MITSUBISHI

GRAPHIC OPERATION TERMINAL

GOT

GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Extended/Option Functions Manual

GRAPHIC OPERATION TERMINAL GOT1000
GRAPHIC OPERATION TERMINAL
GOT1000
POWER
MITSUBISHI

● SAFETY PRECAUTIONS ●

(Always read these precautions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The precautions given in this manual are concerned with this product.
In this manual, the safety precautions 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 the ⚠caution level may lead to a serious accident according to the circumstances.
Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[DESIGN PRECAUTIONS]

⚠WARNING

- Some failures of the GOT, communication unit or cable may keep the outputs on or off.
  An external monitoring circuit should be provided to check for output signals which may lead to a serious accident.
  Not doing so can cause an accident due to false output or malfunction.

- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative.
  For bus connection : The CPU becomes faulty and the GOT becomes inoperative.
  For other than bus connection : The GOT becomes inoperative.
  A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur.
  Not doing so can cause an accident due to false output or malfunction.

- Do not use the GOT as the warning device that may cause a serious accident.
  An independent and redundant hardware or mechanical interlock is required to configure the device that displays and outputs serious warning.
  Failure to observe this instruction may result in an accident due to incorrect output or malfunction.

[DESIGN PRECAUTIONS]

⚠WARNING

- 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 POWER LED flickers (green/orange) and the display section turns black and causes the monitor screen to appear blank, while the input of the touch switch(s) remains active.
  This may confuse an operator in thinking that the GOT is in "screensaver" mode, who then tries to release the GOT from this mode by touching the display section, which may cause a touch switch to operate.
  Note that the following occurs on the GOT when the backlight goes out.
  The POWER LED flickers (green/orange) and the monitor screen appears blank.

- The display section of the GT16 is an analog-resistive type touch panel.
  If you touch the display section simultaneously in 2 points or more, the switch that is located around the center of the touched point, if any, may operate.
  Do not touch the display section in 2 points or more simultaneously.
  Doing so may cause an accident due to incorrect output or malfunction.

- When programs or parameters of the controller (such as a PLC) that is monitored by the GOT are changed, be sure to reset the GOT or shut off the power of the GOT at the same time.
  Not doing so can cause an accident due to false output or malfunction.

⚠CAUTION

- Do not bundle the control and communication cables with main-circuit, power or other wiring.
  Run the above cables separately from such wiring and keep them a minimum of 100mm apart.
  Not doing so noise can cause a malfunction.

- Do not press the GOT display section with a pointed material as a pen or driver.
  Doing so can result in a damage or failure of the display section.

[MOUNTING PRECAUTIONS]

⚠WARNING

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT to/from the panel.
  Not doing so can cause the GOT to fail or malfunction.

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the communication unit, option function board or multi-color display board onto/from the GOT.
  Not doing so can cause the unit to fail or malfunction.

- Before mounting an optional function board or Multi-color display board, wear a static discharge wrist strap to prevent the board from being damaged by static electricity.

[MOUNTING PRECAUTIONS]

⚠CAUTION

- Use the GOT in the environment that satisfies the general specifications described in the User's Manual.
  Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction.
  Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT.
- When loading the communication unit or option unit to the GOT (GT16, GT15), fit it to the extension interface of the GOT and tighten the mounting screws in the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction.
  Overtightening can cause a drop, failure or malfunction due to the damage of the screws or unit.
- When mounting the multi-color display board onto the GOT (GT15), connect it to the corresponding connector securely and tighten the mounting screws within the specified torque range.
  Loose tightening may cause the unit and/or GOT to malfunction due to poor contact.
  Overtightening may damage the screws, unit and/or GOT; they might malfunction.
- When mounting the option function board onto the GOT (GT16), connect it to the corresponding connector securely and tighten the mounting screws within the specified torque range.
- When mounting an optional function board onto the GOT(GT15), fully connect it to the connector until you hear a click.
- When mounting an optional function board onto the GOT(GT11), fully connect it to the connector.
- When inserting a CF card into the GOT(GT16, GT15, GT11), push it into the CF card interface of GOT until the CF card eject button will pop out.
  Failure to do so may cause a malfunction due to poor contact.
- When inserting/removing a CF card into/from the GOT(GT16, GT15, GT11), turn the CF card access switch off in advance.
  Failure to do so may corrupt data within the CF card.
- When removing a CF card from the GOT, make sure to support the CF card by hand, as it may pop out.
  Failure to do so may cause the CF card to drop from the GOT and break.
- When installing a USB memory to the GOT(GT16), make sure to install the USB memory to the USB interface firmly.
  Failure to do so may cause a malfunction due to poor contact.
- Before removing the USB memory from the GOT(GT16), operate the utility screen for removal.
  After the successful completion dialog box is displayed, remove the memory by hand carefully.
  Failure to do so may cause the USB memory to drop, resulting in a damage or failure of the memory.

[MOUNTING PRECAUTIONS]

⚠CAUTION

- For closing the USB environmental protection cover, fix the cover by pushing the △ mark on the latch firmly to comply with the protective structure.
- Remove the protective film of the GOT.
  When the user continues using the GOT with the protective film, the film may not be removed.
- Operate and store the GOT in environments without direct sunlight, high temperature, dust, humidity, and vibrations.
- Use the protective cover for oil when the GOTs (GT16, GT15, GT11 and GT10) are used in the environment with oil or chemicals.
  Not doing so can cause failures or malfunction due to the infiltration of oil or chemicals.

[WIRING PRECAUTIONS]

⚠WARNING

- Be sure to shut off all phases of the external power supply used by the system before wiring.
  Failure to do so may result in an electric shock, product damage or malfunctions.

⚠CAUTION

- Please make sure to ground FG terminal and LG terminal and protective ground terminal of the GOT power supply section by applying Class D Grounding (Class 3 Grounding Method) or higher which is used exclusively for the GOT.
  Not doing so may cause an electric shock or malfunction.
- Be sure to tighten any unused terminal screws with a torque of 0.5 to 0.8N•m.
  Failure to do so may cause a short circuit due to contact with a solderless terminal.
- Use applicable solderless terminals and tighten them with the specified torque.
  If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.
  Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the specified torque range.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or the GOT.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT. Not doing so can cause a fire, failure or malfunction.

[WIRING PRECAUTIONS]

⚠CAUTION

- The module has an ingress prevention label on its top to prevent foreign matter, such as wire offcuts, from entering the module during wiring.
  Do not peel this label during wiring.
  Before starting system operation, be sure to peel this label because of heat dissipation.
- Plug the bus connection cable by inserting it into the connector of the connected unit until it "clicks".
  After plugging, check that it has been inserted snugly.
  Not doing so can cause a malfunction due to a contact fault.
- Plug the communication cable into the connector of the connected unit and tighten the mounting and terminal screws in the specified torque range.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.
- Plug the QnA/ACPU/Motion controller (A series) bus connection cable by inserting it into the connector of the connected unit until it "clicks".
  After plugging, check that it has been inserted snugly.
  Not doing so can cause a malfunction due to a contact fault.

[TEST OPERATION PRECAUTIONS]

⚠WARNING

- Before performing the test operations of the user creation monitor screen (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method.
  During test operation, never change the data of the devices which are used to perform significant operation for the system.
  False output or malfunction can cause an accident.

[STARTUP/MAINTENANCE PRECAUTIONS]

⚠WARNING

- When power is on, do not touch the terminals.
  Doing so can cause an electric shock or malfunction.
- Correctly connect the battery connector.
  Do not charge, disassemble, heat, short-circuit, solder, or throw the battery into the fire.
  Doing so will cause the battery to produce heat, explode, or ignite, resulting in injury and fire.
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases.
  Not switching the power off in all phases can cause a unit failure or malfunction.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

⚠CAUTION

- Do not disassemble or modify the unit.
  Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly.
  Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped.
  Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull the cable portion.
  Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop or apply strong impact to the unit.
  Doing so may damage the unit.
- Do not drop or give an impact to the battery mounted to the unit.
  Doing so may damage the battery, causing the battery fluid to leak inside the battery.
  If the battery is dropped or given an impact, dispose of it without using.
- Before touching the unit, always touch grounded metal, etc. to discharge static electricity from human body, etc.
  Not doing so can cause the unit to fail or malfunction.
- Replace battery with GT15-BAT(GT16, GT15) or GT11-50BAT(GT11, GT10) by Mitsubishi electric Co. only.
  Use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
  Keep away from children. Do not disassemble and do not dispose of in fire.

[TOUCH PANEL PRECAUTIONS]

⚠CAUTION

- For the analog-resistive film type touch panels, normally the adjustment is not required.
  However, the difference between a touched position and the object position may occur as the period of use elapses.
  When any difference between a touched position and the object position occurs, execute the touch panel calibration.
- When any difference between a touched position and the object position occurs, other object may be activated.
  This may cause an unexpected operation due to incorrect output or malfunction.

[BACKLIGHT REPLACEMENT PRECAUTIONS]

⚠WARNING

- Be sure to shut off all phases of the external power supply of the GOT (and the PLC CPU in the case of a bus topology) and remove the GOT from the control panel before replacing the backlight (when using the GOT with the backlight replaceable by the user).
  Not doing so can cause an electric shock.
  Replacing a backlight without removing the GOT from the control panel can cause the backlight or control panel to drop, resulting in an injury.

⚠CAUTION

- Wear gloves for the backlight replacement when using the GOT with the backlight replaceable by the user.
  Not doing so can cause an injury.
- Before replacing a backlight, allow 5 minutes or more after turning off the GOT when using the GOT with the backlight replaceable by the user.
  Not doing so can cause a burn from heat of the backlight.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

- When disposing of the product, handle it as industrial waste.
- When disposing of this product, treat it as industrial waste.
  When disposing of batteries, separate them from other wastes according to the local regulations.
  (For details of the battery directive in EU member states, refer to the User's Manual of the GOT to be used.)

[TRANSPORTATION PRECAUTIONS]

⚠CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.
  (For details on models subject to restrictions, refer to the User's Manual for the GOT you are using.)
- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of the User's Manual, as they are precision devices.
  Failure to do so may cause the unit to fail.
  Check if the unit operates correctly after transportation.

REVISIONS

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

Print Date	* Manual Number	Revision
Mar., 2005	SH(NA)-080544ENG-A	First edition
Oct., 2005	SH(NA)-080544ENG-B	Compatible with GT Designer2 Version2.18U. Partial corrections Abbreviations and generic terms in this manual, Chapter1, Section 1.1.1, 1.1.2, 1.1.3, 2.1, 2.2.1, 2.2.2, 2.3.1, 2.4.2, 2.4.3, 2.4.4, 2.4.5, 2.5, 2.5.1, 2.5.3, 2.6.1, 2.7.1, 2.8.1, 2.9.2, 2.9.3, 2.9.4, 2.9.5, 3.1, 3.2.1, 3.2.2, 3.3, 3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.8, 4.1, 4.2.1, 4.3, 4.3.1, 4.3.2, 4.4.1, 4.4.2, 4.4.7, 4.7.3, App.1, INDEX Partial additions Section 2.6, 2.7, 2.8, 3.4, 3.5.4 Additions Section 2.2.3, 3.2.3, 3.2.4, 4.2.2, 4.4.6, Chapter 5, 6, 7, 8, 9, 10 Section 2.2.3 → 2.2.4, Section 5.1 → 2.10, Section 3.3.4 → 3.3.3, Section 3.4.3 → 3.4.2, Section 4.2.2 → 4.2.3, Section 4.4.6 → 4.4.7, Section 4.4.7 → 4.4.8, Section 5.2 → 3.8, Section 5.3 → 4.7
Jan., 2006	SH(NA)-080544ENG-C	Compatible with GT Designer2 Version2.27D. Partial corrections About Manuals, Abbreviations and generic terms in this manual, How to read this manual, Section 3.1, 3.4.2, 4.4.6, 5.4.12, 7.4.1, 8.4.11, 9.2.1, 9.4.8, 10.2.1, App1 Additions Section 1.1.4, 3.5.7
Jun., 2006	SH(NA)-080544ENG-D	Compatible with GT Designer2 Version2.32J. Partial corrections About Manuals, Abbreviations and generic terms in this manual, How to read this manual, Section 1.1.1, 1.1.2, 2.3.1, 3.2.1, 3.3.2, 4.1, 5.1, 5.3, 6.1, 6.2.2, 6.4.1, 6.4.2, 7.1, 7.2.1, 7.2.4, 8.2.1, 8.4.2, 8.4.11, 10.2.1, 10.2.3, App1 Additions Chapter 1, Section 2.1, 3.2.4, 8.2.3, 9.2.1
Nov., 2006	SH(NA)-080544ENG-E	Compatible with GT Designer2 Version2.43V. Partial corrections Section 2.2.4, 3.1, 3.2.4, 3.3.2, 3.6, 3.8, 6.2.2, 7.2.3, 8.2.2 Partial additions Section 3.3.1, 3.3.3, 3.4.1

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May, 2007	SH(NA)-080544ENG-F	Compatible with GT Designer2 Version 2.58L Partial corrections Section 1.1.1, 1.1.2, 2.1, 2.2.1, 2.5.1, 2.6.1, 2.7.1, 2.8.1, 2.9.3, 3.1, 3.2.1, 3.2.4, 3.3.1, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.5.1 to 3.5.7, 3.6.1 to 3.6.7, 3.7.1, 4.2.1, 5.2.1, 5.3, 5.4.9 to 5.4.11, 7.1, 8.2.1, 8.4.11, 9.2.1, 9.4.8 Partial additions Section 5.2.3, 5.4.1 Additions Section 3.3.5, 3.8, 5.4.12, 14.10, Chapter 11 Section 3.8 → 3.9, Section 5.4.12 → 5.4.13, Section 5.4.13 → 5.4.14
Aug., 2007	SH(NA)-080544ENG-G	Compatible with GT Designer2 Version 2.63R Partial corrections Section 3.2.1, 8.2.3, 8.3, 8.4.1, 8.4.6 Partial additions Chapter 1, Section 1.1.1, 1.1.2, 1.1.4, 2.2.3, 3.2.2, 3.2.3, 3.2.4, 6.2.2, 6.2.3, 8.2.1, 8.4.4, 10.2.1, 10.2.2, 10.2.3, 10.4, 10.5, 11.2.1, App1 Additions Section 11.5, Chapter 12 Section 11.5 → 11.6
Dec., 2007	SH(NA)-080544ENG-H	Compatible with GT Designer2 Version 2.72A Partial corrections Section 1.1.3, 1.1.4, 3.2.1, 3.3.3, 10.2, 10.2.1, 11.3.1, 11.3.2, 11.4.1, 11.5.2, 11.5.3, 12.4 Partial additions Section 1.1.1, 1.1.2, 2.1, 2.3.1, 3.2.4, 3.4.1, 11.1, 11.2.1, 11.2.3, 11.3.3 Additions Section 11.3.4
Feb., 2008	SH(NA)-080544ENG-I	Compatible with GT Designer2 Version 2.77F Partial corrections Section 1.1.3, 2.2.3, 3.2.3, 7.2.3 Partial additions Chapter 1, Section 1.1.1, 1.1.2, 1.1.4, 2.2.1, 3.1, 3.2.1, 6.2.1, 6.2.2, 7.1, 7.2.1, 7.2.2, 7.2.4, 7.4.1 to 7.4.9, 8.2, App1 Additions Chapter 13

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Jun., 2008	SH(NA)-080544ENG-J	Compatible with GT Designer2 Version 2.82L Partial corrections Section 3.2.2, 3.7, 6.4.4, 7.2.1, 11.2.1, 11.3.3 Partial additions Section 1.1.1, 1.1.2, 2.2.1, 3.2.4, 6.2.1, 6.3, 6.4.1, 6.4.2, 6.4.3, 11.2.3, 11.6, 13.2.1, App1
Oct., 2008	SH(NA)-080544ENG-K	Compatible with GT Designer2 Version 2.90U. Partial corrections Section 1.1.3, 2.1, 2.3.1, 3.3.1, 4.4.1, 5.5, 6.3, 7.3, 8.3, 9.3, 10.3, 11.1, 11.3.1, 11.3.4, 11.4.1, 11.4.3, 11.6, 12.3, 13.1, 13.3.1, 13.5.1, 13.5.2, 13.6.1, 13.6.3, 13.7.1 → 13.7.3 Partial additions Section 1.1.1, 1.1.2, 2.2.1, 3.2.1, 3.5.4, 4.1, 4.2.1, 4.3.1, 4.4.6, 5.1, 5.2.3, 5.3, 5.4.1, 5.4.10, 5.4.13, 6.2.1, 7.2.1, 8.2.1, 9.2.1, 10.2.1, 10.2.3, 11.2.1, 11.3.2, 12.2.3, 13.2.1, 13.2.2, 13.8, 13.9, App1
Dec., 2008	SH(NA)-080544ENG-L	Compatible with GT Designer2 Version 2.91V Partial corrections Section 10.2.3, 12.2.2, 13.2.4 Partial additions Section 1.1.2, 2.2.1, 3.2.1, 5.2.1, 6.2.1, 7.2.1, 8.2.1, 9.2.1, 10.2.1, 11.2.1, 12.2.1, 13.2.1, App1, 1.1, 1.2
Mar., 2009	SH(NA)-080544ENG-M	Compatible with GT Designer2 Version 2.96A Partial corrections Section 3.2.1, 6.2.1, 7.2.1, 10.2.2, 11.2.2, 11.5.2, 12.3 Partial additions Chapter 1, Section 1.1.1, 1.1.2, 1.1.4, 8.2.1, 11.2.1, 12.2.3, 12.4, 12.5, 12.2.1 Additions Chapter 14
Sep., 2010	SH(NA)-080544ENG-N	Partial corrections How to read this manual, App1
Sep., 2012	SH(NA)-080544ENG-O	Partial corrections SAFETY PRECAUTIONS changed, Section 8.2.1, 8.4.4

Japanese Manual Version SH-080541-V

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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About Manuals

The following manuals are also related to this product.
If necessary, order them by quoting the details in the tables below.
The manual in PDF-format is included in the GT Works2 and GT Designer2 products.

Related Manuals

Manual Name	Manual Number (Model Code)
GT16 User's Manual (Hardware) Describes the GT16 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. (Sold separately)	SH-080928ENG (1D7MD3)
GT16 User's Manual (Basic Utility) Describes the GT16 utility-relevant contents, including the screen settings, operation method settings, program/data management, and self check function. (Sold separately)	SH-080929ENG (1D7MD4)
GT15 User's Manual -Describes the GT15 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. -Describes the GT15 functions, including the utility. (Sold separately)	SH-080528ENG (1D7M23)
GT11 User's Manual -Describes the GT11 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. -Describes the GT11 functions, including the utility. (Sold separately)	JY997D17501 (09R815)
GT11 Handy GOT User's Manual -Describes the Handy GOT hardware-relevant contents, including the system configurations, specifications, part names, mounting, power supply wiring, external dimensions, and option devices. -Describes the Handy GOT functions, including the utility, and how to make cables. (Sold separately)	JY997D20101 JY997D20102 (09R817)
GT10 User's Manual -Describes the GT10 hardware-relevant contents, including the specifications, part names, mounting, power supply wiring, external dimensions, and option devices. -Describes the GT10 functions, including the utility. (Sold separately)	JY997D24701 (09R819)
GT SoftGOT1000 Version2 Operating Manual Describes the screen configuration, functions and using method of GT SoftGOT1000. (Sold separately)	SH-080602ENG (1D7M48)
GT Designer2 Version2 Basic Operation/Data Transfer Manual (For GOT1000 Series) Describes methods of the GT Designer2 installation operation, basic operation for drawing and transmitting data to GOT1000 series (Sold separately)	SH-080529ENG (1D7M24)
GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) (1/3, 2/3, 3/3) Describes specifications and settings of each object function applicable to GOT1000 series. (Sold separately)	SH-080530ENG (1D7M25)

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Manual Name	Manual Number (Model Code)
GOT1000 Series Connection Manual (1/3, 2/3, 3/3) Describes system configurations of the connection method applicable to GOT1000 series and cable creation (Sold separately)	SH-080532ENG (1D7M26)
GOT1000 Series Gateway Functions Manual Describes specifications, system comfigurations and setting method of the gateway function. (Sold separately)	SH-080545ENG (1D7M33)
GOT1000 Series MES Interface Function Manual Describes the specifications, system configurations, and setting method of GT MES interface function. (Sold separately)	SH-080654ENG (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
	GT11 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-32MC, GT05-MEM-64MC, GT05-MEM-128MC, GT05-MEM-256MC, GT05-MEM-512MC, GT05-MEM-1GC, GT05-MEM-2GC	
Memory card adaptor		GT05-MEM-ADPC	
Option function board		GT16-MESB, GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M, GT11-50FNB	
Battery		GT15-BAT, GT11-50BAT	
Protective Sheet		For GT16	GT16-90PSCB, GT16-90PSGB, GT16-90PSCW, GT16-90PSGW, GT16-80PSCB, GT16-80PSGB, GT16-80PSCW, GT16-80PSGW, GT16-70PSCB, GT16-70PSGB, GT16-70PSCW, GT16-70PSGW, GT16-60PSCB, GT16-60PSGB, GT16-60PSCW, GT16-60PSGW
		For GT15	GT15-90PSCB, GT15-90PSGB, GT15-90PSCW, GT15-90PSGW, GT15-80PSCB, GT15-80PSGB, GT15-80PSCW, GT15-80PSGW, GT15-70PSCB, GT15-70PSGB, GT15-70PSCW, GT15-70PSGW, GT15-60PSCB, GT15-60PSGB, GT15-60PSCW, GT15-60PSGW, GT15-50PSCB, GT15-50PSGB, GT15-50PSCW, GT15-50PSGW
		For GT11	GT11-50PSCB, GT11-50PSGB, GT11-50PSCW, GT11-50PSGW, GT11H-50PSC
		For GT10	GT10-50PSCB, GT10-50PSGB, GT10-50PSCW, GT10-50PSGW, GT10-40PSCB, GT10-40PSGB, GT10-40PSCW, GT10-40PSGW, GT10-30PSCB, GT10-30PSGB, GT10-30PSCW, GT10-30PSGW, GT10-20PSCB, GT10-20PSGB, GT10-20PSCW, GT10-20PSGW
Protective cover for oil		GT05-90PCO, GT05-80PCO, GT05-70PCO, GT05-60PCO, GT05-50PCO	
USB environmental protection cover		GT16-UCOV, GT15-UCOV, GT11-50UCOV	
Stand		GT15-90STAND, GT15-80STAND, GT15-70STAND, A9GT-50STAND, GT05-50STAND	
Attachment		GT15-70ATT-98, GT15-70ATT-87, GT15-60ATT-97, GT15-60ATT-96, GT15-60ATT-87, GT15-60ATT-77, GT15-50ATT-95W, GT15-50ATT-85	
Backlight		GT16-90XLTT, GT16-80SLTT, GT15-90XLTT, GT15-80SLTT, GT16-70SLTT, GT16-70VLTT, GT16-60SLTT, GT16-60VLTT, GT15-70SLTT, GT15-70VLTT, GT15-70VLTN, GT15-60VLTT, GT15-60VLTN	
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® (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.

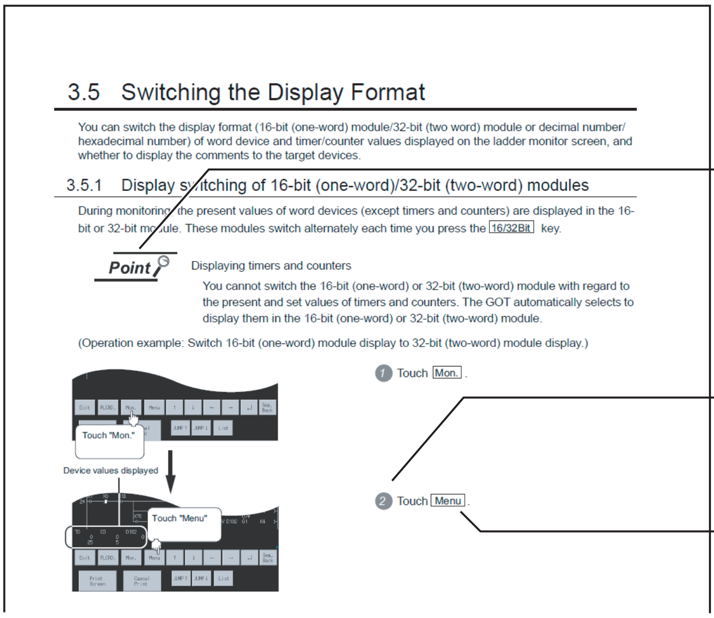
How to read this manual

1 Functions

This manual describes functions available for GT Designer2 Version2.96A.
For the added functions by the product version upgrade, refer to the list of functions added by GT Designer2 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.



3.5 Switching the Display Format

You can switch the display format (16-bit (one-word) module/32-bit (two word) module or decimal number/hexadecimal number) of word device and timer/counter values displayed on the ladder monitor screen, and whether to display the comments to the target devices.

3.5.1 Display switching of 16-bit (one-word)/32-bit (two-word) modules

During monitoring, the present values of word devices (except timers and counters) are displayed in the 16-bit or 32-bit module. These modules switch alternately each time you press the 16/32Bit key.

Point

Displaying timers and counters

You cannot switch the 16-bit (one-word) or 32-bit (two-word) module with regard to the present and set values of timers and counters. The GOT automatically selects to display them in the 16-bit (one-word) or 32-bit (two-word) module.

(Operation example: Switch 16-bit (one-word) module display to 32-bit (two-word) module display.)

① Touch Mon. .

② Touch Menu .

Point Refers to the information required.

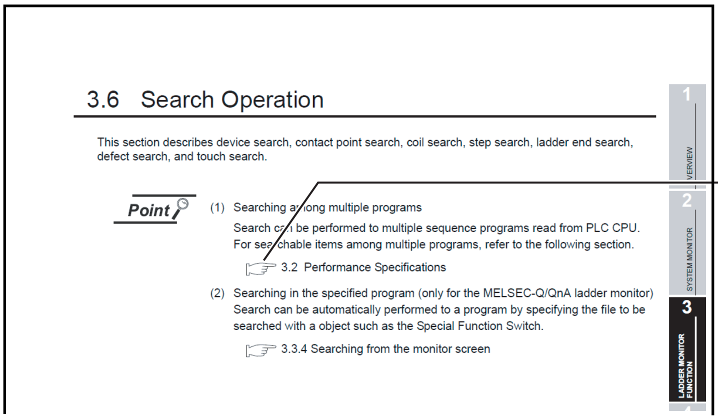
Remark Refers to the supplementary explanations for reference.

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

Menu and items are differentiated with parentheses.

[ ] :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.



3.6 Search Operation

This section describes device search, contact point search, coil search, step search, ladder end search, defect search, and touch search.

Point

(1) Searching among multiple programs
Search can be performed to multiple sequence programs read from PLC CPU.
For searchable items among multiple programs, refer to the following section.
☞ 3.2 Performance Specifications

(2) Searching in the specified program (only for the MELSEC-Q/QnA ladder monitor)
Search can be automatically performed to a program by specifying the file to be searched with a object such as the Special Function Switch.
☞ 3.3.4 Searching from the monitor screen

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

1. OVERVIEW

This manual describes the following functions available on a GOT system in which the standard monitor OS, an Extended function OS, an Option OS, and the Communication driver are installed.

- System monitor
- Ladder monitor
- A list editor
- FX list editor
- Intelligent module monitor
- Network monitor
- Q motion monitor
- Servo amplifer monitor
- CNC monitor
- Backup/restore
- CNC data I/O
- SFC monitor
- Ladder editor

The monitor functions explained herein are intended to troubleshoot the PLC system and to streamline maintenance operations.

Point

(1) Precautions for using each function
Some functions are not available depending on the GOT used, target CPU or connection form.
For option function boards, functions available on each GOT, and restrictions on each target CPU and connection form, see the appropriate chapter.

(2) Display examples in this manual
In this manual, with a few special exceptions, explanations are given primarily using the GTI575-V screens.

1.1 Before Using Each Function

1.1.1 Each function and related manuals

The difference between the extended and option functions of the GOT is shown below.

- Extended functions : Functions available by installing an Extended function OS.
- Option functions : Functions available by connecting an option function board (including a board with add-on memory).
  Many of the option functions require an Option OS to be installed.

For a description of each function, see the appropriate manual listed below.

1 Manuals describing functions and how to set them

Category	Function name	Reference
Extended functions	Bar code	GT Designer 2 Version □ Screen Design Manual
	RFID	
	System monitor	Chapter 2
	Stroke font	GT Designer2 Version □ Screen Design Manual
	Video display	
	RGB display	
	Remote personal computer operation	
	Multimedia	
	Backup/restore	Chapter11
	CNC data I/O	Chapter12
	Operator authentication	GT Designer2 Version □ Screen Design Manual
	Sound output	
	External I/O/operation panel	
	Device data transfer	
	Maintenance timing setting	GT15 User's Manual
	Multi-channel	GT Designer 2 Version □ Screen Design Manual
	KANJI regions	
	Operation log	
	Document display	
	Kana-kanji conversion*1	
	Kana-kanji conversion (enhanced version)	
	Historical Trend Graph	
	Logging	
	Recipe	
	Advanced Recipe	
	Object Script	
	Ladder monitor	Chapter 3
	A list editor	Chapter 4
	FX list editor	Chapter 5
	Intelligent module monitor	Chapter 6
	Network monitor	Chapter 7
	Q motion monitor	Chapter 8

(Continued to next page)

Category	Function name	Reference
Option functions	Servo amplifer monitor	Chapter 9
	CNC monitor	Chapter 10
	SFC monitor	Chapter 13
	Ladder editor	Chapter 14
	Gateway	GOT1000 Series Gateway Functions Manual
	MES interface	GOT1000 Series MES Interface Function Manual

2 Manuals describing how to connect an option function board

GOT	Reference manual
GT16	GT16 User's Manual (Hardware)
GT15	GT15 User's Manual
GT11	GT11 User's Manual

3 Manuals describing how to install each OS

OS	Reference manual
Extended function OS	GT Designer 2 Version □ Basic Operation/Data Transfer Manual
Option OS	

1.1.2 Hardware and OS' required for each function

To use each function, extended function OS, or option OS and option function board is required.
For installing the extended function OS or option OS on the GOT, make sure that the user area of the specified drive has enough free space for the OS memory space shown on the next page.
For details of data transfer, refer to the following.

☞ GT Designer 2 Basic Operation/Data Transfer Manual
Subsection 8.1.2 Drive capacity required for data transfer

The following shows the option function boards applicable to 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 required

An option function board (GT15-FNB or GT11-50FNB) is built in the following GOTs.

GOT	Model	Description
GT15[*1]	All models	Function version D or later
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.

☞ Appendix1 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.
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

1 For GT16

○: Required (Either one) ×: Unusable

Function name	Extended function OS / option OS name	OS memory space (user area)[*1]		Option function board
		Built-in flash memory (ROM)	User memory (RAM)	GT16-MESB
Bar code	Bar code	50KB	84KB	Not required
RFID	RFID	50KB	166KB	Not required
System monitor	System monitor	450KB	692KB	Not required
Report	Report	150KB	235KB	Not required
Printer	Printer	552KB	1104KB	Not required
Stroke font[*2]	Stroke Font Support Data	300 KB	400 KB	Not required
	Stroke Standard Font(JPN)	2160KB	2160KB	Not required
	Stroke Standard Font(JPN)(supporting Hangul)	3175KB	3175KB	Not required
	Stroke Standard Font(China GB)	1474KB	1474KB	Not required
	Stroke Standard Font(China GB)(supporting Hangul)	2016KB	2016KB	Not required
Video display	Video/RGB	298KB	480KB	Not required
RGB display				
Multimedia	Multimedia	298KB	1074KB	Not required
Remote personal computer operation	Video/RGB	298KB	480KB	Not required
	PC Remote Operation	50KB	84KB	Not required
Backup/restore	Backup/Restore	420KB	766KB	Not required
Operator Authentication	Operator authentication	460KB	730KB	Not required
	Fingerprint Authentication	270KB	616KB	Not required
Sound Output	Sound Output	100KB	200KB	Not required
External I/O / Operation Panel	External I/O / Operation Panel	70KB	100KB	Not required
CNC data I/O	CNC Data I/O	210KB	383KB	Not required
	GOT Platform Library	77KB	200KB	Not required
Device data transfer	Device Data Transfer	50KB	100KB	Not required
Maintenance timing setting	Not required	-	-	Not required
Multi-channel	Not required	-	-	Not required
KANJI regions	Standard Font (China GB)	1280KB	1280KB	Not required
	Standard Font (China Big5)	1920KB	1920KB	Not required
	Standard Font (Japanese)	1280KB	1280KB	Not required
	Stroke Font (JPN)	1037KB	1037KB	Not required
	Stroke Font (China GB5)	1248KB	1248KB	Not required
	Stroke Font (China Big5)	1680KB	1680KB	Not required
Operation log	Operation Log	384KB	1221KB	Not required
	Device name converter	400KB	800KB	Not required
Document display	Document Display	150KB	3072KB	Not required
Kana-kanji conversion (enhanced version)	KANA KANJI(JPN) (Enhanced Version)	1242KB	2774KB	Not required
Historical Trend Graph	Not required	-	-	Not required
Logging	Logging	380KB	710KB	Not required
Recipe	Recipe	70KB	100KB	Not required
Advanced Recipe	Advanced Recipe	310KB	1187KB	Not required

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○: Required ×: Unusable

Function name	Extended function OS / option OS name	OS memory space (user area)		Option function board
		Built-in flash memory (ROM)	User memory (RAM)	GT16-MESB
Object Script	Object Script	180KB	360KB	Not required
Ladder monitor	Ladder monitor for MELSEC-A	342KB	674KB	Not required
	Ladder monitor for MELSEC-FX	342KB	674KB	Not required
	Ladder monitor for MELSEC-Q/QnA	590KB	4170KB	Not required
Ladder editor[*3]	GOT Platform Library	77KB	200KB	Not required
	Ladder editor	2567KB	8192KB	Not required
	GOT Function Expansion Library	4729KB	19381KB	Not required
A list editor	List editor for MELSEC-A	542KB	1024KB	Not required
FX list editor	List editor for MELSEC-FX	542KB	1024KB	Not required
Intelligent module monitor	Intelligent module monitor	390KB	770KB	Not required
Network monitor	Network monitor	210KB	370KB	Not required
Q motion monitor	Q motion monitor	390KB	770KB	Not required
Servo amplifier monitor	Servo amplifier monitor	390KB	770KB	Not required
CNC monitor	CNC monitor	390KB	770KB	Not required
SFC monitor[*4]	GOT Platform Library	77KB	200KB	Not required
	SFC monitor	442KB	2108KB	Not required
	GOT Function Expansion Library	4729KB	19381KB	Not required
Gateway	Gateway (Server, Client)	50KB	100KB	Not required
	Gateway (Mail)	50KB	100KB	Not required
	Gateway (FTP)	50KB	84KB	Not required
MES interface	MES Interface	1598KB	13461KB	○

*1 The OS memory space differs between the built-in flash memory (ROM) and the user memory (RAM).
When writing data, including the OS, communication drivers, and project data, from the built-in flash memory (ROM) to the user memory (RAM), the OS data size increases. Make sure that the total data size does not exceed the user memory (RAM) capacity.

*2 For using fonts, install option fonts if necessary.
For how to use fonts and the setting method, refer to the following manual.

GT Designer2 Version□ Screen Design Manual (2.3 Specifications of Applicable Characters)

*3 For using the ladder editor, install all the OSs of [GOT Platform Library], [Ladder editor], and [GOT Function Expansion Library] on the GOT.

*4 For using the SFC monitor, install all the OSs of [GOT Platform Library], [SFC monitor], and [GOT Function Expansion Library] on the GOT.

2 For GT15

For GOTs with built-in option function boards, refer to the following.

☞ Section 1.1.2 Hardware and OS' required for each function

○: Required (Either one) ×: Unusable

Function name	Extended function OS / option OS name	OS memory space (user area)	Option function board		
			GT15-FNB	GT15-QFNB GT15-QFNB☐M	GT15-MESB48M
Bar code	Bar code	84KB	Not required		
RFID	RFID	166KB	Not required		
System monitor	System monitor	746KB	Not required		
Report	Report	235KB	Not required		
Printer	Printer	1104KB	Not required		
Stroke font[*6]	Stroke Font Support Data	400 KB	Not required		
	Stroke Standard Font(JPN)	2160KB	Not required		
	Stroke Standard Font(JPN)(supporting Hangul)	3175KB	Not required		
	Stroke Standard Font(China GB)	1474KB	Not required		
	Stroke Standard Font(China GB)(supporting Hangul)	2016KB	Not required		
Video display[*2]	Video/RGB	512KB	Not required		
RGB display[*2]					
Remote personal computer operation[*2]	Video/RGB	512KB	Not required		
	PC Remote Operation	84KB	Not required		
Backup/restore	Backup/Restore	820KB	Not required		
Operator Authentication	Operator authentication	784KB	Not required		
	Fingerprint Authentication	616KB	Not required		
Sound Output	Sound Output	200KB	Not required		
External I/O / Operation Panel	External I/O / Operation Panel	100KB	Not required		
CNC data I/O[*1]	CNC Data I/O	437KB	Not required		
	GOT Platform Library	100KB	Not required		
Device data transfer	Device Data Transfer	100KB	Not required		
Maintenance timing setting	Not required	-	○	○	○
Multi-channel	Not required	-	×	○	○
KANJI regions	Standard Font (China GB)	1280KB	○	○	○
	Standard Font (China Big5)	1920KB	○	○	○
	Standard Font (Japanese)	1280KB	○	○	○
	Stroke Font (JPN)	1037KB	○	○	○
	Stroke Font (China GB5)	1248KB	○	○	○
	Stroke Font (China Big5)	1680KB	○	○	○
Operation log	Operation Log	1218KB	○	○	○
	Device name converter	800KB	○	○	○
Document display	Document Display	2048KB	×	○	○
Kana-kanji conversion[*4]	KANA KANJI(JPN)[*4]	1223KB	○	○	○
Kana-kanji conversion (enhanced version)[*4]	KANA KANJI(JPN) (Enhanced Version)[*4]	2774KB	○	○	○

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○: Required ×: Unusable

Function name	Extended function OS / option OS name	OS memory space (user area)	Option function board		
			GT15-FNB	GT15-QFNB GT15-QFNB□M	GT15-MESB48M
Historical Trend Graph	Not required	-	○	○	○
Logging	Logging	740KB	○	○	○
Recipe	Recipe	100KB	○	○	○
Advanced Recipe	Advanced Recipe	1241KB	○	○	○
Object Script	Object Script	360KB	○	○	○
Ladder monitor*3	Ladder monitor for MELSEC-A	523KB	○	○	○
	Ladder monitor for MELSEC-FX	592KB	○	○	○
	Ladder monitor for MELSEC-Q/QnA	1082KB	×	○	○
Ladder editor	GOT Platform Library	100KB	Not required		
	Ladder editor	5121KB	×	○	○
	GOT Function Expansion Library	4729KB	×	○	○
A list editor	List editor for MELSEC-A	1058KB	○	○	○
FX list editor	List editor for MELSEC-FX	1058KB	○	○	○
Intelligent module monitor*3	Intelligent module monitor	384KB	○	○	○
Network monitor	Network monitor	324KB	○	○	○
Q motion monitor	Q motion monitor	607KB	○	○	○
Servo amplifier monitor	Servo amplifier monitor	524KB	○	○	○
CNC monitor*1	CNC monitor	588KB	○	○	○
SFC monitor*3*7	GOT Platform Library	100KB	Not required		
	SFC monitor	1373KB	×	○	○
	GOT Function Expansion Library	4729KB	×	○	○
Gateway	Gateway (Server, Client)	100KB	○	○	○
	Gateway (Mail)	100KB	○	○	○
	Gateway (FTP)	64KB	○	○	○
MES interface	MES Interface	3196KB	×	×	○*5

*1 Applicable to the GT1595-X, GT1585V-S, GT1585-S, GT1575V-S, and GT1575-S only.

*2 Applicable to the GT1585V-S and GT1575V-S only.

*3 Inapplicable to the GT1555-Q and GT1550-Q.

*4 This function is dedicated to Japanese version.

*5 A capacity of 8218KB in the add-on memory (48MB) of the GT15-MESB48M is used for the MES interface function operation.

*6 For using fonts, install option fonts if necessary.
For how to use fonts and the setting method, refer to the following manual.

☞ GT Designer2 Version□ Screen Design Manual (2.3 Specifications of Applicable Characters)

*7 For using the SFC monitor function, a capacity of 6201KB or more is required in the user area of the specified drive for installing the extended function OS and option OS. (For using the GOT with the built-in flash memory of 5MB, set the OS boot drive to [A: Standard CF Card].)
For operating GOT Function Expansion Library (option OS), a capacity of 8192KB is required in the user area of the GOT memory. (A total memory capacity of 14393KB is required for using the SFC monitor function.)
Therefore, the following settings are required depending on the GOT to be used.

GOT	Required setting
GT1575-VN, GT1572-VN, GT1562-VN	• Setting the OS boot drive to [A: Standard CF Card] • Memory expansion (Installing an option function board with add-on memory)
Other than the above	• Memory expansion (Installing an option function board with add-on memory)

For setting the OS boot drive, refer to the following.

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

*8 For using the ladder editor function, a capacity of 9949KB or more is required in the user area of the specified drive for installing the extended function OS and option OS.
A total memory capacity of 21212KB is required for using the ladder editor function.
Therefore, to use the ladder editor function, set the OS boot drive to [A: Standard CF Card] and mount an option function board with 16MB or more memory on the GOT.

*9 The GT1555-V does not support the function.

3 For GT11

For GOTs with built-in option function boards, refer to the following.

☞ Section 1.1.2 Hardware and OS' required for each function

○: Required - : Unusable

Function name	Extended function OS/ Option OS name	OS memory space (user area)	Option function board
			GT11-50FNB
Bar code	Bar code	0KB	Not required
RFID	RFID		Not required
System monitor	System monitor		Not required
Recipe	Recipe		○
A list editor[*1]	List editor for MELSEC-A		○
FX list editor[*2]	List editor for MELSEC-FX		○

*1 Inapplicable to the GT1155-QTBDQ, GT1155-QSBDQ, and GT1150-QLBDQ.

*2 Inapplicable to the GT1155-QTBDQ, GT1155-QTBDA, GT1155-QSBDQ, GT1155-QSBDA, GT1150-QLBDQ, and GT1150-QLBDA.

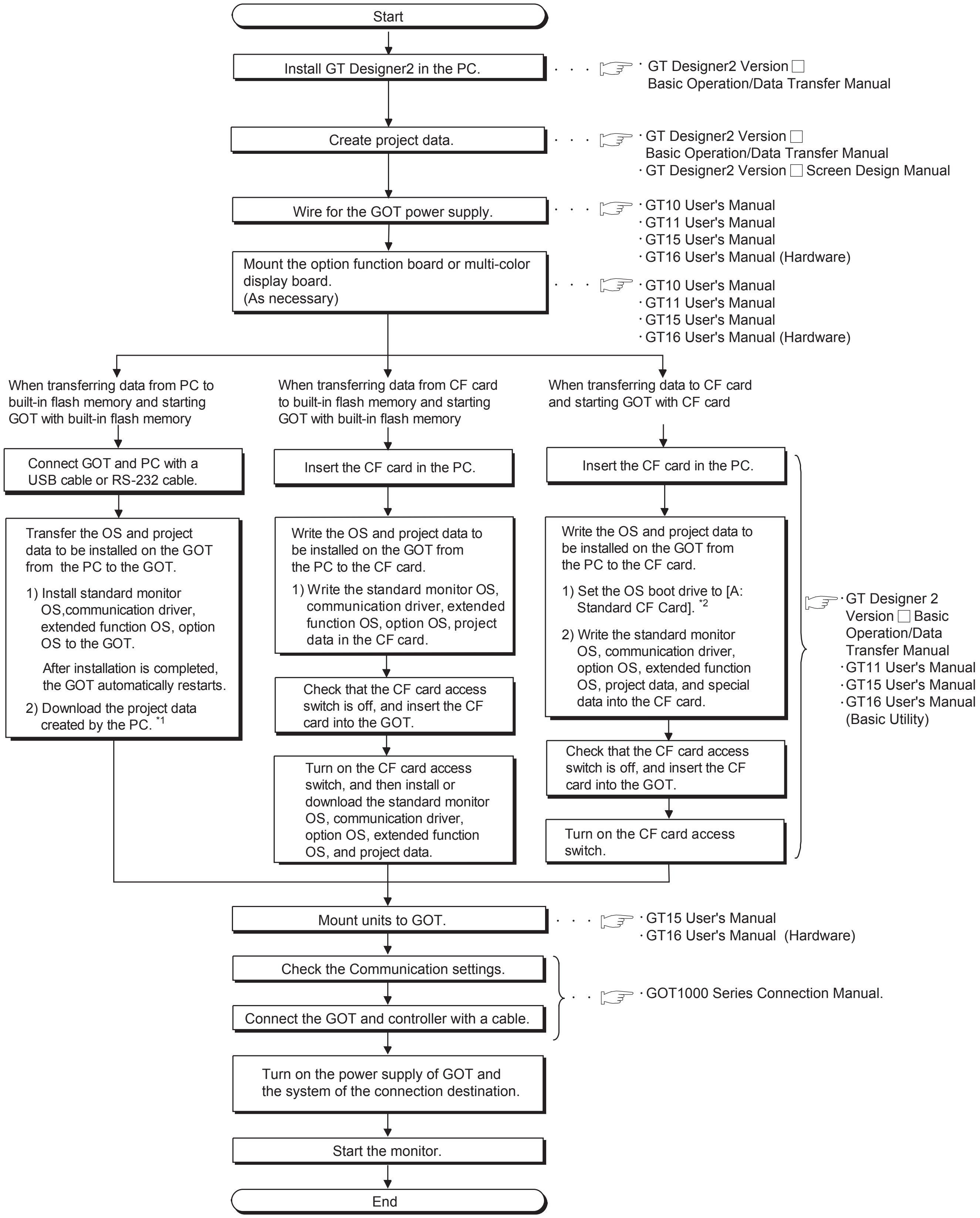
4 For GT10

Function name	Extended function OS/ Option OS name	OS memory capacity (user area)	Option function board
Bar code	Not required	-	Not required
Recipe	Not required	-	Not required
FX list editor [*1]	Not required	-	Not required

*1 Inapplicable to the GT1030 and GT1020.

1.1.3 Outline of procedure to the operation of each function

Before operating each function, download the required Extended function OS or Option OS into the GOT according to the procedure shown below, and connect required hardware to the GOT.


Start
Install GT Designer2 in the PC.
☞ · GT Designer2 Version □ Basic Operation/Data Transfer Manual
Create project data.
☞ · GT Designer2 Version □ Basic Operation/Data Transfer Manual
· GT Designer2 Version □ Screen Design Manual
Wire for the GOT power supply.
☞ · GT10 User's Manual
· GT11 User's Manual
· GT15 User's Manual
· GT16 User's Manual (Hardware)
Mount the option function board or multi-color display board. (As necessary)
☞ · GT10 User's Manual
· GT11 User's Manual
· GT15 User's Manual
· GT16 User's Manual (Hardware)
When transferring data from PC to built-in flash memory and starting GOT with built-in flash memory
When transferring data from CF card to built-in flash memory and starting GOT with built-in flash memory
When transferring data to CF card and starting GOT with CF card
Connect GOT and PC with a USB cable or RS-232 cable.
Transfer the OS and project data to be installed on the GOT from the PC to the GOT.
1) Install standard monitor OS,communication driver, extended function OS, option OS to the GOT.
After installation is completed, the GOT automatically restarts.
2) Download the project data created by the PC. *1
Insert the CF card in the PC.
Write the OS and project data to be installed on the GOT from the PC to the CF card.
1) Write the standard monitor OS, communication driver, extended function OS, option OS, project data in the CF card.
Check that the CF card access switch is off, and insert the CF card into the GOT.
Turn on the CF card access switch, and then install or download the standard monitor OS, communication driver, option OS, extended function OS, and project data.
Insert the CF card in the PC.
Write the OS and project data to be installed on the GOT from the PC to the CF card.
1) Set the OS boot drive to [A: Standard CF Card]. *2
2) Write the standard monitor OS, communication driver, option OS, extended function OS, project data, and special data into the CF card.
Check that the CF card access switch is off, and insert the CF card into the GOT.
Turn on the CF card access switch.
☞ · GT Designer 2 Version □ Basic Operation/Data Transfer Manual
· GT11 User's Manual
· GT15 User's Manual
· GT16 User's Manual (Basic Utility)
Mount units to GOT.
☞ · GT15 User's Manual
· GT16 User's Manual (Hardware)
Check the Communication settings.
Connect the GOT and controller with a cable.
☞ · GOT1000 Series Connection Manual.
Turn on the power supply of GOT and the system of the connection destination.
Start the monitor.
End

* 1 Project data can be also downloaded/uploaded via Ethernet.
For download/upload of project data via Ethernet, BootOS and standard monitor OS should be installed in the GOT in advance so that the GOT and PC can communicate with each other via Ethernet by setting Communication Settings.
Refer to the following manual for details.
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8 TRANSFERRING DATA)

* 2 The B drive cannot be set as the OS boot drive.

Point

Precautions for setting OS boot drive to [A: Standard CF Card]

(1) GOT startup time
When the OS boot drive is set to [A: Standard CF Card], the GOT startup time with the A drive takes longer than that with the C drive.
The GOT startup time with the A drive differs depending on the CF card type, the numbers of extended function OSs and option OSs, and project data size.

(2) Handling CF card during booting OS
Do not remove the CF card and do not turn off the CF card access switch during booting the OS.
Doing so causes the boot to fail. As a result, the GOT does not start correctly.

(3) Corrective actions when OS cannot be booted
The OS cannot be booted in the following conditions.
Take the following corrective actions, and then boot the OS again.

Condition	Corrective action
The type of the GOT to be used differs from the GOT type data set with GT Designer2 stored in the CF card.	Select the same GOT type as the GOT to be used in the Communicate with Memory Card screen. Select OSs and project data to be downloaded, and then download the selected data to the CF card.
The OS boot drive has insufficient free space.	Mount an option function board with add-on memory on the GOT or delete unnecessary data.
The CF card access switch is off.	Turn on the CF card access switch.

1.1.4 Displayable languages for each function

Languages available for each function are shown in the following table.
For details of font data and displayable language, refer to the following.

☞GT Designer2 Version□ Screen Design Manual (2.3.1 Fonts)

(○: Displayed, ×: Not displayed, Eng.: Displayed in English)

Function			Japanese	English	Chinese (Simplified)	Chinese (Traditional)	German	Korean
Utility function			○	○	○	○	○	○
System monitor			○	○	○	○	○	○
Backup/restore			○	○	○	○	○	○
Ladder monitor			―					
	· File name · Title · Comment · Note · Statement	Ladder monitor for MELSEC-A	○	○	×	×	×	×
		Ladder monitor for MELSEC-FX	○	○	×	×	×	×
		Ladder monitor for MELSEC-Q/QnA	○	○	×	×	×	○*1
	Other than the above	Ladder monitor for MELSEC-A*3	○	○	Eng.	Eng.	Eng.	Eng.
		Ladder monitor for MELSEC-FX	○	○	○	○	○	○
		Ladder monitor for MELSEC-Q/QnA	○	○	○	○	○	○
A list editor*3			○	○	Eng.	Eng.	Eng.	Eng.
FX list editor			○	○	○	○	○	○
Intelligent module monitor*3			○	○	Eng.	Eng.	Eng.	Eng.
Network monitor			○	○	○	○	○	○
Q motion monitor*3			○	○	Eng.	Eng.	Eng.	Eng.
Servo amplifier monitor*3			○	○	Eng.	Eng.	Eng.	Eng.
CNC monitor			―					
	Monitor area		*2	*2	*2	*2	*2	*2
	Other than the above		○	○	○	○	○	○
CNC data I/O			○	○	○	Eng.	Eng.	Eng.
SFC monitor			○	○	○	○	○	○
Ladder editor			○	○	○	○	○	○

*1 For further information, see the following:

☞ Section 3.5.7 Language switching of the sequence program (MELSEC-Q/QnA ladder monitor)

*2 The displayable language depends on the setting of the CNC side. (The language used on the monitor area is not linked to the language setting of [GOT setup].)
For the CNC settings, refer to the manual of CNC (C70, C6/C64) to be connected.

*3 For displaying the system screen for the function in English, install the OS for the function on the GOT with the English version of GT Designer2.

2. SYSTEM MONITOR

GT16 GT15 GT SOFT GOT1000 GT11 GT10

2.1 Features

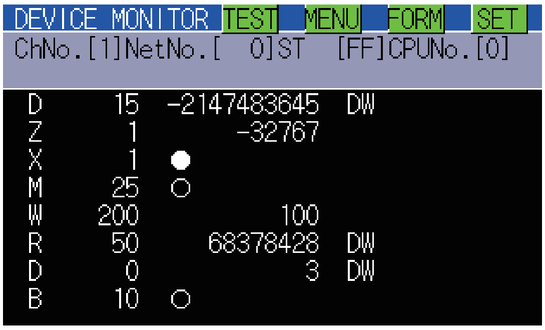
The system monitor function is capable of monitoring and changing the devices within a target controller.
It is intended to troubleshoot the controller system and to streamline maintenance operations.
By installing the system monitor, an extended function OS, from GT Designer 2 into the GOT, you can monitor and test the devices of the controller and the buffer memory of the intelligent function module.

1 Any device on four dedicated screens can be monitored.

The system monitor function comprises four monitors - entry monitor, batch monitor, TC monitor, and BM monitor, and you can monitor any device according to the application.

Entry monitor

(On the GT15)



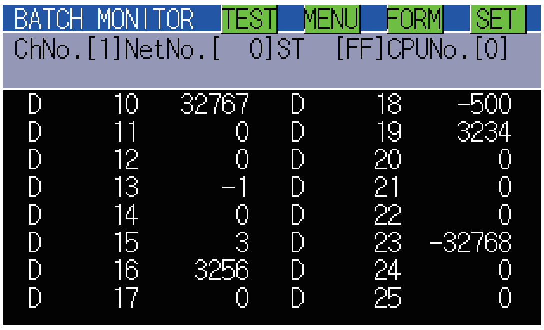
```
DEVICE MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D      15  -2147483645  DW
 Z       1       -32767
 X       1  ●
 M      25  ○
 W     200          100
 R      50     68378428  DW
 D       0            3  DW
 B      10  ○
```

The entry monitor function monitors up to 8 controller devices entered by the user in a single window.

(☞ Section 2.5 Entry Monitor)

Batch monitor

(On the GT15)



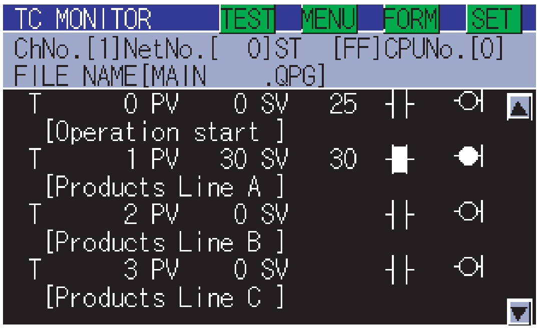
```
BATCH MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D     10   32767   D    18    -500
 D     11       0   D    19    3234
 D     12       0   D    20       0
 D     13      -1   D    21       0
 D     14       0   D    22       0
 D     15       3   D    23  -32768
 D     16    3256   D    24       0
 D     17       0   D    25       0
```

The batch monitor function monitors up to 16 controller devices from the device number specified by the user in a single window.

(☞ Section 2.6 Batch Monitor)

TC monitor

(On the GT15)



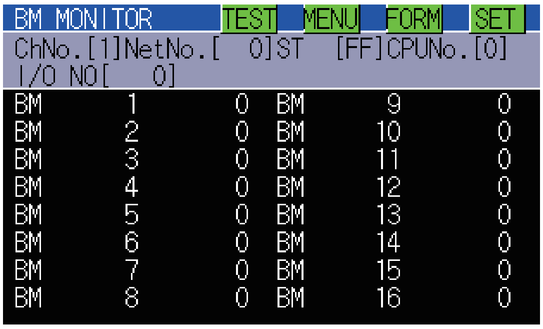
```
TC MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN     .QPG]
 T     0 PV     0 SV   25
  [Operation start ]
 T     1 PV    30 SV   30
  [Products Line A ]
 T     2 PV     0 SV
  [Products Line B ]
 T     3 PV     0 SV
  [Products Line C ]
```

The TC monitor function monitors the present value, set value, contact point, and coil of up to 8 controller timers (T)/ counters (C) from the device number specified by the user in a single window.

(☞ Section 2.7 TC Monitor (Monitoring Timers and Counters))

BM monitor (monitoring Buffer memory)

(On the GT15)



```
BM MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
I/O NO[   0]
BM       1      0  BM      9      0
BM       2      0  BM     10      0
BM       3      0  BM     11      0
BM       4      0  BM     12      0
BM       5      0  BM     13      0
BM       6      0  BM     14      0
BM       7      0  BM     15      0
BM       8      0  BM     16      0
```

The BM monitor function monitors up to 16 devices from the initial device number in the buffer memory of the intelligent function module specified by the user in a single window.

(☞ Section 2.8 BM Monitor (Monitoring Buffer Memory))

Point

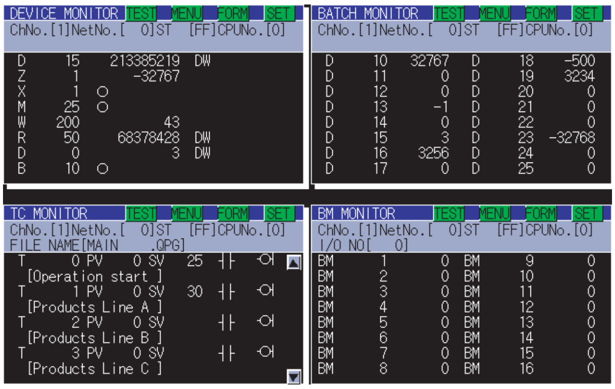
(1) Displaying the system monitor screen of the GT16 or GT15

Display methods differ depending on the GOT.

For the GOT with VGA or higher resolution, the monitor screen is divided into four windows. The GOT can simultaneously display four different kinds of monitor screens.

For the GT1555-VTBD, the monitor screen can be switched between the full and quad modes with the button for switching the number of monitor screens.

For the GOT with QVGA resolution, the GOT can display one of the four monitor screens as a full screen.



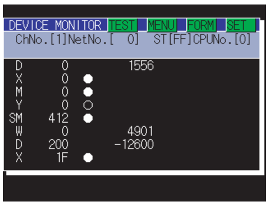
```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D      15    213385219  DW
 Z       1       -32767
 X       1  ○
 M      25  ○
 W     200           43
 R      50     68378428  DW
 D       0            3  DW
 B      10  ○
```

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D      10   32767   D      18    -500
 D      11       0   D      19    3234
 D      12       0   D      20       0
 D      13      -1   D      21       0
 D      14       0   D      22       0
 D      15       3   D      23  -32768
 D      16    3256   D      24       0
 D      17       0   D      25       0
```

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN    .QPG]
 T      0 PV    0 SV   25  ┤├     ─○┤
  [Operation start ]
 T      1 PV    0 SV   30  ┤├     ─○┤
  [Products Line A ]
 T      2 PV    0 SV       ┤├     ─○┤
  [Products Line B ]
 T      3 PV    0 SV       ┤├     ─○┤
  [Products Line C ]
```

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
I/O NO[   0]
BM       1       0  BM       9       0
BM       2       0  BM      10       0
BM       3       0  BM      11       0
BM       4       0  BM      12       0
BM       5       0  BM      13       0
BM       6       0  BM      14       0
BM       7       0  BM      15       0
BM       8       0  BM      16       0
```

(GOT with VGA or higher resolution)



```
ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]

 D      0           1556
 X      0  ●
 M      0  ●
 Y      0  ○
SM    412  ●
 W      0           4901
 D    200         -12600
 X     1F  ●
```

(GOT with QVGA resolution)

- For GT1555-VTBD

(a) Full mode

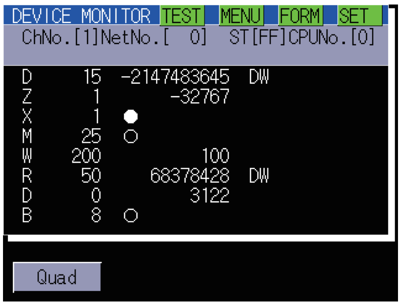
When starting the system monitor, the GOT displays the monitor screen in the full mode.

The GOT displays one of the four monitor screens.

The screen display size differs depending on the monitor screen to be displayed.*1

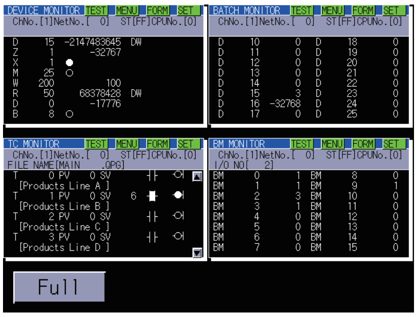
(b) Quad mode

With the button for switching the number of monitor screens, the monitor screen is divided into four windows. The GOT can simultaneously display the four kinds of monitor screens.



```
ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]

 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0         3122
 B      8  ○
```

(Full mode)



(Quad mode)

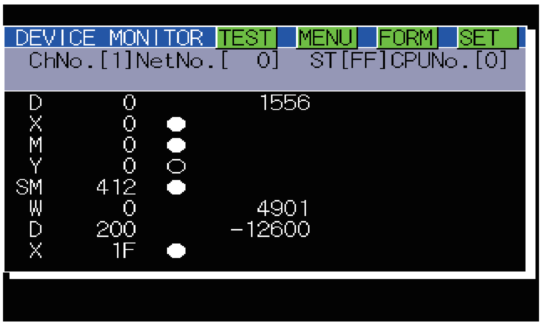
*1 The monitor screen in the full mode is four times bigger than each monitor screen in the quad mode.

For displaying screens commonly used in the system, including the key window, the monitor screen size in the full mode is the same as each monitor screen size in the quad mode.

For details of switching the number of the monitor screens, refer to the following.

☞ Section 2.3.1 Outline until starting the system monitor

(2) Displaying the system monitor screen of the GT11
The GOT can display one of the four monitor screens as a full screen.



```
ChNo.[1]NetNo.[   0]  ST[FF]CPUNo.[0]

 D       0          1556
 X       0   ●
 M       0   ●
 Y       0   ○
SM     412   ●
 W       0          4901
 D     200        -12600
 X      1F   ●
```

2 Data can be changed by test operation.

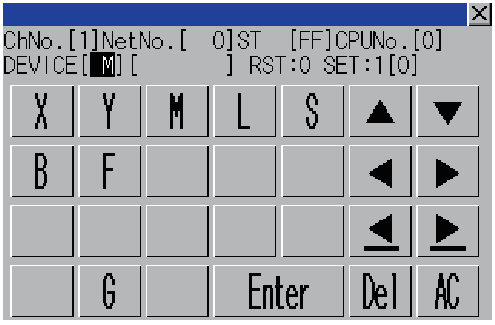
For further information, see the following:

☞ Section 2.9 Test Operation

(Test example)

When turning ON MO

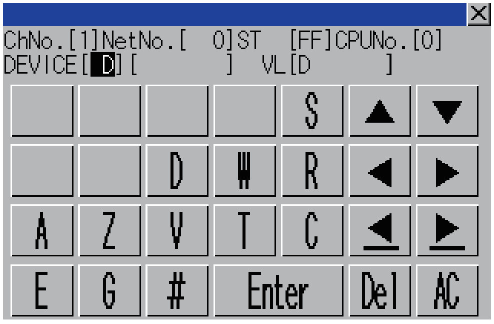
(On the GT15)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
DEVICE[M][         ] RST:0 SET:1[0]
```

When changing the present value of DO

(On the GT15)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
DEVICE[D][         ]  VL[D        ]
```

(1) Testing a bit device
A device specified by the user is turned on and off.

(2) Testing a word device
A specified value is written to a device specified by the user.

(3) Testing a timer/counter
Specified values are written as the present and set values of a device specified by the user.

(4) Testing buffer memory
A specified value is written to buffer memory specified by the user.

3 The display format and device comment/no-comment display can be switched.

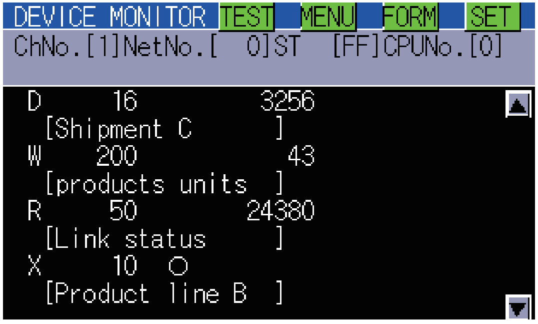
For further information, see the following:

☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

(Test example)

When the entry monitor is displayed
(comment display)

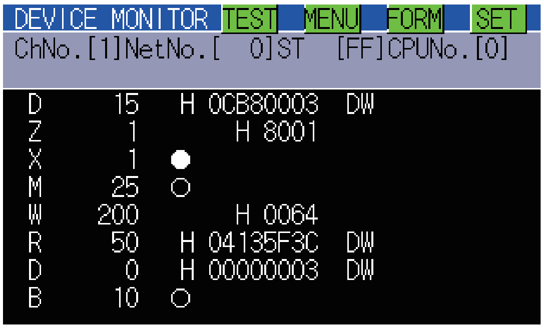
(On the GT15)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D      16          3256
  [Shipment C        ]
 W     200            43
  [products units  ]
 R      50         24380
  [Link status      ]
 X      10   ○
  [Product line B  ]
```

When the entry monitor is displayed
(hexadecimal display)

(On the GT15)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D      15   H 0CB80003  DW
Z       1       H 8001
X       1   ●
M      25   ○
W     200       H 0064
R      50   H 04135F3C  DW
D       0   H 00000003  DW
B      10   ○
```

(1) Switching the display format
Word device values are displayed in decimal or hexadecimal numbers on the entry, batch, TC, and BM monitors.

(2) Device comment display
Comments written in the controller are displayed when a controller device is monitored.

4 Other stations can be monitored.

You can monitor other stations in the data link system containing the GOT (or GOT-connected station), network system or CC-Link system.

For further information about the connection forms that can be monitored, see the following:

☞ Section 2.2.1 System configuration

2.2 Specifications

2.2.1 System configuration

This subsection describes the controller names and the connection forms between the GOT and the controller that can be covered by the system monitor function.
For further information about communication units and cables for each connection form, see the following:

☞ GOT1000 Series Connection Manual

1 Target controller

Controller
QCPU (Q mode), Q series motion controller CPU
QSCPU[*1]
QnACPU
ACPU/QCPU (A mode), A series motion controller CPU
FXCPU
Remote I.O station (MELSECNET/H system)
MELDAS C6/C64

*1 The GOT cannot write data to devices in the QSCPU. (The test operation is not available.)

2 Connection type

(1) When the GOT is connected to a QCPU (Q mode), Q series motion controller CPU, or QSCPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection type between GOT and controller																		Reference section
Name	Description	Bus connection *9		Direct CPU connection *9		Computer link connection *9		Ethernet connection		MELSEC NET/H connection, MELSEC NET/10 connection		CC-Link IE*5		CC-Link connection				GOT multidrop connection		
														ID*6*9		G4*7*9				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	○	○	○	○	○	○	△*4	×	△*2	×	○	×	△*4	×	○	○	×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device																			2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device	△*1	△*1	△*1	△*1	△*1	△*1			△*1 *2		△*1				△*1	△*1			2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified intelligent function module																			2.8
Data change by test operation	Setting/ Resetting bit devices	△*4	△*4	△*4	△*4	○	○			△*2 *4		△*4				△*4	△*4			2.9
	Changing the present value of word devices and buffer memory					△*3	△*3													
	Changing the present value of TC (possible during TC monitoring)					△*4	△*4													
	Changing the set value of TC (possible during TC monitoring)*8																			
Quick test	Changing device values by performing a quick test																			2.4.5

Function		Connection type between GOT and controller																		Reference section
Name	Description	Bus connection *9		Direct CPU connection *9		Computer link connection *9		Ethernet connection		MELSEC NET/H connection, MELSEC NET/10 connection		CC-Link IE*5		CC-Link connection				GOT multidrop connection		
														ID*6*9		G4*7*9				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Display switching	Displaying device comments	△*4	△*4	△*4	△*4	△*4	△*4	△*4	×	△*2 *4	×	△*4	×	△*4	×	△*4	△*4	×	×	2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal																			

*1 These items cannot be monitored when a motion controller (Q series) is monitored.

*2 When the GOT is connected to the MELSECNET/10, use a QCPU and a network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, QJ71BR11) of function version B or a later version.

*3 The present value of Z cannot be changed. None of the connection types supports V.

*4 When a motion controller (Q series) is connected, device comments cannot be displayed.

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

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

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

*8 When a QCPU redundant system is used, data of the set value cannot be changed.

*9 The QSCPU does not support the connection type.

(2) When the GOT is connected to a QnACPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*4		G4*5				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	△*3	△*3	△*3	△*3	○	○	△*3	×	△*2	×	△*3	×	△*3	×	×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device																	2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device									△*1*2								2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified intelligent function module																	2.8
Data change by test operation	Setting/Resetting bit devices									△*2*3								2.9
	Changing the present value of word devices and buffer memory					△*2	△*2											
	Changing the present value of TC (possible during TC monitoring)					△*3	△*3											
	Changing the set value of TC (possible during TC monitoring)																	
Quick test	Changing device values by performing a quick test																	2.4.5

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*4		G4*5				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Display switching	Displaying device comments	△*3	△*3	△*3	△*3	△*3	△*3	△*3	×	△ *2 *3	×	△*3	×	△*3	×	×	×	2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal																	

*1 When the GOT is connected to the MELSECNET/10, use a QCPU and a network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, QJ71BR11) of function version B or a later version.

*2 The present value of Z cannot be changed. None of the connection forms supports V.

*3 When the GOT is connected to a QnACPU whose date shown on the rating plate is earlier than 9707B, device comments cannot be displayed.

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

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

(3) When the GOT is connected to a ACPU/QCPU (A mode) or A series motion controller CPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*3		G4*4				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	○	○	○	○	△*2	△*2	○	×	○	×	○	×	○	×	×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device																	2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device	△*1	△*1	△*1	△*1	△*1	△*1			△*1				△*1				2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified intelligent function module																	2.8
Data change by test operation	Setting/Resetting bit devices	○	○	○	○	○	○			○				○				2.9
	Changing the present value of word devices and buffer memory					△*2	△*2											
	Changing the present value of TC (possible during TC monitoring)					○	○											
	Changing the set value of TC (possible during TC monitoring)																	
Quick test	Changing device values by performing a quick test					△*2	△*2											2.4.5
Display switching	Displaying device comments					○	○											2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal																	

*1 These items cannot be monitored when an A motion controller CPU is monitored.

*2 V, Z, and A cannot be monitored, or their present values cannot be changed.

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

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

(4) When the GOT is connected to an FXCPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller				Reference section
Name	Description	Direct CPU connection		GOT multidrop connection		
		GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	△*2	△*2	×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device					2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device	△*1*2	△*1*2	×	×	2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified special function unit/block	×	×	×	×	2.8
Data change by test operation	Setting/Resetting bit devices	△*2	△*2	×	×	2.9
	Changing the present value of word devices and buffer memory	△*2	△*2			
	Changing the present value of TC (possible during TC monitoring)					
	Changing the set value of TC (possible during TC monitoring)	×	×			
Quick test	Changing device values by performing a quick test	△*2	△*2	×	×	2.4.5
Display switching	Displaying device comments	×	×	×	×	2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal	△*2	△*2			

*1 The set value and coil of T/C cannot be monitored.

*2 V, Z, and A cannot be monitored, or their present values cannot be changed.

(5) When the GOT is connected to a remote I/O station of MELSECNET/H system

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/H connection, MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*2		G4*3				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	×	×	○	○	○	○	×								×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device																	2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device																	2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified intelligent function module																	2.8
Data change by test operation	Setting/Resetting bit devices																	2.9
	Changing the present value of word devices and buffer memory					△*1	△*1											
	Changing the present value of TC (possible during TC monitoring)					○	○											
	Changing the set value of TC (possible during TC monitoring)*4																	
Quick test	Changing device values by performing a quick test																	2.4.5

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/H connection, MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*2		G4*3				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Display switching	Displaying device comments	×	×	○	○	○	○	×								×	×	2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal																	

*1 The present value of V and Z cannot be changed.

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

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

*4 When a QCPU redundant system is used, data of the set value cannot be changed.

(6) When the GOT is connected to a MELDAS C6/C64

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*1		G4*2				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Entry monitor	Monitoring present values by entering devices to be monitored in advance	×	×	○	×	×	×	○	×	○	×	○	×	×	×	×	×	2.5
Batch monitor	Monitoring the present value of n devices from a specified device																	2.6
TC monitor	Monitoring the present value, set value, contact point, and coil of m devices from a specified device			×				×		×		×						2.7
BM monitor	Monitoring the present value of x devices in specified buffer memory of a specified intelligent function module			○				○		○		○						2.8
Data change by test operation	Setting/Resetting bit devices																	2.9
	Changing the present value of word devices and buffer memory																	
	Changing the present value of TC (possible during TC monitoring)																	
	Changing the set value of TC (possible during TC monitoring)			×				×		×		×						
Quick test	Changing device values by performing a quick test			○				○		○		○						2.4.5

Function		Connection form between GOT and controller																Reference section
Name	Description	Bus connection		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection		CC-Link connection				GOT multidrop connection		
												ID*1		G4*2				
		GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	
Display switching	Displaying device comments	×	×	○	×	×	×	○	×	○	×	○	×	×	×	×	×	2.4.4
	Displaying word device and buffer memory values in decimal or hexadecimal																	

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

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

3 Required Extended function OS

(1) The Extended function OS shown in the table below is required.

Extended function OS	OS memory space (user area)				Option function board		
	GT16		GT15	GT11	GT16	GT15	GT11
	Built-in flash memory (ROM)	User memory (RAM)					
System monitor	450KB	692KB	746KB	0KB	Not required	Not required	Not required

(2) Install the Extended function OS.
Install System monitor (Extended function OS) in the GOT.
For a detailed installation procedure, see the following:

☞ Section 1.1.3 Outline of procedure to the operation of each function

Before transferring data from GT Designer 2 to the GOT (installing OS', downloading project data), it is necessary to confirm the free capacity of the user area in the specified drive and the size of the data to be transferred.
For further information, see the following:

☞ GT Designer 2 Basic Operation/Data Transfer Manual
Subsection 8.1.2 Drive capacity required for data transfer

2.2.2 Devices that can be monitored

For further information about the monitor device names that can be monitored and the scope, see the following:

☞ GT Designer2 Version □ Screen Design Manual

2.2.3 Access range

With Universal model QCPU, the GOT can monitor up to 64 stations.
When the GOT is connected to the remote I/O station in MELSECNET/H network system, only the master station can be monitored.
The access range other than above is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

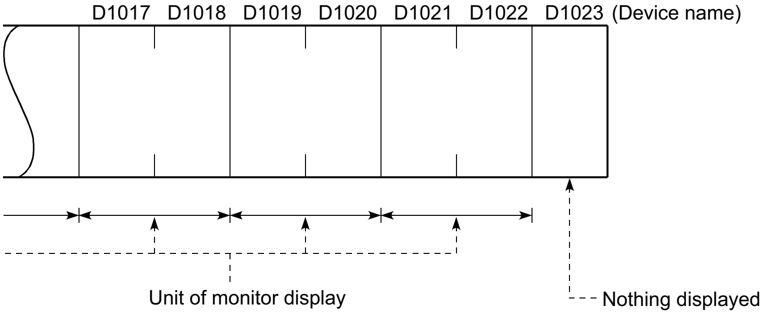
☞ GT Designer2 Version □ Screen Design Manual (2.7 Controller that can be monitored and the Access Range)

2.2.4 Precautions

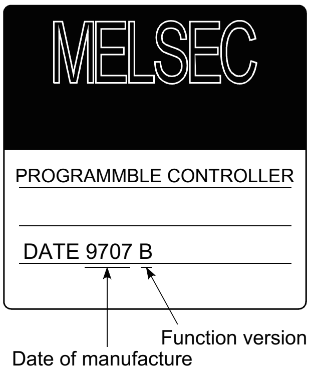
(1) Monitoring and testing real number data
Real number data cannot be monitored and tested.
All word devices containing real number data are monitored in integer data (binary data).

(2) Monitoring devices in 32-bit (two-word) module
When monitoring word devices (T, C, D, W, etc.) in 32-bit (two-word) module, those with 32 bits of data remaining are monitored.
Devices with 16 bits (one-word) of data remaining are not monitored.
If an odd number is specified for the first monitor device number, the last device number of the specified controller will not be displayed.

(Example) When the data entry of the A2NCPU is monitored in units of 32 bits from odd numbers (D1, D3 ...)



(3) Changing the T/C set values of large-size and small-size QnACPUs and displaying device comments
The T/C set values of QnACPUs whose date on the CPU rating plate is after [9707B] can be changed, and device comments can be displayed.
<Information on the rating plate>



(4) Programs capable of changing timer/counter set values
- Only the main program can change the timer/counter set values of AnNCPUs, AnACPUs, and AnUCPUS.
- When executing multiple programs with the QCPU (Q mode) and QnACPU, setting values of timer/counter can be changed only to the program (scan execution type program set at the lowest number among them in parameter settings of GX Developer) whose file name is displayed on the TC Monitor screen.
  Note that a file to be displayed cannot be changed on the GOT.

(5) Z0 of QCPUs and QnACPUs and Z0 and V0 of ACPUs
- Z0 of QCPUs and QnACPUs and Z0 and V0 of ACPUs are displayed as Z and V respectively.

2.3 Display

This section describes the operation procedure from turning on the power to the GOT to system monitor display.

2.3.1 Outline until starting the system monitor

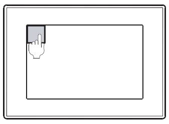
This subsection describes the flow until the system monitor function screen is displayed after System monitor (Extended function OS) is installed in the GOT.

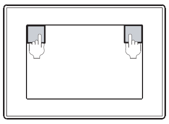
Start

Turn on the power to the GOT

Starting from the utility

Display the utility.



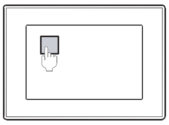


After the utility is displayed, touch [Debug & self check] → [Debug] → [System monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (System Monitor) set in the project data

Touch the special function switch.



Refer to the following manual for how to set the special function switch.

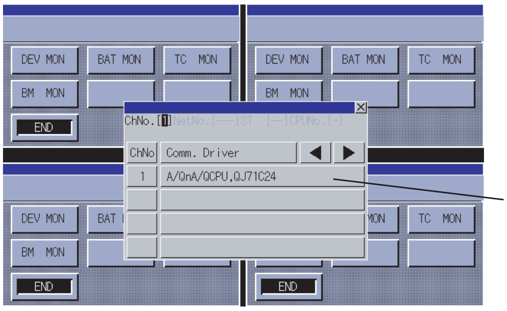
☞ GT Designer2 Version ☐ Screen Design Manual (6.2 Touch Switch)

Display the functional change menu screen of the system monitor function.

GT15 Only

Depending on the model used, the GT15 displays the functional change menu screen in four different screen displays.

Set the channel No., network No., station No., etc.

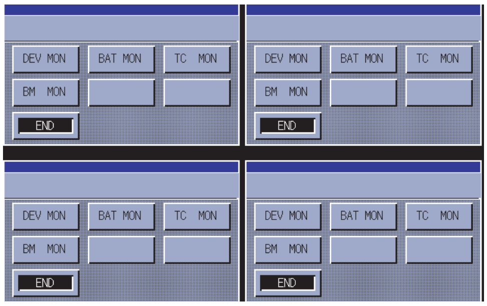


ChNo.[1]

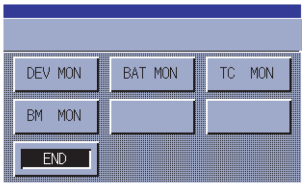
ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24

Communication setting window

(GT15)



(GT11)



Reads the PLC and displays the sequence program.

(Continued to next page)

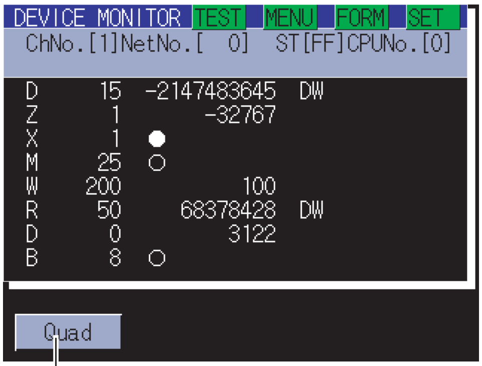
From previous page

Changing monitor screen from full mode to quad mode (For GT1555-VTBD)

GT15 Only

For the GT1555-VTBD, the monitor screen can be switched between the full and quad modes with the button for switching the number of monitor screens
When the monitor screen is switched to the full mode, the GOT displays a monitor screen displayed on the upper left in the quad mode in the full mode.[*1]

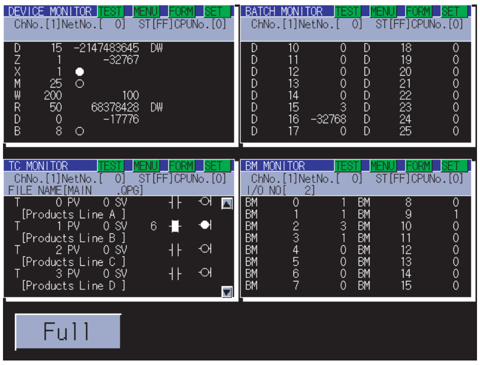
When starting the system monitor, the GOT displays the monitor screen in the full mode.



```
DEVICE MONITOR
 ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]
 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0         3122
 B      8  ○
```

The button for switching the number of monitor screens

The monitor screen is switched between the full and quad modes with the button for switching the number of monitor screens.



```
DEVICE MONITOR
 ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]
 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0       -17776
 B      8  ○
```

```
BATCH MONITOR
 ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]
 D     10       0   D    18     0
 D     11       0   D    19     0
 D     12       0   D    20     0
 D     13       0   D    21     0
 D     14       0   D    22     0
 D     15       3   D    23     0
 D     16  -32768   D    24     0
 D     17       0   D    25     0
```

```
TC MONITOR
 ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]
FILE NAME[MAIN    .QPG]
 T       0 PV    0 SV
  [Products Line A ]
 T       1 PV    0 SV    6
  [Products Line B ]
 T       2 PV    0 SV
  [Products Line C ]
 T       3 PV    0 SV
  [Products Line D ]
```

```
BM MONITOR
 ChNo.[1]NetNo.[  0]  ST[FF]CPUNo.[0]
 I/O NO[   2]
BM     0      1   BM     8     0
BM     1      1   BM     9     1
BM     2      3   BM    10     0
BM     3      1   BM    11     0
BM     4      0   BM    12     0
BM     5      0   BM    13     0
BM     6      0   BM    14     0
BM     7      0   BM    15     0
```

[*1] The monitor screen in the full mode is four times bigger than each monitor screen in the quad mode.
For displaying screens commonly used in the system, including the key window, the monitor screen size in the full mode is the same as each monitor screen size in the quad mode.

Point

(1) How to display the utility

For how to display the utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (1.3 Utility Display)
GT15 User's Manual (9.3 Utility Display)
GT11 User's Manual (9.3 Utility Display)

(2) Displaying the start screen on the GT16 and GT15

If you reactivate the system monitor function without turning off the power to the GOT, the last displayed screen appears.

(3) Displaying communication setting window

After turning on the GOT, the communication setting window is displayed at the first startup of the system monitor only.

For displaying the communication setting window at the second or later startup, touch the ENTRY button on the system monitor screen.

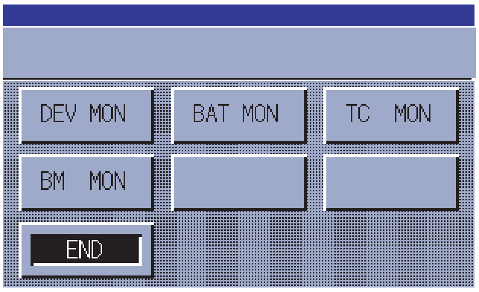
(4) If the project data has not been downloaded

The system monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2.4 Operation Procedure Common to the System Monitor Screens

2.4.1 Functional change menu screen

This subsection describes the configuration of the functional change menu screen and the functions of the keys displayed on it.



The table below describes the functions of the keys displayed on the functional change menu screen.

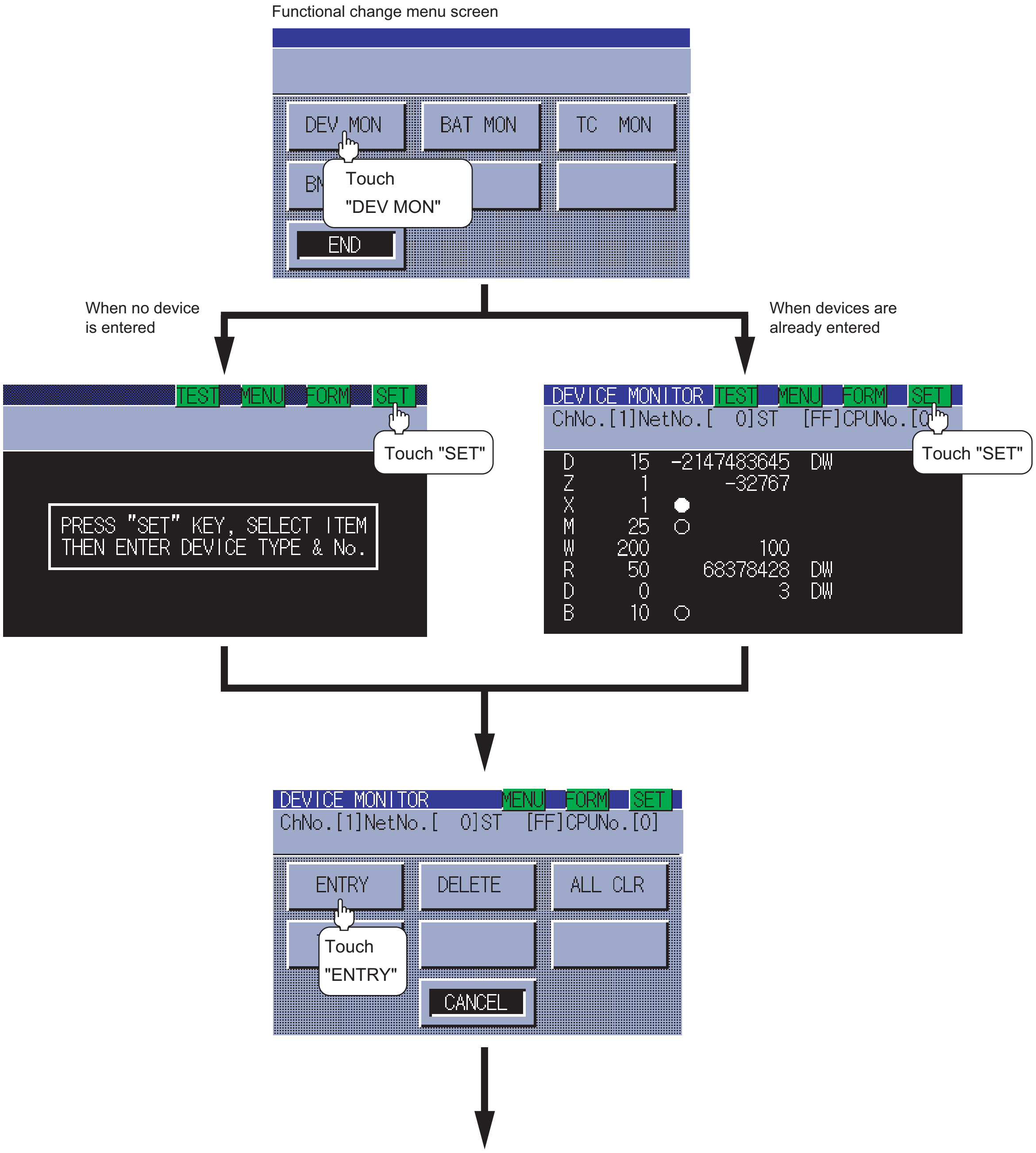
Key	Function
DEV MON	Performs entry monitoring in the Entry Monitor window. ☞ Section 2.5 Entry Monitor
BAT MON	Performs batch monitoring in the Batch Monitor window. ☞ Section 2.6 Batch Monitor
TC MON	Performs TC monitoring in the TC Monitor window. ☞ Section 2.7 TC Monitor (Monitoring Timers and Counters)
BM MON	Performs buffer memory monitoring in the BM Monitor window. ☞ Section 2.8 BM Monitor (Monitoring Buffer Memory)
END	The system monitor function is deactivated, and the screen returns to Main Menu of the utility. If the system is activated from the User screen, the screen returns to it.

2.4.2 Entering monitor devices (specifying monitor stations and devices)

This subsection describes how to specify network numbers, monitor stations, and monitor devices by taking the Entry Monitor window as an example.

The procedure for specifying network numbers, monitor stations, and monitor devices is the same even if other items than the "entry monitor."

(Example) Entering a monitor device when the entry monitor is used



```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

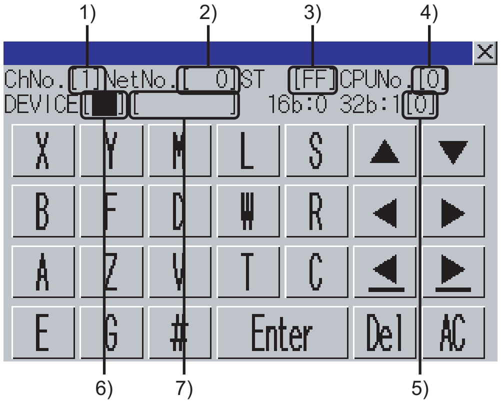
```
ChNo.[1]NetNo.[   0]ST   [FF]CPUNo.[0]
D    15  -2147483645  DW
Z     1       -32767
X     1  ●
M    25  ○
W   200          100
R    50     68378428  DW
D     0            3  DW
B    10  ○
```

```
ChNo.[1]NetNo.[   0]ST   [FF]CPUNo.[0]
```

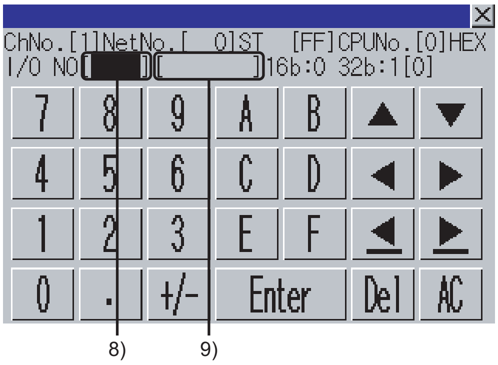
(Continued to next page)

(From previous page)

Device entry screen when the entry monitor, batch monitor or TC monitor is selected


ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[ ][ ] 16b:0 32b:1[0]

Device entry screen when the BM monitor is selected


ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]HEX
I/O NO[ ][ ]16b:0 32b:1[0]

Set 1) to 9) as shown in the table below, and then touch the Enter key.
For the operation of key windows, see the following:

☞ Section 2.4.3 Key window setting columns and operation procedure

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID*2	G4*3
1)*1	Channel No.	Sets the channel number of the controller targeted to the system monitor.						
2)	Network No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)*4	Station No.	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	Data range	1: Indicates that the device value is a 32-bit (two-word) module. 0: Indicates that the device value is a 16-bit (one-word) module.						
6)*1	Device name	Set the name and number of the device to be monitored.						
7)*1	Device number							
8)*1	I/O number	When the initial I/O signal of module is displayed with three digits, specify the first two digits.						
9)*1	Initial device number	Set the initial device number of the buffer memory in decimal.						

*1 For devices that can be set, see the following:
☞ GT Designer 2 Version □ Screen Design Manual (Section 2.9 Devices that can be set)
*2 Indicates CC-Link connection (Intelligent device station).
*3 Indicates CC-Link connection (via G4).
*4 When the station No. is set to the host station (FF), set the network No. to 0.

Point

Displaying the data range

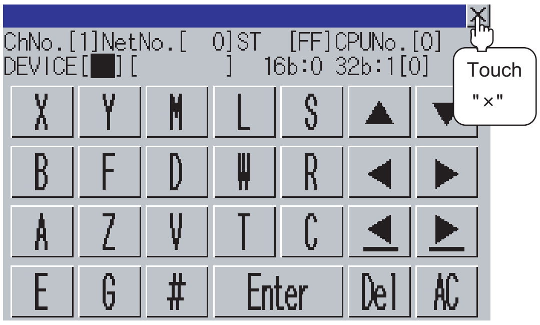
The Entry Monitor, Batch Monitor, TC Monitor, and BM Monitor screens display the data range as shown below.

- DW : 32-bit (two-word) module
- Nothing displayed : 16-bit (one-word) module

(Continued to next page)

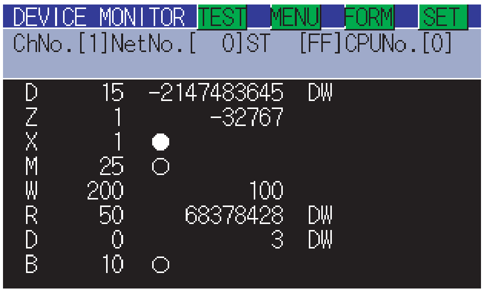
(From previous page)

DEVICE ENTRY



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
DEVICE[■][         ]  16b:0 32b:1[0]
```

Touch "×"



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

Point

(1) Retaining entered information
If the system monitor function is reactivated without turning off the power to the GOT, the last displayed information will be retained.
If the power to the GOT is turned on again and the system monitor function is reactivated, the last displayed information will be deleted.

(2) Entry unit of monitor devices
Each monitor device is entered in a combination of a network number and a CPU station number. If the CPU station number is changed, the entered monitor device will become invalid.

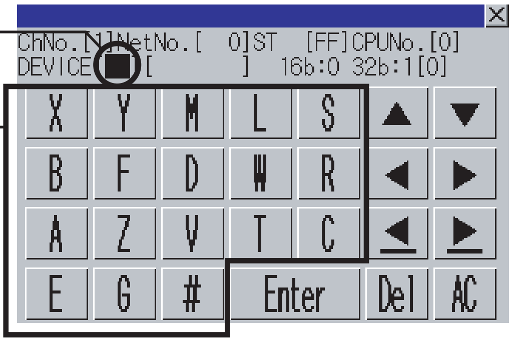
2.4.3 Key window setting columns and operation procedure

1 Operating the key window

① Using the ◄ and ► keys, move the cursor to the item you want to set.
The displayed keyboard depends on the position of the cursor as shown below.

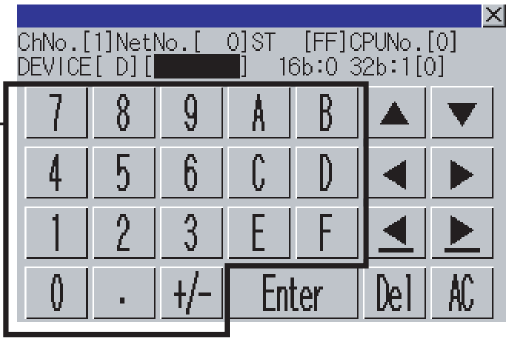
Displayed position of cursor

Keyboard displayed when the cursor is placed on the device name



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[■][ ] 16b:0 32b:1[0]

Keyboard displayed when the cursor is placed on the device number



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[D][■] 16b:0 32b:1[0]

② If necessary, enter numbers or characters from the keyboard.

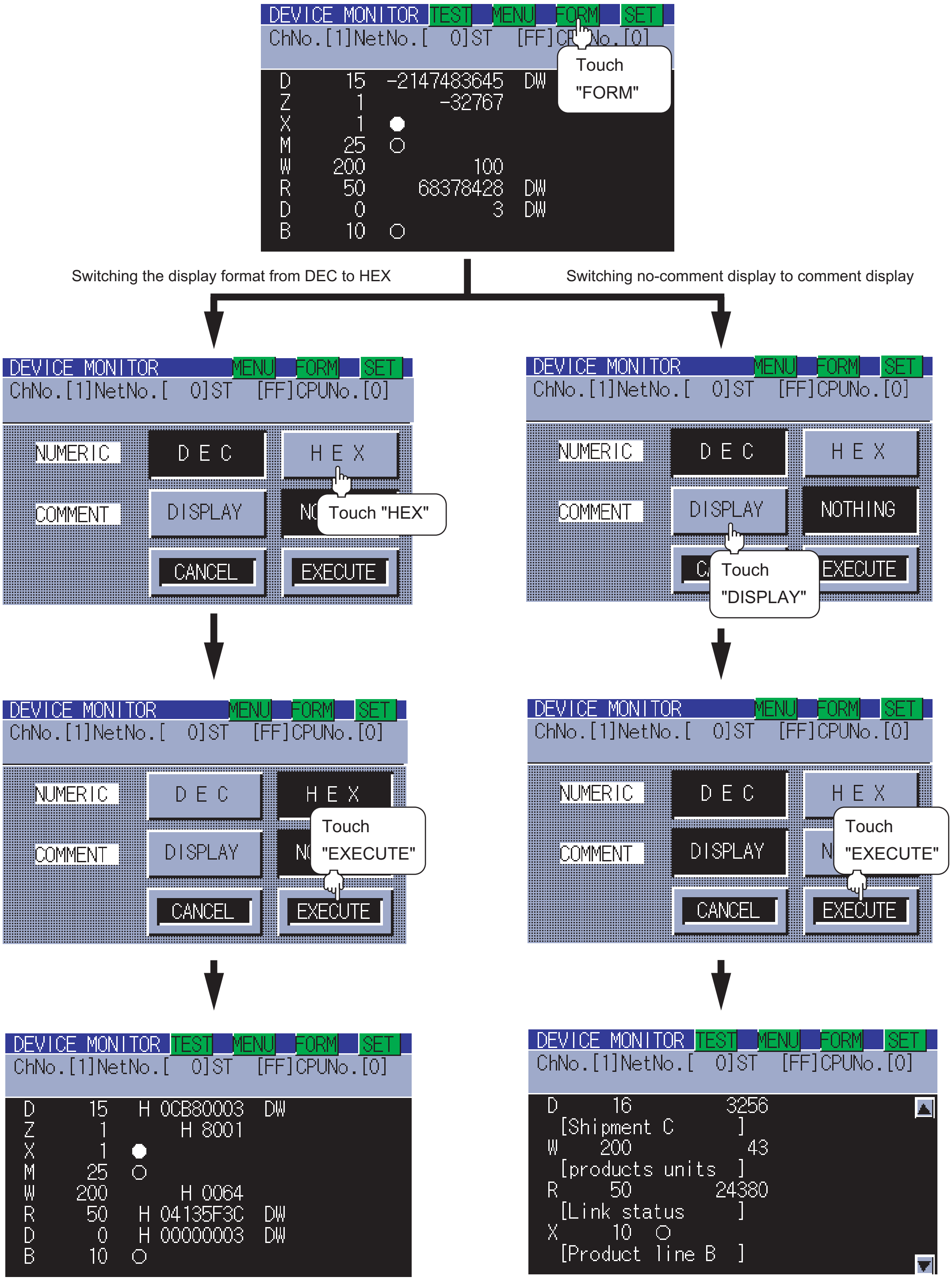
- Del key: Used to delete a character of the entered information.
- AC key: Used to delete all characters under the cursor.
- The ▲/▼ keys without a description do not function.

③ Entry is completed by touching the Enter key.

④ The keyboard closes by touching the ☒ key.

2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

This subsection describes how to switch the display format and comment/no-comment display.
The Entry Monitor window is taken here as an example to describe the specification of a monitor station and a monitor device when the system monitor function is executed.
The procedure for switching the display format (DEC/HEX) and comment display when another item is selected.
(Example of switching when the entry monitor is selected)
Switching the display format from DEC to HEX
Switching no-comment display to comment display



```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D     15  H 0CB80003  DW
 Z      1      H 8001
 X      1  ●
 M     25  ○
 W    200      H 0064
 R     50  H 04135F3C  DW
 D      0  H 00000003  DW
 B     10  ○
```

```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D     16          3256
  [Shipment C         ]
 W    200            43
  [products units  ]
 R     50         24380
  [Link status       ]
 X     10  ○
  [Product line B  ]
```

Point

(1) Changing the comment or comment capacity of the controller
If you change a comment or comment capacity of the controller after the system monitor function is activated, the comment may not be properly displayed on each monitor screen.
After a comment or comment capacity is changed, turn off the GOT and turn it on again.

(2) Switching the display format (DEC/HEX)
The present value of word devices and the present value and set value of timers/ counters will be displayed in decimal or hexadecimal numbers.

(3) Switching comment/no-comment display
The comments written to the target controller will be displayed or not be displayed.
(Priority of comment display: Extension comment > Comment)

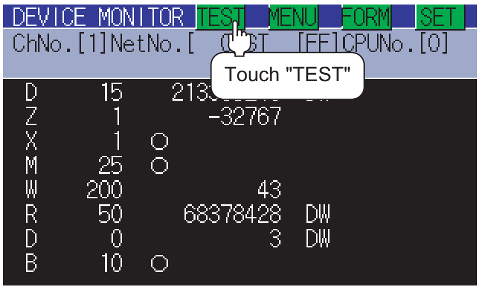
(4) Comment/No-comment display
  (a) The BM monitor does not display comments.
  (b) Comments will not be displayed when any of the CPUs listed below is monitored.
    - FXCPU
    - QnACPU or Q series motion controller CPU whose date on the rating plate is earlier than 9707B
  (c) Comments will not be displayed when any of the devices listed below is monitored.
    - Internal device of the GOT (GB, GD, GS)
    - Host device (B, W, SB, SW) when the MELSECNET/H or MELSECNET/10 is connected
    - Host device (X,Y, WW, WR) when a CC-Link is connected
  (d) Displaying the comments of QCPUs (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU)
    Comments will not be displayed when the following PLC parameters (PLC file settings) are set:
    - When the comment file is set to "Not used"
    - When the comment file is set to "Use the same file name as the program"
    - When a password is set to the comment file
    - When a comment file is stored in program memory
  (e) Displaying the comments of QCPUs (Q00JCPU, Q00CPU, Q01CPU)
    Comments will not be displayed when the following PLC parameter (PLC file setting) is set:
    - When the comment file "MAIN" does not exist in the program memory
  (f) Displaying the comments of QnACPUs
    With a QnACPU whose date on the rating plate is earlier than 9707B, comments cannot be displayed.
    Use a QnACPU whose date on the rating plate is 9707B or later.
    Also, comments will not be displayed when the following settings are made to the PLC parameter (PLC file setting) is set.
    - When the comment file is not set "Not used"
    - When the comment file is set to "Use the same file name as the program"
    - When a keyword is entered for each memory

2.4.5 Quick test of monitor devices

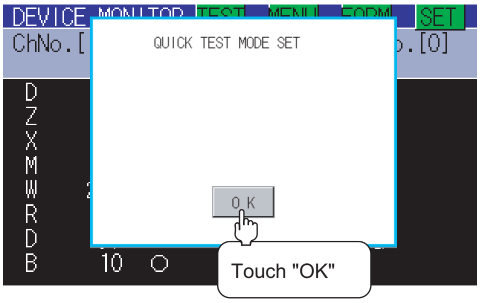
⚠WARNING

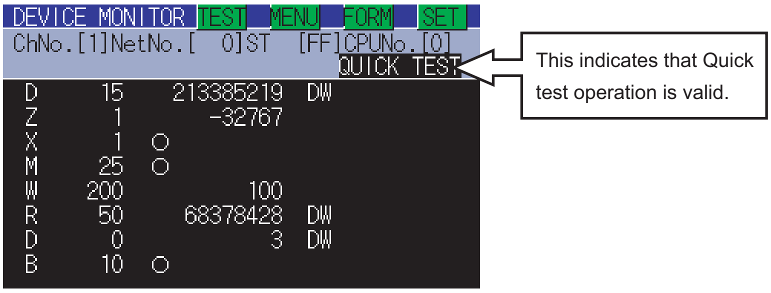
- Before performing the quick test operations of the system monitor function (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method.
  During quick test operation, never change the data of the devices which are used to perform significant operation for the system.
  False output or malfunction can cause an accident.

The quick test operation procedure for monitor devices is described below.
The Entry Monitor screen is taken as an example to describe quick test operation when the system monitor function is executed.
The operation procedure is the same even if the batch monitor, TC monitor or BM monitor is selected.
(Example of quick test operation when the entry monitor is selected)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D     15    213
Z      1       -32767
X      1  ○
M     25  ○
W    200           43
R     50     68378428  DW
D      0            3  DW
B     10  ○
```





```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D     15    213385219  DW
Z      1       -32767
X      1  ○
M     25  ○
W    200          100
R     50     68378428  DW
D      0            3  DW
B     10  ○
```

This indicates that Quick test operation is valid.

