word area within the script error data (GS82 to GS113).<br>The value at GS81 cycles as shown below each time an error occurs.<br>"-1" → "82" → "84" → ..... → "112" (cycles back to "82".)<br>The relationships between the GS81 value and the latest error code storing area are shown below.<br><table><tr><th>GS81</th><th>Area where the latest error code is stored</th></tr><tr><td>82</td><td>GS82 to GS83</td></tr><tr><td>84</td><td>GS84 to GS85</td></tr><tr><td>...</td><td>...</td></tr><tr><td>112</td><td>GS112 to GS113</td></tr></table> |
| GS82 to 113*1 | Object script error data | Stores the script No. of error occurrence and the corresponding error codes in due order, starting from the higher addresses of the storage area.<br>When an error occurs, the script No. and error code are stored in 2-word unit as a history.<br>Note that if 15 or more errors occur, the higher addresses are overwritten in order. |
| GS114 | Object script execution pointer | Stores the pointer where the latest script execution number is stored.<br>The latest script execution number is stored in a 1-word area within the script execution numbers (GS115 to GS145).<br>The value at GS114 cycles as shown below each time an object script is executed.<br>"-1" → "115" → "116" → ..... → "145" (cycles back to "115".)<br>The relationships between the GS114 value and the latest script execution number storing area are shown below.<br><table><tr><th>GS114</th><th>Area where the latest error code is stored</th></tr><tr><td>115</td><td>GS115</td></tr><tr><td>116</td><td>GS116</td></tr><tr><td>...</td><td>...</td></tr><tr><td>145</td><td>GS145</td></tr></table> |
| GS115 to 145 | Object script execution number | Stores the script Nos. of the scripts executed as a history. |
| GS387 | Object script common control (write only) | GS384.0 :When ON, clears Script error data (GS82 to 113).<br>GS387.1 :Re-executes the script that has been suspended due to error when turned ON. |

(Continued to next page)

<table>
<tr><th>Address</th><th>Item Name</th><th>Description</th></tr>
<tr><td>GS388</td><td>Object script monitoring time</td><td>Sets the monitor time of one object script in unit of second.<br>If an object script does not end after elapsing the preset time, object script processing is stopped. (Error code: 1015)<br>The initial setting of "0" is processed as 10 seconds.
<table>
<tr><th>Setting Example</th><th>Monitor Time</th></tr>
<tr><td>0 (default)</td><td>10 seconds</td></tr>
<tr><td>1</td><td>1 seconds</td></tr>
<tr><td>10</td><td>10 seconds</td></tr>
<tr><td>11</td><td>11 seconds</td></tr>
</table></td></tr>
<tr><td>GS389</td><td>Object script initial operation</td><td>Sets the contents of initial operation to be performed when the following conditions are satisfied.<br>• The object script is used.<br>• The execution condition (trigger type) selected is "Rise / Fall".<br>• The screen is switched to the one that includes object scripts.<br>• Switching security<br>• Switching language<br>• Switching station No.<br>Set the contents of initial operation to be performed at the start up of the GOT.<br>• Object for which store memory is set<br>• Line graph for which locus display is set
<table>
<tr><th>Setting Example</th><th>Trigger Type</th><th>Bit Value of Trigger</th><th>Initial Operation</th></tr>
<tr><td rowspan="2">0</td><td>Rise</td><td>ON</td><td rowspan="2">Performed</td></tr>
<tr><td>Fall</td><td>OFF</td></tr>
<tr><td rowspan="2">Other than 0</td><td>Rise</td><td>ON</td><td rowspan="2">Not performed</td></tr>
<tr><td>Fall</td><td>OFF</td></tr>
</table></td></tr>
</table>

*1 According to errors, script user ID may be "0".
For the script function error, refer to the following.

☞ This section 3 Error category of object script and operation at the occurrence of error

## 2 Error code list

### (1) Project script, Screen script

| Error Code | Error Definition | Corrective Action |
|---|---|---|
| 1*1 | Initialization of project script failed. | • Reduce the number of monitor device points for scripts.<br>• Reduce the number of times to execute the project script. |
| 2*1 | Initialization of screen script (base) failed. | • Reduce the number of monitor device points for scripts and base screens.<br>• Reduce the number of times to execute screen script (base). |
| 3*1 | Initialization of screen script (superimpose window) failed. | • Reduce the number of monitor device points for scripts and the superimpose window 1.<br>• Reduce the number of times to execute the screen script (superimpose window) . |
| 4*1 | Initialization of screen script (overlap window 1) failed. | • Reduce the number of monitor device points for scripts and the overlap window 1.<br>• Reduce the number of times to execute the screen script (overlap window 1) . |
| 5*1 | Initialization of screen script (overlap window 2) failed. | • Reduce the number of monitor device points for scripts and the overlap window 2.<br>• Reduce the number of times to execute the screen script (overlap window 2) . |
| 6 | An error occurred in reading data from the device that always collects the data. | • Correct the script of the device of which the data is outside the specified range. |
| 7*1 | The number of times to execute scripts exceeded the limit. And some scripts were left unexecuted. | • Change the number of times to execute scripts in one project to 256 or less.<br>• Change the number of times to execute scripts on one screen to 256 or less. |
| 8 | When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the monitor device value could not be handled as BCD. | • Check whether the device to be monitored is correct.<br>• Check the processing of the device which could not be handled as BCD, and correct the script and sequence program. |
| 9 | When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the operation result was outside the BCD data range. | • Check the processing of the device that was brought outside the BCD data range. |
| 10 | The numerator was divided by the denominator of 0. | • Check the factor that caused zero division in the corresponding script, and correct the script. |
| 11*1 | Write to a device failed. | • Check the device description of the corresponding script. |
| 12 | Reservation of an internal area for device write failed. | • Reduce the number of write device points in the corresponding script. |
| 13 | The while statement includes the description of a device other than a temporary device area. | • Replace the write device in the while statement with a temporary device area. |
| 14 | An expression was too complicated to process. | • Simplify or divide the operation expression in the corresponding script. |
| 15 | A script did not end within the script monitoring time. | • Check whether the corresponding script has gone into an endless loop.<br>• Increase the value of script monitoring time (GS385). |
| 16 | Access to GOT internal device failed, resulting in error (BCD conversion out of device range) occurrence. | • Check the corresponding processing to GOT internal device and check the script and PLC program.<br>• Check the object script description. |
| | Access to gateway device failed. | • Check whether Extended Function OS of gateway function is installed in GOT.<br>• Check the cable. |
| 19 | Failed to initialize screen script (superimposed window 2) | • Reduce the number of monitor device points for scripts and the superimpose window 2.<br>• Reduce the number of scripts to be executed (Superimposed Window 2). |

(Continued to next page)

| Error Code | Error Definition | Corrective Action |
|---|---|---|
| 20 | The GOT fails to access a temporary device area because the specified value is outside the range of the temporary device area. | Correct statements with the temporary device area in the target script. |
| 24 | The GOT fails to execute the file operation function because data in the arguments used in the function are invalid. (The path is invalid, the data are out of range, or the other errors occur.) | • Check if the data in the arguments are not out of range.<br>• Correct the folder and file names.<br>• Check if the storage device data and file size are not out of range by the offset, number of write bytes, and/or number of read bytes. |
| 25 | The GOT fails to write data because the CF card has insufficient free space. | • Check the free space of the CF card. |
| 26 | The GOT fails to access the file because no CF card is installed or the CF card access switch is off. | • Check if a CF card is installed.<br>• Check if the CF card access switch is on. |
| 27 | The GOT fails to write data because the CF card is set as write-protect or the specified file is a read-only file. | • Check if the CF card is not set as write-protect. |
| 28 | The GOT fails to access the file because the CF card is not formatted or the CF card is faulty. | • Check if the CF card is formatted.<br>• Check if the CF card is not broken. |
| 29 | The GOT fails to access the file because the specified file is used for the other functions. | • Check if the specified file is not used for the other functions when executing the file operation function. |
| 30 | The GOT stops the copy because a file with the same name as the copy source file exists in the copy destination folder. | • Check if the copy destination folder has no file with the same name as the copy source file.<br>• If the copy mode is set to overwrite prohibited, set the copy mode to overwrite permitted. |
| 35 | Initialization of screen script (overlap window 3) failed. | • Reduce the number of monitor device points for scripts and the overlap window 3.<br>• Reduce the number of times to execute the screen script (overlap window 3). |
| 36 | Initialization of screen script (overlap window 4) failed. | • Reduce the number of monitor device points for scripts and the overlap window 4.<br>• Reduce the number of times to execute the screen script (overlap window 4). |
| 37 | Initialization of screen script (overlap window 5) failed. | • Reduce the number of monitor device points for scripts and the overlap window 5.<br>• Reduce the number of times to execute the screen script (overlap window 5). |

*1 Script No. "0" is stored to GOT special register (GS).

### (2) Object script

| Error Code | Error Category*1 | Error Definition | Corrective Action |
|---|---|---|---|
| 1000 | Fatal error | Object script cannot be executed since the option function board is not recognized. | Mount the option function board correctly. |
| 1002 | Fatal error | Initialization of objects related to the object scripts failed when switching the screen. | • Reduce the number of object scripts and the monitor device points of the base screen.<br>• Reduce the number of object scripts presently executed. |
| 1006 | Fatal error | An error occurred in writing the data from the ordinarily collected devices. | Correct the description of the device, taken as the out of the range device. |
| 1011*2 | Execution error | Writing to a device failed. | Check the description of the target script. |
| 1014 | Fatal error | The expression is too complicate to be processed. | Simplify the script operation expression by dividing it or by using other appropriate method. |

(Continued to next page)

| Error Code | Error Category*1 | Error Definition | Corrective Action |
|---|---|---|---|
| 1015 | Fatal error | Execution of object script does not finish although the object script monitor time has elapsed. | • Check the script if it constitutes endless loop.<br>• Increase the value set for object script monitoring time (GS388). |
| 1016 | Fatal error | Access to a GOT internal device failed. | • Check the access operation to a GOT internal device and also the script and sequence program.<br>• Check the description of the target script. |
| 1017 | Fatal error | The script that caused an error in syntax check by GT Designer2 was executed. | Check and correct the script that caused an error in syntax check by GT Designer2. |
| 1018 | Fatal error | Access failed since temporary device outside the range is specified. | Specify the temporary device within the range. |
| 1020 | Fatal error | Write to multiple devices was attempted in a single script. | Correct the specified number of write devices to the allowable number. |
| 1021 | Fatal error | Illegal device type was detected. | Correct the device to the one that can be used by the script. |
| 1031 | Fatal error | Reference of an internal variable was impossible. | Correct to the object / object script / trigger type that allows referencing of the corresponding internal variable. |
| 1032 | Fatal error | Substitution to an interval variable was impossible. | Correct to the object / object script / trigger type that allows substitution to the corresponding internal variable. |
| 1039 | Fatal error | The script that caused an error in syntax check by GT Designer2 was executed. | Check and correct the script that caused an error in syntax check by GT Designer2. |
| 1045 | Fatal error | Setting that is not in the object was referenced or changed. | Refer to or change the property that can be set by the object itself. |
| 1057 | Fatal error | The script that caused an error in syntax check by GT Designer2 was executed. | Check and correct the script that caused an error in syntax check by GT Designer2. |
| 1060 | | | |
| 1070 | | | |
| 1108 | Execution error | The result of operation cannot be treated by BCD data. | • Check the device setting for monitoring.<br>• Check the device operation that the BCD data could not process. |
| 1109 | Execution error | The result of operation falls outside the BCD data range. | Check the operation of the device that caused the BCD data to be outside the range. |
| 1110 | Execution error | Zero division was executed. | Check the zero division of the script. |
| 1131 | Execution error | Reference of an internal variable was impossible. | Cheek the internal variable to be referenced. |
| 1141 | Execution error | A value outside the property range was set. | Check the value to be substituted in property. |
| 1142 | Execution error | For the element number of the property that specifies an array, a value outside the range was set. | Check the element number of the property that specifies an array. |
| 1143 | Execution error | • Object font was not the standard font.<br>• For the object font other than 16-dot standard, "0" (display in 0.5 times) was set. | Check the substituted value of property. |
| 1144 | Execution error | A scale ratio causing the figure to exceed the shape was set. | Check the substituted value of property. |
| 1251 | Warning | There is an error in coordinates or radius. | Check the argument in the drawing execution function. |
| 1252 | Warning | There is an error in line style, line width or line color. | Check the argument in the drawing execution function. |
| 1253 | Warning | There is an error in pattern, pattern color or pattern background color. | Check the argument in the drawing execution function. |

(Continued to next page)

| Error Code | Error Category*1 | Error Definition | Corrective Action |
|---|---|---|---|
| 1254 | Warning | There is an error in character attribute, character color, character shade color, character scale ratio, character string code or character string length. | Check the argument in the drawing execution function. |
| 1255 | Warning | There is no comment assigned to the specified comment No. of the specified comment group No. | Check the argument in the drawing execution function. |
| 1256 | Warning | The stored amount of drawing data exceeded the allowable capacity. | Reduce the number of functions. |

*1 For details of error category, refer to the following.

☞ This section 3 Error category of object script and operation at the occurrence of error

*2 Script user ID "0" is stored to GOT special register (GS).

## 3 Error category of object script and operation at the occurrence of error

(1) Error category

Object script errors are classified into the categories shown below.
Script operation at the occurrence of error is also indicated.

| Error Category | Object Script Operation at the Occurrence of Error |
|---|---|
| Fatal error | Object script stops.<br>Object script does not operate even if the trigger condition is established again.<br>Drawing and device write of the object, set with the object script where an error occurred, are stopped. *2 |
| Execution error | Object script stops.<br>Object script operates when the trigger condition is established again.<br>Drawing and device write of the object, set with the object script where an error occurred, are stopped. *2<br>If the error occurs repeatedly, the occurrence of error in the second time and later is not written to GS82 to GS113. |
| Warning | Object script does not stop. |

*2 Operation of the object, set with the object script where an error occurred, differs depending on the action and execution trigger set.

| Trigger Executed to Act for Object Script | Monitor Function of Object | Write Function of Object |
|---|---|---|
| Key code input<br>Input fixation<br>Device writing | Operates | Stops |
| View change<br>Synchronize display trigger | Stops | Operates |
| Other than above | Stops | Stops |

(2) Script executed before the occurrence of an error

Reflection of the written value and execution of a function differ depending on the write target device and the function to be executed.

(a) Writing to a device

If writing to a device was executed by the script that was executed before the occurrence of the error, the written value is reflected as indicated below.

| Write Target Device | Operation at the Occurrence of Error |
|---|---|
| GOT internal device (GB/ GD) | ○ |
| GOT internal device (Other than GB/ GD) | × |
| Controller device | × |
| Temporary device area | ○ |

○ : Written value is reflected. × : Written value is not reflected.

(b) Execution of function

If a function was executed by the script that was executed before the occurrence of the error, execution of the function is processed as indicated below.

| Execution Target of Write and Function | Operation at the Occurrence of Error |
|---|---|
| Free figure drawing | × |
| Object update function | ○ |
| Object display clear function | ○ |
| Screen update function | ○ |
| Internal variable | × |
| Property | ○ |

○ : Function is executed. × : Function is not executed.