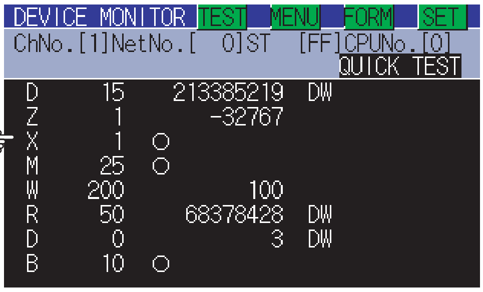
Quick test of bit devices → (1) To quick test of bit devices

Quick test of word devices → (2) To quick test of word devices

(1) Quick test of bit devices

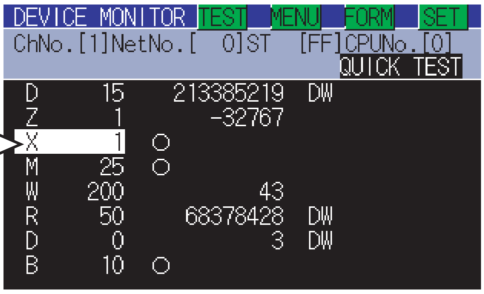
(Operation example)

Change the status of bit device X001 from off (○) to on (●).



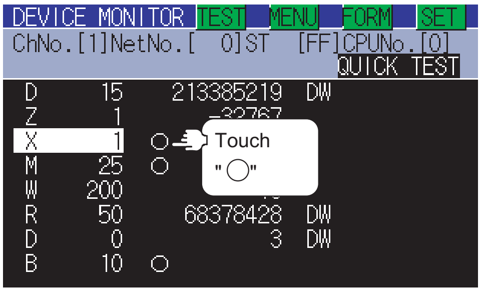
```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
                         QUICK TEST
 D     15    213385219  DW
 Z      1       -32767
 X      1  ○
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

Touch the bit device you want to switch its status to on or off.



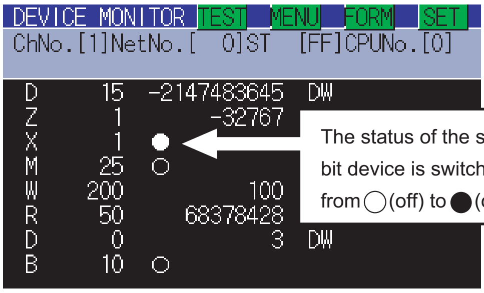
```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
                         QUICK TEST
 D     15    213385219  DW
 Z      1       -32767
 X      1  ○
 M     25  ○
 W    200           43
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

The device name and number of the selected bit device are highlighted.



```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
                         QUICK TEST
 D     15    213385219  DW
 Z      1
 X      1  ○
 M     25  ○
 W    200
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

Touch "○"



```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]

 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

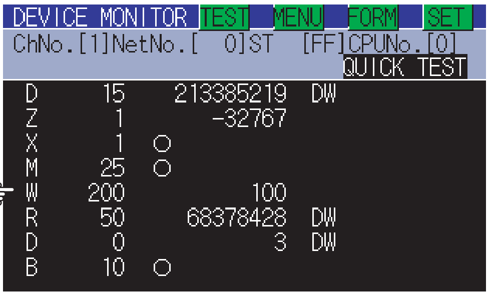
The status of the selected bit device is switched from ○(off) to ●(on).

(2) Quick test of word devices

(Operation example)

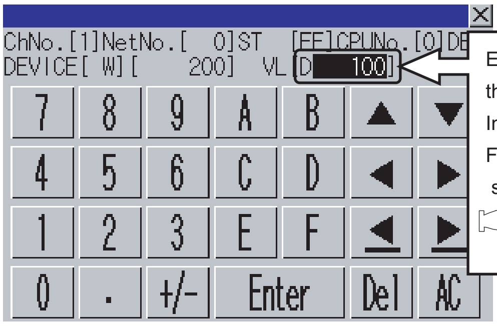
Change the device value of word device W200 from 43 to 100.

Conditions: Data range: 16 bits, device value display format: decimal number



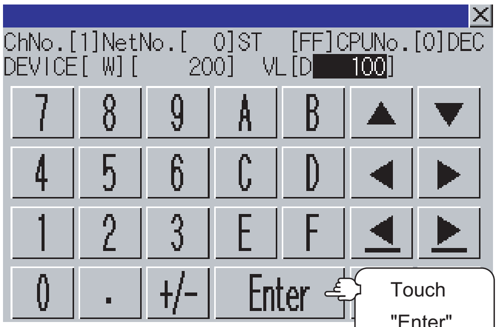
```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
                           QUICK TEST
D    15    213385219  DW
Z     1       -32767
X     1  ○
M    25  ○
W   200          100
R    50     68378428  DW
D     0            3  DW
B    10  ○
```

Touch the device you want to change the device value.



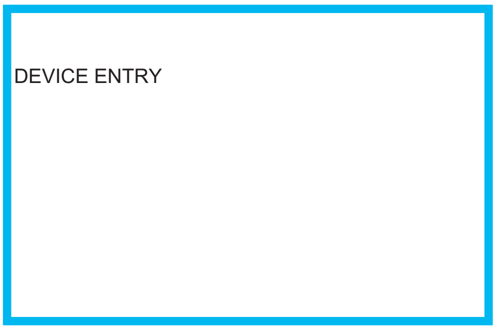
```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]DE
DEVICE[ W][    200]  VL[D     100]
```

Enter a new device value by operating the key window.
In this example, enter "100."
For the operation of the key window, see the following:Subsection
☞ 2.4.3 Key window setting columns and operation procedure



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]DEC
DEVICE[ W][    200]  VL[D     100]
```

Touch "Enter"



DEVICE ENTRY

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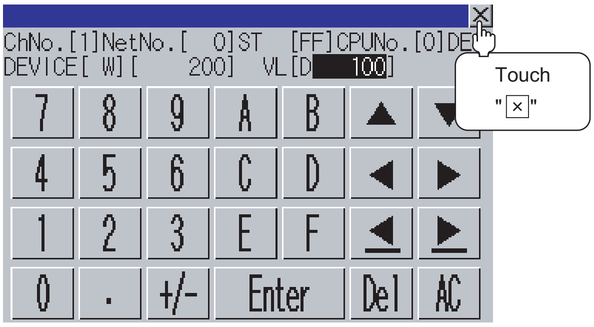
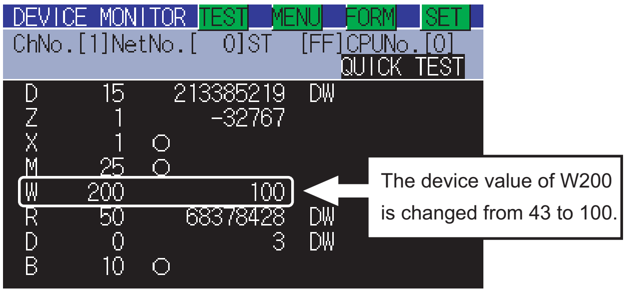
(From previous page)



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]DE
DEVICE[ W][     200]  VL[D     100]
```

Touch "☒"



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
                              QUICK TEST
 D     15    213385219  DW
 Z      1       -32767
 X      1  ○
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

The device value of W200 is changed from 43 to 100.

Point

Effective number of digits of device values that can be changed

If an entered value exceeds the corresponding number of digits specified below, the device value cannot be changed.

[Decimal number]

16-bit (one-word) module : Six digits (including a digit for a sign)

32-bit (two-word) module : Ten digits (including a digit for a sign)

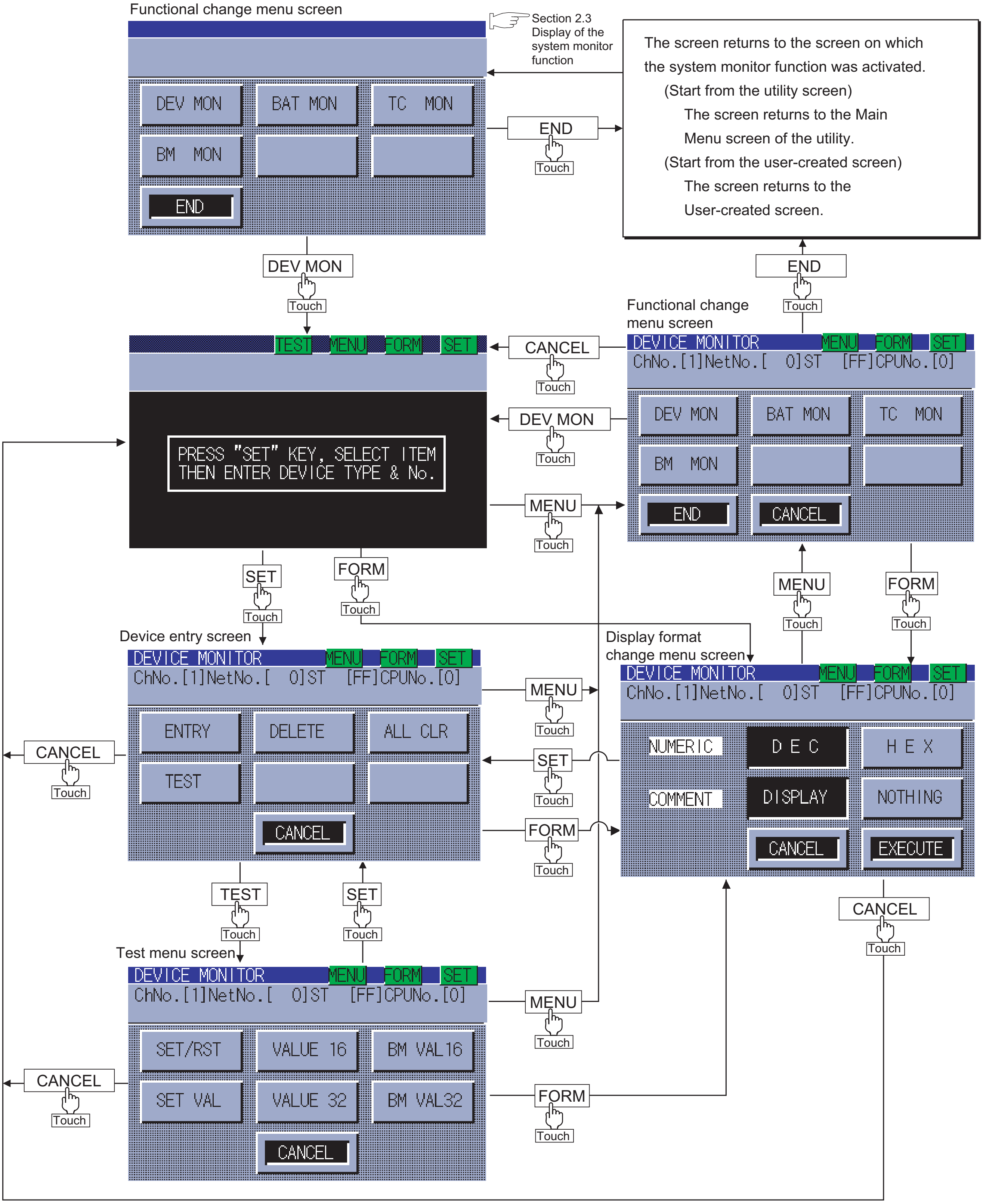
[Hexadecimal number]

16-bit (one-word) module : Four digits

32-bit (two-word) module : Eight digits

2.4.6 Changing screens

This subsection takes the entry monitor as an example to describe how to change screens.



The screen returns to the screen on which the system monitor function was activated.
(Start from the utility screen)
The screen returns to the Main Menu screen of the utility.
(Start from the user-created screen)
The screen returns to the User-created screen.

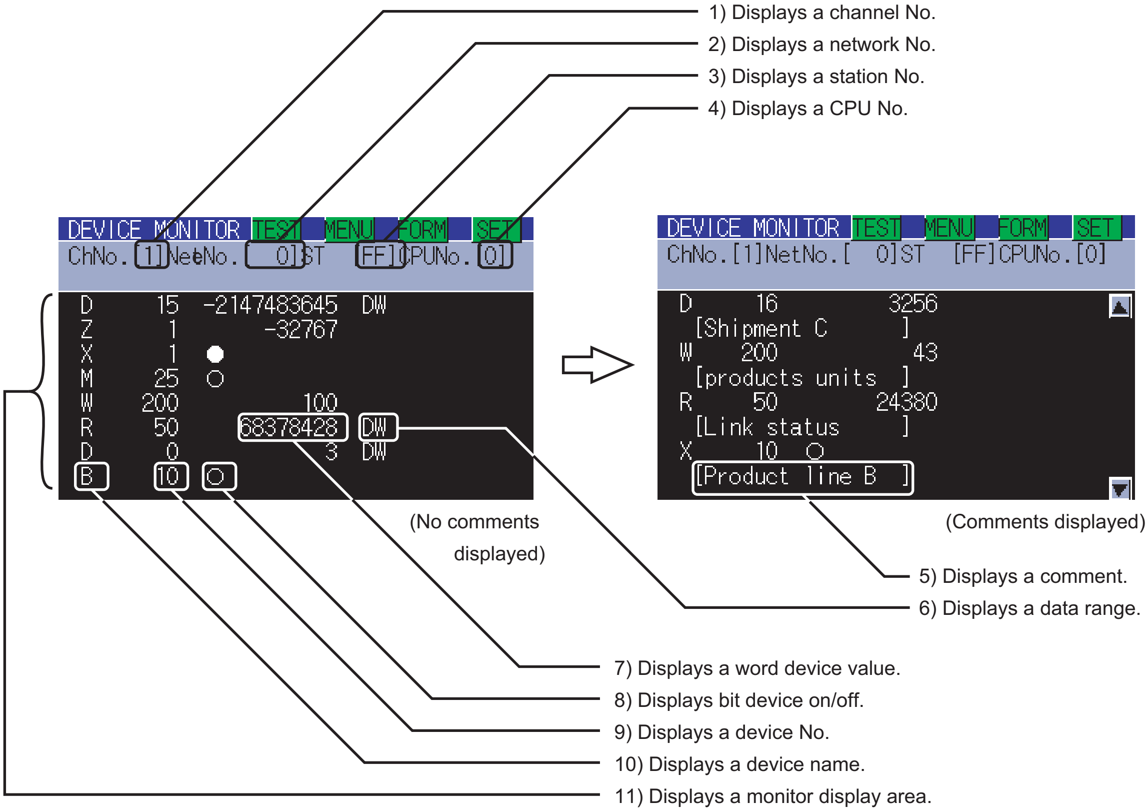
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.

2.5 Entry Monitor

The device monitor is a function to enter devices to be monitored in advance and monitor only entered devices.
This section describes how to activate the entry monitor when the system monitor function is executed.

2.5.1 Information displayed on the Entry Monitor screen and key functions

(1) The information displayed on the Entry Monitor screen is described below.
For the key functions, see the page that follows.



```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D     15  -2147483645  DW
 Z      1       -32767
 X      1  ●
 M     25  ○
 W    200          100
 R     50     68378428  DW
 D      0            3  DW
 B     10  ○
```

(No comments displayed)

```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D      16           3256
  [Shipment C          ]
 W     200             43
  [products units  ]
 R      50          24380
  [Link status         ]
 X      10  ○
  [Product line B  ]
```

(Comments displayed)

1) Displays a channel No.
2) Displays a network No.
3) Displays a station No.
4) Displays a CPU No.
5) Displays a comment.
6) Displays a data range.
7) Displays a word device value.
8) Displays bit device on/off.
9) Displays a device No.
10) Displays a device name.
11) Displays a monitor display area.

For further information about items 1) to 11) shown above, see the page that follows.

(2) The following table describes the key functions displayed on the Entry Monitor screen.

Key switch	Function
TEST	Activates the Quick test operation. ☞ Section 2.4.5 Quick test operation of monitor devices
MENU	Switches the screen to the functional change menu screen to activate another monitor function or terminate the system monitor function. ☞ Section 2.4.6 Changing screens
FORM	Switches the screen to the display format switching screen to change the value display format (DEC/HEX) on the Entry Monitor screen or comment/no-comment display. ☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display
SET	Switches the screen to the Device entry screen to enter monitor devices or delete or test entry devices. ・Entering monitor devices: ☞ Section 2.4.2 Entering monitor devices (specifying monitor stations and devices) ・Deleting entry devices: ☞ Section 2.5.3 Deleting entry devices ・Test operation: ☞ Section 2.9 Test Operation
▲ ▼	Scroll displayed information upward or downward by a line to display the preceding or next monitor device that is not currently displayed. When five or more monitor devices are entered, these switches are available when their comments are displayed. ▲ : Scrolls information upward by a line. ▼ : Scrolls information downward by a line.

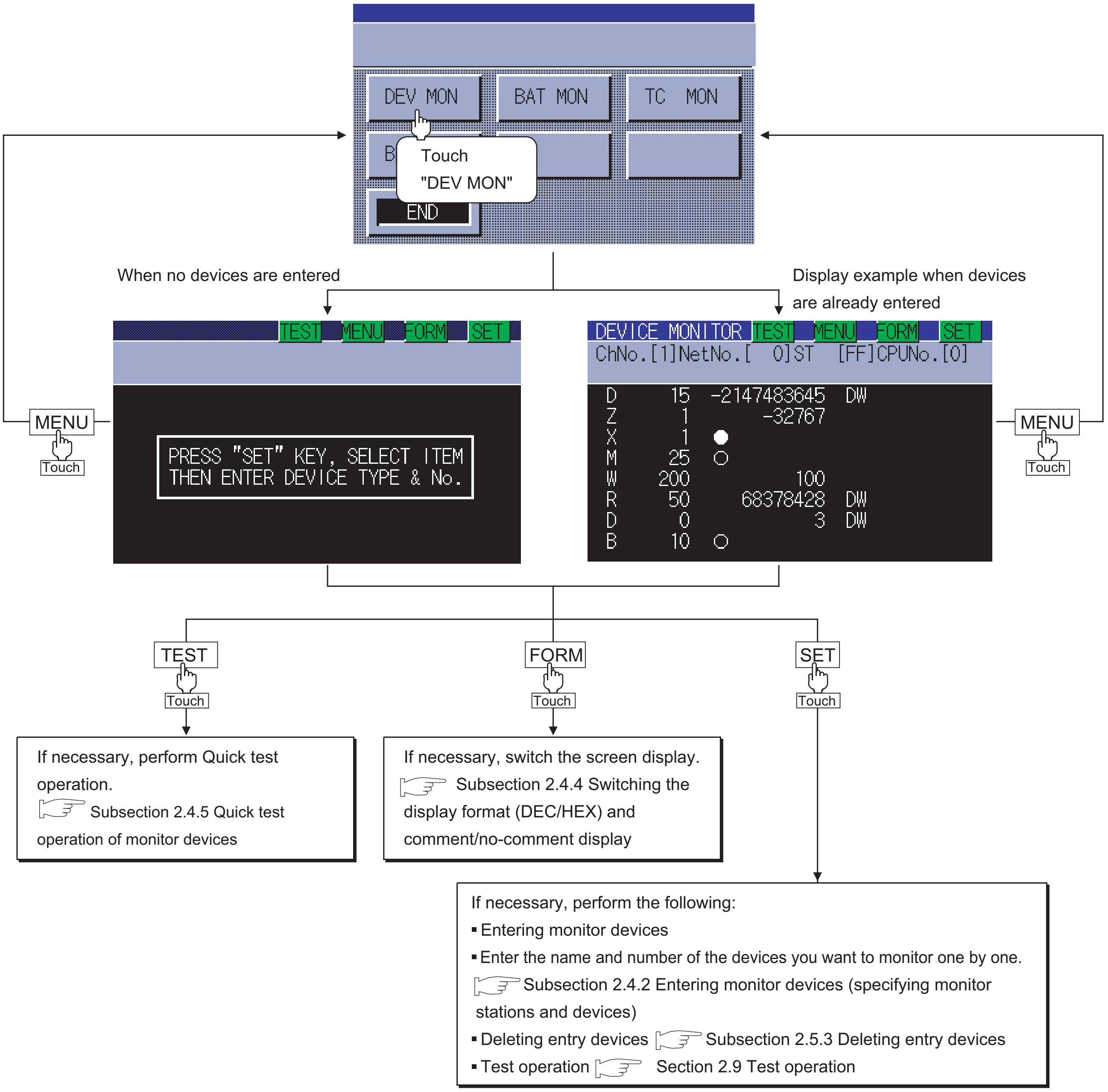
(3) The following table below describes the range of display of items 1) to 11) displayed

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID[*1]	G4 [*2]
1)	Channel No.	Sets the channel number of the controller targeted to the entry monitor.						
2)	Network No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)	Station No.	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	Comment	Displays a comment (maximum number of characters: 16 one-byte characters) A comment is displayed when "DISPLAY" is selected for comment display on the display format switching screen.						
6)	Data range	DW: Indicates that the device value is a 32-bit (two-word) module. Nothing displayed: Indicates that the device value is a 16-bit (one-word) module.						
7)	Word device value	[Decimal number] 16-bit (one-word) module: Six digits (including a digit for a sign) are displayed. (Display example: -12345) 32-bit (two-word) module: Ten digits (including a digit for a sign) are displayed. (Display example: -123456789) [Hexadecimal number] 16-bit (one-word) module: Four digits are displayed. (Display example: H AB12) 32-bit (two-word) module: Eight digits are displayed. (Display example: H ABCDE123)						
8)	Bit device ON/OFF	○: ON ●: OFF						
9)	Device No.	Up to eight devices can be monitored with regard to each CPU station number.						
10)	Device name	For further information about device numbers and names that can be entered: ☞ GT Designer 2 Version □ Screen Design Manual						
11)	Monitor display area	When no comments are displayed: Up to eight devices can be displayed. When comments are displayed : Up to four devices can be displayed.						

[*1] Indicates CC-Link connection (Intelligent device station).

[*2] Indicates CC-Link connection (via G4).

2.5.2 Procedure for entry monitor basic operation



```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D     15  -2147483645  DW
Z      1       -32767
X      1  ●
M     25  ○
W    200          100
R     50     68378428  DW
D      0            3  DW
B     10  ○
```

If necessary, perform Quick test operation.
☞ Subsection 2.4.5 Quick test operation of monitor devices

If necessary, switch the screen display.
☞ Subsection 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

If necessary, perform the following:
- Entering monitor devices
- Enter the name and number of the devices you want to monitor one by one.
  ☞ Subsection 2.4.2 Entering monitor devices (specifying monitor stations and devices)
- Deleting entry devices ☞ Subsection 2.5.3 Deleting entry devices
- Test operation ☞ Section 2.9 Test operation

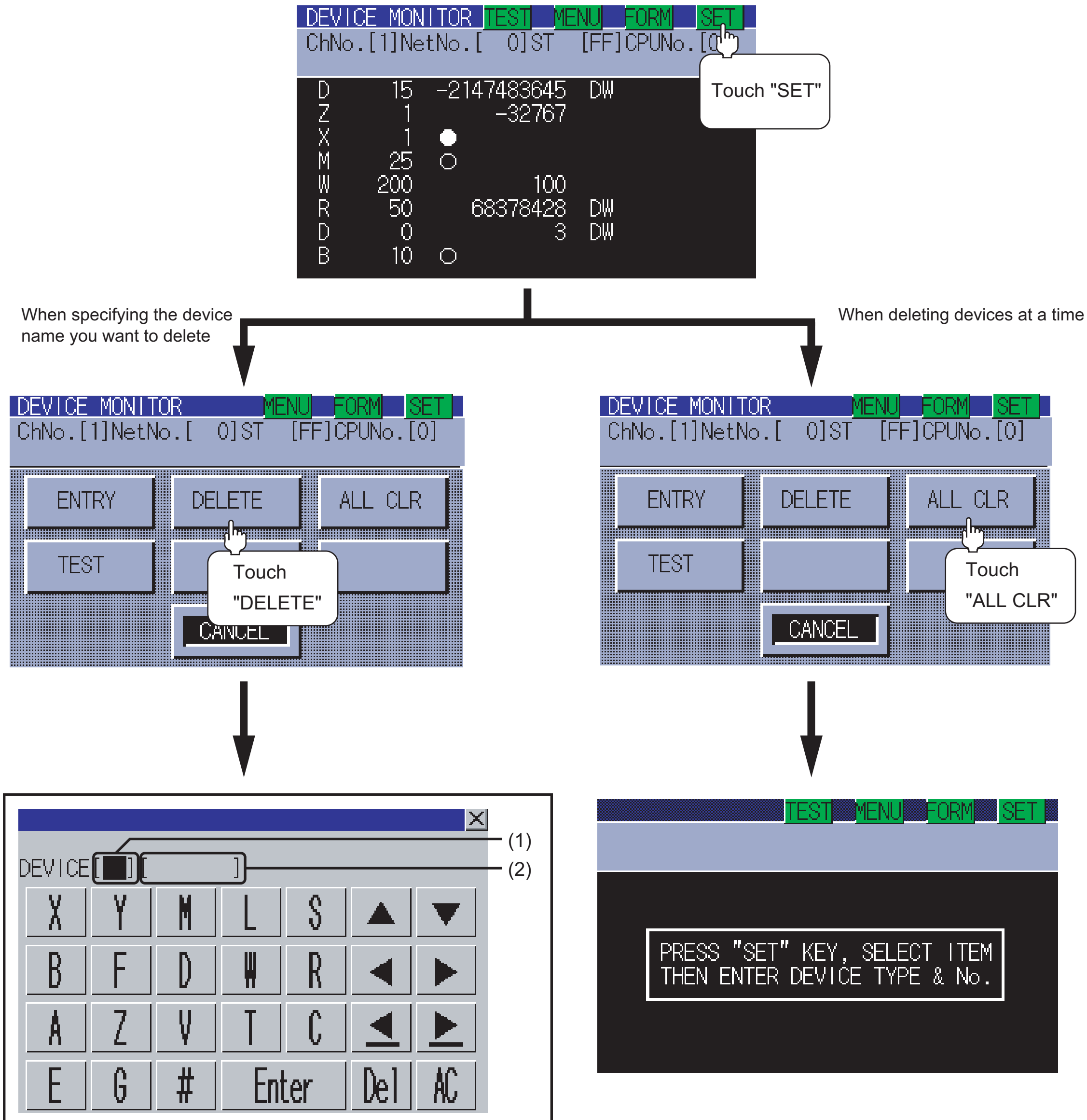
Point

If more than eight devices are registered

You can register up to eight entry devices.
If more than eight devices are registered, the oldest ones will be deleted one by one, and the eight latest entry devices will be monitored.
If necessary, delete unnecessary entry devices and re-enter ones you want to monitor.

2.5.3 Deleting entry devices

This subsection describes how to delete entry devices.
Deleting entry devices with the system monitor function executed is described below.



```
DEVICE MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D    15  -2147483645  DW
Z     1       -32767
X     1  ●
M    25  ○
W   200          100
R    50     68378428  DW
D     0            3  DW
B    10  ○
```

Touch "SET"

When specifying the device name you want to delete

When deleting devices at a time

Touch "DELETE"

Touch "ALL CLR"

```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

1. Enter the device name you want to delete in (1).
2. Enter the device number you want to delete in (2).
3. Touch the Enter key.
4. Touch the × key. The window closes.

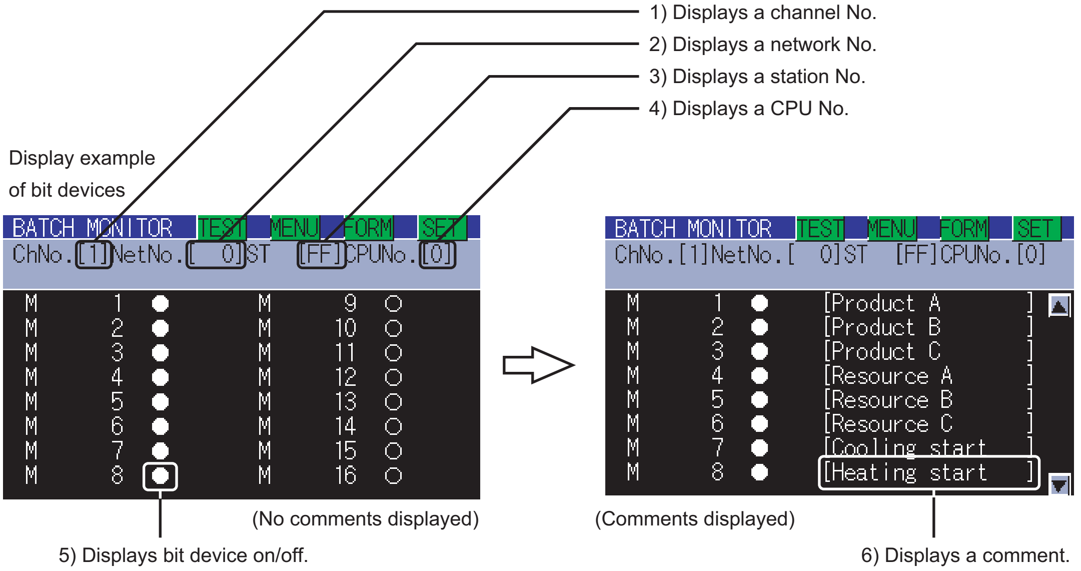
For further information about key window operation, see ☞ Subsection 2.4.3 Key window setting columns and operation procedure.

2.6 Batch Monitor

The batch monitor is a function to specify the head device of any device range to perform monitoring.
This section describes how to operate the batch monitor when the system monitor function is executed.

2.6.1 Information displayed on the Batch Monitor screen and key functions

(1) The information displayed on the Batch Monitor screen is described below.



Display example of bit devices

```
BATCH MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
M     1 ●        M     9 ○
M     2 ●        M    10 ○
M     3 ●        M    11 ○
M     4 ●        M    12 ○
M     5 ●        M    13 ○
M     6 ●        M    14 ○
M     7 ●        M    15 ○
M     8 ●        M    16 ○
```

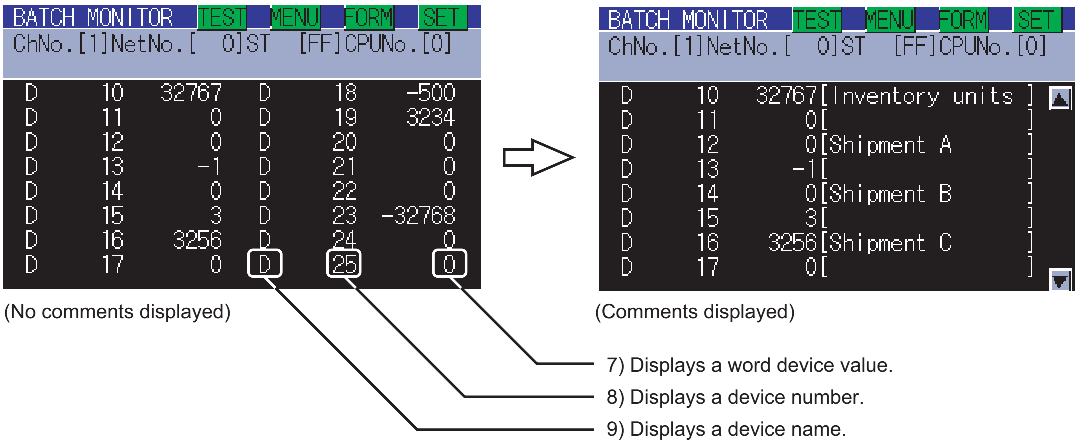
(No comments displayed)

```
BATCH MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
M     1 ●   [Product A       ]
M     2 ●   [Product B       ]
M     3 ●   [Product C       ]
M     4 ●   [Resource A      ]
M     5 ●   [Resource B      ]
M     6 ●   [Resource C      ]
M     7 ●   [Cooling start   ]
M     8 ●   [Heating start   ]
```

(Comments displayed)

1) Displays a channel No.
2) Displays a network No.
3) Displays a station No.
4) Displays a CPU No.
5) Displays bit device on/off.
6) Displays a comment.

Display example of word devices (16-bit)



```
BATCH MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D    10   32767  D    18    -500
D    11       0  D    19    3234
D    12       0  D    20       0
D    13      -1  D    21       0
D    14       0  D    22       0
D    15       3  D    23  -32768
D    16    3256  D    24       0
D    17       0  D    25       0
```

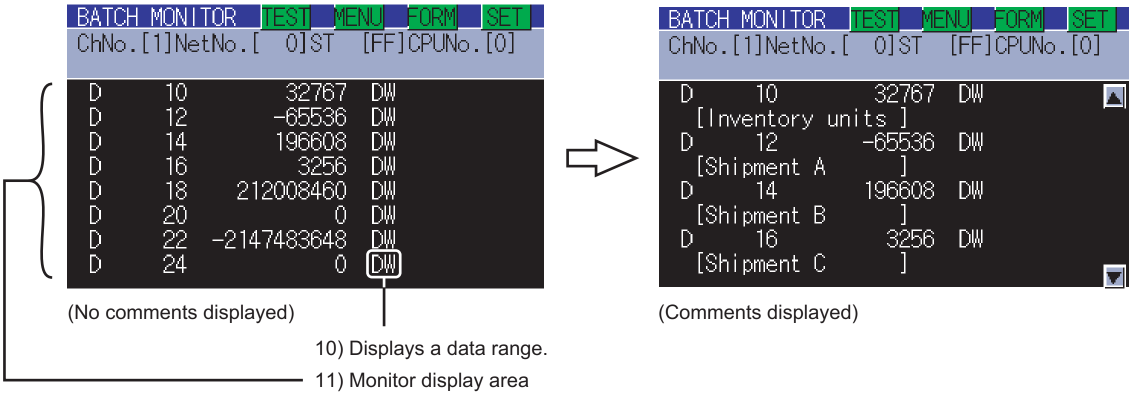
(No comments displayed)

```
BATCH MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D    10   32767[Inventory units ]
D    11       0[                ]
D    12       0[Shipment A      ]
D    13      -1[                ]
D    14       0[Shipment B      ]
D    15       3[                ]
D    16    3256[Shipment C      ]
D    17       0[                ]
```

(Comments displayed)

7) Displays a word device value.
8) Displays a device number.
9) Displays a device name.

Display example of word devices (32-bit)



```
BATCH MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D      10         32767  DW
 D      12        -65536  DW
 D      14        196608  DW
 D      16          3256  DW
 D      18     212008460  DW
 D      20             0  DW
 D      22   -2147483648  DW
 D      24             0  DW
```

(No comments displayed)

```
BATCH MONITOR  TEST  MENU  FORM  SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
 D      10         32767  DW
  [Inventory units ]
 D      12        -65536  DW
  [Shipment A       ]
 D      14        196608  DW
  [Shipment B       ]
 D      16          3256  DW
  [Shipment C       ]
```

(Comments displayed)

For further information about items 1) to 11) shown above, see the page that follows.

Point

Number of devices displayed on a single screen

The number of devices displayed on a single screen depends on the setting of the data range, as shown below.

Word devices (16-bit)	:	16 devices (no comments displayed), eight devices (comments displayed)
Word devices (32-bit)	:	Eight devices (no comments displayed), four devices (comments displayed)
Bit devices	:	16 devices (no comments displayed), eight devices (comments displayed)

For further information about the setting of the data range, see the following:

☞ Section 2.4.2 Entering monitor devices (specifying monitor stations and devices)

(2) The following table describes the key functions displayed on the Batch Monitor screen.

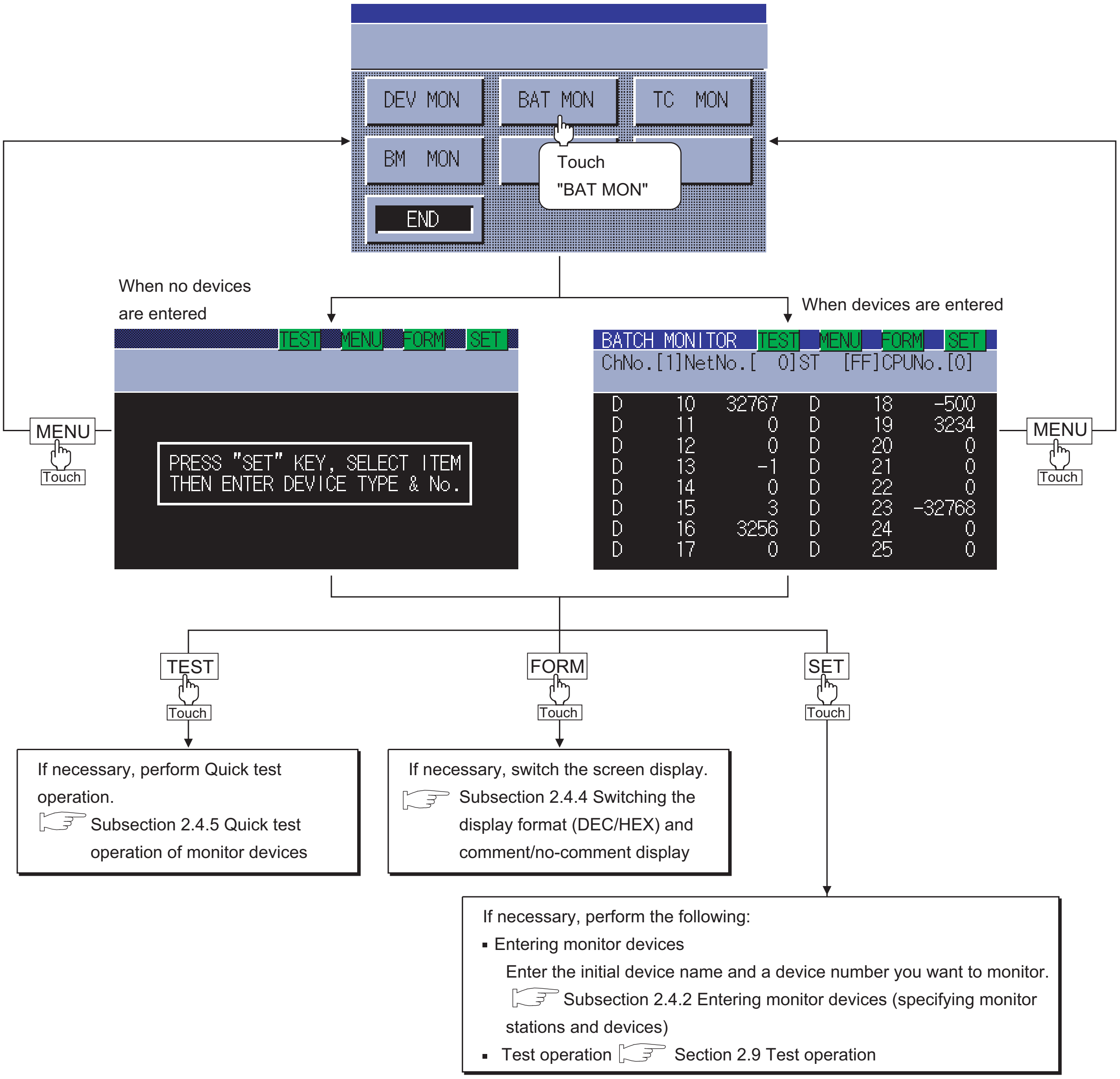
Key switch	Function
TEST	Activates the Quick test operation. ☞ Section 2.4.5 Quick test operation of monitor devices
MENU	Switches the screen to the functional change menu screen to activate another monitor function or terminate the system monitor function. ☞ Section 2.4.6 Changing screens
FORM	Switches the screen to the display format switching screen to change the value display format (DEC/HEX) on the Batch Monitor screen or comment/no-comment display. ☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display
SET	Switches the screen to the Device entry screen to enter or test monitor devices. ・Entering monitor devices :☞ Section 2.4.2 Entering monitor devices (specifying monitor stations and devices) ・Test operation :☞ Section 2.9 Test Operation
▲ ▼	Scroll displayed information upward or downward by a line to display the preceding or next monitor device that is not currently displayed. When five or more monitor devices are entered, these switches are available when their comments are displayed. ▲ : Scrolls information upward by a line. ▼ : Scrolls information downward by a line.

(3) The following table below describes the range of display of items 1) to 11) displayed.

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID*1	G4*2
1)	Channel No.	Sets the channel number of the controller targeted to the batch monitor.						
2)	Net No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)	Station No.	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	Bit device ON/OFF	○: ON ●: OFF						
6)	Comment	Displays a comment (maximum number of characters: 16 one-byte characters). A comment is displayed when "DISPLAY" is selected for comment display on the display format switching screen.						
7)	Word device value	[Decimal number] 16-bit (one-word) module: Six digits (including a digit for a sign) are displayed. (Display example: -12345) 32-bit (two-word) module: Ten digits (including a digit for a sign) are displayed. (Display example: -123456789) [Hexadecimal number] 16-bit (one-word) module: Four digits are displayed. (Display example: H AB12) 32-bit (two-word) module: Eight digits are displayed. (Display example: H ABCDE123)						
8)	Device No.	Up to 16 devices can be entered when the data range is word (16 bits). Up to eight devices can be entered when the data range is two-word (32 bits). For further information about device numbers and names that can be entered: GT Designer 2 Version ☐ Screen Design Manual						
9)	Device name							
10)	Data range	DW: Indicates that the device value is a 32-bit (two-word) module. Nothing displayed: Indicates that the device value is a 16-bit (one-word) module.						
11)	Monitor display area	When no comments are displayed : Up to 16 devices can be displayed at a time (monitor module: one-word). Up to eight devices can be displayed at a time (monitor module: two-word). When comments are displayed : Up to eight devices can be displayed at a time (monitor module: one-word). Up to four devices can be displayed at a time (monitor module: two-word).						

*1: Indicates CC-Link connection (Intelligent device station).
*2: Indicates CC-Link connection (via G4).

2.6.2 Procedure for batch monitor basic operation



```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

```
BATCH MONITOR TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
D     10   32767   D     18    -500
D     11       0   D     19    3234
D     12       0   D     20       0
D     13      -1   D     21       0
D     14       0   D     22       0
D     15       3   D     23  -32768
D     16    3256   D     24       0
D     17       0   D     25       0
```

If necessary, perform Quick test operation.
☞ Subsection 2.4.5 Quick test operation of monitor devices

If necessary, switch the screen display.
☞ Subsection 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

If necessary, perform the following:

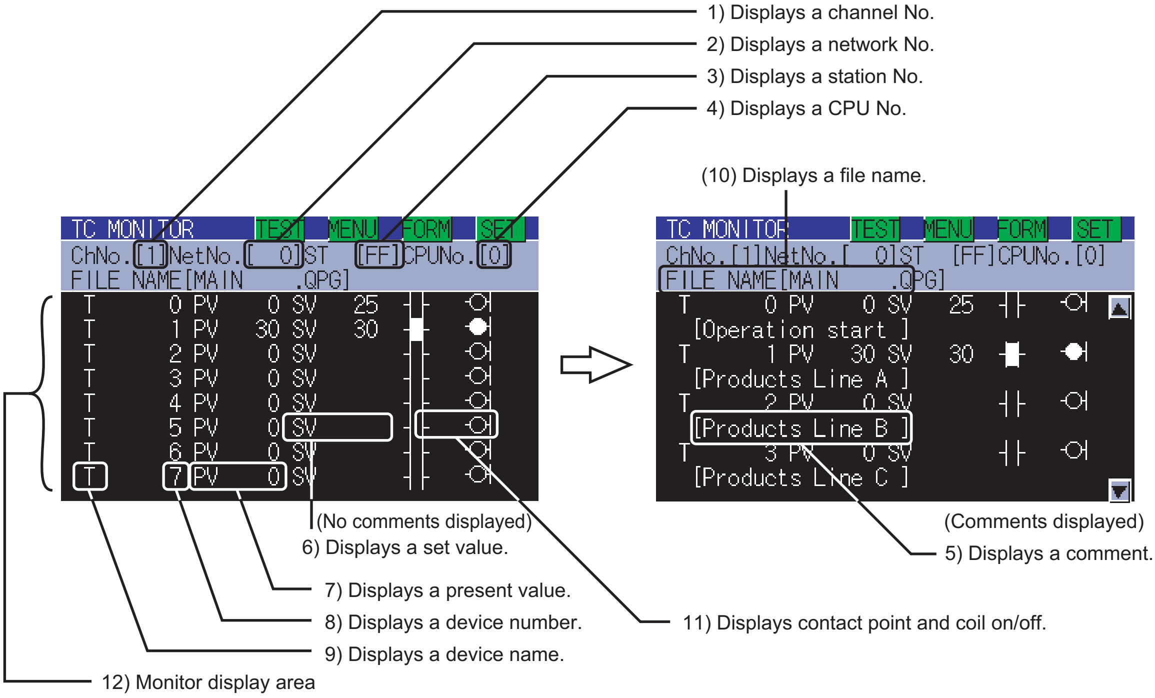
- Entering monitor devices
  Enter the initial device name and a device number you want to monitor.
  ☞ Subsection 2.4.2 Entering monitor devices (specifying monitor stations and devices)
- Test operation ☞ Section 2.9 Test operation

2.7 TC Monitor (Monitoring Timers and Counters)

The TC monitor is a function to monitor only timers (T) and counters (C).
This section describes how to operate the TC monitor when the system monitor function is executed.

2.7.1 Information displayed on the TC Monitor screen and key functions

(1) The information displayed on the TC Monitor screen is described below.


1) Displays a channel No.
2) Displays a network No.
3) Displays a station No.
4) Displays a CPU No.
(10) Displays a file name.
TC MONITOR
TEST
MENU
FORM
SET
(No comments displayed)
6) Displays a set value.
7) Displays a present value.
8) Displays a device number.
9) Displays a device name.
12) Monitor display area
(Comments displayed)
5) Displays a comment.
11) Displays contact point and coil on/off.

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN      .QPG]
T      0 PV    0 SV   25
T      1 PV   30 SV   30
T      2 PV    0 SV
T      3 PV    0 SV
T      4 PV    0 SV
T      5 PV    0 SV
T      6 PV    0 SV
T      7 PV    0 SV
```

```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN      .QPG]
T      0 PV    0 SV   25
  [Operation start ]
T      1 PV   30 SV   30
  [Products Line A ]
T      2 PV    0 SV
  [Products Line B ]
T      3 PV    0 SV
  [Products Line C ]
```

For further information about items 1) to 12) shown above, see the page that follows.

(2) The following table describes the key functions displayed on the TC Monitor screen.

Key switch	Function
TEST	Activates the Quick test operation. ☞ Section 2.4.5 Quick test operation of monitor devices
MENU	Switches the screen to the functional change menu screen to activate another monitor function or terminate the system monitor function. ☞ Section 2.4.6 Changing screens
FORM	Switches the screen to the display format switching screen to change the value display format (DEC/HEX) on the TC Monitor screen or comment/no-comment display. ☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display
SET	Switches the screen to the Device entry screen to enter or test monitor devices. ・Entering monitor devices:☞ Section 2.4.2 Entering monitor devices (specifying monitor stations and devices) ・Test operation:☞ Section 2.9 Test Operation ・Canceling keywords:☞ Section 2.7.3 Procedure for canceling TC monitor keywords
▲ ▼	Scroll displayed information upward or downward by a line to display the preceding or next monitor device that is not currently displayed. When five or more monitor devices are entered, these switches are available when their comments are displayed. ▲ : Scrolls information upward by a line. ▼ : Scrolls information downward by a line.

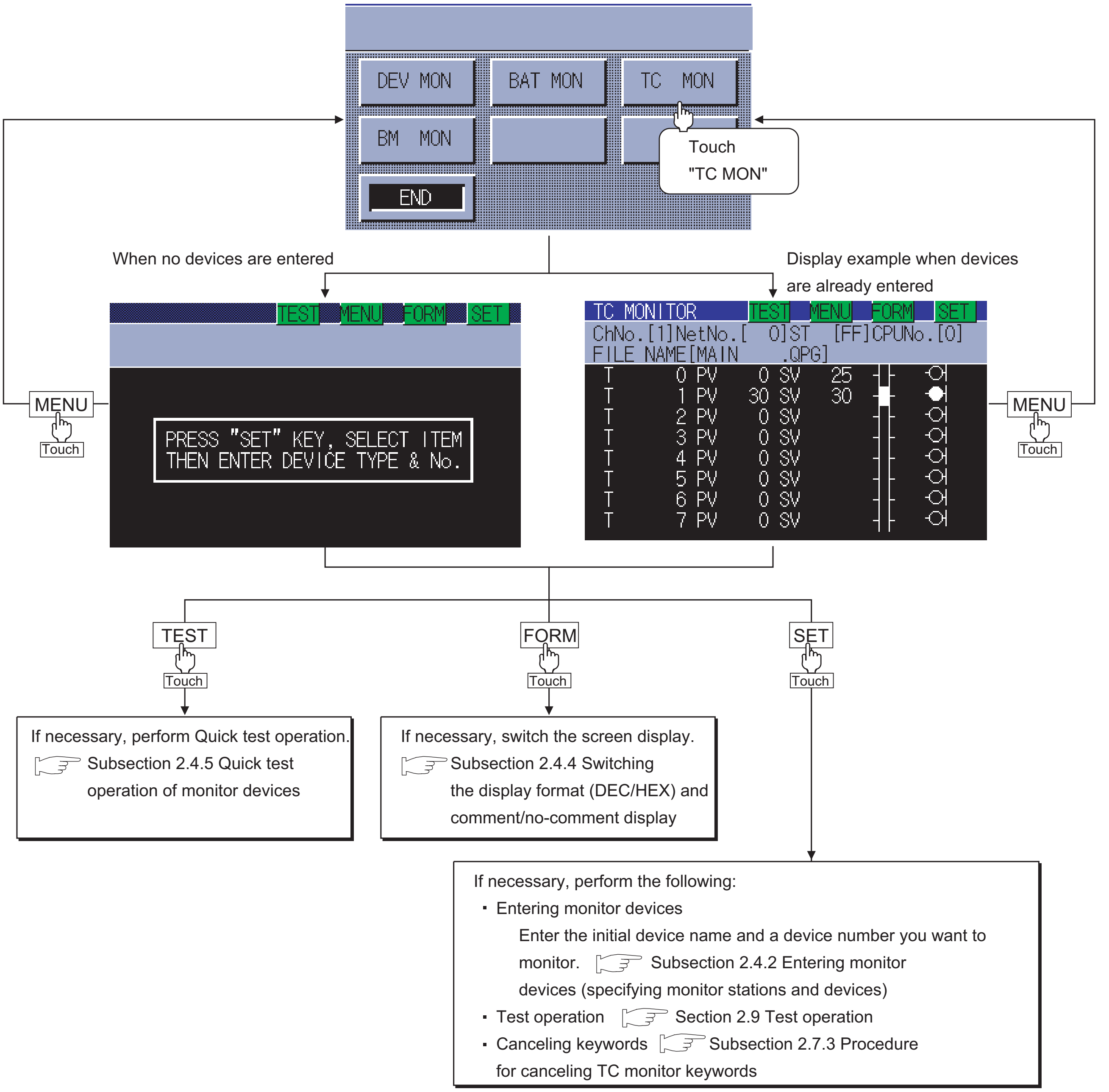
(3) The following table below describes the range of display of items 1) to 12) displayed.

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID*1	G4*2
1)	Channel No.	Sets the channel number of the controller targeted to the TC monitor.						
2)	Network No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)	Station No.	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	Comment	Displays a comment (maximum number of characters: 16 one-byte characters). A comment is displayed when "DISPLAY" is selected for comment display on the display format switching screen.						
6)	Set value	[Decimal number] Four digits are displayed. (Display example: 1234) [Hexadecimal number] Four digits are displayed. (Display example: H AB12)						
7)	Present value	[Decimal number] Four digits are displayed. (Display example: 1234) [Hexadecimal number] Four digits are displayed. (Display example: H AB12) (Present values cannot be monitored when the CPU is an FXCPU.)						
8)	Device No.	Up to eight devices can be entered. For further information about device numbers and names that can be entered: ☞ GT Designer 2 Version □ Screen Design Manual						
9)	Device name							
10)	File name	When the CPU is a QnACPU or QCPU : A program name will be displayed. When there are plural program names, the initial file name to be executed will be displayed. When the CPU is an ACPU or FXCPU : "MAIN PROGRAM" will always be displayed.						
11)	Contact point and coil on/off	┫┣ ─●┤: On ┤├ ─○┤: Off (When the CPU is an FXCPU, contact points and coils cannot be monitored.)						
12)	Monitor display area	When no comments are displayed : Up to eight devices can be displayed at a time. When comments are displayed : Up to four devices can be displayed at a time.						

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

*2: Indicates CC-Link connection (via G4).

2.7.2 Procedure for TC monitor basic operation



```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

```
TC MONITOR
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN     .QPG]
T      0 PV    0 SV   25
T      1 PV   30 SV   30
T      2 PV    0 SV
T      3 PV    0 SV
T      4 PV    0 SV
T      5 PV    0 SV
T      6 PV    0 SV
T      7 PV    0 SV
```

If necessary, perform Quick test operation.
☞ Subsection 2.4.5 Quick test operation of monitor devices

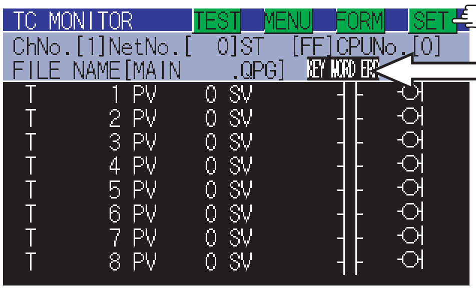
If necessary, switch the screen display.
☞ Subsection 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

If necessary, perform the following:

- Entering monitor devices
  Enter the initial device name and a device number you want to monitor. ☞ Subsection 2.4.2 Entering monitor devices (specifying monitor stations and devices)
- Test operation ☞ Section 2.9 Test operation
- Canceling keywords ☞ Subsection 2.7.3 Procedure for canceling TC monitor keywords

2.7.3 Procedure for canceling TC monitor keywords

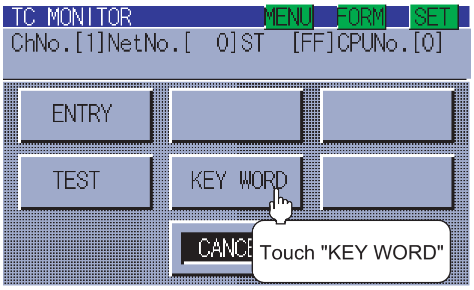
When the target controller is a QCPU and a password is entered in the sequence program, the keyword must be canceled to display the set values of timers and counters.
The procedure for canceling keywords is described below.



```
TC MONITOR                TEST MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
FILE NAME[MAIN       .QPG] KEY WORD ERR
 T        1 PV     0 SV
 T        2 PV     0 SV
 T        3 PV     0 SV
 T        4 PV     0 SV
 T        5 PV     0 SV
 T        6 PV     0 SV
 T        7 PV     0 SV
 T        8 PV     0 SV
```

Touch "SET"

When a password is entered in the sequence program, "KEY WORD ERR" will be displayed.

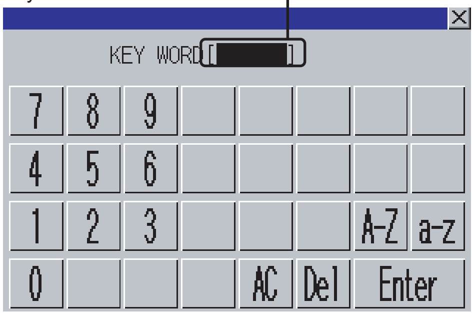


```
TC MONITOR                MENU FORM SET
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]
```

Touch "KEY WORD"

Keyword Release screen

(1)



① Enter the password entered in the sequence program at 1).

- A-Z key : Touch this key to enter alphabetic characters A to Z (uppercase).
- a-z key : Touch this key to enter alphabetic characters a to z (lowercase).
- 0-9 key : Touch this key to enter numbers 1 to 9.
- Del key : Use this key to delete an entered character.
- AC key : Use this key to delete all characters under the cursor.

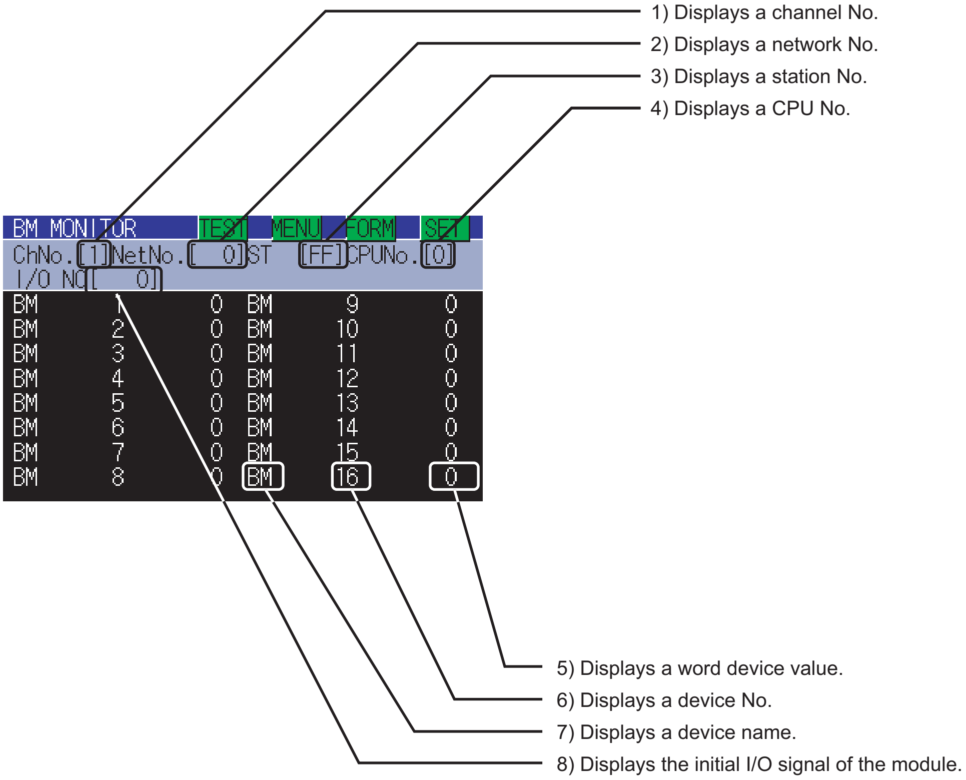
② Entry is completed by touching the Enter key, and the keyboard closes.

2.8 BM Monitor (Monitoring Buffer Memory)

The BM monitor (buffer memory monitor) is a function to monitor the buffer memory of special function modules.
This section describes how to operate the BM monitor when the system monitor function is executed.

2.8.1 Information displayed on the BM Monitor screen and key functions

(1) The information displayed on the BM Monitor screen is described below.



```
BM MONITOR       TEST  MENU  FORM  SET
ChNo.[1]NetNo.[   0]ST  [FF]CPUNo.[0]
 I/O NO[    0]
BM        1      0  BM      9      0
BM        2      0  BM     10      0
BM        3      0  BM     11      0
BM        4      0  BM     12      0
BM        5      0  BM     13      0
BM        6      0  BM     14      0
BM        7      0  BM     15      0
BM        8      0  BM     16      0
```

1) Displays a channel No.
2) Displays a network No.
3) Displays a station No.
4) Displays a CPU No.
5) Displays a word device value.
6) Displays a device No.
7) Displays a device name.
8) Displays the initial I/O signal of the module.

For further information about items 1) to 8) shown above, see the page that follows.

(2) The following table describes the key functions displayed on the BM Monitor screen.

Key switch	Function
TEST	Activates the Quick test operation. ☞ Section 2.4.5 Quick test operation of monitor devices
MENU	Switches the screen to the functional change menu screen to activate another monitor function or terminate the system monitor function. ☞ Section 2.4.6 Changing screens
FORM	Switches the screen to the display format switching screen to change the value display format (DEC/HEX) on the BM Monitor screen or comment/no-comment display. ☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display
SET	Switches the screen to the Device entry screen to enter or test monitor devices. ・Entering monitor devices: ☞ Section 2.4.2 Entering monitor devices (specifying monitor stations and devices) ・Test operation: ☞ Section 2.9 Test Operation
▲ ▼	Scroll displayed information upward or downward by a line to display the preceding or next monitor device that is not currently displayed. When five or more monitor devices are entered, these switches are available when their comments are displayed. ▲ : Scrolls information upward by a line. ▼ : Scrolls information downward by a line.

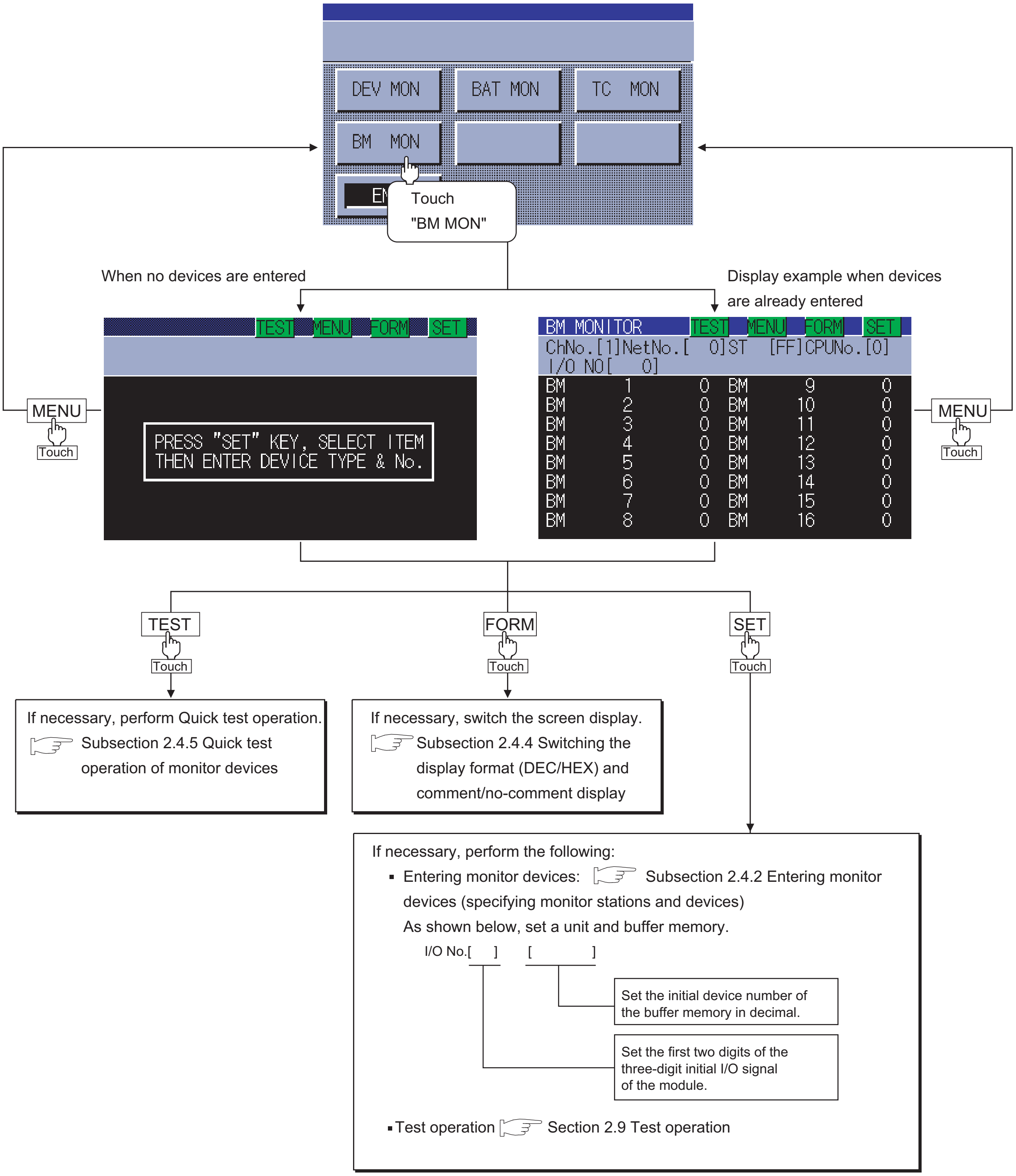
(3) The following table below describes the range of display of items 1) to 8) displayed.

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID*1	G4 *2
1)	Channel No.	Sets the channel number of the controller targeted to the BM monitor.						
2)	Network No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)	Station No.	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	Word device value	[Decimal number] four digits (including a digit for a sign) are displayed. (Display example: 1234) [Hexadecimal number] four digits are displayed. (Display example: H AB12)						
6)	Device No.	Up to 16 devices can be entered. (When the CPU is an FXCPU, devices cannot be entered.)						
7)	Device name	For further information about device numbers and names that can be entered: ☞ GT Designer 2 Version □ Screen Design Manual						
8)	Monitor display area	Up to 16 devices can be displayed at a time.						

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

*2: Indicates CC-Link connection (via G4).

2.8.2 Procedure for BM monitor basic operation



```
PRESS "SET" KEY, SELECT ITEM
THEN ENTER DEVICE TYPE & No.
```

```
BM MONITOR
ChNo.[1]NetNo.[   0]ST   [FF]CPUNo.[0]
I/O NO[    0]
BM      1       0  BM       9       0
BM      2       0  BM      10       0
BM      3       0  BM      11       0
BM      4       0  BM      12       0
BM      5       0  BM      13       0
BM      6       0  BM      14       0
BM      7       0  BM      15       0
BM      8       0  BM      16       0
```

If necessary, perform Quick test operation.
☞ Subsection 2.4.5 Quick test operation of monitor devices

If necessary, switch the screen display.
☞ Subsection 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display

If necessary, perform the following:

- Entering monitor devices: ☞ Subsection 2.4.2 Entering monitor devices (specifying monitor stations and devices)
  As shown below, set a unit and buffer memory.

  I/O No.[ ] [ ]

  Set the initial device number of the buffer memory in decimal.

  Set the first two digits of the three-digit initial I/O signal of the module.
- Test operation ☞ Section 2.9 Test operation

2.9 Test Operation

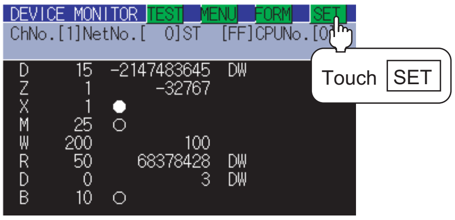
⚠WARNING

- Before performing the quick test operations of the system monitor functin (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method.
  During test operation, never change the data of the devices which are used to perform significant operation for the system.
  False output or malfunction can cause an accident.

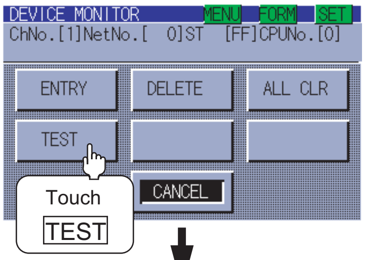
You can specify and test any station and device that can be monitored during monitoring by the system monitor function. This section describes how to test the bit or word devices of the controller or the buffer memory of the intelligent function unit.

2.9.1 Procedure for displaying the test menu screen and the setting key window screen

This subsection describes how to display the test menu screen and the setting key window screen.

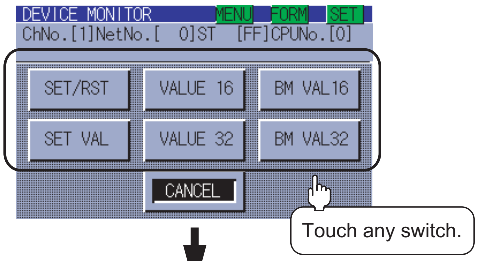


① Touch SET .
(When performing test operation from the Entry Monitor screen)



② Touch TEST .

Test menu screen



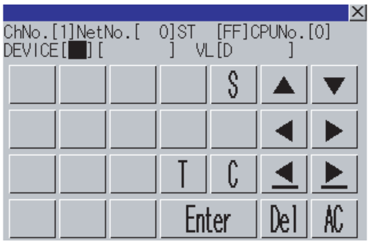
③ The test menu screen appears.

Touch SET/RST , SET VAL , VALUE 16 , VALUE 32 , BM VAL 16 or BM VAL 32 .

Operation example: touch SET VAL .
For a detailed description of each key function, see the following:

☞ Section 2.9.2 Information displayed on the test menu screen and key functions

Setting key window screen



④ The setting key window screen appears.
Display example: set value operation screen of T (timer) and C (counter)
For further infomation about each setting key window, see the following:

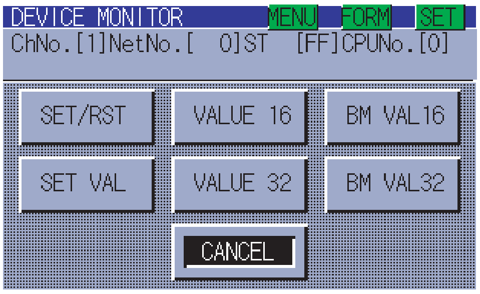
☞ Section 2.9.2 Information displayed on the test menu screen and key functions

For further information about the test operation procedure, see the following:

☞ Section 2.9.4 Test operation procedure

2.9.2 Information displayed on the test menu screen and key functions

(1) Test menu screen



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]

The table shown below describes the key functions.

Key	Function
MENU	Switches the screen to the functional change menu screen to activate another monitor function or terminate the system monitor function. ☞ Section 2.4.6 Changing screens
FORM	Switches the screen to the display format switching screen to change the value display format (DEC/HEX) or comment/no-comment display. ☞ Section 2.4.4 Switching the display format (DEC/HEX) and comment/no-comment display
SET	Switches the screen to the Device entry screen.
SET/RST	Displays the screen for bit device on/off operation.
SET VAL	Displays the Set value operation screen for T (timers) and C (counters).
VALUE 16	Displays the Present value operation screen for word devices. Data range: 16-bit (one-word) module
VALUE 32	Displays the Present value operation screen for word devices. Data range: 32-bit (two-word) module
BM VAL 16	Displays the Present value operation screen for buffer memory. Data range: 16-bit (one-word) module
BM VAL 32	Displays the Present value operation screen for buffer memory. Data range: 32-bit (two-word) module
CANCEL	Terminates the test menu screen and displays each monitor screen.

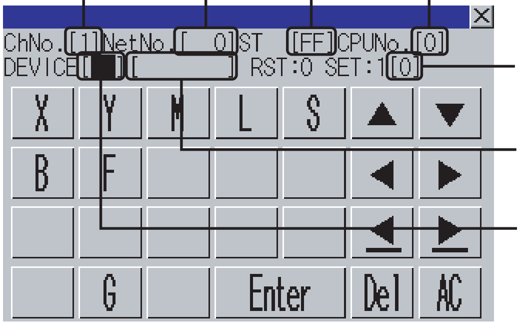
2.9.3 Information and set items displayed on each setting key window screen

The information and set items on the setting key window screen to be used for each test are described below.

(1) Information displayed on each setting key window screen

SET/RST

Screen for bit device on/off operation



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[■][ ] RST:0 SET:1[0]

1) Displays a channel No.

2) Displays a network No.

3) Displays a station No.

4) Displays a CPU No.

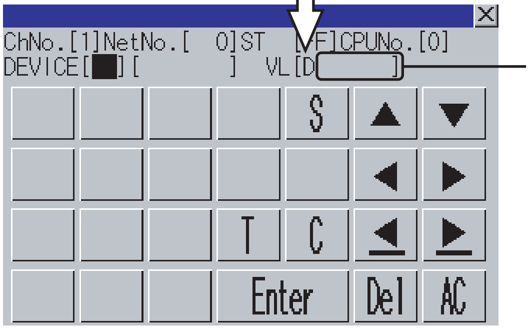
5) Sets on/off

6) Sets a device number.

7) Sets a device name.

SET VAL

Set value operation screen for timers and counters



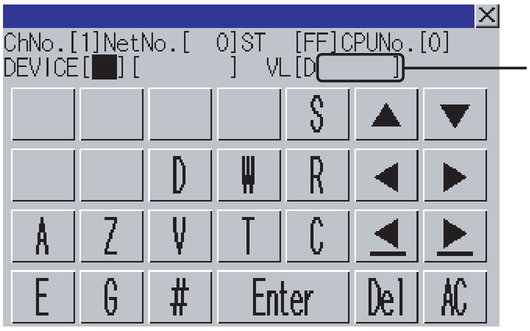
ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[■][ ] VL[D]

Displays whether decimal or hexadecimal is selected.
D: Decimal
H: Hexadecimal

8) Sets a T/C set value.

VALUE 16 VALUE 32

Present value operation screen for word devices (16-bit (one-word) module/32-bit (two-word) module)

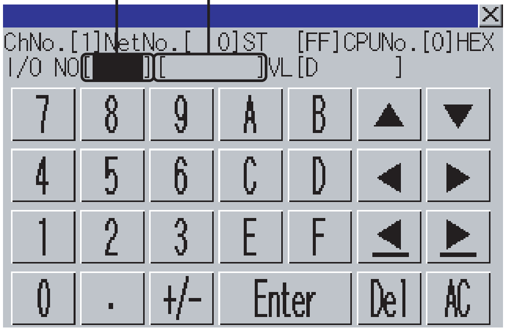


ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[■][ ] VL[D]

9) Sets the present value of a word device.

BM VAL 16 BM VAL 32

Present value operation screen for buffer memory (16-bit (one-word) module/32-bit (two-word) module)



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]HEX
I/O NO[■][ ]VL[D]

10) Sets the initial I/O signal of a module.

11) Sets the initial device number of the buffer memory.

(2) Set items on the setting key window screen
The table shown below describes details of the set items mentioned on the preceding page.

No.	Item	Description of setting						
		Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection	
							ID *1	G4 *2
1)	Channel No.	Sets the channel number of the controller targeted to the test operation.						
2)	Net No.	0			1 to 239	0: Host loop 1 to 255: Specified loop	0	
3)	Station number	FF			1 to 64	FF: When the host station is selected 0: When the control station is selected 1 to 64: When a normal station is selected	FF: When the host station is selected 0: When the master station is selected 1 to 64: When a local station is selected	
4)	CPU No.	0 to 4: This item must be set only when the system is connected to multiple QCPUs. It is not necessary when the system is connected to another CPU.						
5)	On/Off setting	Set "1": On, Set "0": Off						
6)	Device No.	For further information about device numbers and names that can be entered: ☞ GT Designer 2 Version □ Screen Design Manual						
7)	Device name							
8)	T/C set value	[Decimal number] 16-bit (one-word) module: Six digits (including a digit for a sign) are set. (Entry example: -12345) 32-bit (two-word) module: Ten digits (including a digit for a sign) are set. (Entry example: -123456789) [D] displayed in the number entry box indicates that the entry is decimal. [Hexadecimal number] 16-bit (one-word) module: Four digits are set. (Entry example: H AB12) 32-bit (two-word) module: Eight digits are set. (Entry example: H ABCDE123) [H] displayed in the number entry box indicates that the entry is hexadecimal.						
9)	Word device present value	[Decimal number] 16-bit (one-word) module: Six digits (including a digit for a sign) are set. (Entry example: -12345) 32-bit (two-word) module: Ten digits (including a digit for a sign) are set. (Entry example: -123456789) [D] displayed in the number entry box indicates that the entry is decimal. [Hexadecimal number] 16-bit (one-word) module: Four digits are set. (Entry example: H AB12) 32-bit (two-word) module: Eight digits are set. (Entry example: H ABCDE123) [H] displayed in the number entry box indicates that the entry is hexadecimal.						
10)	Initial I/O signal of module	Set the first two digits of the three-digit initial I/O signal of the module.						
11)	Initial device number of buffer memory	Set the number in a decimal number.						

*1: Indicates CC-Link connection (Intelligent device station).
*2: Indicates CC-Link connection (via G4).

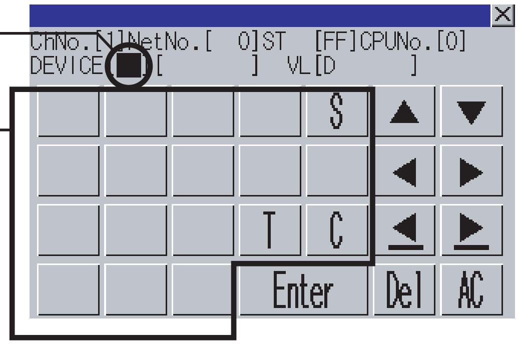
2.9.4 Test operation procedure

Test operation takes place by setting on the setting key window screen the name and number of a device, initial device number of the buffer memory, and the initial I/O of the module or entering change values.
This subsection takes a change of set values as an example to describe the test operation procedure.

1. Touch the SET VAL key on the test menu screen.
   The setting key window screen appears.

2. Using the ◄ and ► keys, move the cursor to the item you want to set.

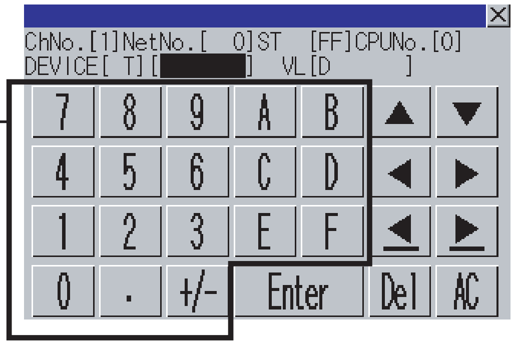
The keyboard displayed depends on the position of the cursor, as shown below.



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[ ][ ] VL[D]

The position of the cursor displayed

Keyboard displayed when the cursor is placed in the device name box



ChNo.[1]NetNo.[0]ST [FF]CPUNo.[0]
DEVICE[T][ ] VL[D]

Keyboard displayed when the cursor is placed in the device number box

3. If necessary, enter numbers or characters on the keyboard.
   - Del key: Use the Del key to delete an entered character.
   - AC key: Use the AC key to delete all characters under the cursor.
   - The ▲/▼ and the keys on which nothing is displayed are not available.
   - For further information about the setting ranges, see the following:
     ☞Section 2.9.3 Information and set items displayed on each setting key window screen

4. Entry is completed by touching the Enter key.

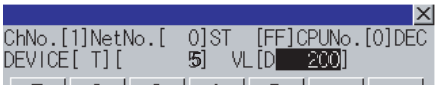
5. The keyboard closes by touching the ☒ key.

Point

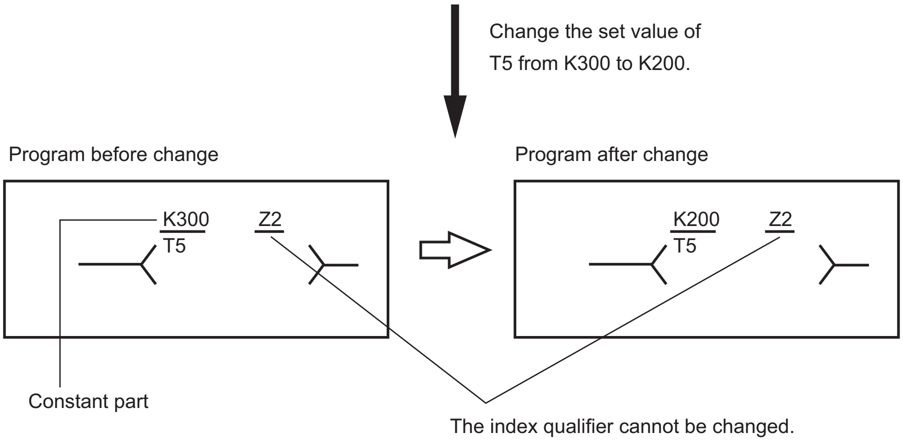
Operating the set values of timers and counters

(1) Time-up/Count-up status
Even if a set value or present value is changed after a timer or counter is up, the time-up or count-up status does not change. The present status is retained.

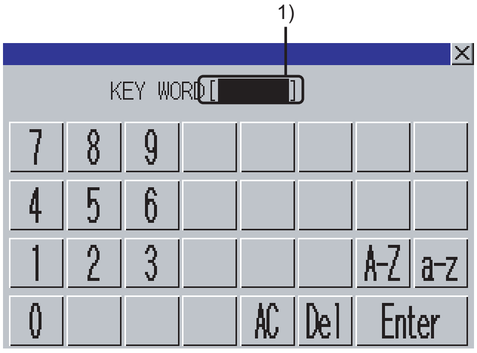
(2) Changing an index qualifier
Only the constant part of a T/C set value with a qualifier can be changed. The index qualifier cannot be changed.
(Example) Change the set value of T5 from 300 to 200.



```
ChNo.[1]NetNo.[  0]ST  [FF]CPUNo.[0]DEC
DEVICE[ T][       5]  VL[D    200]
```



(3) Operation when a password is entered for the controller
When the target controller is a QCPU, the Keyword Release screen appears.
Enter the password.

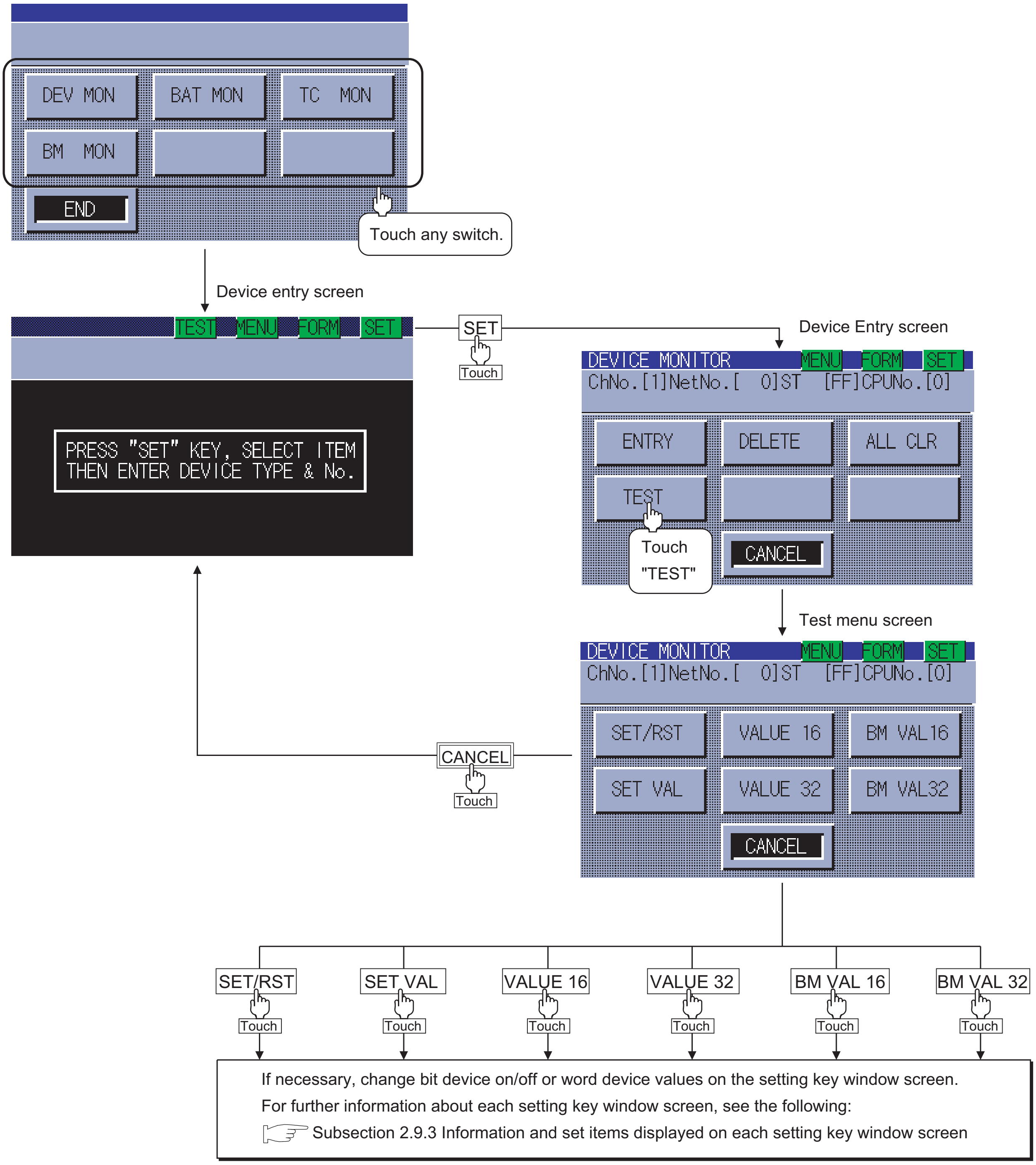


① Enter the password entered in the sequence program at 1).

- A-Z key : Touch this key to enter alphabetic characters A to Z (uppercase).
- a-z key : Touch this key to enter alphabetic characters a to z (lowercase).
- 0-9 key : Touch this key to enter numbers 1 to 9.
- Del key : Use this key to delete an entered character.
- AC key : Use this key to delete all characters under the cursor.

② Entry is completed by touching the Enter key, and the keyboard closes.

2.9.5 Test operation basic procedure



If necessary, change bit device on/off or word device values on the setting key window screen.
For further information about each setting key window screen, see the following:
☞ Subsection 2.9.3 Information and set items displayed on each setting key window screen

2.10 Error Messages and Corrective Action

This section describes the error messages displayed when the system monitor function is executed, and corrective action.

Error message	Description	Corrective action
PLC communications error	Communication could not be established with the PLC CPU.	(1) Connections between the PLC CPU and the GOT (disconnected or cut cables). (2) Has an error occurred in the PLC CPU? (3) Refer to the following manual for confirming whether the error has occurred in network. ☞ GT16 User's Manual (Hardware) GT15 User's Manual GT11 User's Manual

3. LADDER MONITOR FUNCTION

GT16 GT15 GT SOFT GOT1000 GT11 GT10

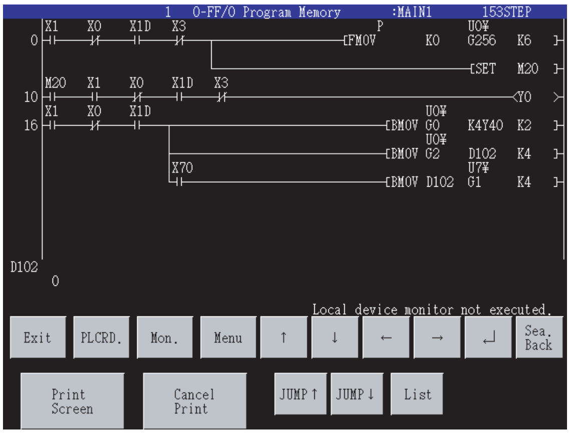
3.1 Features

The ladder monitor enables you to monitor the sequence program within the target controller and change device values.
It is intended to troubleshoot and maintain the PLC system efficiently.
The features of the ladder monitor are shown below.

1 The program with ladder symbols can be monitored

You can monitor PLC CPU programs in ladder diagram format and save displayed screens in BMP or JPEG format. (☞ Section 3.4 Operation Procedure Common)

(Display example)



1 0-FF/0 Program Memory :MAIN1 153STEP

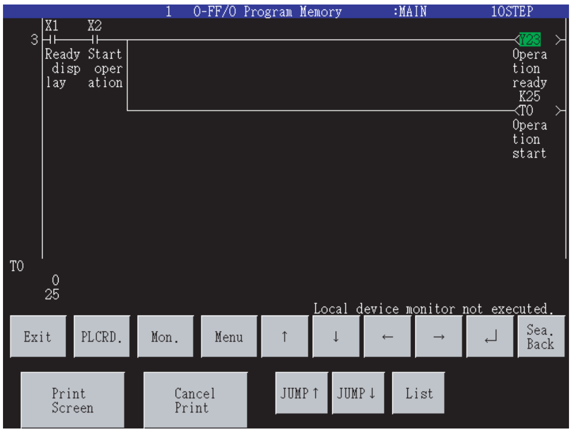
Local device monitor not executed.

2 The display format, device comment display and language can be switched

The following can be switched. (☞ Section 3.5 Switching the Display Format)

- Display format of device values, timer and counter values
- Comment display/non-display of the target device
- Language used for items of the sequence program such as file name and comments

(Display example)



1 0-FF/0 Program Memory :MAIN 10STEP

Local device monitor not executed.

(1) Switching the display format
The present value of a word device is displayed in a decimal of hexadecimal number in the lower area of the screen.
(☞ Subsection 3.5.2 Display switching of decimal numbers/hexadecimal numbers)

(2) Device comment display
Comments of the devices used in the sequence program (comments written in the controller) are displayed.
(☞ Subsection 3.5.3 Switching comment/no-comment display)
Comment file data stored in a CF card can also be displayed when the MELSEC-Q/QnA ladder monitor is used.(Subsection 3.3.5 Reading comment files from CF cards)

(3) Language switching (for MELSEC-Q/QnA ladder monitor only)
In the MELSEC-Q/QnA ladder monitor, language switching (Japanese/Korean) is available for displaying the following items of a sequence program.
(To switch the language, register the following items with the language (Japanese/Korean) used for the PLC READING DATA DISPLAY. To display Korean, for example, register the following items with Korean on GX Developer.)

- File name
- Title
- Comment
- Note
- Statement

Items other than the above (such as menu) are displayed with the language set on [GOT setup].

(☞ Section 3.5.7 Language switching of the sequence program (MELSEC-Q/QnA ladder monitor))

3 Other stations can be monitored

You can use the ladder monitor on other station in the data link system containing the GOT (or GOT-connected station), network system or CC-Link system.
For further information about the connection forms available for the ladder monitor, see the following:

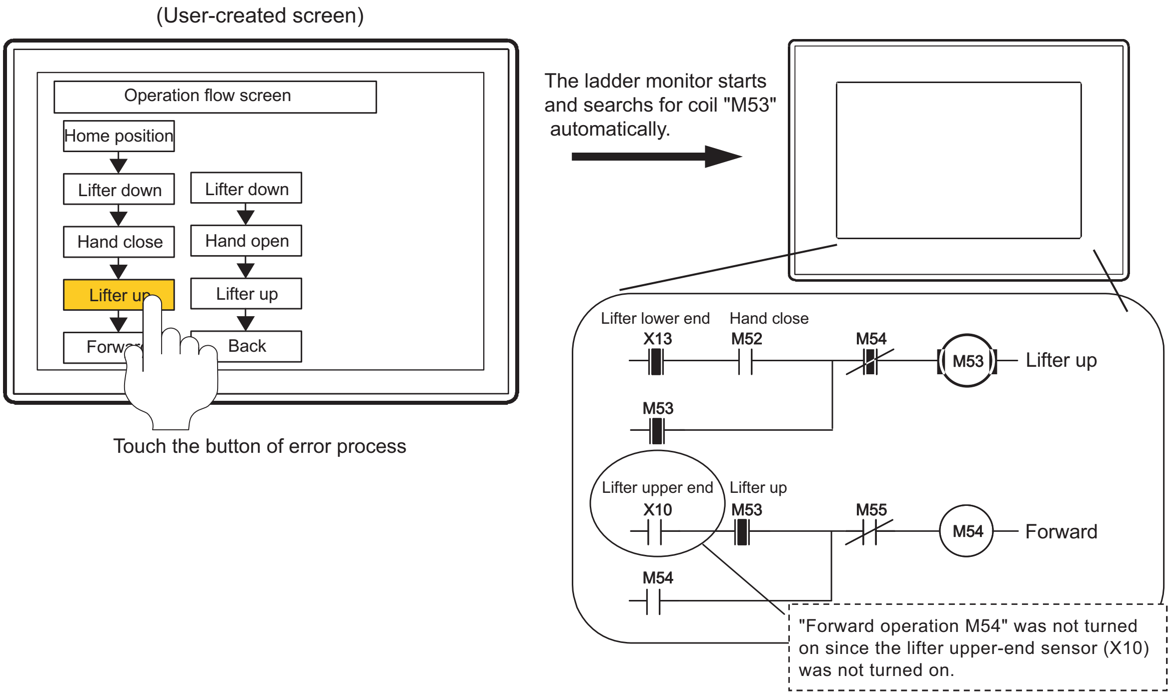
☞ Subsection 3.2.1 System configuration

4 Enhanced interaction with objects

(1) One-touch ladder jump function

Only by touching an object on a user-created screen, a target device can be searched and displayed.
In addition, in the case of the Q/QnA ladder monitor, searching is performed only when the monitor target of the sequence program that has been read and the monitor target that is set on the object match, enabling more accurate search.
Even a person who is not the operator familiar with the equipment inside can trace the source of the equipment error without fail by simple operations, reducing time to stop the error.

Example) Coil searching by touching a touch switch



"Forward operation M54" was not turned on since the lifter upper-end sensor (X10) was not turned on.

(2) Real-time program searching from advanced alarm display, touch switch (for the Q/QnA ladder monitor only)

PLC data can be read automatically and programs to be read can be specified.
When a Japanese or English file name is specified, the corresponding program can be read.
Accordingly, the specified program can be read to be searched and the search result is displayed on the monitor screen by a simple operation as selecting a displayed alarm and then touch the key code switch.

5 Multiple files can be read

By reading multiple PLC CPU files in advance, reading of another program from the PLC CPU is not needed every time the program display is switched, and comment display can be switched automatically.
This enables more efficient ladder monitoring, reducing the operation time.

3.2 Specifications

3.2.1 System configuration

This section describes the system configuration of the ladder monitor.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

☞ GOT1000 Series Connection Manual

1 Target controller

Controller
QCPU (Q mode)[*1], motion controller (Q series)[*2]
QSCPU[*3]
QnACPU
ACPU/QCPU (A mode), motion controller (A series)
FXCPU[*4]
CNC (C70, C6/C64)[*5]

*1 When the GOT is connected to a QCPU set on a redundant type extension base unit, the ladder monitor function cannot be used.

*2 For the motion controller CPU (Q series), only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

*3 The GOT cannot write data to devices in the QSCPU.

*4 The FX3G does not support the ladder monitor function.

*5 Use the function version A2 or later.

2 Connection type

(1) When the GOT is connected to a QCPU (Q mode), a motion controller (Q series)[*1], or a QSCPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection type between GOT and controller									Reference section
Name	Description	Bus connection *7	Direct CPU connection *7	Computer link connection *7	Ethernet connection	MELSEC NET/H connection ,MELSEC NET/10 connection	CC-Link IE*4	CC-Link connection ID*5*7	CC-Link connection G4*6*7	GOT multidrop connection	
Search operation	Device search, defect search, etc.	○			○	△*2	○	○	○	×	3.6
Display switching	Displaying word devices in DEC or HEX	○			○	△*2	○	○	○	×	3.5
	Displaying device comments, etc.	○			○	△*2	○	○	○	×	
Test operation	Changing device values, etc.	△*3			○	△*2 *3	○	△*3	○	×	3.7
Local device monitor	Monitoring local devices	○			○	△*2	○	○	○	×	3.8
Hard copy	Storing ladder monitor screen in BMP/JPEG format or printing it with a printer	○			○	△*2	○	○	○	×	3.4.2

*1 For the motion controller CPU (Q series), only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

*2 For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, and QJ71BR11) with the function version B or later.

*3 The present value of Z cannot be changed. V cannot be turned ON or OFF.

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

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

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

*7 The QSCPU does not support the connection type.

(2) When the GOT is connected to a QnACPU

(○: Available, △: Partly restricted, ×: Unavailable)

<table>
<tr><th colspan="2">Function</th><th colspan="8">Connection form between GOT and controller</th><th rowspan="3">Reference section</th></tr>
<tr><th rowspan="2">Name</th><th rowspan="2">Description</th><th rowspan="2">Bus connection</th><th rowspan="2">Direct CPU connection</th><th rowspan="2">Computer link connection</th><th rowspan="2">Ethernet connection</th><th rowspan="2">MELSEC NET/10 connection</th><th colspan="2">CC-Link connection</th><th rowspan="2">GOT multidrop connection</th></tr>
<tr><th>ID*2</th><th>G4*3</th></tr>
<tr><td>Search operation</td><td>Device search, defect search, etc.</td><td colspan="3">○</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td>3.6</td></tr>
<tr><td rowspan="2">Display switching</td><td>Displaying word devices in DEC or HEX</td><td colspan="3">○</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td rowspan="2">3.5</td></tr>
<tr><td>Displaying device comments, etc.</td><td colspan="3">○</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td></tr>
<tr><td>Test operation</td><td>Changing device values, etc.</td><td colspan="3">△*1</td><td>○</td><td>△*1</td><td>△*1</td><td>×</td><td>×</td><td>3.7</td></tr>
<tr><td>Local device monitor</td><td>Monitoring local devices</td><td colspan="3">×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>-</td></tr>
<tr><td>Hard copy</td><td>Storing ladder monitor screen in BMP/JPEG format or printing it with a printer</td><td colspan="3">○</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td>3.4.2</td></tr>
</table>

*1 The present value of Z cannot be changed. V cannot be turned on or off.

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

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

(3) When the GOT is connected to an ACPU/QCPU (A mode) and an A series motion controller CPU

(○: Available, △: Partly restricted, ×: Unavailable)

<table>
<tr><th colspan="2">Function</th><th colspan="8">Connection form between GOT and controller</th><th rowspan="3">Reference section</th></tr>
<tr><th rowspan="2">Name</th><th rowspan="2">Description</th><th rowspan="2">Bus connection</th><th rowspan="2">Direct CPU connection</th><th rowspan="2">Computer link connection</th><th rowspan="2">Ethernet connection</th><th rowspan="2">MELSEC NET/10 connection</th><th colspan="2">CC-Link connection</th><th rowspan="2">GOT multidrop connection</th></tr>
<tr><th>ID*4</th><th>G4*5</th></tr>
<tr><td>Search operation</td><td>Device search, defect search, etc.</td><td colspan="2" rowspan="3">○</td><td rowspan="3">△*3</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td>3.6</td></tr>
<tr><td rowspan="2">Display switching*1</td><td>Displaying word devices in DEC or HEX</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td rowspan="2">3.5</td></tr>
<tr><td>Displaying device comments, etc.</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td></tr>
<tr><td>Test operation</td><td>Changing device values, etc.</td><td colspan="3">△*2</td><td>○</td><td>△*2</td><td>△*2</td><td>×</td><td>×</td><td>3.7</td></tr>
<tr><td>Hard copy</td><td>Storing ladder monitor screen in BMP/JPEG format or printing it with a printer</td><td colspan="3">○</td><td>○</td><td>○</td><td>○</td><td>×</td><td>×</td><td>3.4.2</td></tr>
</table>

*1 If the total capacity of parameters, sequence programs, T/C set values, comments, and extension comments is 144 Kbytes or over, comments cannot be correctly displayed.

*2 The present value of V and Z cannot be changed.

*3 Subprograms 2 and 3 of the A4UCPU (in computer link connection) cannot be ladder-monitored.

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

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

(4) When the GOT is connected to an FXCPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller		Reference section
Name	Description	Direct CPU connection	GOT multidrop connection	
Search operation	Device search, defect search, etc.	○	×	3.6
Display switching	Displaying word devices in DEC or HEX	○	×	3.5
	Displaying device comments, etc.	○	×	
Test operation	Changing device values, etc.	△*1*2	×	3.7
Hard copy	Storing ladder monitor screen in BMP/JPEG format or printing it with a printer	○	×	3.4.2

*1 The present value of V and Z cannot be changed.
*2 The set values of T and C cannot be changed.

(5) When the GOT is connected to a CNC

(a) When the GOT is connected to a CNC C70

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller									Reference section
Name	Description	Bus connection	Direct CPU connection*1	Computer link connection	Ethernet connection*4	MELSEC NET/10 connection	CC-Link IE*5	CC-Link connection		GOT multidrop connection	
								ID*6	G4*7		
Search operation	Device search, defect search, etc.	○			○	△*2	○	○	○	×	3.6
Display switching	Displaying word devices in DEC or HEX	○			○	△*2	○	○	○	×	3.5
	Displaying device comments, etc.	○			×	△*2	○	○	○		
Test operation	Changing device values, etc.	△*3			○	△*2 *3	○	△*3	○	×	3.7
Hard copy	Storing ladder monitor screen in BMP/JPEG format or printing it with a printer	○			○	△*2	○	○	○	×	3.4.2

*1 Available with the multiple CPU system including a QCPU (Q mode).
*2 For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, and QJ71BR11) with the function version B or later.
*3 The present value of Z cannot be changed. V cannot be turned ON or OFF.
*4 Available with the Display I/F connection only.
*5 Indicates the CC-Link IE controller network connection.
*6 Indicates CC-Link connection (Intelligent device station).
*7 Indicates CC-Link connection (via G4).

(b) When the GOT is connected to a MELDAS C6/C64

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection form between GOT and controller								Reference section
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSEC NET/10 connection	CC-Link connection		GOT multidrop connection	
							ID*4	G4*5		
Search operation	Device search, defect search, etc.	×	○	×	○	○*1	○	×	×	3.6
Display switching*1	Displaying word devices in DEC or HEX	×	○	×	○	○*1	○	×	×	3.5
	Displaying device comments, etc.	×	○	×	○	○	○	×	×	
Test operation	Changing device values, etc.	×	△*2 *3	×	△*2 *3	△*1 *2 *3	△*2 *3	×	×	3.7
Hard copy	Storing ladder monitor screen in BMP/JPEG format or printing it with a printer	×	○	×	○	○*1	○	×	×	3.4.2

*1 For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, and QJ71BR11) with the function version B or later.

*2 The present value of Z cannot be changed. V cannot be turned ON or OFF.

*3 The set values of T and C cannot be changed.

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

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

3 Required option OS' and option function boards

The option function OS' and option function boards shown in the table below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
Ladder monitor for MELSEC-A	342KB	674KB	523KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M
Ladder monitor for MELSEC-FX	342KB	674KB	592KB	Not required	
Ladder monitor for MELSEC-Q/QnA	590KB	4170KB	1082KB	Not required	GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS

Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

☞ 1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

☞ GT15 User's Manual (8.10 Option Function Board)

4 Display screen for the ladder monitor

A sequence program of up to 8 lines (one line: up to 11 contacts (12 or more contacts will be looped back)) is displayed on a single screen.
In addition, the current values of up to 8 word devices (9 or more devices are displayed by switching the display with the arrow key) etc. are displayed.
For the GT1695M-X, GT1685M-S, GT1595-X, GT1585V-S, GT1585-S, GT1575V-S, or GT1575-S, the MELSEC-Q/QnA ladder monitor displays a sequence program of up to 15 lines (one line: up to 11 contacts (12 or more contacts will be looped back)) on a single screen.

3.2.2 Devices and range that can be monitored

(1) MELSEC-A ladder monitor

(○: Possible, ×: Impossible)

Device	Device range	Ladder display	Device monitor display	Search operation
Input	X000 to XFFF (hexadecimal)	○	○	○
Output	Y000 to YFFF (hexadecimal)	○	○	○
Internal relay	M0 to M8191	○	○	○
Latch relay	L0 to L8191			
Step relay	S0 to S8191			
Special internet relay	M9000 to M9255	○	○	○
Link relay	B0000 to B1FFF (hexadecimal)	○	○	○
Timer	T0 to T2047	○	○	○
Counter	C0 to C1023	○	○	○
Data register	D0 to D8191	○	○	○
Special data register	D9000 to D9255	○	○	○
Link register	W0000 to W1FFF (hexadecimal)	○	○	○
Annunciator	F0 to F2047	○	○	○
File register	R0 to R8191	○	○	○
Accumulator	A0 to A1	○	○	○
Index register	V to V1 to V6	○	○	○
Index register	Z to Z1 to Z6	○	○	○
Nesting	N0 to N7	○	×	×
Pointer	P0 to P255	○	×	×
Interrupt pointer	I0 to I31	○	×	×

(2) MELSEC-FX ladder monitor

(○: Possible, ×: Impossible)

Device	Device range	Ladder display	Device monitor display	Search operation
Input	X000 to X337 (octadecimal)	○	○	○
Output	Y000 to Y337 (octadecimal)	○	○	○
Auxiliary relay	M0 to M8511	○	○	○
State	S0 to S4095	○	○	○
Timer contact	T0 to T511	○	○	○
Counter contact	C0 to C255	○	○	○
Data register	D0 to D8511	○	○	○
Index register	V0 to V7	○	○	○
Index register	Z0 to Z7	○	○	○
Nesting	N0 to N7	○	×	×
Pointer	P0 to P4095	○	×	×
Interrupt pointer	I00* to I30* (four points) : Fx0 I00* to I50* (six points) : Fx1, Fx2 I6** to I8** (three points) : Fx1, Fx2 I010 to I060 (six points) : Fx1, Fx2	○	×	×
Extension register	R0 to R32767	○	○	○

(3) MELSEC-Q/QnA ladder monitor

(○: Possible, ×: Impossible)

Device	Device range	Ladder display	Device monitor display	Search operation
Input	X0 to 1FFF, DX0 to 1FFF	○	○	○
Output	Y0 to 1FFF, DY0 to 1FFF	○	○	○
Internal relay	M0 to 32767	○	○	○
Latch relay	L0 to 8191	○	○	○
Link relay	B0 to 7FFF	○	○	○
Timer	T0 to 2047	○	○	○
Retentive timer	ST0 to 2047	○	○	○
Counter	C0 to 1023	○	○	○
Data register	D0 to 12287	○	○	○
Link register	W0 to 1FFF	○	○	○
Annunciator	F0 to 2047	○	○	○
Edge relay	V0 to 2047	○	×	○
File register	R0 to 32767	○	○	○
	ZR0 to 32767	○	○	○
	ZR32768 to 4184063	○	○	×
Extended data register	D0 to 32767	○	○	○ [*1]
Extended link register	W0 to 7FFF	○	○	○ [*1]
Link special relay	SB0 to 7FF	○	○	○
Link special register	SW0 to 7FF	○	○	○
Step relay	S0 to 8191	○	○	○
Index register	Z0 to 15	○	○	○
	Z16 to 19	○	○	○ [*1]
	ZZ0 to 18	○	×	○[*2]
Special relay	SM0 to 2047	○	○	○
Special data register	SD0 to 2047	○	○	○
Function input	FX0 to F	○	×	○
Function output	FY0 to F	○	×	○
Function register	FD0 to 4	○	×	○
Link direct device	J□ □¥□ □	○	×	×
Intelligent function module	U□ □¥□ □	○	×	×
	U3En□ □¥□ □			
Nesting	N0 to 14	○	×	×
Pointer	P0 to 4095	○	×	×
Interrupt pointer	I0 to 255	○	×	×
SFC block device	BL0 to 319	○	×	○
SFC transition device	TR0 to 511	○	×	○
Network No. device	J0 to 255	○	×	×
I/O No. device	U0 to FF	○	×	×
	3E0 to 3E3			
Macro registration device	VD0 to	○	×	×

*1 For searching devices with the menu for the ladder monitor, the device number cannot be specified.

*2 Search ZZ by specifying Z. (For searching ZZ0, specify Z0. For searching ZZ1, specify Z1.)
ZZ0 is not searched by specifying Z1.
When a sequence program has Z and ZZ, specifying Z searches both Z and ZZ.

3.2.3 Access range

With Universal model QCPU, the GOT can monitor up to 64 stations.
The access range other than the above is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

3.2.4 Precautions

(1) Inapplicable GOT
The ladder monitor cannot be used with the GT1555-Q and GT1550-Q.

(2) Precautions to be taken while the ladder monitor is activated
While the ladder monitor is activated, do not perform the following for the GOT.
Otherwise, the stored data may be deleted or the ladder monitor may not operate normally.

- Turning the CF card access switch (ON, OFF)
- Installing/removing the CF card

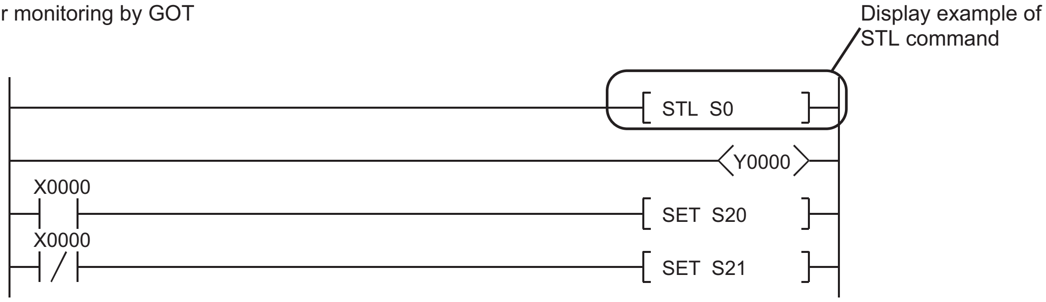
(3) Ladder display
Up to 24 lines can be displayed per ladder block.
If a sequence program is written in which 24 or more lines are used in a ladder block, the ladder cannot be correctly displayed. It is advisable to divide such programs.

(4) When the system is connected to an FXCPU

(a) During PLC reading, only the host station is read.

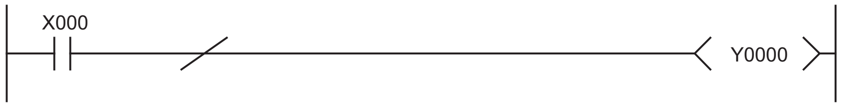
(b) An STL (step ladder) command, a dedicated command for the FXCPU, is displayed as shown below.

Ladder monitoring by GOT



(c) How an INV command is displayed

Ladder monitoring by GOT



(d) When searching an STL command, use "S (state)" in a device search.

(e) The 32-bit counters are displayed in 32-bit fixed display in the device monitor.

(f) When using FX3U(C), if the memory capacity is set to 32,000 or higher with the GX Developer PLC parameters, sequence programs cannot be displayed.
When displaying a sequence program with the GOT, set the memory capacity to 16,000 or less.

(g) Changes to T/C set values are reflected on the ladder monitor display only when they are made with the system monitor or test function.
When a value is changed by numerical input or other object, the change is reflected on the display after the GOT is restarted.

(5) When reading multiple files

(a) Continuous searching in multiple sequence programs is allowed only for device search, contact search, coil search, and touch search.

(b) For searching in multiple sequence programs, the GOT can display search results of the previously searched program by touching the Sea. Back key.
The GOT cannot display search results of multiple programs on one screen.
When programs are switched, the currently displayed search results of the program disappear from the screen.

(c) For returning to the search results of the previously searched program by touching the Sea. Back key during searching in multiple sequence programs, the touch operation is canceled when the previously searched program is deleted.

(d) For defect search, when multiple sequence programs have been read, searching is performed continuously in the program that is searched and displayed first.
Continuous searching in multiple programs is not performed.

(e) Automatical reading and seaching of a specified sequence program is allowed only for the special function switch and advanced alarm display.

(f) If the monitor target is changed to another PLC, all the files that have been stored in the drive of the GOT are deleted when data are read from the PLC.

(g) Without changing the monitor target PLC CPU, files stored in the drive of the GOT will not be deleted by changing the read target drive.
When all files are read from the monitor target PLC CPU with the automatic PLC read setting made, therefore, the programs to be searched and the monitor target programs may not match.
In such a case, delete unnecessary files on the file list window.

(h) The ladder data storable capacity differs according to the ladder data storage destination.

• Built-in flash memory (C drive)	:Up to 4MB
• Standard CF card (A drive/B drive)	:Up to the CF card available space

(i) Up to 512 files of ladder data including those displayed on the GOT (up to 3 files) can be stored in the storage destination drive.
When 511 files of ladder data are stored and another ladder data is displayed on the GOT, therefore, storing a new ladder data is not allowed.

(6) Reading comment files

(a) Comment data can be read from a CF card only with the MELSEC-Q/QnA ladder monitor.

(b) Only files with the file names (program names) with one-byte alphanumeric characters are applicable to the GOT.
When project data are created on GX Developer, use only one-byte alphanumeric characters for file names (program names).

(c) When the data save location is set to [None], save only one comment file in a CF card.
Multiple comment files cannot be read.

(7) Monitoring local devices

  (a) When a sequence program stored in a PLC CPU is changed, be sure to read the program with the GOT.
  When the sequence program in the PLC CPU is changed after reading the sequence program with the GOT, the GOT may not correctly monitor local devices.

  (b) For monitoring local devices, do not monitor the same local device in the same PLC CPU simultaneously with multiple GOTs and GX Developer.

  (c) When the same local device in the same PLC CPU is simultaneously monitored with multiple GOTs and GX Developer, the GOT cannot correctly monitor the devices.

(8) Changing set values of timer and counter when monitoring multiple programs
For monitoring multiple programs, set values of all the target programs can be changed by switching displayed programs when the test menu screen is opened from the ladder monitor screen.

Point

Reflecting value changes in display of ladder monitor screen

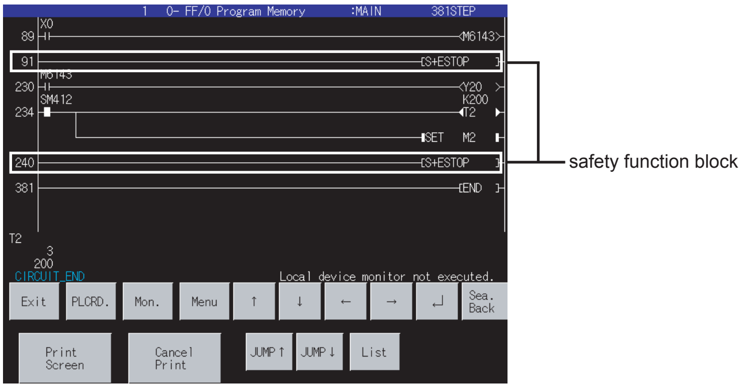
For opening the test menu screen from the system monitor screen or user-created screen, even if the set values of the timer and counter are changed, the changed values are not reflected in the display of the ladder monitor screen.
For reflecting the changed values in the display of the ladder monitor screen, read the program again.

(9) Precautions for Universal model QCPU
Even though Universal model QCPU processes 64-bit data, the GOT cannot monitor the 64-bit data.

(10) Precautions for QSCPU

  (a) The GOT cannot write data to the devices in the QSCPU.

  (b) For a safety function block, only the FB definition name is displayed in the application instruction format.
  The program in the safety function block is not displayed.



Local device monitor not executed.

(c) The following shows the GOT operation when the program in a safety function block has the target of the search operation.

Search operation	GOT operation
Device search Contact point search Coil search	The GOT adds and displays the ladder block that shows the FB definition name in the application instruction format in the last row. For the continuous search, when the program in the safety function block has multiple target devices, the ladder block is added to the last row only one time.
Step search	The GOT displays the ladder block that shows the FB definition name in the application instruction format corresponding to the searched step.
Defect search	The GOT adds and displays the ladder block that shows the FB definition name in the application instruction format in the last row and ends the defect search. (The operaiton is the same as that when all the defective devices are searched.)

3.3 Display

This section describes the operation procedure from turning on the power to the GOT to ladder monitor function display.

3.3.1 Outline until the start

1 Operation for display

(1) Normal operation

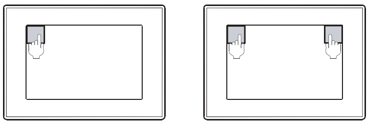
This subsection describes the flow until the ladder monitor operation screen is displayed after a ladder monitor (Option OS) is installed in the GOT.

Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.

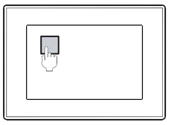


After the utility is displayed, touch [Debug & self check] → [Debug] → [Ladder monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (ladder monitor) set in the project data

Touch the special function switch.

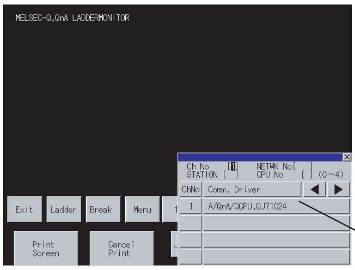


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version ☐ Screen Design Manual (6.2 Touch Switch)

Set the channel No., network No., station No., etc.

(☞ 3.3.3 Display)



MELSEC-Q,QnA LADDERMONITOR

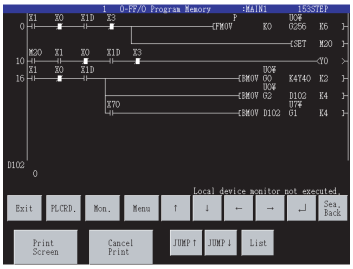
Ch No [1] NETWK No[ ]
STATION [ ] CPU No [ ] (0~4)

ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24

Communication setting window

Read the PLC and display the sequence program.

(☞ 3.3.3 Display)



1 O-FF/O Program Memory :MAIN1 153STEP

Local device monitor not executed.

End

Point

(1) How to display the utility
For how to display the utility, refer to the following.

GT16 User's Manual (Basic Utility) (1.3 Utility Display)
GT15 User's Manual (9.3 Utility Display)

(2) How to make PLC reading unnecessary when turning the GOT power on again
With the MELSEC-Q/QnA ladder monitor, you can save ladder monitor data to a memory card or internal flash memory.
If you save the data beforehand, it is not necessary to read the PLC when switching the GOT power on again.
(3.3.2 Setting and deleting media for saving ladder data)

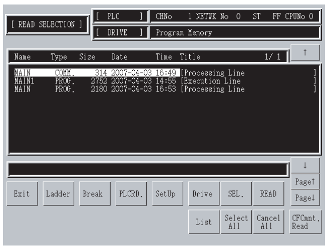
(3) If the project data has not been downloaded
The ladder monitor can be started from the utility even if the project data has not been downloaded to the GOT.

(2) Searching from the monitor screen

The following describes the operation procedures of ladder search using the advanced alarm display, alarm list display, alarm history display, and touch switch.

Start

PLC reading screen



[PLC] CHNo 1 NETWK No 0 ST FF CPUNo 0

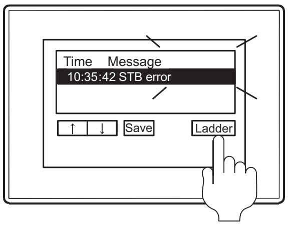
[DRIVE] Program Memory

Name	Type	Size	Date	Time	Title
MAIN	COMM.	314	2007-04-03	16:49	[Processing Line]
MAIN1	PROG.	2752	2007-04-03	14:55	[Execution Line]
MAIN	PROG.	2180	2007-04-03	16:53	[Processing Line]

1/ 1

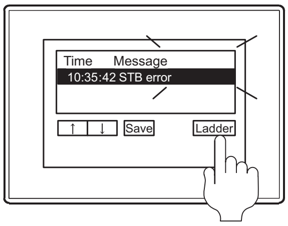
Read the ladder data to be searched from the PLC reading screen.

Advanced alarm*



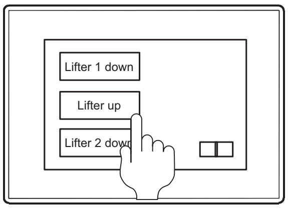
When an alarm occurs, the error device can be searched for with coil/defect search and displayed on the ladder monitor by touching the Ladder key for alarms.

Alarm list
Alarm history

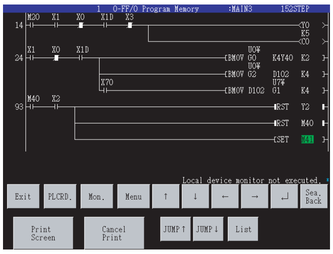


When an alarm occurs, the error device can be searched for with coil search and displayed on the ladder monitor by touching the Ladder key for alarms.

Touch switch*



In a case such that any device is ON, the specified device can be searched for with coil/defect search and displayed on the ladder monitor.



Local device monitor not executed.

The search result is displayed on the ladder monitor.

For operations after search, refer to the following.

(☞ Section 3.3.3 Didplay)

End

*When the automatic PLC read setting is not made, ladder data must be read in advance.

Point

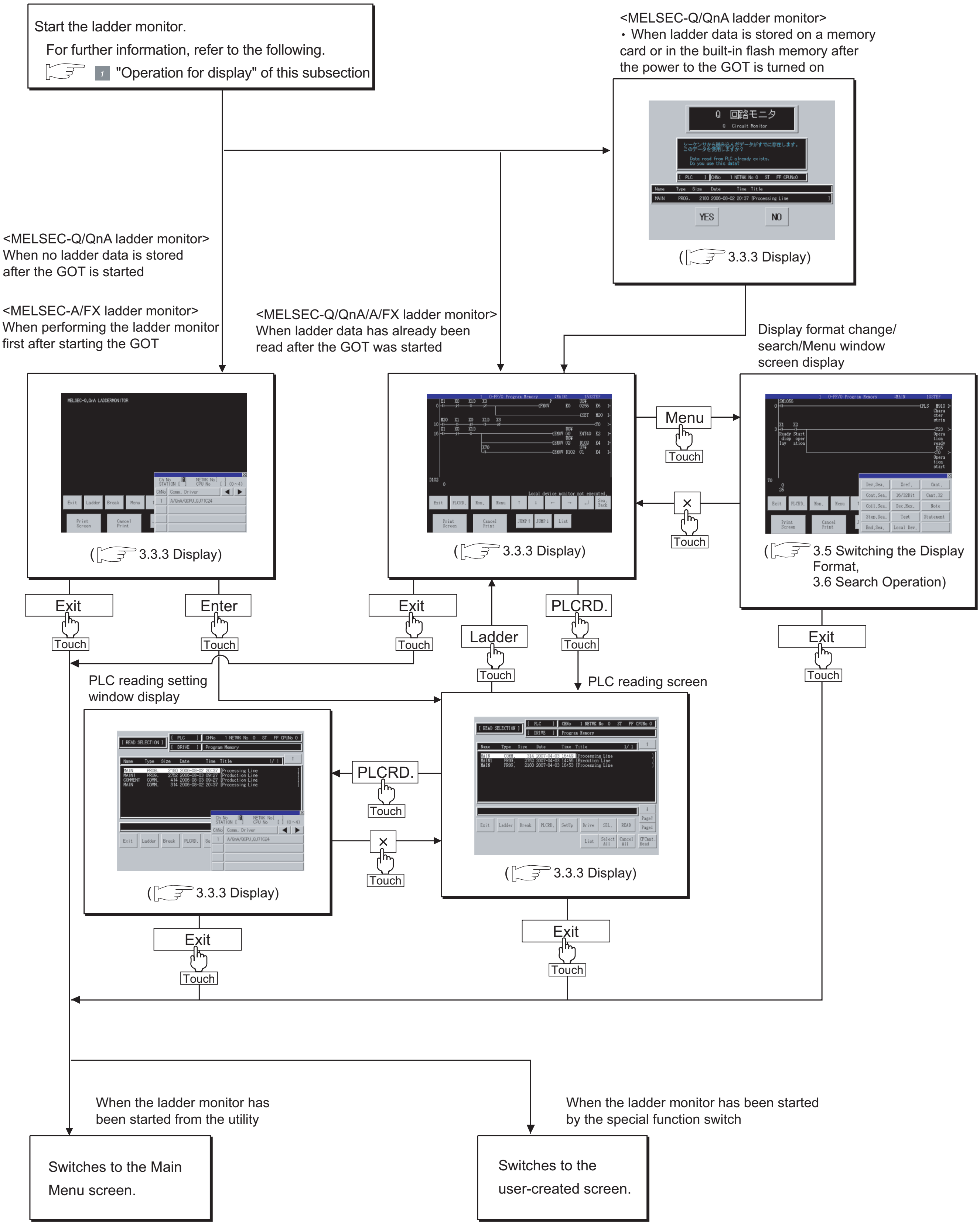
(1) Before searching
When searching program files and displaying the result from the advanced alarm or touch switch with the Q/QnA ladder monitor, programs are read automatically and searched by using the automatic PLC read setting. Programs need not be read in advance.

(2) When powering on the GOT again
When searching program files with the A/FX ladder monitor or with the Q/QnA ladder monitor for which the automatic PLC read setting is made with [None] set as the data storage destination, PLC reading is required every time powering on the GOT.
For the Q/QnA ladder monitor, setting data storage destination eliminates the need of PLC reading when the GOT is powered on again.
For settings of automatic PLC read and data storage destination, refer to the following manual.
☞ GT Designer2 Version2 Screen Design Manual

2 Changing screens

The following describes screen changes of (1) Normal operation using an example of the Q/QnA ladder monitor.

Screen changes of the A/FX ladder monitor is the same.



Start the ladder monitor.

For further information, refer to the following.

1 "Operation for display" of this subsection

<MELSEC-Q/QnA ladder monitor>

・When ladder data is stored on a memory card or in the built-in flash memory after the power to the GOT is turned on

(3.3.3 Display)

<MELSEC-Q/QnA ladder monitor>

When no ladder data is stored after the GOT is started

<MELSEC-A/FX ladder monitor>

When performing the ladder monitor first after starting the GOT

<MELSEC-Q/QnA/A/FX ladder monitor>

When ladder data has already been read after the GOT was started

Display format change/search/Menu window screen display

(3.3.3 Display)

(3.3.3 Display)

(3.5 Switching the Display Format, 3.6 Search Operation)

PLC reading setting window display

PLC reading screen

(3.3.3 Display)

(3.3.3 Display)

When the ladder monitor has been started from the utility

When the ladder monitor has been started by the special function switch

Switches to the Main Menu screen.

Switches to the user-created screen.

3.3.2 Setting and deleting media for saving ladder data

1 Setting the ladder data storage destination

(1) Setting for the Q/QnA ladder monitor

Up to 512 files of data used for the ladder monitor function (sequence programs, device comments) can be stored in a selected drive.

The ladder data storable capacity differs according to the ladder data storage destination.

- Built-in flash memory (C drive) :Up to 4MB
- Standard CF card (A drive/B drive) :Up to the CF card available space

Storing ladder data eliminates the need to read ladder data from the PLC CPU every time powering on the GOT, reducing the time before executing the ladder monitor.

For the ladder data storage destination setting, refer to the following manual.

When setting with the utility

☞ GT16 User's Manual (Basic Utility) (Section 4.2.1 Q/L/QnA ladder monitor setting)
GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor)

When setting with GT Designer2

☞ GT Designer2 Version□ Screen Design Manual (Section 3.8 Setting of GOT Display and Operations (GOT Setup))

Point

Precautions when the ladder data storage destination is set to [None]

- Only one sequence file and comment file of ladder data can be read in the GOT.
- When searching program files using the one-touch ladder jump function, specify a file to be searched.

(2) Setting for the A/FX ladder monitor

Ladder data cannot be stored.

For the A/FX ladder monitor, data for ladder monitoring are deleted every time the GOT is powered on again.

2 Deleting ladder data

Ladder data can be deleted with the ladder monitor screen or the utility.

For deletion of ladder data, refer to the following.

When deleting with the ladder monitor screen

☞ Section 3.3.3 Display

When deleting with the utility

☞ GT16 User's Manual (Basic Utility) (Section 4.2.1 Q/L/QnA ladder monitor setting)
GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor)

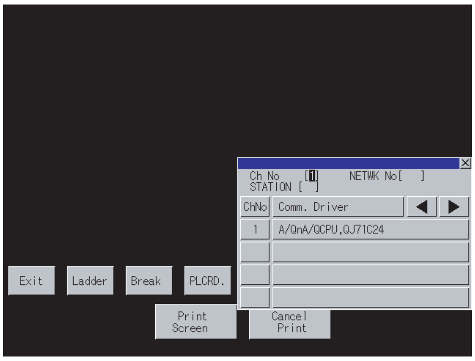
3.3.3 Display

This subsection describes the procedure for reading the PLC to read the sequence program from the target controller when the ladder monitor is executed, and until the ladder monitor screen is displayed.
The operation of reading the PLC depends on the controller type.

1 When the MELSEC-A/FX ladder monitor is executed

The MELSEC-A ladder monitor is taken as an example to describe the operation procedure.

Utility display procedure
☞ Subsection 3.3.1



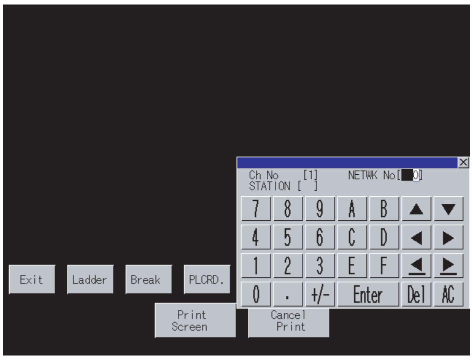
Ch No [1] NETWK No[ ]
STATION [ ]

ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24

① The communication setting window is displayed.

- The name of the Communication driver installed in the GOT is displayed.
- Touch "ChNo." on the communication setting window and set the channel number of the controller targeted to the ladder monitor.

② Touch the ▶ key, and move the cursor to "NETWK No [ ]."



Ch No [1] NETWK No[0]
STATION [ ]

③ Set the network number of the target controller and the CPU station number according to the table shown below.

Setting	Connection form					
	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	CC-Link (intelligent device station)	MELSEC NET/10 connection
NETWK No	0			1 to 239	0	0: Host loop 1 to 255: Specified loop
STATION*1	FF			1 to 64	0: When the master station is selected 1 to 64: When a local station is selected FF: When the host station is selected	0: When the control station is selected 1 to 64: When a normal station is selected

*1 When the station No. is set to the host station (FF), set the network No. to 0.

For the operation of the key window, see the following:

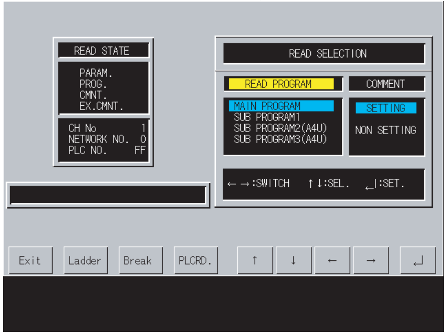
☞ Subsection 2.4.3 Key window setting columns and operation procedure

(Continued to next page)

④ Entry is completed by touching the Enter key, and the key window closes.

(From previous page)

PLC reading screen



CH No 1
NETWORK NO. 0
PLC NO. FF

(Continued to next page)

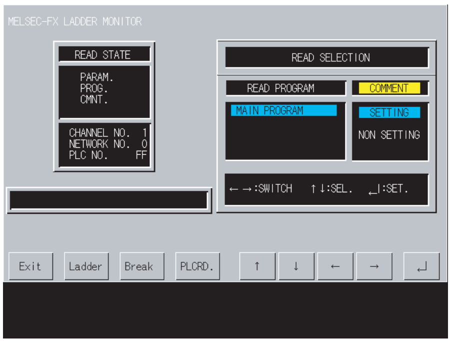
⑤ Touch the →, ←, ↑, and ↓ keys to specify the following items listed under "READ SECTION."

- Sequence program
  (In the case of the MELSEC-A ladder monitor)
  Main program
  Subprogram 1
  Subprogram 2 (A4U)
  Subprogram 3 (A4U)

  (In the case of the MELSEC-FX ladder monitor)
  Main program (fixed)

- SETTING/NON SETTING for comment reading

In the case of the FXCPU



CHANNEL NO. 1
NETWORK NO. 0
PLC NO. FF

⑥ After the items under "READ SECTION" are specified, touch the ↵ key.

Point

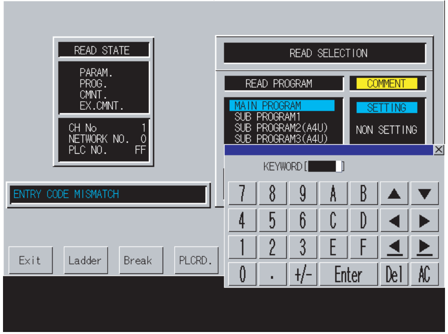
Displaying the ladder monitor screen

The MELSEC-FX ladder monitor screen displays the sequence program that was executed when the PLC was read. If any of the set values of the sequence program is changed, re-read the PLC. Changes to set values are displayed on the screen when the MELSEC-A ladder monitor is executed.
It is not necessary to re-read the PLC.

(From previous page)

When no keyword is registered in the target controller

When a keyword is registered in the target controller



CH No 1
NETWORK NO. 0
PLC NO. FF

ENTRY CODE MISMATCH

⑦ Enter the keyword registered in the target controller.

(In the case of the MELSEC-A ladder monitor)

The data entered can be corrected with the following keys:

Del key: Used to delete a character of the entered information.

AC key: Used to delete all characters entered.

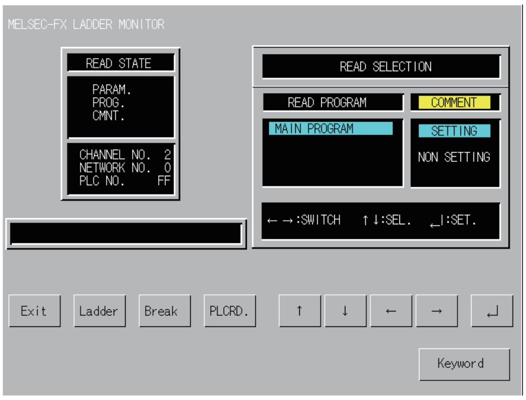
(In the case of the MELSEC-FX ladder monitor)

Touch the Keyword key to enter the keyword registered in the target PLC CPU.

Refer to the following manual for the FX CPU keywords.

☞ GT16 User's Manual (Basic Utility) (3.2 Communication Detail Setting)

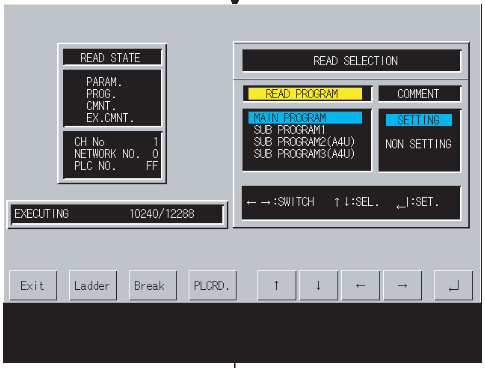
GT15 User's Manual (10.2.3 Display contents of communication detail settings)



CHANNEL NO. 2
NETWORK NO. 0
PLC NO. FF

(Continued to next page)

(From previous page)


READ STATE
PARAM.
PROG.
CMNT.
EX.CMNT.
CH No 1
NETWORK NO. 0
PLC NO. FF

READ SELECTION
READ PROGRAM
MAIN PROGRAM
SUB PROGRAM1
SUB PROGRAM2(A4U)
SUB PROGRAM3(A4U)
COMMENT
SETTING
NON SETTING
←→:SWITCH ↑↓:SEL. ↵:SET.

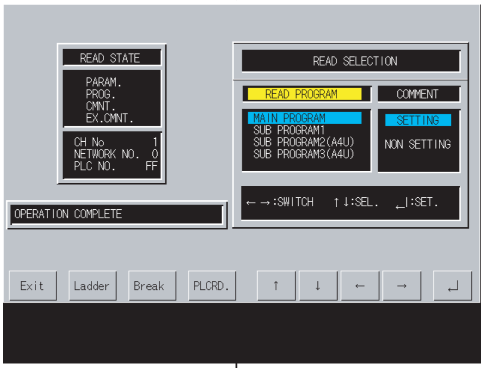
EXECUTING 10240/12288

⑧ The sequence program is read.

- The message "EXECUTING" is displayed.
- The entire size of the program and the portion already read are displayed.

  Portion already read/entire program size

- The reading of the PLC stops by touching the Break key.


READ STATE
PARAM.
PROG.
CMNT.
EX.CMNT.
CH No 1
NETWORK NO. 0
PLC NO. FF

READ SELECTION
READ PROGRAM
MAIN PROGRAM
SUB PROGRAM1
SUB PROGRAM2(A4U)
SUB PROGRAM3(A4U)
COMMENT
SETTING
NON SETTING
←→:SWITCH ↑↓:SEL. ↵:SET.

OPERATION COMPLETE

⑨ The reading of the sequence program is completed.

The message "OPERATION COMPLETE" is displayed.

EXIT

Touch

When the ladder monitor is activated from the utility

The screen switches to the main menu.

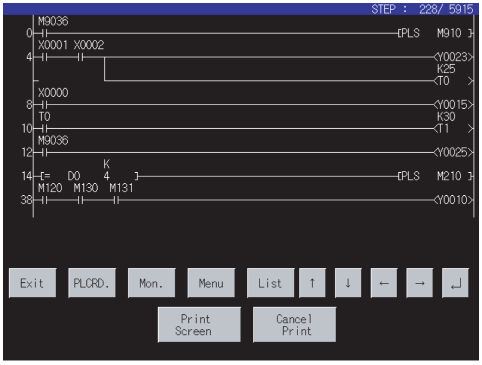
When the ladder monitor is activated by the special function switch

The screen switches to the user-created screen.

Ladder

Touch

Ladder monitor screen


STEP : 228/ 5915

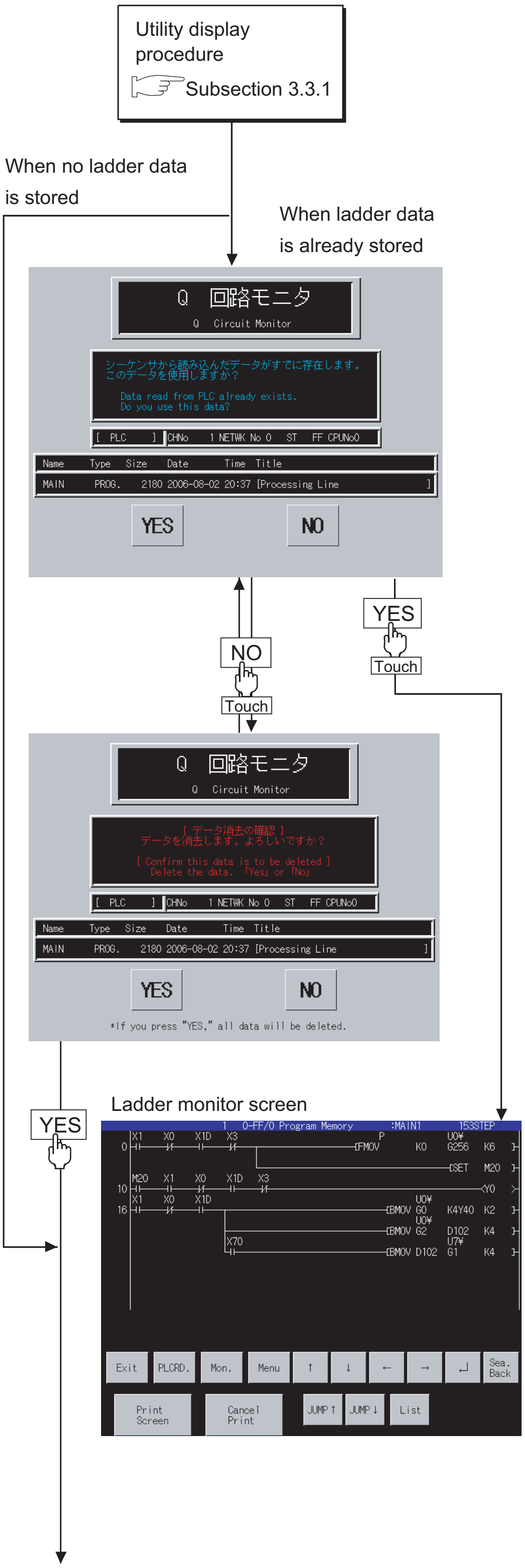
Point

Reading the PLC in the following operations

Once the PLC is read, you do not have to read it in the following operations. However, it must be re-read after you read it and then downloaded project data and when the power to the GOT is turned on again.

2 When the MELSEC-Q/QnA ladder monitor is executed

The MELSEC-Q ladder monitor is taken as an example to describe the operation procedure.
With regard to the MELSEC-QnA ladder monitor, if any keyword is entered in the target controller, it must be entered after ⑥.



シーケンサから読み込んだデータがすでに存在します。
このデータを使用しますか？

Data read from PLC already exists.
Do you use this data?

[PLC] CHNo 1 NETWK No 0 ST FF CPUNo0

Name	Type	Size	Date	Time	Title
MAIN	PROG.	2180	2006-08-02	20:37	[Processing Line]

[データ消去の確認]
データを消去します。よろしいですか？

[Confirm this data is to be deleted]
Delete the data. 「Yes」 or 「No」

[PLC] CHNo 1 NETWK No 0 ST FF CPUNo0

Name	Type	Size	Date	Time	Title
MAIN	PROG.	2180	2006-08-02	20:37	[Processing Line]

*If you press "YES," all data will be deleted.

```
                 1   0-FF/0 Program Memory      :MAIN1      153STEP
   |X1    X0    X1D   X3                      P          U0¥
 0 |-||---|/|---||---|/|---+------------[FMOV       K0   G256   K6   ]
   |                      |
   |                      +-----------------------------[SET    M20   ]
   |M20   X1    X0    X1D   X3
10 |-||---||---|/|---||---|/|--------------------------------<Y0     >
   |X1    X0    X1D                                  U0¥
16 |-||---|/|---||---+-----------------------[BMOV  G0   K4Y40  K2   ]
   |                 |                           U0¥
   |                 +-----------------------[BMOV  G2   D102   K4   ]
   |                 |X70                             U7¥
   |                 +-||--------------------[BMOV  D102 G1     K4   ]
```

① Select and touch YES or NO as described below.

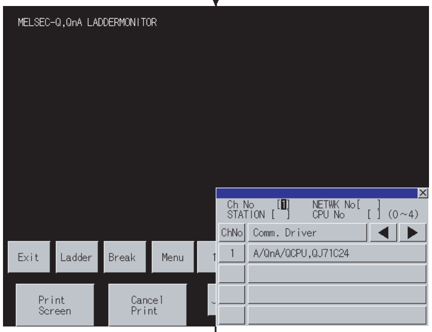
- To use stored ladder data, touch YES.
- To delete stored ladder data and read new ladder data, touch NO.

② Select and touch YES or NO as described below.

- To delete stored ladder data, touch YES.
- To keep stored ladder data, touch NO.

(Continued to next page)

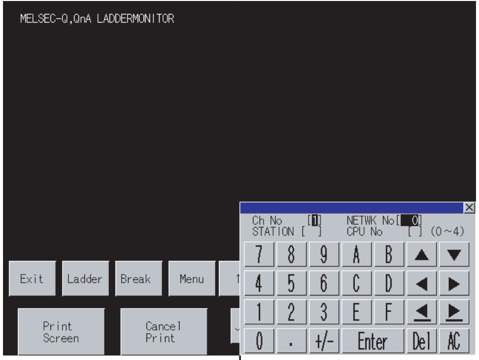
(From previous page)



MELSEC-Q,QnA LADDERMONITOR

Ch No [1] NETWK No[ ]
STATION [ ] CPU No [ ] (0~4)

ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24



MELSEC-Q,QnA LADDERMONITOR

Ch No [1] NETWK No[0]
STATION [ ] CPU No [ ] (0~4)

(Continued to next page)

③ The communication setting window is displayed.

- The name of the Communication driver installed in the GOT is displayed.
- Set the channel number of the controller targeted to the ladder monitor.

④ Touch the ▶ key, and move the cursor to "NETWK No [ ]."

⑤ Set the network number of the target controller, the CPU station number, and the CPU number according to the table shown below.

Setting	Setting range				
	Connection form				
	Bus connection, Direct CPU connection, Computer link connection	Ethernet connection	MELSEC NET/H, MELSEC NET/10 connection	CC-Link IE controller network connection	CC-Link (intelligent device station)
NETWK No	0	1 to 239	0: Host loop 1 to 255: Specified loop	1 to 239	0
STATION[*1]	FF	1 to 64	0: When the control station is selected 1 to 64: When a normal station is selected	1 to 120	0: When the master station is selected 1 to 64: When a local station is selected
CPU No	0 to 4 (Set this item only for the MELSEC-Q ladder monitor.)				

[*1] When the station No. is set to the host station (FF), set the network No. to 0.

For the operation of the key window, see the following:

☞ Subsection 2.4.3 Key window setting columns and operation procedure

⑥ Entry is completed by touching the Enter key, and the key window closes.

Point

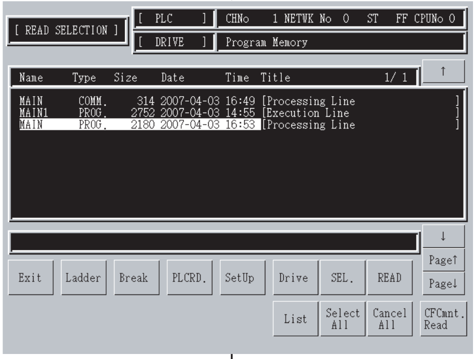
In the case of Ethernet connection

Set a monitor target using GT Designer2 in advance.
For further information about the setting of monitor target, see the following:

☞ GOT1000 Series Connection Manual

(From previous page)

PLC reading screen



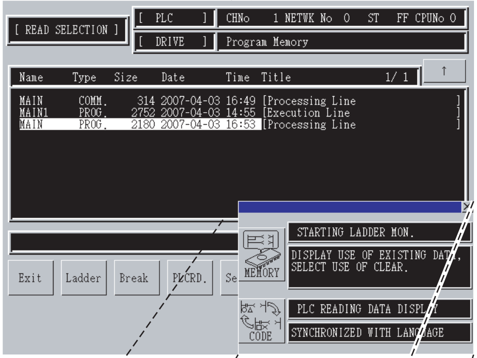
```
[ READ SELECTION ]  [ PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                    [ DRIVE  ]  Program Memory
Name     Type   Size    Date       Time  Title                   1/ 1
MAIN     COMM.   314 2007-04-03 16:49 [Processing Line            ]
MAIN1    PROG.  2752 2007-04-03 14:55 [Execution Line             ]
MAIN     PROG.  2180 2007-04-03 16:53 [Processing Line            ]
```

7 The PLC reading screen is displayed.
Touch the SetUp key. The setting window appears.

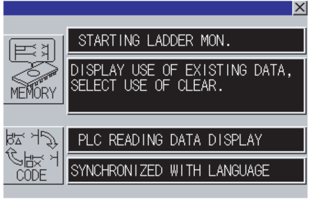
Point

Displaying the ladder monitor screen

When the drive for storing ladder data is set to [C: Flash Memory], the ladder monitor screen displays the sequence program at the time of reading data from the PLC.
If any of the set values of the sequence program is changed, re-read the PLC.
When the drive for storing ladder data is set to [A: Built-in CF card] or [B:Memory card], changes of the set values are reflected in the screen display.
Rereading data from the PLC is not required.

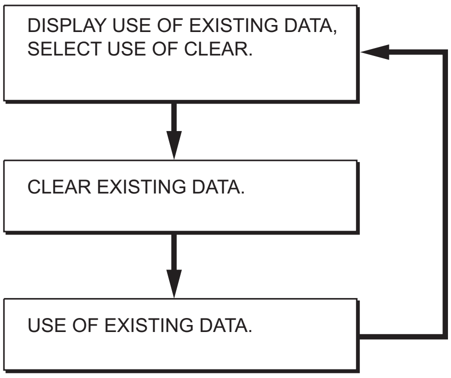


```
[ READ SELECTION ]  [ PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                    [ DRIVE  ]  Program Memory
Name     Type   Size    Date       Time  Title                   1/ 1
MAIN     COMM.   314 2007-04-03 16:49 [Processing Line            ]
MAIN1    PROG.  2752 2007-04-03 14:55 [Execution Line             ]
MAIN     PROG.  2180 2007-04-03 16:53 [Processing Line            ]
```

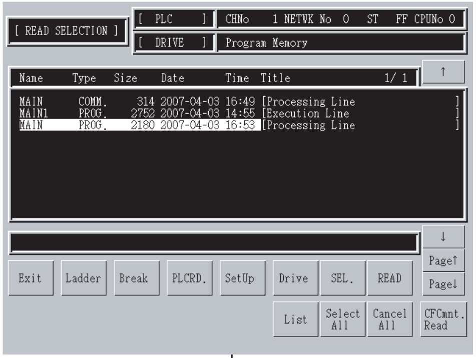


```
STARTING LADDER MON.
DISPLAY USE OF EXISTING DATA,
SELECT USE OF CLEAR.
PLC READING DATA DISPLAY
SYNCHRONIZED WITH LANGUAGE
```

8 The setting window appears. Make settings for the initial activation of the ladder monitor.*
The settings shown below switch each time you touch the MEMORY key.



*This setting is invalid when the automatic PLC read setting is made or a searched file is specified, when performing coil search or defect search from the key code switch or the special function switch set for the advanced alarm display.



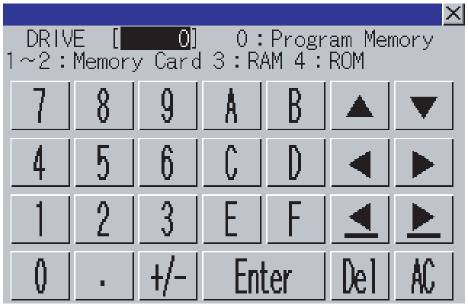
```
[ READ SELECTION ]  [ PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                    [ DRIVE  ]  Program Memory
Name     Type   Size    Date       Time  Title                   1/ 1
MAIN     COMM.   314 2007-04-03 16:49 [Processing Line            ]
MAIN1    PROG.  2752 2007-04-03 14:55 [Execution Line             ]
MAIN     PROG.  2180 2007-04-03 16:53 [Processing Line            ]
```

9 The After the setting is completed, touch the ☒ button to close the Setting window.

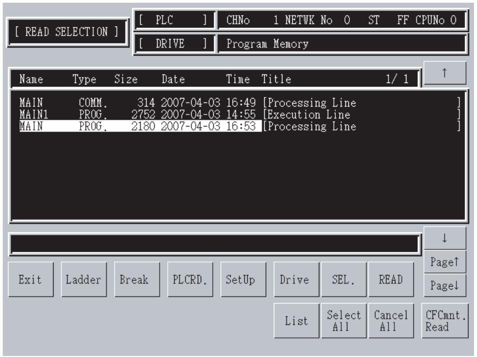
10 Using the Drive key, select the target drive (applicable memory) in which the ladder data to be monitored is saved.

(Continued to next page)

(From previous page)



DRIVE [0] 0 : Program Memory
1～2 : Memory Card 3 : RAM 4 : ROM



[READ SELECTION]

[PLC] CHNo 1 NETWK No 0 ST FF CPUNo 0

[DRIVE] Program Memory

Name	Type	Size	Date	Time	Title 1/ 1
MAIN	COMM.	314	2007-04-03	16:49	[Processing Line]
MAIN1	PROG.	2752	2007-04-03	14:55	[Execution Line]
MAIN	PROG.	2180	2007-04-03	16:53	[Processing Line]

(Continued to next page)

⑪ The drive selection window is displayed. Enter the target drive (applicable memory).
Drive number setting range: 0 to 4

Del key	:Used to delete a character of the entered information.
AC key	:Used to delete all characters under the cursor.
Enter key	:Registers the entered information.

When any keyword is set for the selected drive, enter the keyword.
If canceling the entry, reading of the drive is canceled.

⑫ A list of the files stored in the selected drive is displayed.
Using the keys shown below, select the file data you want to read.

↑ key	:Moves the cursor upward.
↓ key	:Moves the cursor downward.
Page↑ key	:Displays the preceding page.
Page↓ key	:Displays the following page.
SEL. key	:Select/Cancel is switched by moving the cursor and touching this key.
Select All key	:Selects all the files in the drive.
Cancel All key	:Cancels all the file selections.
READ key	:Starts the reading of the file data selected.
CF Cmnt. Read key	:Starts reading a comment file from a CF card.

Set the drive to be used for reading the comment file in [Q/QnA ladder monitor] of the utility or [GOT Setup] of GT Designer2.

☞ GT16 User's Manual (Basic Utility) (4.2.1 Q/L/QnA Ladder Monitor setting)
GT15 User's Manual (11.7 Q/QnA Ladder Monitor)
GT Desinger2 Version □ Screen Design Manual (Setting of GOT Display and Operations (GOT Setup))

For reading comment files from CF cards, refer to the following.

☞ Subsection 3.3.5 Reading comment files from CF cards

Point

Multiple ladder data storable

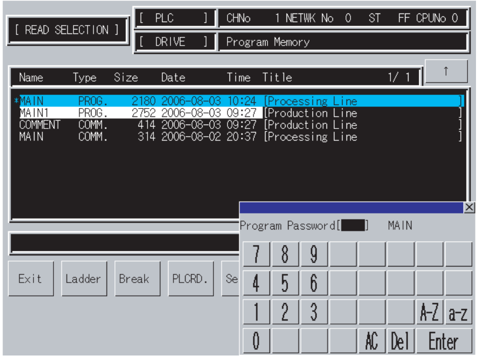
Multiple sequence and comment programs can be read.
For the PLC read setting, refer to the following manuals.

☞ GT16 User's Manual (Basic Utility)
GT15 User's Manual
GT Designer2 Version □ Screen Design Manual

(From previous page)

When no password is entered in the target controller

When a password is entered in the target controller



```
[ READ SELECTION ]   [ PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                     [ DRIVE  ]  Program Memory
 Name     Type   Size   Date       Time  Title                    1/ 1
*MAIN     PROG.  2180 2006-08-03 10:24 [Processing Line              ]
 MAIN1    PROG.  2752 2006-08-03 09:27 [Production Line              ]
 COMMENT  COMM.   414 2006-08-03 09:27 [Production Line              ]
 MAIN     COMM.   314 2006-08-02 20:37 [Processing Line              ]
Program Password[    ]   MAIN
```

⑬ Enter the password entered in the target controller.
In the case of the QCPU, a password is entered in the sequence and comment files.

Point

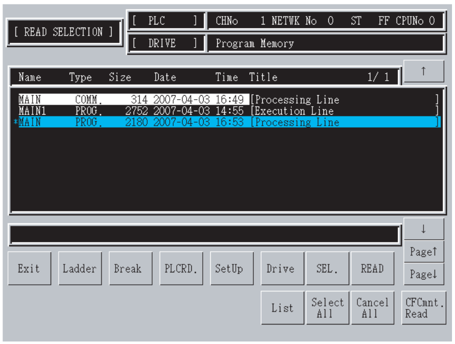
When entering passwords for multiple files

When reading multiple files with passwords set, enter passwords for respective programs.
Canceling an entry cancels the reading of the file.

A-Z	key	:Uppercase alphabetic characters
a-z	key	:Lowercase alphabetic characters

The data entered can be corrected with the following keys:

Del	key	:Used to delete a character of the entered information.
AC	key	:Used to delete all characters entered.



```
[ READ SELECTION ]   [ PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                     [ DRIVE  ]  Program Memory
 Name     Type   Size   Date       Time  Title                    1/ 1
 MAIN     COMM.   314 2007-04-03 16:49 [Processing Line              ]
 MAIN1    PROG.  2752 2007-04-03 14:55 [Execution Line               ]
*MAIN     PROG.  2180 2007-04-03 16:53 [Processing Line              ]
```

⑭ The sequence program is read.

- The message "READING PROGRAM" is displayed.
- The entire size of the program and the portion already read are displayed.

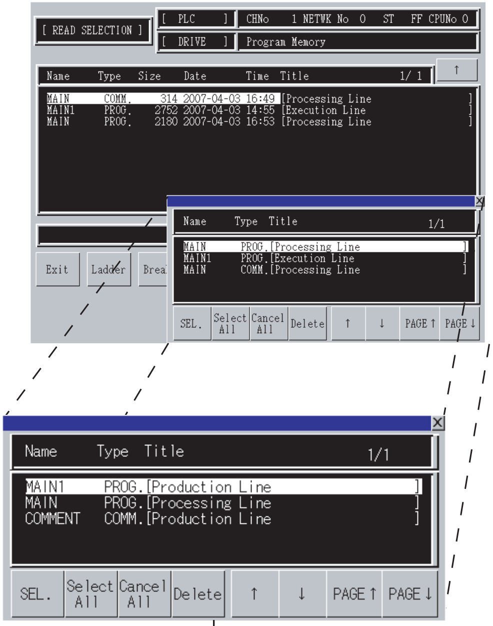
Portion already read/entire program size

- The reading of the PLC stops by touching the Break key.

⑮ After sequence programs are read,
the message "OPERATION COMPLETE" is displayed.

(Continued to next page)

(From previous page)



```
[ READ SELECTION ]   [  PLC   ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                     [  DRIVE ]  Program Memory
Name     Type   Size     Date       Time  Title                  1/ 1
MAIN     COMM.    314 2007-04-03 16:49 [Processing Line               ]
MAIN1    PROG.   2752 2007-04-03 14:55 [Execution Line                ]
MAIN     PROG.   2180 2007-04-03 16:53 [Processing Line               ]
```

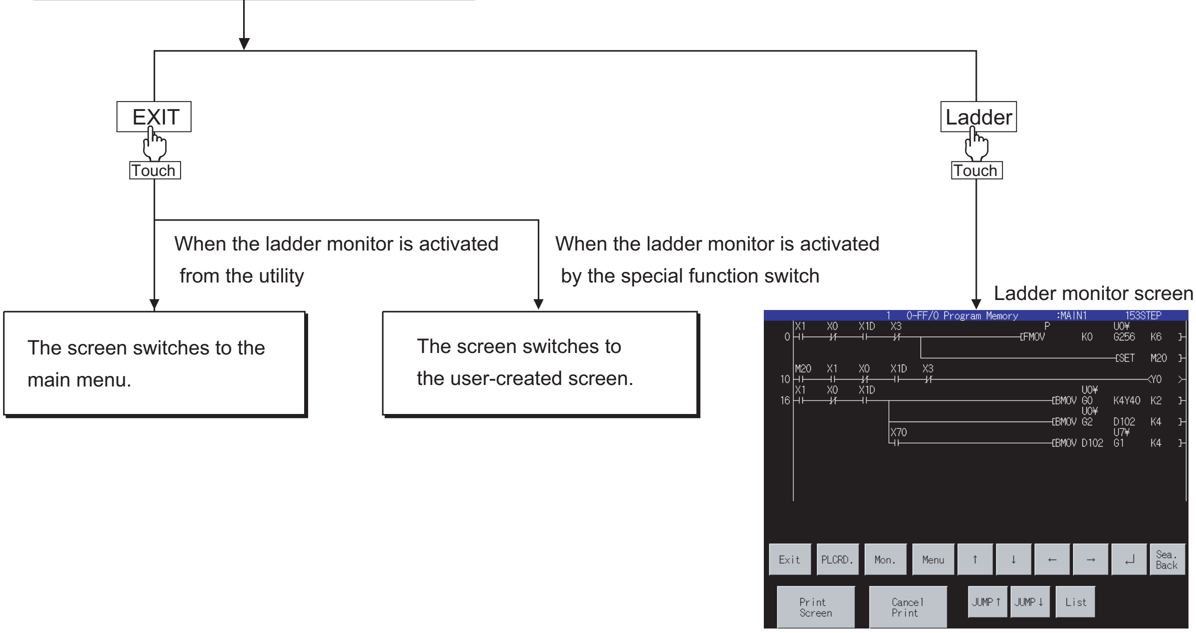
```
Name      Type  Title                        1/1
MAIN       PROG.[Processing Line                ]
MAIN1      PROG.[Execution Line                 ]
MAIN       COMM.[Processing Line                ]
```

```
Name      Type  Title                        1/1
MAIN1     PROG.[Production Line                 ]
MAIN      PROG.[Processing Line                 ]
COMMENT   COMM.[Production Line                 ]
```

⑯ To delete the read ladder data, touch the List key.
The program files and comment files stored in the built-in flash memory of the GOT or in the memory card are displayed.

Files can be selected by touching a key or directly touching the display part.

SEL. key	:Select/cancel is switched by moving the cursor and touching this key.
Select All key	:Selects all files.
Cancel All key	:Cancels all selections.
Delete key	:Deletes the file selected.
↑ key	:Moves the cursor upward.
↓ key	:Moves the cursor downward.
Page ↑ key	:Displays the preceding page.
Page ↓ key	:Displays the following page.



EXIT Touch

Ladder Touch

When the ladder monitor is activated from the utility

The screen switches to the main menu.

When the ladder monitor is activated by the special function switch

The screen switches to the user-created screen.

Ladder monitor screen

```
1   0-FF/0 Program Memory        :MAIN1        153STEP
```

Point

Reading the PLC in the following operations

Once the PLC is read with the power to the GOT turned on, you do not have to read it in the following operations.

3.3.4 Searching from the monitor screen

When starting a ladder monitor with object, coil-search/defect search can be automatically performed to the read sequence program and the result can be displayed on the monitor.

1 Usable objects and functions list

The following table shows the types of objects can be searched from a monitor screen and functions usable in each object.
For object setting to display searching result on ladder monitor, refer to the following manual.

☞ GT Designer2 Version□ Screen Design Manual

(1) MELSEC-Q/QnA ladder monitor

(○: Applicable ×: Inapplicable)

Object	Function			
	Automatic PLC read	Specify Search File	Coil	Factor
Special Function Switch	○*1	○	○	○
Advanced Alarm Display	○*1	○	○	○
Alarm List	×	×	○	×
History	×	×	○	×

*1 For reading comment files from CF cards, refer to the following.

☞ Subsection 3.3.5 Reading comment files from CF cards

(2) MELSEC-A/FX ladder monitor

(○: Applicable ×: Inapplicable)

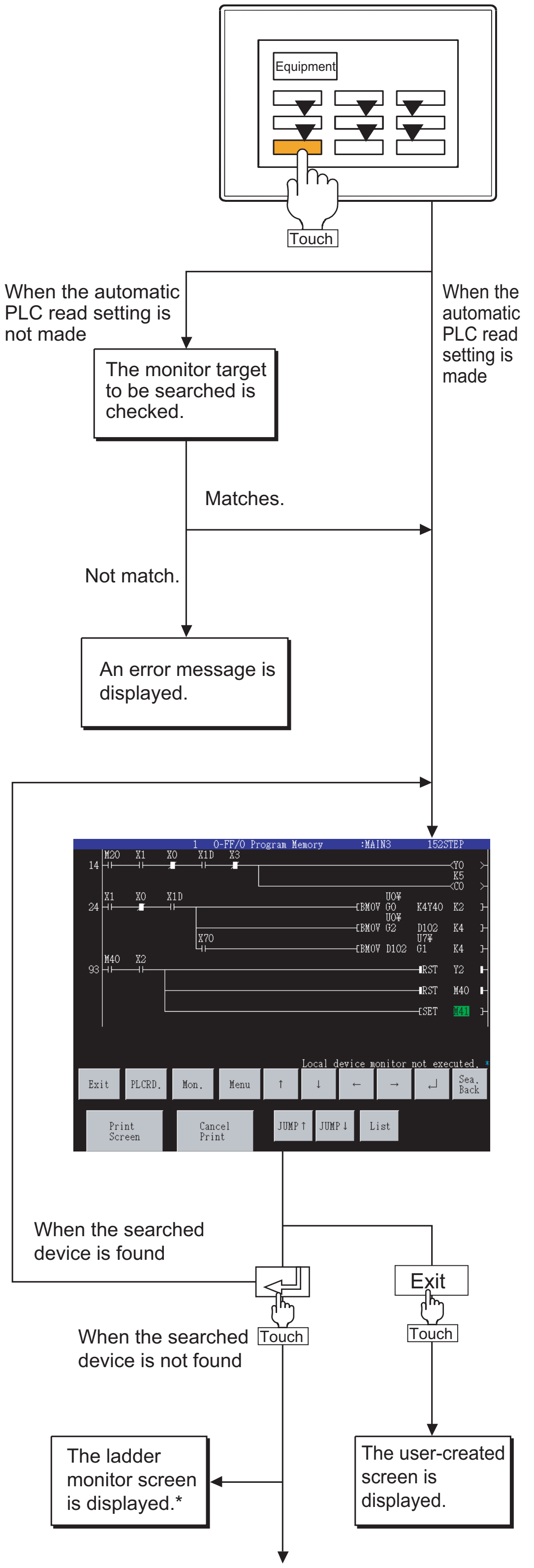
Object	Function			
	Automatic PLC read	Specify Search File	Coil	Factor
Special Function Switch	×	×	○	×
Advanced Alarm Display	×	×	○	×
Alarm List	×	×	○	×
History	×	×	○	×

2 Searching operation

(1) When displaying searching result with the Advanced Alarm Display or Special Function Switch
The following explains the procedure from touching the Key Code Switch for advanced alarm display or Special Function Switch and performing coil-search or defect search to display of a ladder block.*
The following flowchart explains the operation when the destination to save the ladder block data is specified.

* When performing MELSEC-A/FX ladder monitor, the operation is the same when displaying the searching result with Alarm List or History explained (2) .

The following explains the operation taking MELSEC-Q ladder monitor as an example.


Equipment
Touch
When the automatic PLC read setting is not made
When the automatic PLC read setting is made
The monitor target to be searched is checked.
Matches.
Not match.
An error message is displayed.
Exit
PLCRD.
Mon.
Menu
Sea. Back
Print Screen
Cancel Print
JUMP↑
JUMP↓
List
When the searched device is found
When the searched device is not found
Touch
Exit
Touch
The ladder monitor screen is displayed.*
The user-created screen is displayed.

(Continued to next page)

① Touch a key in monitor screen.

The operation differs depending on object setting.

(1) When the Automatic PLC read setting is made
   (a) When [Specify Search File] is selected
   Reads the specified sequence program.
   (b) When [Specify Search File] is not selected
   Reads all sequence programs in the program memory of the target controller.
   For setting method of Automatic PLC read, refer to the following manual.

   ☞ GT Designer2 Version□
   Screen Design Manual

(2) When the Automatic PLC read setting is not made
   Searching starts only when the monitor target of the sequence program that has been read and the monitor target that is set for searching on the object match.
   When they are mismatch, an error message appears.
   Read again to match the monitor target for searching on the PLC reading screen.

② When a keyword is registered to the read target drive, enter the keyword.

To read a file to which a password is registered, enter the password.

If canceling the entry, reading of the drive or file is canceled.

③ After the read program is searched, the result is displayed.

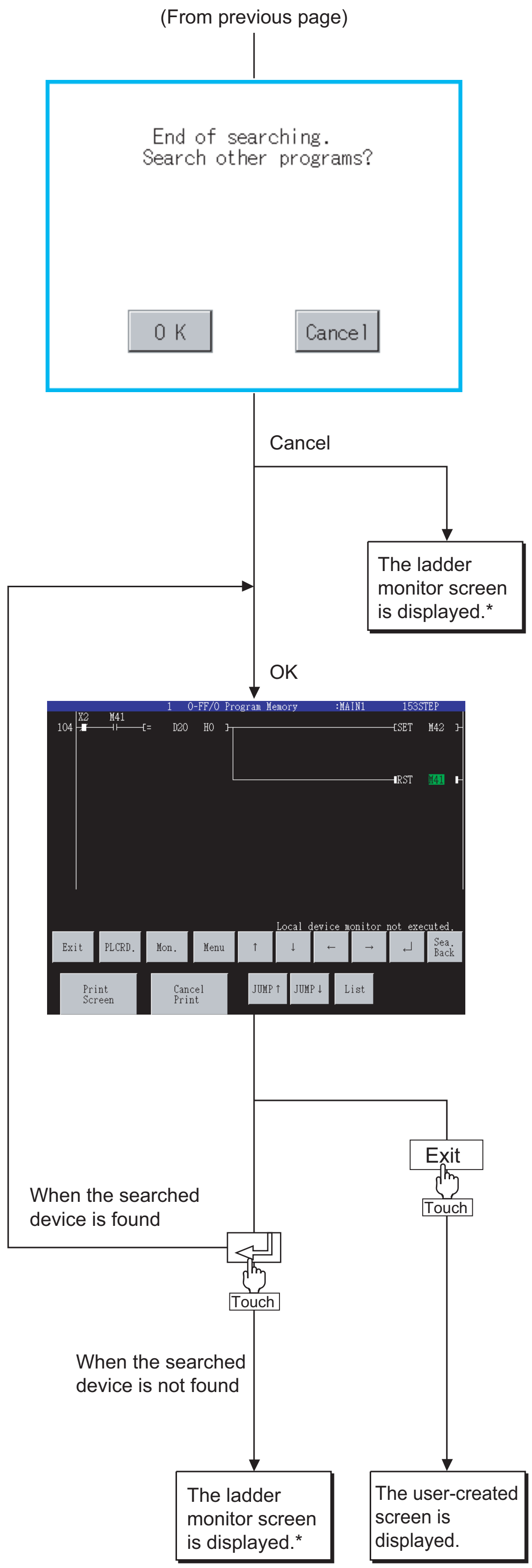
④ Touching the ↵ button searches consecutively.

Touching the Exit button completes searching halfway.

⑤ If the searched device is not found in the read program, the message "DEVICE NOT FOUND" appears and searching is completed.

After searching, the program that has been read first is displayed on the ladder monitor screen.

* After coil-search, monitoring of the displayed ladder starts automatically. (During MELSEC-A/FX ladder monitor, touching the monitor key starts the same operation.)


(From previous page)
End of searching.
Search other programs?
O K
Cancel
Cancel
The ladder monitor screen is displayed.*
OK
Exit
Touch
When the searched device is found
Touch
When the searched device is not found
The ladder monitor screen is displayed.*
The user-created screen is displayed.

⑥ When multiple read programs exist, the dialog box which asks about searching for other programs appears.

Touching the OK button starts searching to all other read programs.

⑦ According to the order of the programs that have been read first, searching is started to the next file and the result is displayed.

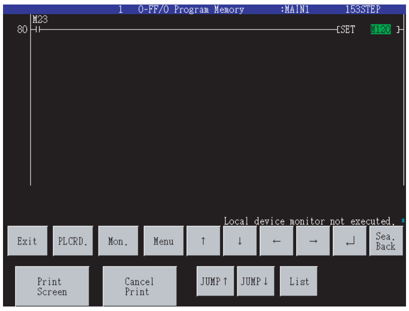
⑧ Touching the ↲ searches consecutively.

Touching the Exit button completes searching halfway.

Point

Ladder display during consecutive search

When displaying the ladder block in the next sequence file, the previous search results are cleared. (☞ Section 3.6.3 Coil search)



⑨ If the searched device is not found in all read programs, the message "DEVICE NOT FOUND" appears and searching is completed.

After searching, the program that has been read first is displayed on the ladder monitor screen.

* After coil-search, monitoring of the ladder displayed is started automatically.

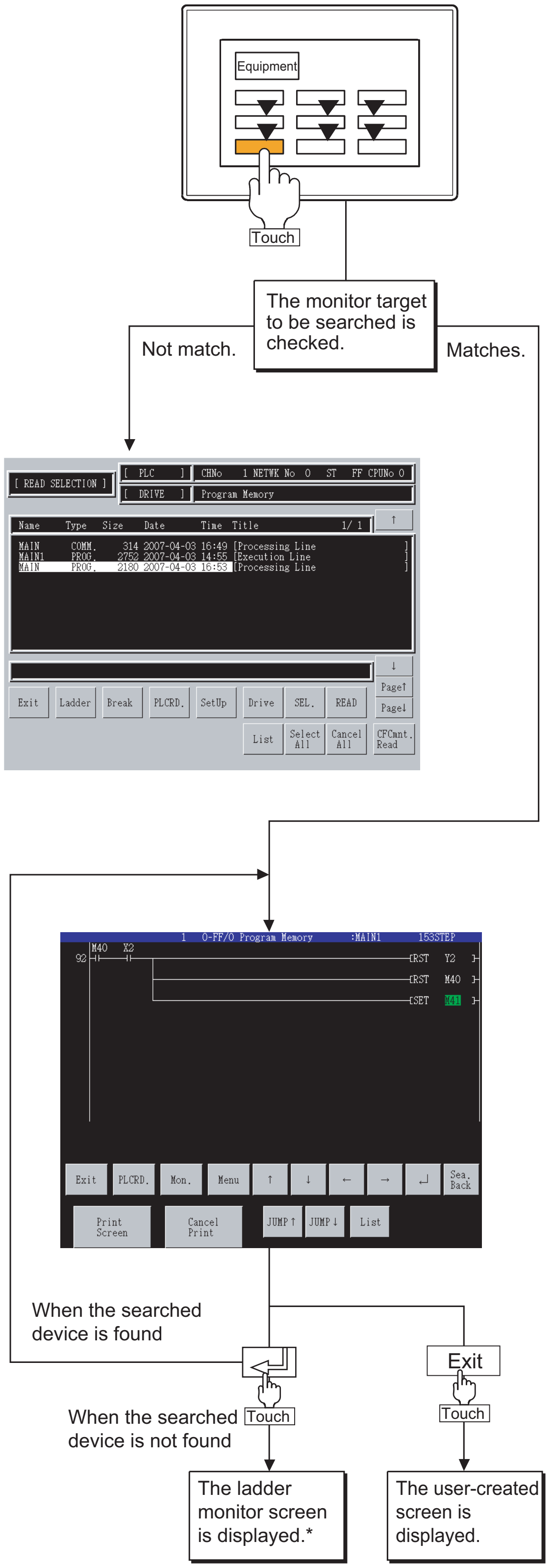
(2) When displaying searching result with Alarm List/History
The following explains the procedure from touching the Key Code Switch for user alarm display and performing coil-search of sequence program to display of a ladder block.

Point

Program to be searched

In Alarm List/History, coil-search is performed to the sequence program that has been displayed on the ladder monitor last among the read sequence programs.
However, when no ladder programs have not been displayed, coil-search is performed to the sequence program that has been read first.
Therefore, the file to be searched has to be read from the PLC reading screen beforehand.
For setting from the PLC reading screen, refer to the following section.
☞ 3.3.3 Display

The following explains the operation taking MELSEC-Q ladder monitor as an example.



```
[  PLC    ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
[  DRIVE  ]  Program Memory
Name      Type   Size    Date       Time  Title                 1/ 1
MAIN       COMM.     314 2007-04-03 16:49 [Processing Line              ]
MAIN1      PROG.    2752 2007-04-03 14:55 [Execution Line               ]
MAIN       PROG.    2180 2007-04-03 16:53 [Processing Line              ]
```

```
            1   0-FF/0 Program Memory       :MAIN1       153STEP
    M40   X2
 92 ┤├────┤├──────────────────────────────[RST    Y2   ]
                                          [RST    M40  ]
                                          [SET    M41  ]
```

① Touch a key in monitor screen.

② Searching stats only when the monitor target of the sequence program that has been read and the monitor target that is set on the object match.

When they are mismatch, an error message appears. Read again to match the monitor target for searching on the PLC reading screen.
In MELSEC-A/FX ladder monitor, an error message does not appear even they are mismatch, and searching continues.

③ Searching result is displayed.

④ Touching the ↵ button searches consecutively.

Touching the Exit button completes searching halfway.

⑤ If the searched device is not found, the message "DEVICE NOT FOUND" appears and searching is completed.

After searching, the normal ladder monitor screen is displayed.

* After coil-search, monitoring of the ladder displayed is started automatically. (For the A/FX ladder monitor, touching the Mon. key provides the same operation.)

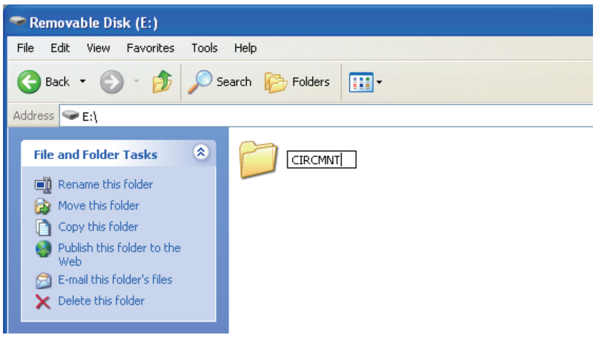
3.3.5 Reading comment files from CF cards

A comment file to be used for the ladder monitor can be read from a CF card installed on the GOT.
Using a comment file stored in a CF card has the following advantages.

- The processing time is shorter than the one for reading a comment file from a PLC CPU.
- Writing comment file data into a PLC CPU is not required, so less memory of the PLC CPU is used.

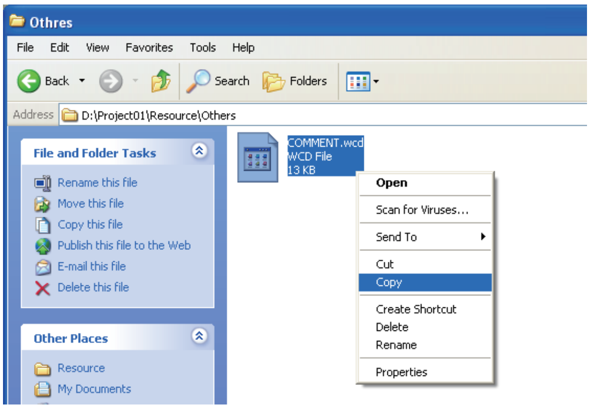
1 Procedure for using comment files stored in CF cards

The following shows the procedure for using a comment file stored in a CF card.

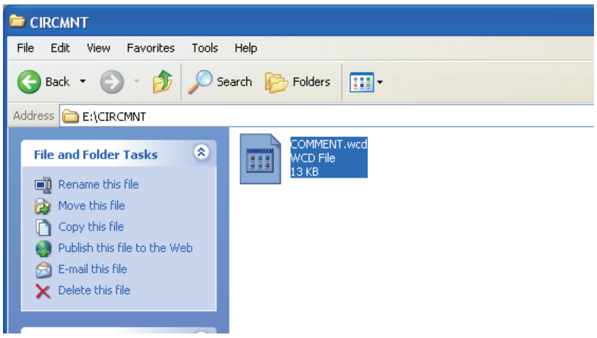


① Create a folder with the folder name of CIRCMNT in a CF card.

When the CIRCMNT folder already exists, creating a new CIRCMNT folder is not required.



② Copy a comment file (.wcd) from the project data of GX Developer.



③ Save the copied comment file in the CIRCMNT folder created in the CF card.

④ Install the CF card with the comment file on the GOT.

⑤ Read the comment file with the ladder monitor.

Point

When using comment files stored in CF cards

When comment files exist both in a CF card and a PLC, the comment file to be used may not be read.
For using a comment file stored in a CF card, do not write comment file data into a PLC.

3.4 Operation Procedure Common

This section describes the information and key functions displayed on the ladder monitor screen.
The display screen of the ladder monitor varies slightly with the GOT used. This chapter mainly uses the screen of the GT1575-V for explanation.

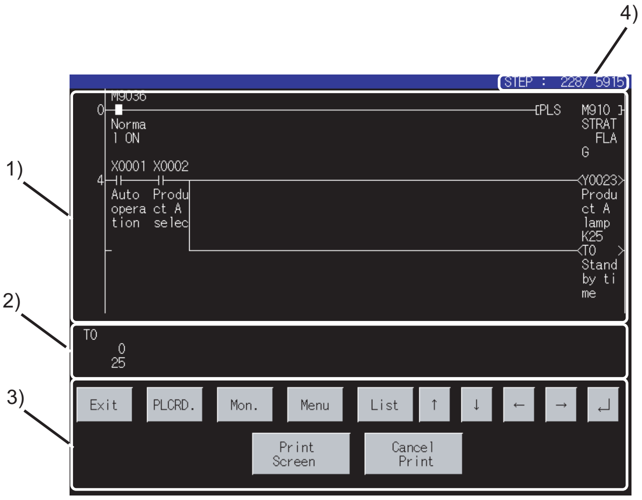
3.4.1 Information and key functions displayed on the screen

The ladder monitor screen depends on the controller type.

Point After executing PLC reading, if the controller comment or comment capacity is changed, the comment may not be correctly displayed on the ladder monitor screen. When changing the comment or comment capacity, re-start the GOT.

(1) When the MELSEC-A/FX ladder monitor is executed

(a) Display monitor



When comment is not displayed :maximum 8 lines
When comment is displayed :maximum 3 lines

ON/OFF status display for ladder monitor
- ON status : ┫┣ ┫/┣ ◀▶ ┫┣
- OFF status : ┤├ ┤/├ ‹› ┤[]├

* The MCR command is normally displayed as ┫┣.

The information shown in the table below is displayed.

No.	Description
1)	Sequence program is displayed. A maximum of 11 contact points is displayed in one line of a ladder; for 12 contact points or more, move to the next line. When a comment display is specified, a comment is also displayed; expanded comments are given priority. For the method of displaying comments, see the following: ☞ Subsection 3.5.3 Switching comment/no-comment display
2)	A maximum of eight devices is displayed for the word device current value, timer and counter current value (upper row), and set value (lower row). When the set value is an indirect specification, the value of the indirectly specified device is displayed. To switch between decimal and hexadecimal for the displayed value, see the following: ☞ Subsection 3.5.2 Display switching of decimal numbers/hexadecimal numbers
3)	Display the keys used with the operation on the ladder monitor screen shown in (b) (Touch input).
4)	The display step number (left) and the remaining step number (right) are displayed.

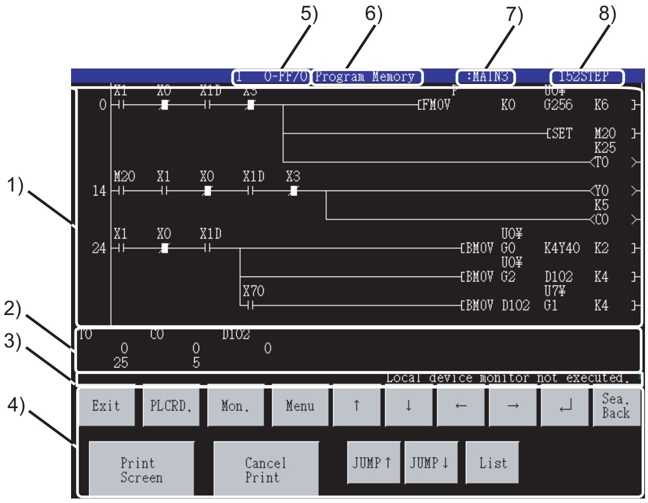
(b) Key functions (when the MELSEC-A/FX ladder monitor is executed)

Key	Function
Exit	Returns the screen to the one displayed when the ladder monitor was activated.
PLCRD.	Switches the screen to the PLC reading screen to read from the controller the sequence program to be monitored. For further information about PLC reading, see the following: ☞ Subsection 3.3.3 Display
Mon.	Starts monitoring the displayed sequence program.
Menu	Displays the Menu window for ladder monitor (☞ This section (2)).
List	Starts the list editor for A/FX. For details on the A/FX list editor, refer to the following. ☞ ・ Chapter 4 MELSEC-A LIST EDITOR ・ Chapter 5 MELSEC-FX LIST EDITOR
↑	Scrolls the information upward by a ladder block.
↓	Scrolls the information downward by a ladder block.
← →	When the number of devices whose present and set values are within the display range shown in 2) on the preceding page is nine or more, the devices to be displayed are switched.
↵	Scrolls the information downward by a screen. In search operation, a search is continuously performed under the same conditions.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, see the following: ☞ Subsection 3.4.2 Hard copy output
Cancel Print	The operation of this key is invalid.

(2) When the MELSEC-Q/QnA ladder monitor is executed

(a) Display screen

(GOT with VGA resolution)



```
T0        C0        D102
   0         0         0
  25         5
                              Local device monitor not executed.
```

For the number of characters of comments and comment display, see the following:

☞ Subsection 3.5.3 Switching comment/no-comment display

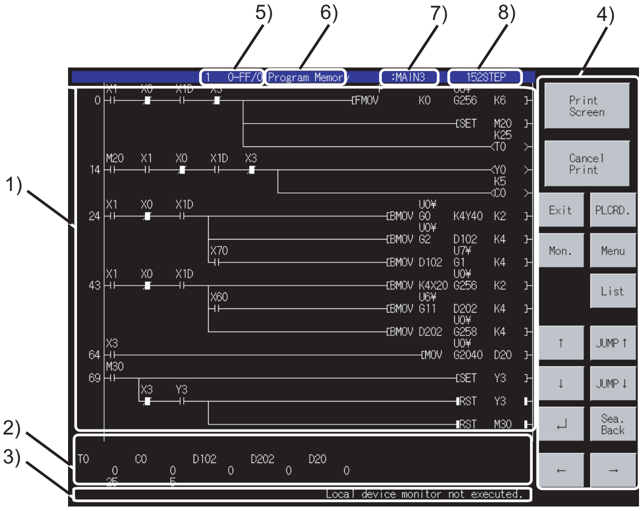
Subsection 3.5.4 Displaying 32 characters of comments

ON/OFF status display for ladder monitor

- ON status : ⊣▮⊢ ⊣▮̸⊢ ◀▶ ⊣▮▮⊢
- OFF status : ⊣⊢ ⊣/⊢ ◇ ⊣[]⊢

* The MCR command is normally displayed as ⊣▮⊢.

(GOT with SVGA or higher resolution)



```
T0        C0        D102      D202      D20
   0         0         0         0         0
  25         5
                              Local device monitor not executed.
```

For the number of characters of comments and comment display, see the following:

☞ Subsection 3.5.3 Switching comment/no-comment display

Subsection 3.5.4 Displaying 32 characters of comments

ON/OFF status display for ladder monitor

- ON status : ⊣▮⊢ ⊣▮̸⊢ ◀▶ ⊣▮▮⊢
- OFF status : ⊣⊢ ⊣/⊢ ◇ ⊣[]⊢

* The MCR command is normally displayed as ⊣▮⊢.

The information shown in the table below is displayed.

No.	Function
1)	Sequence program is displayed. A maximum of 11 contact points is displayed in one line of a ladder; for 12 contact points or more, move to the next line. When [Comment Display] is specified, comments are also displayed. For the method of displaying comments, see the following: ☞ Subsection 3.5.3 Switching comment/no-comment display.
2)	A maximum of eight devices is displayed for the word device current value, timer and counter current value (upper row), and set value (lower row). When the set value is an indirect specification, the value of the indirectly specified device is displayed. To switch between decimal and hexadecimal for the displayed value, see the following: ☞ Subsection 3.5.2 Display switching of decimal numbers/hexadecimal numbers.
3)	The current status of monitoring local devices is displayed. "*" blinks just to the right of the local device monitor status display during communicating with a PLC CPU. Nothing is displayed without monitoring. • Auto setting(program names). : A local device is monitored. (The active program name is displayed.) • Local device monitor not executed. : A local device is not monitored. • Local device monitor is not supported. : The PLC CPU being used is inapplicable to the local device. For switching the local device monitor between execution and non-execution states, refer to the following. ☞ This section (3)

No.	Function
4)	Display the keys used with the operation on the ladder monitor screen shown in (b) (Touch input).
5)	The Ch No., the network No., the station No. and CPU No. are displayed. (Only when the MELSEC-Q ladder monitor function is executed.)
6)	The drive is displayed.
7)	The file name of the PLC program is displayed.
8)	The total number of steps in the current monitor PLC program is displayed.

(b) Key functions (when the MELSEC-Q/QnA ladder monitor is executed)

No.	Function
Exit	Returns the screen to the one displayed when the ladder monitor was activated.
PLCRD.	Switches the screen to the PLC reading screen to read from the controller the sequence program to be monitored. For further information about PLC reading, see the following: ☞ Subsection 3.3.3 Display
Mon.	Starts monitoring the displayed sequence program.
Menu	Displays the Menu window for ladder monitor (☞ This section (2)).
← →	When the number of devices whose present and set values are within the display range shown in 2) on the preceding page is nine or more, the devices to be displayed are switched.
↑ ↓	Scroll the information upward and downward by a ladder block.
↵	Scrolls the information downward by a screen. In search operation, a search is continuously performed under the same conditions.
Sea. Back	Displays back past device/contact point/coil searches or touch searches by one.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, see the following: ☞ Subsection 3.4.2 Hard copy output
Cancel Print	The operation of this key is invalid.
JUMP↑ JUMP↓	Jump the information upward and downward by ten ladder blocks.
List	Displays the program list window (☞ This section (3))

Point

About the Sea. Back key (Only when the MELSEC-Q/QnA ladder monitor is executed.)

(1) Continuous device search by ⏎ key

Immediately after the Sea. Back key has been pressed to go back in the history, a continuous device search using the ⏎ key cannot be executed.

(2) Number of histories that can be gone back

Using the Sea. Back key, you can go back into the history up to 100 ladders.

(3) Clearing search history
When any of the following operations is performed, the search history is cleared to return to the normal ladder display.

- When the ↑ ↓ key is touched.
  (When a single ladder block takes up more than one screen, scrolling can be made within the block.)
- When the JUMP↑ JUMP↓ key is touched.
- When a step search, END search or defect search is executed.
- When a comment display is changed.
- When a new file is read by touching PLCRD. .

(4) Returning search results during searching in multiple sequence programs
(a) Displaying search results

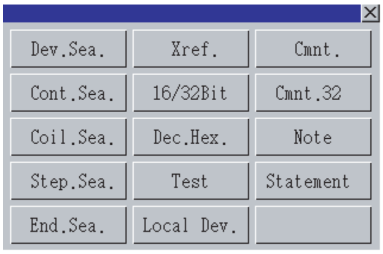
For searching in multiple sequence programs, the GOT can display search results of the previously searched program by touching the Sea. Back key.
The GOT cannot display search results of multiple programs on one screen.
When programs are switched, the currently displayed search results of the program disappear from the screen.

(b) When searching program is deleted

For returning to the search results of the previously searched program by touching the Sea. Back key during searching in multiple sequence programs, the touch operation is canceled when the previously searched program is deleted.

(3) Menu window for the ladder monitor

(a) Display screen

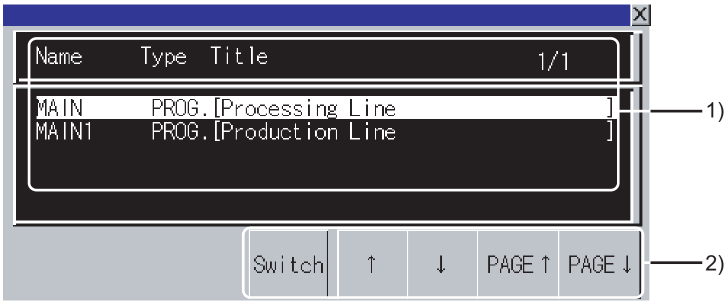


(b) Key functions

Key		Function
Search operation	Dev.Sea.	Displays the ladder block containing the specified device. ☞ Subsection 3.6.1 Device search
	Cont.Sea	Displays the ladder block containing the specified device. ☞ Subsection 3.6.2 Contact point search
	Coil.Sea.	Displays the ladder block containing the specified coil. ☞ Subsection 3.6.3 Coil search
	Step.Sea	Displays the ladder block containing the specified step number. ☞ Subsection 3.6.4 Step search
	End.Sea.	Displays the last ladder block of the sequence program. ☞ Subsection 3.6.5 Ladder end search
	Xref.	Searches the ladder blocks for the status of continuity/non-continuity of the contact point that turned on or off the coil on the sequence program. ☞ Subsection 3.6.6 Defect search
Display format switching	16/32Bit	Switches the word device and timer/counter values displayed on the ladder monitor screen to the 16-bit (one-word) or 32-bit (two-word) module. ☞ Subsection 3.5.1 Display switching of 16-bit (one-word)/32-bit (two-word) modules
	Dec.Hex.	Switches the word device and timer/counter values displayed on the ladder monitor screen to decimal or hexadecimal numbers. ☞ Subsection 3.5.2 Display switching of decimal numbers/hexadecimal numbers
	Cmnt.	Switches whether to display the comments added to the word and bit devices displayed on the ladder monitor screen. ☞ Subsection 3.5.3 Switching comment/no-comment display
	Cmnt.32	Displays the 32 characters of the comments to the word and bit devices displayed on the ladder monitor screen. For further information, see ☞ Subsection 3.5.4 Displaying 32 characters of comments This key is not displayed when the MELSEC-A and MELSEC-FX ladder monitor.
	Note	Switches whether to display integrated notes on the sequence program. Peripheral notes are represented by *. ☞ Subsection 3.5.5 Displaying notes This key is not displayed when the MELSEC-A and MELSEC-FX ladder monitor.
	Statement	Switches whether to display integrated statements on the sequence program. Peripheral statements are represented by *. ☞ Subsection 3.5.6 Displaying statements This key is not displayed when the MELSEC-A and MELSEC-FX ladder monitor.
Test operation	TEST	Changes device values on the screen when the ladder monitor is executed. For further information, see the following: ☞ Section 3.7 Test Operation
Local device monitor	Local Dev.	Switches the local device monitor between execution and non-execution states. ☞ Section 3.8 Local Device Monitor The key is not displayed with the MELSEC-QnA ladder monitor.

(4) Program list window

(a) Display screen



```
Name      Type  Title                          1/1
MAIN       PROG.[Processing Line              ]
MAIN1      PROG.[Production Line              ]
```

The following table shows the display details.

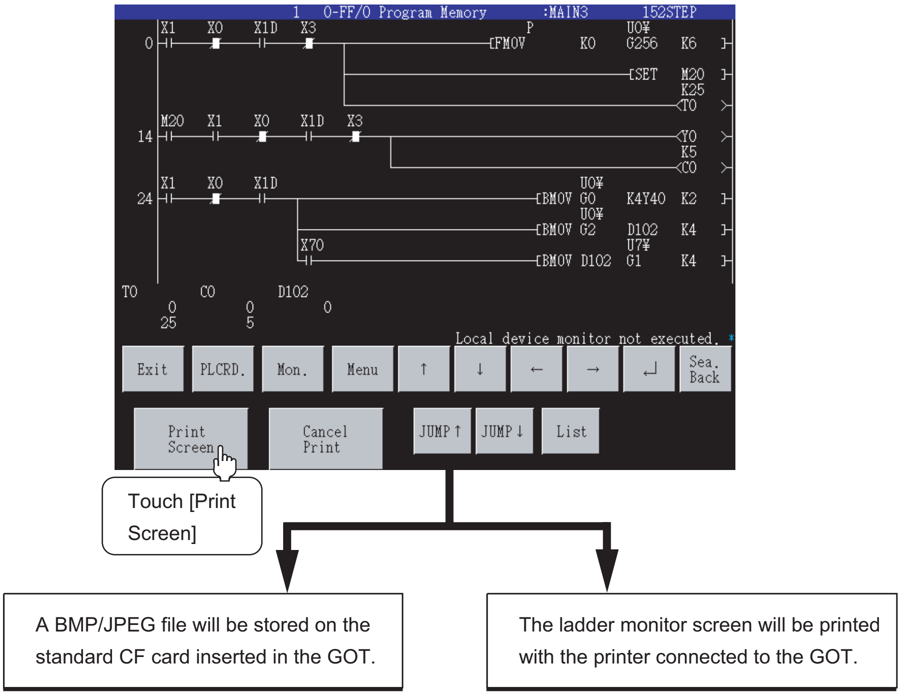
No.	Function
1)	Displays saved sequence program name.
2)	Displays the keys used in the program list window's operation. (Touch input) Besides key touch, a program name can be selected by touching the program name directly.

(b) Key functions

Key	Function
Switch	Switches to the selected ladder monitor screen.
↑ ↓	Scrolls the display upward or downward by a file.
JUMP↑ JUMP↓	Scrolls the display upward or downward by a page.

3.4.2 Hard copy output

This section describes how to store a ladder monitor screen to the memory card in BMP/JPEG file format or print it with a printer.