## 16.4.4 Troubleshooting for object script

The following shows the troubleshooting for the object script

| Error | Cause | Corrective Action |
|---|---|---|
| The object script does not operate. | The option function board is not installed on the GOT. | Install the option function board on the GOT. |
| | The option OS is not installed on the GOT. | Install the option OS (Object script) on the GOT. |
| One of the object scripts does not run. | The syntax for the script is incorrect. | Check if no error occurs with the syntax check on GT Designer2. |
| | The object is out of the GOT display area. | Set the object in the GOT display area. |
| | The displays and operations of the object are limited because of the security. | Decrease the security level. |
| | The settings for the object, including the device, are not set. | Set the device and the other settings for the object. |
| | The trigger conditions are not met for the object script. (For such as [Key Code Input], [Input Fixation], [View Change], [Synchronize Display Trigger], and [Device Writing] of [Trigger Type]) | Set the correct trigger condition. |
| | The same screens, including the screens for the overlay screen function, overlap windows, and superimposed windows, are displayed. | Review the configuration of the screens.<br>(Only the object scripts on the first displayed screen are executed. The object scripts on the second or later displayed screens are not executed.) |
| | An error occurs during the execution of the object script. | Check the error code for the object script. |
| A value cannot be assigned to the device. | The values are written in multiple devices on a script. | For operations in process, use the internal devices or the temporary device area of the GOT |
| | The specified device is incorrect. | Set the correct device. |
| | A communication error occurs. | Check if the cable is unplugged. Check if the communication unit is correctly installed on the GOT. Check if the status of the controllers is ready for communications. |
| The script is stopped in the formula with an internal variable. | The specified internal variable is incorrect. | Set a correct internal variable.<br>(Some internal variables cannot be read or assigned depending on an object and trigger condition.) |
| The script is stopped in the formula with a property. | The specified property is incorrect. | Set a correct property.<br>(Some properties cannot be set depending on an object.) |
| | The value assigned to the property is incorrect. (For example, the value assigned to the property is out of range.) | Check the setting range for the value to be assigned. |
| The script is stopped in the formula with operations. | When the operation is executed with BCD data, the data become out of range.<br>Division by zero | Set a correct formula. |
| The script is stopped in the formula with a free figure drawing function. | The value for the argument is incorrect. | Check the the value for the argument. |

(Continued to next page)

| Error | Cause | Corrective Action |
|---|---|---|
| The object script does not operate. | The option function board is not installed on the GOT. | Install the option function board on the GOT. |
| | The option OS is not installed on the GOT. | Install the option OS (Object script) on the GOT. |
| The key input cannot be operated even though the keys are pressed. | An error occurs on the script. | Check if no error occurs during the execution of the object script. |
| Even though the device is entered for the numerical input, the entered value cannot be written in the device. | | |
| The display of the object is not changed even though the object is set. | | |
| A value cannot be written in the device with touch switches. | | |

# APPENDICES

## Appendix1 Key Code List

(1) List of key code for numerical and ASCII input

| Key | Key code (H) | Key | Key code (H) | Key | Key code (H) | Key | Key code (H) |
|---|---|---|---|---|---|---|---|
| SP | 0020H | @ | 0040H | ` | 0060H | ← | 0081H |
| ! | 0021H | A | 0041H | a | 0061H | ↑ | 0082H |
| ” | 0022H | B | 0042H | b | 0062H | ↓ | 0083H |
| # | 0023H | C | 0043H | c | 0063H | (Clear) | 0088H |
| $ | 0024H | D | 0044H | d | 0064H | | |
| % | 0025H | E | 0045H | e | 0065H | | |
| & | 0026H | F | 0046H | f | 0066H | | |
| , | 0027H | G | 0047H | g | 0067H | | |
| ( | 0028H | H | 0048H | h | 0068H | | |
| ) | 0029H | I | 0049H | i | 0069H | | |
| * | 002AH | J | 004AH | j | 006AH | | |
| + | 002BH | K | 004BH | k | 006BH | | |
| , | 002CH | L | 004CH | l | 006CH | | |
| - | 002DH | M | 004DH | m | 006DH | | |
| . | 002EH | N | 004EH | n | 006EH | | |
| / | 002FH | O | 004FH | o | 006FH | | |
| 0 | 0030H | P | 0050H | p | 0070H | | |
| 1 | 0031H | Q | 0051H | q | 0071H | | |
| 2 | 0032H | R | 0052H | r | 0072H | | |
| 3 | 0033H | S | 0053H | s | 0073H | | |
| 4 | 0034H | T | 0054H | t | 0074H | | |
| 5 | 0035H | U | 0055H | u | 0075H | | |
| 6 | 0036H | V | 0056H | v | 0076H | | |
| 7 | 0037H | W | 0057H | w | 0077H | | |
| 8 | 0038H | X | 0058H | x | 0078H | | |
| 9 | 0039H | Y | 0059H | y | 0079H | | |
| : | 003AH | Z | 005AH | z | 007AH | | |
| ; | 003BH | [ | 005BH | { | 007BH | | |
| < | 003CH | \ | 005CH | \| | 007CH | | |
| = | 003DH | ] | 005DH | } | 007DH | | |
| > | 003EH | ^ | 005EH | ～ | 007EH | | |
| ? | 003FH | _ | 005FH | → | 0080H | | |

(2) List of key code for objects

(a) Key code for numerical input

| Key code (H) | Application |
|---|---|
| 0008H | Deletes the least signification digit and shifts the entire digits to the right by one. |
| 000DH | Write to the destination device (Execute)/Move the cursor |
| 001BH | Cancel |
| 002DH | "±" (sign inversion) |
| 002EH | "." |
| 0030H to 0046H | Input value |
| 0090H | Move cursor to right within object |
| 0091H | Move cursor to left within object |
| 0092H | User ID ascending order movement of cursor |
| 0093H | User ID ascending order movement of cursor |
| FFFAH | Increment |
| FFFBH | Decrement |

(b) Key code for ASCII input

| Key code (H) | Application |
|---|---|
| 0008H | Deletes the first character and shifts the entire characters to the right by one character. |
| 000DH | Write to the destination device (Execute)/Move the cursor |
| 001BH | Cancel |
| ASCII code | Input characters |
| 0084H | Kanji conversion |
| 0085H | Previous choice |
| 0086H | Next choice/Conversion |
| 0087H | Select/No conversion/Select next word |
| 0089H | Select previous word |
| 0090H | Move cursor to right within object/Lengthen the word length |
| 0091H | Move cursor to left within object/Shorten the word length |
| 0092H | User ID ascending order movement of cursor |
| 0093H | User ID ascending order movement of cursor |

(c) Key code for data list display function

| Key code (H) | Application |
|---|---|
| 00F2H | Scroll up by one line |
| 00F3H | Scroll down by one line |

(d) Key code for alarm list display function

| Key code (H) | Application |
|---|---|
| 00F2H | Scroll up by one line |
| 00F3H | Scroll down by one line |
| FFB0H | Show cursor |
| FFB1H | Hide cursor |
| FFB2H | Move cursor upward (Move to previous page when cursor is hidden.) |
| FFB3H | Move cursor downward (Move to next page when cursor is hidden.) |
| FFB8H | Display detail information |
| FFBCH | Display ladder |

(e) Key code for alarm history function

| Key code (H) | Application |
|---|---|
| FFB0H | Show cursor |
| FFB1H | Hide cursor |
| FFB2H | Move cursor upward (Move to previous page when cursor is hidden.) |
| FFB3H | Move cursor downward (Move to next page when cursor is hidden.) |
| FFB4H | Display date/time of selected data |
| FFB5H | Display date/time of all data |
| FFB6H | Clear the selected alarm data |
| FFB7H | Clear all alarm data |
| FFB8H | Display detail /Move to the lower hierarchy |
| FFB9H | Reset the selected alarm data |
| FFBBH | Store to Memory Card |
| FFBCH | Display ladder |

(f) Key coder for advanced alarm display function

| Key code (H) | Application |
|---|---|
| FFB0H | Show cursor |
| FFB1H | Hide cursor |
| FFB2H | Move cursor up |
| FFB3H | Move cursor down |
| FFB4H | Display date/time of selected data |
| FFB5H | Display date/time of all data |
| FFB6H | Clear the selected alarm data |
| FFB7H | Clear all alarm data |
| FFB8H | Move to the lower hierarchy (Display detail) |
| FFB9H | Reset the specified device |
| FFBBH | Store to Memory Card |
| FFBCH | Display ladder |
| FFC2H | Move to the upper hierarchy |

(g) Key code for historical trend graph display function

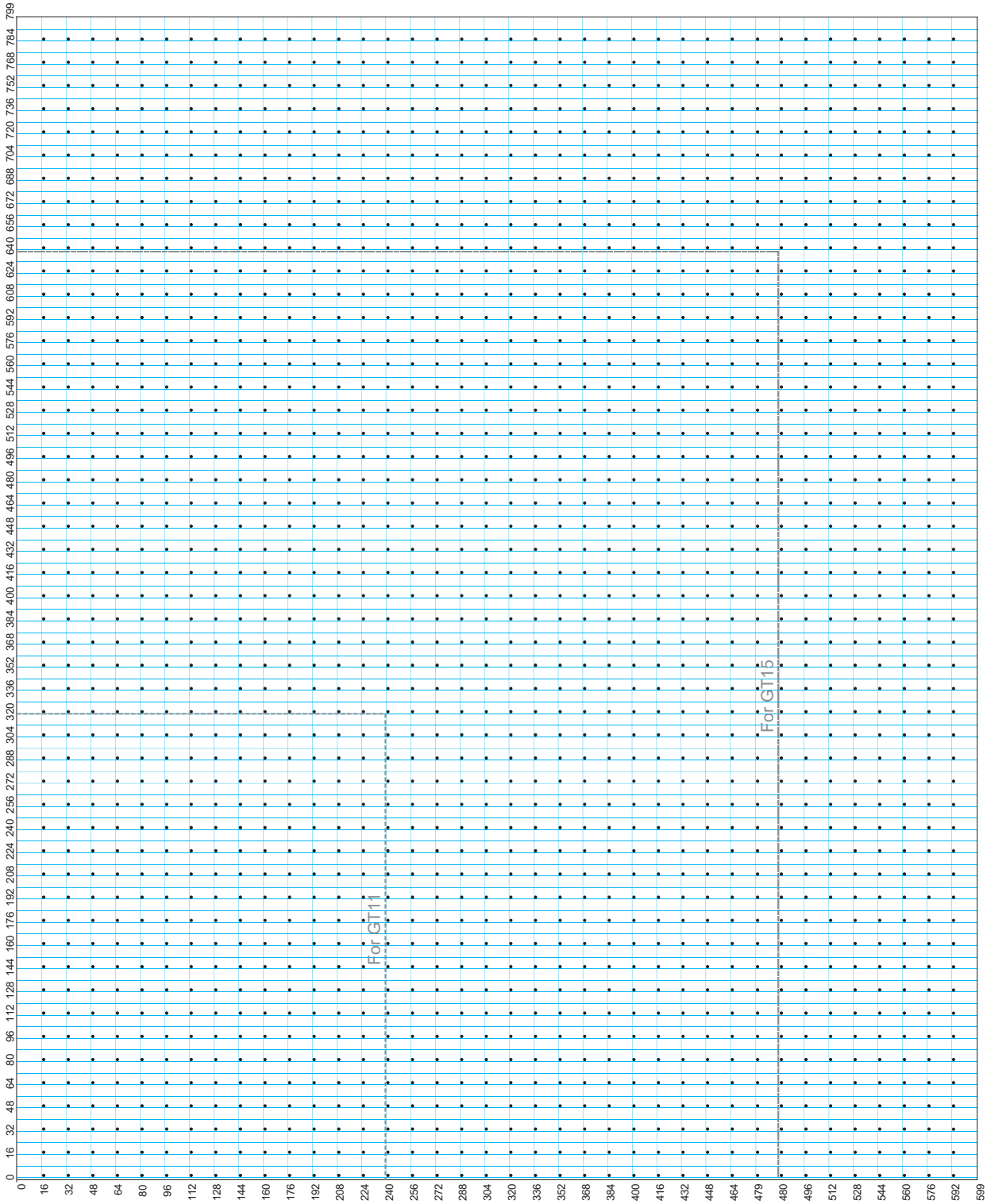
| Key code (H) | Application |
|---|---|
| FFD4H | Display position time specification jump |
| FFF0H | Show cursor |
| FFF1H | Hide cursor |
| FFF2H | Cursor next |
| FFF3H | Cursor previous |
| FFF4H | Graph next |
| FFF5H | Graph previous |
| FFF6H | Graph next page scroll |
| FFF7H | Graph previous page scroll |
| FFF8H | Time axis expansion |
| FFF9H | Time axis reduction |

(h) Key code for document display function

| Key code$^{(H)}$ | Application |
|---|---|
| $FFE0_H$ | Next page |
| $FFE1_H$ | Previous page |
| $FFE2_H$ | Expansion |
| $FFE3_H$ | Reduction |
| $FFE4_H$ | Up scroll |
| $FFE5_H$ | Down scroll |
| $FFE6_H$ | Left scroll |
| $FFE7_H$ | Right scroll |

# Appendix2 Drawing Sheet

(1) For GT15/GT11



# Appendix3 Synthesized Colors Available for XOR

The following table indicates the colors and corresponding numbers available when using the parts display function XOR drawing mode
When using the XOR for any colors other than the following, preview them in the preview of GT Designer.

| | Black 0 | Blue 3 | Red 224 | Purple 227 | Green 28 | Cyan 31 | Yellow 252 | White 255 | Dark blue 2 | Dark red 160 | Dark purple 162 | Dark green 20 | Dark cyan 22 | Dark yellow 180 | Gray 182 | Dark white 109 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black 0 | Black 0 | Blue 3 | Red 224 | Purple 227 | Green 28 | Cyan 31 | Yellow 252 | White 255 | Dark blue 2 | Dark red 160 | Dark purple 162 | Dark green 20 | Dark cyan 22 | Dark yellow 180 | Gray 182 | Dark white 109 |
| Blue 3 | Blue 3 | Black 0 | Purple 227 | Red 224 | Cyan 31 | Green 28 | White 255 | Yellow 252 | — 1 | — 163 | — 161 | — 23 | — 21 | — 183 | — 181 | — 110 |
| Red 224 | Red 224 | Purple 227 | Black 0 | Blue 3 | Yellow 252 | White 255 | Green 28 | Cyan 31 | — 226 | — 64 | — 66 | — 244 | — 246 | — 84 | — 86 | — 141 |
| Purple 227 | Purple 227 | Red 224 | Blue 3 | Black 0 | White 255 | Yellow 252 | Cyan 31 | Green 28 | — 225 | — 67 | — 65 | — 247 | — 245 | — 87 | — 85 | — 142 |
| Green 28 | Green 28 | Cyan 31 | Yellow 252 | White 255 | Black 0 | Blue 3 | Red 224 | Purple 227 | — 30 | — 188 | — 190 | — 8 | — 10 | — 168 | — 170 | — 113 |
| Cyan 31 | Cyan 31 | Green 28 | White 255 | Yellow 252 | Blue 3 | Black 0 | Purple 227 | Red 224 | — 29 | — 191 | — 189 | — 11 | — 7 | — 171 | — 169 | — 114 |
| Yellow 252 | Yellow 252 | White 255 | Green 28 | Cyan 31 | Red 224 | Purple 227 | Black 0 | Blue 3 | — 254 | — 92 | — 94 | — 232 | — 234 | — 72 | — 74 | — 145 |
| White 255 | White 255 | Yellow 252 | Cyan 31 | Green 28 | Purple 227 | Red 224 | Blue 3 | Black 0 | — 253 | — 95 | — 93 | — 235 | — 233 | — 75 | — 73 | — 146 |
| Dark blue 2 | Dark blue 2 | — 1 | — 226 | — 225 | — 30 | — 29 | — 254 | — 253 | Black 0 | Dark purple 162 | Dark red 160 | Dark cyan 22 | Dark green 20 | Gray 182 | Dark yellow 180 | — 111 |
| Dark red 160 | Dark red 160 | — 163 | — 64 | — 67 | — 188 | — 191 | — 92 | — 95 | Dark purple 162 | Black 0 | Dark blue 2 | Dark yellow 180 | Gray 182 | Dark green 20 | Dark cyan 22 | — 205 |
| Dark purple 162 | Dark purple 162 | — 161 | — 66 | — 65 | — 190 | — 189 | — 94 | — 93 | Dark red 160 | Dark blue 2 | Black 0 | Gray 182 | Dark yellow 180 | Dark cyan 22 | Dark green 20 | — 207 |
| Dark green 20 | Dark green 20 | — 23 | — 244 | — 247 | — 8 | — 11 | — 232 | — 235 | Dark cyan 22 | Dark yellow 180 | Gray 182 | Black 0 | Dark blue 2 | Dark red 160 | Dark purple 162 | — 121 |
| Dark cyan 22 | Dark cyan 22 | — 21 | — 246 | — 245 | — 10 | — 7 | — 234 | — 233 | Dark green 20 | Gray 182 | Dark yellow 180 | Dark blue 2 | Black 0 | Dark purple 162 | Dark red 160 | — 123 |
| Dark yellow 180 | Dark yellow 180 | — 183 | — 84 | — 87 | — 168 | — 171 | — 72 | — 75 | Gray 182 | Dark green 20 | Dark cyan 22 | Dark red 160 | Dark purple 162 | Black 0 | Dark blue 2 | — 217 |
| Gray 182 | Gray 182 | — 181 | — 86 | — 85 | — 170 | — 169 | — 74 | — 73 | Dark yellow 180 | Dark cyan 22 | Dark green 20 | Dark purple 162 | Dark red 160 | Dark blue 2 | Black 0 | — 219 |
| Dark white 109 | Dark white 109 | — 110 | — 141 | — 142 | — 113 | — 114 | — 145 | — 146 | — 111 | — 205 | — 207 | — 121 | — 123 | — 217 | — 219 | Black 0 |

# Appendix4 ASCII Code List

ASCII code list is shown below. (The blanks represent control code.)
0xA1 to 0xDF can be displayed only when the GOT's system language is Japanese.