1 0-FF/0 Program Memory :MAIN3 152STEP
Local device monitor not executed.
Exit
PLCRD.
Mon.
Menu
↑
↓
←
→
↵
Sea. Back
Print Screen
Cancel Print
JUMP↑
JUMP↓
List

Touch [Print Screen]

A BMP/JPEG file will be stored on the standard CF card inserted in the GOT.

The ladder monitor screen will be printed with the printer connected to the GOT.

Point

- Install the extended function OS (Printer) to the GOT when printing a ladder monitor screen.
- The output target (memory card/printer) of hard copy can be set in Hard Copy of GT Designer2.
  For details of hard copy setting, refer to the following manuals.

  ☞ GT16 User's Manual (Basic Utility) (Chapter 6 DATA CONTROL)
  GT15 User's Manual (Chapter 13 FILE DISPLAY AND COPY)
  GT Designer2 Version□ Screen Design Manual (Section 13.2 Hard Copy)
- When outputting a hard copy, the display can be inverted between white and black.
  For invert colors setting, refer to the following manual.

  ☞ GT Designer2 Version□ Screen Design Manual (Section 13.2 Hard Copy)

3.5 Switching the Display Format

You can switch the display format (16-bit (one-word) module/32-bit (two word) module or decimal number/ hexadecimal number) of word device and timer/counter values displayed on the ladder monitor screen, and whether to display the comments to the target devices.

3.5.1 Display switching of 16-bit (one-word)/32-bit (two-word) modules

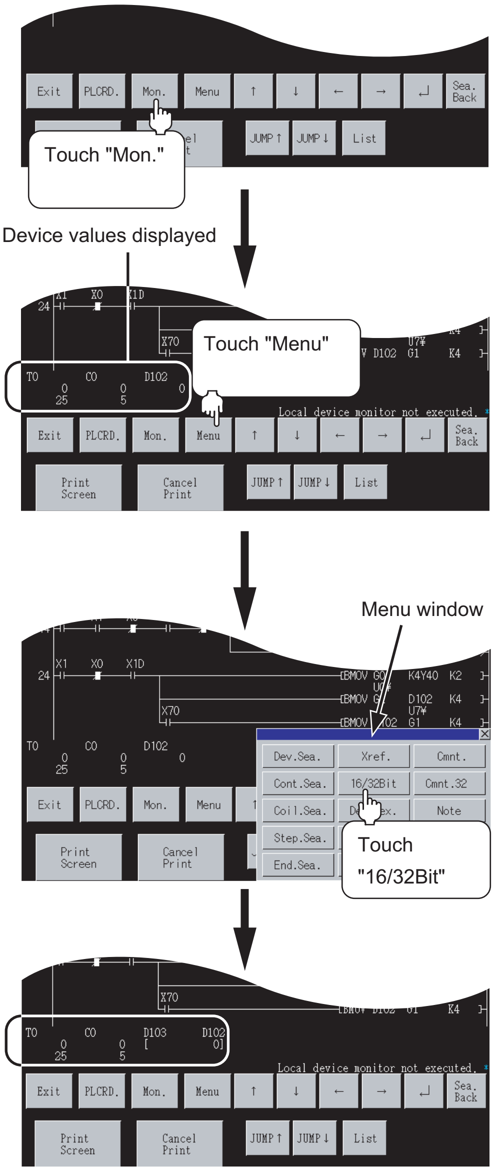
During monitoring, the present values of word devices (except timers and counters) are displayed in the 16-bit or 32-bit module. These modules switch alternately each time you press the 16/32Bit key.

Point

Displaying timers and counters

You cannot switch the 16-bit (one-word) or 32-bit (two-word) module with regard to the present and set values of timers and counters. The GOT automatically selects to display them in the 16-bit (one-word) or 32-bit (two-word) module.

(Operation example: Switch 16-bit (one-word) module display to 32-bit (two-word) module display.)



1. Touch Mon. .

2. Touch Menu .

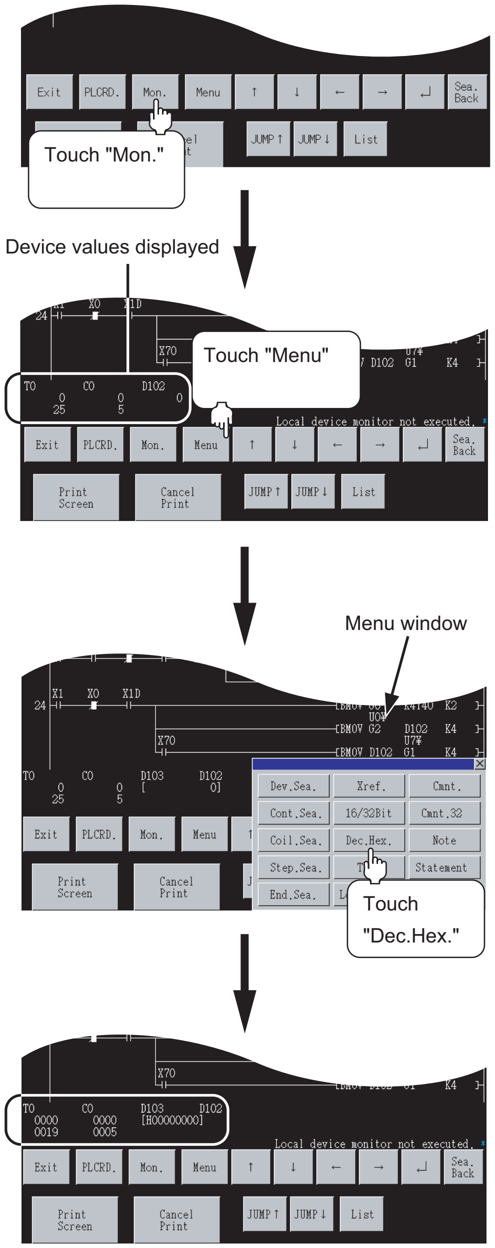
3. Touch 16/32Bit .

4. The word devices are displayed in the 32-bit (two-word) module.

3.5.2 Display switching of decimal numbers/hexadecimal numbers

During monitoring, the present values of word devices and the present values (upper values) and set values (lower values) of timers/counters are displayed in decimal or hexadecimal numbers. The display formats switch alternately each time you press the Dec.Hex. key.

(Example of operation: Switching the decimal display to the hexadecimal display.)



1. Touch Mon. .

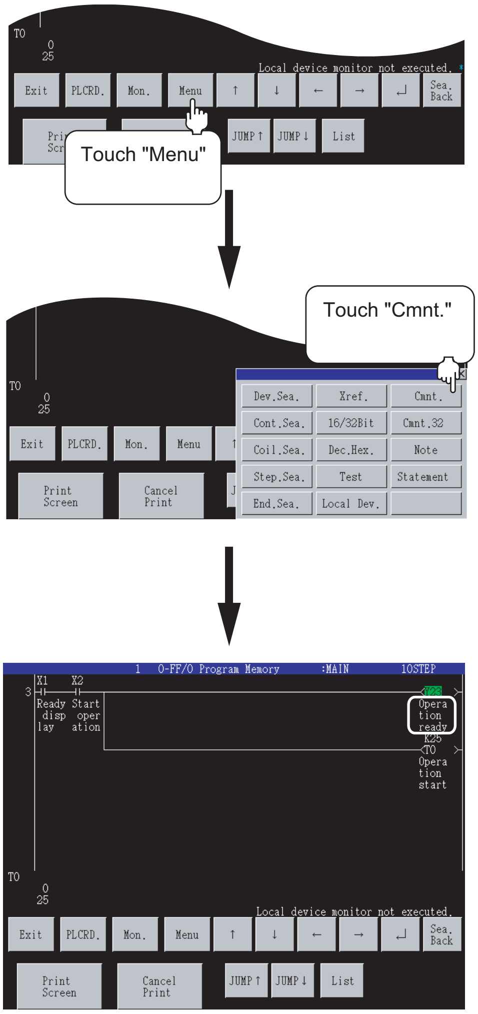
2. Touch Menu .

3. Touch Dec.Hex. .

4. The values are displayed in hexadecimal numbers.

3.5.3 Switching comment/no-comment display

Comments written in the target controller are displayed. Comment display and no-comment display switch alternately each time you press the Cmnt. key.



1. Touch Menu .

2. Touch Cmnt. .

3. Comments are displayed.
   Each comment is displayed in five characters on three lines.

Point

Priority of comment display

(1) For the MELSEC-Q/QnA ladder monitor
Either of Common Comment or Comment by program can be selected.
For the setting of comment display priority, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (4.2.1 Q/L/QnA ladder monitor setting)
GT15 User's Manual (11.7 Q/QnA Ladder Monitor)

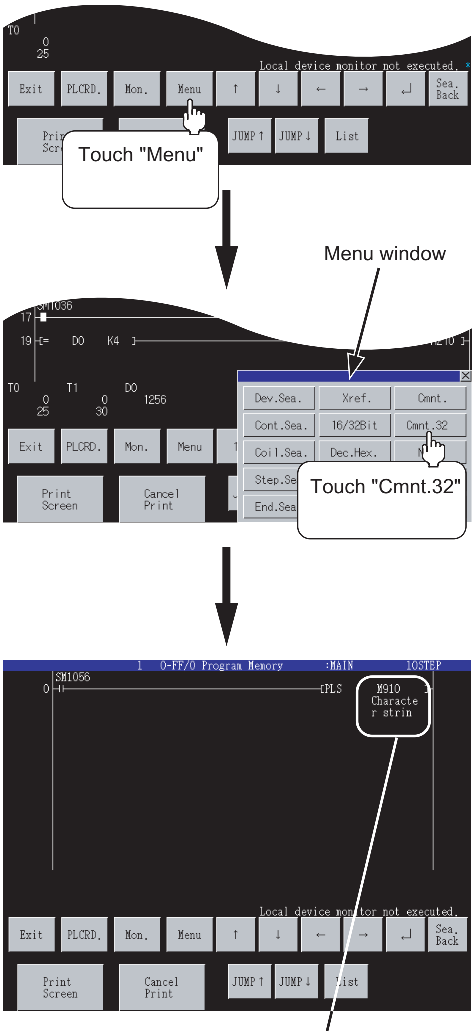
(2) For the MELSEC-A ladder monitor
The comment display priority is as follows.

Extension comment > Comment in Kanji or kana

3.5.4 Displaying 32 characters of comments

Comments can be displayed in 32 characters when the MELSEC-Q/QnA ladder monitor is executed. They are not displayed when the MELSEC-A/FX ladder monitor is executed.

(1) Procedure for displaying 32 characters of comments



Display example of 32 characters of comment
A comment is displayed in eight characters on four lines.

1 Touch Menu.

2 Touch Cmnt.32.

3 Comments are displayed in 32 characters. A comment is displayed in eight characters on four lines.

(2) Comment display when the MELSEC-Q/QnA ladder monitor is executed

Comments are displayed as shown below when you touch each of the Cmnt. and Cmnt.32 keys.

Present comment display status	Key operation	Comment display after key operation
No comments displayed	Touch the Cmnt. key.	Comments displayed
	Touch the Cmnt.32 key.	32 characters of comments displayed
Comments displayed	Touch the Cmnt. key.	No comments displayed
	Touch the Cmnt.32 key.	32 characters of comments displayed
32 characters of comments displayed	Touch the Cmnt. key.	Comments displayed
	Cmnt.32 key.	No 32 characters of comments displayed

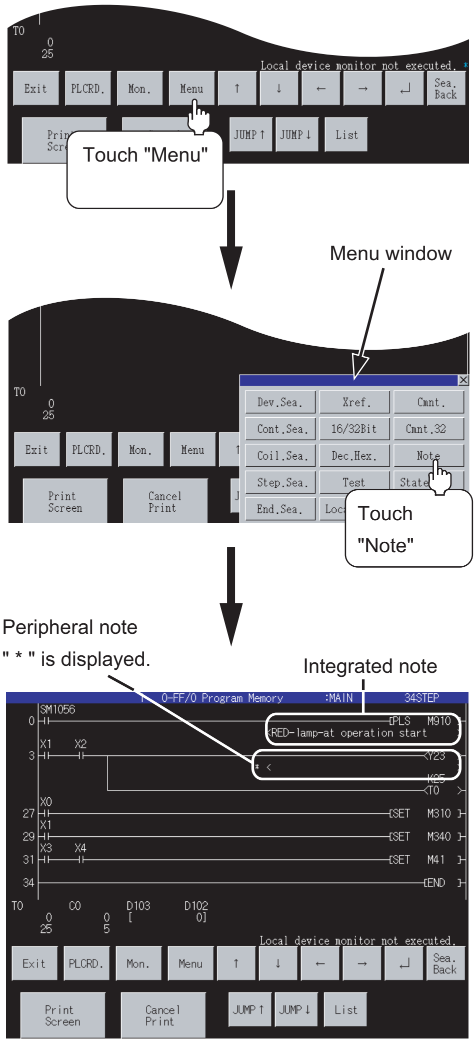
(3) Numbers of lines and contact points that can be displayed when the MELSEC-Q/QnA ladder monitor is executed

The table below shows the numbers of lines and contact points that can be displayed in the statuses of no comments displayed, comments displayed, and 32 characters of comments displayed.

GOT	No comments displayed		Comments displayed		32 characters of comments displayed	
	Number of lines that can be displayed	Maximum number of contact points displayed	Number of lines displayed	Maximum number of contact points displayed	Number of lines displayed	Maximum number of contact points displayed
GT1695M-X GT1685M-S GT1595-X GT1585V-S GT1585-S GT1575V-S GT1575-S	15	11	6	11	5	6
GT1575-V GT1575-VN GT1572-VN GT1565-V GT1562-VN	8	11	3	11	2	6

3.5.5 Displaying notes

Notes in the sequence program can be displayed when the MELSEC-Q/QnA ladder monitor is executed.
This subsection describes the operation procedure for displaying notes.
Notes cannot be displayed when the MELSEC-A/FX ladder monitor is executed.
Peripheral notes are represented by "*."



1. Touch Menu .

2. Touch Note .

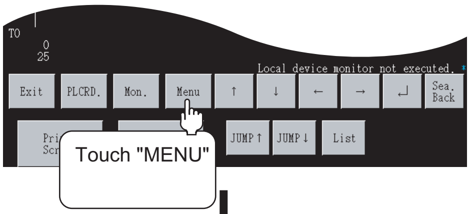
3. Peripheral/Integrated notes are displayed.

3.5.6 Displaying statements

Statements in the sequence program can be displayed when the MELSEC-Q/QnA ladder monitor is executed. This subsection describes the operation procedure for displaying statements.
Statements cannot be displayed when the MELSEC-A/FX ladder monitor is executed.
The following statements cannot be displayed and are represented by "*."

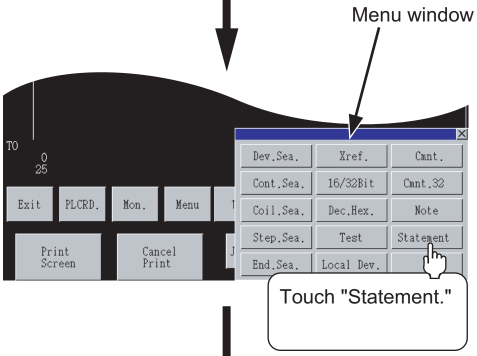
- Peripheral statements
- I statements (peripheral) and P statements (peripheral)

1. Touch Menu .



Touch "MENU"

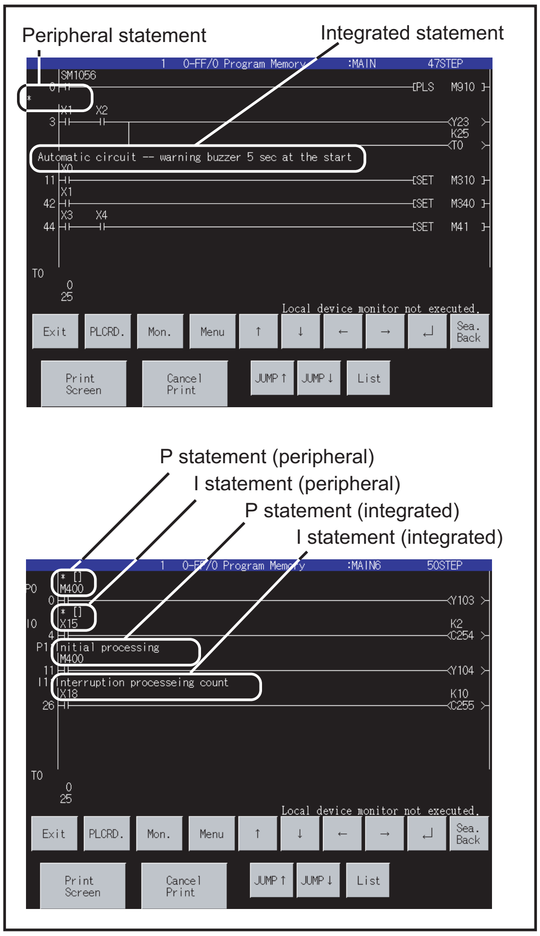
2. Touch Statement .



Touch "Statement."

3. Peripheral/Integrated statements are displayed.
Peripheral statements are represented by "*."

4. I/P statements are displayed.
I statements (peripheral) and P statements (peripheral) are represented by "*."

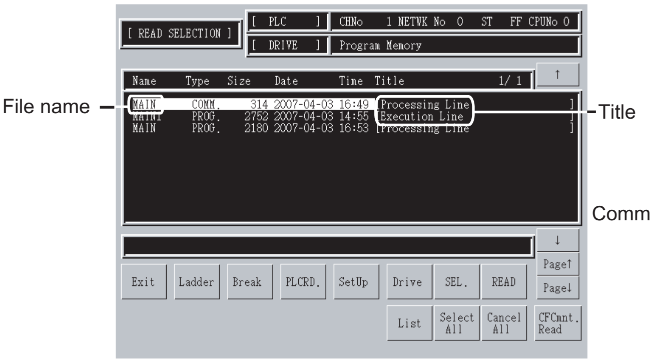


3.5.7 Language switching of the sequence program (MELSEC-Q/QnA ladder monitor)

In the MELSEC-Q/QnA ladder monitor, language switching (Japanese/Korean) is available for displaying the following items of a sequence program.
(To switch the language, register the following items with the language (Japanese/Korean) used for the PLC READING DATA DISPLAY. To display Korean, for example, register the following items with Korean on GX Developer.)

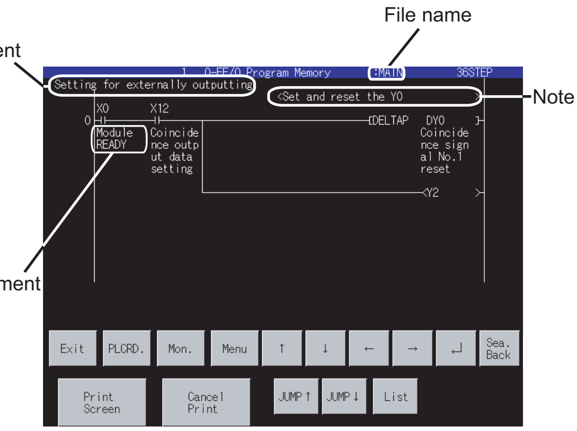
- File name
- Title
- Comment
- Note
- Statement

Items other than the above (such as menu) are displayed with the language set on [GOT setup].



```
[ READ SELECTION ]  [  PLC   ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                    [  DRIVE ]  Program Memory
Name      Type   Size    Date        Time  Title                     1/ 1
MAIN      COMM.    314 2007-04-03 16:49 [Processing Line                  ]
MAIN1     PROG.   2752 2007-04-03 14:55 [Execution Line                   ]
MAIN      PROG.   2180 2007-04-03 16:53 [Processing Line                  ]
```

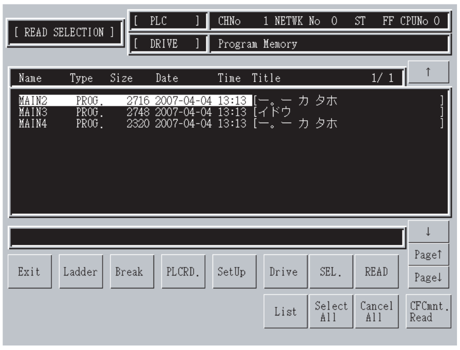
Example) PLC reading screen



Example) Ladder monitor screen

Display procedure for the PLC reading screen
☞ Subsection 3.3.3 2

PLC reading screen

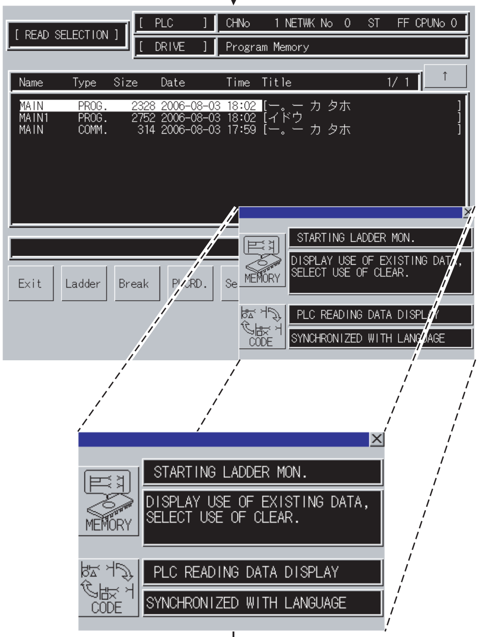


```
[ READ SELECTION ]  [  PLC   ]  CHNo    1 NETWK No  0   ST   FF CPUNo 0
                    [  DRIVE ]  Program Memory
Name      Type   Size    Date        Time  Title                     1/ 1
MAIN2     PROG.   2716 2007-04-04 13:13 [一。ー カ タホ                   ]
MAIN3     PROG.   2748 2007-04-04 13:13 [イドウ                         ]
MAIN4     PROG.   2320 2007-04-04 13:13 [一。ー カ タホ                   ]
```

(Continued to next page)

1 Touch the SetUp key. The setting window appears.

(From previous page)



CHNo 1 NETWK No 0 ST FF CPUNo 0

Program Memory

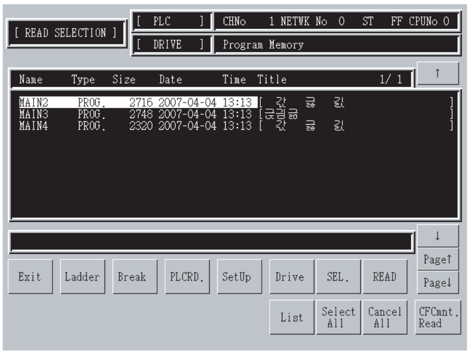
Name	Type	Size	Date	Time	Title 1/ 1
MAIN	PROG.	2328	2006-08-03	18:02	[ー。ー カ タホ]
MAIN1	PROG.	2752	2006-08-03	18:02	[イドウ]
MAIN	COMM.	314	2006-08-03	17:59	[ー。ー カ タホ]

STARTING LADDER MON.

DISPLAY USE OF EXISTING DATA,
SELECT USE OF CLEAR.

PLC READING DATA DISPLAY

SYNCHRONIZED WITH LANGUAGE

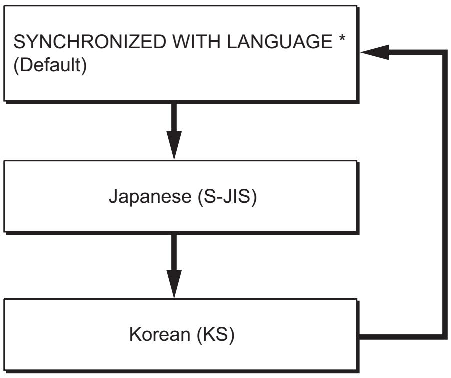


CHNo 1 NETWK No 0 ST FF CPUNo 0

Program Memory

Name	Type	Size	Date	Time	Title 1/ 1
MAIN2	PROG.	2716	2007-04-04	13:13	[갃 긇 깏]
MAIN3	PROG.	2748	2007-04-04	13:13	[귿길긂]
MAIN4	PROG.	2320	2007-04-04	13:13	[갃 긇 깏]

② The setting window appears. Perform the PLC READING DATA DISPLAY.
The settings shown below switch with every touching of the CODE key.



* The language set at [GOT setup] is displayed.

③ After completing the setting, touch the ☒ button to close the setting window.

④ The display is switched.

3.6 Search Operation

This section describes device search, contact point search, coil search, step search, ladder end search, defect search, and touch search.

Point

(1) Searching among multiple programs

Search can be performed to multiple sequence programs read from PLC CPU. For searchable items among multiple programs, refer to the following section.

☞ 3.2 Specifications

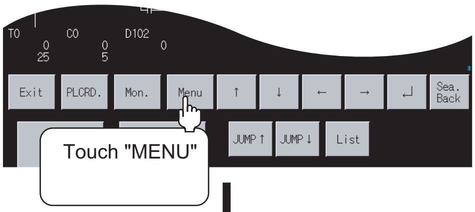
(2) Searching in the specified program (only for the MELSEC-Q/QnA ladder monitor) Search can be automatically performed to a program by specifying the file to be searched with a object such as the Special Function Switch.

☞ 3.3.4 Searching from the monitor screen

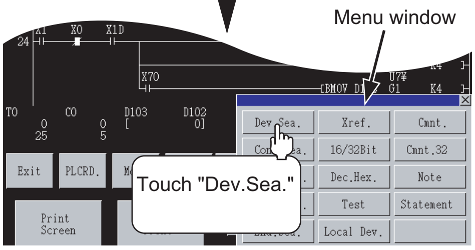
3.6.1 Device search

Device search displays the ladder block that contains a specified device.

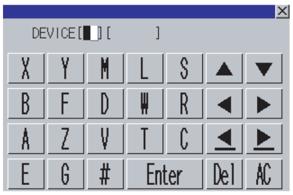
<Operation procedure>



① Touch Menu .



② Touch Dev.Sea. .



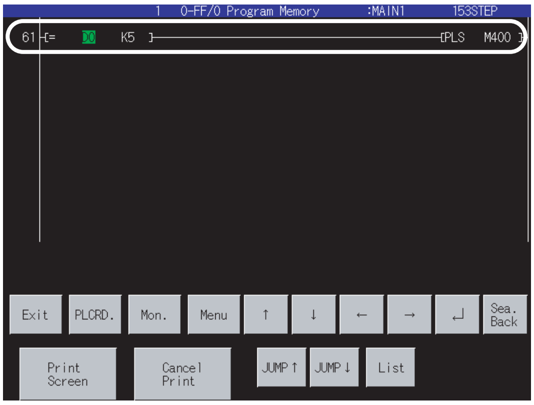
③ Using the ◄ and ► keys, switch the input area, and enter a device name and its number. [*1]
Example: Specify D0.

④ After the device name and its number are entered, touch the Enter key. Input is completed, and the keyboard closes.

*1 The data entered can be corrected with the following keys:

Del key: Used to delete a character of the entered information.

AC key: Used to delete all characters entered.



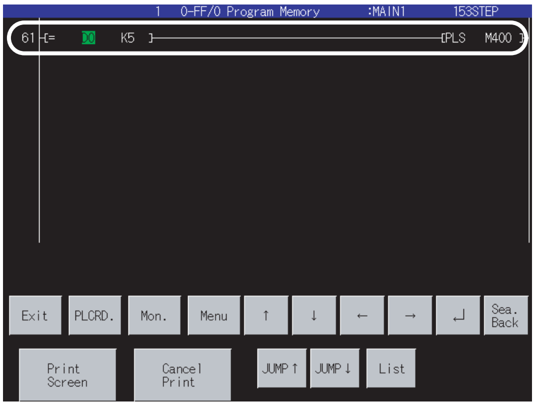
⑤ The ladder block containing the specified device is displayed.
The device is highlighted as shown in the display example below.
(Display example)
D0

Point

(1) Continuous read based on the same device
After a search, a continuous search can be performed based on the same device by touching ↵ on the screen.
If you touch ↵ another key, the continuous read function will be canceled.

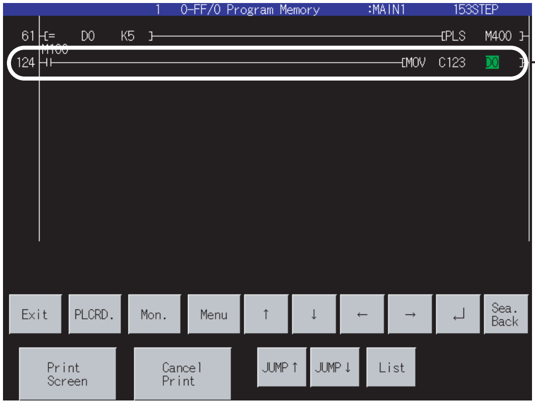
(2) Ladder monitor display after a search
The ladder block containing the searched device is displayed.

Example) 1) When the entered device you want to search is "D0"



```
          1   0-FF/0 Program Memory      :MAIN1      153STEP
61 -[=   D0    K5  ]----------------------------[PLS   M400 ]
```

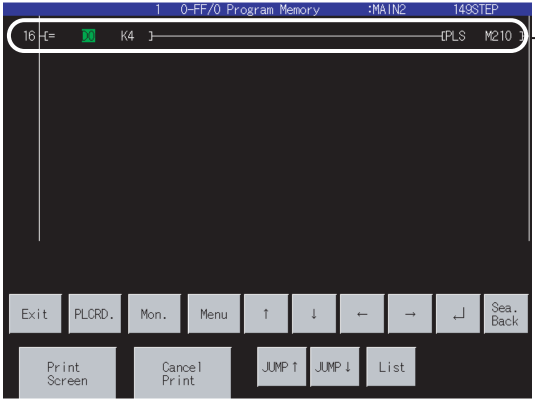
2) When the same search is continued



```
          1   0-FF/0 Program Memory      :MAIN1      153STEP
61 -[=   D0    K5  ]----------------------------[PLS   M400 ]-
    M100
124 -||-------------------------------------[MOV  C123   D0  ]
```

The ladder is displayed on the following line.

When searching multiple files with the MELSEC-Q/QnA ladder monitor, displaying the ladder block of the subsequent sequence file clears the previous display.



```
          1   0-FF/0 Program Memory      :MAIN2      149STEP
16 -[=   D0    K4  ]----------------------------[PLS   M210 ]
```

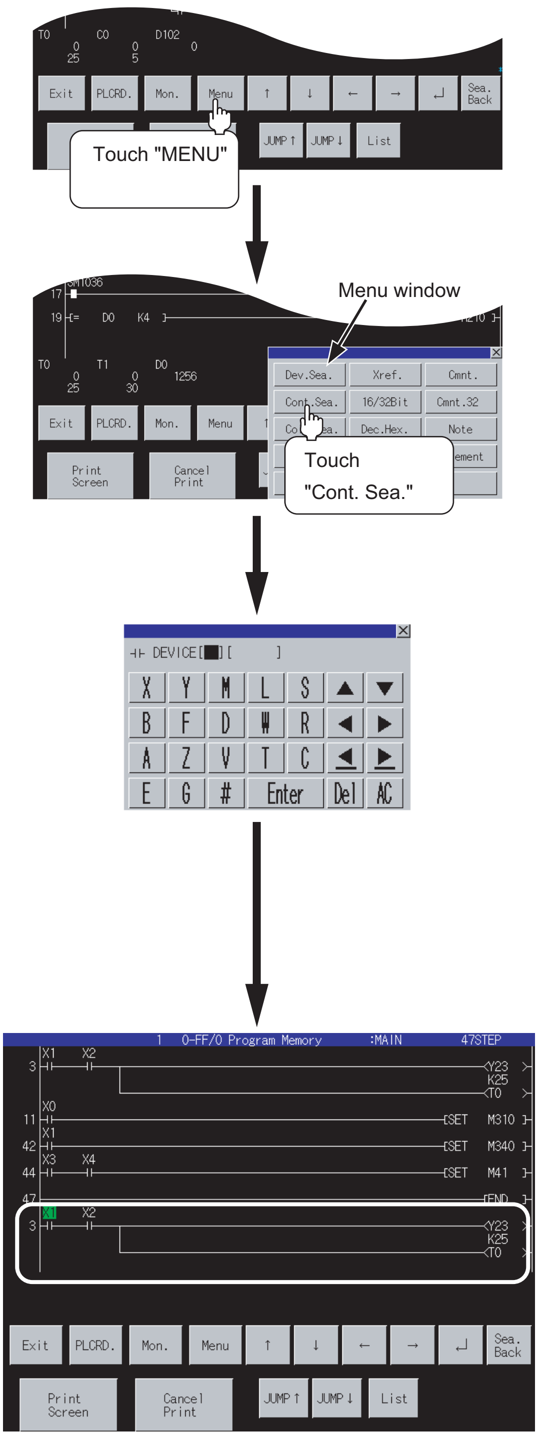
Only the ladder block(s) found in the subsequent sequence file is displayed.

(3) Indirect specification device read
Indirect specification devices (index register (Z)) cannot be specified and read when the MELSEC-Q/QnA ladder monitor is executed.

3.6.2 Contact point search

Contact search displays the ladder block that contains a specified contact point.

<Operation procedure>



1. Touch Menu.

2. Touch Cont.Sea.

3. Using the ◀ and ▶ keys, switch the input area, and enter a device name and its number. *1
   Example: Specify X1.

4. After the device name and its number are entered, touch the Enter key. Input is completed, and the keyboard closes.

   *1 The data entered can be corrected with the following keys:

   Del key: Used to delete a character of the entered information.

   AC key: Used to delete all characters entered.

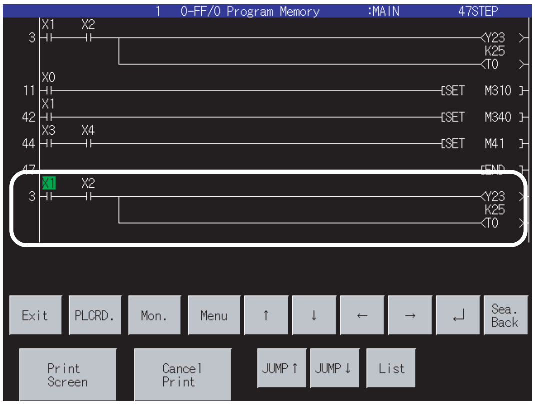
5. The ladder block containing the specified contact point is displayed.
   The contact point is highlighted as shown in the display example below.
   (Display example)
   X1

Point

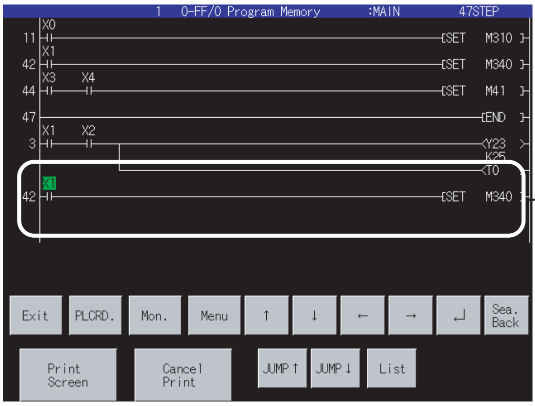
(1) Continuous read based on the same contact point
After a search, a continuous search can be performed based on the same contact point by touching ↵ on the screen.
If you touch another ↵ key, the continuous read function will be canceled.

(2) Ladder monitor display after a search
The ladder block containing the searched contact point is displayed.

Example) 1) When the entered contact point you want to search is "X1"

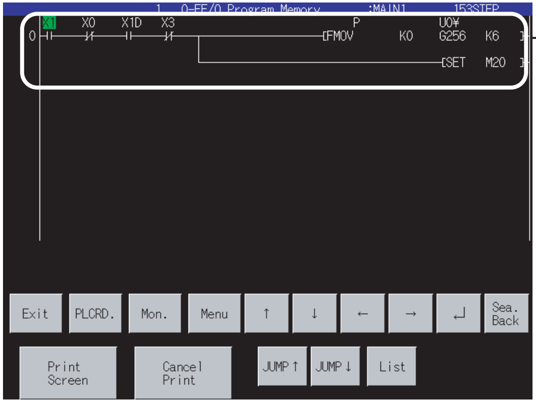


2) When the same search is continued



The ladder is displayed on the following line.

When searching multiple files with the MELSEC-Q/QnA ladder monitor, displaying the ladder block of the subsequent sequence file clears the previous display.

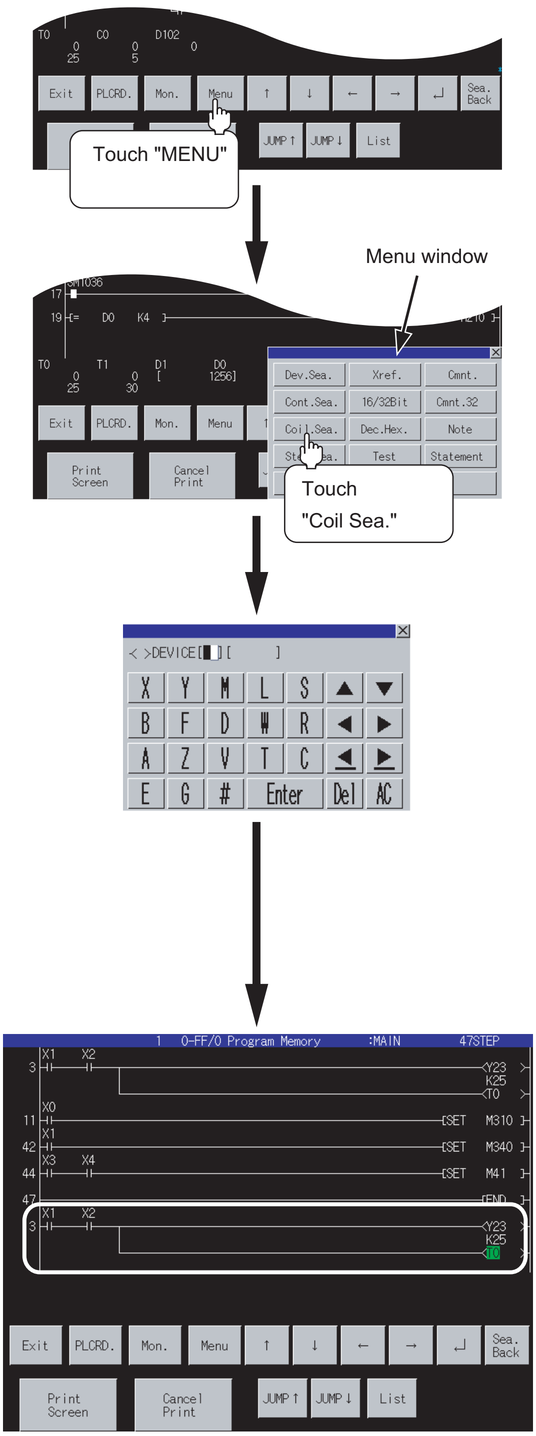


Only the ladder block(s) found in the subsequent sequence file is displayed.

3.6.3 Coil search

Coil search displays the ladder block that contains a specified coil.

<Operation procedure>



1 Touch Menu .

2 Touch Coil.Sea. .

3 Using the ◀ and ▶ keys, switch the input area, and Enter a device name and its number.*1
Example: Specify T0.

4 After the device name and its number are entered, touch the Enter key. Input is completed, and the keyboard closes.

*1 The data entered can be corrected with the following keys:

Del key: Used to delete a character of the entered information.

AC key: Used to delete all characters entered.

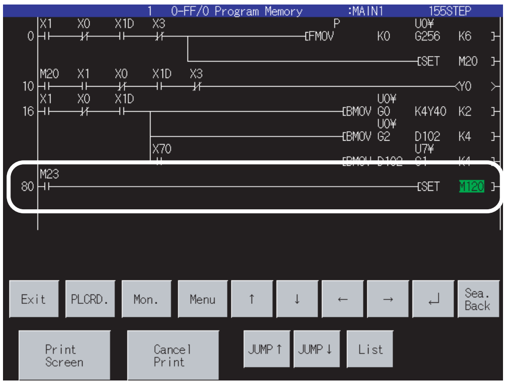
5 The ladder block containing the specified coil is displayed.
The coil name is highlighted as shown in the display example below.
(Display example)
T0

Point

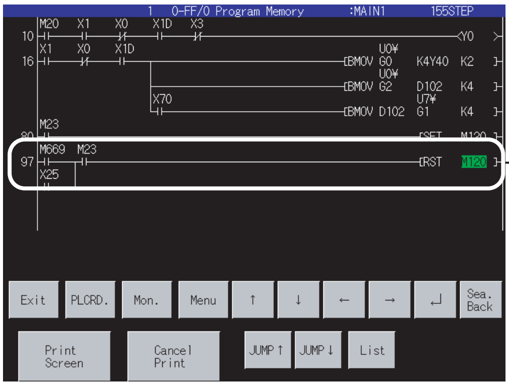
(1) Continuous read based on the same coil
After a search, a continuous search can be performed based on the same coil by touching ↵ on the screen.
↵ If you touch another key, the continuous read function will be canceled.

(2) Ladder monitor display after a search
The ladder block containing the searched coil is displayed.

Example) 1) When the entered coil you want to search is "M120"

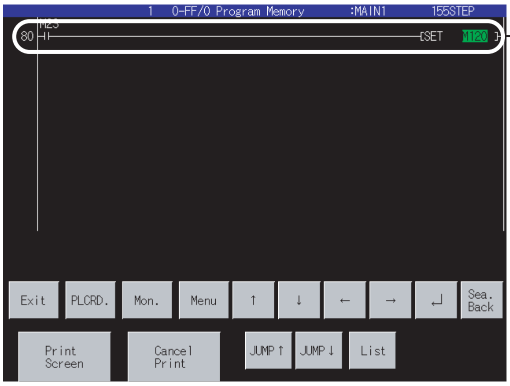

1 0-FF/0 Program Memory :MAIN1 155STEP
0 X1 X0 X1D X3 P FMOV K0 U0¥ G256 K6
SET M120
10 M20 X1 X0 X1D X3 Y0
16 X1 X0 X1D BMOV U0¥ G0 K4Y40 K2
BMOV U0¥ G2 D102 K4
X70 BMOV D102 U7¥ G1 K4
80 M23 SET M120
Exit PLCRD. Mon. Menu ↑ ↓ ← → ↵ Sea. Back
Print Screen Cancel Print JUMP↑ JUMP↓ List

2) When the same search is continued


1 0-FF/0 Program Memory :MAIN1 155STEP
10 M20 X1 X0 X1D X3 Y0
16 X1 X0 X1D BMOV U0¥ G0 K4Y40 K2
BMOV U0¥ G2 D102 K4
X70 BMOV D102 U7¥ G1 K4
80 M23 SET M120
97 M669 M23 RST M120
X25
Exit PLCRD. Mon. Menu ↑ ↓ ← → ↵ Sea. Back
Print Screen Cancel Print JUMP↑ JUMP↓ List

The ladder is displayed on the following line.

When searching multiple files with the MELSEC-Q/QnA ladder monitor, displaying the ladder block of the subsequent sequence file clears the previous display.

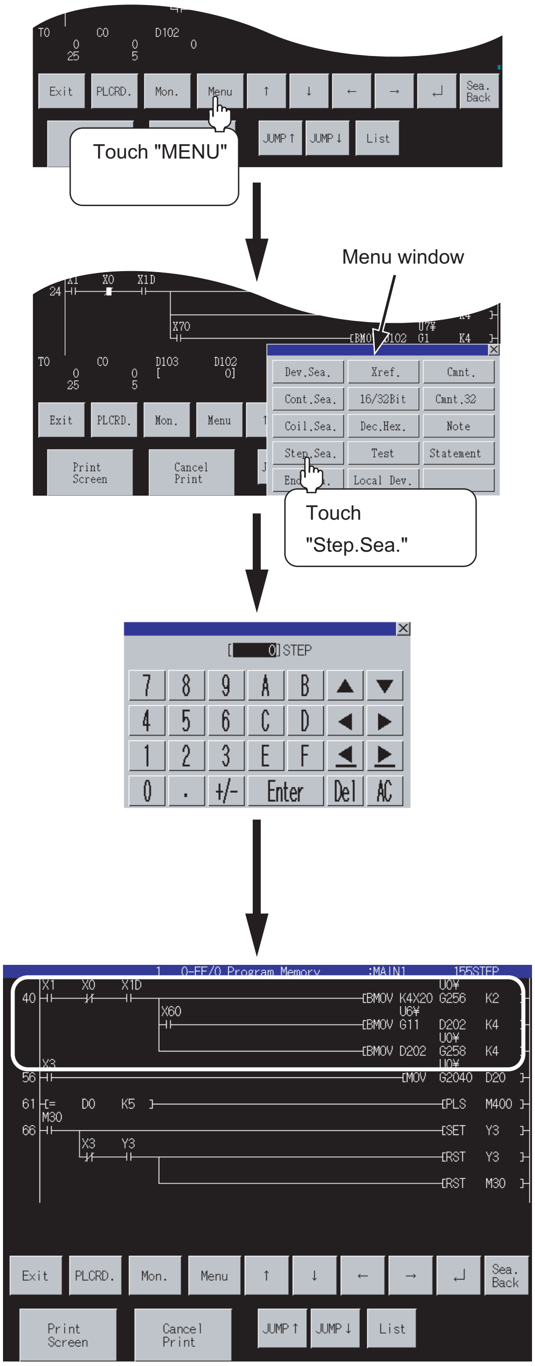

1 0-FF/0 Program Memory :MAIN1 155STEP
80 M23 SET M120
Exit PLCRD. Mon. Menu ↑ ↓ ← → ↵ Sea. Back
Print Screen Cancel Print JUMP↑ JUMP↓ List

Only the ladder block(s) found in the subsequent sequence file is displayed.

3.6.4 Step search

Step search displays the ladder block that contains a specified step number.

<Operation procedure>



1. Touch Menu .

2. Touch Step.Sea. .

3. Enter a step number.*1
Example: Specify step No. 40.

4. After the step number is entered, touch the Enter key. Input is completed, and the keyboard closes.

   *1 The data entered can be corrected with the following keys:

   Del key: Used to delete a character of the entered information.

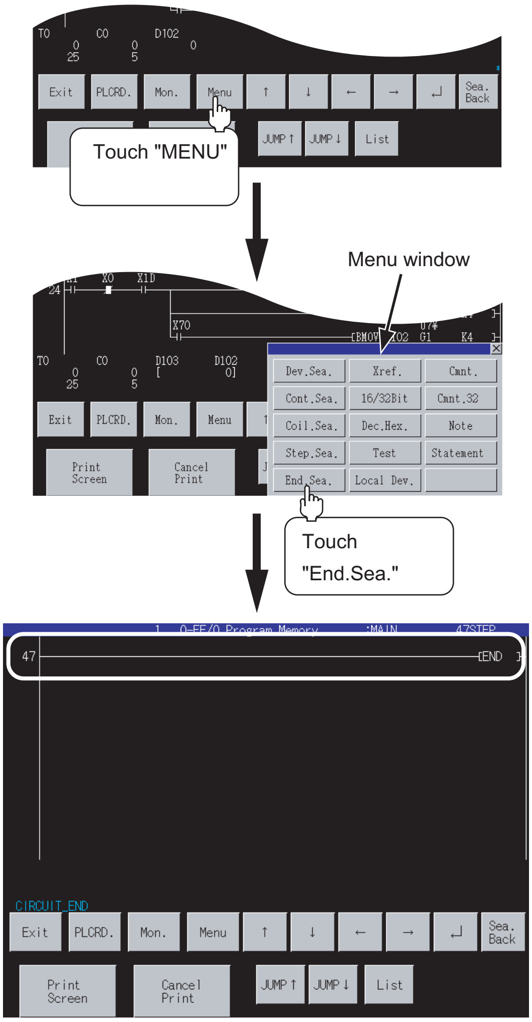
   AC key: Used to delete all characters entered.

5. The ladder block is displayed with the specified step number at the top.
(Display example)
The ladder block of step No. 40 is displayed.

3.6.5 Ladder end search

Ladder end search displays the last ladder block of the sequence program.

<Operation procedure>



1 Touch Menu.

2 Touch End.Sea..

3 The last ladder block of the sequence program is displayed.

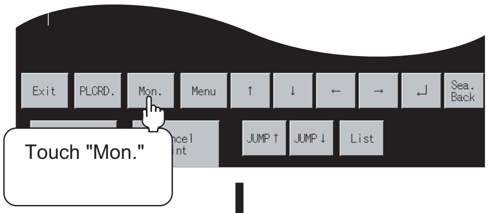
- •MELSEC-Q/QnA ladder monitor
  The ladder block of the end command is displayed.
- •MELSEC-A/FX ladder monitor
  The last ladder block is displayed (the end command is not displayed).

The message "CIRCUIT_END" will be displayed.

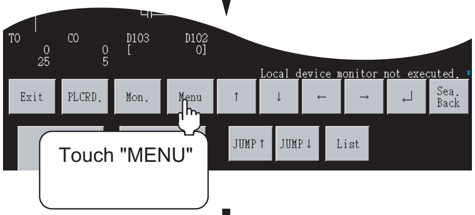
3.6.6 Defect search

Defect search searches the ladder block for the status of conductive/non-conductive of the contact point that turned on or off the coil on the sequence program.

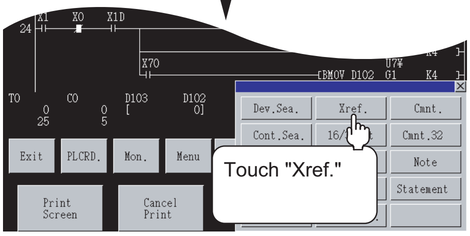
<Operation procedure>



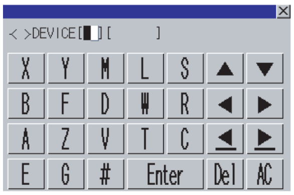
1 Touch Mon. .



2 Touch Menu .



3 Touch Xref. .



4 Select a coil, if necessary.

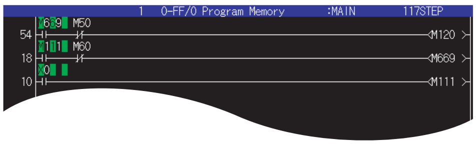
Using the ◀ and ▶ keys, switch the input area, and enter the device name and its number of the selected coil.[*1]
Example: Specify M120.

5 After the device name and its number are entered, touch the Enter key. Input is completed, and the keyboard closes.

*1 The data entered can be corrected with the following keys:

Del key: Used to delete a character of the entered information.

AC key: Used to delete all characters entered.



6 A search for the device begins, and the research result is displayed.

To cancel a defect search, touch ESC .
During a defect search, all key operations except ESC and Exit are invalid.

Point

Operation before a defect search

In the case of the MELSEC-A/FX ladder monitor, touch Mon. before starting a defect search.

If you touch Xref. without touching Mon. , the message "NO MONITORING" will be displayed.

(1) Search result

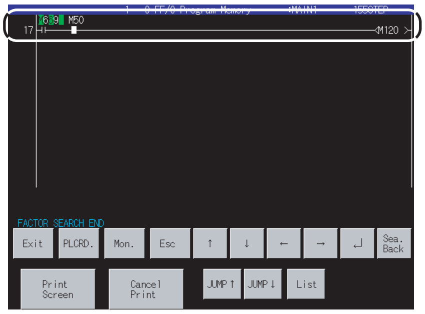
Search results reveal any occurrences of the search device. They are useful when you determine whether a defective device is conductive or nonconductive.

If any occurrence of the search device is not found as a result of the search, a message appears on-screen, telling that "PROGRAM NOT FOUND."

(a) When an occurrence of the search device is found:

If an occurrence of the search device is found as a result of the search, the search for another defective device will automatically be started.

Example: After searching for Device M120 that is in the OFF state, "M669" will be displayed as a device that caused a failure.



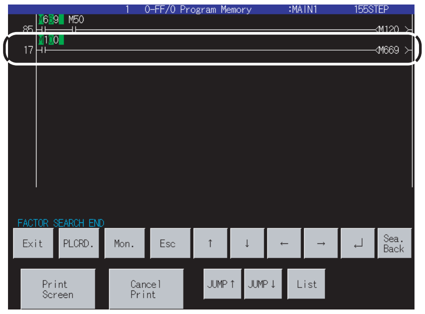
FACTOR SEARCH END

After searching for Coil M120 that is in the OFF state, "M669" is displayed as a device that is not conductive.

Example: M669

* After searching for a device that is in the ON state, a device that is conductive is displayed. The entire field of the device name and number is highlighted on-screen.

Example: M669



FACTOR SEARCH END

After searching for Coil M669 that is in the OFF state, "M111" is displayed as a device that is not conductive.

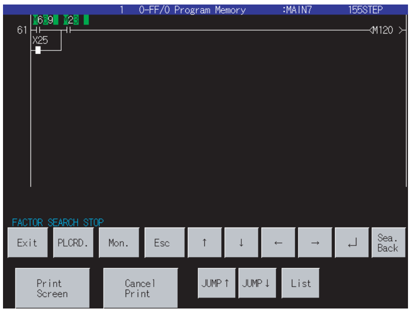
Example: M111

The next defect is automatically searched.

When there is no more defect, the "FACTOR SEARCH STOP" will be displayed, and the defect search will end.

(b) When two occurrences of the search device are found.
If there are two or more devices that caused a failure, the "the defect search is interrupted" message appears and the defect search is terminated.

Example: After searching for Device M120 that is in the OFF state, "M669" and "M23" will be displayed as devices that caused a failure.



1 0-FF/0 Program Memory :MAIN7 155STEP

FACTOR SEARCH STOP

After searching for coil M120 that is in the OFF state, “M669“ and “M23” are displayed as devices that are not conductive.

Example: M669 , M23

* After searching for a device that is in the ON state, devices that are conductive are displayed. The entire field of the device name and number is highlighted on-screen.B

Example: M669 , M23

When resuming the defect search, specify either of the found contacts M669 and X0025. After touching ESC to change it into Menu , execute the defect search.

Point

Precautions for making defect search

(1) When the contact point searched is a b contact point
If a B-contact is found defective as a result of the defect search, a search for the cause of the ON/OFF state will be automatically switched.

(2) Screen display after a defect search
After the end of the defect search, the GOT stops monitor and displays the search result.
Hence, the monitor screen of the GOT shows the result retained during the defect search.

(3) Display of defect search results
While the search result is displayed after the end of the defect search, the searched ladder can be displayed backwards by pressing ↑ ↓ (single ladder block scroll) or JUMP↑ JUMP↓ (10 ladder block jump (available for only the MELSEC-Q/Qn ladder monitor)).
Up to 100 ladders can be displayed on-screen. The following messages will appear at the start or the end of the search results.

- When viewing the start of search results: "This is the start of search results."
- When viewing the end of the search results: "This is the end of search results."

(4) Display of contact point and coil ON/OFF
1) During automatic search execution

- MELSEC-A/FX ladder monitor: Displays ON/OFF in the entire ladder displayed on the screen.
- MELSEC-Q/QnA ladder monitor: Displays ON/OFF in the ladder displayed last.

2) During search result display
The ON/OFF of the ladder block searched last and the monitor results of word devices are displayed.

(5) Switching the Menu / ESC key switch

When the defect serch starts, Menu change into ESC .

Touch ESC during the defect search to stop the defect search and display the search result.

Further, touch ESC to change ESC into Menu and display the normal ladder.

(6) Screen display during a defect search

1) If the display data exceeds one screen during the defect search
   The screen is scrolled automatically.
2) If the ladder step searched during the defect search exceeds one screen
   - MELSEC-A/FX ladder monitor: The screen is scrolled automatically to the last line of the ladder step.
   - MELSEC-Q/QnA ladder monitor: The screen is not scrolled automatically to display the ladder step.

(7) Screen display when you touch the ESC key

Touching ESC can stop the defect search. Search results are continuously displayed on-screen until ESC is touched.
The ladder step searched last is displayed as described below.

- MELSEC-A/FX ladder monitor: ON/OFF display is not provided.
- MELSEC-Q/QnA ladder monitor: ON/OFF display is provided.

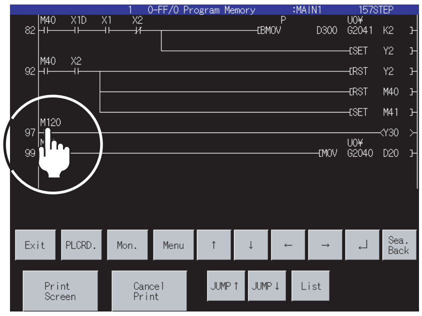
3.6.7 Touch search

Touch search is a function to search the coil of the same device by touching a contact point displayed on the ladder monitor screen, or to search the contact point of the same device by touching a coil.
You can search sequence program from the first to last steps.
This function is valid whenever a ladder monitor is normally displayed.

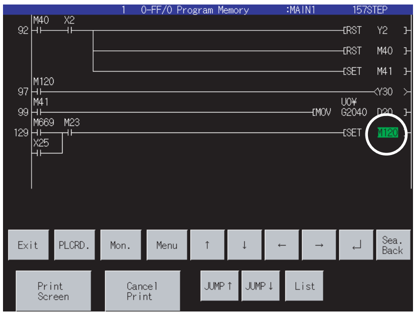
Point

- Touch search is not available when the MELSEC-A/FX ladder monitor is executed.
- Touch search is not available for commands or word devices except contact points and coils.
- Touch search is not available when defect search is used.
  (To use touch search, touch ESC to deactivate defect search.)

(1) Contact point search → coil search

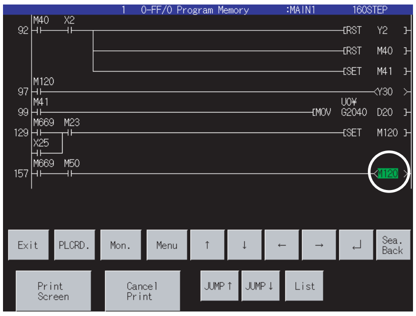


① Touch a contact point on the screen.
Touch example: M120



② The coil of the same device in which the contact point exists is searched, and the ladder block containing the searched coil is added to the ladder blocks displayed.
(The searched device is highlighted.)

Display example: M120

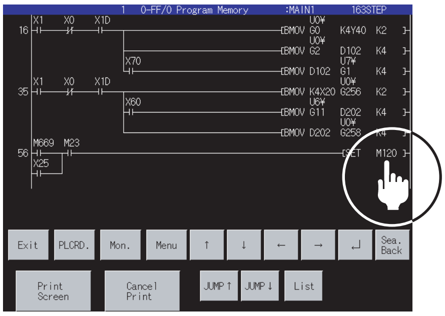


③ You can continuously search the ladder in the downward direction by touching ↵ .

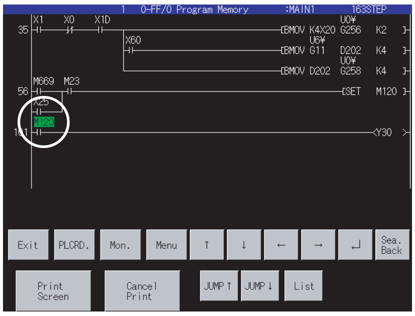
The next coil is displayed.

④ When there is no more contact point of the same device in which the touched contact point exists, the message "DEVICE NOT FOUND" will be displayed.

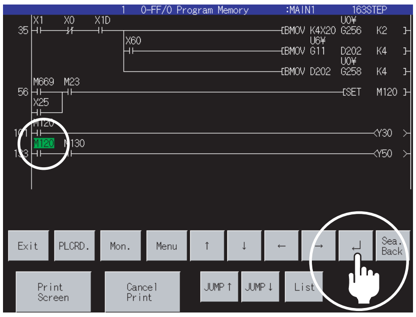
(2) Operation procedure (coil touch → contact point search)



1 Touch a coil on the screen.

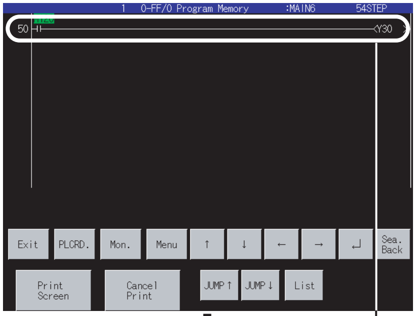


2 The contact point of the same device in which the coil exists is searched, and the ladder block containing the searched contact point is added to the ladder blocks displayed.
(The searched device is highlighted.)



3 You can continuously search the ladder in the downward direction by touching ↵

When searching multiple files with the MELSEC-Q/QnA ladder monitor, displaying the ladder block of the subsequent sequence file clears the previous display.



Only the ladder block(s) found in the subsequent sequence file is displayed.

next contact point is displayed.

4 When there is no more contact point of the same device in which the touched coil exists, the message "DEVICE NOT FOUND" will be displayed.

3.7 Test Operation

You can change device values and turn on and off bit devices on the screen when the ladder monitor is executed. This section describes how to display the test menu screen.
For the procedure for changing device values and turning on and off bit devices, see the following.

☞ Section 2.9 Test Operation

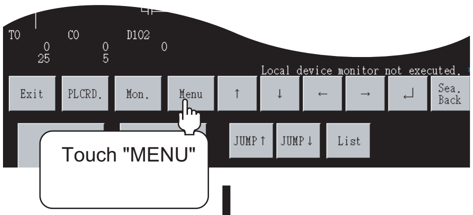
Point

Before test operation

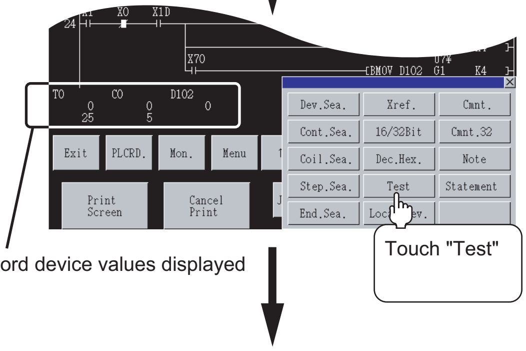
Timer and counter values cannot be changed during MELSEC-FX ladder monitoring.
With the MELSEC-Q/QnA ladder monitor function, the GOT cannot write data to the devices in the QSCPU.

3.7.1 Displaying the test menu screen

(1) Displaying the test menu screen
The procedure for displaying the test menu screen during ladder monitoring is described below.

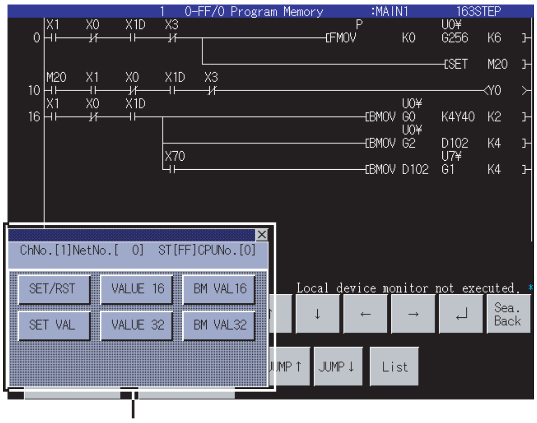


1 Touch Menu.



Word device values displayed

2 Touch TEST.


1 0-FF/0 Program Memory :MAIN1 163STEP
ChNo.[1]NetNo.[0] ST[FF]CPUNo.[0]
SET/RST
VALUE 16
BM VAL16
SET VAL
VALUE 32
BM VAL32
Local device monitor not executed.
Sea. Back
JUMP↑
JUMP↓
List

Test menu screen

3 The test menu screen is displayed.
Change device values by operating the window.
For further information about the operation procedure, see the following:
☞ Section 2.9 Test Operation

Point

The present and set values of word devices are hidden behind the test menu screen.
You can display hidden present and set values by scrolling them to the right or left using the ← or → key.

3.8 Local Device Monitor

The GOT can monitor local devices with the MELSEC-Q ladder monitor.
For local devices, refer to an applicable programmable controller manual.

Point

Monitoring local devices

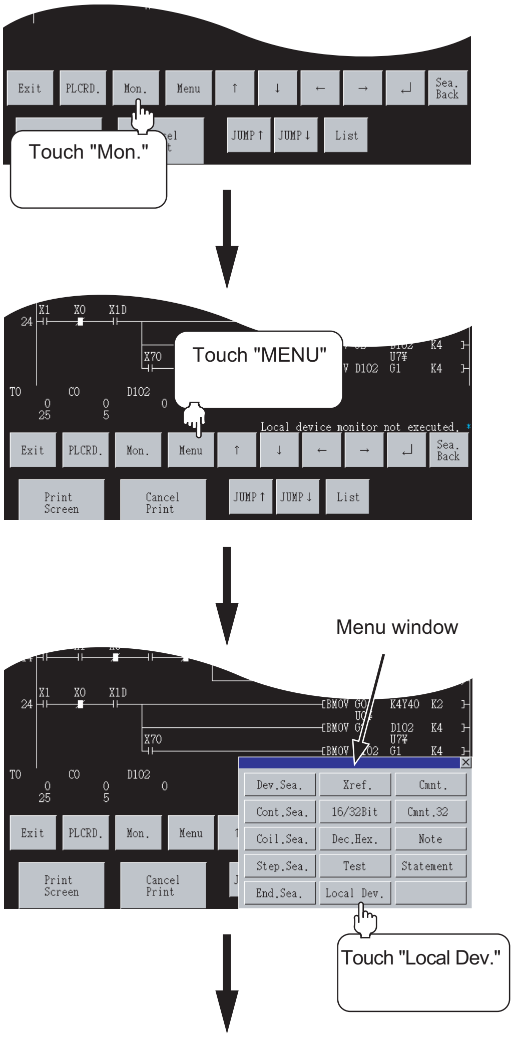
Local devices can be monitored only with the ladder monitor.
Operations for monitoring local devices cannot be executed on the user-created screen.

3.8.1 Operation procedure for local device monitor

Every time the Local Dev. key is pressed, the local device monitor is switched between execution and non-execution states.

1 Starting local device monitor

The following shows how to start the local device monitor.



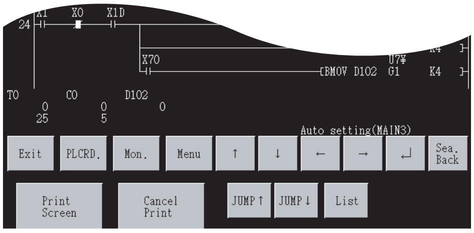
(Continued to next page)

① Touch Mon. .

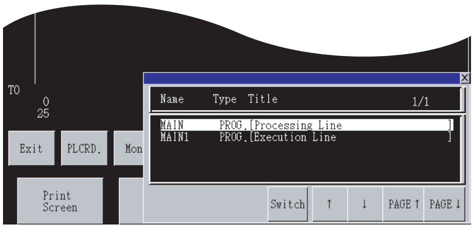
② Touch Menu.

③ Touch Local Dev. .

(From previous page)



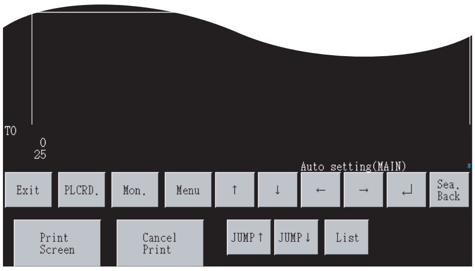
4 The local device monitor is started.



Name	Type	Title
MAIN	PROG.	[Processing Line]
MAIN1	PROG.	[Execution Line]

1/1

5 For changing a sequence program to be monitored, touch List, and then change sequence programs on the program list window.



6 The local device monitor is started with the changed sequence program.

Point

How to monitor local devices when ladder monitor starts

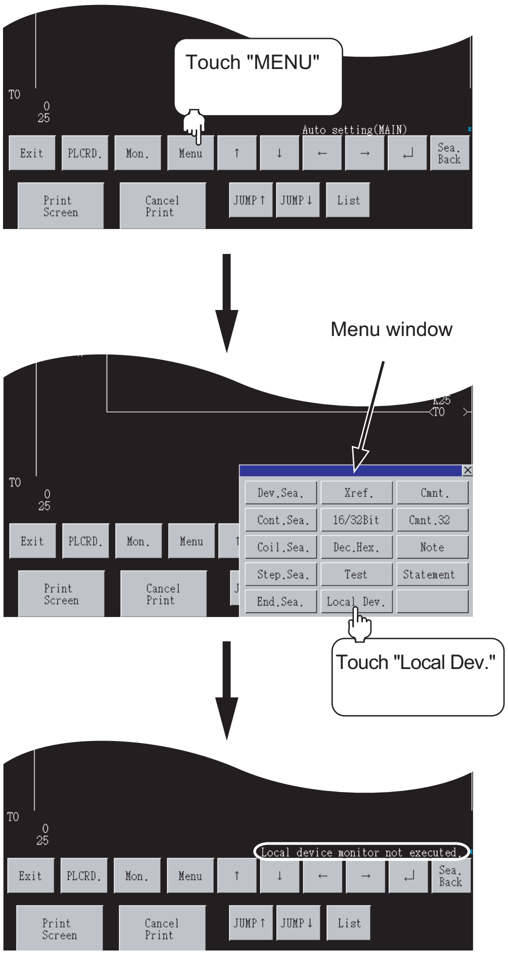
With setting the GOT setup, the GOT can start monitoring local devices when the ladder monitor starts.
For settings for monitoring local devices when the ladder monitor starts, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (4.2.1 Q/L/QnA ladder monitor setting)

GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor)

2 Ending local device monitor

The following shows how to end the local device monitor.



Local device monitor not executed.

1. Touch Menu.

2. Touch Local Dev. .

3. End the local device monitor.
   The local device monitor is ended with the following operations.
   - When touching Exit key
   - When touching PLCRD. key

Point

When ladder monitor screen is switched to other screens during executing local device monitor

When the ladder monitor screen is switched to other screens because of communication errors and others during monitoring local devices, the GOT keeps monitoring local devices.
For switching the local device monitor to non-execution state, restart the ladder monitor, and then switch the local device monitor to non-execution state.

(Continued to next page)

3.9 Error Messages and Corrective Action

This section describes the error messages displayed when the ladder monitor function is executed, and corrective action.

Error message	Description	Corrective action
ENTRY CODE MISMATCH	The specified keyword is different from the keyword that is registered in the object PLC CPU.	Check the keyword that is registered in the object PLC CPU and specify again.
FILE NOT FOUND	(1) An attempt was made to switch to the ladder monitor screen when a sequence program had not been read. (2) When the file is selected and the "Read" key is pressed, the selected file does not exist in the PLC drive.	Read the sequence program that written in the object PLC CPU. (Ex.) A sub-sequence program can only be specified as A3 CPU/A4UCPU.
PLC COMMUNICATION ERROR	(1) Cannot communicate with PLC CPU of the specified network No. or station No. (2) The specified drive does not exist.	Check and correct the following: (1) Does the specified PLC CPU exist? (2) Is it online? (Data communication status?) (3) Has an error occurred? (4) Is CPU No. correct? (5) Power on the GOT again. and so on.
LOCK ON OTHER MACHINE. PLEASE CANSEL	File is locked with the peripheral equipment (GX Developer, GPPQ).	After reading and writing with the peripheral equipment (GX Developer, GPPQ), read the file again.
NOT EXISTING DRIVE, DRIVE ERROR	(1) The specified drive does not exist. (2) The specified drive is faulty.	(1) Check whether the specified drive exists or not. (2) Check whether the specified drive is faulty or not.
ENTRY CODE MISMATCH	The specified file password differs from the one registered as the file password of the corresponding PLC CPU.	Confirm the file password registered to the drive of the corresponding PLC CPU, and specify it again.
FILE NOT FOUND	(1) When reading file from PLC CPU • After selecting a file and pressing the "Read" key, the selected file does not exist in the PLC CPU drive. • When starting ladder monitor from the monitor screen, the selected file does not exist in the PLC CPU drive. (2) When reading file from CF card • No CF cards are inserted in the specified drive. • No comment files are stored in the CF card.	(1) When reading file from PLC CPU • Perform [Read from PLC] on the network No./station number input screen to update the file list. Change the specified drive (Target memory). • Check the sequence program in the PLC CPU. (2) When reading file from CF card • Check if a CF card is inserted in the specified drive. • Check if comment files are stored in the CF card.
USE BY OTHER MACHINE. PLEASE CANCEL	The sequence or comment is being used by the peripheral device (GX Developer).	Perform file read again after completion of read/write from/to the peripheral device (GX Developer).
2M bytes of comments were read since they exceeded 2M bytes.	Only 2M bytes of the comment file was read because its size is greater than 2M bytes.	Reduce the comments to bring the size of the comment file down below 2 Mbytes.
Outside CPU reset/device range/ special module illegal access	The accessed special module is faulty or does not exist.	Check the system configuration.
FILE ACCESS ERROR. CONFIRM DRIVE.	The access error to file has occurred.	When the storage location of ladder data is set to [A: Standard CF Card] or [B: Extended Memory Card], check that the CF card is properly inserted. • Check if the CF card is properly inserted in the drive set for reading comment files.
INSUFFICIENT SAVING DRIVE CAPACITY.	Capacity of free disk of saving destination is insufficient.	Confirm the capacity of free disk of saving destination, increase the amount of free disk.
FILE ACCESS..<DO NOT PULL OUT THE PLUG>	File being accessed.	Do not turn off the power during message display. Wait until the message display goes out.

(Continued to next page)

Error message	Description	Corrective action
No END instruction.	The sequence program has no END instruction.	Check the sequence program with the peripheral device (GX Developer).
Instruction code abnormal.	The sequence program has an abnormal command code.	Check the sequence program with the peripheral device (GX Developer).
Ladder creation bad.	The sequence program has an abnormal circuit.	Check the sequence program with the peripheral device (GX Developer).
Please release the keyword.	Communication is not possible because a keyword is registered in the target PLC. (For FX3U(C) only)	Release the keyword for the target PLC.
THE KEYWORD IS REGISTERED.	A keyword is set to the PLC that is targeted to the PLC reading on the PLC reading screen.	Release the keyword for the target PLC.
Cannot read multiple files.	Data Save Location is set to [None].	(1) When reading file from PLC CPU • Read only one program file or one comment file. (2) When reading file from CF card • No CF cards are inserted in the specified drive. • No comment files are stored in the CF card.
Number of files exceeds 512. Aborting . . .	The number of read file exceeds the maximum number of files can be treated in ladder monitor (512).	Delete superfluous files and perform reading again.
This is not a specified program.	When starting ladder monitor from a monitor, the monitor target of the specified device and that of the program already read to the GOT do not match.	Read the program again.
The specified file does not exist.	An invalid program is specified during monitoring local devices.	Check the sequence program in the PLC CPU, and then read the program again.
Local device monitor error.	An error occurs during monitoring local devices.	Check the settings in the PLC CPU, and read the program again.
Local device monitor is not supported.	The PLC CPU does not support the local device monitor function.	Check manuals for the PLC CPU.

4. MELSEC-A LIST EDITOR

GT16 GT15 ~~GT SOFT GOT1000~~ GT11 ~~GT10~~

4.1 Features

The MELSEC-A list editor enables you to change the sequence program in the ACPU/QCPU (A mode).
This function is intended to troubleshoot the PLC system and to streamline maintenance operations.
By installing list editor for MELSEC-A, an Option OS, from GT Designer2 into the GOT, you can edit the ACPU/QCPU (A mode) PLC program.
The features of the MELSEC-A list editor are described below.

1 Parameters and sequence programs are easy to maintain.

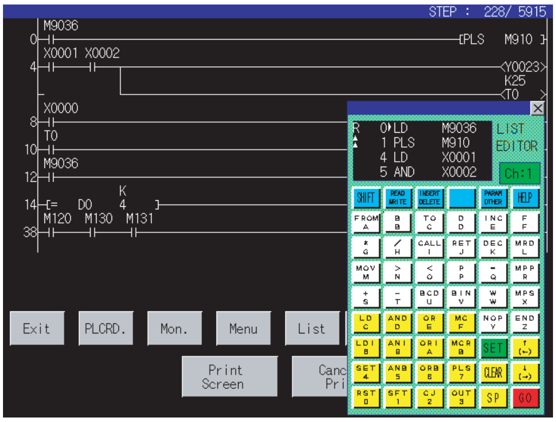
You can check or partly correct, change or add PLC CPU parameters and sequence programs simply by operating keys.
You can easily edit sequence programs without preparing any peripheral unit other than the GOT.

Example of changing sequence program commands

```
                  Changed
LD    X0                      LD    X0
OUT   Y20      ────────▶      MOV   D0     D1
LD    X1                      LD    X1
       ⸾                             ⸾
```

2 Combination with the ladder monitor

You can open the MELSEC-A List Editor window from the Ladder Monitor screen with a single touch, and can edit PLC program while checking the ladder.
You can also display a list from the step line displayed by the ladder monitor.



```
R  0 LD   M9036
   1 PLS  M910
   4 LD   X0001
   5 AND  X0002
```

GT16 GT15

3 Other stations are accessible.

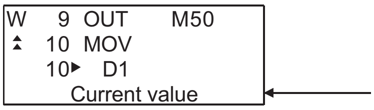
You can edit the sequence program for other stations in the data link system containing the GOT (or GOT-connected station), network system or CC-Link system.

4 Help function

A convenient help function is supported, which enables you to read, write, insert, and delete data as you select menus.

5 Comment for each device can be displayed.

Comment of the device at the cursor position can be displayed.



```
W    9  OUT     M50
▲   10  MOV
    10▶  D1
      Current value
```

Comment of D1 is displayed.

4.2 Specifications

4.2.1 System configuration

This subsection describes the PLC CPU series names and the connection forms between the GOT and the PLC for which the MELSEC-A list editor is available.
For further information about communication units and cables for each connection form, see the following:

GOT1000 Series Connection Manual

1 Targeted PLC

PLC
ACPU/QCPU (A mode)*1*2

*1 Motion controller CPUs cannot be connected. The message "MOTION CONTROLLER NOT SUPPORTED" will be displayed when the MELSEC-A list editor function is activated.
*2 When the PLC is A2USH-S1, it operates within the range of A3U; when the PLC is the A2SH-S1, A2SH, A1SH, or A1SJH, it operates within the range of A3N.

2 Connection forms

When the GOT is connected to an ACPU/QCPU (A mode)

(○: Available, ×: Unavailable)

Function name	Connection form between GOT and PLC															
	Bus connection*1*3		Direct CPU connection		Computer link connection		Ethernet connection		MELSEC NET/10 connection*1*2		CC-Link connection*1*2				GOT multidrop connection	
											ID*4		G4*5			
	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11	GT16 GT15	GT11
MELSEC-A list editor	○	○	○	○	×	×	○	×	○	×	○	×	×	×	×	×

*1 When the PLC is the A2SH-S1/A2SH/A1SH/A1SJH, use a CPU of version E or a later version. Programs cannot be written to CPUs of version D or an earlier version.
*2 When the PLC is A3N, A2N-S1, A2N, or A1N, it can not be used.
*3 When the PLC is QCPU (A mode), it cannot be used.
*4 Indicates CC-Link connection (Intelligent device station).
*5 Indicates CC-Link connection (via G4).

3 Required option OS and option function board

The option OS and option function board shown below are required.

Option OS	OS memory space (user area)				Option function board		
	GT16		GT15	GT11	GT16	GT15	GT11
	Built-in flash memory (ROM)	User memory (RAM)					
MELSEC-A list editor	542KB	1024KB	1058KB	0KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M	GT11-50FNB

(1) Option OS

Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15 and GT11

Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

GT15 User's Manual (8.10 Option Function Board)
GT11 User's Manual (8.3 Option Function Board)

4.2.2 Access range

The access range is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

4.2.3 Precautions

The points of precaution when using MELSEC-A list editor are described.

(1) Reading the MELSEC-A list editor by specifying a command
The MELSEC-A list editor cannot be ready by specifying a dedicated command.

(2) Using the MELSEC-A list editor together with the ladder monitor
Even if you execute the MELSEC-A list editor with the ladder monitor activated, edited information will not be reflected on the Ladder Monitor screen.
To reflect such edited information, perform the PLC reading of the ladder monitor again.

(3) Executing the MELSEC-A list editor
Execute the MELSEC-A list editor when the target PLC is not running.
It cannot be executed when the PLC is running.

(4) Changing sequence programs/parameters using another peripheral equipment
When using the MELSEC-A list editor, do not change programs or parameters in the PLC CPU from other peripheral equipment.
If you change programs or parameters, either reset the GOT main unit or set the PLC No. again.
If you carelessly change the program on one PLC from multiple units of peripheral equipment (including GOT), the contents of the program in the PLC CPU and the peripheral equipment may not be the same, resulting in an unintended operation of the PLC CPU.

(5) Writing sequence programs
Sequence programs cannot be written when the target CPU is operating EEPROM.

4.3 Display

4.3.1 Outline until the start

This subsection describes an outline until the system monitor screen is displayed after List editor for MELSEC-A (Option OS) is installed in the GOT.

Start

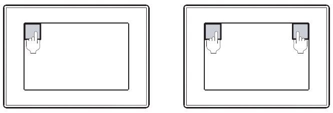
Turn on the power to the GOT.

Starting from the utility

Starting from the special function switch (MELSEC-A List editor) set in the project data

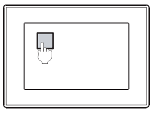
Starting from the ladder monitor

Display the utility.



After the utility is displayed, touch [Debug & self check] → [Debug] → [MELSEC-A List editor] from the Main Menu.
For how to display the utility, refer to the user's manual of the GOT to be used.

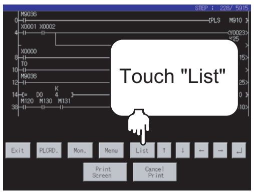
Touch the special function switch.



Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

Activate the MELSEC-A list editor on the Ladder monitor function screen.

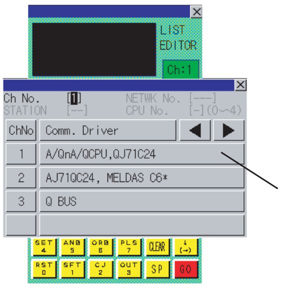


GT16 GT15

☞ Subsection 3.4.1 Information and key functions displayed on the Ladder monitor screen

GT16 GT15

Set the Channel No.

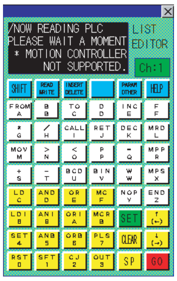


ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24
2	AJ71QC24, MELDAS C6*
3	Q BUS

Communication setting window *1

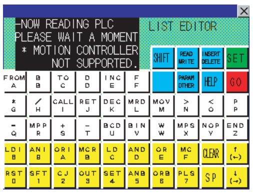
(For GT15)

Read the PLC and display the sequence program.



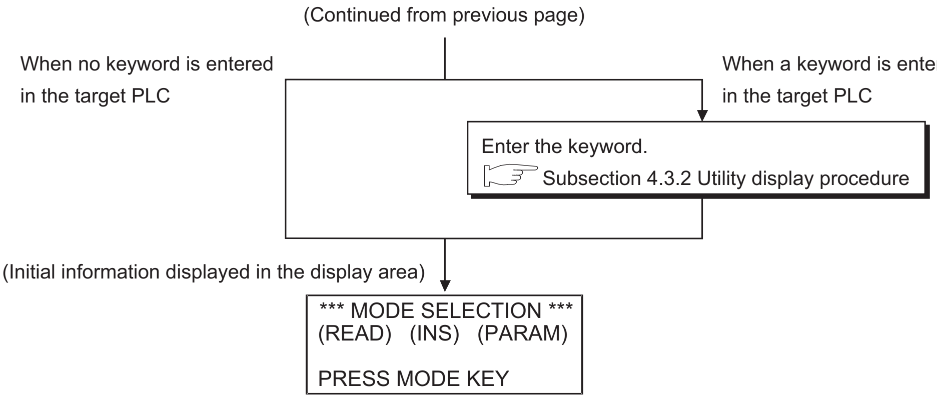
NOW READING PLC
PLEASE WAIT A MOMENT
* MOTION CONTROLLER
NOT SUPPORTED.

(For GT11)



NOW READING PLC
PLEASE WAIT A MOMENT
* MOTION CONTROLLER
NOT SUPPORTED.

(Continued to next page)


(Continued from previous page)
When no keyword is entered in the target PLC
When a keyword is entered in the target PLC
Enter the keyword.
Subsection 4.3.2 Utility display procedure
(Initial information displayed in the display area)
*** MODE SELECTION ***
(READ) (INS) (PARAM)
PRESS MODE KEY

*1 The communication setting window is not displayed when starting from the ladder monitor.

Point

(1) How to display the utility
For how to display the utility, refer to the following.

GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)
GT11 User's manual (9.3 Utility Display)

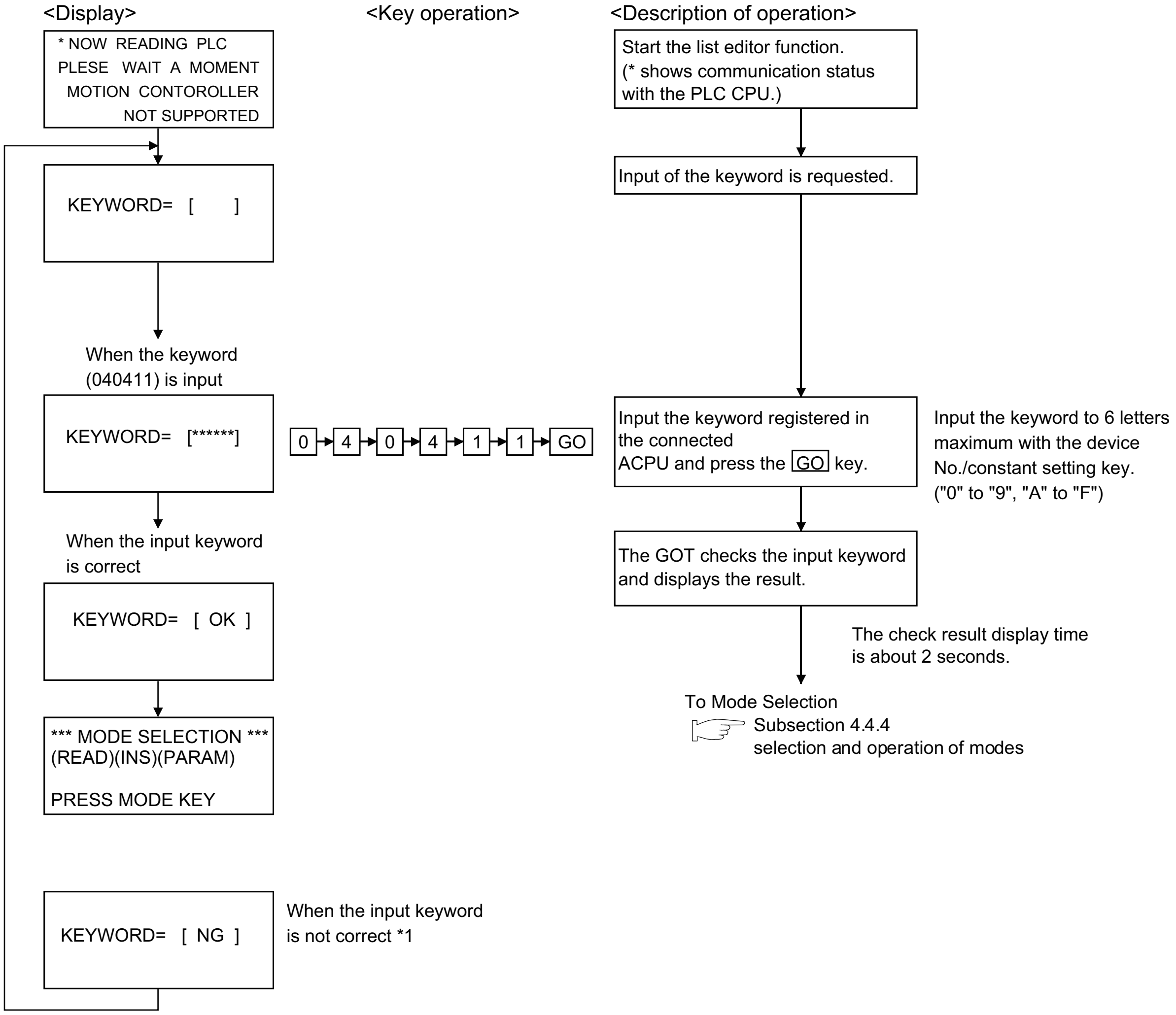
(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the MELSEC-A list editor only.
For displaying the communication setting window at the second or later startup, touch the Ch: button on the MELSEC-A list editor screen.

(3) If the project data has not been downloaded
The A list editor can be started from the utility even if the project data has not been downloaded to the GOT.

4.3.2 Operation of keyword input

If a keyword is registered in the ACPU when the connected ACPU or the ACPU PLC No. No. corresponding to the operation is changed, the GOT requests for input of the registered keyword. Input the keyword registered in the ACPU and press the GO key.
If a keyword is not registered in the ACPU, this operation is not required.

Procedure for inputting the keyword for the MELSEC-A list editor


<Display>
<Key operation>
<Description of operation>
* NOW READING PLC
PLESE WAIT A MOMENT
MOTION CONTOROLLER
NOT SUPPORTED
Start the list editor function.
(* shows communication status with the PLC CPU.)
KEYWORD= [ ]
Input of the keyword is requested.
When the keyword (040411) is input
KEYWORD= [******]
0 → 4 → 0 → 4 → 1 → 1 → GO
Input the keyword registered in the connected ACPU and press the GO key.
Input the keyword to 6 letters maximum with the device No./constant setting key. ("0" to "9", "A" to "F")
When the input keyword is correct
KEYWORD= [OK]
The GOT checks the input keyword and displays the result.
The check result display time is about 2 seconds.
*** MODE SELECTION ***
(READ)(INS)(PARAM)
PRESS MODE KEY
To Mode Selection
Subsection 4.4.4 selection and operation of modes
KEYWORD= [NG]
When the input keyword is not correct *1

*1 When the input keyword does not match with the registered keyword, only the following operations in subsection 4.6.7 can be allowed.

Other modes
- Error step reading
- Buffer memory overall monitor
- Time monitor
- PLC No. setting
- Main/sub switching

Point

When you forgot the keyword entered in the ACPU

- Even if you are unsure of the keyword entered in the ACPU, you cannot delete it independently. If deleting user data, including sequence programs, does not cause any inconvenience to you, clear (delete) the entered keyword by <PLC memory all clear.>
  Note that <PLC memory all clear> clears user data, including sequence programs, as well.
  For further information about PLC memory all clear, see the following:

  ☞ Section 4.5.6 PLC memory all clear
- When you know the keyword and want to change it or add a new keyword, see the following:

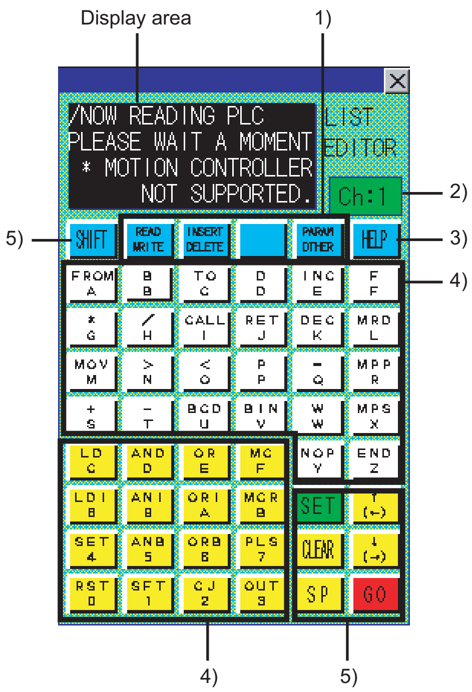
  ☞ Section 4.6.1 Common operation

4.4 Operation Methods

4.4.1 Key arrangement and a list of key functions

(1) The arrangement and functions of the keys displayed on the MELSEC-A List Editor window are described below.

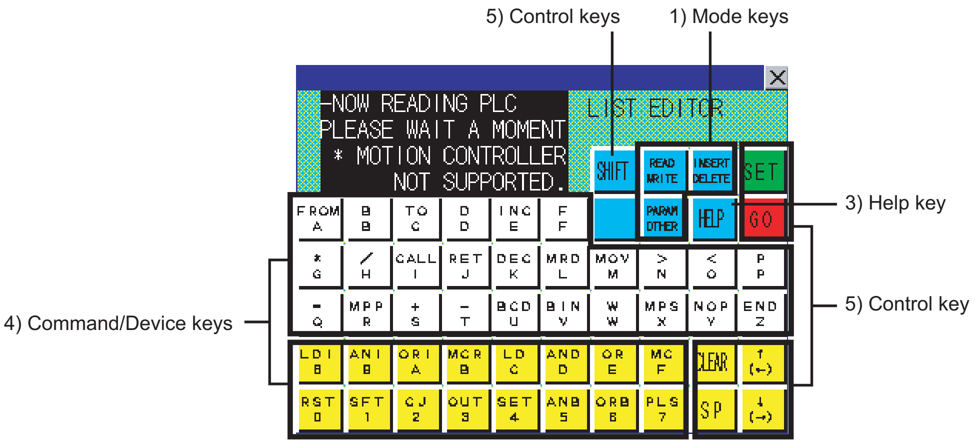
(a) Key arrangement and functions for GT16 and GT15



/NOW READING PLC
PLEASE WAIT A MOMENT
* MOTION CONTROLLER
NOT SUPPORTED.

Key name		Summary of function	Reference section
1) Mode key	READ WRITE	The key that specifies read or write mode. Switch the valid key with SHIFT.	Section 4.4.4 Section 4.6.2 Section 4.6.3
	INSERT DELETE	The key that specifies insert or delete mode. Switch the valid key with SHIFT.	Section 4.4.4 Section 4.6.4 Section 4.6.5
	PARAM OTHER	The key that specifies parameter or other mode. Switch the upper and lower lines with SHIFT.	Section 4.4.4 Section 4.6.6 Section 4.6.7
2) Ch no.	Ch:	Displays a Communication Ch No.	-
3) Help key	HELP	The key that can operate the help function.	Section 4.5.5
4) Command/ Device key	FROM A ~ END Z	Key that inputs K/H at the input of command, device name and constant input. Only when the valid key of upper/lower character needs to be switched, switching is allowed with input of the SHIFT and SET keys.	-
	RST 0 ~ MC F	Key that inputs the command, device number and constant. Only when the valid key of upper/lower character needs to be switched, switching is allowed with input of the SHIFT and SET keys.	-
5) Control key	SET	Key that declares start of step number input or automatic scroll. Switch key that makes the lower character valid on each key with dual functions. Whether upper or lower character is valid can be checked on the display.	Section 4.4.4
	SHIFT	Switch key that makes the upper character valid on each key with dual functions. Whether upper or lower character is valid can be checked on the display.	Section 4.4.4
	CLEAR	When the Help function is used, the screen returns to the display at the input of the HELP key.	-
		In the Parameter mode, the process is cancelled. After restarting, continue the operation.	-
		If the Clear key is pressed when the system is not in the Parameter mode, Other mode or Help function, the screen returns to the initial status of the mode selection. (The input commands or device numbers except for the mode are cleared.) This is used for repeating the procedure if incorrect keys are pressed.	Section 4.4.7
		In the Other mode, the screen returns to the previous display.	-
	SP	Key that provides blank space at the command and at between device names.	-
	↑ (←) ↓ (→)	Key that moves the cursor on the display (▶, ■) or determines scroll directions.	Section 4.4.3
	GO	Press this key at the last of a series of key operations to execute the operation. Check the details of key operations on the display before pressing this key.	Section 4.4.5

(b) Key arrangement and functions for the GT11



NOW READING PLC
PLEASE WAIT A MOMENT
* MOTION CONTROLLER
NOT SUPPORTED.

The functions of these keys are the same as those of the keys for the GT15. For a summary of the functions, see the preceding page.

(2) How to express keys and key operation descriptions
The keys for the MELSEC-A list editor and operation procedures are described in text in a simplified manner as shown below.

(a) Some keys, such as $\boxed{\substack{\text{RST}\\0}}$ and $\boxed{\substack{\text{MOV}\\\text{M}}}$, are available for two different purposes.
Operate such keys with either the upper or lower function indicated on them valid according to the operation. In descriptions, only the necessary functions are indicated on keys.
(Example of description)

When entering the character "M," the $\boxed{\substack{\text{MOV}\\\text{M}}}$ key is indicated as $\boxed{\text{M}}$ in the description.

Make upper or lower functions valid by using the $\boxed{\text{SHIFT}}$ key or the $\boxed{\text{SET}}$ key.For further information about the procedure for making upper or lower functions valid, see the following:

☞ Section 4.4.3 Switching valid keys (upper/lower functions)

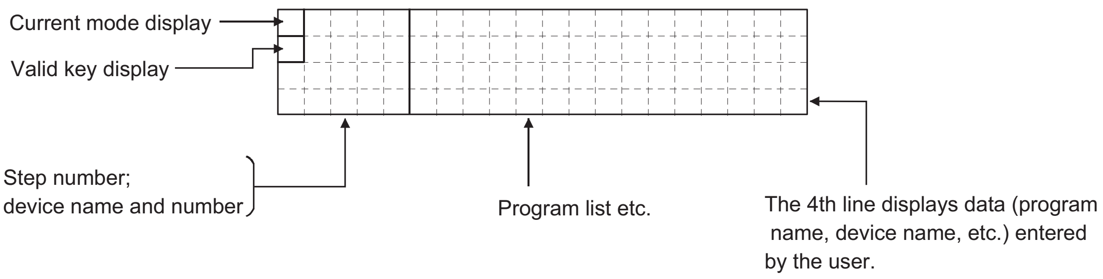
(b) The expression $\boxed{\text{Key 1}}$ $\boxed{\rightarrow}$ $\boxed{\text{Key 2}}$ $\boxed{\rightarrow}$ ... $\boxed{\text{Key n}}$ means touching keys from $\boxed{\text{Key 1}}$ to $\boxed{\text{Key n}}$ in order.
(Example of description)

The example of description shown below indicates that $\boxed{\text{SET}}$ must be touched first, $\boxed{\text{F}}$ second, $\boxed{\text{0}}$ third, and $\boxed{\text{GO}}$ finally.

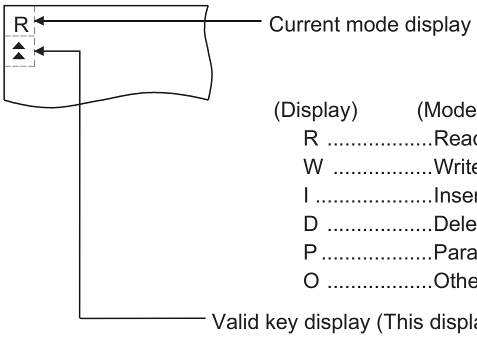
$\boxed{\text{SET}} \rightarrow \boxed{\text{F}} \rightarrow \boxed{\text{0}} \rightarrow \boxed{\text{R}} \rightarrow \boxed{\text{SP}} \rightarrow \boxed{\text{K}} \rightarrow \boxed{\text{5}} \rightarrow \boxed{\text{GO}}$

4.4.2 Display format of the display area

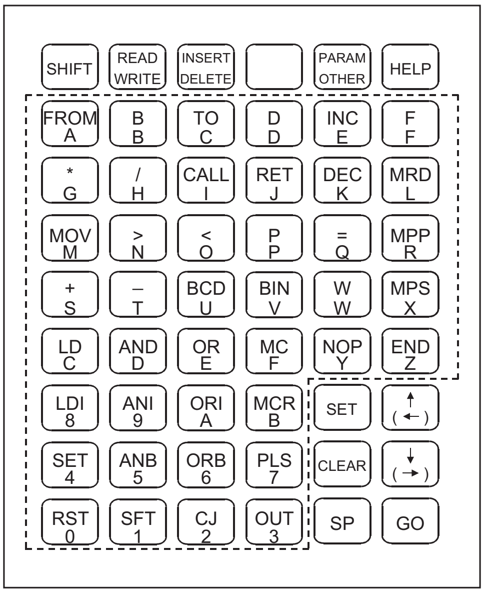
The following describes the position and content of each data field in the MELSEC-A list editor display area


Current mode display
Valid key display
Step number; device name and number
Program list etc.
The 4th line displays data (program name, device name, etc.) entered by the user.