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | (SP) | 0 | @ | P | ` | p | | | | ー | タ | ミ | | |
| 1 | | | ! | 1 | A | Q | a | q | | | 。 | ア | チ | ム | | |
| 2 | | | " | 2 | B | R | b | r | | | 「 | イ | ツ | メ | | |
| 3 | | | # | 3 | C | S | c | s | | | 」 | ウ | テ | モ | | |
| 4 | | | $ | 4 | D | T | d | t | | | 、 | エ | ト | ヤ | | |
| 5 | | | % | 5 | E | U | e | u | | | ・ | オ | ナ | ユ | | |
| 6 | | | & | 6 | F | V | f | v | | | ヲ | カ | ニ | ヨ | | |
| 7 | | | ' | 7 | G | W | g | w | | | ァ | キ | ヌ | ラ | | |
| 8 | | | ( | 8 | H | X | h | x | | | ィ | ク | ネ | リ | | |
| 9 | | | ) | 9 | I | Y | i | y | | | ゥ | ケ | ノ | ル | | |
| A | | | * | : | J | Z | j | z | | | ェ | コ | ハ | レ | | |
| B | | | + | ; | K | [ | k | { | | | ォ | サ | ヒ | ロ | | |
| C | | | , | < | L | \ | l | ¦ | | | ャ | シ | フ | ワ | | |
| D | | | − | = | M | ] | m | } | | | ュ | ス | ヘ | ン | | |
| E | | | . | > | N | ^ | n | ~ | | | ョ | セ | ホ | ゛ | | |
| F | | | / | ? | O | _ | o | | | | ッ | ソ | マ | ゜ | | |

# Appendix5 GOT Displays

The following shows types of displays for GOT.
Layouts and operations of functions, including objects and windows, can vary depending on the type of the display.
(For details, refer to this manual.)

| Type of display | GOT |
|---|---|
| Analog resistive film | GT16, GT1595-X, GT SoftGOT1000*, GT1020 |
| Matrix resistive film | Other than above |

* GT SoftGOT1000 is the software that is started on a personal computer.
Touch keys for GOT are equivalent to clicking on the screen of a personal computer for GT SoftGOT1000.

# Appendix6 Font Selection

Fonts applicable to the GOT varies depending on purposes.
Select the suitable font corresponding to the change method for font type.
For the specifications of fonts applicable to the GOT, refer to the following.

☞ Section 2.3.1 Fonts

The font selection guide is shown below.

| Application | Font | |
|---|---|---|
| | Changing text size by 1-dot units | Changing text size by integral multiple rate |
| Non-switching the displayed text<br>Example) Display texts with graphic characters | TrueType Mincho<br>TrueType Gothic<br>Stroke<br>Windows® font | 6 X 8 dots<br>12 dot Standard (Gothic)<br>16 dot Standard (Mincho/Gothic)<br>12 dot HQ Mincho<br>12 dot HQ Gothic<br>16 dot HQ Mincho<br>16 dot HQ Gothic |
| Switching and displaying the text with comments<br>Example) Display comments that is switched by the comment display | Stroke | 12 dot Standard (Gothic)<br>16 dot Standard (Mincho/Gothic)<br>12 dot HQ Gothic<br>16 dot HQ Gothic |
| Display the text with the numeric display, numeric input, or the time display | TrueType Gothic<br>TrueType Numerical (Gothic/7-Segment)<br>Stroke | 6 X 8 dots<br>12 dot Standard (Gothic)<br>16 dot Standard (Mincho/Gothic)<br>12 dot HQ Mincho<br>12 dot HQ Gothic<br>16 dot HQ Mincho<br>16 dot HQ Gothic |
| Display the text with the ASCII display or ASCII input. | Stroke | 6 X 8 dots<br>12 dot Standard (Gothic)<br>16 dot Standard (Mincho/Gothic) |

**Point**

Precautions for using stroke font

Compared with other fonts, the stroke font requires extra time to display on the screen.
Note that switching the display with frequency or displaying many texts may cause the delay of screen-displayed.

# Appendix7 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series)

The following describes the functions added by version upgrade of the GT Designer2 Version2.96A (partially including 2.97B).
For function comparisons among GOTs, refer to the following.

☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual
(App3-2 List of Differences between the GOT1000 series and GOT-900 series functions)

For using the following functions, use GT Designer2 or OS of the corresponding version or later.
(Applicable OS versions and communication drivers for GT16, GT15, GT SoftGOT1000, and GT11 are different from those for GT10. The added functions for GT10 are listed separately from those for GT16, GT15, GT SoftGOT1000, and GT11.)

**Point**

How to use this table

1 provides the versions of GT Designer2 and OS required for each GOT or communication unit.

2 and the following provides description for the functions added with the version upgrade, and the versions of GT Designer2 and OS with which the function is compatible.

Regarding 2 and the following, there may be a case where the function is not supported by a particular type of GOT even when the function is compatible with the version.
In such a case, check the version for the function and the version of the GOT, and use GT Designer2 or OS of the later version.

## Appendix.7.1 GT16, GT15, GT SoftGOT1000, and GT11

### 1 Added GOT main unit/Communication unit

| Target Models | Version of GT Designer2 | Version of OS |
|---|---|---|
| GT1695M-XTBA, GT1695M-XTBD | 2.90U | Standard monitor OS [04.02.**] |
| GT1685M-STBA, GT1685M-STBD | 2.90U | Standard monitor OS [04.02.**] |
| GT1675M-STBA, GT1675M-STBD, GT1675M-VTBA, GT1675M-VTBD | 2.96A | Standard monitor OS [04.04.**] |
| GT1665M-STBA, GT1665M-STBD, GT1665M-VTBA, GT1665M-VTBD | 2.96A | Standard monitor OS [04.04.**] |
| GT1595-XTBA | 2.18U | Standard monitor OS [02.02.**] |
| GT1595-XTBD | 2.32J | Standard monitor OS [03.00.**] |
| GT1585-STBD | 2.18U | Standard monitor OS [02.02.**] |
| GT1585V-STBA, GT1585V-STBD | 2.32J | Standard monitor OS [03.00.**] |
| GT1575-STBD | 2.18U | Standard monitor OS [02.02.**] |
| GT1575V-STBA, GT1575V-STBD | 2.32J | Standard monitor OS [03.00.**] |
| GT1575-VTBD | 2.18U | Standard monitor OS [02.02.**] |
| GT1575-VNBA, GT1575-VNBD, GT1572-VNBA, GT1572-VNBD | 2.18U | Standard monitor OS [02.02.**] |
| GT1565-VTBD | 2.18U | Standard monitor OS [02.02.**] |

(Continued to next page)

| Target Models | Version of GT Designer2 | Version of OS |
|---|---|---|
| GT1562-VNBA, GT1562-VNBD | 2.18U | Standard monitor OS [02.02.**] |
| GT1555-VTBD | 2.58L | Standard monitor OS [03.03.**] |
| GT1555-QTBD, GT1555-QSBD, GT1550-QLBD | 2.32J | Standard monitor OS [03.00.**] |
| GT1155-QTBDQ, GT1155-QSBDQ, GT1155-QTBDA, GT1155-QSBDA<br>GT1150-QLBDQ, GT1150-QLBDA | 2.58L | Standard monitor OS [03.03.**] |
| GT1155-QTBD | 2.73B | Standard monitor OS [03.09.**] |
| GT1155HS-QSBD to GT1150HS-QLBD | 2.18U | Standard monitor OS [02.02.**] |
| GT SoftGOT1000 | 2.27D | - |
| GT15-QBUS(2), GT15-ABUS(2), GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE | 2.18U | Standard monitor OS [02.02.**]<br>Communication driver<br>For communication drivers used in each connection, use [02.02.**] or |
| GT15-J71GP23-SX | 2.77F | Standard monitor OS [03.12.**] |
| GT01-RS4-M | 2.96A | Standard monitor OS [04.03.**]<br>Communication driver<br>Multidrop(Host) [04.04.**]<br>Multidrop(Slave) [04.04.**] |
| GT16M-V4, GT16M-R2, GT16M-V4R1, GT16M-ROUT | 2.90U | Extended function OS<br>Video/RGB [04.02.**] |
| GT16M-MMR | 2.90U | Extended function OS<br>Multimedia [04.02.**] |
| GT15-CFCD | 2.43V | Standard monitor OS [03.01.**]<br>BootOS [03.01.**.M] |
| GT15-CFEX-C08SET | 2.45X | Standard monitor OS [03.02.**]<br>BootOS [03.02.**.N] |
| GT15-SOUT | 2.58L | Extended function OS<br>Sound Output [03.03.**] |
| GT15-DIO | 2.58L | Extended function OS<br>External I/O / Operation Panel [03.03.**] |
| GT15-DIOR | 2.90U | Extended function OS<br>External I/O / Operation Panel [04.02.**] |
| GT15-80FPA | 2.91V | Extended function OS<br>Operator authentication [04.03.**]<br>Fingerprint Authentication [04.03.**] |

## 2 Added connection types

### (1) For GT16

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Bus connection | Supporting connection to BUS | 2.90U | Communication driver<br>Bus(Q)[04.02.**]<br>Bus(A/QnA) [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>Bus(Q)[04.03.**] |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Bus connection | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>Bus(Q)[04.04.**] |
| Direct connection to CPU | Supporting the direct CPU connection | 2.90U | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.02.**]<br>MELSEC-FX [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.04.**] |
| Computer link connection | Supporting the computer link connection | 2.90U | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.02.**]<br>AJ71QC24, MELDAS C6* [04.02.**]<br>AJ71C24/UC24 [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>A/QnA/Q CPU, QJ71C24 [04.04.**] |
| MELSECNET/H connection (PLC to PLC network) | Supporting connection to MELSECNET/H (PLC to PLC network) | 2.90U | Communication driver<br>MELSECNET/H [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>MELSECNET/H [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>MELSECNET/H [04.04.**] |
| MELSECNET/10 connection (PLC to PLC network) | Supporting connection to MELSECNET/10 PLC to PLC connection) | 2.90U | Communication driver<br>MELSECNET/H [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>MELSECNET/H [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>MELSECNET/H [04.04.**] |
| CC-Link IE controller network connection | Supporting connection to CC-Link IE controller network | 2.90U | Communication driver<br>CC-Link IE Controller Network [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>CC-Link IE Controller Network [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>CC-Link IE Controller Network [04.04.**] |
| CC-Link connection (Intelligent device station) | Supporting connection to CC-Link (Intelligence device station) | 2.90U | Communication driver<br>CC-Link Ver2 (ID) [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>CC-Link Ver2 (ID) [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>CC-Link Ver2 (ID) [04.04.**] |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| CC-Link connection (Via G4) | Supporting connection to CC-Link (Via G4) | 2.90U | Communication driver<br>CC-Link(G4) [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>CC-Link(G4) [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>CC-Link(G4) [04.04.**] |
| Ethernet connection | Supporting connection to the Ethernet | 2.90U | Communication driver<br>Ethernet(MELSEC),Q17nNC, CRnD-700 [04.02.**] |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>Ethernet(MELSEC),Q17nNC, CRnD-700 [04.03.**] |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>Ethernet(MELSEC),Q17nNC, CRnD-700 [04.04.**] |
| OMRON PLC connection | Supporting connection to OMRON PLC | 2.90U | Communication driver<br>OMRON SYSMAC [04.02.**] |
| KEYENCE PLC connection | Supporting connection to KEYENCE PLC | 2.90U | Communication driver<br>KEYENCE KV700/1000 [04.02.**] |
| KOYO EI PLC connection | Supporting connection to KOYO EI PLC | 2.90U | Communication driver<br>KOYO KOSTAC/DL [04.02.**] |
| SHARP PLC connection | Supporting connection to SHARP PLC | 2.90U | Communication driver<br>SHARP JW [04.02.**] |
| TOSHIBA PLC connection | Supporting connection to TOSHIBA PLC | 2.90U | Communication driver<br>TOSHIBA PROSEC T/V [04.02.**] |
| TOSHIBA MACHINE PLC connection | Supporting connection to TOSHIBA MACHINE PLC | 2.90U | Communication driver<br>TOSHIBA MACHINE TCmini [04.02.**] |
| JTEKT PLC connection | Supporting connection to JTEKT PLC | 2.90U | Communication driver<br>JTEKT TOYOPUC-PC [04.02.**] |
| HITACHI IES PLC connection | Supporting connection to HITACHI IES PLC | 2.90U | Communication driver<br>HITACHI HIDIC H [04.02.**]<br>HITACHI HIDIC H (Protocol 2) [04.02.**] |
| HITACHI PLC connection | Supporting connection to HITACHI PLC | 2.90U | Communication driver<br>HITACHI S10mini/S10V [04.02.**] |
| FUJI FA PLC connection | Supporting connection to FUJI FA PLC | 2.90U | Communication driver<br>FUJI MICREX-F [04.02.**] |
| PANASONIC PLC connection | Supporting connection to PANASONIC PLC | 2.90U | Communication driver<br>MATSUSHITA MEWNET-FP [04.02.**] |
| | Communication driver name has been changed. | 2.96A | Communication driver<br>Panasonic MEWNET-FP [04.04.**] |
| YASKAWA PLC connection | Supporting connection to YASKAWA PLC | 2.90U | Communication driver<br>YASKAWA GL/CP9200(SH/H)/ CP9300MS [04.02.**]<br>Ethernet(YASKAWA) [04.02.**] |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| YOKOGAWA PLC connection | Supporting connection to YOKOGAWA PLC | 2.90U | Communication driver<br>YOKOGAWA FA500/FA-M3/ STARDOM [04.02.**]<br>Ethernet(YOKOGAWA) [04.02.**]<br>MODBUS/TCP [04.02.**] |
| ALLEN-BRADLEY PLC connection | Supporting connection to ALLEN-BRADLEY PLC | 2.90U | Communication driver<br>AB SLC500, AB 1:N [04.02.**]<br>AB MicroLogix [04.02.**]<br>AB Control/CompactLogix [04.02.**]<br>EtherNet/IP(AB) [04.02.**] |
| GE FANUC PLC connection | Supporting connection to GE FANUC PLC | 2.90U | Communication driver<br>GE Fanuc Automation(SNP-X) [04.02.**] |
| LS IS PLC connection | Supporting connection to LS IS PLC | 2.90U | Communication driver<br>LS Industrial Systems MASTER-K[04.02.**] |
| SCHNEIDER PLC connection | Supporting connection to the MODBUS® /TCP | 2.90U | Communication driver<br>MODBUS/TCP [04.02.**] |
| SIEMENS PLC connection | Supporting connection to SIEMENS PLC | 2.90U | Communication driver<br>SIEMENS S7-300/400 [04.02.**]<br>SIEMENS S7-200 [04.02.**] |
| Microcomputer connection | Supporting connection to a microcomputer | 2.90U | Communication driver<br>Computer [04.02.**] |
| MODBUS® /RTU connection | Supporting MODBUS® /RTU connection | 2.96A | Communication driver<br>MODBUS/RTU [04.04.**] |
| MODBUS® /TCP connection | Supporting connection to the MODBUS® /TCP | 2.90U | Communication driver<br>MODBUS/TCP [04.02.**] |
| OMRON temperature controller connection | Supporting connection to OMRON temperature controller | 2.90U | Communication driver<br>OMRON THERMAC / INPANEL NEO [04.02.**] |
| SHINKO indicating controller connection | Supporting connection to SHINKO indicating controller | 2.90U | Communication driver<br>SHINKO TECHNOS CONTROLLER [04.02.**] |
| CHINO controller connection | Supporting connection to CHINO controller | 2.90U | Communication driver<br>CHINO Controllers(MODBUS) [04.02.**] |
| FUJI SYS temperature controller connection | Supporting connection to FUJI SYS temperature controller | 2.90U | Communication driver<br>FUJI PXR/PXG/PXH [04.02.**] |
| YAMATAKE temperature controller connection | Supporting connection to YAMATAKE temperature controller | 2.90U | Communication driver<br>YAMATAKE SDC/DMC [04.02.**] |
| YOKOGAWA temperature controller connection | Supporting connection to YOKOGAWA temperature controller | 2.90U | Communication driver<br>YOKOGAWA GREEN/UT100/ UT2000 [04.02.**] |
| RKC temperature controller connection | Supporting connection to RKC temperature controller | 2.90U | Communication driver<br>RKC SR Mini HG(MODBUS) [04.02.**] |
| Inverter connection | Supporting connection to inverter | 2.90U | Communication driver<br>FREQROL 500/700 [04.02.**] |
| Robot controller connection | Supporting connection to robot controller | 2.90U | Communication driver<br>QJ71E71/AJ71(Q)E71,Q17nNC, CRnD-700 [04.02.**] |

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| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Servo amplifier connection | Supporting connection to servo amplifier | 2.90U | Communication driver<br>MELSERVO-J3, J2S/M [04.02.**] |
| | Supporting connection to MR-J2S-*CL | 2.96A | Communication driver<br>MELSERVO-J3, J2S/M [04.04.**] |
| CNC connection (MELDAS C6/C64) | Supporting connection to CNC (MELDAS C6/C64 series) | 2.90U | Communication driver<br>AJ71QC24, MELDAS C6* [04.02.**]<br>MELSECNET/H [04.02.**]<br>CC-Link Ver2 (ID) [04.02.**]<br>Ethernet(MELSEC), Q17nNC, CRnD-700 [04.02.**] |
| GOT multidrop connection | Supporting the GOT multidrop connection | *1 | - |
| Barcode reader connection | Supporting connection to barcode reader | 2.90U | Extended function OS<br>Barcode [04.02.**] |
| Printer connection | Supporting connection to printer | 2.90U | Extended function OS<br>Printer [04.02.**] |
| FA transparent | Supporting the FA transparent function via USB | 2.90U | Standard monitor OS [04.02.**] |
| | Supporting the Ethernet connection between the GOT and the PLC on GX Developer | 2.96A | Standard monitor OS [04.04.**] |
| External I/O device connection | Supporting connection to external I/O devices | 2.90U | Extended function OS<br>External I/O / Operation Panel [04.02.**] |
| RFID connection | Supporting connection to the RFID controller | 2.90U | Extended function OS<br>RFID [04.02.**] |

*1 This item is supported by GT Works3 Version1.14Q or later.

### (2) For GT15, GT SoftGOT1000, and GT11

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| Bus connection | Supporting connection to BUS | 2.04E | Communication driver<br>Bus(Q)[01.00.**]<br>Bus(A/QnA) [01.00.**] | ○ | × | × | × |
| | | 2.58L | GT15<br>Communication driver<br>Bus(Q) [03.03.**]<br>Bus(A/QnA) [03.03.**]<br>GT11<br>BootOS [03.03.**.P]<br>Standard monitor OS [03.03.**]<br>Communication driver<br>Bus(Q) [03.03.**]<br>Bus(A/QnA) [03.03.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q172HCPU, Q173HCPU | 2.09K | Communication driver<br>Bus(Q) [01.02.**] | ○ | × | ○ | × |
| | Priority order of data load can be set. | 2.43V | Communication driver<br>Bus connection Q [03.01.**] | ○ | × | ○ | × |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver<br>Bus connection Q [03.07.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| Bus connection | Supporting connection to CRnQ-700 | 2.73B | Communication driver<br>Bus connection Q [03.09.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver<br>Bus connection Q [03.12.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver<br>Bus connection Q [03.13.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver<br>Bus connection Q [04.03.**] | ○ | ○ | ○ | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver<br>Bus connection Q [04.04.**] | ○ | ○ | ○ | × |
| Direct connection to CPU | Supporting connection to Q172HCPU, Q173HCPU | 2.09K | Communication driver<br>A/QnA/QCPU,QJ71C24 [01.02.**] | ○ | × | × | ○ |
| | Supporting connection to FX3U series | 2.18U | Communication driver<br>MELSEC-FX[02.02.**] | ○ | ○ | × | ○ |
| | Supporting automatic system switching for QCPU redundant system | 2.32J | Communication driver<br>A/QnA/QCPU, QJ71C24, MELDAS C6* [03.00.**] | ○ | ○ | × | ○ |
| | Communication driver name has been changed. | 2.43V | Communication driver<br>A/QnA/QCPU, QJ71C24 [03.01.**] | ○ | × | × | ○ |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver<br>A/QnA/QCPU,QJ71C24, MELDASC6*[03.07.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting connection to CRnQ-700 | 2.73B | Communication driver<br>A/QnA/QCPU, QJ71C24 [03.09.**] | ○ | ○ | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | | Communication driver<br>A/QnA/QCPU, QJ71C24 [03.09.**]<br>MELSEC-FX[03.09.**] | ○ | × | × | ○ |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver<br>A/QnA/QCPU, QJ71C24 [03.12.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver<br>A/QnA/QCPU, QJ71C24 [03.13.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to QS001CPU | | | × | ○ | × | × |
| | Supporting connection to FX3G series | 2.90U | Communication driver<br>MELSEC-FX[04.02.**] | ○ | ○ | × | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| Direct connection to CPU | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver A/QnA/QCPU, QJ71C24 [04.03.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver A/QnA/QCPU, QJ71C24 [04.04.**] | ○ | ○ | × | ○ |
| Computer link connection | Supporting connection to Q172HCPU, Q173HCPU | 2.09K | Communication driver A/QnA/QCPU,QJ71C24 [01.02.**] | ○ | × | × | ○ |
| | Communication driver name has been changed. | 2.43V | Communication driver A/QnA/QCPU, QJ71C24 [03.01.**] AJ71QC24, MELDAS C6* [03.01.**] | ○ | × | × | ○ |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver A/QnA/QCPU,QJ71C24, MELDASC6*[03.07.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting the redundant system with the redundant type extension base unit | | | | | | |
| | Supporting connection to CRnQ-700 | 2.73B | Communication driver A/QnA/QCPU, QJ71C24 [03.09.**] | ○ | ○ | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | | Communication driver A/QnA/QCPU, QJ71C24 [03.09.**] AJ71QC24, MELDAS C6* [03.09.**] AJ71C24/UC24[03.09.**] | ○ | × | × | ○ |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver A/QnA/QCPU, QJ71C24 [03.12.**] | ○ | ○ | × | ○ |
| | Supporting connection to QJ71CMON | | | | | | |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver A/QnA/QCPU, QJ71C24 [04.04.**] | ○ | ○ | × | ○ |
| Computer link connection | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver A/QnA/QCPU, QJ71C24 [03.13.**] | ○ | ○ | × | ○ |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver A/QnA/QCPU, QJ71C24 [04.03.**] | ○ | ○ | × | ○ |
| MELSECNET/H connection (PLC to PLC network) | Supporting connection to MELSECNET/H (PLC to PLC network) | 2.25B | - | × | ○ | × | × |
| | | 2.32J | Communication driver MELSECNET/H [03.00.**] | ○ | ○ | × | × |
| | Supporting routing parameter setting with GT Designer2. | 2.43V | Communication driver MELSECNET/H [03.01.**] | ○ | × | × | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| MELSECNET/H connection (PLC to PLC network) | Supporting connection to Universal model QCPU | 2.63R | Communication driver MELSECNET/H[03.07.**] | ○ | ○ | × | × |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting connection to CRnQ-700 | 2.73B | Communication driver MELSECNET/H[03.09.**] | ○ | ○ | × | × |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver MELSECNET/H[03.12.**] | ○ | ○ | × | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver MELSECNET/H[03.13.**] | ○ | ○ | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to QS001CPU | | | ○ | ○ | × | × |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver MELSECNET/H [04.03.**] | ○ | ○ | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver MELSECNET/H [04.04.**] | ○ | ○ | × | × |
| MELSECNET/10 connection (PLC to PLC network) | Supporting connection to MELSECNET/10 PLC to PLC connection) | 2.09K | Communication driver MELSECNET/10 [01.02.**] | ○ | ○ | × | × |
| | Supporting connection to Q172HCPU, Q173HCPU | | | | × | | |
| | Supporting automatic system switching for QCPU redundant system | 2.32J | Communication driver MELSECNET/10 [03.00.**] | ○ | ○ | × | × |
| | Supporting routing parameter setting with GT Designer2. | 2.43V | Communication driver MELSECNET/H [03.01.**] | ○ | × | × | × |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver MELSECNET/H[03.07.**] | ○ | ○ | × | × |
| | Supporting connection to Q17nDCPU | | | ○ | ○ | × | × |
| | Supporting connection to CNC C70 | | | ○ | ○ | × | × |
| | Supporting connection to CRnQ-700 | 2.73B | Communication driver MELSECNET/H[03.09.**] | ○ | ○ | × | × |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver MELSECNET/H[03.12.**] | ○ | ○ | × | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver MELSECNET/H[03.13.**] | ○ | ○ | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | ○ | ○ | × | × |
| | Supporting connection to QS001CPU | | | ○ | ○ | × | × |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver MELSECNET/H [04.03.**] | ○ | ○ | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver MELSECNET/H [04.04.**] | ○ | ○ | × | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| CC-Link IE controller network connection | Supporting connection to CC-Link IE controller network | 2.77F | Communication driver CC-Link IE Controller Network[03.12.**] | ○ | ○ | × | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver CC-Link IE Controller Network[03.13.**] | ○ | ○ | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to QS001CPU | | | ○ | ○ | × | × |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver CC-Link IE Controller Network[04.03.**] | ○ | ○ | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver CC-Link IE Controller Network[04.04.**] | ○ | ○ | × | × |
| CC-Link connection (Intelligent device station) | Supporting connection to CC-Link (Intelligence device station) | 2.09K | Communication driver CC-LINK(ID) [01.02.**] | ○ | × | × | × |
| | Supporting connection to Q172HCPU, Q173HCPU | | | | | | |
| | Supporting connection to CC-Link Ver.2 | 2.32J | Communication driver CC-Link Ver2 (ID) [03.00.**] | ○ | ○ | × | × |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver CC-Link Ver2 (ID) [03.07.**] | ○ | × | × | × |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting the redundant system with the redundant type extension base unit | | | | | | |
| | Supporting connection to CRnQ-700 | 2.73B | Communication driver CC-Link Ver2 (ID) [03.09.**] | ○ | × | × | × |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver CC-Link Ver2 (ID) [03.12.**] | ○ | × | × | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver CC-Link Ver2 (ID) [03.13.**] | ○ | × | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver CC-Link Ver2 (ID) [04.03.**] | ○ | × | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver CC-Link Ver2 (ID) [04.04.**] | ○ | × | × | × |
| CC-Link connection (Via G4) | Supporting connection to CC-Link (Via G4) | 2.09K | Communication driver CC-LINK(G4) [01.02.**] | ○ | × | × | ○ |
| | Supporting connection to Q172HCPU, Q173HCPU | | | | | | |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| CC-Link connection (Via G4) | Supporting connection to Universal model QCPU | 2.63R | Communication driver CC-Link(G4)[03.07.**] | ○ | × | × | ○ |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting the redundant system with the redundant type extension base unit | | | | | | |
| | Supporting connection to AJ65BT-R2N | 2.73B | Communication driver CC-Link(G4)[03.09.**] | ○ | × | × | ○ |
| | Supporting connection to CRnQ-700 | | | | | | |
| | Supporting settings for the number of retries, the timeout time, and delay time | | | | | | |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver CC-Link(G4)[03.12.**] | ○ | × | × | ○ |
| | Supporting connection to Q02PHCPU and Q06PHCPU | 2.82L | Communication driver CC-Link(G4)[03.13.**] | ○ | × | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | | | |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver CC-Link(G4) [04.03.**] | ○ | × | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver CC-Link(G4) [04.04.**] | ○ | × | × | × |
| Ethernet connection | Supporting connection to the Ethernet | 2.09K | Communication driver QJ71E71/AJ71(Q)E71 [01.02.**] | ○ | ○ | × | × |
| | Supporting connection to Q172HCPU, Q173HCPU | | | | × | | |
| | Supporting automatic system switching for QCPU redundant system | 2.32J | Communication driver QJ71E71/AJ71(Q)E71 [03.00.**] | ○ | ○ | × | × |
| | Supporting routing parameter setting with GT Designer2. | 2.43V | Communication driver QJ71E71/AJ71(Q)E71 [03.01.**] | ○ | ○ | × | × |
| | Supporting connection to Universal model QCPU | 2.63R | Communication driver QJ71E71/AJ71(Q)E71, Q17nNC[03.07.**] | ○ | ○ | × | × |
| | Supporting connection to Q17nDCPU | | | | | | |
| | Supporting connection to CNC C70 | | | | | | |
| | Supporting the redundant system with the redundant type extension base unit | | | | | | |
| | Supporting the redundant system with the remote I/O station of the MELSECNET/H network system | | | | × | | |
| | The communication driver name is changed. | 2.73B | Communication driver QJ71E71/AJ71(Q)E71,Q17nNC, CRnD-700 [03.09.**] | ○ | × | × | × |
| | Supporting connection to CRnQ-700 and CRnD-700 | | | ○ | ○ | × | × |
| | Supporting connection to Q13UDHCPU and Q26UDHCPU | 2.77F | Communication driver QJ71E71/AJ71(Q)E71,Q17nNC, CRnD-700 [03.12.**] | ○ | ○ | × | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| Ethernet connection | The communication driver name is changed. | 2.82L | Communication driver Ethernet(MELSEC),Q17nNC, CRnD-700 [03.13.**] | ○ | × | × | × |
| | Supporting connection to Q02PHCPU and Q06PHCPU | | | ○ | ○ | × | × |
| | Supporting connection to Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q13UDEHCPU, and Q26UDEHCPU | | | | ○ | × | × |
| | Supporting connection to QS001CPU | | | ○ | ○ | × | × |
| | Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU | 2.91V | Communication driver Ethernet(MELSEC), Q17nNC, CRnD-700 [04.03.**] | ○ | ○ | × | × |
| | Supporting connection to Q170MCPU | 2.96A | Communication driver Ethernet(MELSEC), Q17nNC, CRnD-700 [04.04.**] | ○ | ○ | × | × |
| OMRON PLC connection | Extended device range monitored (The setting of TIM or CNT up to 4095, etc.) | 2.09K | Communication driver OMRON SYSMAC [01.02.**] | ○ | ○ | × | ○ |
| | Supporting delay time setting | 2.27D | Communication driver OMRON SYSMAC [02.04.**] | ○ | × | × | ○ |
| | Supporting the settings of Retry and Timeout Time. | 2.43V | Communication driver OMRON SYSMAC [03.01.**] | ○ | × | × | ○ |
| | Supporting connection to CP1L | 2.82L | Communication driver OMRON SYSMAC [03.13.**] | ○ | × | × | ○ |
| KEYENCE PLC connection | Supporting connection to KEYENCE PLC | 2.18U | Communication driver KEYENCE KV700/1000 [02.02.**] | ○ | × | × | ○ |
| | Supporting connection to KV-3000 and KV-5000 | 2.77F | Communication driver KEYENCE KV700/1000 [03.12.**] | ○ | × | × | ○ |
| KOYO EI PLC connection | Supporting connection to KOYO EI PLC | 2.82L | Communication driver KOYO KOSTAC/DL [03.13.**] | ○ | × | × | ○ |
| SHARP PLC connection | Supporting connection to SHARP PLC | 2.09K | Communication driver SHARP JW [01.02.**] | ○ | × | × | ○ |
| | Supporting settings for the number of retries and the timeout time | 2.73B | Communication driver SHARP JW [03.09.**] | ○ | × | × | ○ |
| TOSHIBA PLC connection | Supporting connection to TOSHIBA PLC | 2.09K | Communication driver TOSHIBA PROSEC T/V [01.02.**] | ○ | × | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | 2.73B | Communication driver TOSHIBA PROSEC T/V [03.09.**] | ○ | × | × | ○ |
| | Supporting connection to model2000(S2T) | 2.77F | Communication driver TOSHIBA PROSEC T/V [03.12.**] | ○ | × | × | ○ |
| TOSHIBA MACHINE PLC connection | Supporting connection to TOSHIBA MACHINE PLC | 2.77F | Communication driver TOSHIBA MACHINE TCmini [03.12.**] | ○ | × | × | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| JTEKT PLC connection | Supporting connection to JTEKT PLC | 2.32J | Communication driver JTEKT TOYOPUC-PC [03.00.**] | ○ | × | × | ○ |
| HITACHI IES PLC connection | Supporting connection to HITACHI IES PLC | 2.09K | Communication driver HITACHI HIDIC H [01.02.**] HITACHI HIDIC H (Protocol 2) [01.02.**] | ○ | × | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | 2.73B | Communication driver HITACHI HIDIC H [03.09.**] HITACHI HIDIC H (Protocol 2) [03.09.**] | ○ | × | × | ○ |
| HITACHI PLC connection | Supporting connection to HITACHI PLC | 2.43V | Communication driver HITACHI S10mini/S10V [03.01.**] | ○ | × | × | ○ |
| FUJI FA PLC connection | Supporting connection to FUJI FA PLC | 2.43V | Communication driver FUJI MICREX-F [03.01.**] | ○ | × | × | ○ |
| PANASONIC PLC connection | Supporting connection to PANASONIC PLC | 2.09K | Communication driver MATSUSHITA MEWNET-FP [01.02.**] | ○ | × | × | ○ |
| | Supporting connection to FP-Σ | 2.18U | Communication driver MATSUSHITA MEWNET-FP [02.02.**] | ○ | × | × | ○ |
| | Supporting connection to FP-X | 2.58L | Communication driver MATSUSHITA MEWNET-FP [03.03.**] | ○ | × | × | ○ |
| | The device range applicable to monitoring is extended. (Up to 991F for R and up to 911 for WR can be set.) | | | ○ | × | × | ○ |
| | Supporting settings for the timeout time and the delay time | 2.73B | Communication driver MATSUSHITA MEWNET-FP [03.09.**] | ○ | × | × | ○ |
| | Communication driver name has been changed. | 2.96A | Communication driver Panasonic MEWNET-FP [04.04.**] | ○ | × | × | ○ |
| YASKAWA PLC connection | Supporting connection to MP2000 and MP3000 | 2.47Z | Communication driver YASKAWA GL/CP9200(SH/H)/ CP9300MS [03.02.**] | ○ | × | × | ○ |
| | Supporting the Ethernet connection | 2.47Z | Communication driver Ethernet(YASKAWA) [03.02.**] | ○ | ○ | × | × |
| | Supporting settings for the number of retries and the timeout time | 2.73B | Communication driver YASKAWA GL/CP9200(SH/H)/ CP9300MS [03.09.**] | ○ | × | × | ○ |
| | Supporting connection to CP-312 | 2.77F | Communication driver Ethernet(YASKAWA) [03.12.**] | ○ | × | × | × |
| YOKOGAWA PLC connection | Supporting connection to STARDOM | 2.32J | Communication driver YOKOGAWA FA500/FA-M3/ STARDOM [03.00.**] | ○ | × | × | ○ |
| | Supporting the Ethernet connection | 2.47Z | Communication driver Ethernet(YOKOGAWA) [03.02.**] | ○ | ○ | × | × |
| | Supporting connection to the MODBUS® /TCP | 2.73B | Communication driver MODBUS/TCP [03.09.**] | ○ | × | × | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| ALLEN-BRADLEY PLC connection | Can use L device by MicroLogix 1000/ 1200/1500 series | 2.18U | Communication driver AB MicroLogix [02.02.**] | ○ | × | × | ○ |
| | Supporting connection to Control/ CompactLogix | 2.58L | Communication driver AB Control/CompactLogix [03.03.**] | ○ | × | × | ○ |
| | Supporting the Ethernet connection | 2.63R | Communication driver EtherNet/IP(AB)[03.07.**] | ○ | × | × | × |
| GE FANUC PLC connection | Supporting connection to GE FANUC PLC | 2.82L | Communication driver GE Fanuc Automation(SNP-X) [03.13.**] | ○ | × | × | ○ |
| LS IS PLC connection | Supporting connection to LS IS PLC | 2.90U | Communication driver LS Industrial Systems MASTER-K [04.02.**] | ○ | × | × | ○ |
| SCHNEIDER PLC connection | Supporting connection to the MODBUS® /TCP | 2.73B | Communication driver MODBUS/TCP [03.09.**] | ◯ | × | × | × |
| SIEMENS PLC connection | Supporting connection to SIEMENS S7-200 series | 2.18U | Communication driver SIEMENS S7-200 [02.02.**] | ○ | × | × | ○ |
| Microcomputer connection | Supporting XON/XOFF control | 2.32J | Communication driver Computer [03.00.**] | ○ | × | × | ○ |
| | Supporting interrupt extension | | | | | | |
| MODBUS® /RTU connection | Supporting MODBUS® /RTU connection | 2.96A | Communication driver MODBUS/RTU [04.04.**] | ○ | × | × | ○ |
| MODBUS® /TCP connection | Supporting MODBUS® /TCP connection | 2.73B | Communication driver MODBUS/TCP [03.09.**] | ○ | × | × | × |
| OMRON temperature controller connection | Supporting connection to OMRON temperature controller | 2.18U | Communication driver OMRON THERMAC / INPANEL NEO [02.02.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added. | 2.58L | Communication driver OMRON THERMAC/INPANEL NEO [03.03.**] | ○ | × | × | ○ |
| SHINKO indicating controller connection | Supporting connection to SHINKO indicating controller | 2.43V | Communication driver Shinko Technos Controller [03.01.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | 2.58L | Communication driver Shinko Technos Controller [03.03.**] | ○ | × | × | ○ |
| CHINO controller connection | Supporting connection to CHINO controller | 2.58L | Communication driver CHINO Controllers(MODBUS) [03.03.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | | | | | | |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| FUJI SYS temperature controller connection | Supporting connection to FUJI SYS temperature controller | 2.32J | Communication driver FUJI PXR/PXG/PXH [03.00.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | 2.58L | Communication driver FUJI PXR/PXG/PXH [03.03.**] | ○ | × | × | ○ |
| YAMATAKE temperature controller connection | Supporting connection to YAMATAKE temperature controller | 2.18U | Communication driver YAMATAKE SDC/DMC [02.02.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | 2.58L | Communication driver YAMATAKE SDC/DMC [03.03.**] | ○ | × | × | ○ |
| YOKOGAWA temperature controller connection | Supporting connection to YOKOGAWA temperature controller | 2.43V | Communication driver YOKOGAWA GREEN/UT100/ UT2000 [03.01.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | 2.58L | Communication driver YOKOGAWA GREEN/UT100/ UT2000 [03.03.**] | ○ | × | × | ○ |
| RKC temperature controller connection | Supporting connection to RKC temperature controller | 2.18U | Communication driver RKC SR Mini HG(MODBUS) [02.02.**] | ○ | × | × | ○ |
| | Supporting connection to SRZ | 2.58L | Communication driver RKC SR Mini HG(MODBUS) [03.03.**] | ○ | × | × | ○ |
| | The functions to automatically stop monitoring faulty stations and to disconnect communications with controllers are added | | | | | | |
| | Supporting connection to CB series | 2.87R | Communication driver RKC SR Mini HG(MODBUS) [04.03.**] | ○ | × | × | ○ |
| Inverter connection | Supporting connection to inverter | 2.18U | Communication driver FREQROL 500/700 [02.02.**] | ○ | × | × | ○ |
| | Setting range for Timeout Time has been changed. (3 to 30 seconds → 1 to 30 seconds) | 2.43V | Communication driver FREQROL 500/700 [03.01.**] | ○ | × | × | ○ |
| | Supporting connection to E700 series and V500/V500L series | 2.63R | Communication driver FREQROL 500/700[03.07.**] | ○ | × | × | ○ |
| | Supporting connection to D700 series | 2.91V | Communication driver FREQROL 500/700 [04.03.**] | ○ | × | × | ○ |
| Servo amplifier connection | Supporting connection to servo amplifier | 2.09K | Communication driver MELSERVO-J2S/M [01.02.**] | ○ | × | × | ○ |
| | Supporting connection to MELSERVO-J3 series | 2.18U | Communication driver MELSERVO-J3,J2S/M [02.02.**] | ○ | × | × | ○ |
| | Supporting connection to MR-J3-*T series | 2.63R | Communication driver MELSERVO-J3, J2S/M [03.07.**] | ○ | × | × | ○ |
| | Supporting writing to the $E^2$PROM area in parameter writing | 2.32J | Communication driver MELSERVO-J3, J2S/M [03.00.**] | ○ | × | × | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| Servo amplifier connection | Supporting the point table setting for MR-J2S-*CP | 2.32J | Communication driver MELSERVO-J3, J2S/M [03.00.**] | ○ | × | × | ○ |
| | Supporting the test run mode | 2.32J | Communication driver MELSERVO-J3, J2S/M [03.00.**] | ○ | × | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | 2.73B | Communication driver MELSERVO-J3, J2S/M [03.09.**] | ○ | × | × | ○ |
| | Enables setting the host station address. | 2.90U | Communication driver MELSERVO-J3, J2S/M [04.02.**] | ○ | × | × | ○ |
| | Supporting connection to MR-J2S-*CL | 2.96A | Communication driver MELSERVO-J3, J2S/M [04.04.**] | ○ | × | × | ○ |
| Robot controller connection | Supporting connection to robot controller | 2.77F | Communication driver QJ71E71/AJ71(Q)E71,Q17nNC, CRnD-700 [03.12.**] | ○ | ○ | × | × |
| CNC connection (MELDAS C6/ C64) | Supporting connection to CNC (MELDAS C6/C64 series) | 2.18U | Communication driver A/QnA/QCPU, QJ71C24, MELDAS C6* [02.02.**] A/QnAQJ71E71/AJ71(Q)E71 [02.02.**] MELSECNET/10 [02.02.**] CC-Link(ID) [02.02.**] | ○ | ○ | × | ○ |
| | Communication driver name has been changed. | 2.43V | Communication driver AJ71QC24, MELDAS C6* [03.01.**] | ○ | × | × | ○ |
| | Supporting settings for the number of retries, the timeout time, and delay time | 2.73B | Communication driver AJ71QC24, MELDAS C6* [03.09.**] | ○ | × | × | ○ |
| | Communication driver name has been changed. | | Communication driver QJ71E71/AJ71(Q)E71,Q17nNC, CRnD-700 [03.09.**] | ○ | × | × | × |
| GOT multidrop connection | Supporting the GOT multidrop connection | 2.96A | Communication driver Multidrop(Host) [04.04.**] Multidrop(Slave) [04.04.**] | × *1 | × | × | ○ |
| Barcode reader connection | Supporting connection to barcode reader | 2.09K | Extended function OS Barcode [01.02.**] | ○ | × | ○ | ○ |
| | Supporting connection to 2D-code reader | 2.27D | Extended function OS Barcode [02.04.**] | ○ | × | ○ | ○ |
| Printer connection | Supporting connection to printer | 2.27D | Extended function OS Printer [02.04.**] | ○ | × | × | × |
| FA transparent | Supporting the FA transparent function via USB | 2.09K | GT15 Standard monitor OS [01.02.**] GT11 Standard monitor OS [01.02.**] Boot OS [01.02.**.C] | ○ | × | ○ | ○ |
| | MT Developer (via USB), MR Configurator and FR Configurator are added as compatible software. | 2.27D | Standard monitor OS [02.04.**] | ○ | × | ○ | ○ |
| | GX Configuration and PX Developer are added as compatible software. | 2.32J | Standard monitor OS [03.00.**] | ○ | × | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT11 | |
|---|---|---|---|---|---|---|---|
| | | | | | | Bus | Serial |
| FA transparent | Supporting the computer link connection between the GOT and PLC on GX Developer | 2.77F | Standard monitor OS [03.12.**] | ○ | × | ○ | ○ |
| | Supporting the computer link connection between the GOT and PLC on PX Developer | 2.82L | Standard monitor OS [03.13.**] | ○ | × | ○ | ○ |
| | FX Configurator-FP is added as compatible software. | | | | | | |
| | Supporting the Ethernet connection between the GOT and the PLC on GX Developer | 2.96A | Standard monitor OS [04.04.**] | ○ | × | × | × |
| Multiple-GT11 connection | Connection with multiple GT11s | 2.09K | Standard monitor OS [01.02.**] | × | × | ○ | ○ |
| External I/O device connection | Supporting connection to external I/O devices | 2.58L | Extended function OS External I/O / Operation Panel [03.03.**] | ○ | × | × | × |
| RFID connection | Supporting connection to the RFID controller | 2.73B | Extended function OS RFID [03.09.**] | ○ | × | ○ | ○ |