(1) Mode and valid key display
The following describes the mode and valid key display.
The mode display shows the MELSEC-A list editor mode selected by the user.
The valid key display shows which of the two functions assigned to each key is currently available: the function indicated at the upper part of the key or the function indicated at the lower part of the key.



(Display)	(Mode)
R	Read mode
W	Write mode
I	Insert mode
D	Delete mode
P	Parameter mode
O	Other mode



With regard to keys framed in dotted lines in the figure shown at the left, the valid key display indicates which of the two functions assigned to each key is valid:

▲ : Function indicated at the upper part of each key is available.
▼ : Function indicated at the lower part of each key is available.

Example: FROM/A key

▲ Function indicated at the upper part of the key is available. ...... FROM

▼ Function indicated at the lower part of the key is available. ...... A

Point

To switch between two functions of keys (functions indicated at upper and lower parts of the keys), press the SHIFT and SET keys.

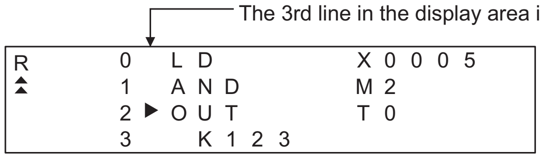
☞ Section 4.4.3 Switching valid keys (upper/lower functions)

(2) The cursor appears

The cursor appears ■ and is highlighted during data input.

(3) Indication of the selected line

When a program list is displayed, the line currently selected for editing is indicated by " ▶ " appearing immediately after the step number.


The 3rd line in the display area is selected for editing.

```
R       0   L D          X 0 0 0 5
▲       1   A N D        M 2
        2 ▶ O U T        T 0
        3     K 1 2 3
```

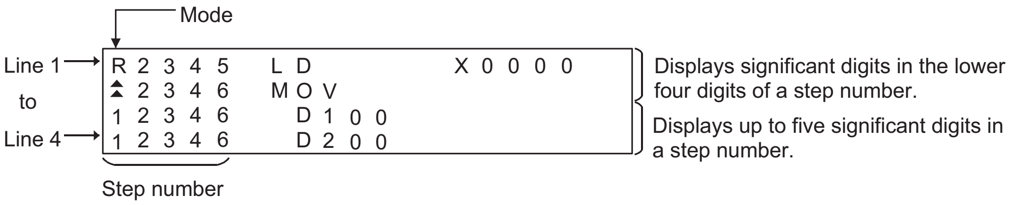
You can use the ↑ and ↓ keys to move " ▶ " up and down.

(4) Step number display

A step number is displayed as a decimal number.

On the 1st and 2nd lines in the display area, significant digits in the lower four digits of a step number are displayed.

On the 3rd and 4th lines in the display area, up to five significant digits in a step number are displayed.



```
R 2 3 4 5   L D          X 0 0 0 0
▲ 2 3 4 6   M O V
1 2 3 4 6     D 1 0 0
1 2 3 4 6     D 2 0 0
```

Displays significant digits in the lower four digits of a step number.

Displays up to five significant digits in a step number.

(5) Device display

Two or more device specifications attached to a basic or application instruction are displayed using the same step number.

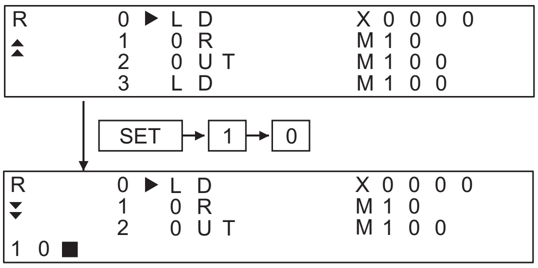
For information on the step numbers, see Paragraph (4) above.

(6) Display of data input from the keys

Data input from the keys will appear at the cursor position. As more characters are input, the cursor moves to the right.

The cursor appears as " ■ ".

Example: The user enters SET → 1 → 0



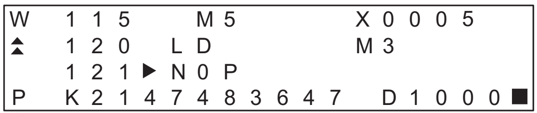
```
R       0 ▶ L D          X 0 0 0 0
▲       1   0 R          M 1 0
▲       2   0 U T        M 1 0 0
        3   L D          M 1 0 0
```

```
R       0 ▶ L D          X 0 0 0 0
▼       1   0 R          M 1 0
        2   0 U T        M 1 0 0
1 0 ■
```

(7) Shifting of data to the left during the input of a program

When the user inputs a program, the codes entered before a touch on the GO key will appear on the 4th (bottom) line of the display area.

If the codes cannot appear on a single line, the display on the 4th line only will shift by a single character position to the left each time the user touches a key. (Each character that goes out of the display area by the left-shift operation is retained in the memory.)



```
W   115   M5       X0005
▲   120  LD        M3
    121▶N0P
P   K2147483647  D1000■
```

The user has entered "DMOVP K2147483647 D1000".

You can move " ■ " in the specified direction (right or left) with the (←) or (→) key.

(8) Display of an error message

An error message will appear on the 4th line of the display area.

An error message on the display is cleared when you press any key. Then the display resumes the state before the appearance of the error message.

When an error message is displayed, take action according to the procedure described in the following section:

☞ Section 4.7 Error Messages and Corrective Actions

4.4.3 Switching valid keys (upper/lower functions)

Make valid the upper or lower function of keys available for two different purposes to operate the MELSEC-A list editor.

(1) Switching the upper and lower functions of mode keys
In general, the upper functions of mode keys are valid.
To make the lower function of a mode key valid, touch the SHIFT key and then the mode key.
During switching of the upper and lower functions of mode keys, the mark on the valid keys remains ⏶.

(2) Switching the upper and lower functions of command/device keys
Switch the upper and lower functions of command/device keys using the keys shown below, if necessary.

SHIFT :Makes the upper function valid.
SET : Makes the lower function valid.
* The keys shown below can be operated even if the lower function of a key is valid.
(You do not need to operate the SHIFT key.)
• Comparison symbol keys at the input of comparison operation commands: <, >, =
•Minus key in command source data: -
For further information about the display of valid keys, see the following:

☞ Section 4.4.2 Display format of the display area

(3) Valid command/device keys after setting each mode
Valid command/device keys after setting each mode are shown below.

(a) Valid keys after setting read, write, and insert modes.
The upper functions of the command/device keys are valid.
If necessary, switch the upper and lower functions of necessary keys for operation.

(b) Valid keys after setting parameter, other, and help modes.
The lower functions of the command/device keys are valid.
If necessary, switch the upper and lower functions of necessary keys for operation.

4.4.4 Selection and operation of modes

Select appropriate modes of the MELSEC-A list editor for the operations described in Sections 4.5 and 4.6.

You can change modes as you desire during any of the operations described in Sections 4.5 and 4.6, so that you can continue operations while changing modes.

READ ·················· Read mode
WRITE ················ Write mode
INSERT ·············· Insert mode
DELETE ·············· Delete mode
PARAM ·············· Parameter mode
OTHER ················ Other mode

Remark

Mode key input is always valid.
Input of the mode key clears the input data except for the step numbers. The display returns to the initial status of the mode selection.

4.4.5 Command input procedures

Command input procedures can be classified as follows:

1) Input the command key to use the command on the key.
2) Input the alphanumeric keys corresponding to each character of command sequentially.
3) Select and input the command to be used from the Help function.

Command input procedures for 1) and 2) above are as follows.
For command input procedure 3) from the Help function, refer to Section 4.4.5 Command input procedures

Point

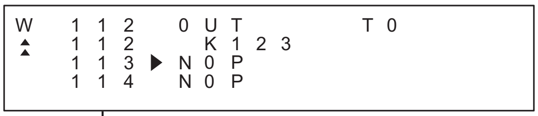
When the command is input, the input details are displayed at the 4th line (the bottom line) on the display. In the following description, the input of SP key may be omitted when a blank space between the input command and the cursor position is automatically inserted. Refer to the example in each description.

(1) For command code only

(a) When the command available on the keyboard is input

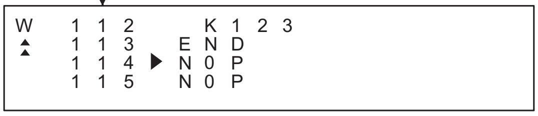
Command → GO

(Ex) When END is input



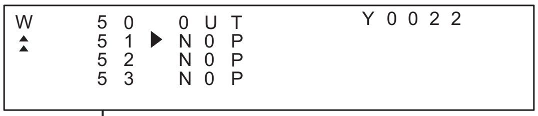
```
W     1 1 2    0 U T          T 0
▲     1 1 2      K 1 2 3
      1 1 3 ▶ N 0 P
      1 1 4    N 0 P
```

END → GO



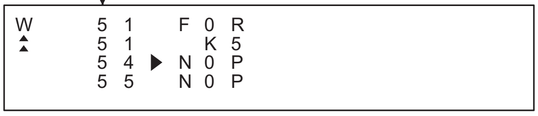
```
W     1 1 2      K 1 2 3
▲     1 1 3    E N D
      1 1 4 ▶ N 0 P
      1 1 5    N 0 P
```

(b) When the command not available on the keyboard is input
(Ex) When FOR K5 is input



```
W       5 0    0 U T          Y 0 0 2 2
▲       5 1 ▶ N 0 P
        5 2    N 0 P
        5 3    N 0 P
```

SET → F → 0 → R → SP → K → 5 → GO

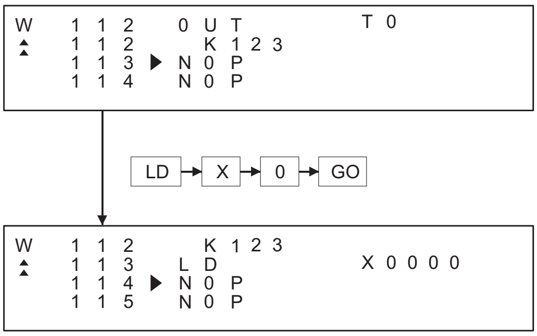


```
W       5 1    F 0 R
▲       5 1      K 5
        5 4 ▶ N 0 P
        5 5    N 0 P
```

(2) For command code and device (1)

Command → SP → DEVICE → DEVICE No. → GO

(Ex) When LD X0 is input



```
W   1 1 2     0 U T          T 0
▲   1 1 2       K 1 2 3
    1 1 3  ▶  N 0 P
    1 1 4     N 0 P
```

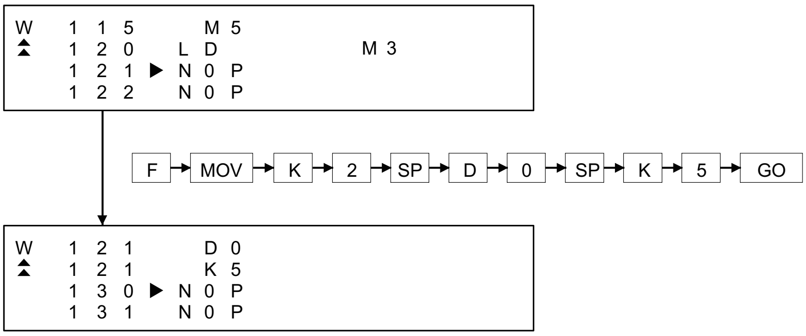
LD → X → 0 → GO

```
W   1 1 2       K 1 2 3
▲   1 1 3     L D            X 0 0 0 0
    1 1 4  ▶  N 0 P
    1 1 5     N 0 P
```

(3) For commands other than above

Input the SP key between the command and the device, the source data, and the destination data.

(Ex 1) When FMOV K2 DO K5 is input

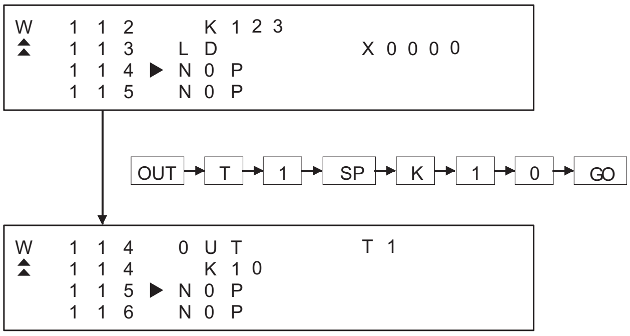


```
W   1 1 5       M 5
▲   1 2 0     L D            M 3
    1 2 1  ▶  N 0 P
    1 2 2     N 0 P
```

F → MOV → K → 2 → SP → D → 0 → SP → K → 5 → GO

```
W   1 2 1       D 0
▲   1 2 1       K 5
    1 3 0  ▶  N 0 P
    1 3 1     N 0 P
```

(Ex 2) When OUT T1 K10 is input

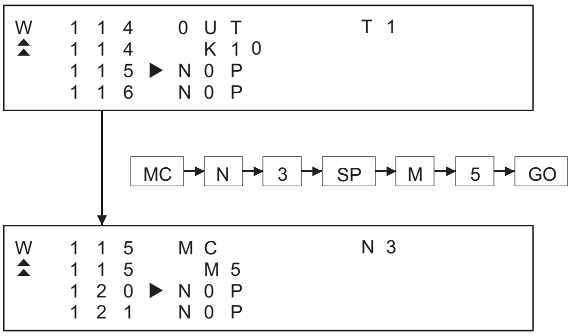


```
W   1 1 2       K 1 2 3
▲   1 1 3     L D            X 0 0 0 0
    1 1 4  ▶  N 0 P
    1 1 5     N 0 P
```

OUT → T → 1 → SP → K → 1 → 0 → GO

```
W   1 1 4     0 U T          T 1
▲   1 1 4       K 1 0
    1 1 5  ▶  N 0 P
    1 1 6     N 0 P
```

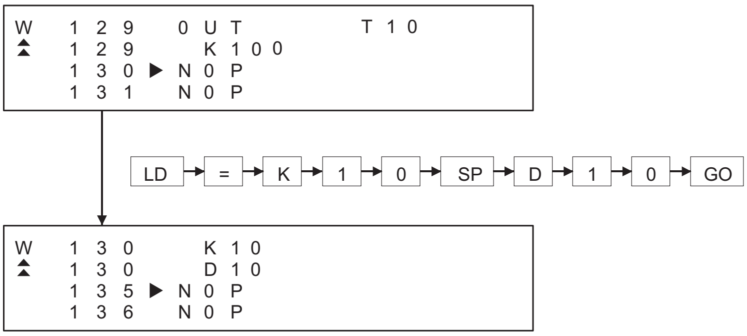
(Ex 3) When MC N3 M5 is input



```
W  1 1 4    0 U T          T 1
⏫  1 1 4      K 1 0
   1 1 5 ▶ N 0 P
   1 1 6    N 0 P
```

```
W  1 1 5    M C            N 3
⏫  1 1 5      M 5
   1 2 0 ▶ N 0 P
   1 2 1    N 0 P
```

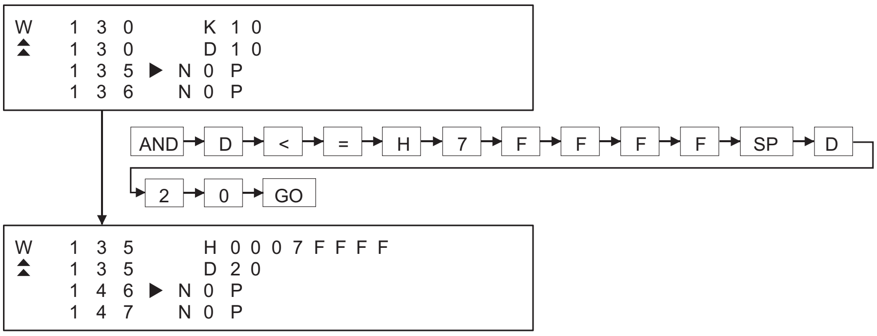
(Ex 4) When LD = K10 D10 is input



```
W  1 2 9    0 U T          T 1 0
⏫  1 2 9      K 1 0 0
   1 3 0 ▶ N 0 P
   1 3 1    N 0 P
```

```
W  1 3 0      K 1 0
⏫  1 3 0      D 1 0
   1 3 5 ▶ N 0 P
   1 3 6    N 0 P
```

(Ex 5) When ANDD<=H7FFFF D20 is input



```
W  1 3 0      K 1 0
⏫  1 3 0      D 1 0
   1 3 5 ▶ N 0 P
   1 3 6    N 0 P
```

```
W  1 3 5      H 0 0 0 7 F F F F
⏫  1 3 5      D 2 0
   1 4 6 ▶ N 0 P
   1 4 7    N 0 P
```

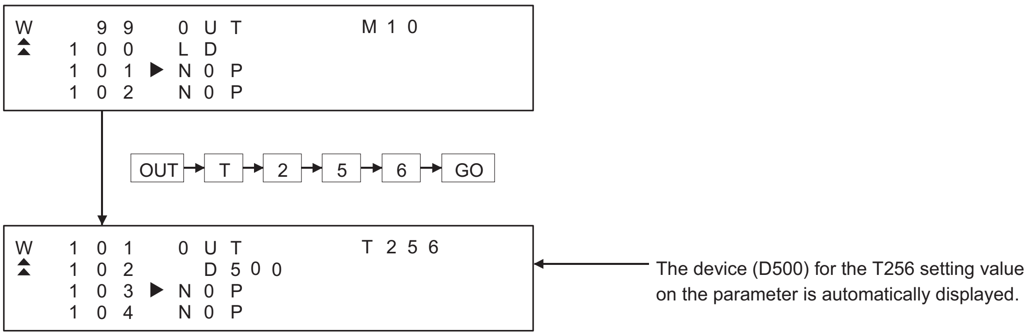
(4) Handling of devices M, L and S

Devices M, L and S in the Test, Monitor, Write and Insert modes change the display depending on the set parameters.

If LD L0 is input for the parameter setting of M0 to 999 and L1000 to L2047, the result is LD M0.

(5) For extension timer/extension counter of AnA and AnUCPU
When the extension timer (T256 to T2047) and the extension counter (C256 to C1023) are input as the first device of the command, input the first device and the device number.

(Ex) When OUT T256 D500 is input



```
W      9 9   0 U T         M 1 0
▲    1 0 0   L D
     1 0 1 ▶ N 0 P
     1 0 2   N 0 P
```

```
W    1 0 1   0 U T         T 2 5 6
▲    1 0 2     D 5 0 0
     1 0 3 ▶ N 0 P
     1 0 4   N 0 P
```

The device (D500) for the T256 setting value on the parameter is automatically displayed.

Point

When the extension timer and the extension counter are used, be sure to set the 257 points or more and the setting value device (D, W, R) on the parameter for both the timer and the counter.

4.4.6 Hard copy output

GT16 GT15

Screens of the MELSEC-A list editor can be stored to a memory card in BMP/JPEG file format or printed with a printer.
Refer to the following for the hard copy.

- Starting the MELSEC-A list editor from the ladder monitor (3.4.2 Hard copy output)
- Setting the hard copy with GT Designer2.
  (GT Designer2 Version □ Screen Design Manual (Section 13.2 Hard Copy))

4.4.7 Action if an incorrect key is input

If an incorrect key is input, cancel the input contents.

1 Operation

(1) Before touching the GO key (before reading/writing the input contents)
Before touching the GO key, touch the CLEAR key.

(2) After touching the GO key (after reading/writing the input contents)
Write the command again. (5.4.5 Writing commands)
Commands finalized by writing and inserting operations are revised (overwritten) with the program writing.

Remark

When the CLEAR key is input in the parameter mode, the GOT stops the process.
To continue the operation, carry on the key input.

4.4.8 List of functions

The table below shows the functions available for each mode.

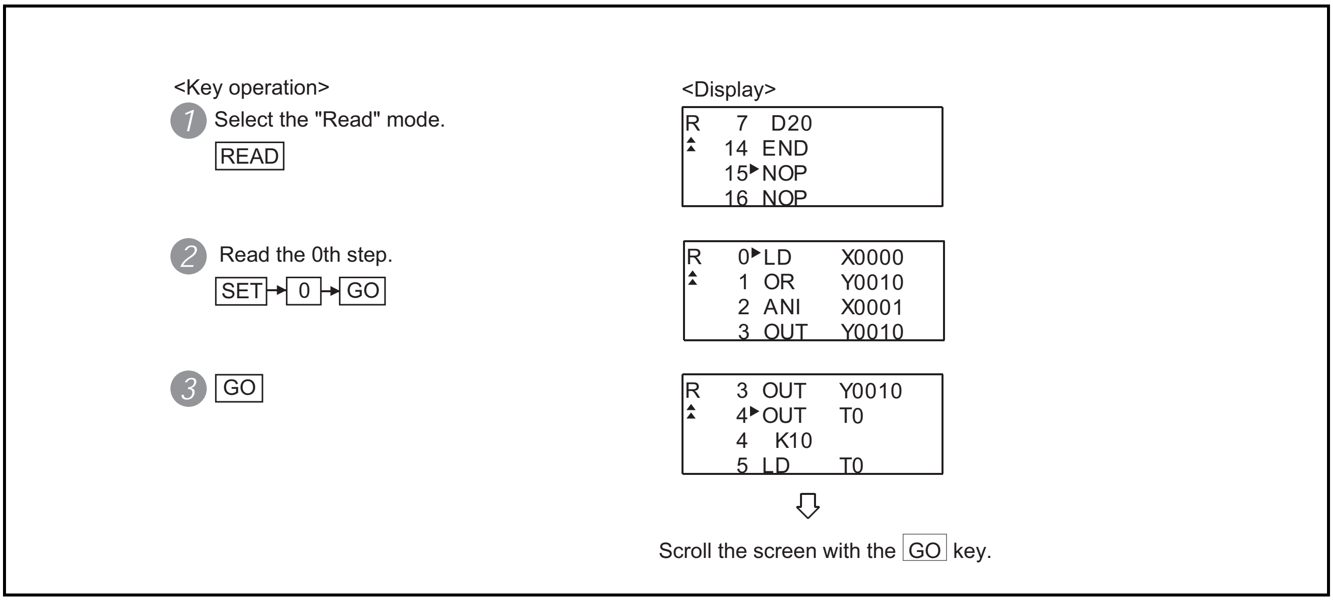
Mode (mode display)	Function
Write (W)	Writes, adds, or modifies a program.
	Changes a device used at the selected step in the program.
	Displays a list of instructions that start with the specified character and allows the user to choose from them.
	Reads a program after allowing the user to specify a step number.
	Declares the specified part of the program NOP.
	Displays a comment for the specified device.
Read (R)	Reads a program after allowing the user to specify a step number.
	Reads a program after allowing the user to specify an instruction used.
	Reads a program after allowing the user to specify a device used.
	Automatically scrolls the display of a program that has been read up to a specified step.
	Corresponds to program read and automatic scroll functions described above.
	Displays a comment for the specified device.
Insert (I)	Inserts a new program into the displayed program.
	Displays a list of instructions that start with the specified character and allows the user to choose from them.
	Reads a program after allowing the user to specify a step number.
	Moves the selected part of the program to a specified part of the program.
	Copies the selected part of the program to a specified part of the program.
	Displays a comment for the specified device.
Delete (D)	Deletes a program at the specified step.
	Deletes the specified block in the program.
	Deletes all NOP instructions found in program codes described before the END instruction. (NOPLF instructions will not be deleted.)
	Displays a comment for the specified device.
Parameter (P)	Clears all parameters in the ACPU only.
	Sets or changes various parameters like those for the memory capacity, timer/counter, and latching range.
	Sets or changes a keyword.
Others (O)	Changes values set to timer/counter devices.
	Displays details of an error in the ACPU and the associated step number.
	Checks duplex coils, instruction codes, and other elements in the program.
	With regard to a special function unit of the specified I/O number, monitors the contents of the buffer memory at the specified address.
	Monitors the ACPU clock (D9025 through D9027).
	Clears all contents of the ACPU memory and resets it to the initial state.
	Clears the program (Main/Sub) currently selected.
	Clears all device memories except for special-D, special-M, and R.
	Switches the target ACPU in GOT operations in each mode.
	Switches the target program (Main/Sub) in GOT operations in each mode.
	Forcibly changes the ACPU running status between RUN and STOP.
	Performs a read or write operation to the ACPU memory in the machine language.

4.5 Basic Operation

This section takes an easy operation example to describe the basic operation of the MELSEC-A list editor.

4.5.1 Reading sequence programs

[Operation exaple]



<Key operation>

1. Select the "Read" mode.
   READ
2. Read the 0th step.
   SET → 0 → GO
3. GO

<Display>

```
R    7   D20
▲   14  END
    15▸NOP
    16  NOP
```

```
R    0▸LD       X0000
▲    1  OR      Y0010
     2  ANI     X0001
     3  OUT     Y0010
```

```
R    3  OUT     Y0010
▲    4▸OUT      T0
     4    K10
     5  LD      T0
```

⇩

Scroll the screen with the GO key.

4.5.2 Changing (Overwriting) commands

The example shown below is used to describe how to change sequence program commands.

Before change

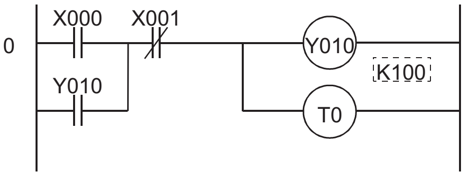
```
      ⁓
3  OUT   Y010
4  OUT   T0  K10
      ⁓
```

⇩

After change

```
      ⁓
3  OUT   Y010
4  OUT   T0  K100
      ⁓
```

Change the timer setting value from K10 to K100.



Change the timer setting value from K10 to K100.

[Operation example]

<Key operation>

<Display>

1 Select the "Write" mode.

SHIFT → WRITE

```
W    7  K80
     7▸ K5
     7  D20
    14  END
```

2 Read the 4th step that changes the setting value.

SET → 4 → GO

```
W    3  OUT    Y0010
     4▸OUT    T0
     4  K10
     5  LD     T0
```

3 Move the cursor to setting value "K10" of T0.

↓ → GO

```
W    3  OUT    Y0010
     4  OUT    T0
     4▸ K10
K10
```

4 K → 1 → 0 → 0 → GO

```
W    4  OUT    T0
     4  K100
     5▸LD     T0
     6  ANI    M0
```

⇩

The setting value of timer T0 was changed from "K10" to "K100".

4.5.3 Adding (Inserting) commands

The example shown below is used to describe how to add sequence program commands.

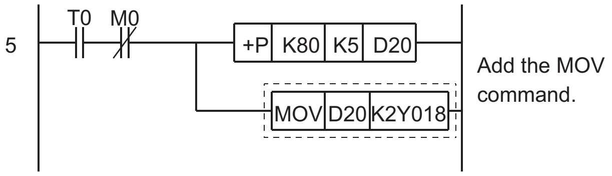
Before addition

```
 7 +P  K80 K5  D20
14 END
```

After addition

```
 7 +P  K80 K5  D20
14 MOV D20 K2Y018
19 END
```

Add the MOV command.



Add the MOV command.

[Operation example]

<Key operation>

<Display>

1. Select the "Insert" mode.

   INSERT

```
I    4  OUT     T0
     4    K100
     5▶LD       T0
     6  ANI     M0
```

2. Read the 14th step to insert the command.

   SET → 1 → 4 → GO

```
I    7    D20
    14▶END
    15  NOP
    16  NOP
```

3. Input the "MOV D20 K2Y0018"

   MOV → D → 2 → 0 → SP → K → 2 → Y → 1 → 8 → GO

```
I   14    D20
    14    K2Y0018
    19▶END
    20  NOP
```

The command of "MOV D20 K2Y0018" was added to Step 14.

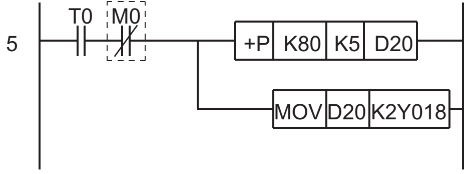
4.5.4 Deleting commands

The example shown below is used to describe how to delete sequence program commands.

Before deletion

```
      ⟆
5  LD   T0
6  ANI  M0
7  +P   K80  K5   D20
      ⟆
```

Delete the ANI MO command.



⇩

After deletion

```
      ⟆
5  LD   T0
7  +P   K80  K5   D20
      ⟆
```

Delete the ANI MO command.

[Operation example]

<Key operation>

① Select the "Delete" mode.

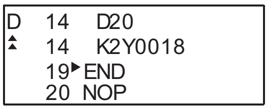
SHIFT → DELETE

② Read the 6th step

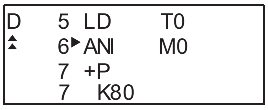
SET → 6 → GO

③ GO

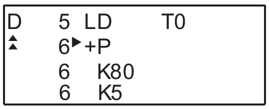
<Display>



```
D  14   D20
   14   K2Y0018
   19▸END
   20  NOP
```



```
D   5  LD      T0
    6▸ANI      M0
    7  +P
    7   K80
```



```
D   5  LD      T0
    6▸+P
    6   K80
    6   K5
```

The GO key deletes the command at the cursor position.
The step number is brought forward.

⇩

The "ANI MO" command was deleted.

4.5.5 Using the help function

HELP is input to use the Help function.

Input of HELP displays the Help function menus in each mode. Select the corresponding item for execution.

(1) Reading the command in the sequence program
Example of reading the area using the "MOV" command in the sequence program.

[Operation example]

<Key operation>

<Display>

① Input the HELP key in the Read mode.

READ → HELP

```
 ***HELP  MENU***
1: READ
2: COMMENT  DISPLAY
                CLEAR:END
```

② 1: Select "Read".

1

```
 *** READ  ***      1/ 2
1: STEP
2: INSTRUCTION
CLEAR:END  HELP:MENU
```

③ 2: Select "INSTRUCTION".

2

```
  ***  READ  ***
KEY  IN  INSTRUCTION
[                      ]
CLEAR:END  HELP:MENU
```

④ Set the "MOV" command.

MOV

```
  ***  READ  ***
KEY  IN  STEP  NO.
[MOV                   ]
CLEAR:END  HELP:MENU
```

⑤ GO

```
R     6   D20
▲    13▶MOV
     13   D20
     13   K2Y0018
```

Reading "MOV D20 K2Y0018" of the 13th step.

⑥ GO

```
R     6   D20
▲    13▶MOV
     13   D20
  NOT FOUND
```

Message when the "MOV" command is not present after the 13th step.

⇩

Now, reading the command with the Help function command specification is completed.

(2) Displaying comment
The following example shows the procedure of displaying the comment in the Read mode.

[Operation example]

<Key operation> <Display>

① Input the HELP key in the Read mode.
HELP

```
 ***HELP  MENU***
1: READ
2: COMMENT  DISPLAY
            CLEAR:END
```

② Select "2: COMMENT DISPLAY".
2

```
 ***COMMENT DISP.***
1: YES
2: NO
CLEAR:END  HELP:MENU
```

③ Select "1: YES".
1

```
R    0▶LD      X0000
▲    1 OUT     Y0020
     2 LD      X0000
      Motor start limit
```

Display the comment of the device at the cursor position.

④ Move the cursor to the following step.
↓

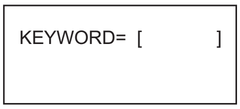
```
R    0 LD      X0000
▲    1▶OUT     Y0020
     2 LD      X0000
      Motor start check
```

4.5.6 PLC memory all clear

When input of a keyword is requested, all parameters and sequence programs can be cleared together with the keyword registered in the ACPU using the operation below.

[Operation example]

① Display the keyword input request.



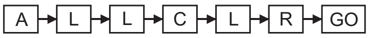
```
KEYWORD= [          ]
```

② Stop operation of ACPU

Set the target ACPU to the stop status.

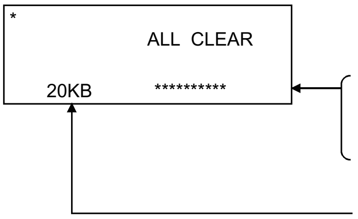
③ Operation of PC memory all clear

Input "ALLCLR" and press the GO key.



④ Display of PC memory all clear process

When the GOT starts clearing the process, the display in the left appears. "*" column and the total number of bytes change sequentially.



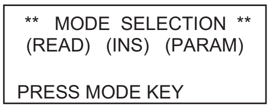
```
*
               ALL  CLEAR

     20KB        **********
```

"*" (maximum 10 per process) is displayed according to the memory capacity to be cleare
As the clearing process proceeds, each "*" is deleted.
One "*" shows 10% of memory capacity.

The memory capacity (total number of bytes) to be cleared is displayed in kbytes.
As the clearing process proceeds, 1 kbyte is decreased.

⑤ Completion of PC memory all clear process

When the GOT completes the clearing process, the screen in the left appears. (status before the mode selection)



```
 **  MODE  SELECTION  **
 (READ)  (INS)  (PARAM)

PRESS MODE KEY
```

⑥ If necessary, start the next operation.

4.6 List of Operation Procedures

4.6.1 Common operation

Details		Purpose	Procedures (key input sequence)
Basic operation	Input of keyword at start-up	Input when the keyword is registered in the ACPU.	Keyword → GO
	Mode selection Switching of valid key	Select the mode.	Mode key (READ, INSERT, PARAM) SHIFT → Mode key (WRITE, DELETE, OTHERS)
	Switching of valid key	Switch the valid key (function indicated at the upper/lower part of the key) by a user.	SHIFT or SET
	Action for incorrect input	Perform the operation for incorrect key input.	CLEAR, Mode key or SHIFT → Mode key
	Operation of command help function	Perform operation with the Help function command specification.	Perform program display operation in the Write/Insert mode. → HELP → 1 → 1 → 1 → Input the capital letter of the command. → GO → 1 → Input the capital letter of the command. → Input the corresponding command number. → GO ↳ 1 ↑
	Display of Comment	Display the comment stored in the ACPU.	Perform program display operation in the Write/Read/Insert/Delete mode. → HELP → 2 → 1 ↳ 2
Command input operation	Command code only	Input the command code only.	Command → GO
	Command code and 1 device	Input the command code and 1 device.	Command → SP → Device → Device No. → GO
	Other than above (command key input)	Input the command other than above with the command key.	Input the SP between the device, the source data and the destination.
	Other than above (device key input)	Input the command other than above without the command key.	Input the SP between the command, the device, the source data and the destination.

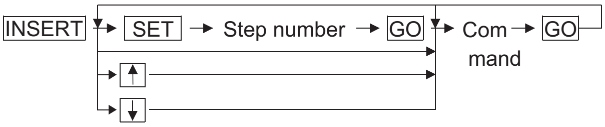
4.6.2 Operation in write mode (W)

Details	Purpose	Procedures (key input sequence)
Continuous write in NOP	Set the specified range in the program to NOP.	Program display in the Write mode → HELP → 1 → 2 → 1 → Start step specification → GO → Final step specification → GO → 2 → Start step specification → GO
Write/modify (change) of program	Write the new program/modify (change)	SHIFT → WRITE → SET → Step number → GO → Command → GO → ↑ → ↓

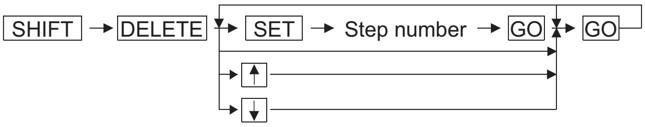
4.6.3 Operation in read mode (R)

Details	Purpose	Procedures (key input sequence)
Command reading with the specified step number	Read the command of the specified step number in the program.	READ → SET → Step number → GO → GO
Read the command with the specified command.	Read the specified command in the program.	READ → Command → Device → Device number → GO READ → Command → GO
Read the command with the specified device.	Read the command with the specified device used in the program.	READ → SET → Device → Device number → GO READ → SET → GO
Automatic scroll	Display the program with automatic scroll.	Read operation above → SET → ↑ / ↓ → SET → Step number → SET → SP → ↑ / ↓

4.6.4 Operation in insert mode (I)

Details	Purpose	Procedures (key input sequence)
Insert a command in the program.	Insert a command in the program.	 INSERT SET Step number GO Com mand GO ↑ ↓
Move the program.	Move the whole program.	Display the program in the Insert mode. → HELP → 1 → 2 → Specify the movement start step. → GO → Specify the movement end step. → GO → Specify the movement destination step. → GO
Copy the program.	Copy the program.	Display the program in the Insert mode. → HELP → 1 → 3 → Specify the copy start step. → GO → Specify the copy end step. → GO → Specify the copy destination step. → GO

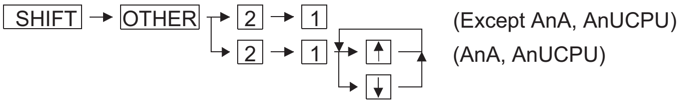
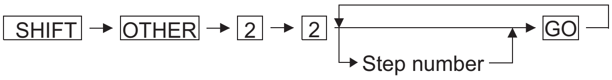
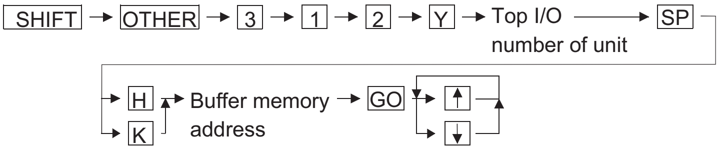
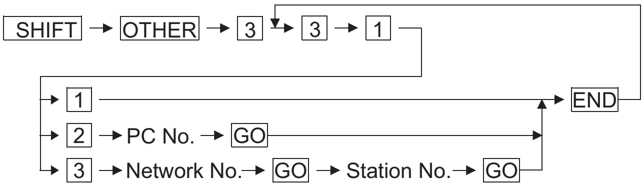
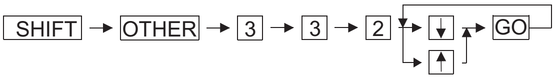
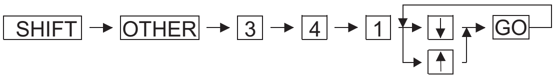
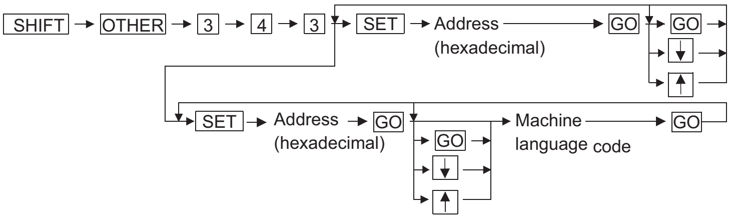
4.6.5 Operation in delete mode (D)

Details	Purpose	Procedures (key input sequence)
Delete a command from the program.	Delete a command from the program.	
Delete the specified range of the program.	Specify the range of the program for deletion.	Display the program in the Delete mode. → HELP → 1 → 1 → Specify the deletion start step. → GO → Specify the deletion end step. → GO
Delete the whole NOP.	Delete the whole NOP in the program.	Display the program in the Delete mode. → HELP → 1 → 2

4.6.6 Operation in parameter mode (P)

Details	Purpose	Procedures (key input sequence)
Clearing all parameters	Return the parameters to the initial setting status.	PARAM → 1 → ↑ → GO → END → ↑ → GO
Parameter setting (for A0J2HCPU)	Set the parameters for the A0J2HCPU.	PARAM → 2 → 1)
Setting of latch range	Select the latch range from "No latch", "1/2 latch" and "All latch".	1) → 1 → ↑ → GO → 2) ↓
Setting of step relay	Set the availability (S1536 to 2047) of the step relay.	1) → 2 → ↑ → GO → 2) ↓
Completion of setting	When the parameter setting is complete, write the PLC CPU.	2) → CLEAR → END → ↑ Setting for multiple items is also available. → GO (End of writing is displayed.)
Parameter setting (other than A0J2HCPU)	Set the parameters other than A0J2HCPU.	PARAM → 2 → 1)
Setting of memory capacity	Set the main sequence program capacity and the file register capacity.	1) → 1 → Capacity → GO → END → 2) (For main, input unit: 1K step) 1) → 1 → ↓ → Capacity → GO → END → 2) (For sub, input unit: 1K step) 1) → 1 → ↓ → points → GO → END → 2) (For file register, input unit: 1K point)
M, L, S setting (other than AnA, AnUCPU)	Set the top device number used in the latch relay/step relay.	1) → 2 → Top number of L → GO → Top number of S → GO → 2)
M, L, S setting (AnA, AnUCPU only)	Set the top device number used in the latch relay/step relay/internal relay.	1) → 2 → Top number of L → GO → Top number of S → GO → Top number of M → GO → 2)
Timer setting (other than AnACPU)	Set the top device used in the low speed/high speed/ retentive timers.	1) → 3 → Top number of timer → GO → 2)
Timer setting (AnACPU))	Set the number of timers used, the top device number that stores the setting value after T256, and the top device used in the low speed/ highspeed/retentive timers.	1) → 3 → No. of timers → GO → Top device for storage of setting values → GO → Top number of timer → GO → 2)
Counter setting (AnACPU only)	Set the number of counters used, and the top device number that stores the setting value after C255.	1) → 4 → No. of counters → GO → Top device for storage of setting values → GO → 2)
Setting of latch range WDT setting	Set the range of the device for latch setting.	1) → 5 → ↑ → Top number of latch → GO → ↑ → GO → 2) ↓ ↓ → END → End number of latch → GO
WDT setting (other than AnA, AnU)	Set the value of the watchdog timer in the unit of 10 ms.	1) → 6 → WDT value → GO → 2) (input unit: 10 ms)
Setting of I/O control system (only for A3HCPU and A3MCPU)	Set the I/O control system.	1) → 7 → ↑ → GO → 2) ↓
Completion of setting (write)	When parameter setting is complete, write the PLC CPU.	2) → CLEAR → END → ↑ Setting for multiple items is also available. → GO (End of writing is displayed.)

4.6.7 Operation in other mode (O)

Details	Purpose	Procedures (key input sequence)
Error check	Operation that checks the error step number/error code for the current error in the ACPU. (other than AnA and AnUCPU)	 SHIFT → OTHER → 2 → 1 2 → 1 → ↑ / ↓ (Except AnA, AnUCPU) (AnA, AnUCPU)
Program check	Check the program(double coil, command code, END command).	
Buffer memory batch monitoring	Monitor the buffer memory details of the special function unit.	 SHIFT → OTHER → 3 → 1 → 2 → Y → Top I/O number of unit → SP H / K → Buffer memory address → GO → ↑ / ↓
Clock monitor	Monitor the clock data of the ACPU.	SHIFT → OTHER → 3 → 1 → 3
Clearing of all PC memories	Clear all memories in the ACPU.	SHIFT → OTHER → 3 → 2 → GO → ↑ → GO
Clearing of all programs	Clear all sequence program, microcomputer program and T/C setting value areas.	SHIFT → OTHER → 3 → 2 → 2 → ↑ → GO
Clearing of all device memories	Clear all details of the bit device and the word device in the ACPU.	SHIFT → OTHER → 3 → 2 → 3 → ↑ → GO
PLC No. setting	Set the PLC No. of other stations for access on the MELSECNET II (/B) or MELSECNET/10.	 SHIFT → OTHER → 3 → 3 → 1 1 → END 2 → PC No. → GO 3 → Network No. → GO → Station No. → GO
Main/sub-program switching	Select the main/sub- program displayed on the list edit screen.	
Remote run/stop	Operate the run/stop status of the ACPU from the GOT.	
Read/write of machine language	Specify the memory address (absolute address) of the ACPU. Read the memory details and write the machine language to the memory.	 SHIFT → OTHER → 3 → 4 → 3 → SET → Address (hexadecimal) → GO → GO / ↓ / ↑ SET → Address (hexadecimal) → GO → GO / ↓ / ↑ Machine language code → GO

4.7 Error Messages and Corrective Actions

4.7.1 Error messages and corrective actions in direct CPU connection

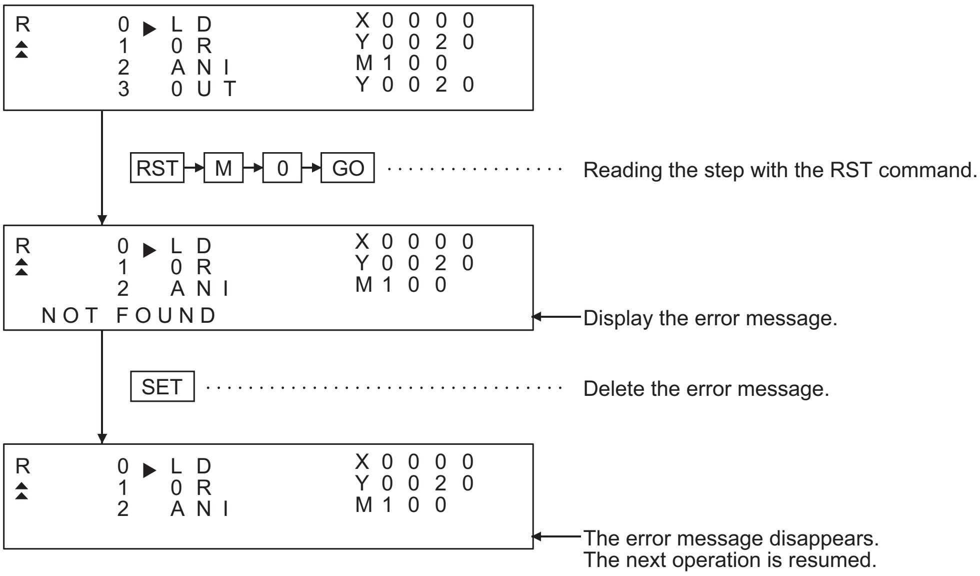
If an error is detected with the MELSEC-A list editor during operation of each mode, an error message appears at the 4th line of the display.
Error messages, display conditions and corrective actions are displayed below. If an error message appears, take the following actions to resume operation.

① Check the error message.

② Remove the cause of the error.

③ Input the corresponding key.
(The error message disappears. The screen returns to the status before error.)

(Example)



```
R      0 ▶ LD          X0000
⏶      1   OR          Y0020
       2   ANI         M100
       3   OUT         Y0020
```

Reading the step with the RST command.

```
R      0 ▶ LD          X0000
⏶      1   OR          Y0020
       2   ANI         M100
   NOT FOUND
```

Display the error message.

Delete the error message.

```
R      0 ▶ LD          X0000
⏶      1   OR          Y0020
       2   ANI         M100
```

The error message disappears.
The next operation is resumed.

Error message	Description	Corrective action
Address error	In machine language writing, the address which was tried to be written was at the write-protect area.	Set the correct address.
No corresponding program	The specified command was not found.	Check the program.
Memory cassette check	In communication with the CPU for clearing the keyword or writing the parameter, the memory cassette is insufficient or not mounted.	(1) Mount the memory cassette properly. (2) Replace the memory cassette with a new one.
Step over error	The set step number is larger than the maximum step number.	Set the correct step number.
Setting error	Setting value is not correct.	Set the correct value.
Not selectable	The function which cannot be executed was selected.	Select other function.
Operation error	The set device symbol is incorrect.	Perform the correct key operation.
Device error	The specified command was not found. The device number exceeds the range.	(1) Set the correct device symbol. (2) Set the number within the range of CPU device.
Identical coil	The identical coil is found in the sequence program.	Proceed to the next operation if it does not affect the control. Correct the program if it affects the control.
Command error	When the program is read, it cannot be converted to the proper command.	When the CPU has detected the error, stop running of the operation. After resetting the CPU, check the command around the error. Write the correct command. (For check of the error step, refer to 4.6.7.)
Command setting error	The command set at the time of read, write or insert is not correct.	Set the correct command.
Memory protect	When writing in the Write or the Insert/Delete mode, the memory protect switch in the memory cassette is ON.	Turn OFF the memory protect switch in the memory cassette.
Capacity over	Memory assignment set in the parameter exceeded the capacity of the memory cassette.	Set the parameter within the capacity of the memory cassette.
No END command	There is no END command.	Write the END command at the last step of the program.
PLC communication error	When the list editor function is started, proper communication with the PLC is not made.	Restart the list editor function. If communication is not made properly, check the following: (1) GOT main unit (2) Connection of the cable (3) CPU main unit (if any error has occurred)
PLC COMM ERROR PLEASE CLOSE	When the editor for MELSEC-A is started, proper communication with the CPU is not made.	Close and restart the editor for MELSEC-A. If communication is not made properly, check the following: (1) GOT main unit (2) Connection of the cable (3) CPU main unit
PC write error	Correct writing was not made in the Write or Insert mode.	(1) Check the setting of RAM/ROM. (2) Check the RAM mounting. (3) Check the setting of the memory protect switch in the CPU.
PLC is running	Writing, insertion or deletion was attempted during running of the CPU.	Stop the CPU.
PC No. error	The PLC number is set to other station.	Change the PLC number and set the station for access to the host.

(Continued to next page)

Error message	Description	Corrective action
**KS over	The value exceeding the range of the program capacity by **K steps was attempted to be set.	Reduce the program capacity by **K steps for setting.
**KP over	The value exceeding the range of the file register capacity by **K points was attempted to be set.	The value exceeding the range of the file register capacity by **K points was attempted to be set.
Not available for QnACPU. Set the PLC No.	The CPU at the list edit destination is QnACPU.	Set the PLC number and change the station for access.
The keyword is not input. Set the PLC No.	The "GO" key was pressed without input of the keyword on the keyword input screen.	Set the PLC number and change the station for list edit. Or select the same station and input the keyword.
The PLC parameter was changed. Read the ladder monitor again.	The PLC parameter exceeding the file (R) register capacity was set.	Restart the GOT system if required.
The PLC parameter was changed. Restart the GOT system.	The capacity of the file (R) register was set.	Read the ladder monitor on the PLC again if required.
The PLC program was edited. Read the ladder monitor again.	Edit the PLC program.	Read the ladder monitor on the PLC again if required.

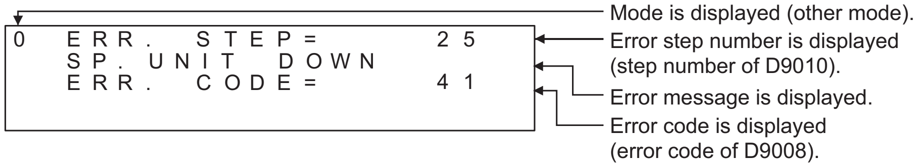
4.7.2 PLC CPU error messages and troubleshooting

When the error step read in other mode is performed, the error message and the error step of the current error in the ACPU are displayed.
Error messages, error details and corrective actions are displayed below. If an error message appears, take the following actions to resume operation.

1. Check the error message.
2. If the error code is not displayed, check the error code of special register D9008 with the system monitor function (Refer to Chapter 2.).
3. Remove the cause of the error.

(Display)

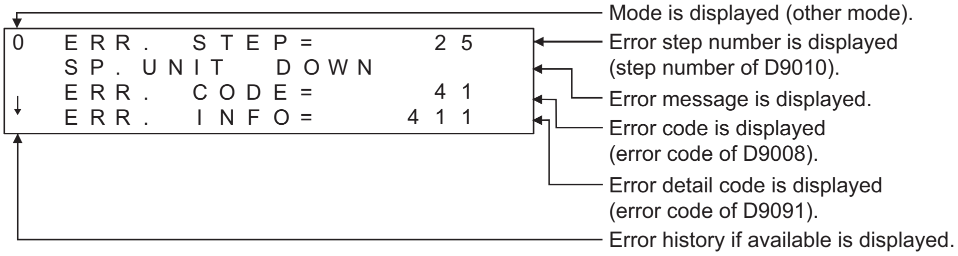
(1) Example of display for an error in the CPU other than AnA and AnU



```
0   ERR.  STEP=       25
    SP. UNIT  DOWN
    ERR.  CODE=       41
```

Mode is displayed (other mode).
Error step number is displayed (step number of D9010).
Error message is displayed.
Error code is displayed (error code of D9008).

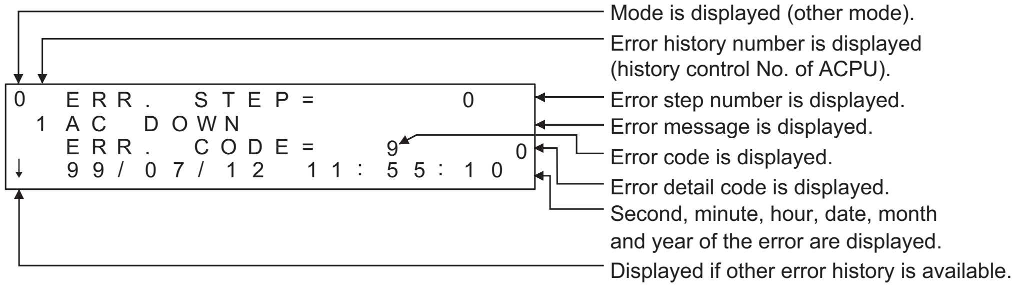
(2) Example of display for an error in the AnA or AnUCPU



```
0   ERR.  STEP=       25
    SP. UNIT   DOWN
    ERR.  CODE=       41
↓   ERR.  INFO=      411
```

Mode is displayed (other mode).
Error step number is displayed (step number of D9010).
Error message is displayed.
Error code is displayed (error code of D9008).
Error detail code is displayed (error code of D9091).
Error history if available is displayed.

(3) Example of next display for the display of "↓" above (error history is available)



```
0   ERR.  STEP=         0
  1 AC  DOWN
    ERR.  CODE=     9    0
↓   99/07/12  11:55:10
```

Mode is displayed (other mode).
Error history number is displayed (history control No. of ACPU).
Error step number is displayed.
Error message is displayed.
Error code is displayed.
Error detail code is displayed.
Second, minute, hour, date, month and year of the error are displayed.
Displayed if other error history is available.

Point

When an error message of the PLC CPU appears, refer to the ACPU programming manual (Common Command) and the user's manual for each CPU for corrective actions.

4.7.3 Error using list editor function on the link system

When the MELSEC-A list editor is used on the link system, the "PLC communication error (**)" may appear. In this case, check the error details and the corrective actions.

Error No.	Error message	Corrective action
2	Time-out error: No response to the request	Check the cable wiring.
4	Process cancel: New process request was given to the list editor function while the CPU is processing.	Perform correct key operations on the GOT.
5	Sum check error: A sum check error from the link communication has occurred.	There may be noise interference. Check the system again.
16	PLC No. error: There is no station corresponding to the PLC number.	Check the PLC number setting. Set the correct number.
19	This error may occur when the ACPU is reset during monitoring.	Perform the monitor setting again.
24	Remote error: Although remote stop/pause is performed from the computer link unit, remote run/stop is additionally performed.	Perform the remote run/stop/pause from either unit.
25	Refer to the next page for error messages and actions. After confirming the device value explained at the next page with the system monitor function, take action.	
32	Link error: While the slave station is monitoring the master station, the master station is reset.	Perform the monitor setting again.
34	EEPROM failure: The EEPROM, cannot be written due to EEPROM failure.	Replace the EEPROM with a new one.

[Detailed description of error No. "25"]

If error number "25" appears, the following causes are possible. Check the details and the corrective actions.

(1) When connected to the master station

Device number	Description	Details	
M9210	Link card error (for master station)	OFF : Normal ON : Error	The control depends on whether there is an error at the hardware of the link card. The link card in the CPU link unit is judged at the CPU. Replace the link unit.
M9224	Link status	OFF : Online ON : Offline, station-to-station test, or self-loopback test	The control depends on whether the master station itself is online or offline, or in the station-to-station mode or the self-loopback mode. Check the mode switch.
M9227	Loop test status	OFF : Not executed ON : Forward loop test and reverse loop test are being executed.	The control depends on whether the master station itself is executing the forward loop test or the reverse loop test.

(2) When connected to the local station

Device number	Description	Details	
M9211	Link card error (for local station)	OFF : Normal ON : Error	The control depends on whether there is an error at the hardware of the link card. The link card in the CPU link unit is judged at the CPU. Replace the link unit.
M9240	Link status	OFF : Online ON : Offline, station-to-station test, or self-loopback test	The control depends on whether the local station itself is online or offline, or in the station-to-station mode or the self-loopback mode. Check the mode switch.
M9257	Loop test status	OFF : Not executed ON : Forward loop test and reverse loop test are being executed.	The control depends on whether the local station itself is executing the forward loop test or the reverse loop test.

(3) When connected to the CPU in MELSECNET/10
An error in the MELSECNET/10 is reported using a four digit (hexadecimal) error number.
For details of the errors and corrective actions, see the MELSECNET/10 Network System Reference Manual.

If an error code not listed in the previous page is displayed, contact the nearest of our system service centers, agents, and branch offices.

5. MELSEC-FX LIST EDITOR

5.1 Features

The MELSEC-FX list editor enables you to change the sequence program in the FX PLC.
This function is intended to troubleshoot the PLC system and to streamline maintenance operations.
By installing list editor for MELSEC-A, an Option OS, from GT Designer2 into the GOT, you can edit the FX PLC program.
The features of the MELSEC-FX list editor are described below.

1 Parameters and sequence programs are easy to maintain.

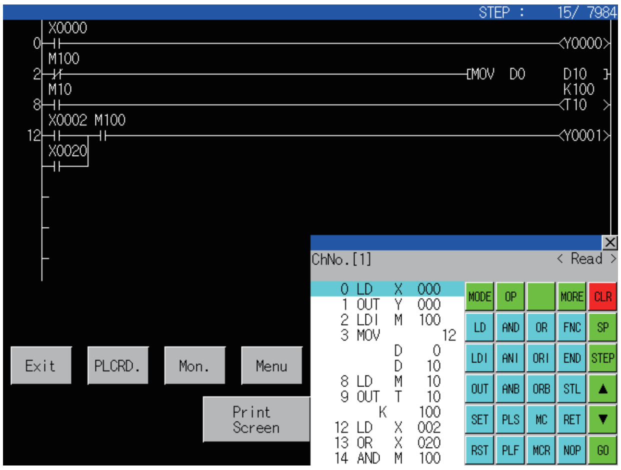
You can check or partly correct, change or add FX PLC CPU parameters and sequence programs simply by operating keys.
You can easily edit sequence programs without preparing any peripheral unit other than the GOT.

(Example of changing sequence program commands)

```
                 Changed
LD    X000                 LD    X000
OUT   Y020      ───►       OUT   Y030
LD    X001                 LD    X001
       ∫                          ∫
```

2 Combination with the ladder monitor

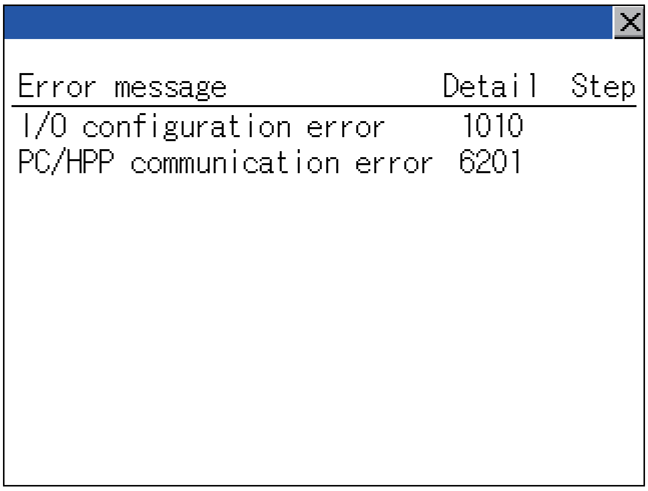
You can open the MELSEC-FX List Editor window from the Ladder Monitor screen with a single touch.
You can edit PLC program while checking the ladder.
You can also display a list from the step line displayed by the ladder monitor.



```
 0 LD    X  000
 1 OUT   Y  000
 2 LDI   M  100
 3 MOV        12
         D     0
         D    10
 8 LD    M    10
 9 OUT   T    10
        K    100
12 LD    X  002
13 OR    X  020
14 AND   M  100
```

3 Errors that occur during list editing can be checked easily.

Error messages, error codes, and number of steps for errors that occur in the FX PLC can be checked.
Details can be checked immediately even for errors that occur during list editing.

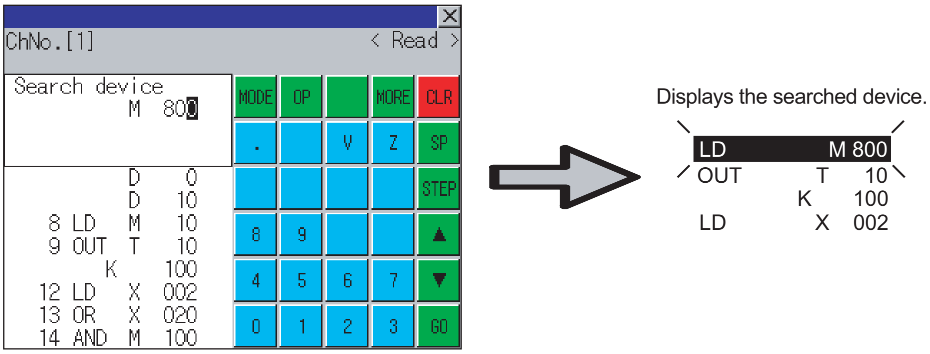


Error message	Detail	Step
I/O configuration error	1010	
PC/HPP communication error	6201	

4 Commands and devices can be searched and displayed.

Commands and devices used in sequence programs can be searched.
The correction position can be searched for cases such as when you want to correct a specific device.

Searched device
M800



```
ChNo.[1]                < Read >
Search device
           M   800
           D     0
           D    10
  8 LD     M    10
  9 OUT    T    10
         K     100
 12 LD     X   002
 13 OR     X   020
 14 AND    M   100
```

Displays the searched device.

```
LD              M 800
OUT          T     10
           K      100
LD           X    002
```

5.2 Specifications

5.2.1 System configuration

This section describes the system configuration of the MELSEC-FX list editor.
For further information about communication units and cables for each connection form, see the following.

GOT1000 Series Connection Manual

1 Controllers that can be edited with the MELSEC-FX list editor

Target controller
FXCPU

2 Connection forms

(○: Available, ×: Unavailable)

Function name		Connection form between GOT and PLC							
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSEC NET/10 connection	CC-Link connection		GOT multidrop connection
							ID*1	G4*2	
MELSEC-FX list editor	Sequence program writing, parameter setting, PLC diagnostics and keyword registration, etc.	×	○	×					×

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

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

3 Required option OS and option function board

The option OS and option function board shown below are required.

Option OS	OS memory space (user area)					Option function board			
	GT16		GT15	GT11	GT10	GT16	GT15	GT11	GT10
	Built-in flash memory (ROM)	User memory (RAM)							
MELSEC-FX list editor	542KB	1024KB	1058KB	0KB	Not required	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M	GT11-50FNB	Not required

(1) Option OS

(a) For GT16, GT15, and GT11
Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(b) For GT10
Installing the option OS is not required.

(2) OS memory space
The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board
(a) For GT16 and GT10
No option function board is required.
(b) For GT15 and GT11
Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

GT15 User's Manual (8.10 Option Function Board)
GT11 User's Manual (8.3 Option Function Board)

4 Functions list and monitor conditions

The following shows the memory that can be monitored by the MELSEC-FX list editor and the FX PLC status conditions.

(○ : Can be monitored △ : Can be monitored under certain conditions × : Cannot be monitored)

Function		Memory that can be monitored *2				FX PLC status	Reference
		Built-in memory	RAM memory cassette	EEPROM memory cassette, flash memory cassette	EPROM memory cassette		
Reading sequence programs	Displaying sequence programs	○	○	○	○	RUN/ STOP	Section 5.4.3
	Searching commands/ devices						Section 5.4.4
Writing sequence programs	Writing commands	○	○	△*1	×	For Stop only	Section 5.4.5
	Changing operands/set values						Section 5.4.6
Inserting commands							Section 5.4.5
Deleting commands							Section 5.4.7
Sequence program all clear							Section 5.4.8
PLC diagnostics		○	○	○	○	RUN/ STOP	Section 5.4.9
Parameter setting	Display						Section 5.4.10
	Set	○	○	△*1	×	For Stop only	
Keyword		○	○	○	○	RUN/ STOP	Section 5.4.11

*1 The operation is available only when the protect switch is OFF.

*2 The available memory differs depending on the FX PLC being used.
For further information, see the following manual.

☞ The hardware manual of the FX PLC being used

5.2.2 Access range

The access range is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

5.2.3 Precautions

(1) Inapplicable GOT
The FX list editor function cannot be used with the GT1030 and GT1020.

(2) Using other peripheral equipment for sequence program/parameter change
When using the MELSEC-FX list editor, do not change programs or parameters in the PLC CPU from other peripheral equipment.
If you make a change, temporarily exit the MELSEC-FX list editor after the change is made, then start the MELSEC-FX list editor again.
If you carelessly change the program on one PLC from multiple units of peripheral equipment (including GOT), the contents of the program in the PLC CPU and the peripheral equipment may not be the same, resulting in an unintended operation of the PLC CPU.

(3) Sequence program change
Stop the FX PLC before changing (writing, inserting, deleting) a sequence program or changing parameters.
Operation is not possible with the FX PLC running.

(4) If you press the GO key but the system does not proceed to the next operation (for example, a search)
Check the input contents (applied instruction number, device value, etc.).

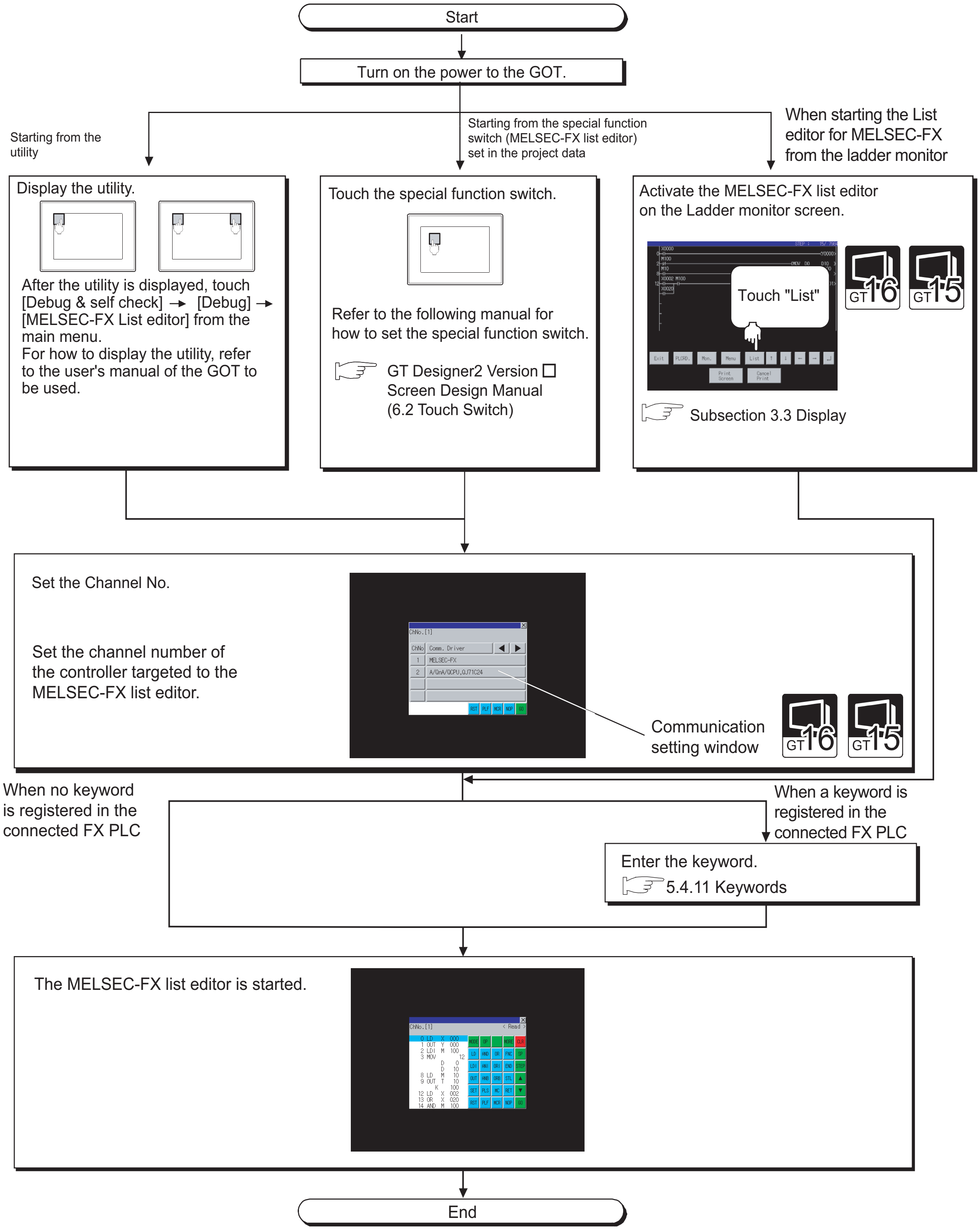
(5) When used together with the ladder monitor
Even if you execute the MELSEC-FX list editor with the ladder monitor activated, edited information will not be reflected on the Ladder Monitor screen.
To reflect such edited information, perform the PLC reading of the ladder monitor again.

(6) When using list monitor
Only devices to be used for basic instructions can be monitored.
The status of devices (word, bit) to be used for application instructions cannot be monitored.

5.3 Display

1 Outline until the start

This subsection describes an outline until the system monitor screen is displayed after List editor for MELSEC-FX (Option OS) is installed in the GOT.



Start
Turn on the power to the GOT.
Starting from the utility
Starting from the special function switch (MELSEC-FX list editor) set in the project data
When starting the List editor for MELSEC-FX from the ladder monitor

Display the utility.

After the utility is displayed, touch [Debug & self check] → [Debug] → [MELSEC-FX List editor] from the main menu.
For how to display the utility, refer to the user's manual of the GOT to be used.

Touch the special function switch.

Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

Activate the MELSEC-FX list editor on the Ladder monitor screen.

☞ Subsection 3.3 Display

Set the Channel No.

Set the channel number of the controller targeted to the MELSEC-FX list editor.

Communication setting window
GT16
GT15
When no keyword is registered in the connected FX PLC
When a keyword is registered in the connected FX PLC

Enter the keyword.
☞ 5.4.11 Keywords

The MELSEC-FX list editor is started.

Point

(1) How to display the utility
For how to display the utility, refer to the following.

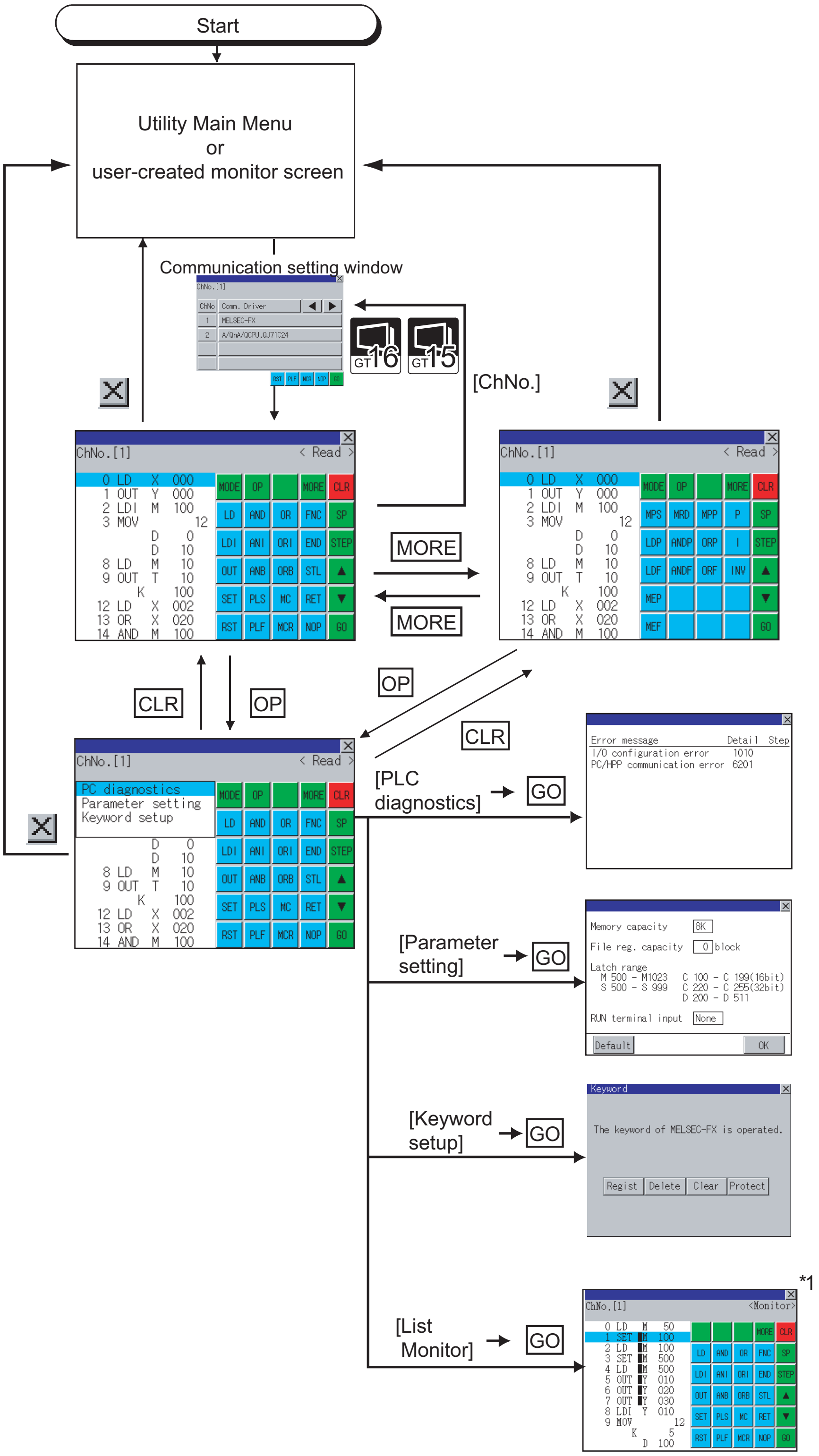
GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)
GT11 User's manual (9.3 Utility Display)
GT10 User's manual (8.2 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the MELSEC-FX list editor only.
For displaying the communication setting window at the second or later startup, touch [ChNo.] on the MELSEC-FX list editor screen. (5.4 Operation Method)

(3) If the project data has not been downloaded
The MELSEC-FX list editor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Change screens

This section describes how to change the screen.



Error message Detail Step
I/O configuration error 1010
PC/HPP communication error 6201

Memory capacity 8K
File reg. capacity 0 block
Latch range
M 500 - M1023 C 100 - C 199(16bit)
S 500 - S 999 C 220 - C 255(32bit)
D 200 - D 511
RUN terminal input None

The keyword of MELSEC-FX is operated.

*1 With setting special function switches (FX list monitor), the list monitor can be started on the monitor screen.
When the list monitor is started on the monitor screen, the list editor cannot be used.
For how to set special function switches, refer to the following manual.
☞ GT Designer2 Version ☐ Screen Design Manual (6.2 Touch Switch)

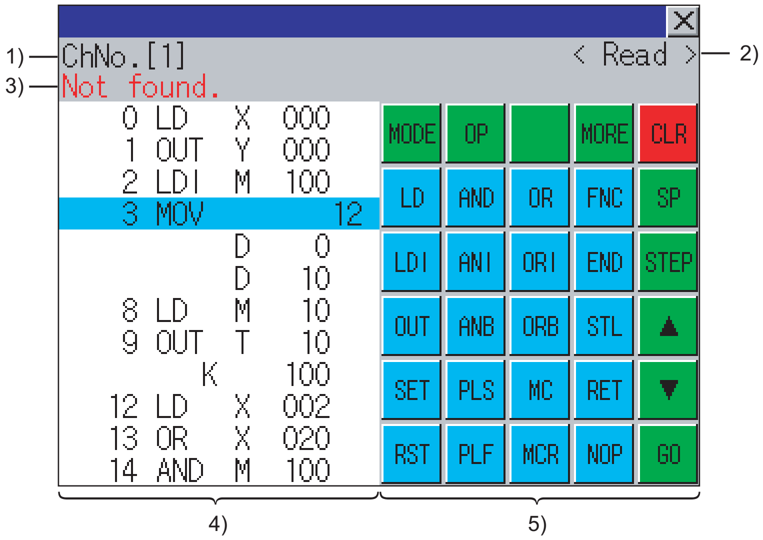
5.4 Operation Procedures

This section describes the contents of the MELSEC-FX list editor and the key functions displayed on the screen.
The display screen of the MELSEC-FX list editor varies slightly with the GOT used. This chapter mainly uses the screen of the GT1575-V for explanation.

5.4.1 Key arrangement and a list of key functions

The arrangement and functions of the keys displayed on the MELSEC-FX List Editor window are described below.

1 Displayed contents



Not found.

```
 0 LD   X  000
 1 OUT  Y  000
 2 LDI  M  100
 3 MOV        12
        D      0
        D     10
 8 LD   M     10
 9 OUT  T     10
      K      100
12 LD   X    002
13 OR   X    020
14 AND  M    100
```

No.	Item	Description
1)	Channel No. GT16 GT15	Displays the currently selected channel number. Touching "ChNo." displays the communication setting window. The communication setting window is not displayed if the MELSEC-FX list editor is started from the ladder monitor.
2)	Mode	Displays a mode for MELSEC-FX list editor. (☞ 5.4.2 Selection and operation of modes) [Monitor] is displayed when the list monitor is executed.(☞ Section 5.4.12 List monitor)
3)	Error message	Displays the contents of errors that occur with the MELSEC-FX list editor. (5.5 Error Messages and Corrective Action)
4)	List display area	Displays the sequence program in list format (12 digits). The position (line) that can be edited is displayed with a bar.
5)	Key area	Displays the keys that can be used with the MELSEC-FX list editor.

2 Key functions

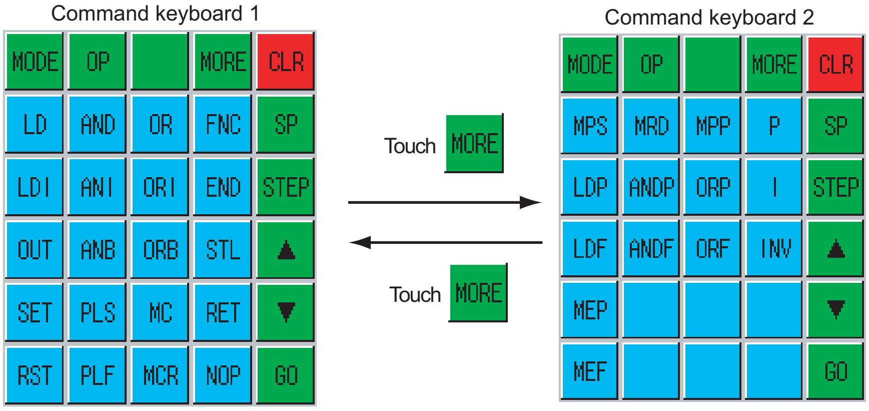
The table below shows the functions of the keys that are used for the operation on the MELSEC-FX list editor screen.

Key	Function
ChNo.[1] GT16 GT15	Displays the communication setting window. The communication setting window is not displayed if the MELSEC-FX list editor is started from the ladder monitor.
MODE	Selects a mode for MELSEC-FX list editor. (☞ 5.4.2 Selection and operation of modes)
OP	Displays the PLC diagnostics, parameter setting, and keyword selection menu.
MORE	Switches between command keyboard 1 and command keyboard 2. (☞ 3 "Keyboard switching" in this section)
CLR	When inputting commands :Cancels the key input when only part of the command has been input. (☞ Section 5.4.14 Action for an incorrect key input) When option menu is displayed: Closes the option menu. Commands cannot be deleted with this key. (☞ 5.4.7 Deleting commands)
SP	Space key. This key is used when setting timers and counters, writing applied commands, etc.
STEP	Displays the list from a specified step No. when the step No. is input.
▲ ▼	Moves the list display area bar up and down and switches the line being edited.
GO	Determines the key operation.
LD to INV , 0 to 9 , etc.	Inputs commands, device names, etc. The key contents depend on the input contents. The commands that can be used differ depending on the target FX PLC. Refer to the manual for the FX PLC to be used.
☒	Exits the MELSEC-FX list editor.

3 Keyboard switching

Touching the MORE button switches the command keyboard 1 and command keyboard 2.

When you touch the button for a keyboard function, the optimum keyboard for input for that function is displayed automatically.

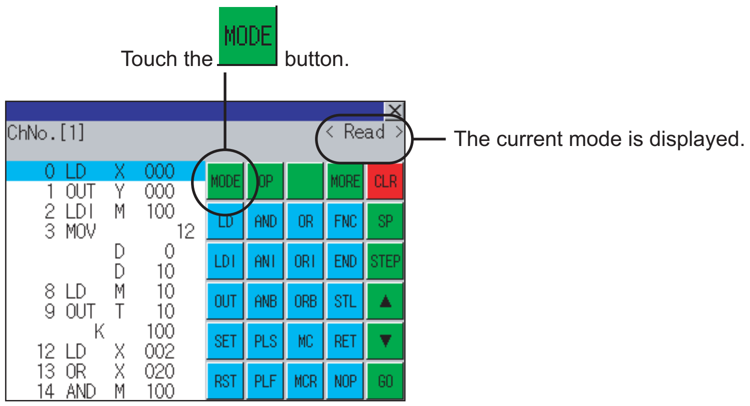


5.4.2 Selection and operation of modes

The MELSEC-FX list editor has four modes: READ, WRITE, INSERT, and DELETE.
Select an appropriate mode for the intended operation.
For more information on the mode to select, refer to the function operations from subsection 5.4.3 onward.

1 How to change modes

Touch the MODE button.
Each time you touch this button, the mode changes.



```
 0 LD   X  000
 1 OUT  Y  000
 2 LDI  M  100
 3 MOV        12
       D    0
       D   10
 8 LD   M  10
 9 OUT  T  10
      K   100
12 LD   X  002
13 OR   X  020
14 AND  M  100
```

2 In the case the mode cannot be changed

In the following cases, only READ mode is allowed.
If you try to change to other than READ mode, an error message is displayed.
To change to other than READ mode, take the action below.

Error Message	Description	Corrective action
PLC is running	The FX PLC is in the RUN status.	Stop the FX PLC.
Can not write.	The protect switch of the EEPROM memory cassette is on.	Switch off the protect switch of the EEPROM memory cassette.
	The EPROM memory cassette is enabled.	Set a memory other than EPROM as the memory to write to.

5.4.3 Sequence program display

Sequence programs are read from the FX PLC to the GOT and displayed.
There are two displaying methods: specifying the step number, and scrolling one screen at a time.

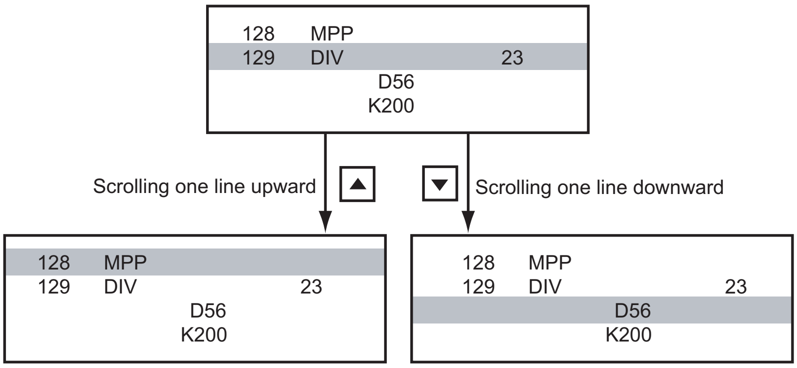
1 Display using cursor keys

(1) Operation

Scroll with ▲ or ▼.

(2) Example

Scroll one line upward or downward.



```
128     MPP
129     DIV                 23
                  D56
                  K200
```

```
128     MPP
129     DIV                 23
                  D56
                  K200
```

```
128     MPP
129     DIV                 23
                  D56
                  K200
```

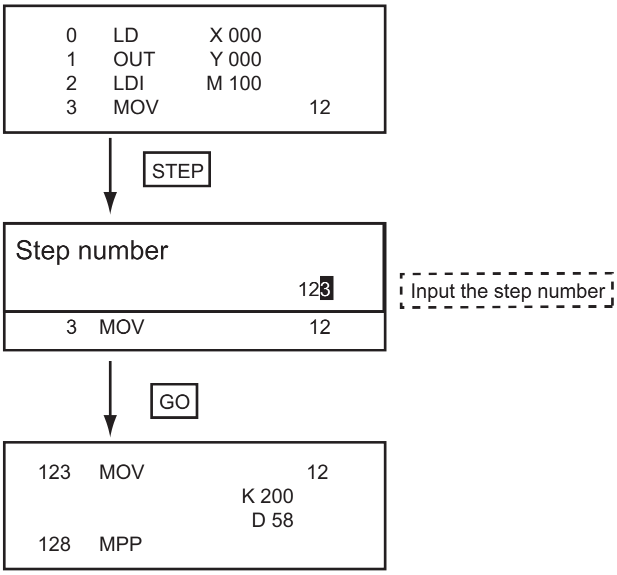
2 Display specifying the step number

(1) Operation

STEP → Input the step number. → GO

(2) Example

Displaying step number 123.



```
  0    LD      X 000
  1    OUT     Y 000
  2    LDI     M 100
  3    MOV              12
```

```
Step number
                     123
  3   MOV               12
```

```
123   MOV               12
                 K 200
                  D 58
128   MPP
```

Hint! When the specified step number is the operand of an applied instruction

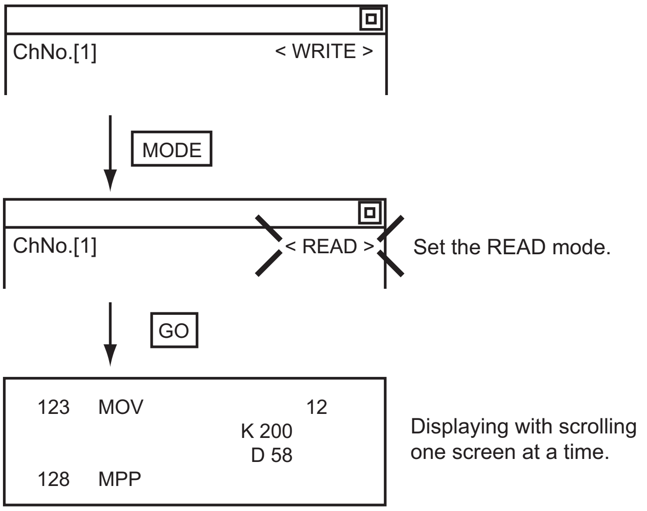
If the specified step number is a timer (T) or counter (C) set value or the operand of an applied instruction, that command section is displayed at the head.

3 Display scrolling one screen at a time

(1) Operation

MODE → GO
(Read mode)

(2) Example
Displaying with scrolling one screen at a time.



Set the READ mode.

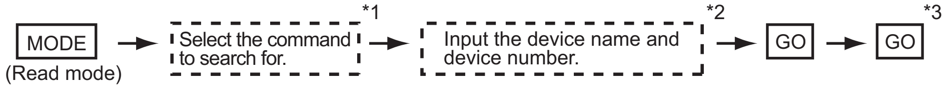
Displaying with scrolling one screen at a time.

5.4.4 Searching commands and devices

Displays a command or device by searching it in sequence program from Step 0.

1 Command search

(1) Operation

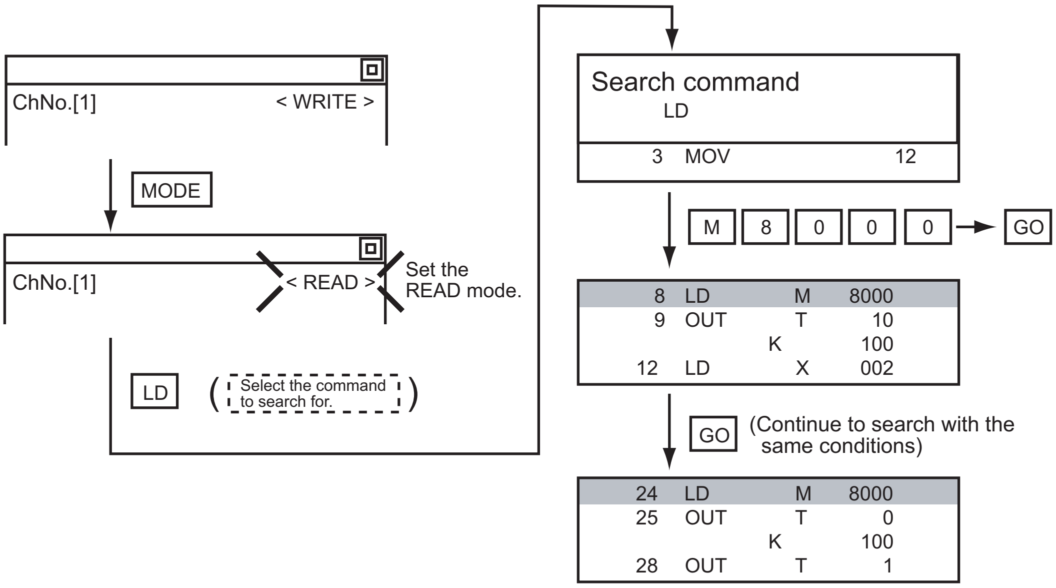

MODE
(Read mode)
Select the command to search for.
*1
Input the device name and device number.
*2
GO
GO
*3

*1 If the command you want to search for is not on the keyboard, touch the MORE key to switch to the other keyboard.
When searching for an applied instruction, touch the FNC key and input the applied instruction number.
When searching for a label, touch P or I and input the pointer number.
(☞ 5.4.5 2 Writing applied instructions)

*2 Input only when searching for commands requiring a device name and device number.

*3 After the search results are displayed, you can continue searching with the same conditions by touching the GO key.
Touching any key other than the GO key ends the search.

(2) Example
Searching for LD M8000



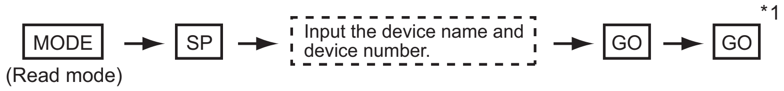
Point

Pointer (P, I) searches

For pointer searches, only labels are searched.
Pointers specified as operands in applied instructions are not searched.

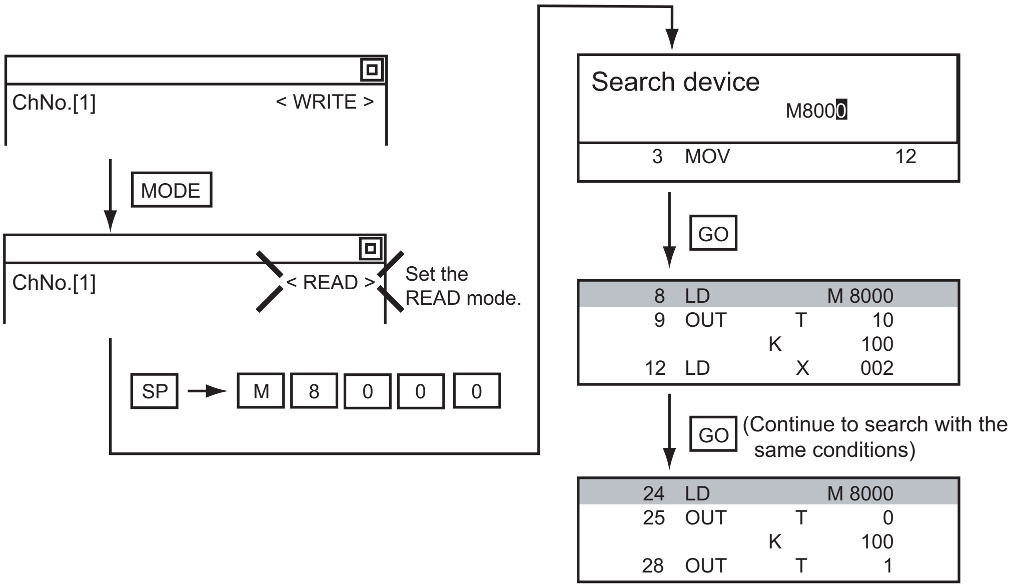
2 Device search

(1) Operation



*1 After the search results are displayed, you can continue searching with the same conditions by touching the GO key.
Touching any key other than the GO key ends the search.

(2) Example
Searching for LD M8000



```
ChNo.[1]                < WRITE >

ChNo.[1]                < READ >

Search device
                M8000
  3   MOV                  12

  8   LD             M 8000
  9   OUT        T       10
             K          100
 12   LD         X      002

 24   LD             M 8000
 25   OUT        T        0
             K          100
 28   OUT        T        1
```

Point Devices that cannot be searched

The following devices cannot be searched.

- Pointers, interrupt pointers
- Constant K, constant H, constant E
- Bit devices with specifying numbers only
- Special function unit/block buffer memory
- Devices specified with the operand of an applied instruction

Pointers and interrupt pointers can be searched for with command searches.

(☞ 1 "Command search" in this section)

5.4.5 Writing commands

Writes a sequence program to the FX PLC. (Overwrite/Insert)

1 Writing basic commands

(1) Operations

(a) Inputting command only (Ex.: ANB, ORB command etc.)

Stop the FX PLC → MODE → Input the command → GO

For overwriting: (WRITE mode)
For insertion: (INSERT mode)

(b) Inputting command and device (LD, AND commands etc.)

Stop the FX PLC → MODE → Input the command

For overwriting: (WRITE mode)
For insertion: (INSERT mode)

→ Input the device name and device number → GO

(c) Inputting command, No. 1 device, No. 2 device (MC, OUT (T, C) commands, etc.)

Stop the FX PLC → MODE → Input the command → Input the device name and device number

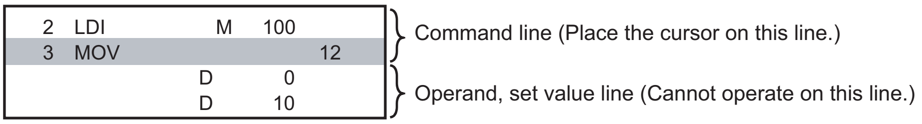
For overwriting: (WRITE mode)
For insertion: (INSERT mode)

→ SP → Input the device name and device number → GO

Point

Moving the cursor to the position to write the command

When starting to write a command, place the cursor on the command line (the line on which the step number is displayed).
You cannot write a command with the cursor on an operand or set value line.



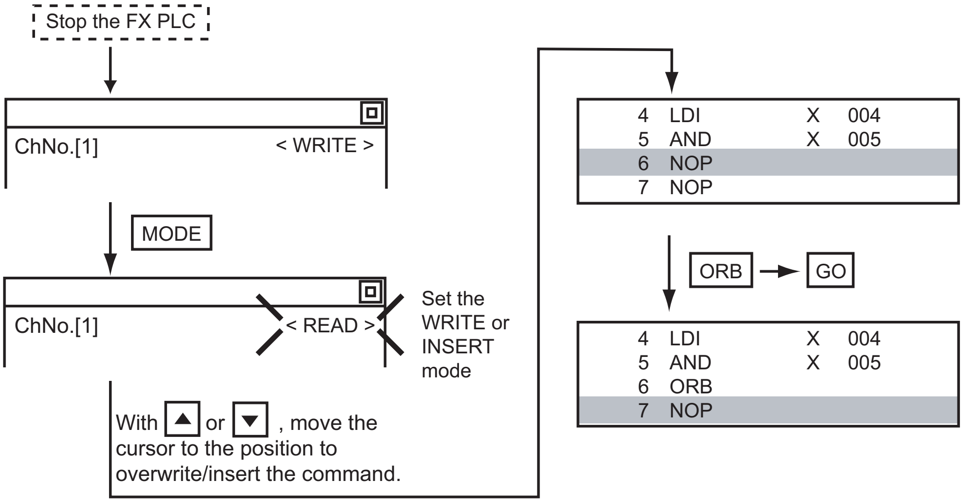
```
2  LDI          M    100
3  MOV                   12
              D        0
              D       10
```

Command line (Place the cursor on this line.)

Operand, set value line (Cannot operate on this line.)

(2) Example

(a) Writing ORB command



Stop the FX PLC

```
ChNo.[1]                  < WRITE >
```

MODE

```
ChNo.[1]                  < READ >
```

Set the WRITE or INSERT mode

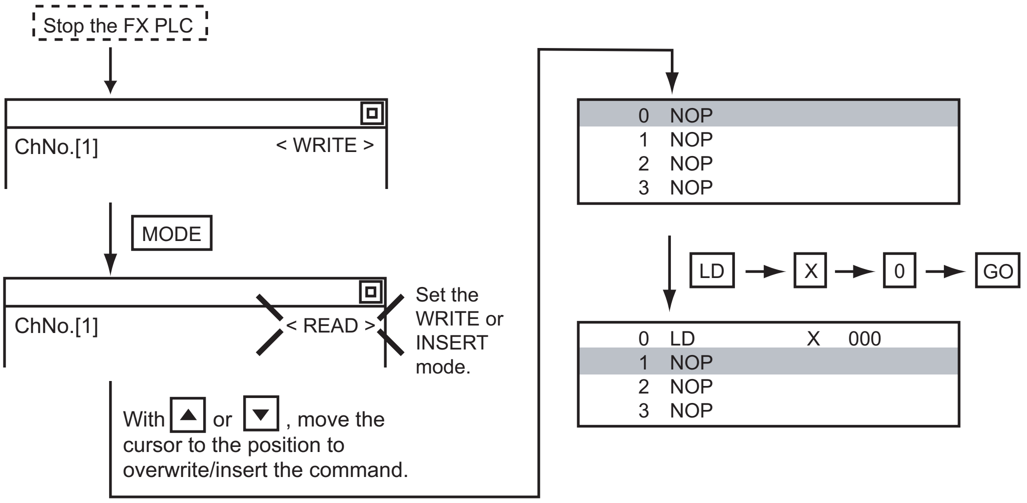
With ▲ or ▼, move the cursor to the position to overwrite/insert the command.

```
4  LDI        X   004
5  AND        X   005
6  NOP
7  NOP
```

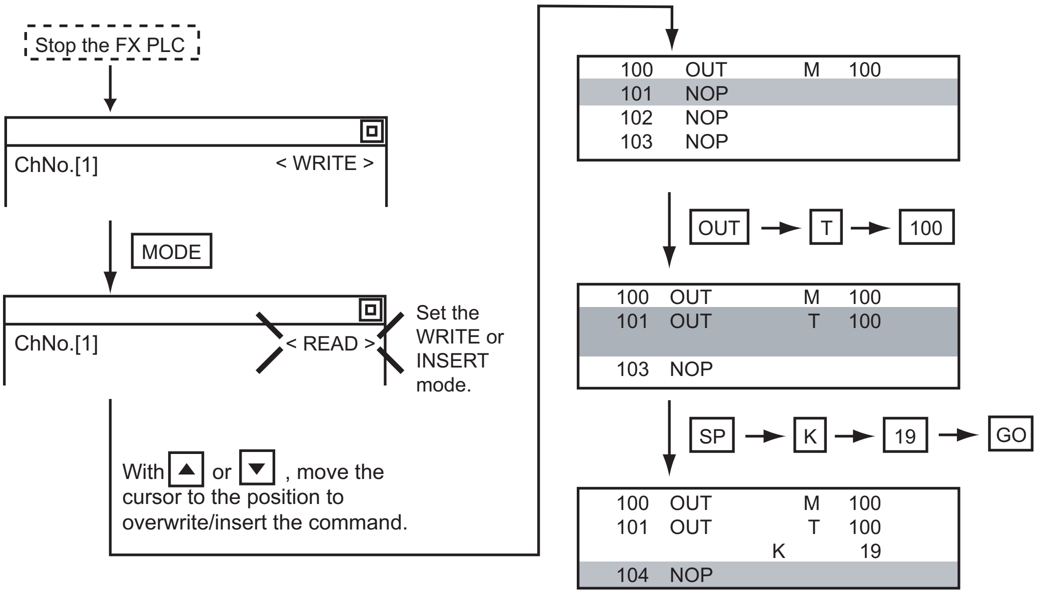
ORB → GO

```
4  LDI        X   004
5  AND        X   005
6  ORB
7  NOP
```

(b) Inputting LD X000

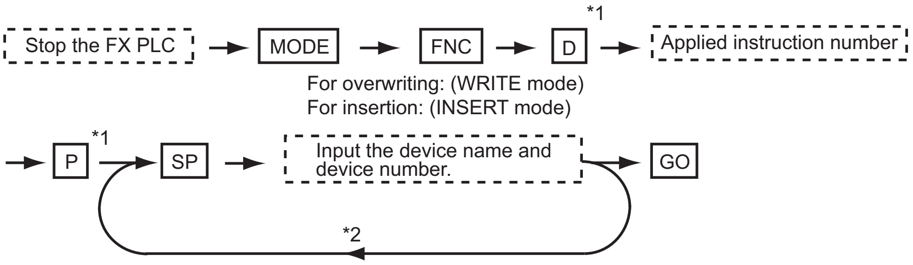


(c) Inputting OUT T100 K19



2 Writing applied instructions

(1) Operations


Stop the FX PLC
MODE
FNC
D
*1
Applied instruction number
For overwriting: (WRITE mode)
For insertion: (INSERT mode)
P
*1
SP
Input the device name and device number.
GO
*2

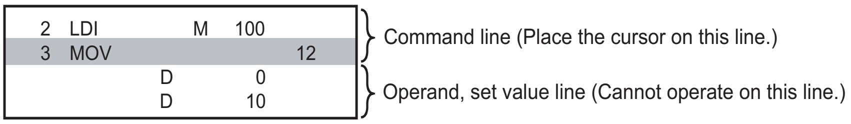
*1 D (double word command) and P (pulse execution format command) can also be input after the applied instruction number is input. Inputting in the order P → D is also possible.