*1 This item is supported by GT Works3 Version1.14Q or later.

## 3 Added GT Designer2 functions

### (1) For GT16

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Function for GT Designer2 | All GT15 functions added by GT Designer2 Version2.90U or earlier are available. | 2.90U | Standard monitor OS [04.02.**] |
| Project data matching | Project data matching is available between data stored in the personal computer and data opened with GT Designer2. | 2.96A | - |
| Screen preview | Enables switching screens in the Screen Preview window. | 2.96A | - |
| Auxiliary setting | The setting to adjust the order of displaying objects on the GOT to that of the overlapped objects on GT Designer2 is added. | 2.96A | - |

### (2) For GT15, GT SoftGOT1000, and GT11

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Ethernet download | Downloading the project data via Ethernet | 2.09K | Standard monitor OS [01.02.**] | ○ | × | × |
| Basic comment, comment group | Copying comments in column unit on Basic Comment or Comment Group, etc. | 2.09K | - | ○ | ○ | ○ |
| | Enables editing the comment group directly in settings for lamps and touch switches. | 2.77F | - | ○ | ○ | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Library workspace | Improved library structure and added import function | 2.09K | - | ○ | ○ | ○ |
| | Improved user library structure, expanded the user library registration capacity, copying the figure data to the user library, etc. | 2.18U | - | ○ | ○ | ○ |
| | Addition of fixed frame figure | 2.18U | - | ○ | ○ | ○ |
| | Enables setting the background color of the figures in the Library Editor screen. | 2.47Z | - | ○ | ○ | ○ |
| | Enables sorting the figure data by subject or function and displaying different-shaped figures in the same color in the image list. | 2.58L | - | ○ | ○ | ○ |
| | Real type data are added to the subject in the library. | 2.63R | - | ○ | ○ | ○ |
| Project data matching | Project data matching is available between data stored in the GOT and data opened with GT Designer2. | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | ○ |
| | Project data matching is available between the GOT and GT Designer2 even if the minor versions are not matched. | 2.82L | - | ○ | × | ○ |
| | Project data matching is available between data stored in the personal computer and data opened with GT Designer2. | 2.96A | - | ○ | ○ | ○ |
| Copy ON → OFF<br>Copy OFF → ON | Enables copying of only characters in lamp display, touch switch and comment display. | 2.18U | - | ○ | ○ | ○ |
| | Enables copying of only comment No. in bit lamp, touch switch, and comment display(bit). | 2.73B | - | ○ | ○ | ○ |
| Import, Export | Enables editing of the settings for advanced alarm observation (advanced user alarm), alarm history, advanced recipe function and recipe function in the CSV file format and other format. | 2.18U | - | ○ | ○ | ○ |
| | Items that can be imported or exported with the advanced alarm observation and alarm history are added. (Device No., comment No., detail No., and others) | 2.77F | - | ○ | ○ | × |
| Print | Enables printing of header and footer | 2.18U | - | ○ | ○ | ○ |
| Edit | Enables duplicating and consecutive copying of figures and objects. | 2.90U | - | ○ | ○ | ○ |
| Data View | Enables changing of the settings for the respective objects in grouped objects | 2.18U | - | ○ | ○ | ○ |
| Batch Edit | Enables global replacement of channel No. | 2.18U | - | ○ | ○ | × |
| Screen Preview | Enables checking for security level switching and language switching in image after switching | 2.18U | - | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Screen preview | Enables switching screens in the Screen Preview window. | 2.96A | - | ○ | ○ | ○ |
| Wizard | Wizard for setting the GOT type, controller type and communication settings when creating a new project | 2.18U | - | ○ | ○ | ○ |
| Screen script, project script | Settings on the Script Edit dialog are available for screen script and project script. | 2.27D | - | ○ | ○ | × |
| Auxiliary setting | Setting of maintaining screen numbers of the screens being displayed (System Information) during screen switching is added. | 2.27D | - | ○ | ○ | ○ |
| | The setting to adjust the order of displaying objects on the GOT to that of the overlapped objects on GT Designer2 is added. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | ○ |
| Expansion / Reduction | Supports expansion/reduction when multiple objects and shapes are selected. | 2.32J | - | ○ | ○ | ○ |
| | Supports automatically zooming in and out objects and figures suitable for the screen size when the GOT type is changed to a GOT type with different resolution. | 2.73B | - | ○ | ○ | ○ |
| Screen capture | Function for capturing the specified range and loading to GT Designer2 | 2.43V | - | ○ | ○ | ○ |
| Zoom | • Interval of magnification specification has been changed.<br>• +/- buttons have been added.<br>• Zoom in/zoom out operations using the " Ctrl key" and "Mouse wheel" have been added. | 2.43V | - | ○ | ○ | ○ |
| Guidelines | Lines to align figures and objects are displayed when arranging a placed figure or object. | 2.90U | - | ○ | ○ | ○ |
| Communication | Holds the previous downloaded drive. | 2.47Z | - | ○ | × | ○ |
| | • Enables updating BootOS without the standard monitor OS updated when only BootOS is already installed on the GOT.<br>• Enables installing the standard monitor OS, the communication driver, the extended OS or the option OS at once when only BootOS is already installed in the GOT. | 2.58L | BootOS [03.03.**.P] | ○ | × | ○ |
| | Enables installing OSs on the A drive with the OS boot drive set to the A drive. | 2.73B | - | ○ | × | × |
| Preferences | Enables setting the maximum number of screens to be displayed on GT Designer2. | 2.63R | - | ○ | ○ | ○ |
| Device list | Functions of the collection target selection, jump, file output, and others are added. | 2.73B | - | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Text list | Enables displaying the direct input texts in a list. | 2.90U | - | ○ | ○ | ○ |
| Reading BMP or JPEG image data | Enables displaying BMP or JPEG image data reduced to a resolution of 2000 × 1600 or less on GT Designer2. | 2.77F | - | ○ | ○ | ○ |