*2 When a command specifies multiple devices for operations, input the SP key followed by the device name and device number.

Point

(1) Moving the cursor to the position to write the command

When starting to write a command, place the cursor on the command line (the line on which the step number is displayed).
You cannot write a command with the cursor on any other line.

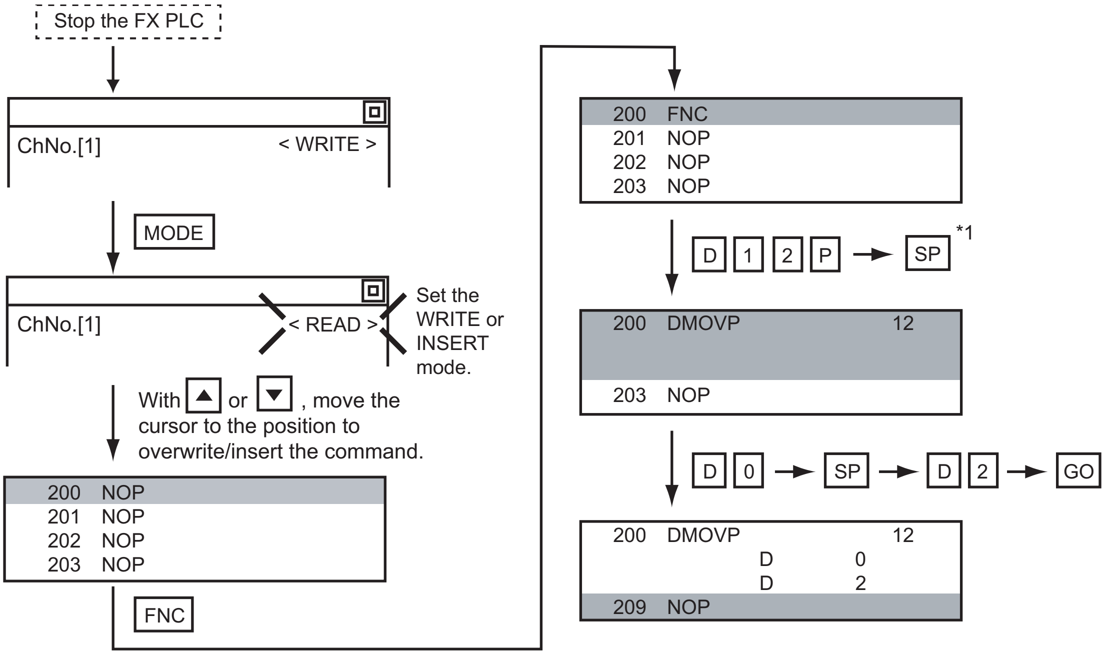


```
 2  LDI          M   100
 3  MOV                     12
              D        0
              D       10
```

Command line (Place the cursor on this line.)
Operand, set value line (Cannot operate on this line.)

(1) Commands using a text string constant for a command operand (such as ASC command)
With the MELSEC-FX list editor, text string constants cannot be written as operands. (such as ASC commands)
Use GX Developer for writing such commands.

(2) Example
Input "DMOVP D0 D2".



```
ChNo.[1]                  < WRITE >
```

```
ChNo.[1]                  < READ >
```

```
200  NOP
201  NOP
202  NOP
203  NOP
```

```
200  FNC
201  NOP
202  NOP
203  NOP
```

```
200  DMOVP            12

203  NOP
```

```
200  DMOVP            12
             D        0
             D        2
209  NOP
```

Stop the FX PLC
MODE
Set the WRITE or INSERT mode.
With ▲ or ▼ , move the cursor to the position to overwrite/insert the command.
FNC
D 1 2 P → SP
*1
D 0 → SP → D 2 → GO

*1 The MOV command is FNC12.

5.4.6 Changing operands, set values

Changes the operand section of an applied instruction and OUT (T, C) command set value.

1 Operation

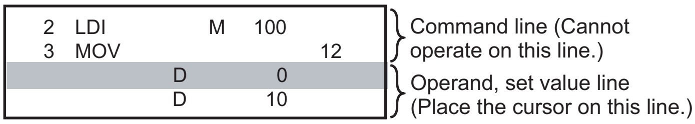
Stop the FX PLC → MODE (Read mode) → SP → Input the device name and device number → GO

*1 For decimal numbers, input K, then the number.
For hexadecimal numbers, input H, then the number.

Point

Moving the cursor to the line on which the operand or set value is to be changed

When starting to change an operand or a set value, place the cursor on the line of the operand or set value to be changed (the line on which the step number is not displayed).
If you place the cursor on the command line, the input operation is not possible.

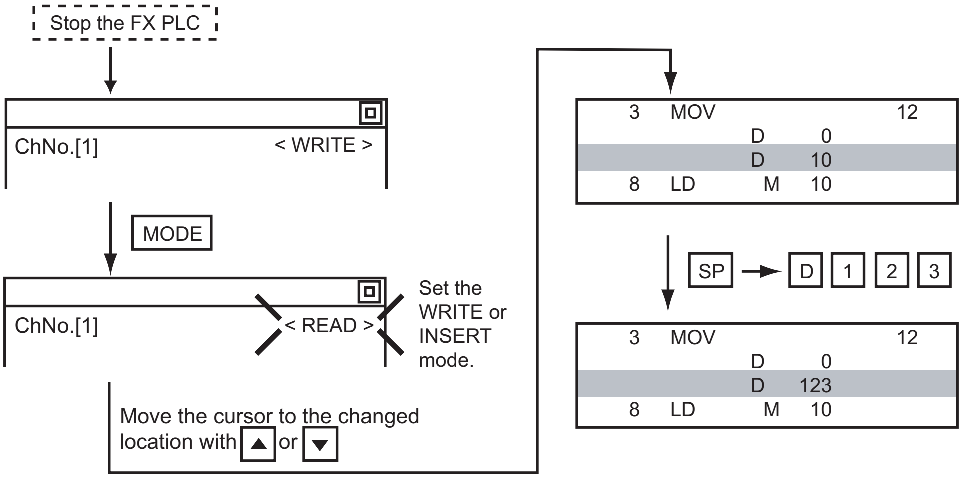


```
 2  LDI          M   100
 3  MOV                    12
                D        0
                D       10
```

Command line (Cannot operate on this line.)
Operand, set value line (Place the cursor on this line.)

2 Example

Changing "MOV D0 D10" to "MOV D0 D123"



5.4.7 Deleting commands

Deletes one command at a time from a sequence program.

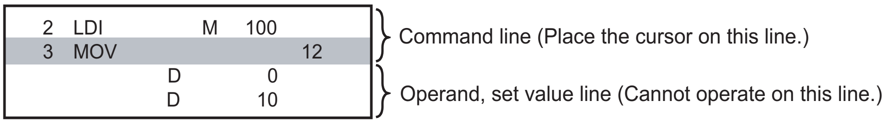
1 Operation

Stop the FX PLC → MODE (DELETE mode) → Move the cursor to the command to be deleted → GO

Point

When moving the cursor to the position where the command is to be deleted.

Place the cursor on the command line (the line on which the step number is displayed).
You cannot delete the command if the cursor is placed on the line of an operand or set value.



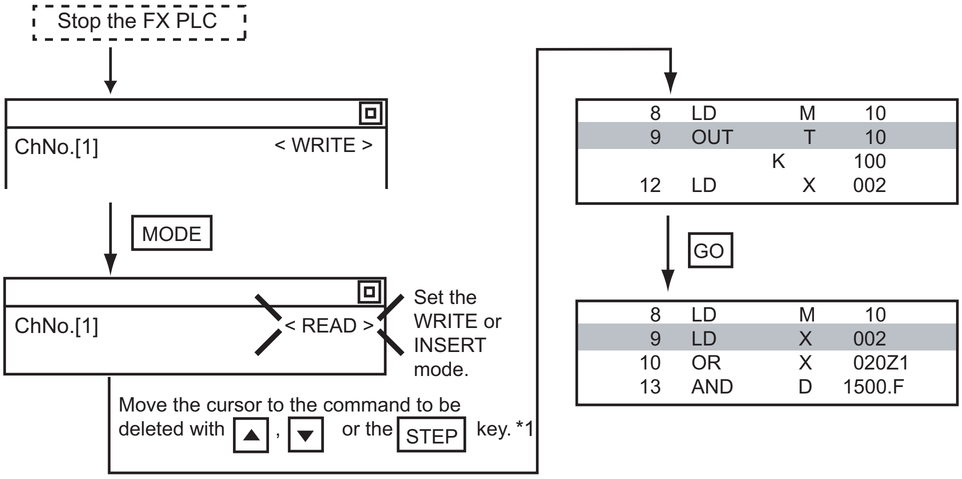
```
 2  LDI          M   100
 3  MOV                    12
            D          0
            D         10
```

Command line (Place the cursor on this line.)

Operand, set value line (Cannot operate on this line.)

2 Example

Deleting "OUT T10 K100"



Set the WRITE or INSERT mode.

Move the cursor to the command to be deleted with ▲, ▼ or the STEP key. *1

```
 8  LD       M    10
 9  OUT      T    10
         K       100
12  LD       X   002
```

```
 8  LD       M    10
 9  LD       X   002
10  OR       X   020Z1
13  AND      D   1500.F
```

5.4.8 Sequence program all clear

Clears all the sequence programs.

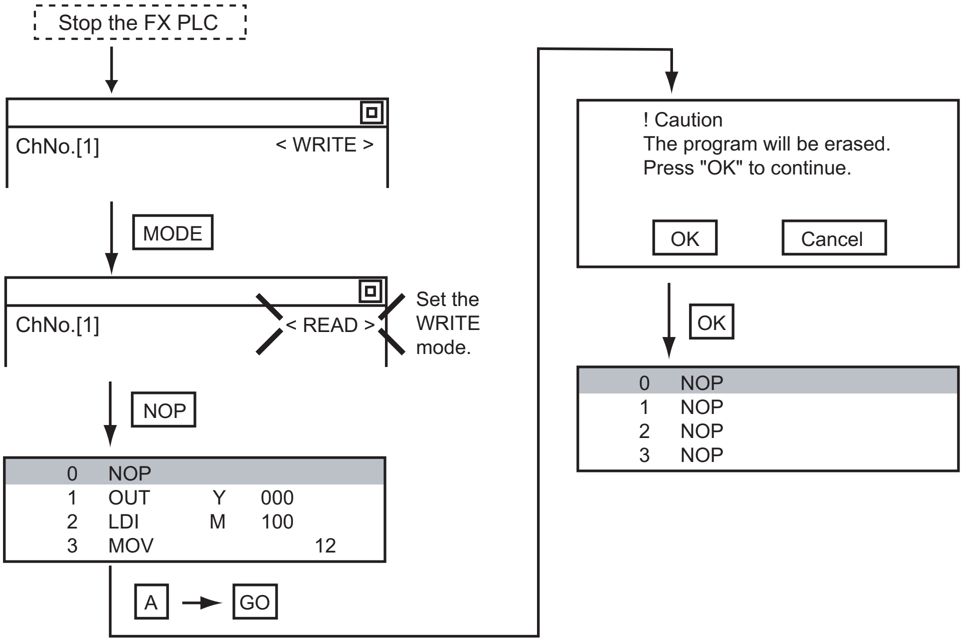
1 Operation

Stop the FX PLC → MODE → NOP → A → GO

(WRITE mode)

2 Example

Clears all the sequence programs.



```
ChNo.[1]                    < WRITE >
```

```
ChNo.[1]                    < READ >
```

Set the WRITE mode.

```
0   NOP
1   OUT      Y   000
2   LDI      M   100
3   MOV                12
```

! Caution
The program will be erased.
Press "OK" to continue.

```
0   NOP
1   NOP
2   NOP
3   NOP
```

Point

Items cleared when All Clear for a sequence program is performed

When All Clear is executed, the parameters before program execution are initialized and Latch Clear is executed.
The memory space becomes the default value, the comment area a 0 block, the file register space a 0 block, and keywords unregistered.
After All Clear, set the above parameters etc. again.

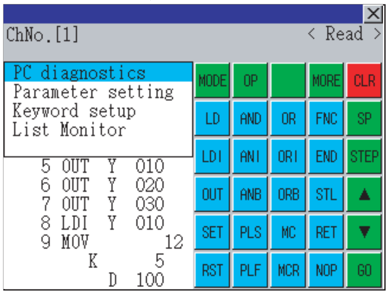
5.4.9 PLC diagnostics

Displays the FX PLC error message, error code, and step at which the error occurred.

1 Operation

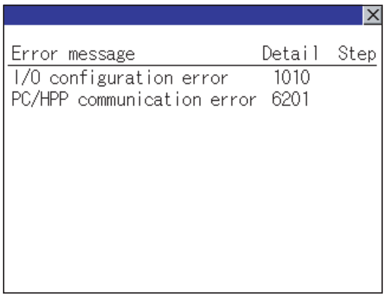
OP → [PLC diagnostics] → GO

↓ OP → Select [PLC diagnostics] with ▲ or ▼



```
  5 OUT  Y  010
  6 OUT  Y  020
  7 OUT  Y  030
  8 LDI  Y  010
  9 MOV        12
       K        5
         D  100
```

↓ GO

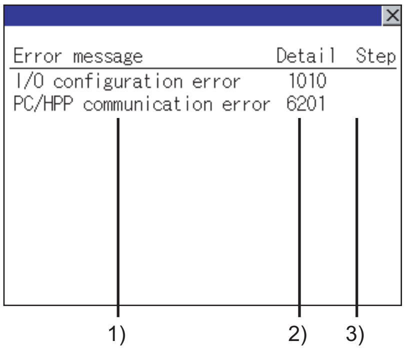


```
Error message               Detail  Step
I/O configuration error      1010
PC/HPP communication error  6201
```

2 PLC diagnostics screen

The following describes the contents displayed on the PLC diagnostics screen and the function of on-screen key.

(1) Displayed contents



```
Error message               Detail  Step
I/O configuration error      1010
PC/HPP communication error  6201
```

No.	Item	Display contents
1)	Error message	Displays the error message. (I/O configuration error/PLC hardware error/PC/HPP communication error/Serial communication error/Parameter error/Syntax error/Circuit error/ Operation error)
2)	Detail	Displays the error code.
3)	Step	Displays the step number in the sequence program at which the error occurred. (This is displayed only for a syntax error, circuit error, or operation error.)

Remark

Error details

For details on an FX PLC error, refer to the manual below.

☞ Programming manual for the FX CPU used

(2) Key functions

The table below shows the functions of the keys that are used for the operation on the PLC diagnostics screen.

Key	Function
☒	Exits the PLC diagnostics.

5.4.10 Parameter setting

Sets FX PLC parameters.

1 Parameters that can be changed and change targets

(1) Parameters that can be changed

The parameters that can be changed with the MELSEC-FX list editor and the target FX PLCs are as follows.

(○: Can be set/changed ×: Cannot be set/changed)

Item	Target CPU							
	FX0(S) /FX0N	FX1	FX2(C)	FX1S	FX1N(C)	FX2N(C)	FX3G	FX3U(C)
Memory space setting	×	○	○	×	×	○	○	○
File register space setting	○[1]	×	○	○	○	○	○	○
Latch range setting	×[2]	○	○	×[2]	×[2]	○	×	○
RUN terminal setting	×	×	×	○	○	○	○	○
Initialization of parameters	○	○	○	○	○	○	○	○

[1] When connecting an FX0(S), set "0".
Setting other than "0" causes a parameter error.

[2] When the parameters are initialized, the display on the MELSEC-FX list editor is different from the FX PLC default values, but do not change the latch range. Changing the latch range causes an error.

(2) Change targets

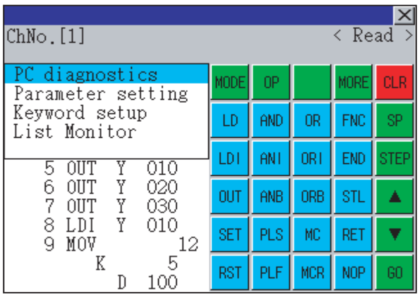
When a memory cassette is mounted, the parameters in the memory cassette are targeted for changes.

2 Operation

Stop the FX PLC [1] → OP → [Parameter setting] → GO

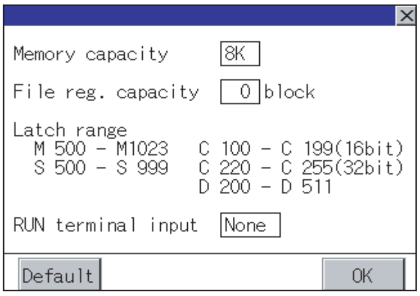
Stop the FX PLC [1]

↓ OP → Select [Parameter setting] with ▲ or ▼.



```
 5 OUT  Y  010
 6 OUT  Y  020
 7 OUT  Y  030
 8 LDI  Y  010
 9 MOV        12
        K      5
           D 100
```

↓ GO


Memory capacity 8K

File reg. capacity 0 block

Latch range
M 500 - M1023 C 100 - C 199(16bit)
S 500 - S 999 C 220 - C 255(32bit)
D 200 - D 511

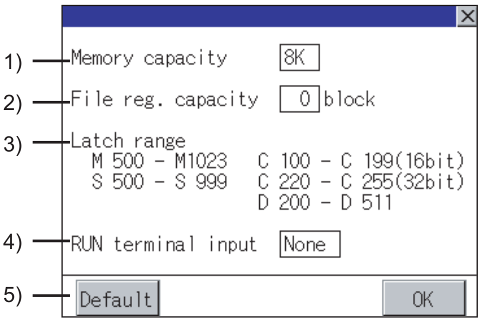
RUN terminal input None

[1] When checking parameters (not changing), it is not necessary to stop the PLC.

3 Parameter setting screen

The following describes the contents displayed on the PLC diagnostics screen and the function of on-screen keys.

(1) Displayed contents



Memory capacity 8K

File reg. capacity 0 block

Latch range
M 500 - M1023 C 100 - C 199(16bit)
S 500 - S 999 C 220 - C 255(32bit)
D 200 - D 511

RUN terminal input None

Default OK

No.	Item	Display contents
1)	Memory capacity	Sets the memory space (number of steps). If you touch the *K section, you can change the memory space.
2)	File reg. capacity	Sets the memory space (number of blocks) allocated to the file register. Touch the ☐ section and input the number of blocks.
3)	Latch range	Sets the latch range (power failure hold area). Touch the number display section and input the value.
4)	RUN terminal input	Sets whether or not to use one of the FX PLC input terminals for RUN input. Touch the ☐ section and set the device to be set for the RUN terminal.
5)	Default	Initializes the parameters

Point

Memory space for kana comments after changing memory space, file register space

If the memory space is set smaller than the total of the file register space and kana comment space, the kana comment space is automatically reduced.
(With the MELSEC-FX list editor, the kana comment space is not displayed.)
Note that if any setting as described below is made, the kana comment space is reduced.
(Settings that reduce kana comment space and the kana comment space after setting change)
Settings resulting in $Nm < Nf \times 500 + Nk \times 500 + 500$

$$\text{Kana comment space (steps) after setting change} = \frac{Nm - Nf \times 500 - 500}{500}$$

Nm: Memory space after change (steps)
Nf: File register space after change (blocks)
Nk: Comment space before change (blocks)

Remark

Settable range and default value

The settable range and the default value depend on the FX PLC type.
Refer to the following manual for details of the settable range and the default value.
☞ Programming manual for the FX PLC used

(2) Key functions

The table below shows the functions of the keys that are used for the operation on the parameter setting screen.

Key	Function
Default	Initializes the parameters
OK	Completes the changed setting contents.
☒	Ends parameter setting.

5.4.11 Keywords

Registers, deletes, releases protection for, and sets protection for the FX PLC keywords.

1 Function usability of the MELSEC-FX list editor for keyword protection levels

The functions that can be used with the MELSEC-FX list editor depend on the keyword protection level.

(○: Available, ×: Unavailable)

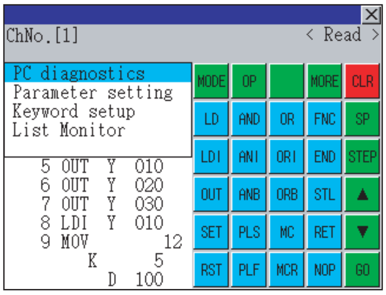
Function		Keyword protection level				Reference
		All operation protect (All on-line operation protect) *2	**Read/Incorrect write protection (Read/write protect) *2**	**Incorrect write protect (Write protect) *2**	**Keyword not registered/keyword protection canceled**	
Reading sequence programs	Displaying sequence programs	×	×	○	○	5.4.3
	Searching commands/ devices	×	×	○	○	5.4.4
Writing sequence programs	Writing commands	×	×	×	○	5.4.5
	Changing operands/set values	×	×	×	○	5.4.6
Inserting commands		×	×	×	○	5.4.5
Deleting commands		×	×	×	○	5.4.7
Sequence program all clear		×	×	×	○	5.4.8
PLC diagnostics		○*1	○	○	○	5.4.9
Parameter setting		×	×	×	○	5.4.10

*1 When the 2nd keyword is set to an FX PLC that supports 2nd keyword, it becomes "×" (cannot be used).
*2 The names within the parentheses ( ) are for when a keyword + 2nd keyword is set.

2 Operation

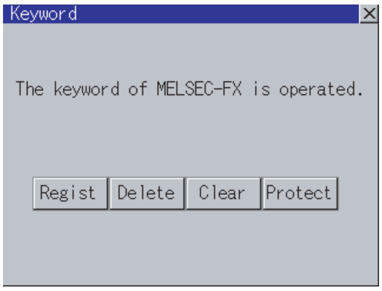
OP → [Keyword setup] → GO

OP → Select [Keyword setup] with ▲ or ▼.



```
 5 OUT  Y  010
 6 OUT  Y  020
 7 OUT  Y  030
 8 LDI  Y  010
 9 MOV        12
        K      5
          D  100
```

GO



The keyword of MELSEC-FX is operated.

3 Keyword screen and protection level

When [Keyword setup] is selected with the MELSEC-FX list editor, the keyword screen is displayed. Refer to the following manual for the procedure for keyword operations.

GT16 User's Manual (Basic Utility) (3.2.3 Display contents of communication detail setting)
GT15 User's Manual (10.2.3 Display contents of communication detail settings)
GT11 User's Manual (10.2.3 Display contents of communication detail settings)
GT10 User's Manual (11.4 Keyword)

Remark

Keywords

Refer to the following manual for details of keyword.

Programming manual for the FX PLC used

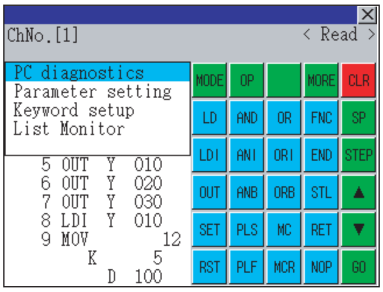
5.4.12 List monitor

The status of contacts and coils in a sequence program is displayed.

1 Operation

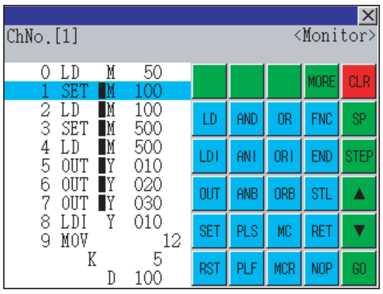
OP → [List Monitor] → GO

OP → Select [List Monitor] with ▲ or ▼



```
ChNo.[1]                < Read >
PC diagnostics
Parameter setting
Keyword setup
List Monitor
 5 OUT  Y  010
 6 OUT  Y  020
 7 OUT  Y  030
 8 LDI  Y  010
 9 MOV        12
      K        5
        D  100
```

GO



```
ChNo.[1]             <Monitor>
 0 LD   M   50
 1 SET ■M  100
 2 LD  ■M  100
 3 SET ■M  500
 4 LD  ■M  500
 5 OUT ■Y  010
 6 OUT ■Y  020
 7 OUT ■Y  030
 8 LDI  Y  010
 9 MOV       12
      K       5
        D  100
```

When the list monitor is started on the FX list editor screen, the step numbers displayed on the FX list editor screen is displayed on the list monitor screen.

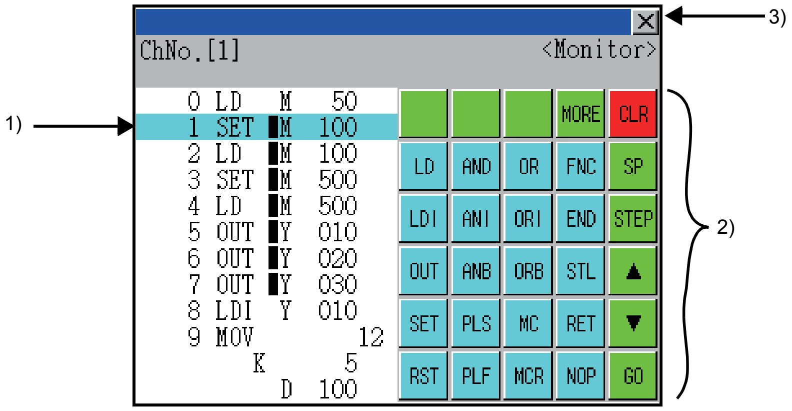
Point

Starting list monitor with special function switches (FX list monitor)

With setting special function switches (FX list monitor), the list monitor can be started on the monitor screen.
When the list monitor is started on the monitor screen, the list editor cannot be used.
For how to set special function switches, refer to the following manual.

2 Displays and key functions

The following describes the displays for the list monitor.



```
ChNo.[1]               <Monitor>
 0 LD    M    50
 1 SET  ▮M   100
 2 LD   ▮M   100
 3 SET  ▮M   500
 4 LD   ▮M   500
 5 OUT  ▮Y   010
 6 OUT  ▮Y   020
 7 OUT  ▮Y   030
 8 LDI   Y   010
 9 MOV          12
       K         5
         D     100
```

No.	Item	Display contents
1)	List display area[*1]	The status of contacts and coils is displayed on the left of device displays.
2)	Keys	The same operations as in the READ mode of the FX list editor can be executed. ☞ Section 5.4.3 Sequence program display
3)	☒	Ends the list monitor. When the list monitor is executed on the FX list editor screen, the screen is switched to the FX list editor screen.

*1 The status of contacts and coils is displayed as below.

Type of instructio	Description	Status	
		■ Displayed	■ Not displayed
LD, AND, ORC(ontact instruction (Normal open))	Contact	ON	OFF
LDI, ANI, ORI(Contact instruction (Normal close))	Contact	OFF	ON
OUT, SET	TC: Coil	ON	OFF
	Except TC: Contact	ON	OFF
RST	TC: Reset	ON	OFF
	Word device	Value: 0	Value: Except 0
	Except TC and word device: Contac	OFF	ON
MC, STL	Contact	ON	OFF
LDP, ANDP, ORP, LDF, ANDF, ORF (Rise or fall contact instruction)	Not monitored	Always ■ not displayed	

5.4.13 Hard copy output

GT16 GT15

Screens of the MELSEC-FX list editor can be stored to a memory card in BMP/JPEG file format or printed with a printer.
Refer to the following for the hard copy.

- Starting the MELSEC-FX list editor from the ladder monitor (☞3.4.2 Hard copy output)
- Setting the hard copy with GT Designer2

  ☞GT Designer2 Version □ Screen Design Manual (Section 13.2 Hard Copy)

5.4.14 Action for an incorrect key input

If an incorrect key is input, cancel the input contents.

1 Operation

(1) Before touching the GO key (before reading/writing the input contents)

Before touching the GO key, touch the CLR key.

(2) After touching the GO key (after reading/writing the input contents)

Write the command again. (☞5.4.5 Writing commands)
Commands finalized by writing and inserting operations are revised (overwritten) with the program writing.

5.5 Error Messages and Corrective Actions

This section describes the error messages displayed when the MELSEC-FX list editor is executed, and corrective action.

Error Messeage	Description	Corrective action
Can not display while protected.	The all-operation protect, anti-plagiarism, or incorrect write protect keyword is set.	· Check the protected operation. · Clear the keyword protection or delete the keyword. ☞ Section 5.4.11 Keywords
Can not operate while protected.		
PLC parameter error.	An FX PLC parameter is defective.	Set correct parameters in the FX PLC.
PLC communications error.	The communication with the FX PLC is defective.	· Check the FX PLC, cable, and GOT for abnormality. · Check whether the communication settings are correct or not.
PLC is running.	A writing operation etc. has been made while the FX PLC is running.	Stop the FX PLC.
Can not write.	· The memory to write to is EPROM. · The protect switch of the EEPROM is on.	· Set other than EPROM for the memory to write to. · Switch off the protect switch of the EEPROM.
Step number is out of a range.	The specified step number exceeded the maximum number.	Specify a step number below the maximum value.
Not found.	The specified command cannot be found.	Proceed to the next operation.
Not found.	The specified device cannot be found.	Proceed to the next operation.
Step overflow.	The program may exceed the available space. (Writing is not executed.)	Check the program memory space and delete commands to keep it within the space. ☞ Section 5.4.7 Deleting commands
Command error.	An invalid command (non-existent command) was specified.	Input the correct command.

Point

How to erase an error message

An error message is not erased even if the cause of the error is eliminated.
To erase an error message, touch a key on the MELSEC-FX list editor screen.

MEMO

6. INTELLIGENT MODULE MONITOR

6.1 Features

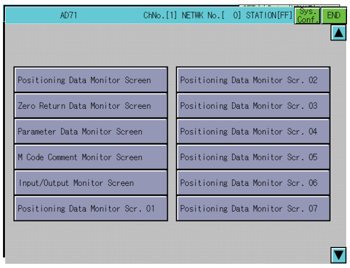
With the intelligent module monitor, you can use dedicated screens to monitor the buffer memory of the intelligent function module and make changes to the data.
In addition, you can monitor the signal statuses of the I/O modules.
The features of the intelligent module monitor are described below.

1 Realized monitoring with dedicated screens

You can monitor the intelligent function module(s) and I/O module(s) and make changes to the data using dedicated screens.
There is no need to create screens for monitoring or data changes, thereby reducing the drawing workload.

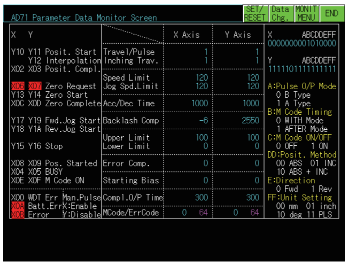
(1) For intelligent function module
As a menu of monitor items is displayed, select an item from the menu, and the corresponding monitor screen is then displayed.
Details of the buffer memory and the I/O signal statuses between the buffer memory and the PLC CPU are displayed in text, numerical values, and graphs on the monitor screens.

Select a monitor from the menu


AD71
ChNo.[1] NETWK No.[0] STATION[FF]
Sys. Conf.
END
Positioning Data Monitor Screen
Zero Return Data Monitor Screen
Parameter Data Monitor Screen
M Code Comment Monitor Screen
Input/Output Monitor Screen
Positioning Data Monitor Scr. 01
Positioning Data Monitor Scr. 02
Positioning Data Monitor Scr. 03
Positioning Data Monitor Scr. 04
Positioning Data Monitor Scr. 05
Positioning Data Monitor Scr. 06
Positioning Data Monitor Scr. 07

Select a menu

Monitor screen



AD71 Parameter Data Monitor Screen

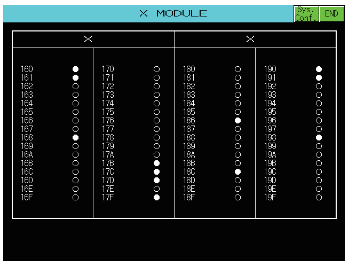
X	Y	
Y10	Y11	Posit. Start
	Y12	Interpolation
X02	X03	Posit. Compl.
X06	X07	Zero Request
Y13	Y14	Zero Start
X0C	X0D	Zero Complete
Y17	Y19	Fwd.Jog Start
Y18	Y1A	Rev.Jog Start
Y15	Y16	Stop
X08	X09	Pos. Started
X04	X05	BUSY
X0E	X0F	M Code ON
X00	WDT Err	Man.Pulse
X0A	Batt.Err	X:Enable
X0B	Error	Y:Disable

	X Axis	Y Axis
Travel/Pulse	1	1
Inching Trav.	1	1
Speed Limit	120	120
Jog Spd.Limit	120	120
Acc/Dec Time	1000	1000
Backlash Comp	-6	2550
Upper Limit	100	100
Lower Limit	0	0
Error Comp.	0	0
Starting Bias	0	0
Compl.O/P Time	300	300
MCode/ErrCode	0 64	0 64

X ABCDDEFF
0000000001010000
Y ABCDDEFF
1111101111111111
A:Pulse O/P Mode
0 B Type
1 A Type
B:M Code Timing
0 WITH Mode
1 AFTER Mode
C:M Code ON/OFF
0 OFF 1 ON
DD:Posit. Method
00 ABS 01 INC
10 ABS + INC
E:Direction
0 Fwd 1 Rev
FF:Unit Setting
00 mm 01 inch
10 deg 11 PLS

(2) For I/O module
The status of I/O signals to and from an external module is monitored.

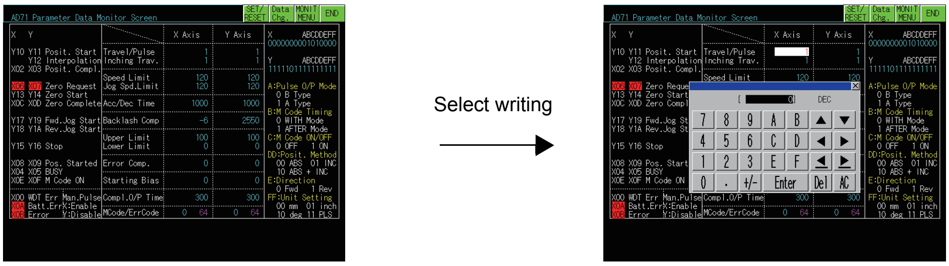
Monitor screen


X MODULE
Sys. Conf.
END
X
X
160 161 162 163 164 165 166 167 168 169 16A 16B 16C 16D 16E 16F
170 171 172 173 174 175 176 177 178 179 17A 17B 17C 17D 17E 17F
180 181 182 183 184 185 186 187 188 189 18A 18B 18C 18D 18E 18F
190 191 192 193 194 195 196 197 198 199 19A 19B 19C 19D 19E 19F

2 Enabled data change by write operations

The values are written into the buffer memory of the intelligent function module by writing values from the monitor screen.

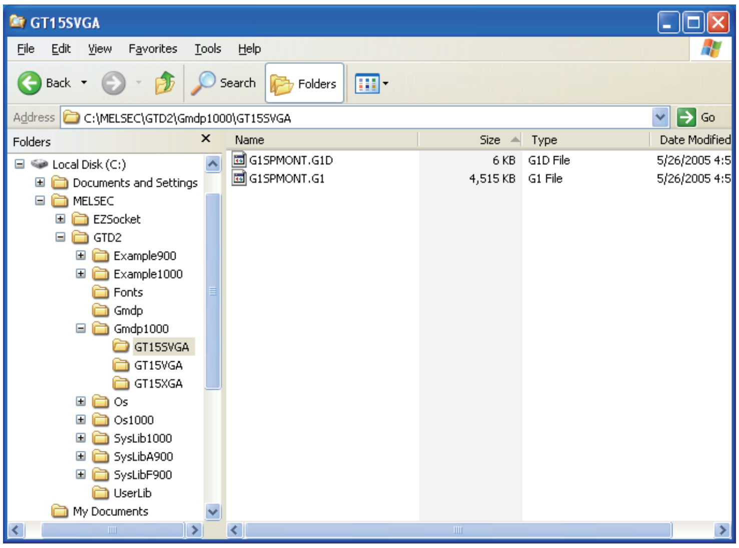
(Writing example)


Monitor screen
When changing a change-permitted channel

3 Enabled project data reusing for the intelligent module monitor

Intelligent module monitor data is saved in the following directory in a personal computer with GT Designer2 installed. (Saved as a G1 file)

Because the following data can be edited with GT Designer2, you can use part of the data for project data. (It is recommended that you copy the data to prevent accidental deletion of the data.)



Address C:\MELSEC\GTD2\Gmdp1000\GT15SVGA

Name	Size	Type	Date Modified
G1SPMONT.G1D	6 KB	G1D File	5/26/2005 4:5
G1SPMONT.G1	4,515 KB	G1 File	5/26/2005 4:5

6.2 Specifications

6.2.1 System configuration

This section describes the system configuration of the intelligent module monitor.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

☞GOT1000 Series Connection Manual

1 Targeted equipments for the intelligent module monitor

(1) PLC CPU

PLC
QCPU (Q mode), motion controller (Q series)*1
QSCPU
QnACPU*2
ACPU/QCPU (A mode)

*1 For the motion controller CPU (Q series), only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

*2: You cannot use Q4ARCPU.

(2) Intelligent module

For QCPU (A mode), QnACPU, and ACPU		For QCPU (Q mode)	
A62DA-S1,	A68AD,	Q64AD,	Q68ADV,
A68ADN,	A68RD,	Q68ADI,	QD62,
A84AD,	A616AD,	Q64DA,	Q62DA,
A616TD,	A616DAV,	QD62D,	QD62E,
A616DAI,	A61LS,	QD75D,	QD75P,
A62LS,	AD61,	QD75MH,	QD75M,
AD70,	AD70D,	Output module,	Input module,
AD71,	AD72,		
A1SD71,	A1SD61,		
A1S64AD,	A1S62DA,		
A1SD70,	A1S62RD,		
A1SJ71PT32-S3,	A1S63ADA,		
AJ71PT32-S3,	AD75P*1,		
A1SD75P*2,	AJ71ID1-R4,		
AJ71ID2-R4	A1SJ71ID1-R4,		
A1SJ71ID2-R4,	A1S68DAV,		
A1S68DAI,	A1S68AD,		
A1S64TCTT(BW)-S1,	A1S64TCRT(BW)-S1		
Input module,	Output module,		

*1: AD75M1 (M2/M3) can be monitored in the range of AD75P1 (P2/P3).

*2: A1SD75M1 (M2/M3) can be monitored in the range of A1SD75P1 (P2/P3).

You can use the system monitor [BM MONITOR] to monitor intelligent function modules other than those listed above.

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection type between GOT and PLC CPU								
Name	Description	Bus connection[*5]	Direct CPU connection[*5]	Computer link connection[*5]	Ethernet connection	MELSEC NET/H connection, MELSEC NET/10 connection	CC-Link IE[*2]	CC-Link connection		GOT multidrop connection
								ID[*3*5]	G4[*4*5]	
Intelligent module monitor	Monitors buffer memory of intelligent function module and signal statuses of I/O modules	○	○	○	○	△[*1]	○	○	○	×

[*1] For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, and QJ71BR11) with the function version B or later.

[*2] Indicates the CC-Link IE controller network connection.

[*3] Indicates CC-Link connection (Intelligent device station).

[*4] Indicates CC-Link connection (via G4).

[*5] The QSCPU does not support the connection type.

3 Required option OS and option function board

The option OS and option function board shown below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
Intelligent module monitor	390KB	770KB	384KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS

Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.

For the GOTs with a built-in option function board, refer to the following.

1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

GT15 User's Manual (8.10 Option Function Board)

4 Required memory space for use of the intelligent module monitor

The memory space of the intelligent module monitor data is indicated below.

The memory space required for storing data into the internal memory of the GOT is the same as the memory space required for storing data into the hard disk of a personal computer.

For QCPU (A mode), QnACPU, and ACPU			For QCPU (Q mode)		
Stored screen data		Memory space (KB)	Stored screen data		Memory space (KB)
Intelligent module monitor data common information		21.0	Intelligent module monitor data common information		13.4
1 to 2	"A62DA-S1"	7.2	400 to 402	"Q68ADV/Q68ADI/Q64AD"	19.7
3 to 5	"A68AD"	11.0	403 to 405	"Q62DA/Q64DA"	14.1
6 to 8	"A68ADN"	17.4	406 to 407	"QD62D/QD62E/QD62"	17.7
9 to 11	"A68RD"	19.0	408 to 430	"QD75P/QD75D"	572.8
12 to 15	"A84AD"	21.8	431 to 467	"QD75M"	454
16 to 34	"A616AD"	136.6	1001 to 1031	"QD75MH"	427.3
35 to 62	"A616TD"	254.1	Input module		0.0
63 to 65	"A616DAV"	18.1*3	Output module		0.0
66 to 68	"A616DAI"	17.6*3	-		-
69 to 70	"A61LS"	15.6	-		-
71 to 75	"A62LS"	79.0	-		-
76	"AD61"	8.4	-		-
77 to 79	"AD70"	22.2	-		-
80 to 83	"AD70D"	31.9	-		-
84 to 108	"AD71"	662.5	-		-
109 to 133	"AD72 (A1SD71)"	665.5	-		-
134 to 139	"AJ71PT32-S3"	47.2	-		-
146 to 150	"A1SD61"	40.8	-		-
151 to 153	"A1S64AD"	13.8	-		-
154	"A1S62DA"	5.6	-		-
155 to 157	"A1SD70"	22.9	-		-
158 to 160	"A1S62RD"	13.3	-		-
161 to 166	"A1SJ71PT32-S3"	46.9	-		-
167 to 169	"A1S63ADA"	18.1	-		-
170 to 206	"AD75P*1"	621.7	-		-
207 to 210	"AJ71ID*2"	43.8	-		-
211 to 213	"A1S68DAV"	13.3*3	-		-
214 to 216	"A1S68DAI"	13.2*3	-		-
217 to 219	"A1S68AD"	10.6	-		-
220 to 225	"A1S64TCTT/RT-S1"	52.7	-		-
Input module		0.0	-		-
Output module		0.0	-		-

*1 Use the screen for AD75P to monitor A1SD75P.

*2 Use the screen for AJ71ID to monitor A1SJ71ID.

*3 Downloading any of these enables monitoring both intelligent function modules.

6.2.2 Access range

1 When using bus connection/direct CPU connection/computer link connection

- The intelligent module monitor can monitor intelligent function modules on the bases of the connected station and other stations.
- The intelligent module monitor can only monitor systems of the following combinations when computer link connection is applied.

PLC CPU used	Computer link/serial communication module used[*1]
QCPU (Q mode)	QJ71C24
QCPU (A mode)	A1SJ71UC24
QnACPU	AJ71QC24, A1SJ71QC24
ACPU	AJ71UC24, A1SJ71UC24 AJ71C24-S8, A1SJ71C24, A1SCPUC24-R2, A2CCPUC24

*1 For details of module names, refer to the GOT1000 Series Connection Manual.

- The following restrictions apply when monitoring other stations of MELSECNET/II data link systems. Only the host and master stations can be monitored when the connected station is a local station. Regardless of the type of connected station, no stations other than ACPU can be monitored.
- When connected to a remote I/O station on the MELSECNET/H network system, the remote I/O station on the MELSECNET/H network system is displayed as QCPU in the system configuration display of the intelligent module monitor.
- A diagnosis of the remote I/O station on the MELSECNET/H network system is not performed.
- Intelligent function modules on the base of remote I/O stations other than those on the MELSECNET/H network system are not monitored.

2 When using MELSECNET/H, MELSECNET/10, or CC-Link IE controller network connection

- The intelligent module monitor can monitor intelligent function modules on the bases of the control station and normal stations.
- To monitor another network, routing parameters have to be set to the GOT side and PLC side. (Only with the MELSECNET/H communication unit or CC-Link IE controller network communication unit)
  For routing paramater setting, refer to the following manuals.
  Routing parameter setting for the GOT

  ☞ GOT1000 Series Connection Manual (6.2 Preparatory Procedures for Monitoring)

  Routing parameter setting for PLC CPU
  For MELSECNET/H communication unit

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

  For CC-Link IE controller network communication unit

  ☞ CC-Link IE Controller Network Reference Manual

3 When using CC-Link connection (Intelligent device station/via G4)

- The intelligent module monitor can monitor intelligent function modules on the bases of the master station and local stations.

4 When using Ethernet connection

- The intelligent module monitor can monitor the intelligent function module on the base of the PLC CPU assigned the IP address.
  (The station assigned in the Ethernet setting of GT Designer2 can be monitored.)
- To monitor another network, routing parameters have to be set to the GOT side and PLC side.
  For routing parameter setting, refer to the following manuals.
  Routing parameter setting for the GOT

  ☞ GOT1000 Series Connection Manual (6.2 Preparatory Procedures for Monitoring)

  Routing parameter setting for PLC CPU

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

5 When the intelligent module monitor monitors the master station of the MELSECNET/II network on which any remote I/O station exists

- Be sure to assign I/O when the master station is AnN or AnACPU.
  If I/O is not assigned, the system configuration of the intelligent module monitor will not be displayed correctly.
- Intelligent function modules on the base of remote I/O stations are not monitored.

6 With Universal model QCPU

With Universal model QCPU, the GOT can monitor up to 64 stations.

6.2.3 Precautions

1 Inapplicable GOT

The intelligent module monitor function cannot be used with the GT1555-Q and GT1550-Q.

2 Special function modules that cannot be monitored

Modules displayed as "SP" on the System Configuration screen cannot be monitored using the intelligent module monitor.
To monitor these modules, use the system monitor function [BM MONITOR].

3 Display when connecting the small building-block type CPU

This precaution pertains to a situation where an extension base unit for a large building block type is connected to a small building-block type CPU (such as the A1SCPU) in the station connected to the GOT.
In this case, the intelligent function module on the large extension base unit is displayed on the System Configuration screen with the model name of the same type of the small building-block type intelligent function module.
If there is no small building-block type intelligent function module, "SP" is displayed and the object module cannot be monitored.

(Example)

Installed module		Model name displayed
AD72	→	A1SD71
AJ71ID	→	A1SJ71ID
AJ71PT32-S3	→	A1SJ71PT32-S3
AD75P	→	A1SD75P
A68ADN [CH1 to CH8]	→	A1S64AD [CH1 to CH4]
A68RD [CH1 to CH8]	→	A1S62RD [CH1 to CH2]

4 Monitoring intelligent function modules with restrictions

(1) When monitoring AD71 (S1, S2, S7)
When the previous slot of the AD71 module is an empty slot, monitoring is performed in the following way.

(a) The AD71 is treated as the AD72, and "AD72" is displayed on the System Configuration screen.
In this case, select "AD72" that corresponds to the actual installed position.

(b) The monitor screen that displays as shown (a) above is a screen for the AD72.
The number obtained by subtracting 10_H from the I/O signal number on the display is the number for when installing the AD71 in slot 0.

* To prevent the AD71 from being treated as the AD72, execute "Shift the installation position of AD71 forward" or "In the I/O assignments, assign 16 points to the previous empty slot of the AD71".

(2) When monitoring the A68AD, A68ADN, or A68RD used with a small building-block type PLC CPU
The GOT recognizes the intelligent function module installed in a large building-block type extension base unit connected to a small building-block type PLC CPU (e.g. A1SCPU) as a small building-block type intelligent function module to monitor it.
Hence, there are the following precautions for the A68AD, A68ADN, and A68RD.

Intelligent function module	Precautions
A68AD	The A68AD cannot be displayed correctly because the buffer memory configuration differs between the A68AD and A1S68AD.
A68ADN	Among CH1 to CH8 of the A68ADN, CH5 to CH8 cannot be displayed because the A1S64AD has only CH1 to CH4.
A68RD	Among CH1 to CH8 of the A68RD, CH3 to CH8 cannot be displayed because the A1S62RD has only CH1 to CH2.

The above intelligent function modules can be monitored properly if they are installed in a base unit connected to a large building block type PLC CPU (e.g. AnUCPU).

(3) When monitoring the A1SD75M, AD75M
Displayed as A1SD75P or AD75P when the A1SD75M or AD75M is installed.
The A1SD75M or AD75M can be monitored within the monitoring range of the A1SD75P or AD75P.

(4) When monitoring the A81CPU
The A81CPU is monitored in the following way.

Item	64 points in first half	64 points in last half
Treatment of A81CPU	Treated as a module that cannot be monitored.	Treated as an input module.
System Configuration screen	Displays "Special X, Y □"	Displays "Input 64 X □"
Monitoring	Disabled	Enabled as inputs

(5) When monitoring an I/O module

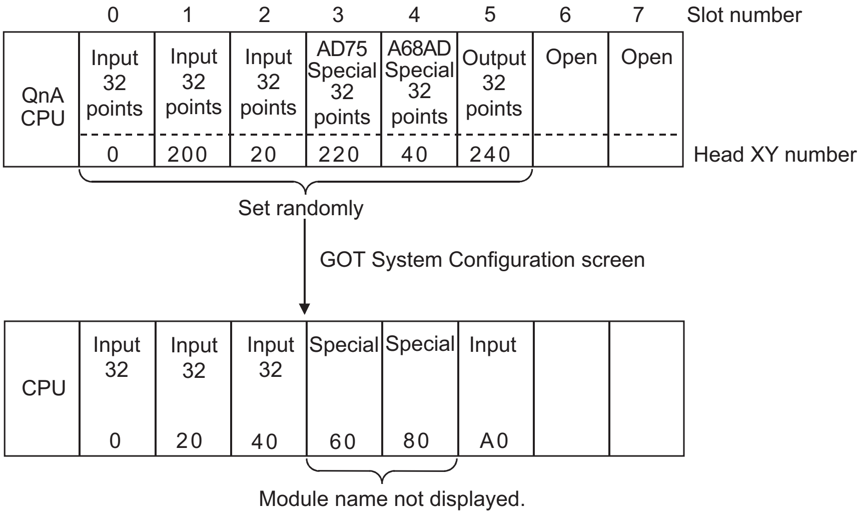
(a) Only the output signal can be monitored for an I/O module for which "Output □" is displayed on the System Configuration screen.
For input signals, monitor X of the PLC CPU device with the system monitor function.

5 Editing and reusing intelligent module monitor data

The project data for the intelligent module monitor cannot be edited by modifying or adding an object.
However, the data can be used on a user-created monitor screen.

6 Precautions for I/O allocation setting

(1) Even when I/O numbers are set at random as shown below, in the case the GOT is connected to the QnACPU, the start XY numbers are displayed in order on the System Configuration screen. When performing intelligent module monitoring, always perform the I/O allocation in order from slot 0.



(2) If the slot assigned with outputs in I/O assignment is not fitted with a module, the GOT displays it as input. (Common to ACPU and QnACPU)

7 Display provided when the QA1S6 □ extension base unit is used with the QCPU (Q mode)

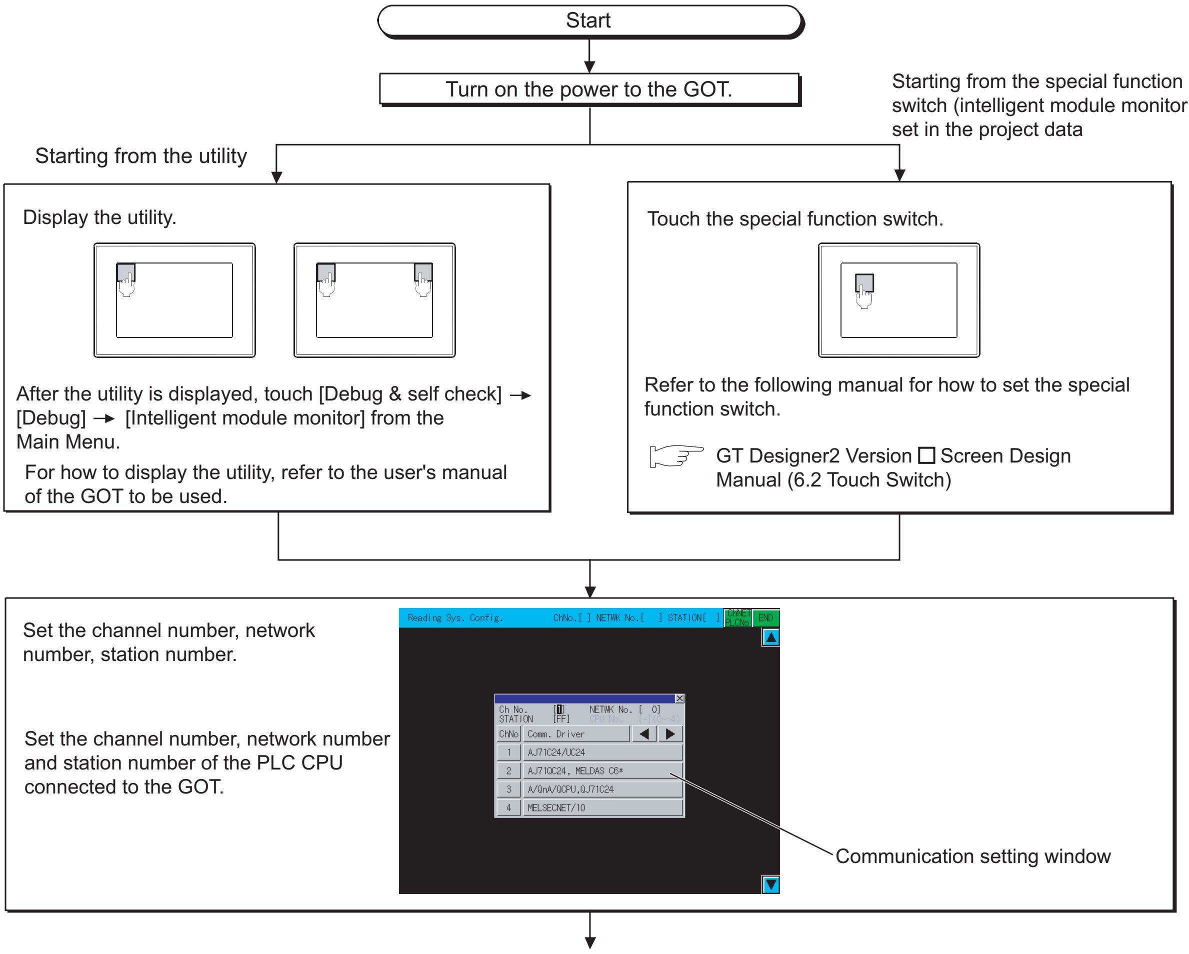
This precaution pertains to a situation where the QA1S6 □ extension base unit is connected to the QCPU (Q mode) in a station connected to the GOT.
In this case, the abbreviated format is displayed for the following intelligent function modules on the System Configuration screen.
You can use the unit detail information to check the full format of the module displayed with the abbreviated format.
Unsupported intelligent function modules are displayed as "SP", and the corresponding modules cannot be monitored.

Installed module	Model name displayed
A1S63ADA	63ADA
A1SJ71PT32-S3	J71PT32-
A1SJ71ID1-R4	J71ID
A1SJ71ID2-R4-S1	
A1S64TCTT(BW)-S1	64TCTT/R
A1S64TCRT(BW)-S1	

6.3 Display

1 Operation procedure until the start of the intelligent module monitor

This subsection describes the flow until the operation screen for the intelligent module monitor is displayed after the intelligent module monitor (Option OS) is installed in the GOT.



Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.

After the utility is displayed, touch [Debug & self check] → [Debug] → [Intelligent module monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (intelligent module monitor) set in the project data

Touch the special function switch.

Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version ☐ Screen Design Manual (6.2 Touch Switch)

Set the channel number, network number, station number.

Set the channel number, network number and station number of the PLC CPU connected to the GOT.

Reading Sys. Config. ChNo.[ ] NETWK No.[ ] STATION[ ]

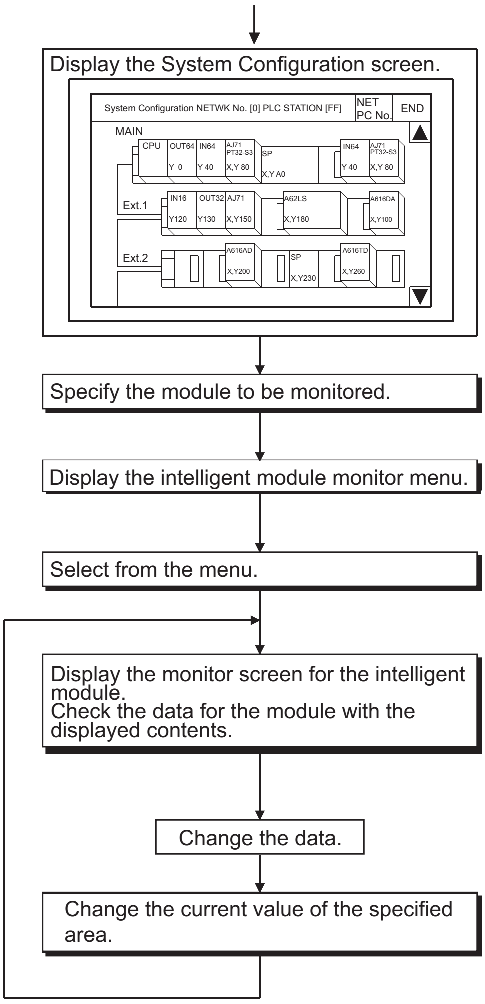
Ch No. [1] NETWK No. [0]
STATION [FF] CPU No. [-](0~4)

ChNo	Comm. Driver
1	AJ71C24/UC24
2	AJ71QC24, MELDAS C6*
3	A/QnA/QCPU,QJ71C24
4	MELSECNET/10

Communication setting window

(Continued to next page)

(Continued from previous page)


Display the System Configuration screen.
System Configuration NETWK No. [0] PLC STATION [FF]
NET PC No.
END
MAIN
CPU
OUT64
IN64
AJ71 PT32-S3
SP
IN64
AJ71 PT32-S3
Y 0
Y 40
X,Y 80
X,Y A0
Y 40
X,Y 80
Ext.1
IN16
OUT32
AJ71
A62LS
A616DA
Y120
Y130
X,Y150
X,Y180
X,Y100
Ext.2
A616AD
SP
A616TD
X,Y200
X,Y230
X,Y260
Specify the module to be monitored.
Display the intelligent module monitor menu.
Select from the menu.
Display the monitor screen for the intelligent module.
Check the data for the module with the displayed contents.
Change the data.
Change the current value of the specified area.

· · · When starting, the module format and related data are not displayed.
When reading of module data from the PLC CPU is complete, the module format and related data is displayed.
When using the QCPU (Q mode) or QSCPU, the PLC CPU status (PC information monitor screen) and module error information and others (Unit Detail Info Screen) can be checked. See Sec. 6.4.1.
When END is selected, the intelligent module monitoring ends and the display moves to the original screen where the intelligent module monitor function was begun.

· · · See Secs. 6.4.1, 6.4.6.

· · · See Sec. 6.4.6.

· · · The Intelligent Module Monitor Screen is displayed by selecting it from the menu.
See Sec. 6.4.6.

· · · See Sec. 6.4.5.
See Sec. 6.5.

· · · Carry out the following operation when changing the current values of the buffer memory that is displayed on the monitor screen.
See Sec. 6.4.7.

Point

(1) How to display the utility
For how to display the utility, refer to the following.

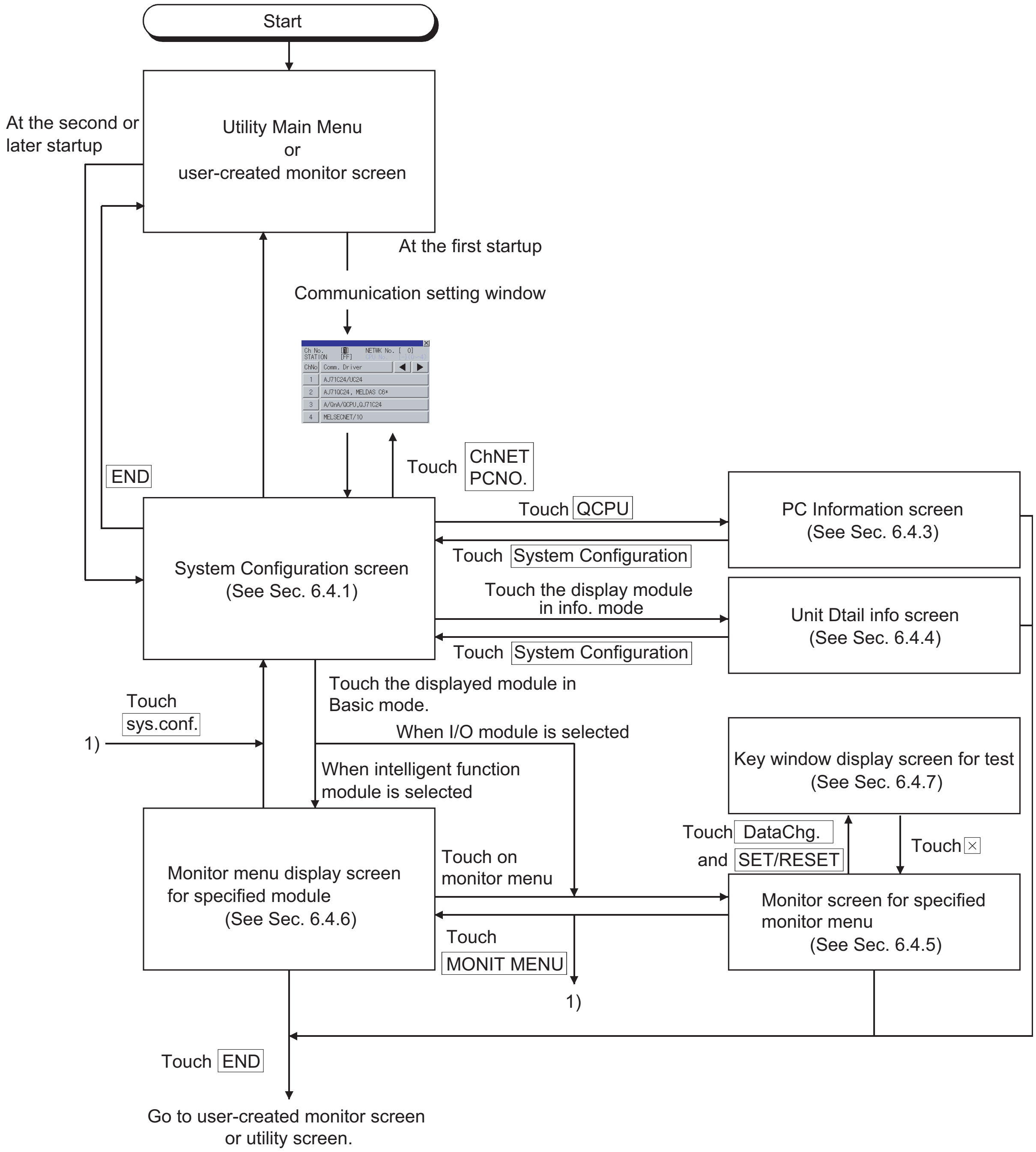
☞ GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the intelligent module monitor only.
For displaying the communication setting window at the second or later startup, touch the [ChNET PLCNo.] button on the intelligent module monitor screen.
(☞ 6.4 Operation of Each Intelligent Module Monitor Screen)

(3) If the project data has not been downloaded
The intelligent module monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens

The following describes how to change the screen.


Start
Utility Main Menu
or
user-created monitor screen
At the second or later startup
At the first startup
Communication setting window
Touch ChNET PCNO.
END
System Configuration screen
(See Sec. 6.4.1)
Touch QCPU
PC Information screen
(See Sec. 6.4.3)
Touch System Configuration
Touch the display module in info. mode
Unit Dtail info screen
(See Sec. 6.4.4)
Touch System Configuration
Touch the displayed module in Basic mode.
When I/O module is selected
When intelligent function module is selected
Touch sys.conf.
1)
Key window display screen for test
(See Sec. 6.4.7)
Touch DataChg. and SET/RESET
Touch ×
Monitor menu display screen for specified module
(See Sec. 6.4.6)
Touch on monitor menu
Monitor screen for specified monitor menu
(See Sec. 6.4.5)
Touch MONIT MENU
1)
Touch END
Go to user-created monitor screen
or utility screen.

Ch No. [1] NETWK No. [0]
STATION [FF] CPU No. [-](0~4)

ChNo	Comm. Driver
1	AJ71C24/UC24
2	AJ71QC24, MELDAS C6*
3	A/QnA/QCPU,QJ71C24
4	MELSECNET/10

6.4 Operation of Each Intelligent Module Monitor Screen

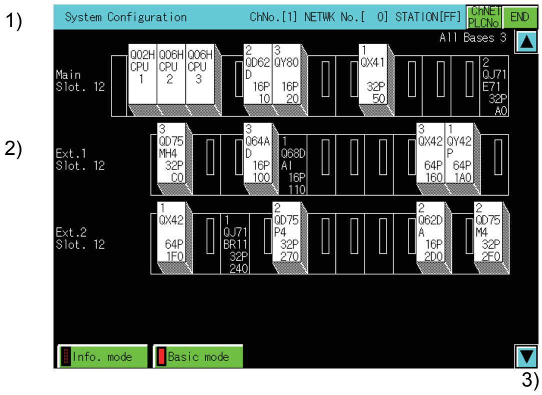
This section describes the operations of the screens when using the intelligent module monitor.

6.4.1 Composition of the system configuration screen and key functions

This section describes the configuration of the System Configuration screen that is displayed after startup of the intelligent module monitor and the functions of the keys displayed on the screen.

1 When using the QCPU (Q mode) or QSCPU

(1) Displayed contents



The model name of the module and related data are displayed at the end of the module data readout from the PLC CPU.
(The OS executes it automatically.)
When connected to the MELSECNET/H or MELSECNET/10, the screen in Section 6.4.2 is displayed.

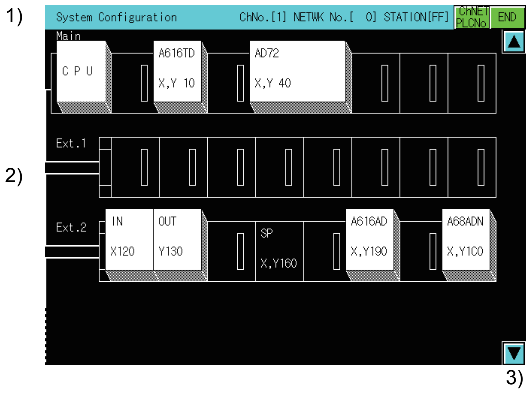
Item	Description
1)	Displays the network number and station number of the monitored station.
2)	Displays the model name, I/O points, and start I/O number for the modules installed in the monitored station. For an intelligent function module that cannot be monitored, the model name is displayed as "SP". The display position of the module becomes the key to switch to the screen where the monitoring of that module is performed. (Touch input) Displays the CPU Nos. for the CPUs and the control CPU number for the installed modules when there are multiple CPU systems.
3)	Display keys used for the operations on the System Configuration screen shown in (2). (Touch input)

(2) Key functions
The table below shows the functions of the keys that are used with the operation on the DEVICE MONITOR screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
ChNET PLCNo	Displays the communication setting window.
QCPU	The screen switches to the PC Information monitor screen. (Refer to Section 6.4.3.)
Module display position	In intelligent module monitor mode: Switches to the screen where the intelligent module monitoring for that module is performed. In unit detail info mode: Switches to the screen displaying detailed information of the selected module.
Info. mode	Switches the System Configuration screen to Info. mode. (Refer to Section 6.4.4.)
Basic mode	Switches the System Configuration screen to Basic mode.
▲ ▼	Scrolls the display one stage up or down to display the system configuration of the currently undisplayed stage immediately before/after the currently displayed stage. Operations can be performed when the system configuration has three or more extension bases. ▲ : Scrolls one stage up. ▼ : Scrolls one stage down.

2 When using the QCPU (A mode), QnACPU, and ACPU

(1) Displayed contents



The model name of the module and related data are displayed at the end of the module data readout from the PLC CPU.
(The OS executes it automatically.)
When connected to MELSECNET/10, the screen shown in Section 6.4.2 is displayed.

Item	Description
1)	Displays the network number and station number of the monitored station.
2)	For modules installed in the monitored station, the model name and start No. of I/O signals are displayed for the intelligent function module, "IN"/"OUT" and the I/O points for the I/O module. For an intelligent function module that cannot be monitored, "SP" and the start No. of the I/O signal are displayed. The display position of the module becomes the key to switch to the screen where the monitoring of that module is performed. (Touch input)
3)	Display keys used for the operation on the System Configuration screen shown in (2). (Touch input)

(2) Key functions

The table below shows the functions of the keys that are used for the operation on the System Configuration screen.

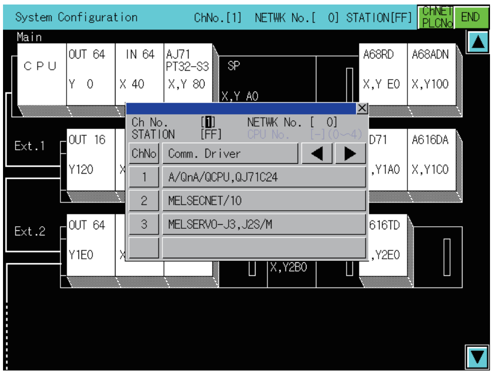
Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
ChNET PLCNo	Displays the communication setting window.
Module display position	Switches to the screen where the intelligent module monitoring for that module is performed.
▲ ▼	Scrolls the display one stage up or down to display the system configuration of the currently undisplayed stage immediately before/after the currently displayed stage. Operations can be performed when the system configuration has three or more extension bases. ▲ : Scrolls one stage up. ▼ : Scrolls one stage down.

6.4.2 Setting method for other station monitoring

The setting method to perform other station monitoring during intelligent module monitoring is described below.

<Intelligent module monitor>

When using MELSECNET/10 connection


System Configuration ChNo.[1] NETWK No.[0] STATION[FF]

Ch No. [1] NETWK No. [0]
STATION [FF] CPU No. [-](0~4)

ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24
2	MELSECNET/10
3	MELSERVO-J3,J2S/M

Touch [Intelligent module monitor] to display the System Configuration screen.

Depending on the connection method, the screen that is first displayed different, as indicated below.

Bus connection and direct CPU connection	The base of the connected station is displayed.
Ethernet connection	The base of the station set as the host is displayed.
CC-Link connection (via G4)	The base of the master station is displayed.
MELSECNET/H connection, MELSECNET/10 connection CC-Link IE controller network connection CC-Link connection (Intelligent device station)	No system configuration display

The following operations are always required for MELSECNET/H, MELSECNET/10 and CC-Link connections.

1) Touch [ChNET PLCNo.] to display the window shown in 2).

2) Touch ▶ to switch to the window for network setup.
(To monitor another channel number or other station, touch the channel number you want to monitor and switch to the network setup window.)
Touch an alphanumeric key to specify the network number and PLC station number.

Alphanumeric key ...	Enters the network number and PLC station number.
◀ ▶	Selects the input area.
↵	Sets the area value.

For data link system

NETWK No. : 0
Station No. : FF (Host)
: 0 (Master station)
: 1 to 64 (Local station)

For network system[2]

NETWK No : 0 (Host loop)
: 1 to 255 (Specified loop)
Station No. : FF (Host)
: 0 (Control station number)
: 1 to 64: (Control station/normal station)

For Ethernet connection[1]

NETWK No. : 1 to 239
Station No. : 1 to 64

For CC-Link system

NETWK No. : 0
Station No. : 0 (Master station)

[1] You need to set a monitor target using GT Designer2 in advance.
For ACPU monitoring, specify the network number/station number set using GT Designer2.
Refer to the following for details of the monitor target setting for Ethernet connection.
☞ GOT1000 Series Connection Manual (10. ETHERNET CONNECTION)

[2] When the station No. is set to the host station (FF), set the network No. to 0.

When the setting is finished, the system configuration of the specified station is displayed.
Refer to Section 6.4.6 for further operations.

6.4.3 Composition of PC Information monitor screen and key functions

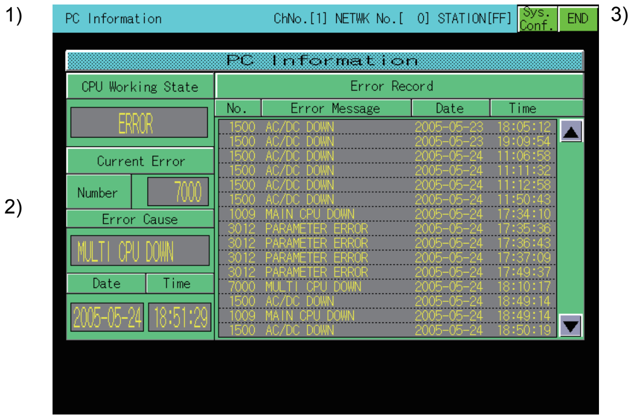
This section describes the structure of the PC Information monitor screen that is displayed by specifying the QCPU (Q mode) or QSCPU on the System Configuration screen, and the key functions displayed on the screen.

The GOT displays the PC Information monitor screen only when using the following controllers.

- QCPU (Q mode)
- QSCPU

1 When using the QCPU (Q mode)

(1) Displayed contents



PC Information ChNo.[1] NETWK No.[0] STATION[FF]

PC Information

CPU Working State: ERROR

Current Error

Number: 7000

Error Cause: MULTI CPU DOWN

Date	Time
2005-05-24	18:51:29

Error Record

No.	Error Message	Date	Time
1500	AC/DC DOWN	2005-05-23	18:05:12
1500	AC/DC DOWN	2005-05-23	19:09:54
1500	AC/DC DOWN	2005-05-24	11:06:58
1500	AC/DC DOWN	2005-05-24	11:11:32
1500	AC/DC DOWN	2005-05-24	11:12:58
1500	AC/DC DOWN	2005-05-24	11:50:43
1009	MAIN CPU DOWN	2005-05-24	17:34:10
3012	PARAMETER ERROR	2005-05-24	17:35:36
3012	PARAMETER ERROR	2005-05-24	17:36:43
3012	PARAMETER ERROR	2005-05-24	17:37:09
3012	PARAMETER ERROR	2005-05-24	17:49:37
7000	MULTI CPU DOWN	2005-05-24	18:10:17
1500	AC/DC DOWN	2005-05-24	18:49:14
1009	MAIN CPU DOWN	2005-05-24	18:49:14
1500	AC/DC DOWN	2005-05-24	18:50:19

Item	Description
1)	Displays the network number and station number of the monitored station.
2)	Displays the operating status, error information and other information of the targeted PLC CPU. Up to 100 error information events can be displayed.
3)	Displays keys used for the operations on the PC Information monitor screen shown in 2 . (Touch input)

(2) Key functions

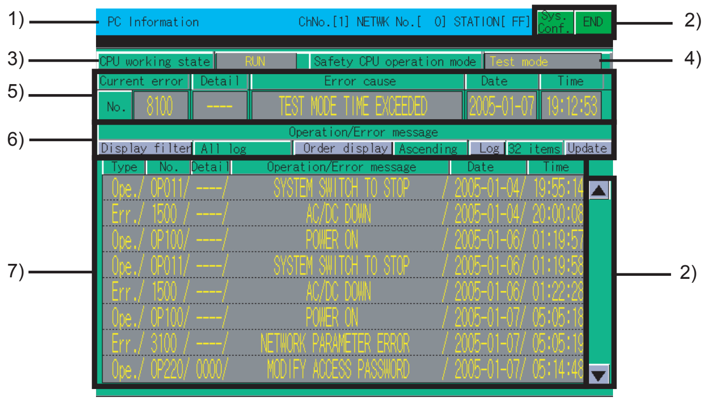
The table below shows the functions of the keys that are used for the operation on the System Configuration screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
Sys. Conf.	Switches the screen to the System Configuration screen. (Refer to Section 6.4.1.)
▲ ▼	Scrolls the display one page up or down. ▲ : Scrolls one page up. ▼ : Scrolls one page down.

2 When using the QSCPU

(1) PC Information monitor screen

(a) Displayed contents



PC Information ChNo.[1] NETWK No.[0] STATION[FF]

CPU working state: RUN
Safety CPU operation mode: Test mode

Current error	Detail	Error cause	Date	Time
No. 8100	----	TEST MODE TIME EXCEEDED	2005-01-07	19:12:53

Operation/Error message

Display filter: All log
Order display: Ascending
Log: 32 items

Type	No.	Detail	Operation/Error message	Date	Time
Ope./	OP011/	----/	SYSTEM SWITCH TO STOP	/ 2005-01-04/	19:55:14
Err./	1500 /	----/	AC/DC DOWN	/ 2005-01-04/	20:00:08
Ope./	OP100/	----/	POWER ON	/ 2005-01-06/	01:19:57
Ope./	OP011/	----/	SYSTEM SWITCH TO STOP	/ 2005-01-06/	01:19:58
Err./	1500 /	----/	AC/DC DOWN	/ 2005-01-06/	01:22:28
Ope./	OP100/	----/	POWER ON	/ 2005-01-07/	05:05:18
Err./	3100 /	----/	NETWORK PARAMETER ERROR	/ 2005-01-07/	05:05:19
Ope./	OP220/	0000/	MODIFY ACCESS PASSWORD	/ 2005-01-07/	05:14:48

Item	Description
1)	Displays the channel number, network number, and station number of the monitored station.
2)	Displays the keys that are used for the operation on the System Configuration screen shown in (b).
3)	Displays the QSCPU operation status. (RUN/STOP)
4)	Displays the safety CPU operation mode. (Safety mode/Test mode)
5)	Displays the error being occurred. Touching the error displays the Error details screen.(☞ This section 2 (3)) No. : Displays the error code. Detail : Displays the detail code of the error log. ([----] is displayed when no detail code exists.) Error cause : Displays the error details. Touching the item displays the Error details screen. Date, Time : Displays the date and the time that the error occurs.
6)	Set the items to be displayed in the log list.(☞ This section 2 (1)(b))
7)	Displays the operation status, error information, and others of the monitored PLC CPU. (Log list) Type : Displays the log types. (Ope: Operation log, Err: Error log) No. : Displays the operation codes or error codes. Detail : Displays the 4-digit detail codes of the operation logs or the error logs for the errors occurred in the CC-Link Safety system remote I/O module. ([----] is displayed when no detail code exists.) Operation/Error message : Displays the operation details or error messages. Displays "BROKEN OPERATION/ERROR LOG" when the log data is damaged. Date, Time : Displays the dates and the time of operations or the dates and time that errors occur. Touching an operation log displays the Operation details screen.(☞ This section 2 (2)) Touching an error log displays the Error details screen.(☞ This section 2 (3))

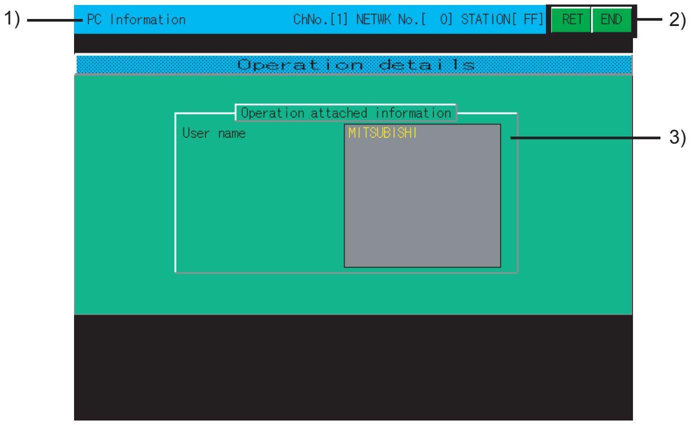
(b) Key functions

The table below shows the functions of the keys that are used for the operation on the System Configuration screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
Sys. Conf.	Switches the screen to the System Configuration screen. (Refer to Section 6.4.1.)
Display filter	Switches the log types to be displayed in the log list. All log : Displays all the logs (error logs, operation logs). Error log : Displays the error logs only. Operation log : Displays the operation logs only.
Order display	Sorts the log list in ascending or descending order.
Log	Switches the numbers of logs displayed in the log list. 32 items : Displays the latest 32 logs. 100 items : Displays the latest 100 logs. (When the number of displayed logs is switched from 100 to 32, 100 logs are displayed before touching the Update key.)
Update	Obtains the latest log information from the PLC CPU and updates the log list. (The displayed log data before touching the Update key is deleted.)
▲ ▼	Scrolls the display one page up or down. ▲ : Scrolls one page up. ▼ : Scrolls one page down.

(2) Operation details screen

(a) Displayed contents



PC Information ChNo.[1] NETWK No.[0] STATION[FF]

Operation details

Operation attached information

User name MITSUBISHI

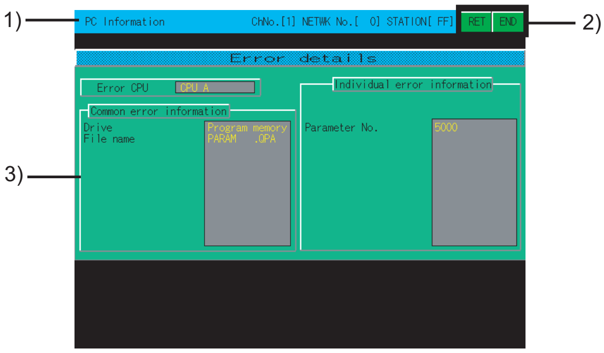
Item	Description
1)	Displays the channel number, network number, and station number of the monitored station.
2)	Displays the keys that are used for the operation on the System Configuration screen shown in (b).
3)	Displays the detailed operating information according to the operation log information stored in the QSCPU.

(b) Key functions

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
RET	Returns the screen to the PC Information monitor screen.

(3) Error details screen

(a) Displayed contents



PC Information ChNo.[1] NETWK No.[0] STATION[FF]

Error details

Error CPU CPU A

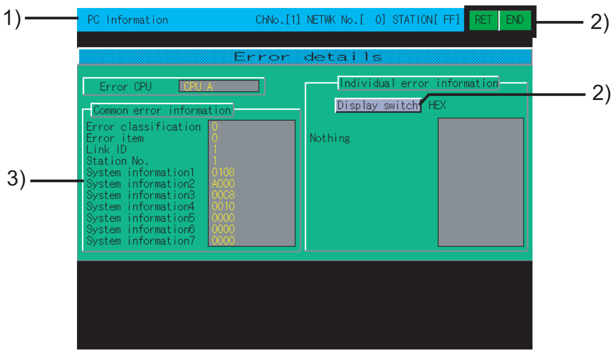
Common error information

Drive Program memory
File name PARAM .QPA

Individual error information

Parameter No. 5000

(Example) Error details screen for safety CPU error



PC Information ChNo.[1] NETWK No.[0] STATION[FF]

Error details

Error CPU CPU A

Common error information

Error classification 0
Error item 0
Link ID 1
Station No. 1
System information1 0108
System information2 A000
System information3 00C8
System information4 0010
System information5 0000
System information6 0000
System information7 0000

Individual error information

Display switch HEX

Nothing

(Example) Displaying individual error information for safety remote I/O station

Item	Description
1)	Displays the channel number, network number, and station number of the monitored station.
2)	Displays the keys that are used for the operation on the System Configuration screen shown in (b).
3)	Displays the common error information and the individual error information according to the information stored in SD4 and subsequent devices of the QSCPU. For the common error information and the individual error information, refer to the following manual. ☞ QSCPU User's Manual (Function Explanation, Program Fundamentals) When the individual error information for the safety remote I/O station is displayed, the numerical notation of the displayed data can be switched between decimal and hexadecimal numbers. (When the CC-Link Safety system master module cannot receive the error information from the safety remote I/O station, [****] is displayed for unreceived items.)

(b) Key functions

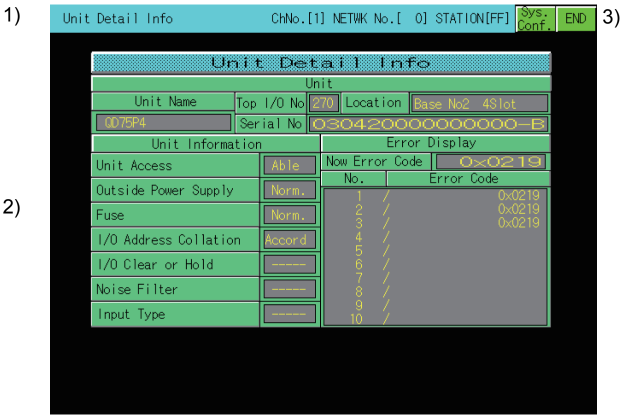
Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
RET	Returns the screen to the PC Information monitor screen.
Display switch	Switches the numerical notation of the displayed data between decimal and hexadecimal numbers. (Only when the individual error information for the safety remote I/O station is displayed)

6.4.4 Composition of the unit detail info screen and key functions

This section describes the structure of the Unit Detail Info screen that is displayed by specifying a module on the System Configuration screen at Info. mode, and the key functions displayed on the screen.
The GOT displays the Unit Detail Info screen only when using the following controllers.

- QCPU (Q mode)
- QSCPU

1 Displayed contents



Unit Detail Info ChNo.[1] NETWK No.[0] STATION[FF]

Unit Detail Info

Unit

Unit Name	Top I/O No	270	Location	Base No2 4Slot
QD75P4	Serial No	030420000000000-B		

Unit Information	
Unit Access	Able
Outside Power Supply	Norm.
Fuse	Norm.
I/O Address Collation	Accord
I/O Clear or Hold	-----
Noise Filter	-----
Input Type	-----

Error Display

Now Error Code 0x0219

No.	Error Code
1 /	0x0219
2 /	0x0219
3 /	0x0219
4 /	
5 /	
6 /	
7 /	
8 /	
9 /	
10 /	

Item	Description
1)	Displays the network number and station number of the monitored station.
2)	Displays the operating status, error information and other information of the targeted PLC CPU. Up to 10 error information events can be displayed.
3)	Displays keys used for the operations on the System Configuration screen shown in 2 . (Touch input)

2 Key functions

The table below shows the functions of keys that are used for the operations on the System Configuration screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
Sys. Conf.	Switches the screen to the System Configuration screen. (Refer to Section 6.4.1.)

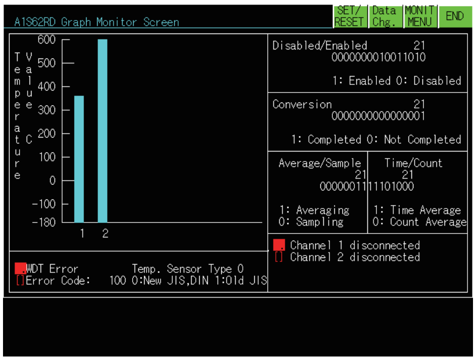
6.4.5 Composition of the intelligent module monitor screen and key functions

This section describes the structure of the monitor screen that is displayed by specifying a module on the System Configuration screen (in Basic mode when the QCPU (Q mode) is used), and the key functions displayed on the screen.

1 Displayed contents (for A68RD)

1)

2)



A1S62RD Graph Monitor Screen

Disabled/Enabled 21
0000000010011010
1: Enabled 0: Disabled

Conversion 21
0000000000000001
1: Completed 0: Not Completed

Average/Sample 21
00000011
1: Averaging
0: Sampling

Time/Count 21
11101000
1: Time Average
0: Count Average

■ Channel 1 disconnected
[] Channel 2 disconnected

■ WDT Error
[] Error Code: 100

Temp. Sensor Type 0
0:New JIS,DIN 1:Old JIS

3)

All data are displayed when the readout from the intelligent function module is completed.
(The OS executes it automatically.)

Item	Description
1)	Displays the model name of the module being monitored.
2)	Displays the buffer memory data of the module in its current form or in a graph. The status of I/O signals to and from PLC CPU is monitored. When testing, execute testing after moving the cursor to the display position of the target data.
3)	Displays keys used for the operations on the monitor screen shown in 2. (Touch input)

2 Key functions

The table below shows the functions of keys that are used for the operations on the monitor screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
MONIT MENU	Closes the current monitor and returns to the screen displaying monitor menu. This operation can only be used when the intelligent function module has a monitor menu.
Data Chg.	Starts changing (writing) the current values of the buffer memory of the intelligent function module displayed on the screen.
SET/ RESET	Starts testing (SET/RST) of the I/O signal between the PLC CPU and the intelligent function module.

6.4.6 Specifying a module to monitor and selecting monitor menu

This section uses the positioning module (AD71) as an example to describe the operations when starting the intelligent module monitor to monitor a desired module.

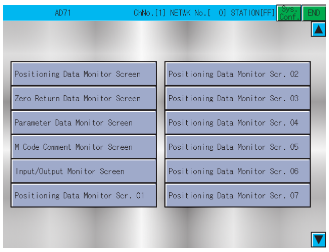
Operation procedure

Display System Configuration screen. See Sec.6.4.1

Specify module to be monitored (Touch display position of module.)

(1) From among the modules installed in the corresponding base unit, specify the intelligent function module whose format is displayed.
* : For modules where the format is not displayed, monitor with the system monitor function (See Sec.2.).
Specify input/output modules according to Sec. 6.6.

Display screen that shows monitor menu.

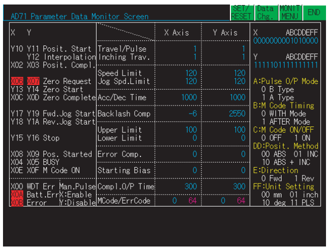

AD71
ChNo.[1] NETWK No.[0] STATION[FF]
Sys. Conf.
END
▲
Positioning Data Monitor Screen
Zero Return Data Monitor Screen
Parameter Data Monitor Screen
M Code Comment Monitor Screen
Input/Output Monitor Screen
Positioning Data Monitor Scr. 01
Positioning Data Monitor Scr. 02
Positioning Data Monitor Scr. 03
Positioning Data Monitor Scr. 04
Positioning Data Monitor Scr. 05
Positioning Data Monitor Scr. 06
Positioning Data Monitor Scr. 07
▼

(2) Specify the menu corresponding to the type of data to be monitored.

(3) With modules for which the monitor menu cannot all be displayed in one screen, touch the ▲ ▼ keys at the right of the screen to scroll the display menu.

Specify menu to be monitored (Touch display position of menu.)

Display monitor screen of specified menu.



```
AD71 Parameter Data Monitor Screen
X   Y                                       X Axis    Y Axis    X        ABCDDEFF
                                                                0000000001010000
Y10 Y11 Posit. Start    Travel/Pulse             1         1
    Y12 Interpolation   Inching Trav.            1         1    Y        ABCDDEFF
X02 X03 Posit. Compl.                                           1111101111111111
                        Speed Limit            120       120
X06 X07 Zero Request    Jog Spd.Limit          120       120    A:Pulse O/P Mode
Y13 Y14 Zero Start                                                0 B Type
X0C X0D Zero Complete   Acc/Dec Time          1000      1000      1 A Type
                                                                B:M Code Timing
Y17 Y19 Fwd.Jog Start   Backlash Comp           -6      2550      0 WITH Mode
Y18 Y1A Rev.Jog Start                                             1 AFTER Mode
                        Upper Limit            100       100    C:M Code ON/OFF
Y15 Y16 Stop            Lower Limit              0         0      0 OFF    1 ON
                                                                DD:Posit. Method
X08 X09 Pos. Started    Error Comp.              0         0      00 ABS  01 INC
X04 X05 BUSY                                                      10 ABS + INC
X0E X0F M Code ON       Starting Bias            0         0    E:Direction
                                                                  0 Fwd    1 Rev
X00 WDT Err  Man.Pulse  Compl.O/P Time         300       300    FF:Unit Setting
X0A Batt.Err X:Enable                                             00 mm   01 inch
X0B Error    Y:Disable  MCode/ErrCode       0   64    0   64      10 deg  11 PLS
```

(4) Check the contents of the display. Carry out the subsequent operation according to Sec. 6.5.

(5) Carry out tests for the displayed data according to Sec.6.4.7.
- Change current value of buffer memory
- Turn output signal from PLC CPU on and off

Proceed to Sec. 6.4.7 and Sec. 6.5

6.4.7 Testing of the intelligent function module

⚠WARNING	• When testing the operation (changing a current buffer memory value) of the intelligent module monitor, read this manual carefully to fully understand the operation. For devices that perform significant operations for the system, never perform test operation to change data. Doing so can cause accidents due to false outputs or malfunctions.

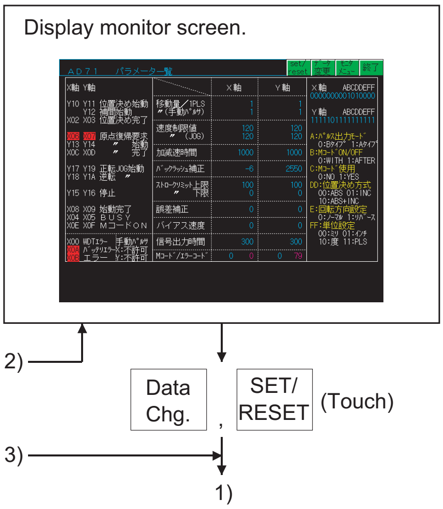
Testing can be performed for all buffer memory data displayed on the current monitor screen.
This section describes the operations for changing the current value of the buffer memory and turning on and off the output signal from the PLC CPU to the intelligent function module.

Point

(1) Perform testing for the buffer memory that can be written from the PLC CPU and output signals that are output from the PLC CPU.

(2) It is recommended that testing be performed with the PLC CPU in STOP status. If the PLC CPU is tested during RUN status, the test monitor display returns to display values output from the sequence program and output statuses.

Operation procedure

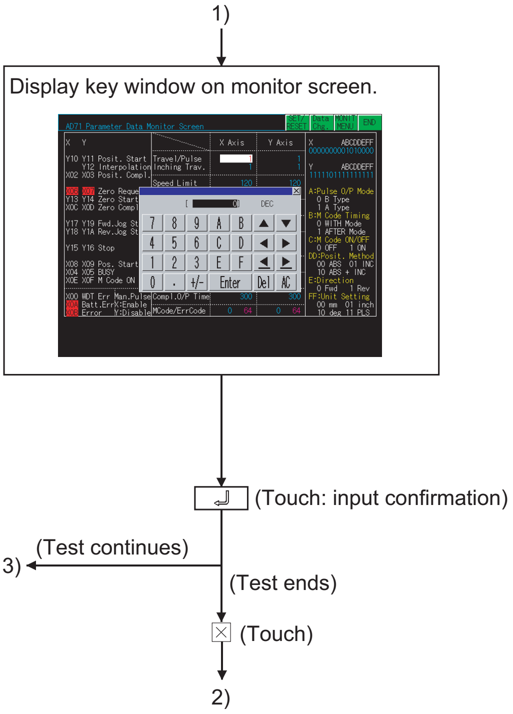


AD71　パラメーター一覧

X軸 Y軸
Y10 Y11 位置決め始動
Y12 補間始動
X02 X03 位置決め完了
X06 X07 原点復帰要求
Y13 Y14 〃 始動
X0C X0D 〃 完了
Y17 Y19 正転JOG始動
Y18 Y1A 逆転 〃
Y15 Y16 停止
X08 X09 始動完了
X04 X05 ＢＵＳＹ
X0E X0F Ｍコード ＯＮ
X00 WDTｴﾗｰ
X0A ﾊﾞｯﾃﾘｴﾗｰ
X0B エラー
手動ﾊﾟﾙｻ
X:不許可
Y:不許可

	X軸	Y軸
移動量／1PLS 〃（手動ﾊﾟﾙｻ）	1 1	1 1
速度制限値 〃 （JOG）	120 120	120 120
加減速時間	1000	1000
ﾊﾞｯｸﾗｯｼｭ補正	-6	2550
ｽﾄﾛｰｸﾘﾐｯﾄ上限 〃 下限	100 0	100 0
誤差補正	0	0
バイアス速度	0	0
信号出力時間	300	300
Mｺｰﾄﾞ/ｴﾗｰｺｰﾄﾞ	0 0	0 79

X軸 ABCDDEFF
0000000001010000
Y軸 ABCDDEFF
1111101111111111
A:ﾊﾟﾙｽ出力ﾓｰﾄﾞ
0:Bﾀｲﾌﾟ 1:Aﾀｲﾌﾟ
B:Mｺｰﾄﾞ ON/OFF
0:WITH 1:AFTER
C:Mｺｰﾄﾞ使用
0:NO 1:YES
DD:位置決め方式
00:ABS 01:INC
10:ABS+INC
E:回転方向設定
0:ﾉｰﾏﾙ 1:ﾘﾊﾞｰｽ
FF:単位設定
00:ﾐﾘ 01:ｲﾝﾁ
10:度 11:PLS


1)
Display key window on monitor screen.
(Touch: input confirmation)
(Test continues)
3)
(Test ends)
☒ (Touch)
2)

When Data Chg. is touched (changes current value of buffer memory)

- All of the following operations can be carried out by touching the keys in the displayed key window.
- When you touch ☒ at the upper left of the key window, the key window closes and the display returns to the monitor screen.

(1) Move the cursor to the position where the data to be tested is displayed. (*1) (▲ ▼: Up/down ▶ ◀: Left/right)

(2) Use the numeric keys to specify the value to be changed. (*2)
The DEL key can be used to clear individual characters among those input.

When SET/RESET is touched (tests the I/O signal)

- All of the following operations can be carried out by touching the keys in the displayed key window.
- When you touch ☒ at the upper left of the key window, the key window closes and the display returns to the monitor screen.

(1) Use the alphabetic character keys to specify the name of the device to be tested, and then touch ▶. (*1)

(2) Use the numeric keys to specify the device number, and then touch ▶.

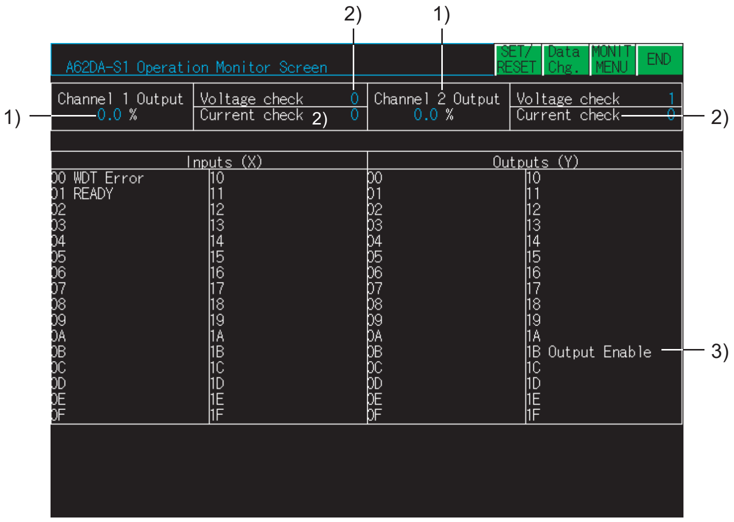
(3) Use the numeric keys to specify "Set" or "Reset".
0: OFF 1: ON

*1 Do not perform the following tests.
If these tests are performed, the module may not operate correctly or the buffer memory/input signal may return to the output value/output status from the intelligent function module.
1) Testing of read-only buffer memory from the PLC CPU.
2) Testing of input signals from the intelligent function module to the PLC CPU.

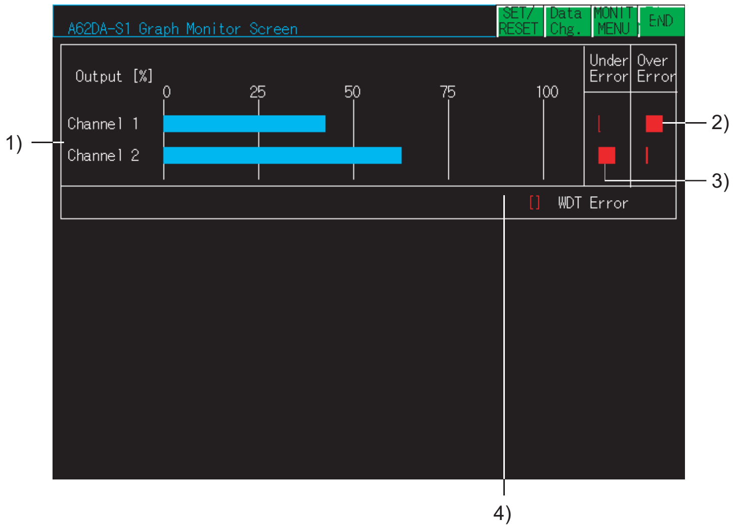
*2 When testing buffer memory data, specify the change value in the following way.
1) For data where 16/32 bits are displayed with one number, specify a new value in decimal format.
2) For data where one number of 16/32 bits is displayed as a percent, such as with an A/D conversion module, specify a new value corresponding to the percentage in decimal format.
Example:
When the set value of the offset or gain is 0 to 2000 and you intend to change it to "50%", input "1000".
3) For data where 16 bits are displayed with "0" or "1" for each bit, specify a new value with changing the data to a decimal.

6.5 Intelligent Module Monitor Screens

6.5.1 A62DA-S1 module monitoring

<table>
<tr><th rowspan="2">Screen example</th><th rowspan="2">No.</th><th colspan="2">Buffer memory address</th></tr>
<tr><th>DEC</th><th>HEX</th></tr>
<tr><td rowspan="4">

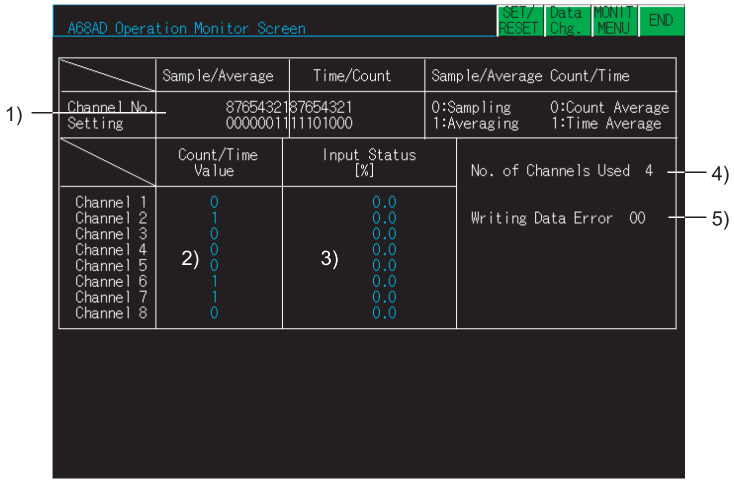
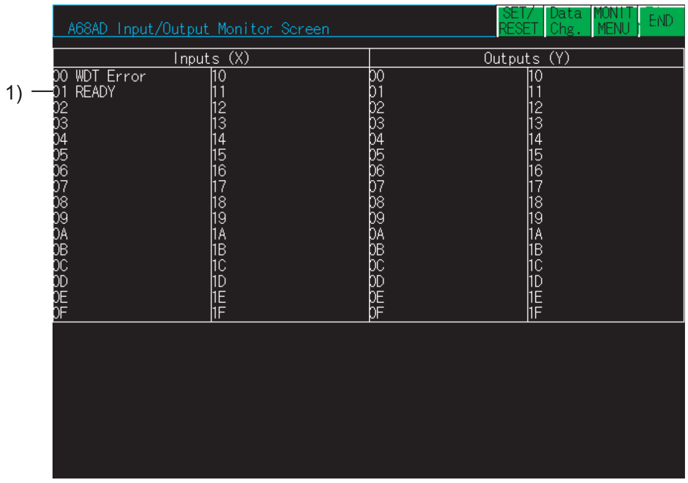
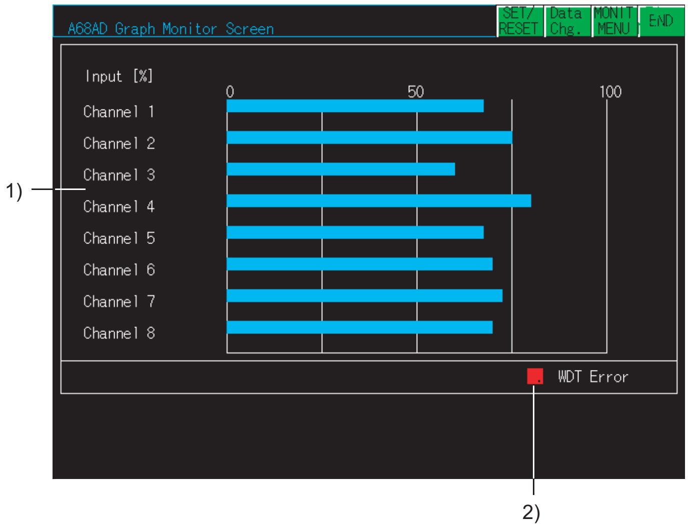
A62DA-S1 Operation Monitor Screen
SET/ RESET
Data Chg.
MONIT MENU
END
Channel 1 Output
0.0 %
Voltage check 0
Current check 0
Channel 2 Output
0.0 %
Voltage check 1
Current check 0
Inputs (X)
Outputs (Y)
00 WDT Error
01 READY
1B Output Enable
1)
2)
3)

</td><td>1)</td><td>0, 1</td><td>0000, 0001</td></tr>
<tr><td>2)</td><td>2 to 5</td><td>0002 to 0005</td></tr>
<tr><td>3)</td><td>-</td><td>-</td></tr>
<tr><td>-</td><td>-</td><td>-</td></tr>
<tr><td rowspan="5">

A62DA-S1 Graph Monitor Screen
SET/ RESET
Data Chg.
MONIT MENU
END
Output [%]
0
25
50
75
100
Under Error
Over Error
Channel 1
Channel 2
WDT Error
1)
2)
3)
4)

</td><td>1)</td><td>0, 1</td><td>0000, 0001</td></tr>
<tr><td>2)</td><td>2, 4</td><td>0002, 0004</td></tr>
<tr><td>3)</td><td>3, 5</td><td>0003, 0005</td></tr>
<tr><td>4)</td><td>-</td><td>-</td></tr>
<tr><td>-</td><td>-</td><td>-</td></tr>
</table>

6.5.2 A68AD module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1	0001
	2)	2 to 9	0002 to 0009
	3)	10 to 17	000A to 0011
	4)	0	0000
	5)	34	0022
	-	-	-
	1)	-	-
	-	-	-
	1)	10 to 17	000A to 0011
	2)	-	-
	-	-	-

A68AD Operation Monitor Screen

SET/ RESET | Data Chg. | MONIT MENU | END

	Sample/Average	Time/Count	Sample/Average Count/Time
Channel No. Setting	87654321 00000011	87654321 11101000	0:Sampling 1:Averaging 0:Count Average 1:Time Average

	Count/Time Value	Input Status [%]
Channel 1	0	0.0
Channel 2	1	0.0
Channel 3	0	0.0
Channel 4	0	0.0
Channel 5	0	0.0
Channel 6	1	0.0
Channel 7	1	0.0
Channel 8	0	0.0

No. of Channels Used 4

Writing Data Error 00

A68AD Input/Output Monitor Screen

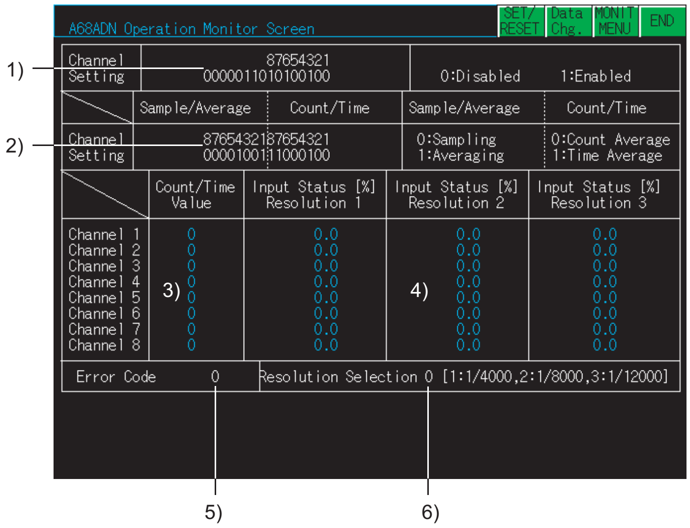
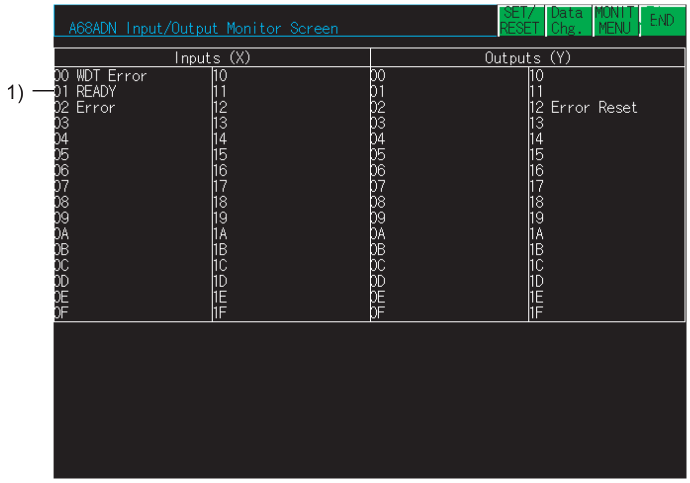
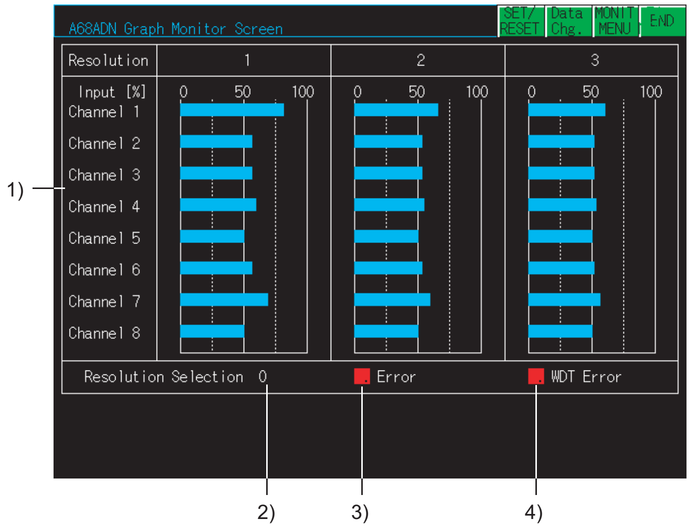
SET/ RESET | Data Chg. | MONIT MENU | END

Inputs (X)		Outputs (Y)	
00 WDT Error	10	00	10
01 READY	11	01	11
02	12	02	12
03	13	03	13
04	14	04	14
05	15	05	15
06	16	06	16
07	17	07	17
08	18	08	18
09	19	09	19
0A	1A	0A	1A
0B	1B	0B	1B
0C	1C	0C	1C
0D	1D	0D	1D
0E	1E	0E	1E
0F	1F	0F	1F

A68AD Graph Monitor Screen

SET/ RESET | Data Chg. | MONIT MENU | END

6.5.3 A68ADN module monitoring

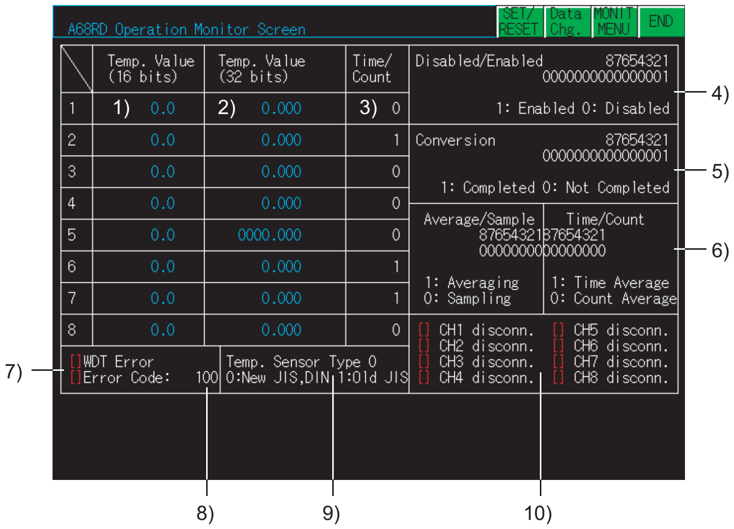
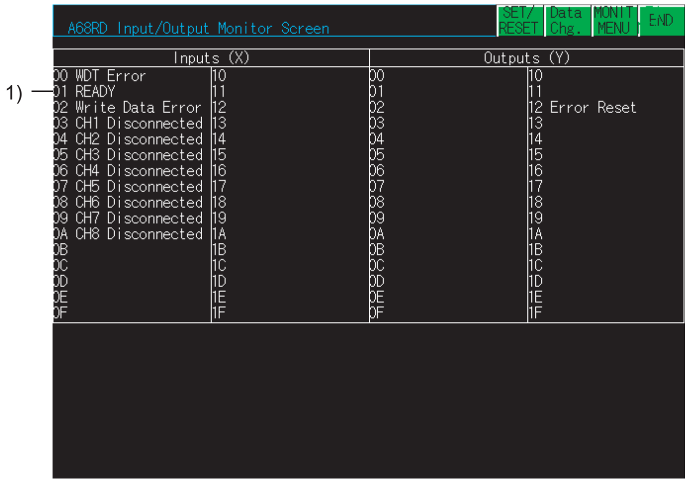
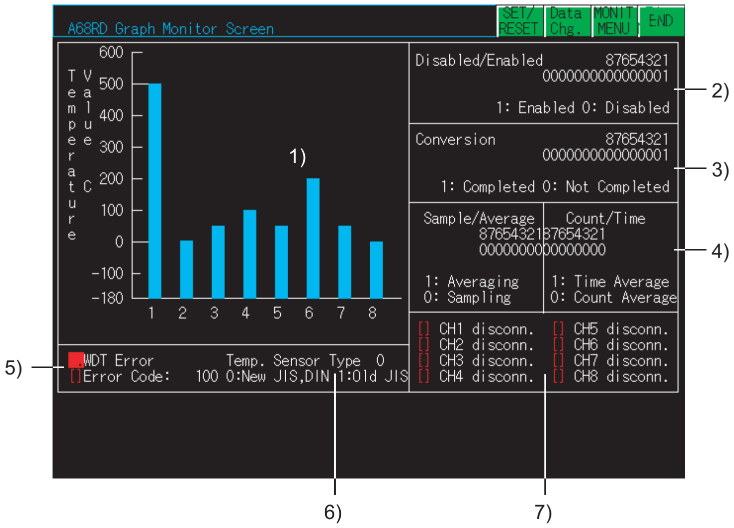
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	0	0000
	2)	1	0001
	3)	2 to 9	0002 to 0009
	4)	10 to 17	000A to 0011
	5)	18	0012
	6)	20	0014
	-	-	-
	1)	-	-
	-	-	-
	1)	10 to 17	000A to 0011
	2)	20	0014
	3)	-	-
	4)	-	-
	-	-	-

```
A68ADN Operation Monitor Screen

Channel                  87654321
Setting          0000011010100100     0:Disabled    1:Enabled

           Sample/Average  Count/Time   Sample/Average  Count/Time
Channel          8765432187654321      0:Sampling      0:Count Average
Setting          0000100111000100      1:Averaging     1:Time Average

           Count/Time  Input Status [%]  Input Status [%]  Input Status [%]
             Value     Resolution 1      Resolution 2      Resolution 3
Channel 1      0          0.0               0.0               0.0
Channel 2      0          0.0               0.0               0.0
Channel 3      0          0.0               0.0               0.0
Channel 4      0          0.0               0.0               0.0
Channel 5      0          0.0               0.0               0.0
Channel 6      0          0.0               0.0               0.0
Channel 7      0          0.0               0.0               0.0
Channel 8      0          0.0               0.0               0.0
 Error Code    0    Resolution Selection 0 [1:1/4000,2:1/8000,3:1/12000]
```

```
A68ADN Input/Output Monitor Screen

           Inputs (X)                       Outputs (Y)
00 WDT Error        10             00             10
01 READY            11             01             11
02 Error            12             02             12 Error Reset
03                  13             03             13
04                  14             04             14
05                  15             05             15
06                  16             06             16
07                  17             07             17
08                  18             08             18
09                  19             09             19
0A                  1A             0A             1A
0B                  1B             0B             1B
0C                  1C             0C             1C
0D                  1D             0D             1D
0E                  1E             0E             1E
0F                  1F             0F             1F
```

```
A68ADN Graph Monitor Screen

Resolution          1                 2                 3
 Input [%]   0    50    100    0    50    100    0    50    100
Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6
Channel 7
Channel 8
 Resolution Selection  0       🟥 Error          🟥 WDT Error
```

6.5.4 A68RD module monitoring

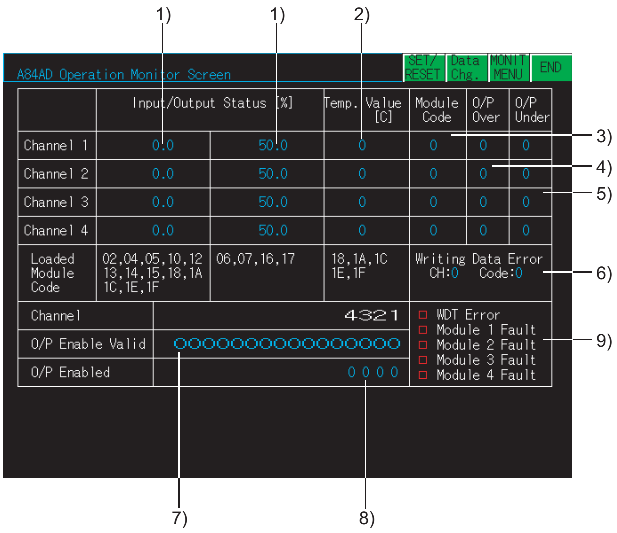
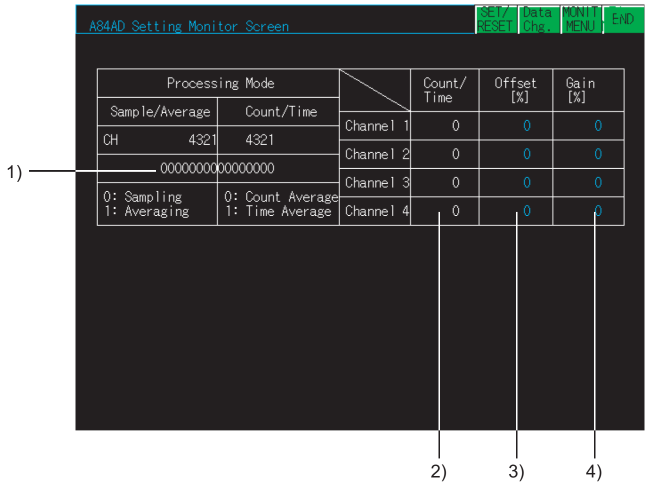
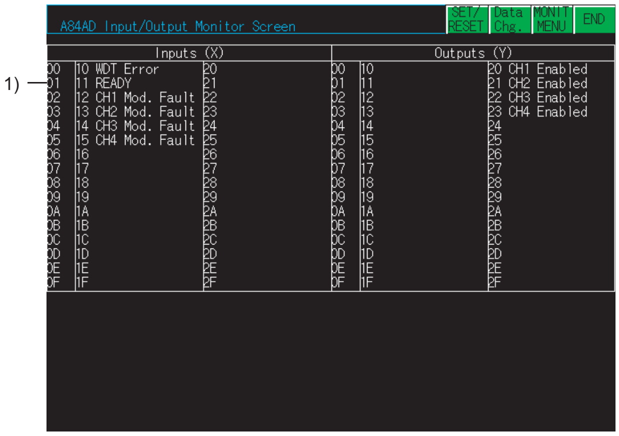
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	10 to 17	000A to 0011
	2)	18 to 33	0012 to 0021
	3)	2 to 9	0002 to 0009
	4)	0	0000
	5)	35	0023
	6)	1	0001
	7)	-	-
	8)	34	0022
	9)	36	0024
	10)	-	-
	-	-	-
	1)	-	-
	-	-	-
	1)	10 to 17	000A to 0011
	2)	0	0000
	3)	35	0023
	4)	1	0001
	5)	-	-
		34	0022
	6)	36	0024
	7)	-	-
	-	-	-

```
A68RD Operation Monitor Screen
   Temp. Value   Temp. Value   Time/   Disabled/Enabled        87654321
   (16 bits)     (32 bits)     Count                   0000000000000001
1  0.0           0.000         0                 1: Enabled 0: Disabled
2  0.0           0.000         1       Conversion              87654321
3  0.0           0.000         0                       0000000000000001
4  0.0           0.000         0         1: Completed 0: Not Completed
5  0.0           0000.000      0        Average/Sample     Time/Count
6  0.0           0.000         1         87654321 87654321
7  0.0           0.000         1         0000000000000000
8  0.0           0.000         0       1: Averaging      1: Time Average
                                       0: Sampling       0: Count Average
[]WDT Error          Temp. Sensor Type 0     [] CH1 disconn.  [] CH5 disconn.
[]Error Code:    100 0:New JIS,DIN 1:Old JIS [] CH2 disconn.  [] CH6 disconn.
                                             [] CH3 disconn.  [] CH7 disconn.
                                             [] CH4 disconn.  [] CH8 disconn.
```

```
A68RD Input/Output Monitor Screen
              Inputs (X)                      Outputs (Y)
00 WDT Error           10            00           10
01 READY               11            01           11
02 Write Data Error    12            02           12 Error Reset
03 CH1 Disconnected    13            03           13
04 CH2 Disconnected    14            04           14
05 CH3 Disconnected    15            05           15
06 CH4 Disconnected    16            06           16
07 CH5 Disconnected    17            07           17
08 CH6 Disconnected    18            08           18
09 CH7 Disconnected    19            09           19
0A CH8 Disconnected    1A            0A           1A
0B                     1B            0B           1B
0C                     1C            0C           1C
0D                     1D            0D           1D
0E                     1E            0E           1E
0F                     1F            0F           1F
```

```
Disabled/Enabled        87654321
                0000000000000001
          1: Enabled 0: Disabled
Conversion              87654321
                0000000000000001
   1: Completed 0: Not Completed
 Sample/Average     Count/Time
  87654321 87654321
  0000000000000000
1: Averaging      1: Time Average
0: Sampling       0: Count Average
WDT Error          Temp. Sensor Type  0      [] CH1 disconn.  [] CH5 disconn.
[]Error Code:   100 0:New JIS,DIN 1:Old JIS  [] CH2 disconn.  [] CH6 disconn.
                                             [] CH3 disconn.  [] CH7 disconn.
                                             [] CH4 disconn.  [] CH8 disconn.
```

6.5.5 A84AD module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	10 to 13	000A to 000D
	2)	18 to 21	0012 to 0015
	3)	28 to 31	001C to 001F
	4)	22 to 25	0016 to 0019
	5)	22 to 25	0016 to 0019
	6)	26	001A
	7)	27	001B
	8)	-	-
	9)	-	-
	-	-	-
	1)	1	0001
	2)	2 to 5	0002 to 0005
	3)	32, 34, 36, 38	0020, 0022, 0024, 0026
	4)	33, 35, 37, 39	0021, 0023, 0025, 0027
	-	-	-
	1)	-	-
	-	-	-

A84AD Operation Monitor Screen

	Input/Output Status [%]		Temp. Value [C]	Module Code	O/P Over	O/P Under
Channel 1	0.0	50.0	0	0	0	0
Channel 2	0.0	50.0	0	0	0	0
Channel 3	0.0	50.0	0	0	0	0
Channel 4	0.0	50.0	0	0	0	0
Loaded Module Code	02,04,05,10,12 13,14,15,18,1A 1C,1E,1F	06,07,16,17	18,1A,1C 1E,1F	Writing Data Error CH:0 Code:0		

Channel	4321
O/P Enable Valid	0000000000000000
O/P Enabled	0 0 0 0

☐ WDT Error
☐ Module 1 Fault
☐ Module 2 Fault
☐ Module 3 Fault
☐ Module 4 Fault

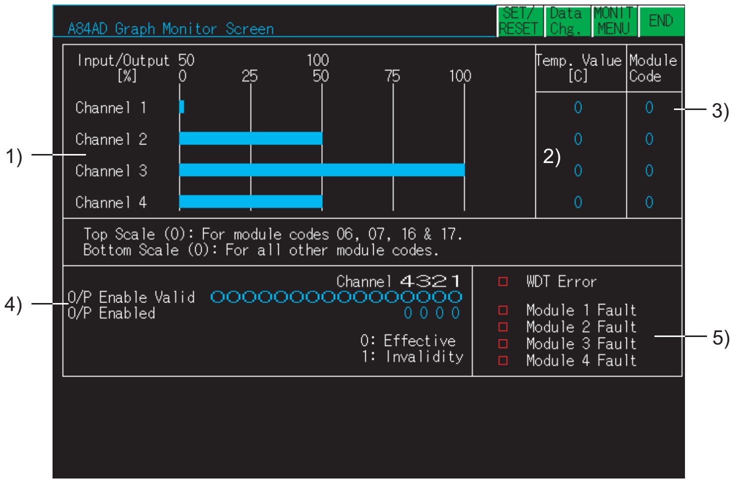
A84AD Setting Monitor Screen

Processing Mode		
Sample/Average	Count/Time	
CH 4321	4321	
0000000000000000		
0: Sampling 1: Averaging	0: Count Average 1: Time Average	

	Count/ Time	Offset [%]	Gain [%]
Channel 1	0	0	0
Channel 2	0	0	0
Channel 3	0	0	0
Channel 4	0	0	0

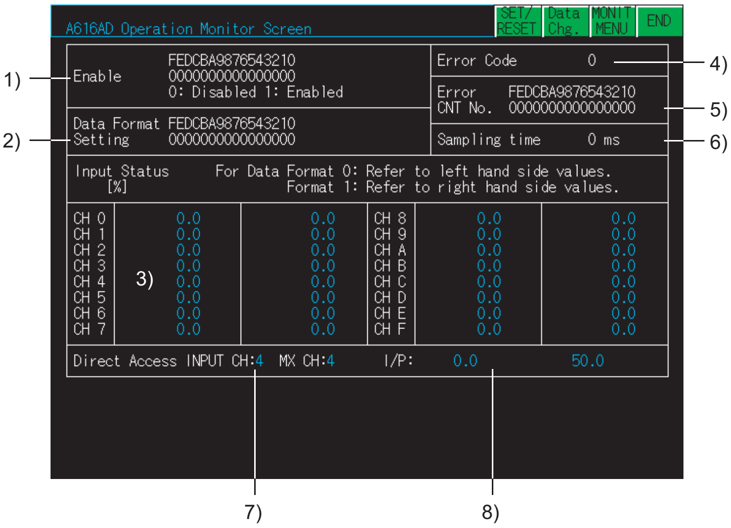
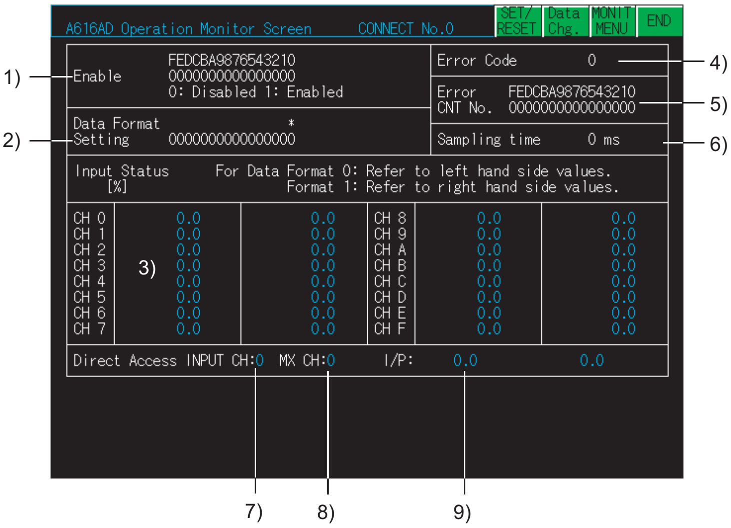
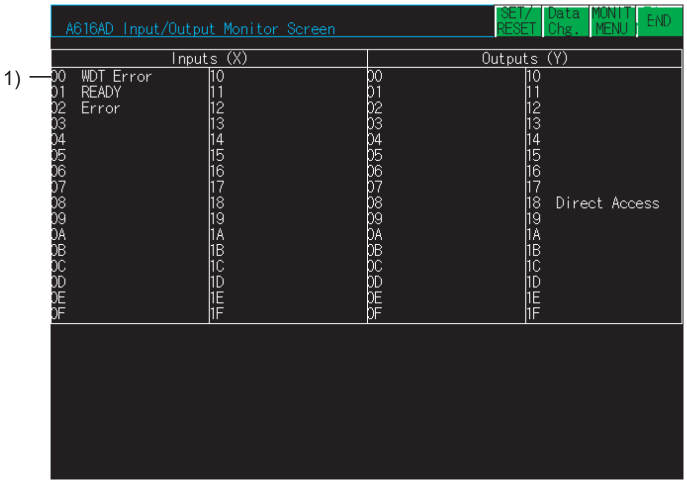
A84AD Input/Output Monitor Screen

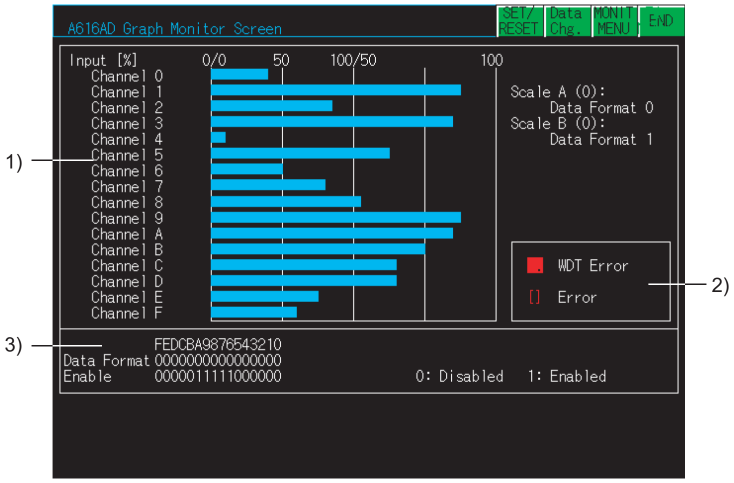
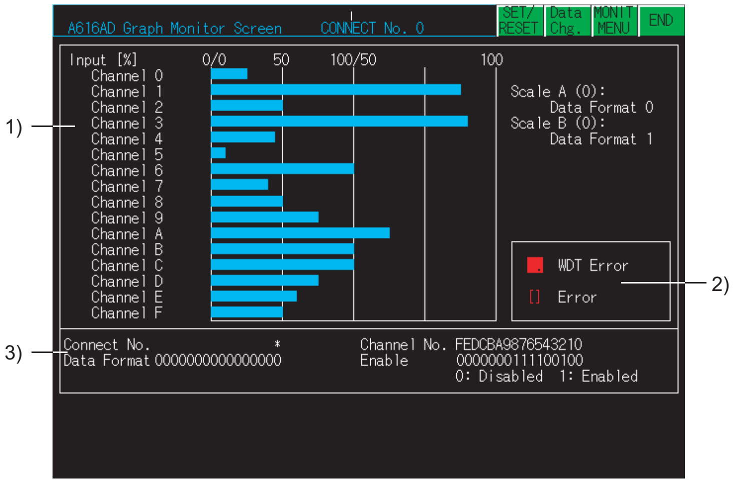
Inputs (X)			Outputs (Y)		
00	10 WDT Error	20	00	10	20 CH1 Enabled
01	11 READY	21	01	11	21 CH2 Enabled
02	12 CH1 Mod. Fault	22	02	12	22 CH3 Enabled
03	13 CH2 Mod. Fault	23	03	13	23 CH4 Enabled
04	14 CH3 Mod. Fault	24	04	14	24
05	15 CH4 Mod. Fault	25	05	15	25
06	16	26	06	16	26
07	17	27	07	17	27
08	18	28	08	18	28
09	19	29	09	19	29
0A	1A	2A	0A	1A	2A
0B	1B	2B	0B	1B	2B
0C	1C	2C	0C	1C	2C
0D	1D	2D	0D	1D	2D
0E	1E	2E	0E	1E	2E
0F	1F	2F	0F	1F	2F

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	10 to 13	000A to 000D
	2)	18 to 21	0012 to 0015
	3)	28 to 31	001C to 001F
	4)	27 -	001B -
	5)	-	-
	-	-	-

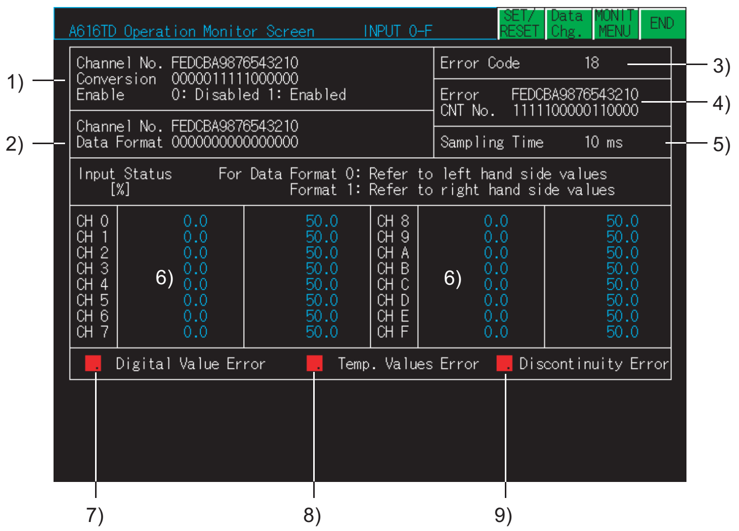
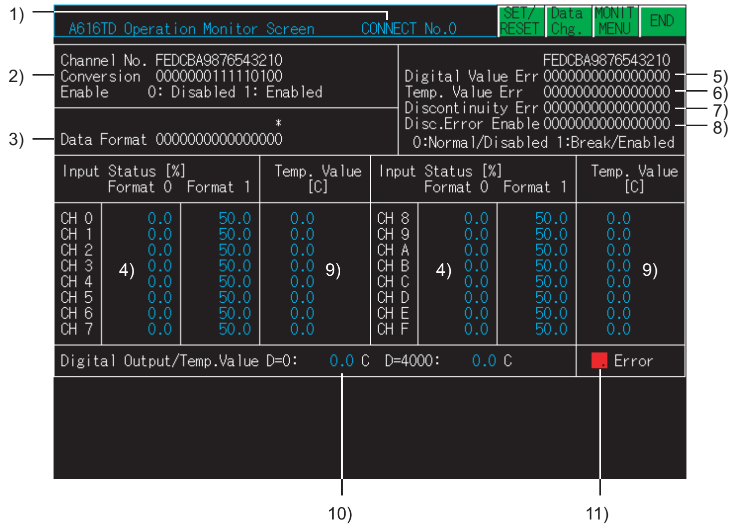
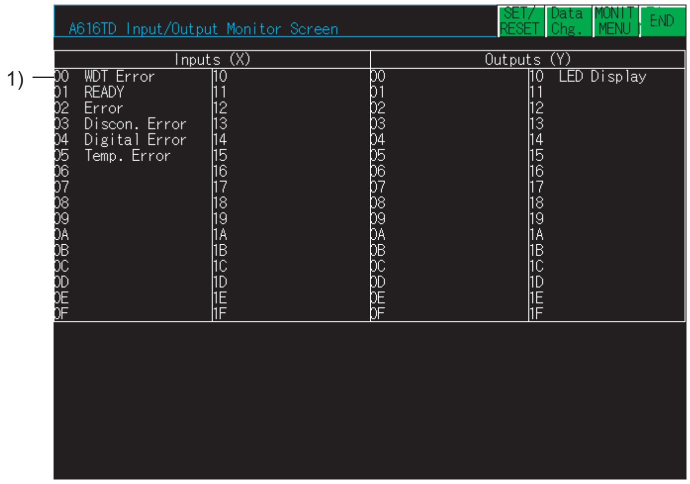
Top Scale (0): For module codes 06, 07, 16 & 17.
Bottom Scale (0): For all other module codes.

6.5.6 A616AD module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
 A616AD Operation Monitor Screen Enable FEDCBA9876543210 0000000000000000 0: Disabled 1: Enabled Error Code 0 Error CNT No. FEDCBA9876543210 0000000000000000 Data Format Setting FEDCBA9876543210 0000000000000000 Sampling time 0 ms Input Status [%] For Data Format 0: Refer to left hand side values. Format 1: Refer to right hand side values. CH 0 0.0 0.0 CH 8 0.0 0.0 CH 1 0.0 0.0 CH 9 0.0 0.0 CH 2 0.0 0.0 CH A 0.0 0.0 CH 3 0.0 0.0 CH B 0.0 0.0 CH 4 0.0 0.0 CH C 0.0 0.0 CH 5 0.0 0.0 CH D 0.0 0.0 CH 6 0.0 0.0 CH E 0.0 0.0 CH 7 0.0 0.0 CH F 0.0 0.0 Direct Access INPUT CH:4 MX CH:4 I/P: 0.0 50.0 SET/ RESET Data Chg. MONIT MENU END 1) 2) 3) 4) 5) 6) 7) 8)	1)	15	000F
	2)	4	0004
	3)	48 to 63	0030 to 003F
	4)	5	0005
	5)	6	0006
	6)	3	0003
	7)	0,1	0000, 0001
	8)	2	0002
	-	-	-
 A616AD Operation Monitor Screen CONNECT No.0 Enable FEDCBA9876543210 0000000000000000 0: Disabled 1: Enabled Error Code 0 Error CNT No. FEDCBA9876543210 0000000000000000 Data Format Setting * 0000000000000000 Sampling time 0 ms Input Status [%] For Data Format 0: Refer to left hand side values. Format 1: Refer to right hand side values. CH 0 0.0 0.0 CH 8 0.0 0.0 CH 1 0.0 0.0 CH 9 0.0 0.0 CH 2 0.0 0.0 CH A 0.0 0.0 CH 3 0.0 0.0 CH B 0.0 0.0 CH 4 0.0 0.0 CH C 0.0 0.0 CH 5 0.0 0.0 CH D 0.0 0.0 CH 6 0.0 0.0 CH E 0.0 0.0 CH 7 0.0 0.0 CH F 0.0 0.0 Direct Access INPUT CH:0 MX CH:0 I/P: 0.0 0.0 SET/ RESET Data Chg. MONIT MENU END 1) 2) 3) 4) 5) 6) 7) 8) 9)	1)	16 to 23	0010 to 0017
	2)	4	0004
	3)	256 to 383	0100 to 017F
	4)	5	0005
	5)	6	0006
	6)	3	0003
	7)	0	0000
	8)	1	0001
	9)	2	0002
	-	-	-
 A616AD Input/Output Monitor Screen Inputs (X) Outputs (Y) 00 WDT Error 10 00 10 01 READY 11 01 11 02 Error 12 02 12 03 13 03 13 04 14 04 14 05 15 05 15 06 16 06 16 07 17 07 17 08 18 08 18 Direct Access 09 19 09 19 0A 1A 0A 1A 0B 1B 0B 1B 0C 1C 0C 1C 0D 1D 0D 1D 0E 1E 0E 1E 0F 1F 0F 1F 	1)	-	-
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
 A616AD Graph Monitor Screen SET/ RESET Data Chg. MONIT MENU END Input [%] 0/0 50 100/50 100 Channel 0 Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel 8 Channel 9 Channel A Channel B Channel C Channel D Channel E Channel F WDT Error Error 1) 2) 3) Scale A (0): Data Format 0 Scale B (0): Data Format 1 FEDCBA9876543210 Data Format 0000000000000000 Enable 0000011111000000 0: Disabled 1: Enabled	1)	48 to 63	0030 to 003F
	2)	-	-
		-	-
	3)	4	0004
		15	000F
	-	-	-
 A616AD Graph Monitor Screen CONNECT No. 0 SET/ RESET Data Chg. MONIT MENU END Input [%] 0/0 50 100/50 100 Channel 0 Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel 8 Channel 9 Channel A Channel B Channel C Channel D Channel E Channel F WDT Error Error 1) 2) 3) Scale A (0): Data Format 0 Scale B (0): Data Format 1 Connect No. * Data Format 0000000000000000 Channel No. FEDCBA9876543210 Enable 0000000111100100 0: Disabled 1: Enabled	1)	256 to 383	0100 to 017F
	2)	-	-
		-	-
	3)	4	0004
		16 to 23	0010 to 0017
	-	-	-

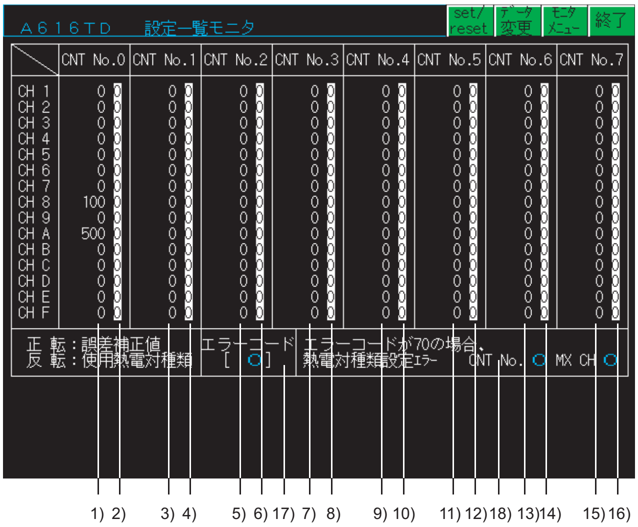
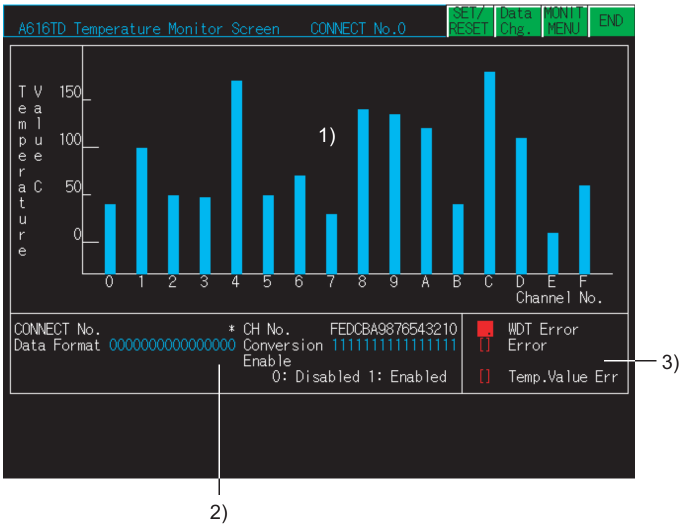
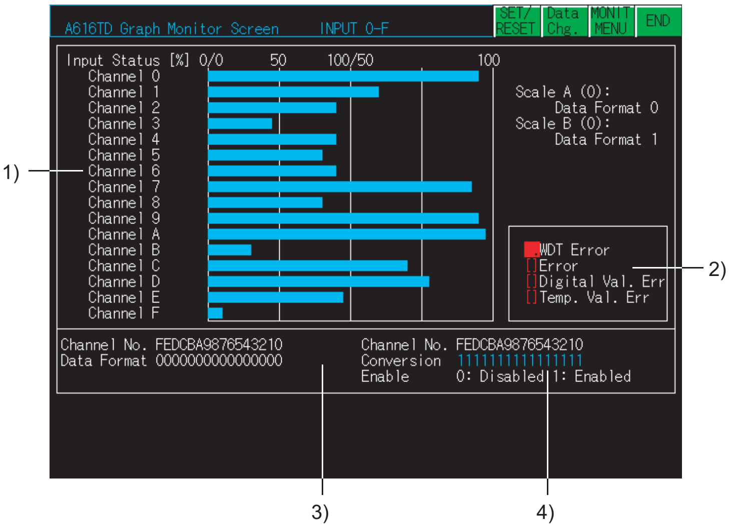
6.5.7 A616TD module monitoring

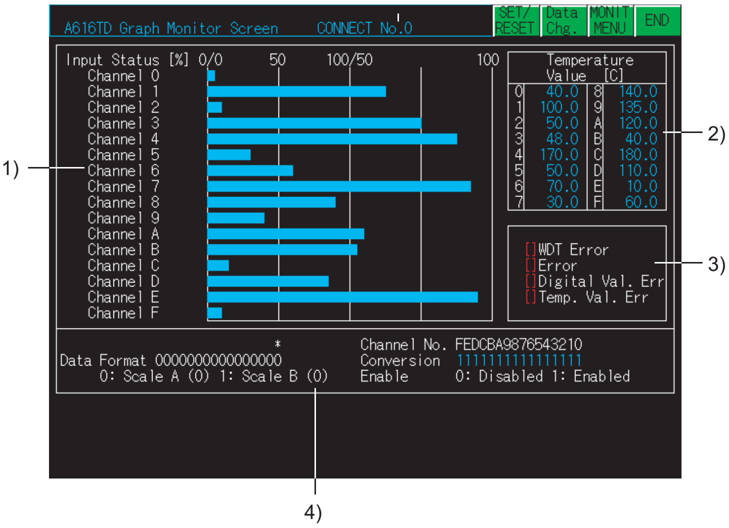
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	15	000F
	2)	0	0000
	3)	1	0001
	4)	2	0002
	5)	4	0004
	6)	112 to 127	0070 to 007F
	7)	-	-
	8)	-	-
	9)	-	-
	-	-	-
	1)	-	-
	2)	16 to 23	0010 to 0017
	3)	0	0000
	4)	384 to 511	0180 to 01FF
	5)	80 to 87	0050 to 0057
	6)	96 to 103	0060 to 0067
	7)	64 to 71	0040 to 0047
	8)	32 to 39	0020 to 0027
	9)	512 to 639	0200 to 027F
	10)	48 to 63	0030 to 003F
	11)	-	-
	-	-	-
	1)	-	-
	-	-	-

```
A616TD Operation Monitor Screen      INPUT 0-F     SET/RESET  Data Chg.  MONIT MENU  END
Channel No. FEDCBA9876543210                        Error Code        18
Conversion  0000011111000000                        Error     FEDCBA9876543210
Enable      0: Disabled 1: Enabled                  CNT No.   1111100000110000
Channel No. FEDCBA9876543210
Data Format 0000000000000000                        Sampling Time     10 ms
Input Status      For Data Format 0: Refer to left hand side values
   [%]                     Format 1: Refer to right hand side values
CH 0     0.0     50.0   CH 8     0.0     50.0
CH 1     0.0     50.0   CH 9     0.0     50.0
CH 2     0.0     50.0   CH A     0.0     50.0
CH 3     0.0     50.0   CH B     0.0     50.0
CH 4     0.0     50.0   CH C     0.0     50.0
CH 5     0.0     50.0   CH D     0.0     50.0
CH 6     0.0     50.0   CH E     0.0     50.0
CH 7     0.0     50.0   CH F     0.0     50.0
🟥 Digital Value Error   🟥 Temp. Values Error  🟥 Discontinuity Error
```

```
A616TD Operation Monitor Screen      CONNECT No.0     SET/RESET  Data Chg.  MONIT MENU  END
Channel No. FEDCBA9876543210                                      FEDCBA9876543210
Conversion  0000000111110100                 Digital Value Err    0000000000000000
Enable      0: Disabled 1: Enabled           Temp. Value Err      0000000000000000
                                             Discontinuity Err    0000000000000000
                                *            Disc.Error Enable    0000000000000000
Data Format 0000000000000000                  0:Normal/Disabled 1:Break/Enabled
Input Status [%]        Temp. Value   Input Status [%]        Temp. Value
     Format 0  Format 1    [C]             Format 0  Format 1    [C]
CH 0     0.0     50.0     0.0        CH 8     0.0     50.0     0.0
CH 1     0.0     50.0     0.0        CH 9     0.0     50.0     0.0
CH 2     0.0     50.0     0.0        CH A     0.0     50.0     0.0
CH 3     0.0     50.0     0.0        CH B     0.0     50.0     0.0
CH 4     0.0     50.0     0.0        CH C     0.0     50.0     0.0
CH 5     0.0     50.0     0.0        CH D     0.0     50.0     0.0
CH 6     0.0     50.0     0.0        CH E     0.0     50.0     0.0
CH 7     0.0     50.0     0.0        CH F     0.0     50.0     0.0
Digital Output/Temp.Value D=0:    0.0 C  D=4000:    0.0 C       🟥 Error
```

```
A616TD Input/Output Monitor Screen                 SET/RESET  Data Chg.  MONIT MENU  END
              Inputs (X)                                 Outputs (Y)
00  WDT Error          10                 00                  10  LED Display
01  READY              11                 01                  11
02  Error              12                 02                  12
03  Discon. Error      13                 03                  13
04  Digital Error      14                 04                  14
05  Temp. Error        15                 05                  15
06                     16                 06                  16
07                     17                 07                  17
08                     18                 08                  18
09                     19                 09                  19
0A                     1A                 0A                  1A
0B                     1B                 0B                  1B
0C                     1C                 0C                  1C
0D                     1D                 0D                  1D
0E                     1E                 0E                  1E
0F                     1F                 0F                  1F
```

Screen example	No.	Buffer memory address	
		DEC	HEX
 A616TD 設定一覧モニタ set/reset データ変更 モニタメニュー 終了 CNT No.0 CNT No.1 CNT No.2 CNT No.3 CNT No.4 CNT No.5 CNT No.6 CNT No.7 CH 1 … CH F 正 転：誤差補正値 反 転：使用熱電対種類 エラーコード [○] エラーコードが70の場合、熱電対種類設定ｴﾗｰ CNT No. ○ MX CH ○ 1) 2) 3) 4) 5) 6) 17) 7) 8) 9) 10) 11) 12) 18) 13) 14) 15) 16)	1)	129 to 143	0081 to 008F
	2)	257 to 271	0101 to 010F
	3)	145 to 159	0091 to 009F
	4)	273 to 287	0111 to 011F
	5)	161 to 175	00A1 to 00AF
	6)	289 to 303	0121 to 012F
	7)	177 to 191	00B1 to 00BF
	8)	305 to 319	0131 to 013F
	9)	193 to 207	00C1 to 00CF
	10)	321 to 335	0141 to 014F
	11)	209 to 223	00D1 to 00DF
	12)	337 to 351	0151 to 015F
	13)	225 to 239	00E1 to 00EF
	14)	353 to 367	0161 to 016F
	15)	241 to 255	00F1 to 00FF
	16)	369 to 383	0171 to 017F
	17)	1	0001
	18)	3	0003
	-	-	-
 A616TD Temperature Monitor Screen CONNECT No.0 SET/RESET Data Chg. MONIT MENU END Temperature Value C 150 100 50 0 0 1 2 3 4 5 6 7 8 9 A B C D E F Channel No. CONNECT No. Data Format 0000000000000000 ＊CH No. FEDCBA9876543210 Conversion Enable 1111111111111111 0: Disabled 1: Enabled WDT Error Error Temp.Value Err 1) 2) 3)	1)	512 to 639	0200 to 027F
	2)	0	0000
		16 to 23	0010 to 0017
	3)	-	-
	-	-	-
 A616TD Graph Monitor Screen INPUT 0-F SET/RESET Data Chg. MONIT MENU END Input Status [%] 0/0 50 100/50 100 Channel 0 … Channel F Scale A (0): Data Format 0 Scale B (0): Data Format 1 WDT Error Error Digital Val. Err Temp. Val. Err Channel No. FEDCBA9876543210 Data Format 0000000000000000 Channel No. FEDCBA9876543210 Conversion Enable 1111111111111111 0: Disabled 1: Enabled 1) 2) 3) 4)	1)	112 to 127	0070 to 007F
	2)	-	-
	3)	0	0000
	4)	15	000F
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	384 to 511	0180 to 01FF
	2)	512 to 639	0200 to 027F
	3)	-	-
	4)	0	0000
		16 to 23	0010 to 0017
	-	-	-

Temperature Value [C]

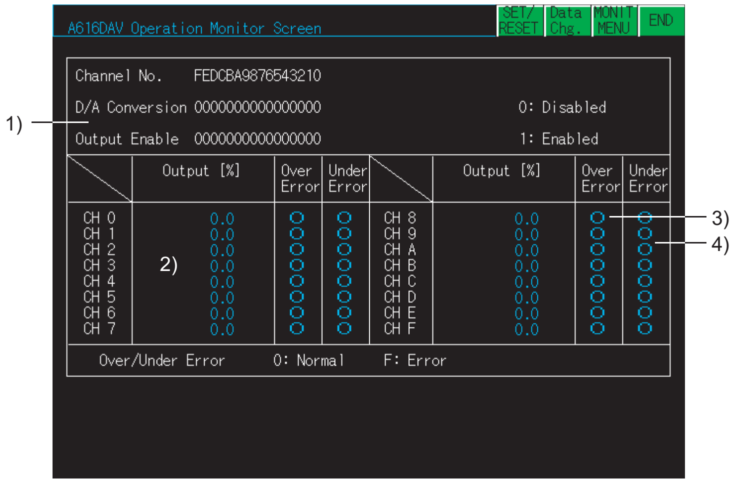
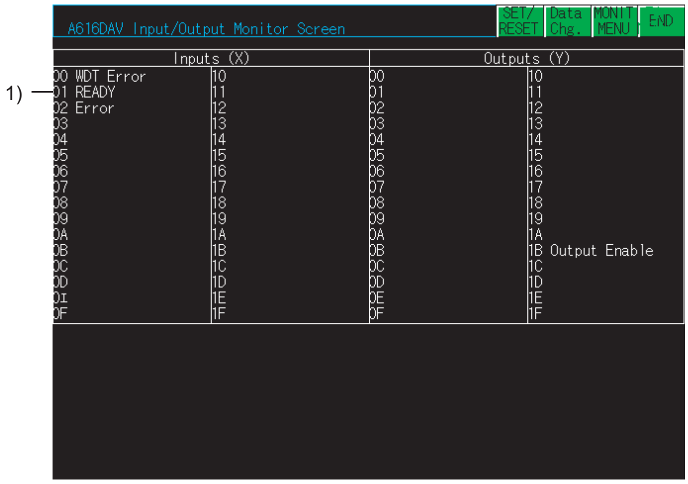
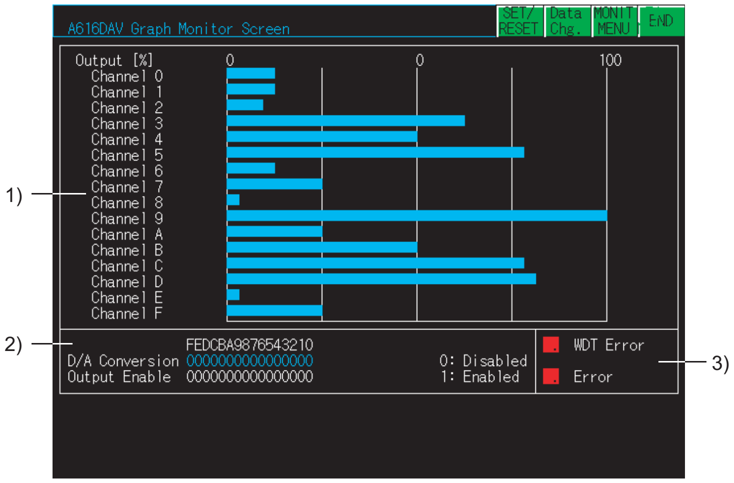
0	40.0	8	140.0
1	100.0	9	135.0
2	50.0	A	120.0
3	48.0	B	40.0
4	170.0	C	180.0
5	50.0	D	110.0
6	70.0	E	10.0
7	30.0	F	60.0

[ ]WDT Error
[ ]Error
[ ]Digital Val. Err
[ ]Temp. Val. Err

*
Data Format 0000000000000000
0: Scale A (0) 1: Scale B (0)

Channel No. FEDCBA9876543210
Conversion 1111111111111111
Enable 0: Disabled 1: Enabled

6.5.8 A616DAV module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	0	0000
		1	0001
	2)	16 to 31	0010 to 001F
	3)	48 to 63	0030 to 003F
	4)	48 to 63	0030 to 003F
	-	-	-
	1)	-	-
	-	-	-
	1)	16 to 31	10 to 1F
	2)	0	0
		1	1
	3)	-	-
		-	-
	-	-	-

```
A616DAV Operation Monitor Screen                          SET/   Data  MONIT  END
                                                          RESET  Chg.  MENU

Channel No.     FEDCBA9876543210
D/A Conversion  0000000000000000               0: Disabled
Output Enable   0000000000000000               1: Enabled

        Output [%]   Over  Under          Output [%]   Over  Under
                     Error Error                       Error Error
CH 0       0.0        ○     ○    CH 8        0.0        ○     ○
CH 1       0.0        ○     ○    CH 9        0.0        ○     ○
CH 2       0.0        ○     ○    CH A        0.0        ○     ○
CH 3       0.0        ○     ○    CH B        0.0        ○     ○
CH 4       0.0        ○     ○    CH C        0.0        ○     ○
CH 5       0.0        ○     ○    CH D        0.0        ○     ○
CH 6       0.0        ○     ○    CH E        0.0        ○     ○
CH 7       0.0        ○     ○    CH F        0.0        ○     ○

Over/Under Error        0: Normal    F: Error
```

```
A616DAV Input/Output Monitor Screen                       SET/   Data  MONIT  END
                                                          RESET  Chg.  MENU
             Inputs (X)                            Outputs (Y)
00 WDT Error        10                  00                  10
01 READY            11                  01                  11
02 Error            12                  02                  12
03                  13                  03                  13
04                  14                  04                  14
05                  15                  05                  15
06                  16                  06                  16
07                  17                  07                  17
08                  18                  08                  18
09                  19                  09                  19
0A                  1A                  0A                  1A
0B                  1B                  0B                  1B Output Enable
0C                  1C                  0C                  1C
0D                  1D                  0D                  1D
0I                  1E                  0E                  1E
0F                  1F                  0F                  1F
```

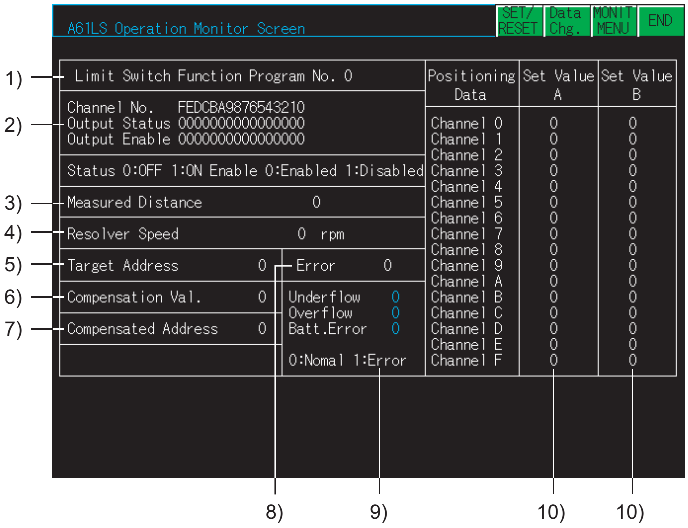
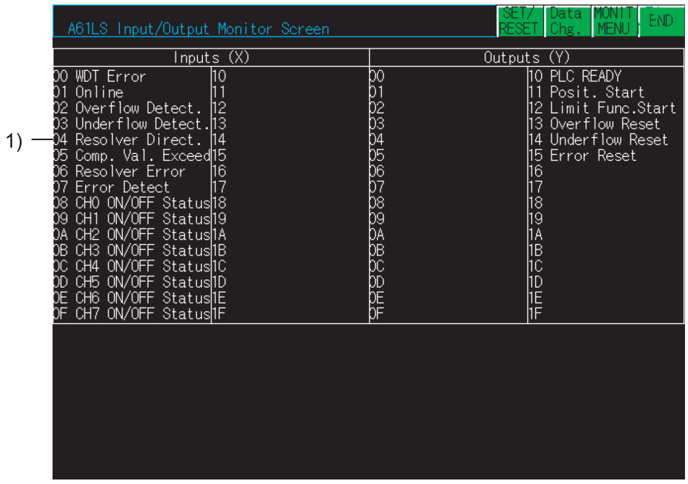
```
A616DAV Graph Monitor Screen                              SET/   Data  MONIT  END
                                                          RESET  Chg.  MENU
Output [%]          0            0            100
  Channel 0
  Channel 1
  Channel 2
  Channel 3
  Channel 4
  Channel 5
  Channel 6
  Channel 7
  Channel 8
  Channel 9
  Channel A
  Channel B
  Channel C
  Channel D
  Channel E
  Channel F

                FEDCBA9876543210                   🟥 WDT Error
D/A Conversion  0000000000000000     0: Disabled
Output Enable   0000000000000000     1: Enabled    🟥 Error
```

6.5.9 A616DAI module monitoring

Refer to the following for further information about the screen for A616DAI and the buffer memory address.

☞ 6.5.8 A616DAV module monitoring

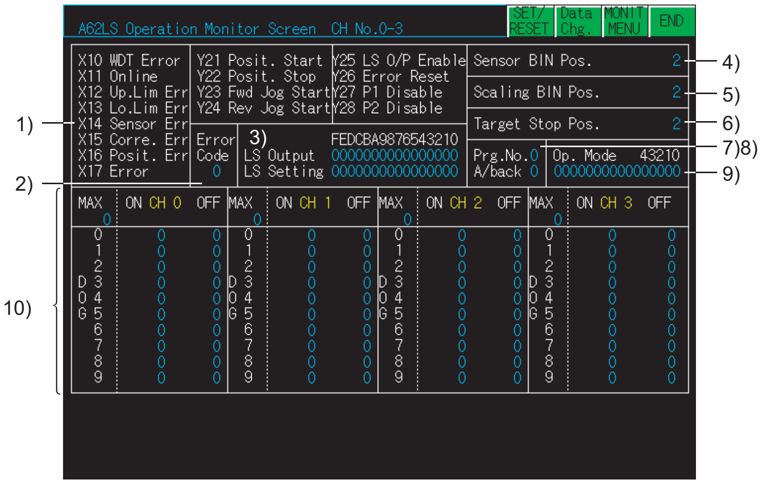
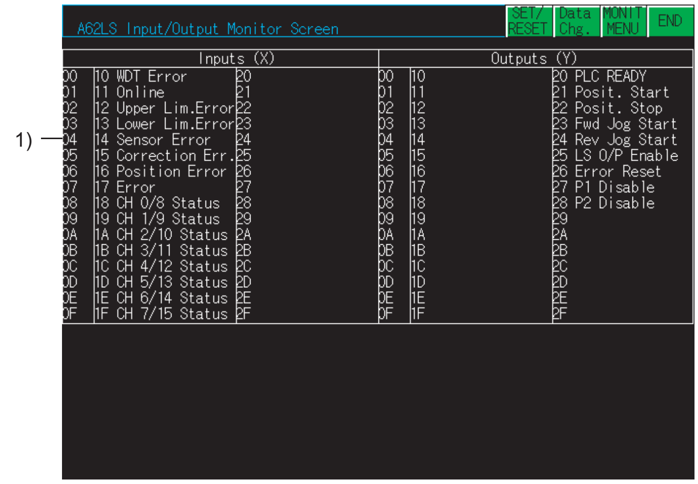
6.5.10 A61LS module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	11	000B
	2)	4,10	0004, 000A
	3)	5, 6	0005, 0006
	4)	3	0003
	5)	12	000C
	6)	7	0007
	7)	0	0000
	8)	8	0008
	9)	2,1,9	0002,0001,0009
	10)	13 to 44	000D to 002C
	-	-	-
	1)	-	-
	-	-	-

```
A61LS Operation Monitor Screen

 Limit Switch Function Program No. 0         | Positioning | Set Value | Set Value
                                             |    Data     |     A     |     B
Channel No.   FEDCBA9876543210               | Channel 0   |     0     |     0
Output Status 0000000000000000               | Channel 1   |     0     |     0
Output Enable 0000000000000000               | Channel 2   |     0     |     0
Status 0:OFF 1:ON Enable 0:Enabled 1:Disabled| Channel 3   |     0     |     0
                                             | Channel 4   |     0     |     0
Measured Distance           0                | Channel 5   |     0     |     0
                                             | Channel 6   |     0     |     0
Resolver Speed             0  rpm            | Channel 7   |     0     |     0
                                             | Channel 8   |     0     |     0
Target Address          0 | Error       0    | Channel 9   |     0     |     0
                          |                  | Channel A   |     0     |     0
Compensation Val.       0 | Underflow   0    | Channel B   |     0     |     0
                          | Overflow    0    | Channel C   |     0     |     0
Compensated Address     0 | Batt.Error  0    | Channel D   |     0     |     0
                          |                  | Channel E   |     0     |     0
                          | 0:Nomal 1:Error  | Channel F   |     0     |     0
```

```
A61LS Input/Output Monitor Screen

              Inputs (X)              |             Outputs (Y)
00 WDT Error           |10            |00            |10 PLC READY
01 Online              |11            |01            |11 Posit. Start
02 Overflow Detect.    |12            |02            |12 Limit Func.Start
03 Underflow Detect.   |13            |03            |13 Overflow Reset
04 Resolver Direct.    |14            |04            |14 Underflow Reset
05 Comp. Val. Exceed   |15            |05            |15 Error Reset
06 Resolver Error      |16            |06            |16
07 Error Detect        |17            |07            |17
08 CH0 ON/OFF Status   |18            |08            |18
09 CH1 ON/OFF Status   |19            |09            |19
0A CH2 ON/OFF Status   |1A            |0A            |1A
0B CH3 ON/OFF Status   |1B            |0B            |1B
0C CH4 ON/OFF Status   |1C            |0C            |1C
0D CH5 ON/OFF Status   |1D            |0D            |1D
0E CH6 ON/OFF Status   |1E            |0E            |1E
0F CH7 ON/OFF Status   |1F            |0F            |1F
```

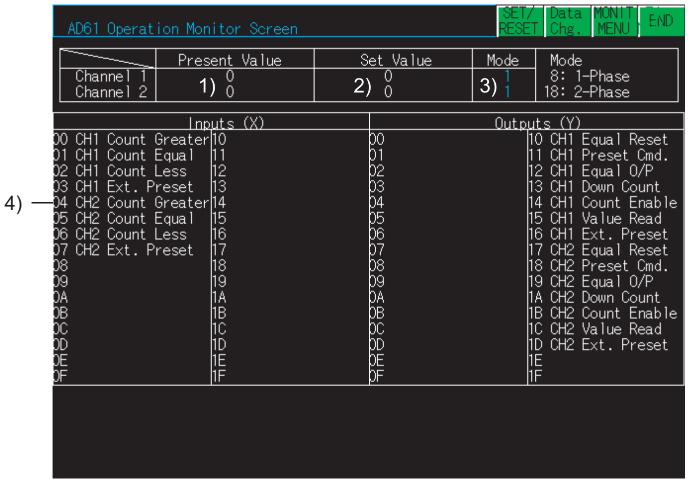
6.5.11 A62LS module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	-	-
	2)	7	0007
	3)	4	0004
		8	0008
	4)	2	0002
	5)	0	0000
	6)	10	000A
	7)	9	0009
	8)	5	0005
	9)	6	0006
	10)	12 to 667	000C to 029B
	-	-	-
	1)	-	-
	-	-	-

```
A62LS Operation Monitor Screen  CH No.0-3

X10 WDT Error    Y21 Posit. Start    Y25 LS O/P Enable  Sensor BIN Pos.          2
X11 Online       Y22 Posit. Stop     Y26 Error Reset
X12 Up.Lim Err   Y23 Fwd Jog Start   Y27 P1 Disable     Scaling BIN Pos.         2
X13 Lo.Lim Err   Y24 Rev Jog Start   Y28 P2 Disable
X14 Sensor Err                                          Target Stop Pos.         2
X15 Corre. Err   Error              FEDCBA9876543210
X16 Posit. Err   Code  LS Output    0000000000000000    Prg.No.0  Op. Mode  43210
X17 Error          0   LS Setting   0000000000000000    A/back 0  0000000000000000

MAX    ON CH 0  OFF  MAX    ON CH 1  OFF  MAX    ON CH 2  OFF  MAX    ON CH 3  OFF
    0                    0                    0                    0
    0     0      0       0     0      0       0     0      0       0     0      0
    1     0      0       1     0      0       1     0      0       1     0      0
    2     0      0       2     0      0       2     0      0       2     0      0
D   3     0      0   D   3     0      0   D   3     0      0   D   3     0      0
O   4     0      0   O   4     0      0   O   4     0      0   O   4     0      0
G   5     0      0   G   5     0      0   G   5     0      0   G   5     0      0
    6     0      0       6     0      0       6     0      0       6     0      0
    7     0      0       7     0      0       7     0      0       7     0      0
    8     0      0       8     0      0       8     0      0       8     0      0
    9     0      0       9     0      0       9     0      0       9     0      0
```

```
A62LS Input/Output Monitor Screen

              Inputs (X)                               Outputs (Y)
00  10 WDT Error           20          00  10          20 PLC READY
01  11 Online              21          01  11          21 Posit. Start
02  12 Upper Lim.Error     22          02  12          22 Posit. Stop
03  13 Lower Lim.Error     23          03  13          23 Fwd Jog Start
04  14 Sensor Error        24          04  14          24 Rev Jog Start
05  15 Correction Err.     25          05  15          25 LS O/P Enable
06  16 Position Error      26          06  16          26 Error Reset
07  17 Error               27          07  17          27 P1 Disable
08  18 CH 0/8 Status       28          08  18          28 P2 Disable
09  19 CH 1/9 Status       29          09  19          29
0A  1A CH 2/10 Status      2A          0A  1A          2A
0B  1B CH 3/11 Status      2B          0B  1B          2B
0C  1C CH 4/12 Status      2C          0C  1C          2C
0D  1D CH 5/13 Status      2D          0D  1D          2D
0E  1E CH 6/14 Status      2E          0E  1E          2E
0F  1F CH 7/15 Status      2F          0F  1F          2F
```

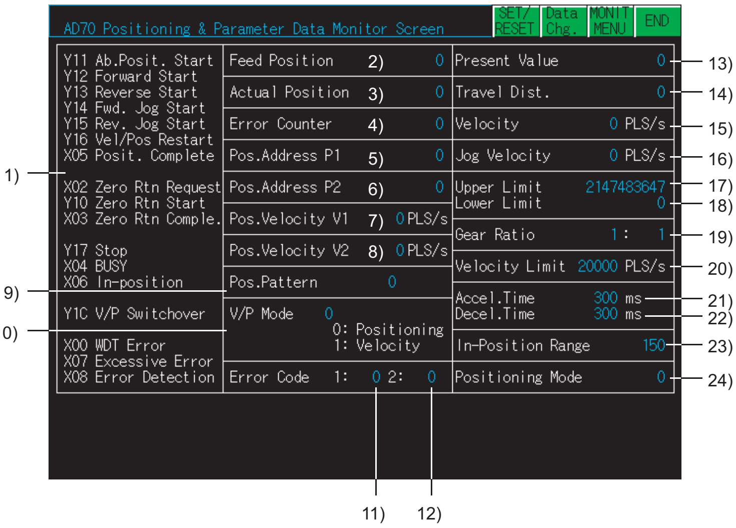
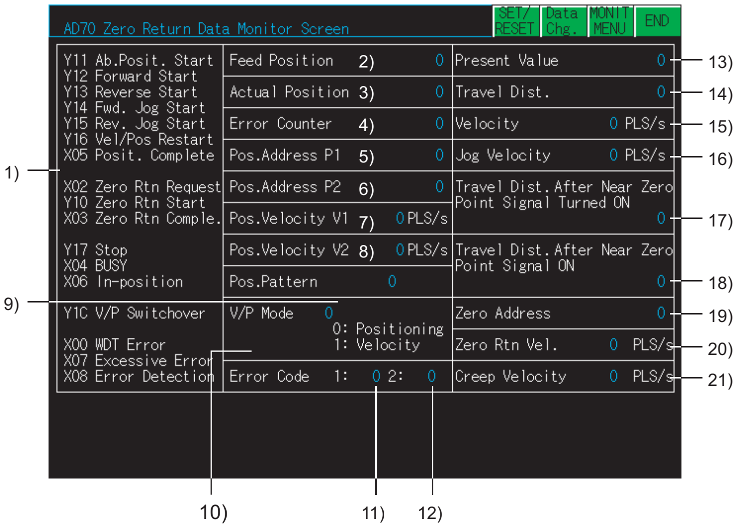
6.5.12 AD61 module monitoring

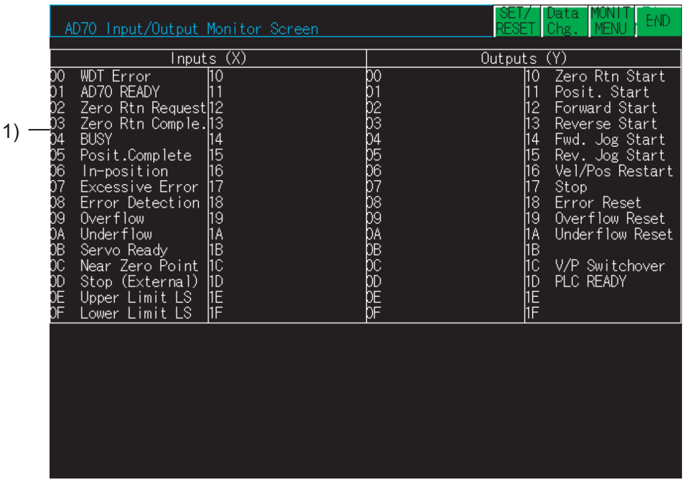
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	4, 5, 36, 37	0004, 0005, 0024, 0025
	2)	6, 7, 38, 39	0006, 0007, 0026, 0027
	3)	3, 35	0003, 0023
	4)	-	-
	-	-	-

	Present Value	Set Value	Mode	Mode
Channel 1	0	0	1	8: 1-Phase
Channel 2	0	0	1	18: 2-Phase

Inputs (X)		Outputs (Y)	
00 CH1 Count Greater	10	00	10 CH1 Equal Reset
01 CH1 Count Equal	11	01	11 CH1 Preset Cmd.
02 CH1 Count Less	12	02	12 CH1 Equal O/P
03 CH1 Ext. Preset	13	03	13 CH1 Down Count
04 CH2 Count Greater	14	04	14 CH1 Count Enable
05 CH2 Count Equal	15	05	15 CH1 Value Read
06 CH2 Count Less	16	06	16 CH1 Ext. Preset
07 CH2 Ext. Preset	17	07	17 CH2 Equal Reset
08	18	08	18 CH2 Preset Cmd.
09	19	09	19 CH2 Equal O/P
0A	1A	0A	1A CH2 Down Count
0B	1B	0B	1B CH2 Count Enable
0C	1C	0C	1C CH2 Value Read
0D	1D	0D	1D CH2 Ext. Preset
0E	1E	0E	1E
0F	1F	0F	1F

6.5.13 AD70 module monitoring

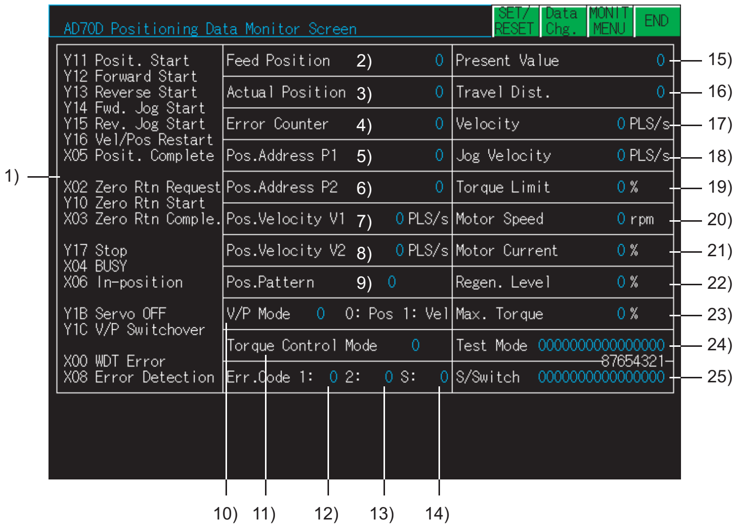
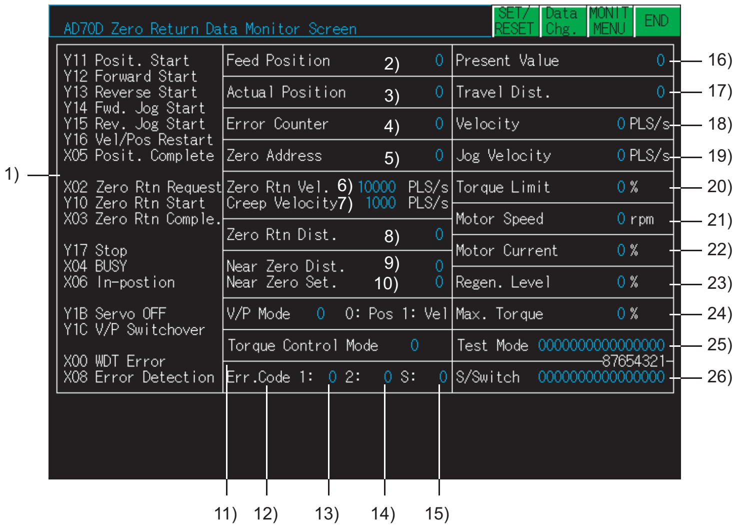
Screen example	No.	Buffer memory address	
		DEC	HEX
 AD70 Positioning & Parameter Data Monitor Screen SET/RESET · Data Chg. · MONIT MENU · END Y11 Ab.Posit. Start Y12 Forward Start Y13 Reverse Start Y14 Fwd. Jog Start Y15 Rev. Jog Start Y16 Vel/Pos Restart X05 Posit. Complete X02 Zero Rtn Request Y10 Zero Rtn Start X03 Zero Rtn Comple. Y17 Stop X04 BUSY X06 In-position Y1C V/P Switchover X00 WDT Error X07 Excessive Error X08 Error Detection Feed Position 0 Actual Position 0 Error Counter 0 Pos.Address P1 0 Pos.Address P2 0 Pos.Velocity V1 0 PLS/s Pos.Velocity V2 0 PLS/s Pos.Pattern 0 V/P Mode 0 0: Positioning 1: Velocity Error Code 1: 0 2: 0 Present Value 0 Travel Dist. 0 Velocity 0 PLS/s Jog Velocity 0 PLS/s Upper Limit 2147483647 Lower Limit 0 Gear Ratio 1 : 1 Velocity Limit 20000 PLS/s Accel.Time 300 ms Decel.Time 300 ms In-Position Range 150 Positioning Mode 0	1)	-	-
	2)	100, 101	0064, 0065
	3)	102, 103	0066, 0067
	4)	106, 107	006A, 006B
	5)	61, 62	003D, 003E
	6)	65, 66	0041, 0042
	7)	63, 64	003F, 0040
	8)	67, 68	0043, 0044
	9)	60	003C
	10)	111	006F
	11)	104	0068
	12)	105	0069
	13)	80, 81	0050, 0051
	14)	88, 89	0058, 0059
	15)	82, 83	0052, 0053
	16)	84, 85	0054, 0055
	17)	0, 1	0000, 0001
	18)	2, 3	0002, 0003
	19)	4, 5	0004, 0005
	20)	20, 21	0014, 0015
	21)	22	0016
	22)	23	0017
	23)	24	0018
	24)	25	0019
 AD70 Zero Return Data Monitor Screen SET/RESET · Data Chg. · MONIT MENU · END Y11 Ab.Posit. Start Y12 Forward Start Y13 Reverse Start Y14 Fwd. Jog Start Y15 Rev. Jog Start Y16 Vel/Pos Restart X05 Posit. Complete X02 Zero Rtn Request Y10 Zero Rtn Start X03 Zero Rtn Comple. Y17 Stop X04 BUSY X06 In-position Y1C V/P Switchover X00 WDT Error X07 Excessive Error X08 Error Detection Feed Position 0 Actual Position 0 Error Counter 0 Pos.Address P1 0 Pos.Address P2 0 Pos.Velocity V1 0 PLS/s Pos.Velocity V2 0 PLS/s Pos.Pattern 0 V/P Mode 0 0: Positioning 1: Velocity Error Code 1: 0 2: 0 Present Value 0 Travel Dist. 0 Velocity 0 PLS/s Jog Velocity 0 PLS/s Travel Dist. After Near Zero Point Signal Turned ON 0 Travel Dist. After Near Zero Point Signal ON 0 Zero Address 0 Zero Rtn Vel. 0 PLS/s Creep Velocity 0 PLS/s	1)	-	-
	2)	100, 101	0064, 0065
	3)	102, 103	0066, 0067
	4)	106, 107	006A, 006B
	5)	61, 62	003D, 003E
	6)	65, 66	0041, 0042
	7)	63, 64	003F, 0040
	8)	67, 68	0043, 0044
	9)	60	003C
	10)	111	006F
	11)	104	0068
	12)	105	0069
	13)	80, 81	0050, 0051
	14)	88, 89	0058, 0059
	15)	82, 83	0052, 0053
	16)	84, 85	0054, 0055
	17)	108, 109	006C, 006D
	18)	46, 47	002E, 002F
	19)	40, 41	0028, 0029
	20)	42, 43	002A, 002B
	21)	44, 45	002C, 002D

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	-	-
	-	-	-

AD70 Input/Output Monitor Screen

Inputs (X)		Outputs (Y)	
00 WDT Error	10	00	10 Zero Rtn Start
01 AD70 READY	11	01	11 Posit. Start
02 Zero Rtn Request	12	02	12 Forward Start
03 Zero Rtn Comple.	13	03	13 Reverse Start
04 BUSY	14	04	14 Fwd. Jog Start
05 Posit.Complete	15	05	15 Rev. Jog Start
06 In-position	16	06	16 Vel/Pos Restart
07 Excessive Error	17	07	17 Stop
08 Error Detection	18	08	18 Error Reset
09 Overflow	19	09	19 Overflow Reset
0A Underflow	1A	0A	1A Underflow Reset
0B Servo Ready	1B	0B	1B
0C Near Zero Point	1C	0C	1C V/P Switchover
0D Stop (External)	1D	0D	1D PLC READY
0E Upper Limit LS	1E	0E	1E
0F Lower Limit LS	1F	0F	1F

6.5.14 AD70D module monitoring

Screen example	No.	Buffer memory address DEC	Buffer memory address HEX
	1)	-	-
	2)	100, 101	0064, 0065
	3)	102, 103	0066, 0067
	4)	104, 105	0068, 0069
	5)	61, 62	003D, 003E
	6)	65, 66	0041, 0042
	7)	63, 64	003F, 0040
	8)	67, 68	0043, 0044
	9)	60	003C
	10)	119	0077
	11)	120	0078
	12)	121	0079
	13)	122	007A
	14)	123	007B
	15)	80, 81	0050, 0051
	16)	86, 87	0056, 0057
	17)	82, 83	0052, 0053
	18)	84, 85	0054, 0055
	19)	89	0059
	20)	110	006E
	21)	111	006F
	22)	112	0070
	23)	113	0071
	24)	125	007D
	25)	126	007E
	1)	-	-
	2)	100, 101	0064, 0065
	3)	102, 103	0066, 0067
	4)	104, 105	0068, 0069
	5)	30, 31	001E, 001F
	6)	32, 33	0020, 0021
	7)	34, 35	0022, 0023
	8)	108, 109	006C, 006D
	9)	106, 107	006A, 006B
	10)	36, 37	0024, 0025
	11)	119	0077
	12)	120	0078
	13)	121	0079
	14)	122	007A
	15)	123	007B
	16)	80, 81	0050, 0051
	17)	86, 87	0056, 0057
	18)	82, 83	0052, 0053
	19)	84, 85	0054, 0055
	20)	89	0059
	21)	110	006E
	22)	111	006F
	23)	112	0070
	24)	113	0071
	25)	125	007D
	26)	126	007E

AD70D Positioning Data Monitor Screen

Y11 Posit. Start
Y12 Forward Start
Y13 Reverse Start
Y14 Fwd. Jog Start
Y15 Rev. Jog Start
Y16 Vel/Pos Restart
X05 Posit. Complete
X02 Zero Rtn Request
Y10 Zero Rtn Start
X03 Zero Rtn Comple.
Y17 Stop
X04 BUSY
X06 In-position
Y1B Servo OFF
Y1C V/P Switchover
X00 WDT Error
X08 Error Detection

Feed Position 0
Actual Position 0
Error Counter 0
Pos.Address P1 0
Pos.Address P2 0
Pos.Velocity V1 0 PLS/s
Pos.Velocity V2 0 PLS/s
Pos.Pattern 0
V/P Mode 0 0: Pos 1: Vel
Torque Control Mode 0
Err.Code 1: 0 2: 0 S: 0

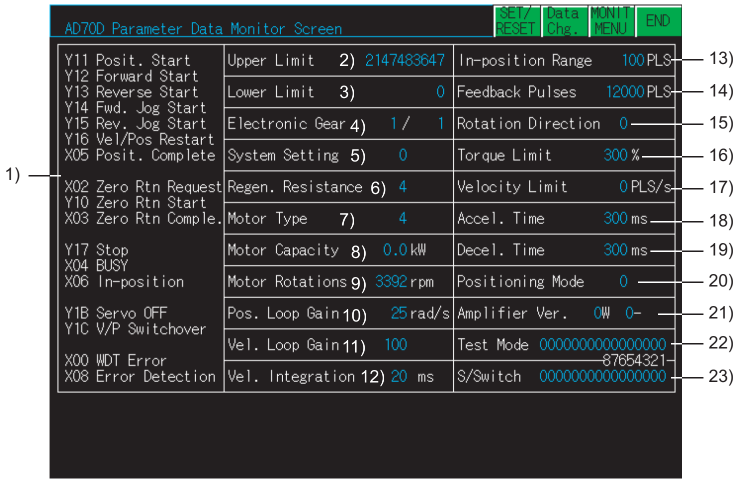
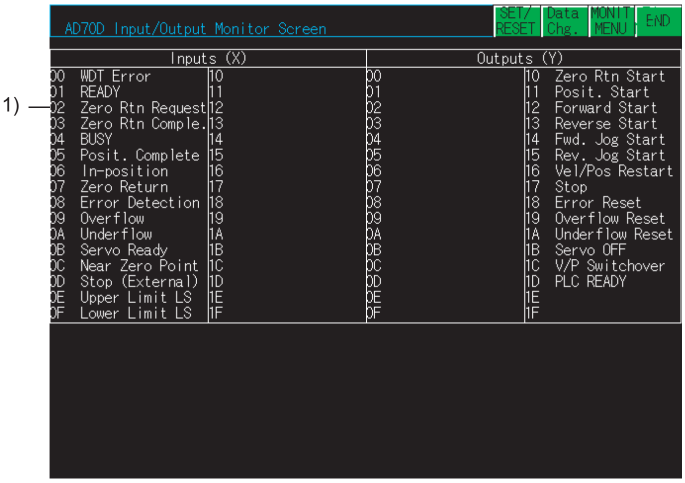
Present Value 0
Travel Dist. 0
Velocity 0 PLS/s
Jog Velocity 0 PLS/s
Torque Limit 0 %
Motor Speed 0 rpm
Motor Current 0 %
Regen. Level 0 %
Max. Torque 0 %
Test Mode 0000000000000000
87654321
S/Switch 0000000000000000

AD70D Zero Return Data Monitor Screen

Y11 Posit. Start
Y12 Forward Start
Y13 Reverse Start
Y14 Fwd. Jog Start
Y15 Rev. Jog Start
Y16 Vel/Pos Restart
X05 Posit. Complete
X02 Zero Rtn Request
Y10 Zero Rtn Start
X03 Zero Rtn Comple.
Y17 Stop
X04 BUSY
X06 In-postion
Y1B Servo OFF
Y1C V/P Switchover
X00 WDT Error
X08 Error Detection

Feed Position 0
Actual Position 0
Error Counter 0
Zero Address 0
Zero Rtn Vel. 10000 PLS/s
Creep Velocity 1000 PLS/s
Zero Rtn Dist. 0
Near Zero Dist. 0
Near Zero Set. 0
V/P Mode 0 0: Pos 1: Vel
Torque Control Mode 0
Err.Code 1: 0 2: 0 S: 0

Present Value 0
Travel Dist. 0
Velocity 0 PLS/s
Jog Velocity 0 PLS/s
Torque Limit 0 %
Motor Speed 0 rpm
Motor Current 0 %
Regen. Level 0 %
Max. Torque 0 %
Test Mode 0000000000000000
87654321
S/Switch 0000000000000000

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	-	-
	2)	0, 1	0000, 0001
	3)	2, 3	0002, 0003
	4)	4, 5	0004, 0005
	5)	10	000A
	6)	11	000B
	7)	12	000C
	8)	13	000D
	9)	14	000E
	10)	15	000F
	11)	16	0010
	12)	17	0011
	13)	18	0012
	14)	19	0013
	15)	20	0014
	16)	21	0015
	17)	40, 41	0028, 0029
	18)	42	002A
	19)	43	002B
	20)	44	002C
	21)	114 to 117	0072 to 0075
	22)	125	007D
	23)	126	007E
	1)	-	-
	-	-	-

AD70D Parameter Data Monitor Screen

Y11 Posit. Start
Y12 Forward Start
Y13 Reverse Start
Y14 Fwd. Jog Start
Y15 Rev. Jog Start
Y16 Vel/Pos Restart
X05 Posit. Complete

X02 Zero Rtn Request
Y10 Zero Rtn Start
X03 Zero Rtn Comple.