## 4 Added common settings/object functions

### (1) For GT16

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Common setting | All GT15 functions added by GT Designer2 Version2.90U or earlier are available. | 2.90U | Standard monitor OS [04.02.**] |
| Figure | Supporting logo text | 2.96A | Standard monitor OS [04.04.**] |
| Standard font | Supporting Chinese(Traditional)(supporting Europe) | 2.91V | Standard monitor OS [04.03.**] |
| Window screen | Supporting the overlap windows 3, 4, and 5 | 2.90U | Standard monitor OS [04.02.**] |
| GOT internal device | The settable range of GS is extended to the range from GS0 to GS2047. | 2.90U | Standard monitor OS [04.02.**] |
| | For the GOT multidrop connection, the device to store the GOT station number is added. | *1 | - |
| | The device to notify the RGB signal input status is added. | 2.96A | Standard monitor OS [04.04.**] |
| | Devices for the MODBUS® /RTU connection are added. | | Standard monitor OS [04.04.**] |
| Screen switching function | Enables setting the screen switching devices for the overlap windows 3, 4, and 5. | 2.90U | Standard monitor OS [04.02.**] |
| Station No. Switching Function | Enables setting the station No. switching devices for the overlap windows 3, 4, and 5. | 2.90U | Standard monitor OS [04.02.**] |
| System information | System information regarding the overlap windows 3, 4, and 5 is added. | 2.90U | Standard monitor OS [04.02.**] |
| | System information regarding the E drive is added. | | |
| | The system signal 2-3 is added. | 2.96A | Standard monitor OS [04.04.**] |
| Security | Supporting the external authentication (RFID) for the operator authentication | 2.91V | Extended function OS<br>Operator authentication [04.03.**]<br>RFID [04.03.**] |
| | Supporting the fingerprint authentication for the operator authentication | | Extended function OS<br>Operator authentication [04.03.**]<br>Fingerprint Authentication [04.03.**] |
| | Enables notifying the login operator name. | 2.96A | Extended function OS<br>Operator authentication [04.04.**] |
| | Supporting the GOT operator management information conversion tool | | - |
| Device setting | Enables reading or writing a device when the 32K-block unit is splitted. | 2.91V | Standard monitor OS [04.03.**] |
| Communication settings | Enables setting the multi-channel Ethernet connection. | 2.90U | Standard monitor OS [04.02.**] |
| | Enables setting multiple drivers for external devices, including a bar code reader. (One driver can be set for one type of external device.) | 2.96A | Standard monitor OS [04.04.**] |

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| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| RGB display | Enables using up to two channels when the GT16M-R2 is used for the RGB input unit. | 2.90U | Standard monitor OS [04.02.**]<br>Extended function OS<br>Video/RGB [04.02.**] |
| Multimedia function | Function to display or record video images taken by a video camera connected to the multimedia unit and to play video files stored in a CF card. | 2.90U | Standard monitor OS [04.02.**]<br>Extended function OS<br>Multimedia [04.02.**] |
| | Enables sending video files to the personal computer by using the Ethernet interface of the multimedia unit. | 2.96A | Standard monitor OS [04.04.**]<br>Extended function OS<br>Multimedia [04.04.**] |
| | Enables recording a video image for approximately 1500 minutes (200 video files). | | |
| | Enables fast-forwarding and playing videos in slow motion. | | |
| | Enables recording or playing video files with sound. | 2.98C | |
| Object function | All GT15 functions added by GT Designer2 Version2.90U or earlier are available.*2 | 2.90U | Standard monitor OS [04.02.**] |
| Touch switch | [Batch Self Check], [USB Device Display], and [Multimedia] are added to [Switch Action] of the special function switch. | 2.90U | Standard monitor OS [04.02.**] |
| | The go to screen switch is applicable to the overlap windows 3, 4, and 5. | | |
| | [Ladder Editor] and [Operator Management] are added to [Switch Action] of the special function switch. | 2.96A | Standard monitor OS [04.04.**] |
| Numerical display/ Numerical input | Enables setting the asterisk display. | 2.96A | Standard monitor OS [04.04.**] |
| ASCII display / ASCII input | Enables setting the asterisk display. | 2.96A | Standard monitor OS [04.04.**] |
| Historical Trend Graph | Enables displaying logging data at the specified time on a trend graph. | 2.96A | Standard monitor OS [04.04.**] |
| RFID function | Supporting the dedicated protocol (ICU-60S and ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) | 2.91V | Extended function OS<br>RFID [04.03.**] |
| Project Script | The file operation functions (file_copy, file_xcopy) are added. | 2.96A | Standard monitor OS [04.04.**] |
| Screen Script | Supporting the overlap windows 3, 4, and 5 | 2.90U | Standard monitor OS [04.02.**] |
| | The file operation functions (file_copy, file_xcopy) are added. | 2.96A | Standard monitor OS [04.04.**] |
| Key Code | The key code for the historical trend graph (Display position time specification jump) is added. | 2.96A | Standard monitor OS [04.04.**] |

*1 This item is supported by GT Works3 Version1.14Q or later.
*2 For the ASCII display or ASCII input, the Kana-kanji conversion is not available.
Only the Kana-kanji conversion (enhanced version) is available.

### (2) For GT15, GT SoftGOT1000, and GT11

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Figure | JPEG file reading enabled | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | × |
| | Function to import IGES format data. | 2.43V | - | ○ | ○ | ○ |
| | Enables adjusting image qualities for reading JPEG files. | 2.47Z | - | ○ | ○ | × |
| | Supporting piping | 2.73B | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | Enables setting the coordinates and the size using values. | 2.90U | - | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Figure | Supporting logo text | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | ○ |
| Object | Enables setting the coordinates and the size using values. | 2.90U | - | ○ | ○ | ○ |
| Text | Windows® fonts applicable | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | ○ |
| | Stroke font applicable | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | Enables specifyng of background color. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| Standard font | The following fonts are supported.<br>• Japanese 12dot<br>• Japanese 16dot Gothic<br>• Japanese 16dot Mincho | 2.04E | Standard monitor OS [01.01**] | ○ | ○ | ○ |
| | The following fonts are supported.<br>• Japanese (supporting Europe) 12dot<br>• Japanese (supporting Europe) 16dot Gothic<br>• Japanese (supporting Europe) 16dot Mincho<br>• Chinese (Simplified) 12dot<br>• Chinese (Simplified) 16dot Mincho<br>• Chinese (Simplified) (supporting Europe) 12dot<br>• Chinese (Simplified) (supporting Europe) 16dot Mincho | 2.27D | Standard monitor OS [02.04.**]<br>Boot OS [G] | ○ | ○ | ○ |
| Standard font | Supporting<br>Chinese (Traditional) (supporting Europe) | 2.91V | Standard monitor OS [04.03.**] | ○ | ○ | ○ |
| TrueType font | Supporting the TrueType numerical font (7-segment) | 2.90U | Standard monitor OS [04.02.**]<br>Boot OS [04.02.**U] | ○ | ○ | ○ |
| Stroke font | Enables setting the KANJI region. | 2.47Z | Standard monitor OS [03.02.**] | ○ | ○ | × |
| | Supporting Thai | 2.47Z | Standard monitor OS [03.02.**] | ○ | ○ | × |
| | The following font name is changed.<br>• Stroke Standard Font(JPN)<br>• The following fonts are added.<br>• Stroke Standard Font(China GB)<br>• Stroke Standard Font(China GB)(supporting Hangul) | 2.58L | Extended function OS<br>Stroke Standard Font [03.03.**] | ○ | × | × |
| | The following font is added.<br>• Stroke Font(JPN) | 2.58L | Option OS<br>Stroke Font(JPN) [03.03.**] | ○ | × | × |
| KANJI Region | Supporting Chinese (Traditional) | 2.18U | Standard monitor OS [02.02.**]<br>Option OS<br>Standard Font (China Big5) [02.02.**] | ○ | ○ | × |
| Window screen | Supporting the overlap windows 3, 4, and 5 | 2.96A | - | × | ○ | × |
| GOT internal device | System alarm information, printer status information, and GT SoftGOT1000 end device are added. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | The devices for the trigger buffer of the MES interface are added. | 2.47Z | Standard monitor OS [03.02.**]<br>Option OS<br>MES Interface [03.02.**] | ○ | × | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| GOT internal device | The settable range of GS is extended to the range from GS0 to GS2047. | 2.96A | - | × | ○ | × |
| | For the GOT multidrop connection, the device to store the GOT station number is added. | 2.96A | Standard monitor OS [04.04.**] | ×*1 | × | ○ |
| | Devices for the MODBUS® /RTU connection are added. | 2.96A | | ○ | × | ○ |
| GOT Type | Supporting vertical installation type display | 2.18U | Standard monitor OS [02.02.**] | × | × | ○ |
| Screen switching function | "ON" and "OFF" can be set. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | Enables setting the screen switching devices for the overlap windows 3, 4, and 5. | 2.96A | - | × | ○ | × |
| Station No. Switching Function | Designation of the channel No. for which station No. is switched is possible. | 2.18U | Standard monitor OS [02.02.**] | ○ | × | × |
| | Enables setting the station No. switching devices for the overlap windows 3, 4, and 5. | 2.96A | - | × | ○ | × |
| Language Switching Device | Language switching device can be used. | 2.00A | Standard monitor OS [01.00.**] | ○ | ○ | × |
| | | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | Enables setting the column No. of the comments to be displayed when the device value is out of range. | 2.90U | Standard monitor OS [04.02.**] | ○ | ○ | ○ |
| Password Setting | Password can be set for the connection of motion controller and servo amplifier. | 2.18U | Standard monitor OS [02.02.**] | ○ | × | ○ |
| System information | System information of report function and print are added. | 2.27D | Standard monitor OS [02.04.**] | × | × | ○ |
| | D drive automatic recovery status notification signal is added. | 2.32J | Standard monitor OS [03.00.**] | × | × | ○ |
| | System information regarding B drive has been added. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | The system signal 2-3 is added. | 2.96A | Standard monitor OS [04.04.**] | ○ | × | × |
| Security | The name [Password] is changed to [Security] in the system environment. | 2.58L | Standard monitor OS [03.03.**] | ○ | ○ | × |
| | Enables setting the operator authentication. | 2.58L | Extended function OS<br>Operator authentication [03.03.**] | ○ | ○ | × |
| | Supporting the external authentication (RFID) for the operator authentication | 2.91V | Extended function OS<br>Operator authentication [04.03.**]<br>RFID [04.03.**] | ○ | × | × |
| | Supporting the fingerprint authentication for the operator authentication | | Extended function OS<br>Operator authentication [04.03.**]<br>Fingerprint Authentication [04.03.**] | ○ | × | × |
| | Enables notifying the login operator name. | 2.96A | Extended function OS<br>Operator authentication [04.04.**] | ○ | ○ | × |
| | Supporting the GOT operator management information conversion tool | | - | ○ | ○ | × |
| GOT Setup | In clock management, both adjust and broadcast can be set. | 2.18U | Standard monitor OS [02.02.**] | ○ | × | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| GOT Setup | Data save device of MELSEC-Q / QnA ladder monitor data can be set at GT Designer2. | 2.18U | - | ○ | × | × |
| | Automatic program read at the start of ladder monitor for MELSEC-Q/QnA/ Priority Level Comment can be set. | 2.43V | - | ○ | × | × |
| | Time setting for call key ON until the start up of utility can be set (for 1-point pressing). | 2.18U | Standard monitor OS [02.02.**] | ○ | × | × |
| | Alarm can be set to be displayed in system language switching or battery drops. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Enables the backup/restore setting. | 2.58L | - | ○ | × | × |
| | Enables the setting for monitoring local devices. | | | ○ | × | × |
| | Enables setting the drive for collectively reading comment data. | | | ○ | × | × |
| | Enables settings for the backup trigger setting and the maximum number of backup data. | 2.73B | - | ○ | × | × |
| Clock Setting | Designation of the channel No. used for adjusting and broadcasting is possible. | 2.18U | Standard monitor OS [02.02.**] | ○ | × | × |
| Startup Logo | Function for setting any screen for the GOT startup screen | 2.09K | Standard monitor OS [01.02.**]<br>Boot OS [01.02.**.C] | ○ | ○ | ○ |
| | Enables displaying a BMP data stored in the A drive as the startup logo when the OS boot drive is set to the A drive. | 2.73B | Boot OS [03.09.**.S] | ○ | × | × |
| Handy GOT Setting | Setting of the grip switch LED of handy GOT | 2.18U | Standard monitor OS [02.02.**] | × | × | ○ |
| Dialog window | System messages to be displayed on GOT can be customized or created by the user. | 2.27D | Standard monitor OS [02.04.**] | ○ | × | ○ |
| Operation log | Function to save the GOT operation performed by the user as a history | 2.32J | Standard monitor OS [03.00.**]<br>Option OS<br>Operation Log [03.00.**] | ○ | ○ | × |
| | Function for converting multiple files | 2.43V | - | ○ | ○ | × |
| | The binary format file output can be converted to CSV/Unicode format file by external control. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | Enables saving the operation log for the operator authentication. | 2.58L | Standard monitor OS [03.03.**]<br>Option OS<br>Operation Log [03.03.**]<br>Extended function OS<br>Operator authentication [03.03.**] | ○ | ○ | × |
| Comment | Comment group can be used. | 2.00A | Standard monitor OS [02.02.**] | ○ | ○ | × |
| | | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| Part | Enables setting the background color of the figures in the Parts Editor screen. | 2.47Z | - | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Key Window | User defined key window display can be switched in synchronization with the language switching device. | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | In the user defined key window, input range (maximum value) and input range (minimum value) are displayed. | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | The current value is displayed in the key window. | 2.82L | Standard monitor OS [03.13.**] | ○ | ○ | ○ |
| Device setting | 65 or later station numbers in the MELSECNET/G network system can be set with using Universal model QCPU as a relay station. | 2.63R | Standard monitor OS [03.07.**] | ○ | ○ | × |
| | Enables reading or writing a device when the 32K-block unit is splitted. | 2.91V | Standard monitor OS [04.03.**] | ○ | ○ | ○ |
| Communication settings | Enables setting multiple drivers for external devices, including a bar code reader. (One driver can be set for one type of external device.) | 2.96A | Standard monitor OS [04.04.**] | ○ | × | × |
| Object rename | Function to allow setting of object name | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| Lamp | Windows® fonts applicable | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | ○ |
| | Stroke font applicable | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | Figure created as a part can be used to a lamp. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | [Comment Group] can be used. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | Enables specifying the transparent color of a figure when using an image file as a figure. | 2.47Z | Standard monitor OS [03.02.**] | ○ | ○ | × |
| Touch switch | Windows® fonts applicable | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | ○ |
| | Stroke font applicable | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | Figure created as a part can be used to a touch switch. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | Data change switch can be used. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | [Comment Group] can be used. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | [Adjust Text Size] setting is possible. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Touch switch | Auto repeat can be used. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | The toutch switch on the ladder monitor with device search function can be used. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | [PX Developer Function call] is added to [Switch Action] of the special function switch. | 2.47Z | Standard monitor OS [03.02.**] | × | ○ | × |
| | Enables specifying the transparent color of a figure when using an image file as a figure. | 2.47Z | Standard monitor OS [03.02.**] | ○ | ○ | × |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Touch switch | [FX List Monitor], [Operator Information Management], [Log-in/Log-out (Operator Authentication)], [Password Change (Operator Authentication)], and [Backup/ Restore] are added to [Switch Action] of the special function switch. | 2.58L | Standard monitor OS[03.03.**] | ○ | ○ | × |
| | The name [Password] is changed to [Password (Security Level)] in [Switch Action] of the special function switch. | | | ○ | ○ | ○ |
| | [CNC Data Input/Output] is added to [Switch Action] of the special function switch. | 2.63R | Standard monitor OS [03.07.**] | ○ | × | ○ |
| | [SFC Monitor] is added to [Switch Action] of the special function switch. | 2.77F | Standard monitor OS [03.12.**] | ○ | × | ○ |
| | [Ladder Editor] and [Operator Management] are added to [Switch Action] of the special function switch. | 2.96A | Standard monitor OS [04.04.**] | ○ | × | × |
| Numerical display/ Numerical input | Setting to display input value when entering the value at input target object position is possible. | 2.32J | Standard monitor OS [03.00.**] | ○ | × | × |
| | Format String setting is possible. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | Enables setting the TrueType Numerical for the font. | 2.90U | Standard monitor OS [04.02.**] | ○ | ○ | ○ |
| | Enables setting the asterisk display. | 2.96A | Standard monitor OS [04.04.**] | ○ | × | × |
| ASCII display / ASCII input | Function to store NULL (0x00) at the end of input characters | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | Function to convert characters input in Kana into Kanji | 2.18U | Standard monitor OS [02.02.**]<br>Option OS<br>KANA KANJI (JP) [02.02.**] | ○ | ○ | × |
| | Alignment setting is added. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Setting for displaying an input value at the input target object position is possible. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | The character display position during the ASCII input can be set to [Left] or [Right]. | 2.82L | Standard monitor OS [03.13.**] | ○ | ○ | ○ |
| | Supporting the Kana-kanji conversion (enhanced version) | 2.90U | Standard monitor OS [04.02.**]<br>Option OS<br>KANA KANJI (JPN) (Enhanced Version) [04.02.**] | ○ | ○ | × |
| | Enables setting the asterisk display. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | ○ |
| Clock display | Enables setting the TrueType Numerical for the font. | 2.90U | Standard monitor OS [04.02.**] | ○ | ○ | ○ |
| Data List | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Comment Display | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | The simple comment is added. | 2.77F | Standard monitor OS [03.12.**] | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Advanced alarm popup display | Enables setting whether to enable or disable the display position switching. | 2.90U | Standard monitor OS [04.02.**] | ○ | ○ | ○ |
| User alarm | Number of alarms settable for GT11 is extended to the same as GT15 (Up to 8192 alarms). | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Alarm history | Number of alarms settable for GT11 is extended to the same as GT15 (Up to 3072 alarms). | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to save alarm history data to the A drive (standard CF card) for GT11 | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to display the cursor by touching an alarm, and function to output the corresponding comment No. to a device | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | The comment group application | 2.73B | Standard monitor OS [03.09.**] | ○ | ○ | ○ |
| Scrolling alarm display | The scrolling alarm display applicable | 2.73B | Standard monitor OS [03.09.**] | × | × | ○ |
| Advanced Alarm | Function for detecting alarm even at the fall of bit device with Advanced User Alarm | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | × |
| | Function to display a cursor by touching an alarm and to output the corresponding comment No. to a device. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | The binary format file output can be converted to CSV/Unicode format file by external control. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | For the advanced alarm display, the title row can be set to be hidden. | 2.82L | Standard monitor OS [03.13.**] | ○ | ○ | × |
| | For the advanced alarm display, the alarm information in the top row is output if the external output trigger is on when the cursor is hidden. | 2.82L | Standard monitor OS [03.13.**] | ○ | ○ | × |
| Parts Display/ Parts Movement | Function for using BMP/JPEG data in memory card as parts | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | × |
| | Settings for BMP/JPEG file parts can be made on each object. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| Parts Display/ Parts Movement | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | Enables specifying the transparent color of a figure when using an image file as a figure. | 2.47Z | Standard monitor OS [03.02.**] | ○ | ○ | × |
| Panelmeter | Windows® fonts applicable | 2.09K | Standard monitor OS [01.02.**] | ○ | ○ | ○ |
| | Stroke font applicable | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Meter Attribute and Core can be set. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Level | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Trend graph | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to collect data only when display trigger is met is added. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| Line graph | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to collect data only when display trigger is met is added. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Bar graph | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to collect data only when display trigger is met is added. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Statistics graph | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to collect data only when display trigger is met is added. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| | When Bit Trigger is not met, whether to enable "Hold Display" can be selected. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Scatter graph | Up to 101 points can be set for scale, value number. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Function to collect data only when display trigger is met is added. | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | ○ |
| Historical Trend Graph | Function to display the data collected by the logging function in trend graph format | 2.18U | Standard monitor OS [02.01.**] | ○ | ○ | × |
| | Enables displaying logging data at the specified time on a trend graph. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | × |
| Time Action | Second specification and external control are possible. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| Logging Function | Function to collect and accumulate device values | 2.18U | Standard monitor OS [02.02.**]<br>Option OS<br>Logging [02.02.**] | ○ | ○ | × |
| | Function for converting multiple files | 2.43V | - | ○ | ○ | × |
| | The binary/CSV/Unicode format files output can be stored to another folder by external control. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| Device data transfer function | Function to read the device value and write in the other device when the trigger condition is satisfied. | 2.73B | Extended function OS<br>Device data transfer [03.09.**] | ○ | × | × |
| Recipe function | Number of devices settable for one recipe in GT11 is extended to the same as GT15 (Up to 8192 devices). | 2.27D | Standard monitor OS [02.04.**]<br>Option OS<br>Recipe [02.04.**] | ○ | ○ | ○ |
| | Function to save recipe data of GT11 in CSV file format | 2.27D | Standard monitor OS [02.04.**]<br>Option OS<br>Recipe [02.04.**] | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Recipe function | Function to save recipe data to the A drive (standard CF card) for GT11 | 2.27D | Standard monitor OS [02.04.**]<br>Option OS<br>Recipe [02.04.**] | ○ | ○ | ○ |
| Advanced Recipe | The extended function of the existing recipe function | 2.09K | Standard monitor OS [01.02.**]<br>Option OS<br>Advanced recipe [01.02.**] | ○ | ○ | × |
| | Function for converting multiple files | 2.43V | - | ○ | ○ | × |
| | The binary format file output can be converted to CSV/Unicode format file by external control. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| | The number of records that can be set is changed to 2000. | 2.58L | Standard monitor OS [03.03.**]<br>Option OS<br>Advanced Recipe [03.03.**] | ○ | ○ | × |
| Report function | Function to print the colleted data | 2.27D | Standard monitor OS [02.04.**]<br>Extended function OS<br>Report [02.04.**] | ○ | ○ | × |
| Hard copy function | Compatible with the printer output | 2.27D | Standard monitor OS [02.04.**]<br>Extended function OS<br>Printer [02.04.**] | ○ | × | × |
| | Thumbnail Output can be set. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| Operation panel function | Enables setting the operation panel. | 2.58L | Extended function OS<br>External I/O / Operation Panel [03.03.**] | ○ | × | × |
| Sound output function | Enables setting the sound output. | 2.58L | Extended function OS<br>Sound Output [03.03.**] | ○ | ○ | × |
| Barcode | Function for loading the data read with bar cord reader to PLC CPU | 2.09K | Standard monitor OS [01.00.**] | ○ | × | ○ |
| | Number of settable devices is extended from 32 to 1024 points. | 2.27D | Standard monitor OS [02.04.**] | ○ | × | ○ |
| | Space (0x20) or NULL (0x00) can be selected for blank device. | 2.27D | Standard monitor OS [02.04.**] | ○ | × | ○ |
| RFID function | Function to write in the devices which data are read by the RFID reader/writer. | 2.73B | Extended function OS<br>RFID [03.09.**] | ○ | × | ○ |
| | Supporting the dedicated protocol (ICU-60S and ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.) | 2.91V | Extended function OS<br>RFID [04.03.**] | ○ | × | ○ |
| Video display | Function to display an image taken by a video camera on the GOT | 2.32J | Standard monitor OS [03.00.**]<br>Extended function OS<br>Video/RGB [03.00.**] | ○ | × | × |
| RGB display | Function to display the personal computer screen on the GOT | 2.32J | Standard monitor OS [03.00.**]<br>Extended function OS<br>Video/RGB [03.00.**] | ○ | × | × |
| Remote personal computer operation function | Function to operate the mouse pointer on the personal computer by touching the personal computer screen displayed on the GOT using the RGB display function. | 2.82L | Standard monitor OS [03.13.**]<br>Extended function OS<br>PC Remote Operation [03.13.**] | ○ | × | × |
| Set overlay screen | Number of screens that can be called on GT11 is extended to the same as GT15 (Up to 2047 screens). | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |

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| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Set overlay screen | Screen calling setting with dragging is possible. | 2.43V | - | ○ | ○ | ○ |
| | Specifying of placement position (Front/ Back) for the basic and called screens is possible. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | ○ |
| | [Disable background colors of overlay screen when setting an overlay screen] can be set. | 2.58L | Standard monitor OS [03.03.**] | ○ | ○ | ○ |
| Test function | Function for changing device value with displaying test window. | 2.09K | Standard monitor OS [02.02.**] | ○ | × | ○ |
| Project Script | Function to execute scripts in unit of project file | 2.00A | Standard monitor OS [01.00.**] | ○ | ○ | × |
| | | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | Word device values can be converted into data in the specified data type, and the GOT can read or write the data. (Data type conversion function) | 2.73B | Standard monitor OS [03.09.**] | ○ | ○ | ○ |
| | The file operation functions are added. | 2.77F | Standard monitor OS [03.12.**] | ○ | ○ | ○ |
| | The file operation functions (file_copy, file_xcopy) are added. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | ○ |
| Screen Script | Function to execute scripts in unit of screen | 2.00A | Standard monitor OS [01.00.**] | ○ | ○ | × |
| | | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | Word device values can be converted into data in the specified data type, and the GOT can read or write the data. (Data type conversion function) | 2.73B | Standard monitor OS [03.09.**] | ○ | ○ | ○ |
| | The file operation functions are added. | 2.77F | Standard monitor OS [03.12.**] | ○ | ○ | ○ |
| | The file operation functions (file_copy, file_xcopy) are added. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | ○ |
| Object Script | Function to execute scripts in unit of object | 2.18U | Option OS<br>Object Script [02.02.**] | ○ | ○ | × |
| | "width", "height", and "decimal_point" are added to the object property. | 2.90U | Option OS<br>Object Script [04.02.**] | ○ | ○ | × |
| Key Code | Key codes for increment key and decrement key are added. | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | ○ |
| | Key code for historical trend graph is added. | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | × |
| | Key code used for Kana Kanji conversion is added. | 2.18U | Standard monitor OS [02.02.**] | ○ | ○ | × |
| | Key codes for user ID ascending/ descending order movement of cursor are added. | 2.27D | Standard monitor OS [02.04.**] | ○ | ○ | ○ |
| | Key codes used for the Kana-kanji conversion (enhanced version) are added. | 2.90U | Standard monitor OS [04.02.**] | ○ | ○ | × |
| | The key code for the historical trend graph (Display position time specification jump) is added. | 2.96A | Standard monitor OS [04.04.**] | ○ | ○ | × |

*1 This item is supported by GT Works3 Version1.14Q or later.

## 5 Other functions added

### (1) For GT16

| Item | Description | Version of GT Designer2 | Version of OS |
|---|---|---|---|
| Other function | All GT15 functions added by GT Designer2 Version2.90U or earlier are available. | 2.90U | Standard monitor OS [04.02.**] |
| Q motion monitor function | Supporting Q170MCPU | 2.96A | Option OS<br>Q motion monitor [04.04.**] |
| Backup/restore function | Enables setting the E drive for the storage location for the backup data or backup setting. | 2.90U | Extended function OS<br>Backup/Restore [04.02.**] |
| | Supporting Q170MCPU | 2.96A | Extended function OS<br>Backup/Restore [04.04.**] |
| CNC data I/O function | Enables specifying the E drive for the target to input or output the CNC data. | 2.90U | Extended function OS<br>CNC Data I/O [04.02.**] |
| | Cycle monitor data can be input and output | 2.96A | Extended function OS<br>CNC Data I/O [04.04.**] |
| Ladder editor | Function to edit the sequence program stored in the controller by using the GOT | 2.96A | Extended function OS<br>GOT Platform Library [04.04.**]<br>Option OS<br>Ladder editor [04.04.**]<br>GOT Function Expansion Library [04.04.**] |
| Multi-channel function | Supporting connection to multiple controllers on the Ethernet network | 2.90U | Standard monitor OS [04.02.**]<br>Communication driver<br>Use the communication driver, [04.02.**] or later for each connection. |
| Tag import function | Function to import a tag file created by the third party programming software to GT Designer2, and set a tag as a device. | 2.91V | Standard monitor OS [04.03.**] |
| OS installation | The A drive and E drive are available for installing the OS at power-on. | 2.91V | Standard monitor OS [04.03.**]<br>BootOS [04.03.**] |

### (2) For GT15, GT SoftGOT1000, and GT11

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Utility | Displays details in OS information, project information, alarm information, hard copy information and advance recipe information properties. | 2.18U | Standard monitor OS [02.02.**] | ○ | × | ○ |
| Network unit status display | Function to display the status of MELSECNET/H communication unit and CC-Link communication unit | 2.32J | Standard monitor OS [03.00.**] | ○ | ○ | × |
| GOT data package acquisition | Function for copying the installed OS or data in the GOT main unit to the memory card | 2.43V | Standard monitor OS [03.01.**]<br>BootOS [03.01.**.M] | ○ | × | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Unlimited installation of extended function OSs and option OSs | Extended function OS and option OS can be installed unlimitedly.<br>Extended function OS and option OS can be operated up to 21.<br>(Conventionally, both of above OSs can be installed and operated up to 9. The extended function OS data size is twice as large as other OS data. The logging OS data size is three times as large as other OS data.) | 2.18U | BootOS [02.02.**.E] | ○ | × | × |
| Unlimited installation of extended function OSs and option OSs | Extended function OS and option OS can be operated up to 32.<br>(The extended function OS data size is twice as large as other OS data. The logging OS data size is three times as large as other OS data.) | 2.73B | BootOS [03.09.**.S] | ○ | × | × |
| Built-in option function board | GT15-FNB built in the GOT is enabled. | 2.58L | BootOS [03.03.**.P]<br>Standard monitor OS [03.03.**] | ○ | × | × |
| System monitoring function | Function for monitoring/testing device of PLC CPU or buffer memory of intelligent function module | 2.09K | Extended function OS<br>System monitor [01.02.**] | ○ | × | ○ |
| | Supporting display of Chinese (Simplified/ Traditional), German, Korean | 2.27D | Extended function OS<br>System monitor [02.04.**] | ○ | × | ○ |
| | Supporting connection to Universal model QCPU | 2.63R | Extended function OS<br>System monitor [03.07.**] | ○ | × | ○ |
| | Supporting connection to CC-Link IE controller network | 2.77F | Extended function OS<br>System monitor [03.12.**] | ○ | × | × |
| Network monitor function | Function to monitor the network status of MELSECNET/H, MELSECNET/10, etc. | 2.18U | Option OS<br>Network monitor [02.02.**] | ○ | × | × |
| | Supporting display of Chinese (Simplified/ Traditional), German, Korean | 2.27D | Option OS<br>Network monitor [02.04.**] | ○ | × | × |
| | Enables monitoring the status of the CC-Link IE controller network. | 2.77F | Option OS<br>Network monitor [03.12.**] | ○ | × | × |
| Ladder monitoring function | Function for displaying sequence program loaded to CPU on GOT | 2.09K | Option OS<br>Ladder monitor for MELSEC-A [01.02.**]<br>Ladder monitor for MELSEC-Q /QnA [01.02.**]<br>Ladder monitor for MELSEC-FX [01.02.**] | ○ | × | × |
| | Supporting display of Chinese (Simplified/ Traditional), German, Korean | 2.27D | Option OS<br>Ladder monitor for MELSEC-Q /QnA [02.04.**]<br>Ladder monitor for MELSEC-FX [02.04.**] | ○ | × | × |
| | Supporting language switching (Japanese/Korean) for displaying file name and title of the sequence program | 2.27D | Option OS<br>Ladder monitor for MELSEC-Q/QnA [02.04.**] | ○ | × | × |
| | Supporting the read of programs/ comments | 2.43V | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.01.**] | ○ | × | × |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Ladder monitoring function | Supporting reading comments from CF cards | 2.58L | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.03.**] | ○ | × | × |
| | Supporting monitoring local devices | 2.58L | | ○ | × | × |
| | Supporting connection to Universal model QCPU | 2.63R | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.07.**] | ○ | × | × |
| Ladder monitoring function | In searching multiple file programs, the backward search display is possible. | 2.73B | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.09.**] | ○ | × | × |
| | With MELSEC-QnA ladder monitor, the currently displayed program automatically reflect the set value of TC changed in the test function. | | | | | |
| | Supporting connection to CC-Link IE controller network | 2.77F | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.12.**] | ○ | × | × |
| | Supporting the safety function block display when using the QS001CPU (Only the FB definition name is displayed in the application instruction format.) | 2.82L | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.13.**] | ○ | × | × |
| | The ranges of M and B devices that can be monitored are expanded. | 2.82L | Option OS<br>Ladder monitor for MELSEC-Q/QnA [03.13.**] | ○ | × | × |
| Intelligent module monitor function | Function to monitor and change the data of intelligent function module buffer memory using a dedicated screen | 2.18U | Option OS<br>Intelligent module monitor [02.02.**] | ○ | × | × |
| | Supporting connection to CC-Link IE controller network | 2.77F | Option OS<br>Intelligent module monitor [03.12.**] | ○ | × | × |
| | When using the QS001CPU, the PC information monitor screen (Operation details screen, Error details screen) is displayed. | 2.82L | Option OS<br>Intelligent module monitor [03.13.**] | ○ | × | × |
| List editor for MELSEC-A | Function for displaying/editing sequence program saved from ACPU with list mode | 2.09K | Option OS<br>List editor for MELSEC-A [01.02.**] | ○ | × | ○ |
| List editor for MELSEC-FX | Function to display / edit the sequence program read out from the FXCPU in the list mode | 2.18U | Option OS<br>List editor for MELSEC-FX [02.02.**] | ○ | × | ○ |
| | Supporting display of Chinese (Simplified) | 2.27D | Extended function OS<br>List editor for MELSEC-FX [02.04.**] | ○ | × | ○ |
| | Supporting display of Chinese (Simplified/Traditional), German and Korean (GT11 supports display of Chinese (Simplified/Traditional) and Korean) | 2.27D | Extended function OS<br>List editor for MELSEC-FX [02.04.**] | ○ | × | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Q motion monitor function | Function to execute servo monitor and parameter setting for motion controller CPU (Q series) | 2.18U | Option OS<br>Q motion monitor [02.02.**] | ○ | × | × |
| | Parameter setting is enabled for Q172HCPU/Q173HCPU. | 2.32J | Standard monitor OS [03.00.**] | ○ | × | × |
| | Supporting connection to Q17nDCPU | 2.63R | Option OS<br>Q motion monitor [03.07.**] | ○ | × | × |
| | Enables clearing the SFC error history. (Universal model QCPU only) | 2.63R | Option OS<br>Q motion monitor [03.07.**] | ○ | × | × |
| | Supporting connection to CC-Link IE controller network | 2.77F | Option OS<br>Q motion monitor [03.12.**] | ○ | × | × |
| | Supporting Q170MCPU | 2.96A | Option OS<br>Q motion monitor [04.04.**] | ○ | × | × |
| Servo amplifier monitor function | Function to monitor the servo amplifier and also to change parameters, execute test run, etc. | 2.18U | Option OS<br>Servo amplifier monitor [02.02.**] | ○ | × | × |
| CNC monitor function | Function to monitor the MELDAS that is connected to the GOT | 2.18U | Option OS<br>CNC monitor [02.02.**] | ○ | × | × |
| | Supporting connection to CNC C70 | 2.63R | Option OS<br>CNC monitor [03.07.**] | ○ | × | × |
| Backup/restore function | Function to back up setting data for controllers and to restore the data to the controllers | 2.58L | Extended function OS<br>Backup/Restore [03.07.**] | ○ | × | × |
| | Supporting Backup Data Conversion Tool | 2.63R | - | ○ | × | × |
| | Supporting the trigger backup | 2.73B | Extended function OS<br>Backup/Restore [03.09.**] | ○ | × | × |
| | Supporting Q170MCPU | 2.96A | Extended function OS<br>Backup/Restore [04.04.**] | ○ | × | × |
| CNC data I/O function | Function to copy or delete data of the CNC that is connected to the GOT | 2.63R | Extended function OS<br>CNC Data I/O [03.07.**] | ○ | × | × |
| | Cycle monitor data can be input and output | 2.96A | Extended function OS<br>CNC Data I/O [04.04.**] | ○ | × | × |
| SFC monitor function | Function to display sequence programs written in the PLC CPU in the SFC diagram format on the GOT | 2.77F | Extended function OS<br>GOT Platform Library [03.12.**]<br>Option OS<br>SFC Monitor [03.12.**]<br>GOT Function Expansion Library [03.12.**] | ○ | × | × |
| Ladder editor | Function to edit the sequence program stored in the controller by using the GOT | 2.96A | Extended function OS<br>GOT Platform Library [04.04.**]<br>Option OS<br>Ladder editor [04.04.**]<br>GOT Function Expansion Library [04.04.**] | ○ | × | × |
| Multi-channel function | Function to monitor multiple controllers with a single unit of GOT | 2.18U | Standard monitor OS [02.02.**]<br>Communication driver<br>Use the communication driver, [02.02.**] or later for each connection. | ○ | × | × |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 15 | GT Soft GOT1000 | GT 11 |
|---|---|---|---|---|---|---|
| Gateway function | Function for monitoring each controller from one GOT/PC or sending a mail from GOT | 2.09K | Option OS<br>Gateway function (Mail) [01.02.**]<br>Gateway function (Server, Client) [01.02.**] | ○ | × | × |
| | Supporting the FTP server function | 2.18U | Option OS<br>Gateway functionFTP [02.02.**] | ○ | × | × |
| | Enables transfer of binary data by the FTP server function. | 2.32J | Option OS<br>Gateway (FTP) [03.00.**] | ○ | × | × |
| Document display function | Function to display document on the GOT | 2.32J | Standard monitor OS [03.00.**]<br>Option OS<br>Document Display [03.00.**] | ○ | ○ | × |
| | Image quality adjustment for documents is possible. | 2.43V | Standard monitor OS [03.01.**] | ○ | ○ | × |
| MES interface function | Function to execute data linkage between the control and information systems | 2.43V | Standard monitor OS [03.01.**]<br>Option OS<br>MES Interface [03.01.**] | ○ | × | × |
| | Oracle 8i, ACCESS2000, ACCESS2003, and MSDE2000 are added to the applicable database. | 2.47Z | Standard monitor OS [03.02.**]<br>Option OS<br>MES Interface [03.02.**] | ○ | × | × |
| | The trigger buffering function is added. Enables setting [Do not sample] for the sampling setting in the device tag settings. | | | | | |
| | Industrial SQL Server 9.0 and Microsoft SQL Server 2005 are added as an applicable database. | 2.58L | Standard monitor OS [03.03.**]<br>Option OS<br>MES Interface [03.03.**] | ○ | × | × |
| | Access 2007 is added as an applicable database. | 2.82L | Standard monitor OS [03.13.**]<br>Option OS<br>MES Interface [03.13.**] | ○ | × | × |
| | Function to send resource data stored in the GOT to the database | | | | | |
| Tag import function | Function to import a tag file created by the third party programming software to GT Designer2, and set a tag as a device. | 2.91V | Standard monitor OS [04.03.**] | ○ | × | ○ |

# Appendix.7.2 For GT10

GT Designer2 Version 2.43V or later is applicable to GT1020.
GT Designer2 Version 2.58L or later is applicable to GT1030.
GT Designer2 Version 2.90U or later is applicable to GT105□.
GT Designer2 Version 2.90U or later is applicable to GT104□.

## 1 Added GOT main unit

| Target Models | Version of GT Designer2 | Version of OS |
|---|---|---|
| GT1020-LBD, GT1020-LBD2, GT1020-LBL | 2.43V | - |
| GT1020-LBDW, GT1020-LBDW2, GT1020-LBLW | 2.58L | - |
| GT1030-LBD, GT1030-LBD2 , GT1030-LBDW, GT1030-LBDW2 | 2.58L | - |
| GT1055-QSBD, GT1050-QBBD | 2.90U | - |
| GT1045-QSBD, GT1040-QBBD | 2.90U | - |

## 2 Added connection types

○ : Applicable × : N/A - : Applicable (from the first version)

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| Direct connection to CPU | Supporting connection to FX3G series | 2.90U | Standard monitor OS [01.10.**]<br>Communication driver<br>MELSEC-FX[01.06.**] | ○ | ○ | ○ |
| Computer link connection | Supporting connection to A series PLC | 2.82L | Standard monitor OS [01.09.**]<br>Communication driver<br>AJ71C24/UC24[01.04.**] | - | ○ | ○ |
| CC-Link connection (Via G4) | Supporting connection to CC-Link (Via G4) | 2.73B | Standard monitor OS [01.07.**]<br>Communication driver<br>CC-Link(G4)[01.00.**] | - | ○ | ○ |
| GOT multidrop connection | Supporting the GOT multidrop connection | 2.96A | Standard monitor OS [01.11.**]<br>Communication driver<br>Multidrop(Host) [01.11.**]<br>Multidrop(Slave) [01.11.**] | ○ | ○ | ○ |
| Microcomputer connection | Supporting the data formats of Format 1 and Format 2. | 2.47Z | Standard monitor OS [01.02.**]<br>Communication driver<br>Computer[01.02.**] | - | - | ○ |
| MODBUS® / RTU connection | Supporting MODBUS® /RTU connection | 2.96A | Standard monitor OS [01.12.**]<br>MODBUS/ RTU [01.07.**] | ○ | ○ | ○ |
| OMRON PLC connection | Supporting connection to OMRON PLC | 2.47Z | Standard monitor OS [01.02.**]<br>Communication driver<br>OMRON SYSMAC [01.02.**] | - | - | ○ |
| KEYENCE PLC connection | Supporting connection to KEYENCE PLC | 2.73B | Standard monitor OS [01.07.**]<br>Communication driver<br>KEYENCE KV-700/1000[01.00.**] | - | ○ | ○ |
| | Supporting connection to KV-3000 and KV-5000 | 2.77F | Communication driver<br>KEYENCE KV700/1000 [01.03.**] | - | ○ | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| TOSHIBA MACHINE PLC connection | Supporting connection to TOSHIBA MACHINE PLC | 2.77F | Communication driver TOSHIBA MACHINE TCmini [01.03.**] | - | ○ | ○ |
| PANASONIC PLC connection | Supporting connection to PANASONIC PLC | 2.73B | Standard monitor OS [01.07.**] Communication driver MATSUSHITA MEWNET-FP [01.00.**] | - | ○ | ○ |
| | Communication driver name has been changed. | 2.96A | Standard monitor OS [01.12.**] Communication driver Panasonic MEWNET-FP [01.07.**] | ○ | ○ | ○ |
| YASKAWA PLC connection | Supporting connection to CP9200SH/MP900 series | 2.73B | Standard monitor OS [01.07.**] Communication driver YASKAWA MP [01.00.**] | - | ○ | ○ |
| | Supporting connection to MP2000/MP900 series | 2.73B | | - | ○ | ○ |
| LS IS PLC connection | Supporting connection to LS IS PLC | 2.90U | Standard monitor OS [01.07.**] Communication driver LS Industrial Systems MASTER-K [01.05.**] | ○ | ○ | ○ |
| ALLEN-BRADLEY PLC connection | Supporting connection to MicroLogix 1000/1200/ 1500 series. | 2.58L | Standard monitor OS [01.04.**] Communication driver AB MicroLogix [01.00.**] | - | ○ | ○ |
| | Supporting connection to SLC500 series. | 2.58L | Standard monitor OS [01.04.**] Communication driver AB SLC 500 [01.00.**] | - | ○ | ○ |
| SIEMENS PLC connection | Supporting connection to SIEMENS S7-200 series. | 2.58L | Standard monitor OS [01.04.**] Communication driver SIEMENS S7-200 [01.00.**] | - | ○ | ○ |
| | Supporting connection to SIEMENS S7-300/400 series | 2.90U | Standard monitor OS [01.10.**] Communication driver SIEMENS S7-300/400 [01.05.**] | ○ | ○ | ○ |
| Inverter connection | Supporting connection to inverter | 2.73B | Standard monitor OS [01.07.**] Communication driver FREQROL 500/700 [01.00.**] | - | ○ | ○ |
| Servo amplifier connection | Supporting connection to MR-J2S-*CL | 2.96A | Standard monitor OS [01.12.**] Communication driver MELSERVO-J3, J2S/M [01.07.**] | ○ | ○ | ○ |
| Bar code reader connection | Supporting connection to barcode reader | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |

## 3 Added GT Designer2 functions

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| Library workspace | Enables setting the background color of the figures in the Library Editor screen. | 2.47Z | - | - | - | ○ |
| Project data matching | Project data matching is available between data stored in the personal computer and data opened with GT Designer2. | 2.96A | - | ○ | ○ | ○ |
| Screen preview | Enables switching screens in the Screen Preview window. | 2.96A | - | ○ | ○ | ○ |
| Auxiliary setting | Enables setting [Specify the touch area.]. | 2.77F | - | - | ○ | × |
| | For the set overlay screen function, the setting to place the called screen under the basic screen is added. | 2.96A | - | ○ | ○ | ○ |
| | For the set overlay screen function, the setting to disable the background color of the called screen is added. | | | ○ | ○ | ○ |
| Reading BMP or JPEG image data | Enables displaying BMP or JPEG image data reduced to a resolution of 2000 × 1600 or less on GT Designer2. | 2.77F | - | - | ○ | ○ |
| Directly editing comment group | Enables editing the comment group directly in settings for the lamps and touch switches. | 2.77F | - | - | ○ | ○ |

## 4 Added common settings/object functions

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| Figure | Supporting piping | 2.73B | Standard monitor OS [01.00.**] | - | ○ | ○ |
| | Enables displaying BMP or JPEG image data reduced to a resolution of 2000 × 1600 or less on GT Designer2. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| | Supporting logo text | 2.96A | Standard monitor OS [01.12.**] | ○ | ○ | ○ |
| Standard font | Supporting Japanese<br>Supporting Japanese (supporting Europe)<br>Supporting Chinese (Simplified)(supporting Europe)<br>Supporting Chinese (Traditional)(supporting Europe) | 2.91V | Standard monitor OS [01.11.**] | ○ | ○ | ○ |
| TrueType font | Supporting the TrueType numerical font (Gothic) | 2.91V | Standard monitor OS [01.11.**] | ○ | ○ | ○ |
| | Supporting the TrueType numerical font (7-segment) | | BootOS [01.11.**.G]<br>Standard monitor OS [01.11.**] | ○ | ○ | ○ |
| Window screen | Corresponding to the overlap window display and the superimpose display. | 2.73B | Standard monitor OS [01.07.**] | - | ○ | ○ |
| GOT internal device | Devices from GS0 to GS1023 are available. | 2.96A | Standard monitor OS [01.12.**] | ○ | ○ | ○ |
| GOT Setup | The key reaction speed can be set. | 2.82L | Standard monitor OS [01.09.**] | - | ○ | ○ |

(Continued to next page)

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| Clock function | The clock data storage to the GD device is possible. | 2.73B | Standard monitor OS [01.07.**] | - | ○ | ○ |
| Numerical Display/ Numerical input | Format String setting is possible. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| | Enables setting the asterisk display. | 2.96A | Standard monitor OS [01.12.**] | ○ | ○ | ○ |
| ASCII input | The ASCII input can be set. | 2.58L | Standard monitor OS [01.03.**] | - | ○ | ○ |
| | Enables setting the asterisk display. | 2.96A | Standard monitor OS [01.12.**] | ○ | ○ | ○ |
| Comment Display | The simple comment is added. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| Lamp Display | [Comment Group] can be used. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| Touch switch | Auto repeat can be used. | 2.73B | Standard monitor OS [01.07.**] | - | ○ | ○ |
| | [Comment Group] can be used. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| | The device monitor and debug function can be set for the action setting of the special function switch and the multi action switch. | 2.82L | Standard monitor OS [01.09.**] | - | ○ | ○ |
| Graph | The statistics bar graph can be set. | 2.58L | Standard monitor OS [01.03.**] | - | - | ○ |
| | The statistics pie graph can be set. | 2.58L | Standard monitor OS [01.03.**] | - | - | ○ |
| Alarm history display | Enables selecting whether to set the scrolling comment display suitable for the message display area. | 2.63R | Standard monitor OS [01.06.**] | - | ○ | ○ |
| | Comment group can be used. | 2.73B | Standard monitor OS [01.07.**] | - | ○ | ○ |
| Scrolling alarm display | The scrolling alarm display applicable | 2.73B | Standard monitor OS [01.07.**] | - | ○ | ○ |

## 5 Other functions added

| Item | Description | Version of GT Designer2 | Version of OS | GT 105□/ 104□ | GT 1030 | GT 1020 |
|---|---|---|---|---|---|---|
| Installing OS | Enables installing the OS without the OS installation screen of the GOT. | 2.77F | Standard monitor OS [01.08.**] | - | ○ | ○ |
| Installing/ uploading with GT10-LDR | Enables installing or uploading the OS, communication drivers, project data, and others with the GT10-LDR. | 2.77F | - | × | ○ | ○ |
| | Enables installing the OS for the GT10-LDR.<br>Supporting the following fonts when the OS is installed.<br>Japanese<br>Chinese (Simplified)(supporting Europe)<br>Chinese (Traditional)(supporting Europe)<br>TrueType numerical font (7-segment)<br>TrueType numerical font (Gothic) | 2.91V | Standard monitor OS [01.11.**] | × | ○ | ○ |
| MELSEC-FX list editor function | Function to display or edit a sequence program read from the FXCPU in the list mode | 2.90U | - | ○ | × | × |

# Memo

# INDEX


[A]

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SH(NA)-080530ENG-R-3/3

Integrated FA Software

# GT Designer2

Version 2

## Screen Design Manual 3/3

(For GOT1000 Series)

| | |
|---|---|
| MODEL | SW2-GT1000-R-E |
| MODEL CODE | 1D7M25 |
| SH(NA)-080530ENG-R 3/3(1209)MEE | |

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