Y17 Stop
X04 BUSY
X06 In-position

Y1B Servo OFF
Y1C V/P Switchover

X00 WDT Error
X08 Error Detection

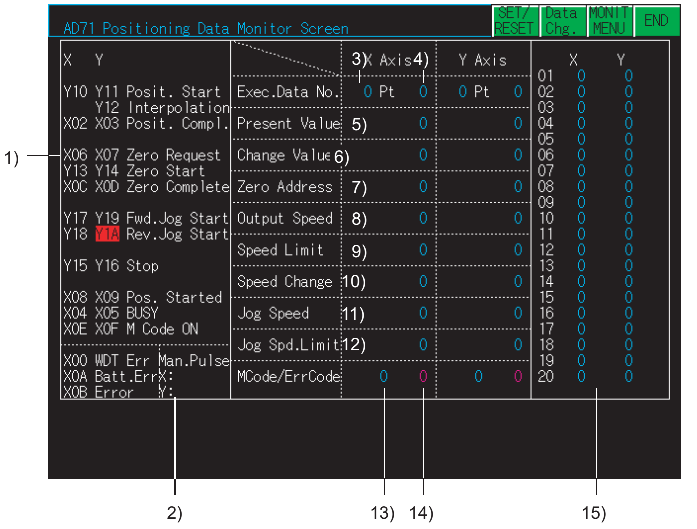
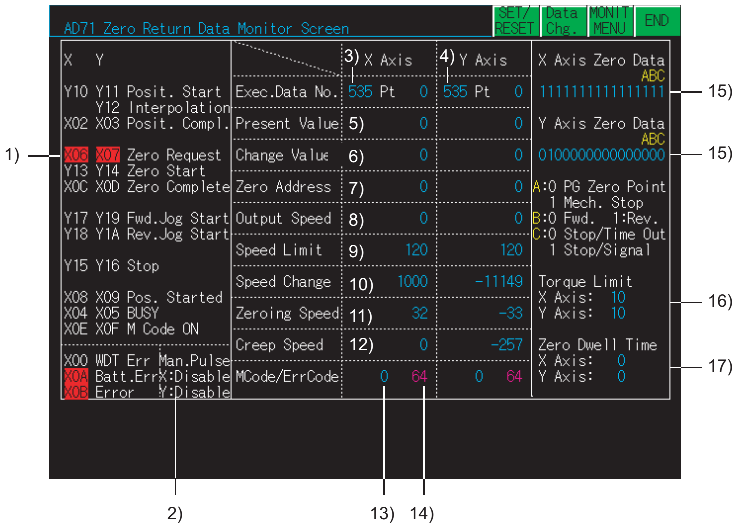
Upper Limit 2) 2147483647
Lower Limit 3) 0
Electronic Gear 4) 1 / 1
System Setting 5) 0
Regen. Resistance 6) 4
Motor Type 7) 4
Motor Capacity 8) 0.0 kW
Motor Rotations 9) 3392 rpm
Pos. Loop Gain 10) 25 rad/s
Vel. Loop Gain 11) 100
Vel. Integration 12) 20 ms

In-position Range 100 PLS 13)
Feedback Pulses 12000 PLS 14)
Rotation Direction 0 15)
Torque Limit 300 % 16)
Velocity Limit 0 PLS/s 17)
Accel. Time 300 ms 18)
Decel. Time 300 ms 19)
Positioning Mode 0 20)
Amplifier Ver. 0W 0- 21)
Test Mode 0000000000000000 22)
87654321
S/Switch 0000000000000000 23)

AD70D Input/Output Monitor Screen

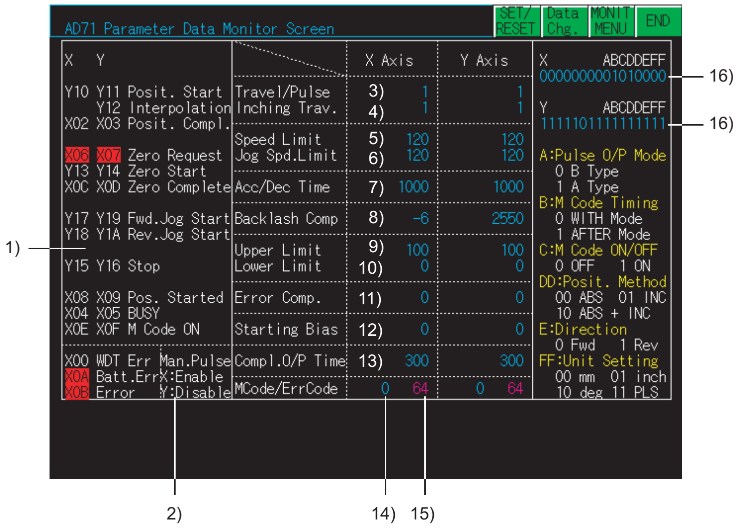
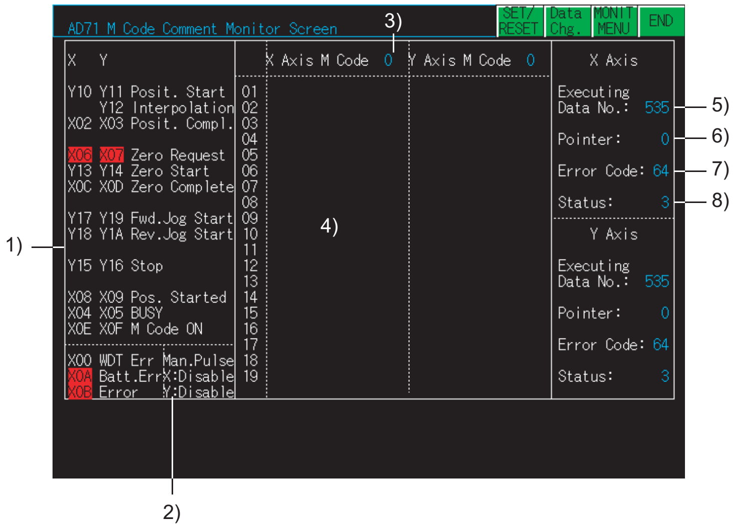
Inputs (X)				Outputs (Y)			
00	WDT Error	10		00		10	Zero Rtn Start
01	READY	11		01		11	Posit. Start
02	Zero Rtn Request	12		02		12	Forward Start
03	Zero Rtn Comple.	13		03		13	Reverse Start
04	BUSY	14		04		14	Fwd. Jog Start
05	Posit. Complete	15		05		15	Rev. Jog Start
06	In-position	16		06		16	Vel/Pos Restart
07	Zero Return	17		07		17	Stop
08	Error Detection	18		08		18	Error Reset
09	Overflow	19		09		19	Overflow Reset
0A	Underflow	1A		0A		1A	Underflow Reset
0B	Servo Ready	1B		0B		1B	Servo OFF
0C	Near Zero Point	1C		0C		1C	V/P Switchover
0D	Stop (External)	1D		0D		1D	PLC READY
0E	Upper Limit LS	1E		0E		1E	
0F	Lower Limit LS	1F		0F		1F	

6.5.15 AD71 module monitoring

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	2)	47	002F	347	015B
	3)	48	0030	348	015C
	4)	39	0027	339	0153
	5)	602	025A	604	025C
		603	025B	605	025D
	6)	41	0029	341	0155
		42	002A	342	0156
	7)	7912	1EE8	7922	1EF2
		7913	1EE9	7923	1EF3
	8)	600	0258	601	0259
	9)	7874	1EC2	7894	1ED6
	10)	40	0028	340	0154
	11)	44	002C	344	0158
	12)	7875	1EC3	7895	1ED7
	13)	46	002E	346	015A
	14)	45	002D	345	0159
	15)	0 to 37	0000 to 0025	300 to 337	012C to 0151
	1)	-	-	-	-
	2)	47	002F	347	015B
	3)	48	0030	348	015C
	4)	39	0027	339	0153
	5)	602	025A	604	025C
		603	025B	605	025D
	6)	41	0029	341	0155
		42	002A	342	0156
	7)	7912	1EE8	7922	1EF2
		7913	1EE9	7923	1EF3
	8)	600	0258	601	0259
	9)	7874	1EC2	7894	1ED6
	10)	40	0028	340	0154
	11)	7914	1EEA	7924	1EF4
	12)	7915	1EEB	7925	1EF5
	13)	46	002E	346	015A
	14)	45	002D	345	0159
	15)	7918	1EEE	7928	1EF8
	16)	7917	1EED	7927	1EF7
	17)	7916	1EEC	7926	1EF6

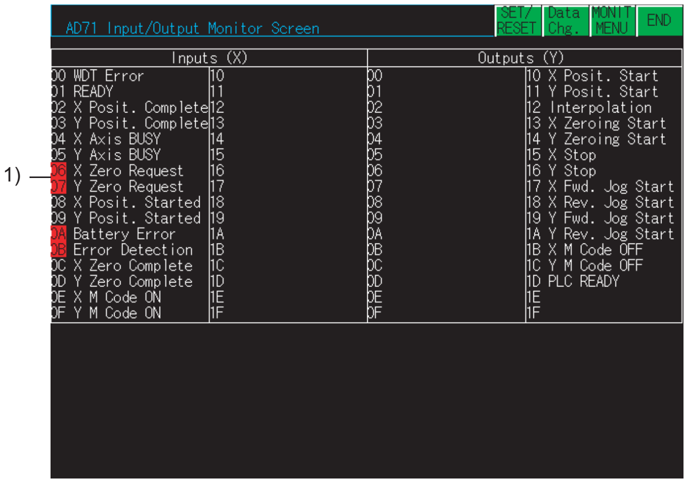
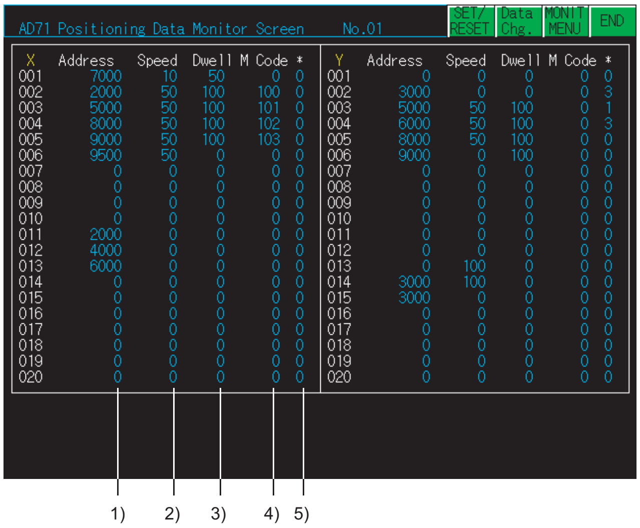
```
AD71 Positioning Data Monitor Screen                     SET/   Data  MONIT  END
                                                         RESET  Chg.  MENU
X   Y                                         X Axis          Y Axis        X   Y
                                                                       01   0   0
Y10 Y11 Posit. Start     Exec.Data No.   0 Pt     0     0 Pt     0     02   0   0
    Y12 Interpolation                                                  03   0   0
X02 X03 Posit. Compl.    Present Value            0              0     04   0   0
                                                                       05   0   0
X06 X07 Zero Request     Change Value             0              0     06   0   0
Y13 Y14 Zero Start                                                     07   0   0
X0C X0D Zero Complete    Zero Address             0              0     08   0   0
                                                                       09   0   0
Y17 Y19 Fwd.Jog Start    Output Speed             0              0     10   0   0
Y18 Y1A Rev.Jog Start                                                  11   0   0
                         Speed Limit              0              0     12   0   0
Y15 Y16 Stop                                                           13   0   0
                         Speed Change             0              0     14   0   0
X08 X09 Pos. Started                                                   15   0   0
X04 X05 BUSY             Jog Speed                0              0     16   0   0
X0E X0F M Code ON                                                      17   0   0
                         Jog Spd.Limit            0              0     18   0   0
X00 WDT Err  Man.Pulse                                                 19   0   0
X0A Batt.Err X:          MCode/ErrCode       0    0        0     0     20   0   0
X0B Error    Y:
```

```
AD71 Zero Return Data Monitor Screen                     SET/   Data  MONIT  END
                                                         RESET  Chg.  MENU
X   Y                                    X Axis            Y Axis        X Axis Zero Data
                                                                                     ABC
Y10 Y11 Posit. Start     Exec.Data No.   535 Pt    0    535 Pt    0     1111111111111111
    Y12 Interpolation
X02 X03 Posit. Compl.    Present Value             0              0     Y Axis Zero Data
                                                                                     ABC
X06 X07 Zero Request     Change Value              0              0     0100000000000000
Y13 Y14 Zero Start
X0C X0D Zero Complete    Zero Address              0              0     A:0 PG Zero Point
                                                                          1 Mech. Stop
Y17 Y19 Fwd.Jog Start    Output Speed              0              0     B:0 Fwd.   1:Rev.
Y18 Y1A Rev.Jog Start                                                   C:0 Stop/Time Out
                         Speed Limit             120            120       1 Stop/Signal
Y15 Y16 Stop
                         Speed Change           1000         -11149     Torque Limit
X08 X09 Pos. Started                                                    X Axis:  10
X04 X05 BUSY             Zeroing Speed            32            -33     Y Axis:  10
X0E X0F M Code ON
                         Creep Speed               0           -257     Zero Dwell Time
X00 WDT Err  Man.Pulse                                                  X Axis:   0
X0A Batt.Err X:Disable   MCode/ErrCode        0   64        0    64     Y Axis:   0
X0B Error    Y:Disable
```

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	2)	0	0	347	015B
	3)	7873	1EC1	7893	1ED5
	4)	7884	1ECC	7904	1EE0
		7885	1ECD	7905	1EE1
	5)	7874	1EC2	7894	1ED6
	6)	7875	1EC3	7895	1ED7
	7)	7876	1EC4	7896	1ED8
	8)	7877	1EC5	7897	1ED9
	9)	7878	1EC6	7898	1EDA
		7879	1EC7	7899	1EDB
	10)	7880	1EC8	7900	1EDC
		7881	1EC9	7901	1EDD
	11)	7882	1ECA	7902	1EDE
		7883	1ECB	7903	1EDF
	12)	7886	1ECE	7906	1EE2
	13)	7887	1ECF	7907	1EE3
	14)	46	002E	346	015A
	15)	45	002D	345	0159
	16)	7872	1EC0	7892	1ED4
	1)	-	-	-	-
	2)	47	002F	347	015B
	3)	46	002E	346	015A
	4)	49 to 200	0031 to 00C8	349 to 500	015D to 01F4
	5)	48	0030	348	015C
	6)	39	0027	339	0153
	7)	45	002D	345	0159
	8)	43	002B	343	0157
	-	-	-	-	-

```
AD71 Parameter Data Monitor Screen               SET/RESET  Data Chg.  MONIT MENU  END

X   Y                                       X Axis      Y Axis    X        ABCDDEFF
                                                                  0000000001010000
Y10 Y11 Posit. Start   Travel/Pulse         3)    1          1
    Y12 Interpolation  Inching Trav.        4)    1          1    Y        ABCDDEFF
X02 X03 Posit. Compl.                                             1111101111111111
                       Speed Limit          5)  120        120
X06 X07 Zero Request   Jog Spd.Limit        6)  120        120    A:Pulse O/P Mode
Y13 Y14 Zero Start                                                  0 B Type
X0C X0D Zero Complete  Acc/Dec Time         7) 1000       1000      1 A Type
                                                                  B:M Code Timing
Y17 Y19 Fwd.Jog Start  Backlash Comp        8)   -6       2550      0 WITH Mode
Y18 Y1A Rev.Jog Start                                               1 AFTER Mode
                       Upper Limit          9)  100        100    C:M Code ON/OFF
Y15 Y16 Stop           Lower Limit         10)    0          0      0 OFF    1 ON
                                                                  DD:Posit. Method
X08 X09 Pos. Started   Error Comp.         11)    0          0      00 ABS   01 INC
X04 X05 BUSY                                                        10 ABS + INC
X0E X0F M Code ON      Starting Bias       12)    0          0    E:Direction
                                                                    0 Fwd    1 Rev
X00 WDT Err Man.Pulse  Compl.O/P Time      13)  300        300    FF:Unit Setting
X0A Batt.ErrX:Enable                                                00 mm   01 inch
X0B Error   Y:Disable  MCode/ErrCode       0     64      0     64   10 deg  11 PLS
```

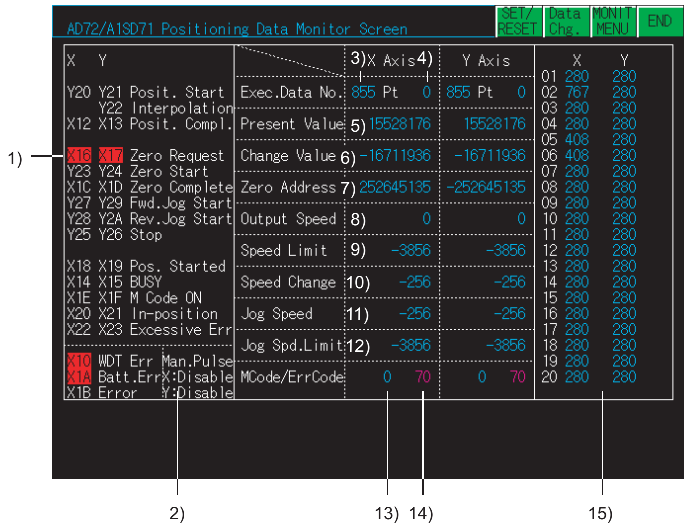
```
AD71 M Code Comment Monitor Screen               SET/RESET  Data Chg.  MONIT MENU  END

X   Y                      X Axis M Code  0  Y Axis M Code  0       X Axis

Y10 Y11 Posit. Start   01                                       Executing
    Y12 Interpolation  02                                       Data No.:  535
X02 X03 Posit. Compl.  03
                       04                                       Pointer:     0
X06 X07 Zero Request   05
Y13 Y14 Zero Start     06                                       Error Code: 64
X0C X0D Zero Complete  07
                       08                                       Status:      3
Y17 Y19 Fwd.Jog Start  09
Y18 Y1A Rev.Jog Start  10                                           Y Axis
                       11
Y15 Y16 Stop           12                                       Executing
                       13                                       Data No.:  535
X08 X09 Pos. Started   14
X04 X05 BUSY           15                                       Pointer:     0
X0E X0F M Code ON      16
                       17                                       Error Code: 64
X00 WDT Err Man.Pulse  18
X0A Batt.ErrX:Disable  19                                       Status:      3
X0B Error   Y:Disable
```

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	-	-	-	-	-
	1)	5072 to 5871	13D0 to 16EF	7072 to 7871	1BA0 to 1EBF
	2)	4272 to 4671	10B0 to 123F	6272 to 6671	1880 to 1A0F
	3)	4672 to 5071	1240 to 13CF	6672 to 7071	1A10 to 1B9F
	4)	3872 to 4271	0F20 to 10AF	5872 to 6271	16F0 to 187F
	5)	3872 to 4271	0F20 to 10AF	5872 to 6271	16F0 to 187F
	-	-	-	-	-

```
AD71 Input/Output Monitor Screen

           Inputs (X)                          Outputs (Y)
00 WDT Error        |10        |00        |10 X Posit. Start
01 READY            |11        |01        |11 Y Posit. Start
02 X Posit. Complete|12        |02        |12 Interpolation
03 Y Posit. Complete|13        |03        |13 X Zeroing Start
04 X Axis BUSY      |14        |04        |14 Y Zeroing Start
05 Y Axis BUSY      |15        |05        |15 X Stop
06 X Zero Request   |16        |06        |16 Y Stop
07 Y Zero Request   |17        |07        |17 X Fwd. Jog Start
08 X Posit. Started |18        |08        |18 X Rev. Jog Start
09 Y Posit. Started |19        |09        |19 Y Fwd. Jog Start
0A Battery Error    |1A        |0A        |1A Y Rev. Jog Start
0B Error Detection  |1B        |0B        |1B X M Code OFF
0C X Zero Complete  |1C        |0C        |1C Y M Code OFF
0D Y Zero Complete  |1D        |0D        |1D PLC READY
0E X M Code ON      |1E        |0E        |1E
0F Y M Code ON      |1F        |0F        |1F
```

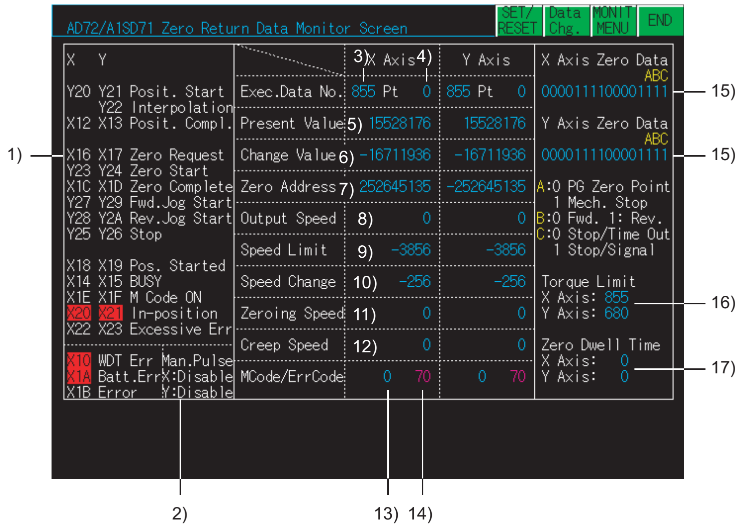
```
AD71 Positioning Data Monitor Screen     No.01

 X   Address   Speed  Dwell M Code *   Y   Address   Speed  Dwell M Code *
001     7000      10     50      0 0  001        0       0      0      0 0
002     2000      50    100    100 0  002     3000       0      0      0 3
003     5000      50    100    101 0  003     5000      50    100      0 1
004     8000      50    100    102 0  004     6000      50    100      0 3
005     9000      50    100    103 0  005     8000      50    100      0 0
006     9500      50      0      0 0  006     9000       0    100      0 0
007        0       0      0      0 0  007        0       0      0      0 0
008        0       0      0      0 0  008        0       0      0      0 0
009        0       0      0      0 0  009        0       0      0      0 0
010        0       0      0      0 0  010        0       0      0      0 0
011     2000       0      0      0 0  011        0       0      0      0 0
012     4000       0      0      0 0  012        0       0      0      0 0
013     6000       0      0      0 0  013        0     100      0      0 0
014        0       0      0      0 0  014     3000     100      0      0 0
015        0       0      0      0 0  015     3000       0      0      0 0
016        0       0      0      0 0  016        0       0      0      0 0
017        0       0      0      0 0  017        0       0      0      0 0
018        0       0      0      0 0  018        0       0      0      0 0
019        0       0      0      0 0  019        0       0      0      0 0
020        0       0      0      0 0  020        0       0      0      0 0
```

6.5.16 AD72/A1SD71 module monitoring



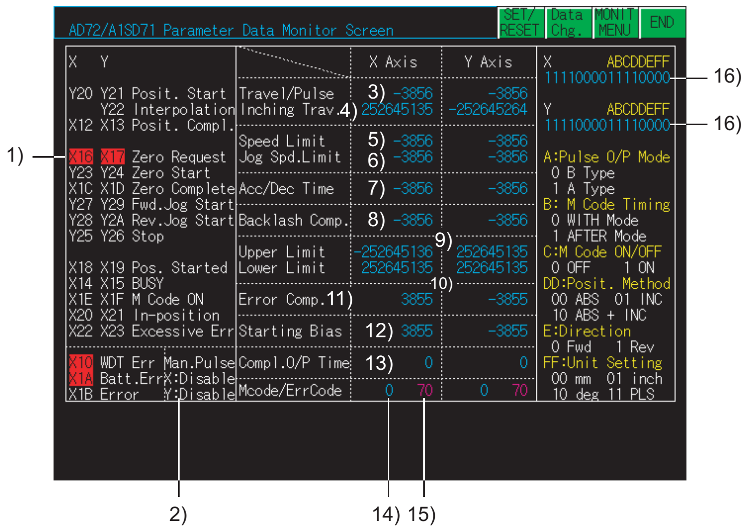
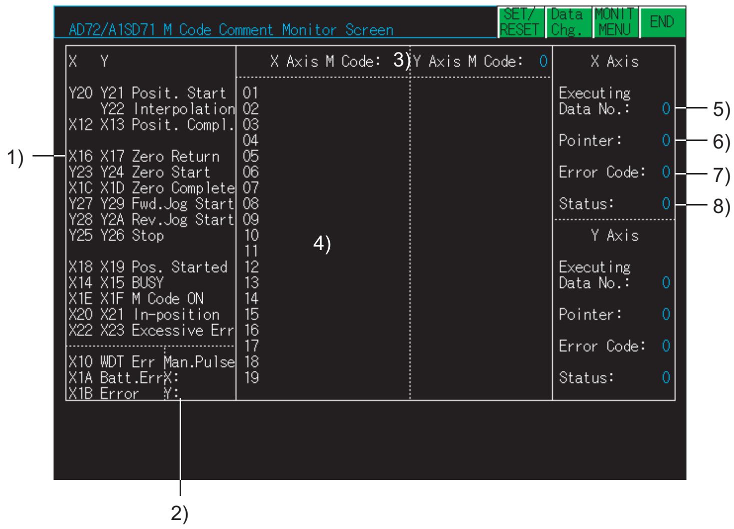
```
AD72/A1SD71 Positioning Data Monitor Screen

X   Y                                        X Axis          Y Axis         X    Y
                                                                          01 280  280
Y20 Y21 Posit. Start     Exec.Data No.   855 Pt    0   855 Pt    0        02 767  280
    Y22 Interpolation                                                     03 280  280
X12 X13 Posit. Compl.    Present Value      15528176       15528176       04 280  280
                                                                          05 408  280
X16 X17 Zero Request     Change Value      -16711936      -16711936       06 408  280
Y23 Y24 Zero Start                                                        07 280  280
X1C X1D Zero Complete    Zero Address      252645135     -252645135       08 280  280
Y27 Y29 Fwd.Jog Start                                                     09 280  280
Y28 Y2A Rev.Jog Start    Output Speed              0              0       10 280  280
Y25 Y26 Stop                                                              11 280  280
                         Speed Limit           -3856          -3856       12 280  280
X18 X19 Pos. Started                                                      13 280  280
X14 X15 BUSY             Speed Change           -256           -256       14 280  280
X1E X1F M Code ON                                                         15 280  280
X20 X21 In-position      Jog Speed              -256           -256       16 280  280
X22 X23 Excessive Err                                                     17 280  280
                         Jog Spd.Limit         -3856          -3856       18 280  280
X10 WDT Err  Man.Pulse                                                    19 280  280
X1A Batt.Err X:Disable   MCode/ErrCode        0   70         0   70       20 280  280
X1B Error    Y:Disable
```

No.	Buffer memory address			
	X axis		Y axis	
	DEC	HEX	DEC	HEX
1)	-	-	-	-
2)	47	002F	347	015B
3)	48	0030	348	015C
4)	39	0027	339	0153
5)	602	025A	604	025C
	603	025B	605	025D
6)	41	0029	341	0155
	42	002A	342	0156
7)	7912	1EE8	7922	1EF2
	7913	1EE9	7923	1EF3
8)	600	0258	601	0259
9)	7874	1EC2	7894	1ED6
10)	40	0028	340	0154
11)	44	002C	344	0158
12)	7875	1EC3	7895	1ED7
13)	46	002E	346	015A
14)	45	002D	345	0159
15)	0 to 37	0000 to 0025	300 to 337	012C to 0151



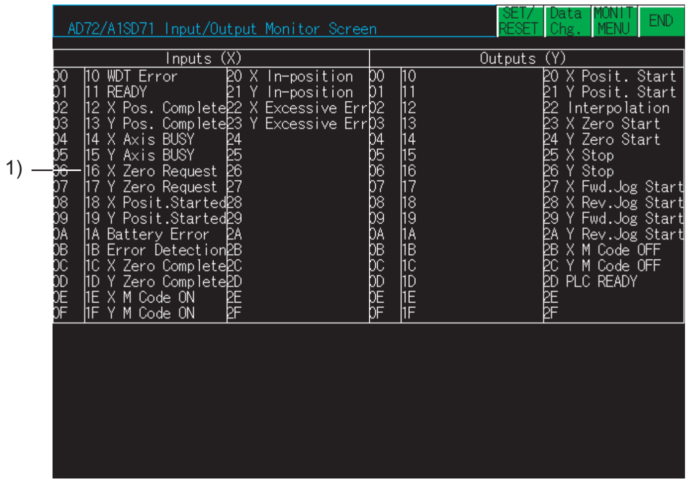
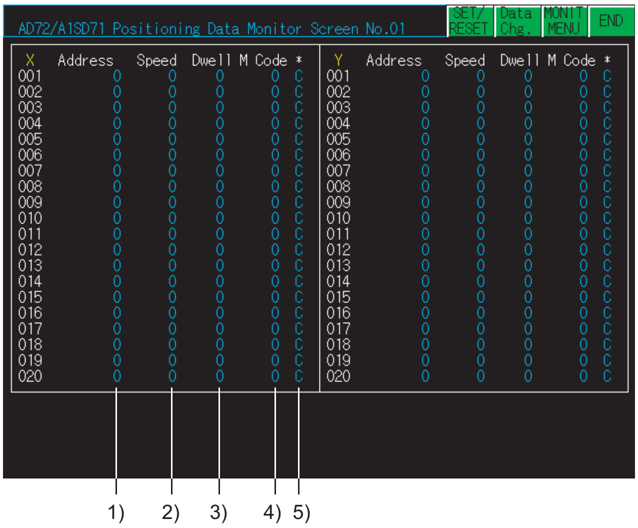
```
AD72/A1SD71 Zero Return Data Monitor Screen

X   Y                                        X Axis          Y Axis       X Axis Zero Data
                                                                                       ABC
Y20 Y21 Posit. Start     Exec.Data No.   855 Pt    0   855 Pt    0        0000111100001111
    Y22 Interpolation
X12 X13 Posit. Compl.    Present Value      15528176       15528176       Y Axis Zero Data
                                                                                       ABC
X16 X17 Zero Request     Change Value      -16711936      -16711936       0000111100001111
Y23 Y24 Zero Start
X1C X1D Zero Complete    Zero Address      252645135     -252645135       A:0 PG Zero Point
Y27 Y29 Fwd.Jog Start                                                       1 Mech. Stop
Y28 Y2A Rev.Jog Start    Output Speed              0              0       B:0 Fwd. 1: Rev.
Y25 Y26 Stop                                                              C:0 Stop/Time Out
                         Speed Limit           -3856          -3856         1 Stop/Signal
X18 X19 Pos. Started
X14 X15 BUSY             Speed Change           -256           -256       Torque Limit
X1E X1F M Code ON                                                         X Axis: 855
X20 X21 In-position      Zeroing Speed             0              0       Y Axis: 680
X22 X23 Excessive Err
                         Creep Speed               0              0       Zero Dwell Time
X10 WDT Err  Man.Pulse                                                    X Axis:    0
X1A Batt.Err X:Disable   MCode/ErrCode        0   70         0   70       Y Axis:    0
X1B Error    Y:Disable
```

No.	Buffer memory address			
	X axis		Y axis	
	DEC	HEX	DEC	HEX
1)	-	-	-	-
2)	47	002F	347	015B
3)	48	0030	348	015C
4)	39	0027	339	0153
5)	602	025A	604	025C
	603	025B	605	025D
6)	41	0029	341	0155
	42	002A	342	0156
7)	7912	1EE8	7922	1EF2
	7913	1EE9	7923	1EF3
8)	600	0258	601	0259
9)	7874	1EC2	7894	1ED6
10)	40	0028	340	0154
11)	7914	1EEA	7924	1EF4
12)	7915	1EEB	7925	1EF5
13)	46	002E	346	015A
14)	45	002D	345	0159
15)	7918	1EEE	7928	1EF8
16)	7917	1EED	7927	1EF7
17)	7916	1EEC	7926	1EF6

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	2)	47	002F	347	015B
	3)	7873	1EC1	7893	1ED5
	4)	7884	1ECC	7904	1EE0
		7885	1ECD	7905	1EE1
	5)	7874	1EC2	7894	1ED6
	6)	7875	1EC3	7895	1ED7
	7)	7876	1EC4	7896	1ED8
	8)	7877	1EC5	7897	1ED9
	9)	7878	1EC6	7898	1EDA
		7879	1EC7	7899	1EDB
	10)	7880	1EC8	7900	1EDC
		7881	1EC9	7901	1EDD
	11)	7882	1ECA	7902	1EDE
		7883	1ECB	7903	1EDF
	12)	7886	1ECE	7906	1EE2
	13)	7887	1ECF	7907	1EE3
	14)	46	002E	346	015A
	15)	45	002D	345	0159
	16)	7872	1EC0	7892	1ED4
	1)	-	-	-	-
	2)	47	002F	347	015B
	3)	46	002E	346	015A
	4)	49 to 200	0031 to 00C8	349 to 500	015D to 01F4
	5)	48	0030	348	015C
	6)	39	0027	339	0153
	7)	45	002D	345	0159
	8)	43	002B	343	0157
	-	-	-	-	-

```
AD72/A1SD71 Parameter Data Monitor Screen                SET/   Data  MONIT  END
                                                         RESET  Chg.  MENU
X   Y                                     X Axis      Y Axis     X           ABCDDEFF
                                                                 1111000011110000
Y20 Y21 Posit. Start  Travel/Pulse       -3856       -3856
    Y22 Interpolation Inching Trav.   252645135  -252645264     Y           ABCDDEFF
X12 X13 Posit. Compl.                                            1111000011110000
                      Speed Limit        -3856       -3856
X16 X17 Zero Request  Jog Spd.Limit      -3856       -3856      A:Pulse O/P Mode
Y23 Y24 Zero Start                                                0 B Type
X1C X1D Zero Complete Acc/Dec Time       -3856       -3856        1 A Type
Y27 Y29 Fwd.Jog Start                                            B: M Code Timing
Y28 Y2A Rev.Jog Start Backlash Comp.     -3856       -3856        0 WITH Mode
Y25 Y26 Stop                                                      1 AFTER Mode
                      Upper Limit   -252645136   252645135      C:M Code ON/OFF
X18 X19 Pos. Started  Lower Limit    252645135   252645135        0 OFF      1 ON
X14 X15 BUSY                                                     DD:Posit. Method
X1E X1F M Code ON     Error Comp.         3855       -3855        00 ABS   01 INC
X20 X21 In-position                                               10 ABS + INC
X22 X23 Excessive Err Starting Bias       3855       -3855       E:Direction
                                                                  0 Fwd     1 Rev
X10 WDT Err Man.Pulse Compl.O/P Time         0           0      FF:Unit Setting
X1A Batt.ErrX:Disable                                             00 mm   01 inch
X1B Error   Y:Disable Mcode/ErrCode     0   70      0   70        10 deg  11 PLS
```

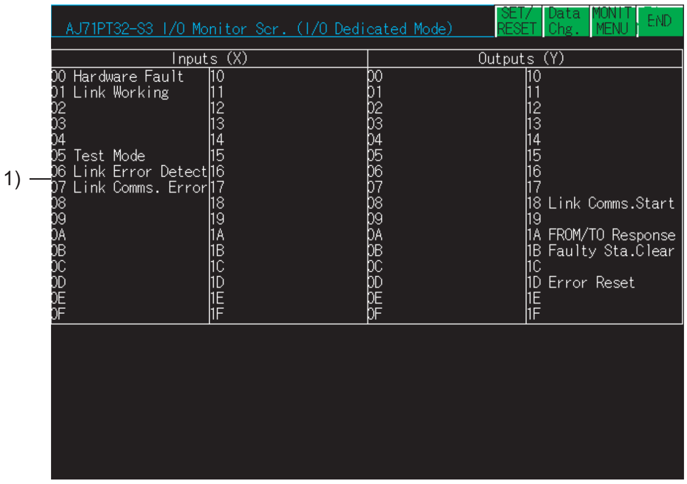
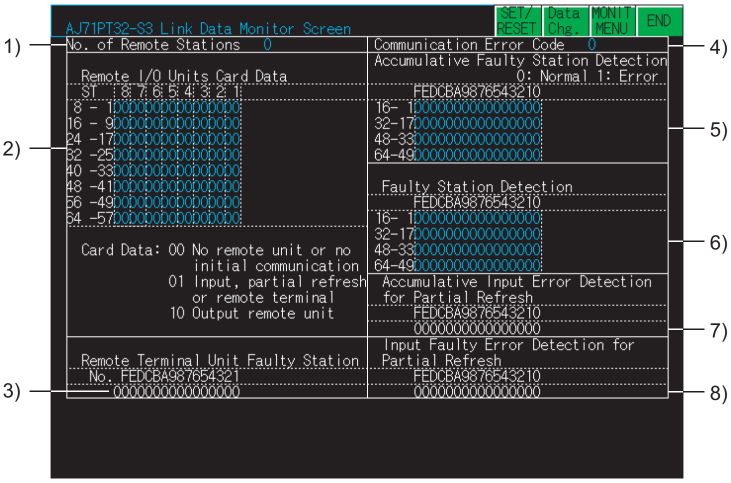
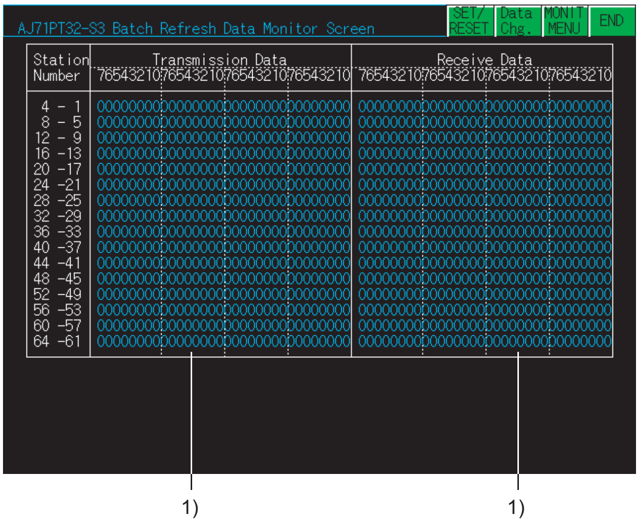
```
AD72/A1SD71 M Code Comment Monitor Screen                SET/   Data  MONIT  END
                                                         RESET  Chg.  MENU
X   Y                    X Axis M Code:    Y Axis M Code:  0          X Axis

Y20 Y21 Posit. Start  01                                         Executing
    Y22 Interpolation 02                                         Data No.:     0
X12 X13 Posit. Compl. 03
                      04                                         Pointer:      0
X16 X17 Zero Return   05
Y23 Y24 Zero Start    06                                         Error Code:   0
X1C X1D Zero Complete 07
Y27 Y29 Fwd.Jog Start 08                                         Status:       0
Y28 Y2A Rev.Jog Start 09
Y25 Y26 Stop          10                                              Y Axis
                      11
X18 X19 Pos. Started  12                                         Executing
X14 X15 BUSY          13                                         Data No.:     0
X1E X1F M Code ON     14
X20 X21 In-position   15                                         Pointer:      0
X22 X23 Excessive Err 16
                      17                                         Error Code:   0
X10 WDT Err Man.Pulse 18
X1A Batt.ErrX:        19                                         Status:       0
X1B Error   Y:
```

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	-	-	-	-	-
	1)	5072 to 5871	13D0 to 16EF	7072 to 7871	1BA0 to 1EBF
	2)	4272 to 4671	10B0 to 123F	6272 to 6671	1880 to 1A0F
	3)	4672 to 5071	1240 to 13CF	6672 to 7071	1A10 to 1B9F
	4)	3872 to 4271	0F20 to 10AF	5872 to 6271	16F0 to 187F
	5)	3872 to 4271	0F20 to 10AF	5872 to 6271	16F0 to 187F
	-	-	-	-	-

```
AD72/A1SD71 Input/Output Monitor Screen
                 Inputs (X)                                  Outputs (Y)
00  10 WDT Error         20 X In-position    00  10          20 X Posit. Start
01  11 READY             21 Y In-position    01  11          21 Y Posit. Start
02  12 X Pos. Complete   22 X Excessive Err  02  12          22 Interpolation
03  13 Y Pos. Complete   23 Y Excessive Err  03  13          23 X Zero Start
04  14 X Axis BUSY       24                  04  14          24 Y Zero Start
05  15 Y Axis BUSY       25                  05  15          25 X Stop
06  16 X Zero Request    26                  06  16          26 Y Stop
07  17 Y Zero Request    27                  07  17          27 X Fwd.Jog Start
08  18 X Posit.Started   28                  08  18          28 X Rev.Jog Start
09  19 Y Posit.Started   29                  09  19          29 Y Fwd.Jog Start
0A  1A Battery Error     2A                  0A  1A          2A Y Rev.Jog Start
0B  1B Error Detection   2B                  0B  1B          2B X M Code OFF
0C  1C X Zero Complete   2C                  0C  1C          2C Y M Code OFF
0D  1D Y Zero Complete   2D                  0D  1D          2D PLC READY
0E  1E X M Code ON       2E                  0E  1E          2E
0F  1F Y M Code ON       2F                  0F  1F          2F
```

```
AD72/A1SD71 Positioning Data Monitor Screen No.01
 X   Address   Speed  Dwell M Code *   Y   Address   Speed  Dwell M Code *
001        0       0      0      0 C  001        0       0      0      0 C
002        0       0      0      0 C  002        0       0      0      0 C
003        0       0      0      0 C  003        0       0      0      0 C
004        0       0      0      0 C  004        0       0      0      0 C
005        0       0      0      0 C  005        0       0      0      0 C
006        0       0      0      0 C  006        0       0      0      0 C
007        0       0      0      0 C  007        0       0      0      0 C
008        0       0      0      0 C  008        0       0      0      0 C
009        0       0      0      0 C  009        0       0      0      0 C
010        0       0      0      0 C  010        0       0      0      0 C
011        0       0      0      0 C  011        0       0      0      0 C
012        0       0      0      0 C  012        0       0      0      0 C
013        0       0      0      0 C  013        0       0      0      0 C
014        0       0      0      0 C  014        0       0      0      0 C
015        0       0      0      0 C  015        0       0      0      0 C
016        0       0      0      0 C  016        0       0      0      0 C
017        0       0      0      0 C  017        0       0      0      0 C
018        0       0      0      0 C  018        0       0      0      0 C
019        0       0      0      0 C  019        0       0      0      0 C
020        0       0      0      0 C  020        0       0      0      0 C
```

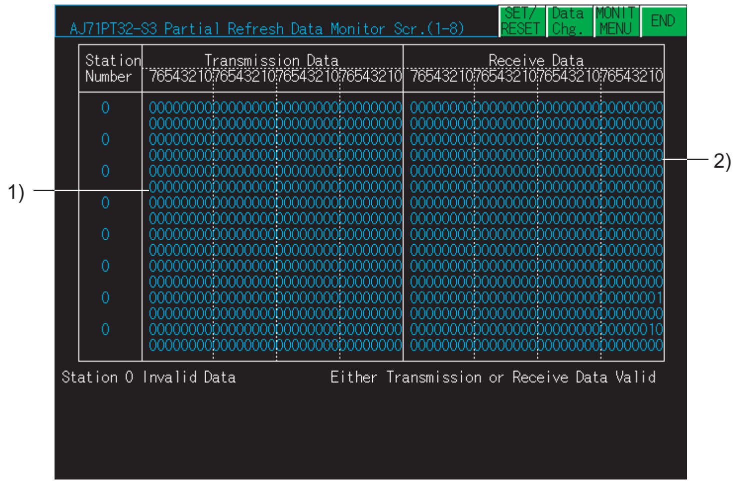
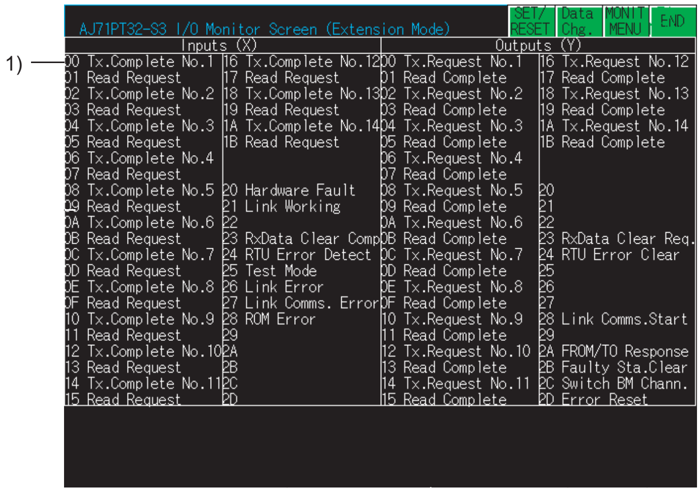
6.5.17 AJ71PT32-S3 module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	-	-
	-	-	-
	1)	0	0000
	2)	70 to 77	0046 to 004D
	3)	195	00C3
	4)	107	006B
	5)	90 to 93	005A to 005D
	6)	100 to 103	0064 to 0067
	7)	598	0256
	8)	599	0257
	-	-	-
	1)	10 to 41	000A to 0029
	2)	110 to 141	006E to 008D
	-	-	-

```
AJ71PT32-S3 I/O Monitor Scr. (I/O Dedicated Mode)
           Inputs (X)                      Outputs (Y)
00 Hardware Fault  10          00          10
01 Link Working    11          01          11
02                 12          02          12
03                 13          03          13
04                 14          04          14
05 Test Mode       15          05          15
06 Link Error Detect16         06          16
07 Link Comms. Error17         07          17
08                 18          08          18 Link Comms.Start
09                 19          09          19
0A                 1A          0A          1A FROM/TO Response
0B                 1B          0B          1B Faulty Sta.Clear
0C                 1C          0C          1C
0D                 1D          0D          1D Error Reset
0E                 1E          0E          1E
0F                 1F          0F          1F
```

```
AJ71PT32-S3 Link Data Monitor Screen
No. of Remote Stations   0          Communication Error Code   0
                                    Accumulative Faulty Station Detection
 Remote I/O Units Card Data                        0: Normal 1: Error
  ST  8 7 6 5 4 3 2 1                    FEDCBA9876543210
 8 - 10000000000000000              16- 10000000000000000
16 - 90000000000000000              32-170000000000000000
24 -170000000000000000              48-330000000000000000
32 -250000000000000000              64-490000000000000000
40 -330000000000000000
48 -410000000000000000               Faulty Station Detection
56 -490000000000000000                   FEDCBA9876543210
64 -570000000000000000              16- 10000000000000000
                                    32-170000000000000000
 Card Data: 00 No remote unit or no 48-330000000000000000
               initial communication64-490000000000000000
            01 Input, partial refresh Accumulative Input Error Detection
               or remote terminal    for Partial Refresh
            10 Output remote unit        FEDCBA9876543210
                                         0000000000000000
                                     Input Faulty Error Detection for
 Remote Terminal Unit Faulty Station Partial Refresh
   No. FEDCBA987654321                   FEDCBA9876543210
       0000000000000000                  0000000000000000
```

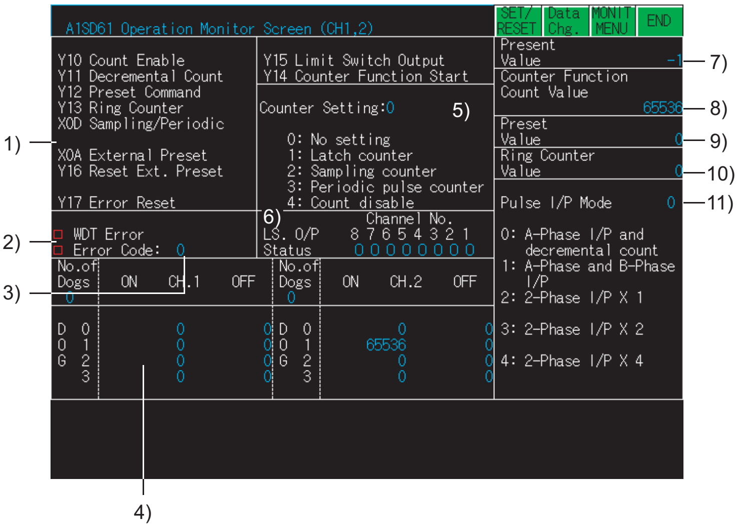
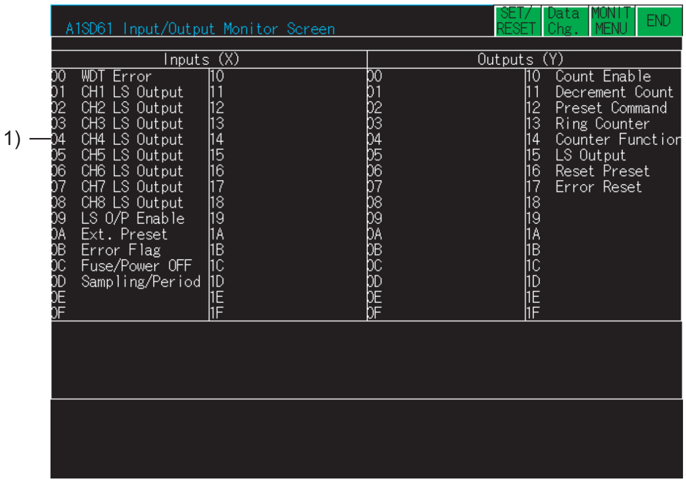
```
AJ71PT32-S3 Batch Refresh Data Monitor Screen
Station            Transmission Data                        Receive Data
Number   76543210 76543210 76543210 76543210   76543210 76543210 76543210 76543210

 4 - 1   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
 8 - 5   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
12 - 9   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
16 -13   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
20 -17   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
24 -21   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
28 -25   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
32 -29   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
36 -33   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
40 -37   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
44 -41   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
48 -45   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
52 -49   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
56 -53   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
60 -57   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
64 -61   00000000 00000000 00000000 00000000   00000000 00000000 00000000 00000000
```

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	300 to 363	012C to 016B
	2)	600 to 663	0258 to 0297
	-	-	-
	1)	-	-
	-	-	-

```
AJ71PT32-S3 Partial Refresh Data Monitor Scr.(1-8)     SET/   Data  MONIT  END
                                                        RESET  Chg.  MENU
Station         Transmission Data                      Receive Data
Number  76543210 76543210 76543210 76543210  76543210 76543210 76543210 76543210
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000001
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
   0    00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000010
        00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000
Station 0 Invalid Data             Either Transmission or Receive Data Valid
```

```
AJ71PT32-S3 I/O Monitor Screen (Extension Mode)         SET/   Data  MONIT  END
                                                        RESET  Chg.  MENU
               Inputs (X)                               Outputs (Y)
00 Tx.Complete No.1  16 Tx.Complete No.12 00 Tx.Request No.1   16 Tx.Request No.12
01 Read Request      17 Read Request      01 Read Complete     17 Read Complete
02 Tx.Complete No.2  18 Tx.Complete No.13 02 Tx.Request No.2   18 Tx.Request No.13
03 Read Request      19 Read Request      03 Read Complete     19 Read Complete
04 Tx.Complete No.3  1A Tx.Complete No.14 04 Tx.Request No.3   1A Tx.Request No.14
05 Read Request      1B Read Request      05 Read Complete     1B Read Complete
06 Tx.Complete No.4                       06 Tx.Request No.4
07 Read Request                           07 Read Complete
08 Tx.Complete No.5  20 Hardware Fault    08 Tx.Request No.5   20
09 Read Request      21 Link Working      09 Read Complete     21
0A Tx.Complete No.6  22                   0A Tx.Request No.6   22
0B Read Request      23 RxData Clear Comp 0B Read Complete     23 RxData Clear Req.
0C Tx.Complete No.7  24 RTU Error Detect  0C Tx.Request No.7   24 RTU Error Clear
0D Read Request      25 Test Mode         0D Read Complete     25
0E Tx.Complete No.8  26 Link Error        0E Tx.Request No.8   26
0F Read Request      27 Link Comms. Error 0F Read Complete     27
10 Tx.Complete No.9  28 ROM Error         10 Tx.Request No.9   28 Link Comms.Start
11 Read Request      29                   11 Read Complete     29
12 Tx.Complete No.10 2A                   12 Tx.Request No.10  2A FROM/TO Response
13 Read Request      2B                   13 Read Complete     2B Faulty Sta.Clear
14 Tx.Complete No.11 2C                   14 Tx.Request No.11  2C Switch BM Chann.
15 Read Request      2D                   15 Read Complete     2D Error Reset
```

6.5.18 A1SD61 module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	-	-
	2)	-	-
	3)	11	000B
	4)	12 to 147	000C to 0093
	5)	5	0005
	6)	-	-
	7)	0, 1	0000, 0001
	8)	2, 3	0002, 0003
	9)	6, 7	0006, 0007
	10)	8, 9	0008, 0009
	11)	4	0004
	-	-	-
	1)	-	-
	-	-	-

A1SD61 Operation Monitor Screen (CH1,2)

Y10 Count Enable
Y11 Decremental Count
Y12 Preset Command
Y13 Ring Counter
X0D Sampling/Periodic
X0A External Preset
Y16 Reset Ext. Preset
Y17 Error Reset

Y15 Limit Switch Output
Y14 Counter Function Start

Counter Setting:0
0: No setting
1: Latch counter
2: Sampling counter
3: Periodic pulse counter
4: Count disable

WDT Error
Error Code: 0

Channel No. 8 7 6 5 4 3 2 1
LS. O/P Status 0 0 0 0 0 0 0 0

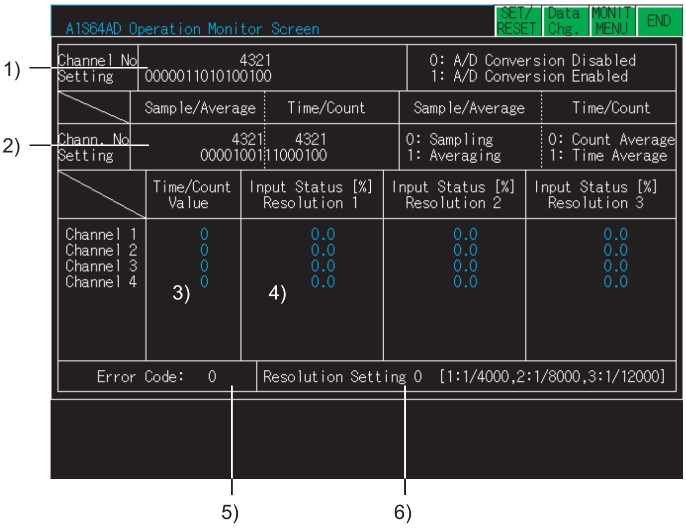
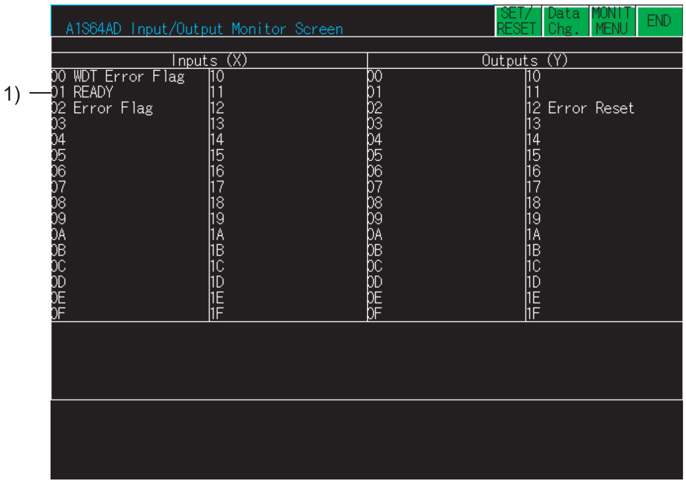
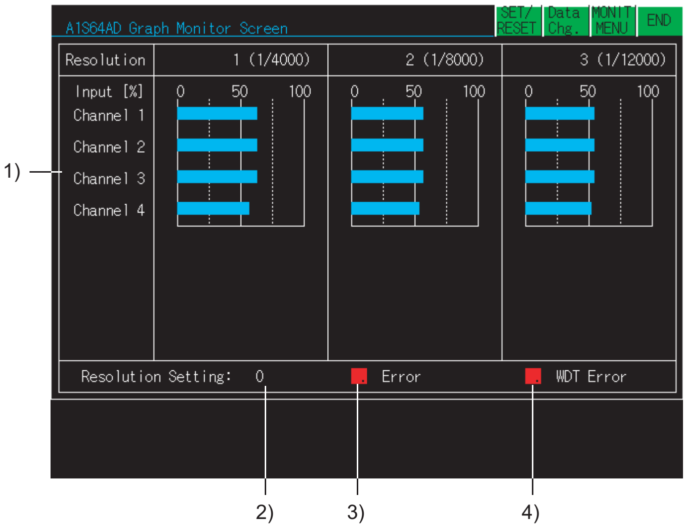
Present Value -1
Counter Function Count Value 65536
Preset Value 0
Ring Counter Value 0
Pulse I/P Mode 0
0: A-Phase I/P and decremental count
1: A-Phase and B-Phase I/P
2: 2-Phase I/P X 1
3: 2-Phase I/P X 2
4: 2-Phase I/P X 4

No.of Dogs		ON	CH.1	OFF	No.of Dogs		ON	CH.2	OFF
0					0				
D	0		0	0	D	0		0	0
O	1		0	0	O	1		65536	0
G	2		0	0	G	2		0	0
	3		0	0		3		0	0

A1SD61 Input/Output Monitor Screen

Inputs (X)				Outputs (Y)			
00	WDT Error	10		00		10	Count Enable
01	CH1 LS Output	11		01		11	Decrement Count
02	CH2 LS Output	12		02		12	Preset Command
03	CH3 LS Output	13		03		13	Ring Counter
04	CH4 LS Output	14		04		14	Counter Function
05	CH5 LS Output	15		05		15	LS Output
06	CH6 LS Output	16		06		16	Reset Preset
07	CH7 LS Output	17		07		17	Error Reset
08	CH8 LS Output	18		08		18	
09	LS O/P Enable	19		09		19	
0A	Ext. Preset	1A		0A		1A	
0B	Error Flag	1B		0B		1B	
0C	Fuse/Power OFF	1C		0C		1C	
0D	Sampling/Period	1D		0D		1D	
0E		1E		0E		1E	
0F		1F		0F		1F	

6.5.19 A1S64AD module monitoring

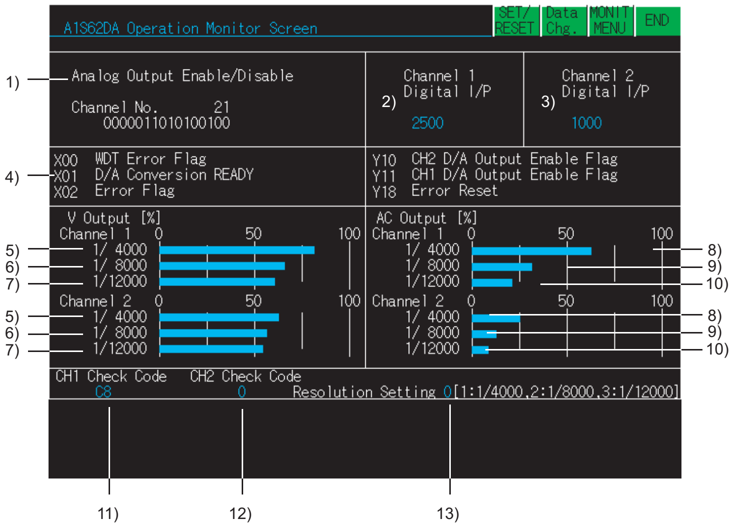
Screen example	No.	Buffer memory address DEC	Buffer memory address HEX
	1)	0	0000
	2)	1	0001
	3)	2 to 5	0002 to 0005
	4)	10 to 13	000A to 000D
	5)	18	0012
	6)	20	0014
	-	-	-
	1)	-	-
	-	-	-
	1)	10 to 13	000A to 000D
	2)	20	0014
	3)	-	-
	4)	-	-
	-	-	-

```
A1S64AD Operation Monitor Screen                  SET/RESET  Data Chg.  MONIT MENU  END
Channel No   4321                      0: A/D Conversion Disabled
Setting      0000011010100100          1: A/D Conversion Enabled
             Sample/Average  Time/Count   Sample/Average   Time/Count
Chann. No             4321   4321         0: Sampling      0: Count Average
Setting           00001001   11000100     1: Averaging     1: Time Average
             Time/Count  Input Status [%]  Input Status [%]  Input Status [%]
             Value       Resolution 1      Resolution 2      Resolution 3
Channel 1    0           0.0               0.0               0.0
Channel 2    0           0.0               0.0               0.0
Channel 3    0           0.0               0.0               0.0
Channel 4    0           0.0               0.0               0.0
Error Code:   0      Resolution Setting 0   [1:1/4000,2:1/8000,3:1/12000]
```

```
A1S64AD Input/Output Monitor Screen               SET/RESET  Data Chg.  MONIT MENU  END
             Inputs (X)                          Outputs (Y)
00 WDT Error Flag   10                00                 10
01 READY            11                01                 11
02 Error Flag       12                02                 12 Error Reset
03                  13                03                 13
04                  14                04                 14
05                  15                05                 15
06                  16                06                 16
07                  17                07                 17
08                  18                08                 18
09                  19                09                 19
0A                  1A                0A                 1A
0B                  1B                0B                 1B
0C                  1C                0C                 1C
0D                  1D                0D                 1D
0E                  1E                0E                 1E
0F                  1F                0F                 1F
```

```
A1S64AD Graph Monitor Screen                      SET/RESET  Data Chg.  MONIT MENU  END
Resolution        1 (1/4000)       2 (1/8000)       3 (1/12000)
Input [%]        0   50   100     0   50   100     0   50   100
Channel 1
Channel 2
Channel 3
Channel 4
Resolution Setting:   0          Error            WDT Error
```

6.5.20 A1S62DA module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	0	0000
	2)	1	0001
	3)	2	0002
	4)	-	-
	5)	1, 2	0001, 0002
	6)		
	7)		
	8)		
	9)		
	10)		
	11)	10	000A
	12)	11	000B
	13)	9	0009
	-	-	-

A1S62DA Operation Monitor Screen

Analog Output Enable/Disable
Channel No. 21
0000011010100100

Channel 1 Digital I/P 2500

Channel 2 Digital I/P 1000

X00 WDT Error Flag
X01 D/A Conversion READY
X02 Error Flag

Y10 CH2 D/A Output Enable Flag
Y11 CH1 D/A Output Enable Flag
Y18 Error Reset

CH1 Check Code C8
CH2 Check Code 0
Resolution Setting 0[1:1/4000,2:1/8000,3:1/12000]

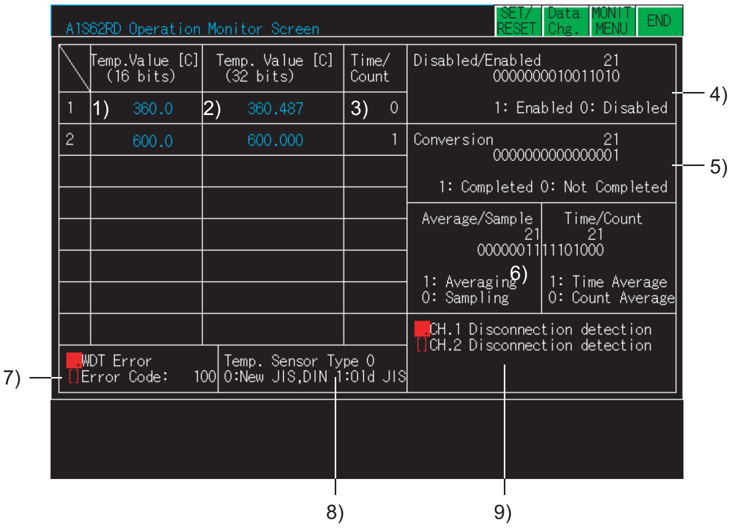
6.5.21 A1SD70 module monitoring

Refer to the following for further information about the screen for A1SD70 and the buffer memory address.

☞ 6.5.13 AD70 module monitoring

6.5.22 A1S62RD module monitoring

Screen example



A1S62RD Operation Monitor Screen

	Temp.Value [C] (16 bits)	Temp. Value [C] (32 bits)	Time/ Count
1	360.0	360.487	0
2	600.0	600.000	1

Disabled/Enabled 21
0000000010011010
1: Enabled 0: Disabled

Conversion 21
0000000000000001
1: Completed 0: Not Completed

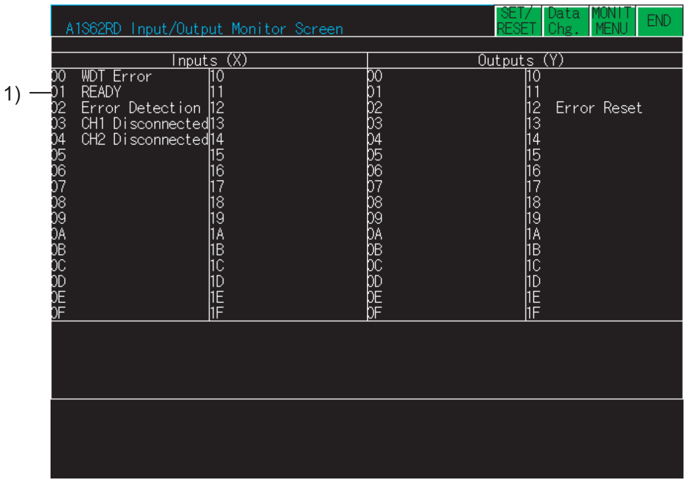
Average/Sample 21 Time/Count 21
0000001111101000
1: Averaging 0: Sampling 1: Time Average 0: Count Average

🟥CH.1 Disconnection detection
☐CH.2 Disconnection detection

🟥WDT Error
☐Error Code: 100

Temp. Sensor Type 0
0:New JIS,DIN 1:Old JIS

No.	Buffer memory address DEC	Buffer memory address HEX
1)	10, 11	000A, 000B
2)	18 to 21	0012 to 0015
3)	2, 3	0002, 0003
4)	0	0000
5)	35	0023
6)	1	0001
7)	-	-
	34	0022
8)	36	0024
9)	-	-
-	-	-



A1S62RD Input/Output Monitor Screen

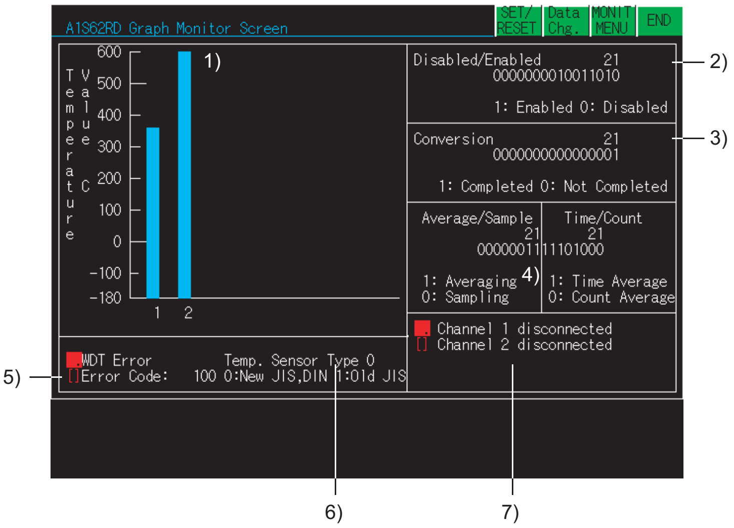
Inputs (X)

00 WDT Error
01 READY
02 Error Detection
03 CH1 Disconnected
04 CH2 Disconnected
05
06
07
08
09
0A
0B
0C
0D
0E
0F
10
11
12
13
14
15
16
17
18
19
1A
1B
1C
1D
1E
1F

Outputs (Y)

00
01
02
03
04
05
06
07
08
09
0A
0B
0C
0D
0E
0F
10
11
12 Error Reset
13
14
15
16
17
18
19
1A
1B
1C
1D
1E
1F

No.	Buffer memory address DEC	Buffer memory address HEX
1)	-	-
-	-	-



A1S62RD Graph Monitor Screen

Disabled/Enabled 21
0000000010011010
1: Enabled 0: Disabled

Conversion 21
0000000000000001
1: Completed 0: Not Completed

Average/Sample 21 Time/Count 21
0000001111101000
1: Averaging 0: Sampling 1: Time Average 0: Count Average

🟥 Channel 1 disconnected
☐ Channel 2 disconnected

🟥WDT Error
☐Error Code: 100

Temp. Sensor Type 0
0:New JIS,DIN 1:Old JIS

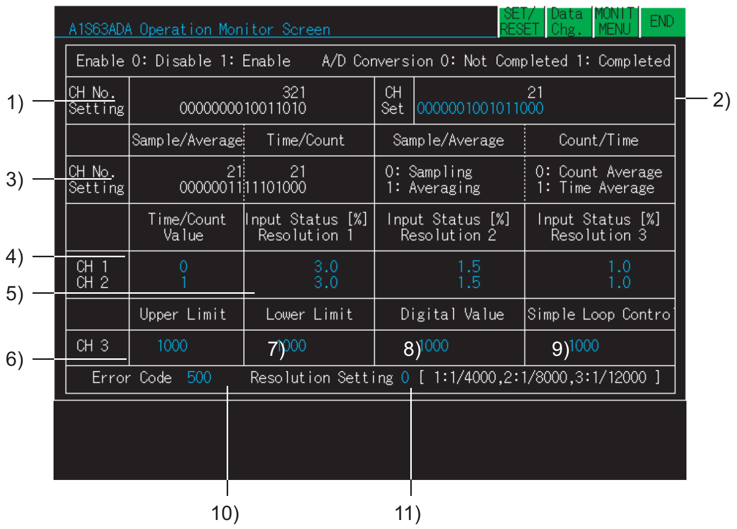
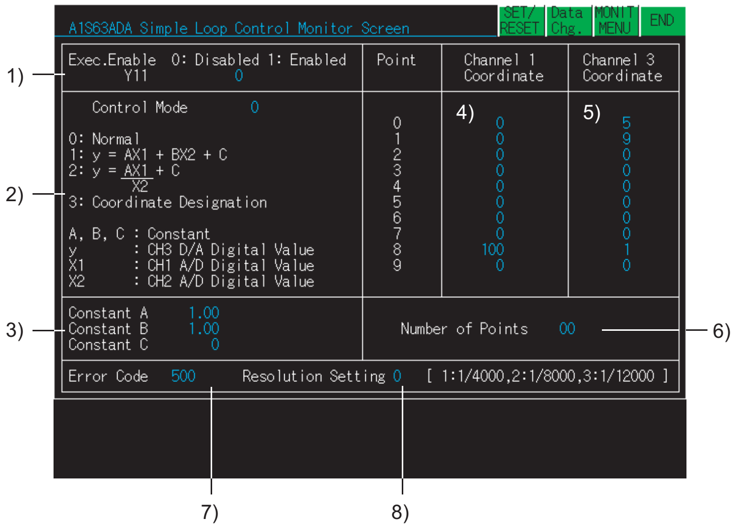
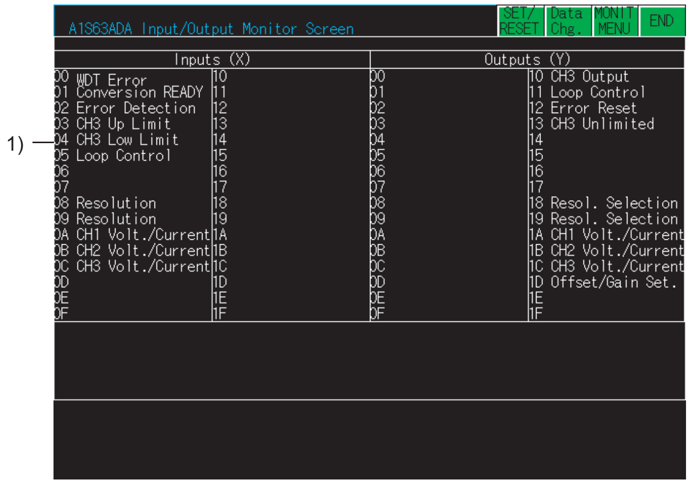
No.	Buffer memory address DEC	Buffer memory address HEX
1)	10, 11	000A, 000B
2)	0	0000
3)	35	0023
4)	1	0001
5)	-	-
	34	0022
6)	36	0024
7)	-	-
-	-	-

6.5.23 A1SJ71PT32-S3 module monitoring

Refer to the following for further information about the screen for A1SJ71PT32-S3 and the buffer memory address.

☞ 6.5.17 AJ71PT32-S3 module monitoring

6.5.24 A1S63ADA module monitoring

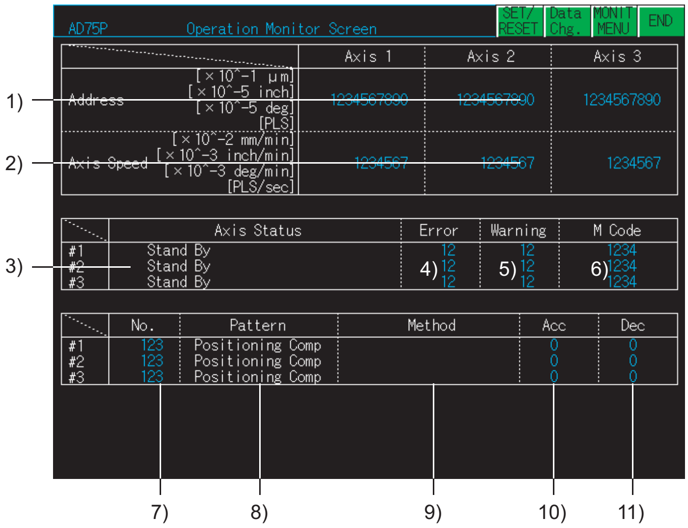
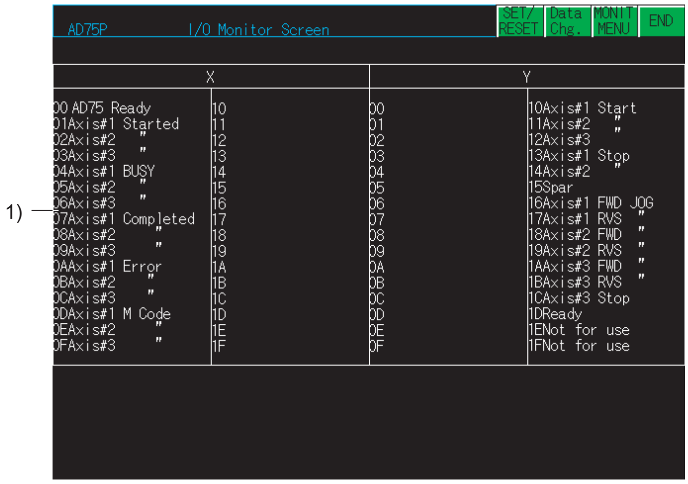
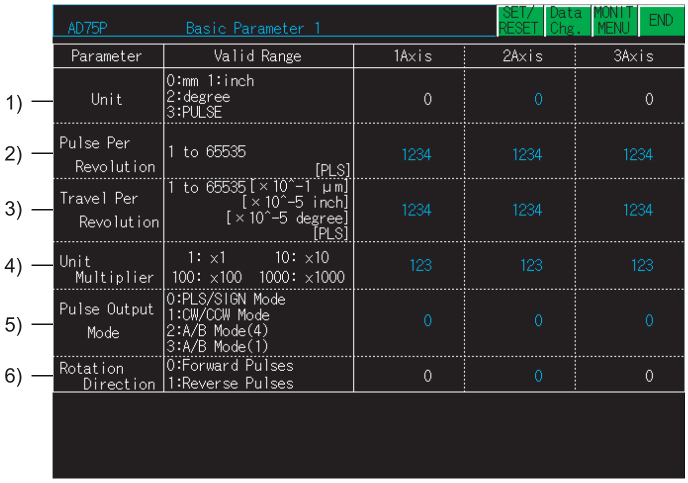
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	0	0000
	2)	15	000F
	3)	1	0001
	4)	2, 3	0002, 0003
	5)	11, 12	000B, 000C
	6)	4	0004
	7)	5	0005
	8)	10	000A
	9)	13	000D
	10)	16	0010
	11)	14	000E
	-	-	-
	1)	-	-
	2)	6	0006
	3)	7, 8, 9	0007, 0008, 0009
	4)	18 to 37	0012 to 0025
	5)		
	6)	17	0011
	7)	16	0010
	8)	14	000E
	-	-	-
	1)	-	-
	-	-	-

```
A1S63ADA Operation Monitor Screen
 Enable 0: Disable 1: Enable    A/D Conversion 0: Not Completed 1: Completed
CH No.              321          | CH          21
Setting  0000000010011010        | Set  0000001001011000
         Sample/Average  Time/Count | Sample/Average      Count/Time
CH No.              21      21      | 0: Sampling         0: Count Average
Setting       00000011 11101000     | 1: Averaging        1: Time Average
         Time/Count  Input Status [%]  Input Status [%]  Input Status [%]
           Value       Resolution 1      Resolution 2      Resolution 3
 CH 1        0            3.0               1.5               1.0
 CH 2        1            3.0               1.5               1.0
         Upper Limit   Lower Limit     Digital Value   Simple Loop Contro
 CH 3       1000          1000             1000             1000
   Error Code  500    Resolution Setting 0 [ 1:1/4000,2:1/8000,3:1/12000 ]
```

```
A1S63ADA Simple Loop Control Monitor Screen
Exec.Enable  0: Disabled 1: Enabled | Point | Channel 1  | Channel 3
      Y11          0                |       | Coordinate | Coordinate
   Control Mode        0            |   0   |     0      |     5
                                    |   1   |     0      |     9
0: Normal                           |   2   |     0      |     0
1: y = AX1 + BX2 + C                |   3   |     0      |     0
2: y = AX1 + C                      |   4   |     0      |     0
       X2                           |   5   |     0      |     0
3: Coordinate Designation           |   6   |     0      |     0
                                    |   7   |     0      |     0
A, B, C : Constant                  |   8   |    100     |     1
y       : CH3 D/A Digital Value     |   9   |     0      |     0
X1      : CH1 A/D Digital Value
X2      : CH2 A/D Digital Value
Constant A    1.00
Constant B    1.00                    Number of Points    00
Constant C       0
Error Code   500    Resolution Setting 0   [ 1:1/4000,2:1/8000,3:1/12000 ]
```

```
A1S63ADA Input/Output Monitor Screen
             Inputs (X)                            Outputs (Y)
00 WDT Error           10            00              10 CH3 Output
01 Conversion READY    11            01              11 Loop Control
02 Error Detection     12            02              12 Error Reset
03 CH3 Up Limit        13            03              13 CH3 Unlimited
04 CH3 Low Limit       14            04              14
05 Loop Control        15            05              15
06                     16            06              16
07                     17            07              17
08 Resolution          18            08              18 Resol. Selection
09 Resolution          19            09              19 Resol. Selection
0A CH1 Volt./Current   1A            0A              1A CH1 Volt./Current
0B CH2 Volt./Current   1B            0B              1B CH2 Volt./Current
0C CH3 Volt./Current   1C            0C              1C CH3 Volt./Current
0D                     1D            0D              1D Offset/Gain Set.
0E                     1E            0E              1E
0F                     1F            0F              1F
```

6.5.25 AD75P/A1SD75P module monitoring

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	800 801	0320 0321	900 901	0384 0385	1000 1001	03E8 03E9
	2)	812 813	032C 032D	912 913	0390 0391	1012 1013	03F4 03F5
	3)	809	0329	909	038D	1009	03F1
	4)	807	0327	907	038B	1007	03EF
	5)	808	0328	908	038C	1008	03F0
	6)	806	0326	906	038A	1006	03EE
	7)	829	033D	929	03A1	1029	0405
	8) 9) 10) 11)	838	0346	938	03AA	1038	040E
	-	-	-	-	-	-	-
	1)	-	-	-	-	-	-
	-	-	-	-	-	-	-
	1)	0	0000	150	0096	300	012C
	2)	1	0001	151	0097	301	012D
	3)	2	0002	152	0098	302	012E
	4)	3	0003	153	0099	303	012F
	5)	4	0004	154	009A	304	0130
	6)	5	0005	155	009B	305	0131
	-	-	-	-	-	-	-

AD75P Operation Monitor Screen

	Axis 1	Axis 2	Axis 3
Address [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	1234567890	1234567890	1234567890
Axis Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	1234567	1234567	1234567

	Axis Status	Error	Warning	M Code
#1	Stand By	12	12	1234
#2	Stand By	12	12	1234
#3	Stand By	12	12	1234

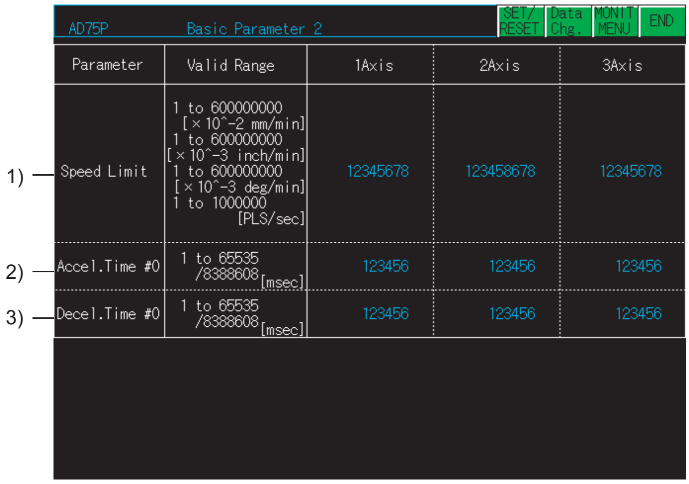
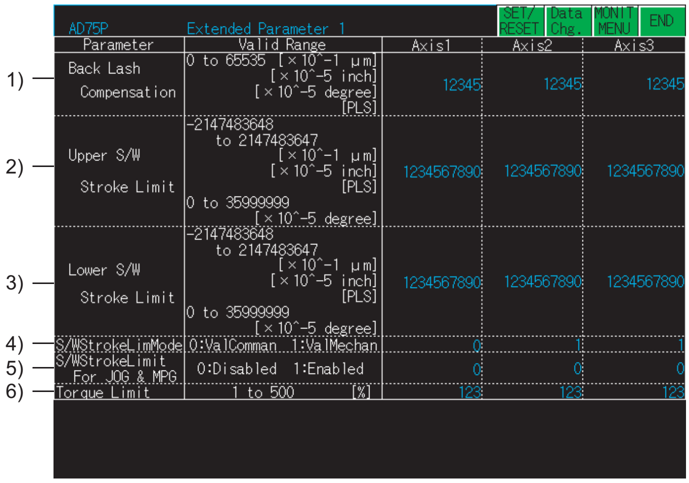
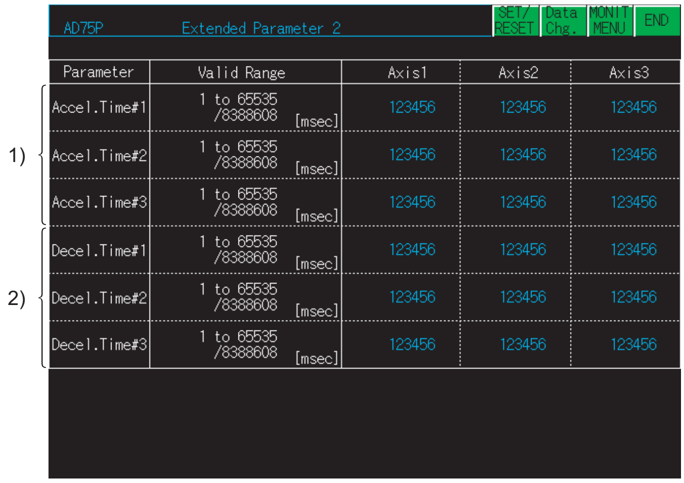
	No.	Pattern	Method	Acc	Dec
#1	123	Positioning Comp		0	0
#2	123	Positioning Comp		0	0
#3	123	Positioning Comp		0	0

AD75P I/O Monitor Screen

X		Y	
00 AD75 Ready	10	00	10Axis#1 Start
01Axis#1 Started	11	01	11Axis#2 "
02Axis#2 "	12	02	12Axis#3 "
03Axis#3 "	13	03	13Axis#1 Stop
04Axis#1 BUSY	14	04	14Axis#2 "
05Axis#2 "	15	05	15Spar
06Axis#3 "	16	06	16Axis#1 FWD JOG
07Axis#1 Completed	17	07	17Axis#1 RVS "
08Axis#2 "	18	08	18Axis#2 FWD "
09Axis#3 "	19	09	19Axis#2 RVS "
0AAxis#1 Error	1A	0A	1AAxis#3 FWD "
0BAxis#2 "	1B	0B	1BAxis#3 RVS "
0CAxis#3 "	1C	0C	1CAxis#3 Stop
0DAxis#1 M Code	1D	0D	1DReady
0EAxis#2 "	1E	0E	1ENot for use
0FAxis#3 "	1F	0F	1FNot for use

AD75P Basic Parameter 1

Parameter	Valid Range	1Axis	2Axis	3Axis
Unit	0:mm 1:inch 2:degree 3:PULSE	0	0	0
Pulse Per Revolution	1 to 65535 [PLS]	1234	1234	1234
Travel Per Revolution	1 to 65535 [×10^-1 μm] [×10^-5 inch] [×10^-5 degree] [PLS]	1234	1234	1234
Unit Multiplier	1: x1 10: x10 100: x100 1000: x1000	123	123	123
Pulse Output Mode	0:PLS/SIGN Mode 1:CW/CCW Mode 2:A/B Mode(4) 3:A/B Mode(1)	0	0	0
Rotation Direction	0:Forward Pulses 1:Reverse Pulses	0	0	0

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	6	0006	156	009C	306	0132
		7	0007	157	009D	307	0133
	2)	8	0008	158	009E	308	0134
		9	0009	159	009F	309	0135
	3)	10	000A	160	00A0	310	0136
		11	000B	161	00A1	311	0137
	-	-	-	-	-	-	-
	1)	15	000F	165	00A5	315	013B
	2)	16	0010	166	00A6	316	013C
		17	0011	167	00A7	317	013D
	3)	18	0012	168	00A8	318	013E
		19	0013	169	00A9	319	013F
	4)	20	0014	170	00AA	320	0140
	5)	21	0015	171	00AB	321	0141
	6)	24	0018	174	00AE	324	0144
	-	-	-	-	-	-	-
	1)	36 to 41	0024 to 0029	186 to 191	00BA to 00BF	336 to 341	0150 to 0155
	2)	42 to 47	002A to 002F	192 to 197	00C0 to 00C5	342 to 347	0156 to 015B
	-	-	-	-	-	-	-

AD75P Basic Parameter 2

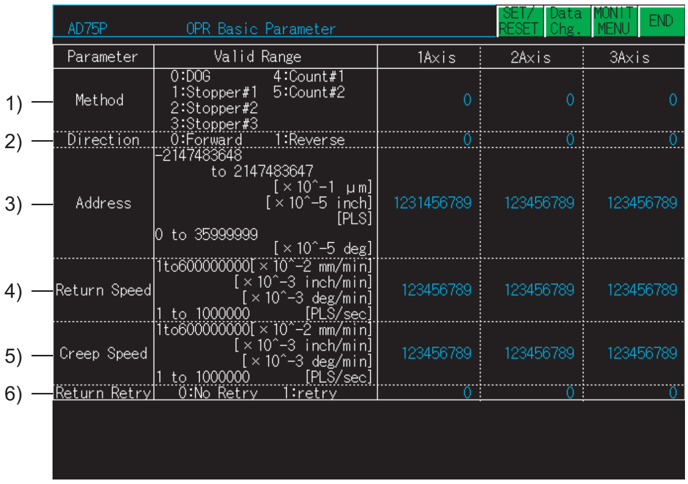
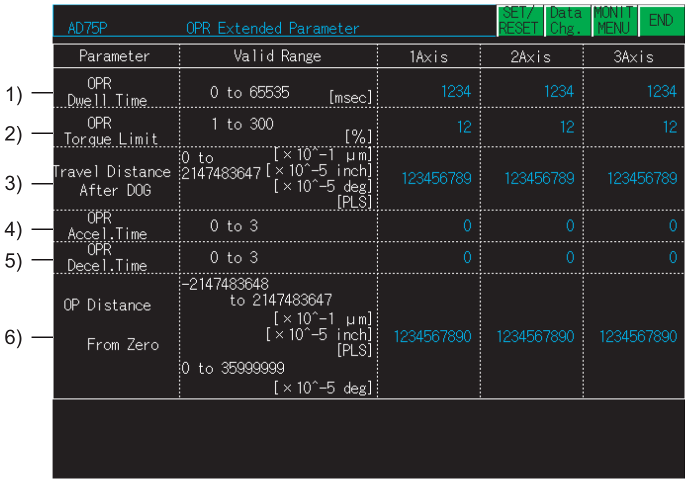
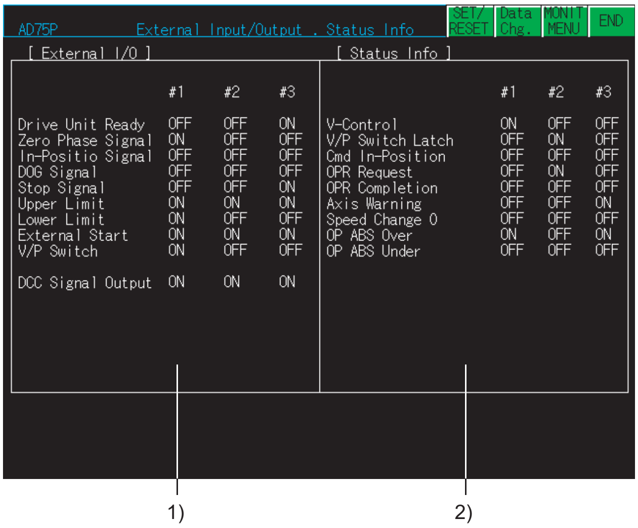
Parameter	Valid Range	1Axis	2Axis	3Axis
Speed Limit	1 to 600000000 [×10^-2 mm/min] 1 to 600000000 [×10^-3 inch/min] 1 to 600000000 [×10^-3 deg/min] 1 to 1000000 [PLS/sec]	12345678	123458678	12345678
Accel.Time #0	1 to 65535 /8388608 [msec]	123456	123456	123456
Decel.Time #0	1 to 65535 /8388608 [msec]	123456	123456	123456

AD75P Extended Parameter 1

Parameter	Valid Range	Axis1	Axis2	Axis3
Back Lash Compensation	0 to 65535 [×10^-1 μm] [×10^-5 inch] [×10^-5 degree] [PLS]	12345	12345	12345
Upper S/W Stroke Limit	-2147483648 to 2147483647 [×10^-1 μm] [×10^-5 inch] [PLS] 0 to 35999999 [×10^-5 degree]	1234567890	1234567890	1234567890
Lower S/W Stroke Limit	-2147483648 to 2147483647 [×10^-1 μm] [×10^-5 inch] [PLS] 0 to 35999999 [×10^-5 degree]	1234567890	1234567890	1234567890
S/WStrokeLimMode	0:ValComman 1:ValMechan	0	1	1
S/WStrokeLimit For JOG & MPG	0:Disabled 1:Enabled	0	0	0
Torque Limit	1 to 500 [%]	123	123	123

AD75P Extended Parameter 2

Parameter	Valid Range	Axis1	Axis2	Axis3
Accel.Time#1	1 to 65535 /8388608 [msec]	123456	123456	123456
Accel.Time#2	1 to 65535 /8388608 [msec]	123456	123456	123456
Accel.Time#3	1 to 65535 /8388608 [msec]	123456	123456	123456
Decel.Time#1	1 to 65535 /8388608 [msec]	123456	123456	123456
Decel.Time#2	1 to 65535 /8388608 [msec]	123456	123456	123456
Decel.Time#3	1 to 65535 /8388608 [msec]	123456	123456	123456

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	70	0046	220	00DC	370	0172
	2)	71	0047	221	00DD	371	0173
	3)	72	0048	222	00DE	372	0174
		73	0049	223	00DF	373	0175
	4)	74	004A	224	00E0	374	0176
		75	004B	225	00E1	375	0177
	5)	76	004C	226	00E2	376	0178
		77	004D	227	00E3	377	0179
	6)	78	004E	228	00E4	378	017A
	-	-	-	-	-	-	-
	1)	79	004F	229	00E5	379	017B
	2)	86	0056	236	00EC	386	0182
	3)	80	0050	230	00E6	380	017C
		81	0051	231	00E7	381	017D
	4)	82	0052	232	00E8	382	017E
	5)	83	0053	233	00E9	383	017F
	6)	84	0054	234	00EA	384	0180
		85	0055	235	00EB	385	0181
	-	-	-	-	-	-	-
	1)	816	0330	916	0394	1016	03F8
	2)	817	0331	917	0395	1017	03F9
	-	-	-	-	-	-	-

AD75P OPR Basic Parameter

Parameter	Valid Range	1Axis	2Axis	3Axis
Method	0:DOG 4:Count#1 1:Stopper#1 5:Count#2 2:Stopper#2 3:Stopper#3	0	0	0
Direction	0:Forward 1:Reverse	0	0	0
Address	-2147483648 to 2147483647 [×10^-1 μm] [×10^-5 inch] [PLS] 0 to 35999999 [×10^-5 deg]	1231456789	123456789	123456789
Return Speed	1to600000000[×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] 1 to 1000000 [PLS/sec]	123456789	123456789	123456789
Creep Speed	1to600000000[×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] 1 to 1000000 [PLS/sec]	123456789	123456789	123456789
Return Retry	0:No Retry 1:retry	0	0	0

AD75P OPR Extended Parameter

Parameter	Valid Range	1Axis	2Axis	3Axis
OPR Dwell Time	0 to 65535 [msec]	1234	1234	1234
OPR Torque Limit	1 to 300 [%]	12	12	12
Travel Distance After DOG	0 to 2147483647 [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	123456789	123456789	123456789
OPR Accel.Time	0 to 3	0	0	0
OPR Decel.Time	0 to 3	0	0	0
OP Distance From Zero	-2147483648 to 2147483647 [×10^-1 μm] [×10^-5 inch] [PLS] 0 to 35999999 [×10^-5 deg]	1234567890	1234567890	1234567890

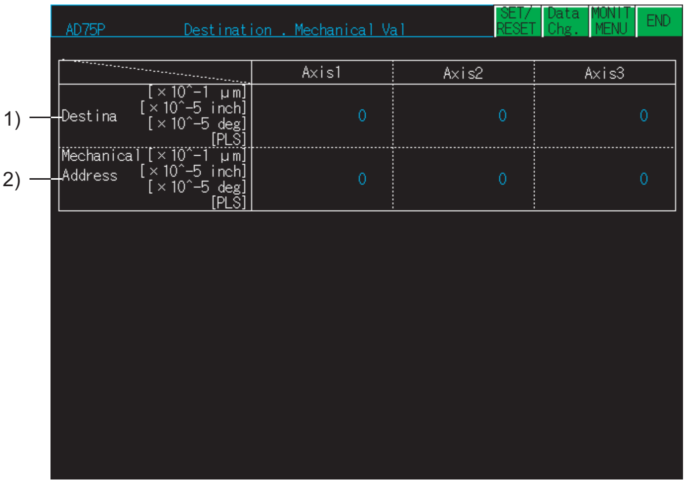
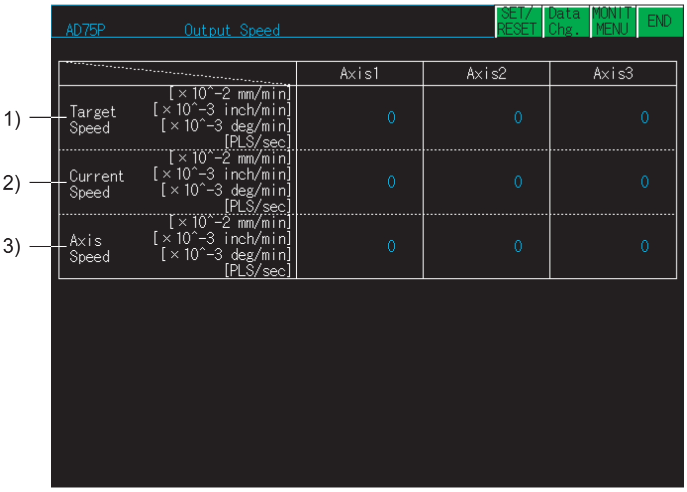
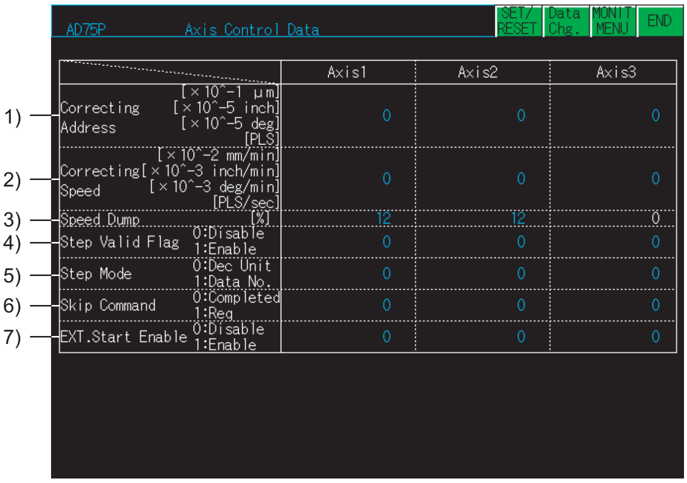
AD75P External Input/Output . Status Info

[External I/O]

	#1	#2	#3
Drive Unit Ready	OFF	OFF	ON
Zero Phase Signal	ON	OFF	OFF
In-Positio Signal	OFF	OFF	OFF
DOG Signal	OFF	OFF	OFF
Stop Signal	OFF	OFF	ON
Upper Limit	ON	ON	ON
Lower Limit	ON	OFF	OFF
External Start	ON	ON	ON
V/P Switch	ON	OFF	OFF
DCC Signal Output	ON	ON	ON

[Status Info]

	#1	#2	#3
V-Control	ON	OFF	OFF
V/P Switch Latch	OFF	ON	OFF
Cmd In-Position	OFF	OFF	OFF
OPR Request	OFF	ON	OFF
OPR Completion	OFF	OFF	OFF
Axis Warning	OFF	OFF	ON
Speed Change 0	OFF	OFF	OFF
OP ABS Over	ON	OFF	ON
OP ABS Under	OFF	OFF	OFF

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	818	0332	918	0396	1018	03FA
		819	0333	919	0397	1019	03FB
	2)	802	0322	902	0386	1002	03EA
		803	0323	903	0387	1003	03EB
	-	-	-	-	-	-	-
	1)	820	0334	920	0398	1020	03FC
		821	0335	921	0399	1021	03FD
	2)	810	032A	910	038E	1010	03F2
		811	032B	911	038F	1011	03F3
	3)	812	032C	912	0390	1012	03F4
		813	032D	913	0391	1013	03F5
	-	-	-	-	-	-	-
	1)	1154	0482	1204	04B4	1254	04E6
		1155	0483	1205	04B5	1255	04E7
	2)	1156	0484	1206	04B6	1256	04E8
		1157	0485	1207	04B7	1257	04E9
	3)	1159	0487	1209	04B9	1259	04EB
	4)	1172	0494	1222	04C6	1272	04F8
	5)	1173	0495	1223	04C7	1273	04F9
	6)	1175	0497	1225	04C9	1275	04FB
	7)	1171	0493	1221	04C5	1271	04F7
	-	-	-	-	-	-	-

AD75P Destination . Mechanical Val

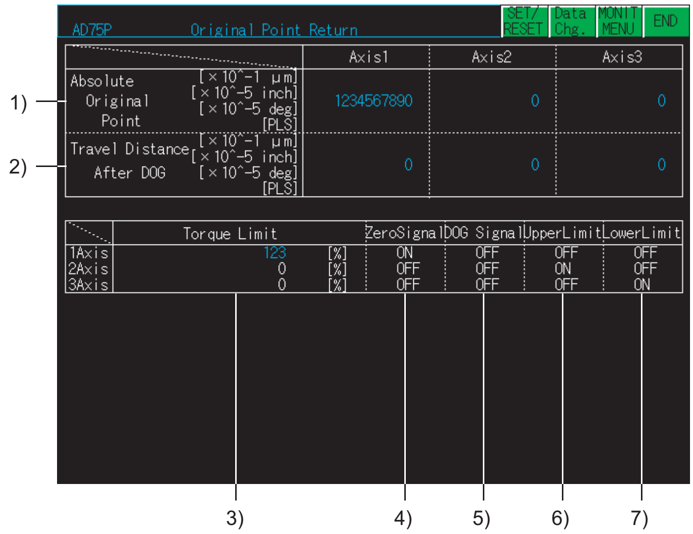
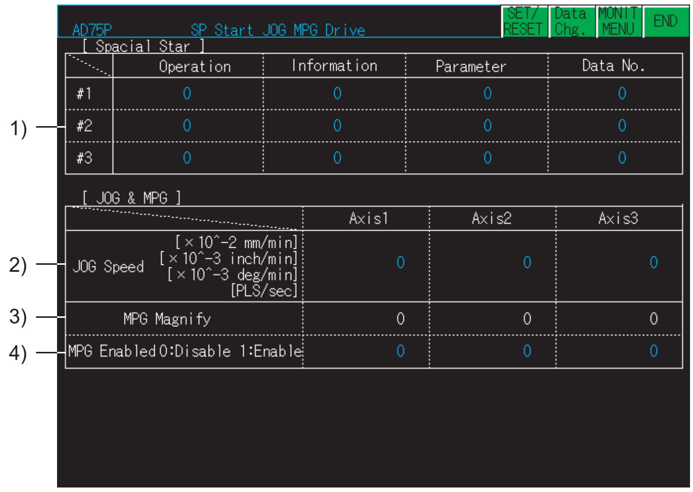
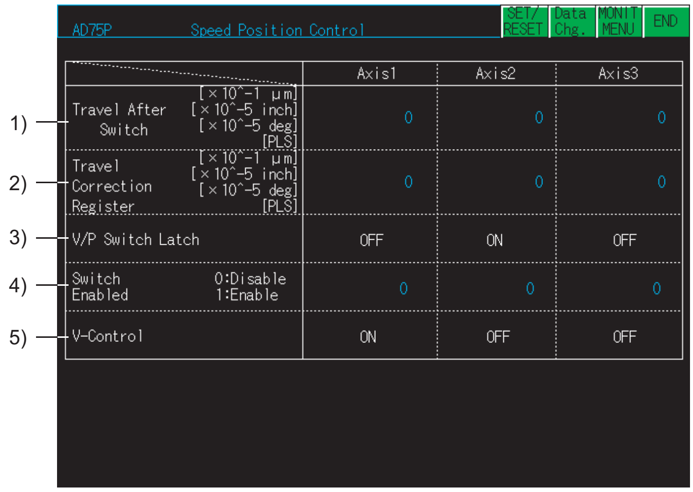
	Axis1	Axis2	Axis3
Destina [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0
Mechanical Address [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0

AD75P Output Speed

	Axis1	Axis2	Axis3
Target Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	0	0	0
Current Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	0	0	0
Axis Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	0	0	0

AD75P Axis Control Data

	Axis1	Axis2	Axis3
Correcting Address [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0
Correcting Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	0	0	0
Speed Dump [%]	12	12	0
Step Valid Flag 0:Disable 1:Enable	0	0	0
Step Mode 0:Dec Unit 1:Data No.	0	0	0
Skip Command 0:Completed 1:Req	0	0	0
EXT.Start Enable 0:Disable 1:Enable	0	0	0

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	822	0336	922	039A	1022	03FE
		823	0337	923	039B	1023	03FF
	2)	824	0338	924	039C	1024	0400
		825	0339	925	039D	1025	0401
	3)	826	033A	926	039E	1026	0402
	4) 5) 6) 7)	816	0330	916	0394	1016	03F8
	-	-	-	-	-	-	-
	1)	832	0340	932	03A4	1032	0408
		827	033B	927	039F	1027	0403
		828	033C	928	03A0	1028	0404
		829	033D	929	03A1	1029	0405
	2)	1160	0488	1210	04BA	1260	04EC
		1161	0489	1211	04BB	1261	04ED
	3)	1168	0490	1218	04C2	1268	04F4
		1169	0491	1219	04C3	1269	04F5
	4)	1167	048F	1217	04C1	1267	04F3
	-	-	-	-	-	-	-
	1)	814	032E	914	0392	1014	03F6
		815	032F	915	0393	1015	03F7
	2)	1164	048C	1214	04BE	1264	04F0
		1165	048D	1215	04BF	1265	04F1
	3)	817	0331	917	0395	1017	03F9
	4)	1163	048B	1213	04BD	1263	04EF
	5)	817	0331	917	0395	1017	03F9
	-	-	-	-	-	-	-

AD75P Original Point Return

	Axis1	Axis2	Axis3
Absolute Original Point [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	1234567890	0	0
Travel Distance After DOG [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0

	Torque Limit		ZeroSignal	DOG Signal	UpperLimit	LowerLimit
1Axis	123	[%]	ON	OFF	OFF	OFF
2Axis	0	[%]	OFF	OFF	ON	OFF
3Axis	0	[%]	OFF	OFF	OFF	ON

AD75P SP Start JOG MPG Drive

[Spacial Star]

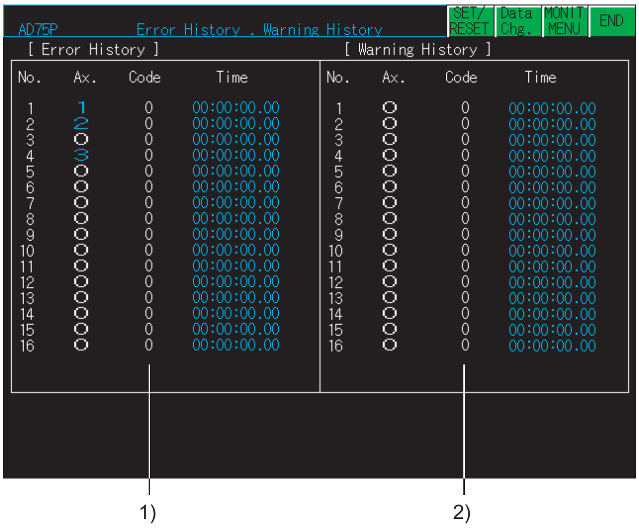
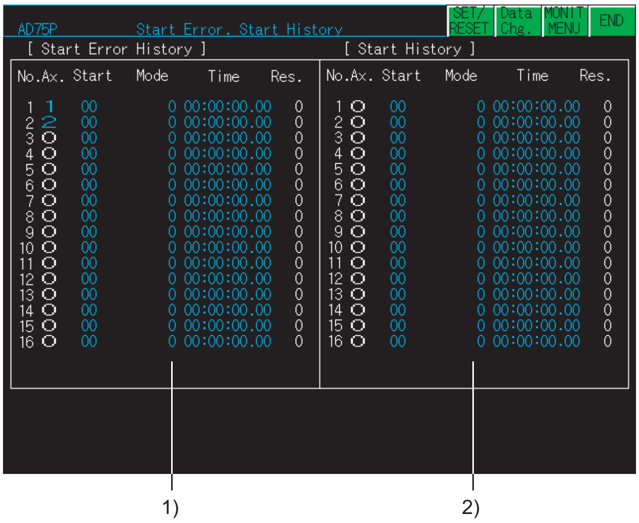
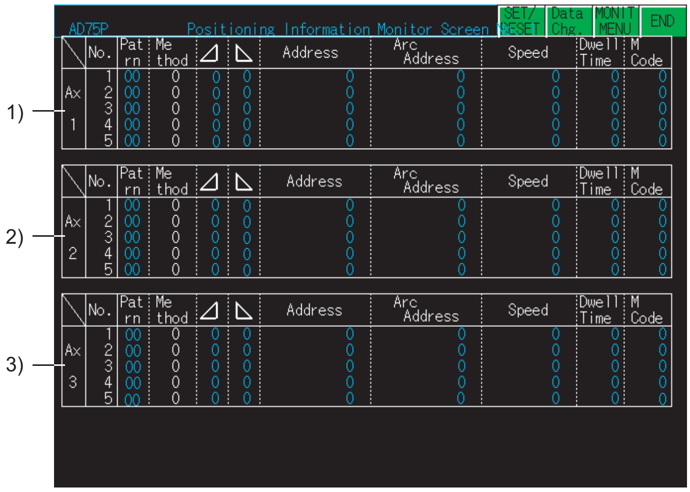
	Operation	Information	Parameter	Data No.
#1	0	0	0	0
#2	0	0	0	0
#3	0	0	0	0

[JOG & MPG]

	Axis1	Axis2	Axis3
JOG Speed [×10^-2 mm/min] [×10^-3 inch/min] [×10^-3 deg/min] [PLS/sec]	0	0	0
MPG Magnify	0	0	0
MPG Enabled 0:Disable 1:Enable	0	0	0

AD75P Speed Position Control

	Axis1	Axis2	Axis3
Travel After Switch [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0
Travel Correction Register [×10^-1 μm] [×10^-5 inch] [×10^-5 deg] [PLS]	0	0	0
V/P Switch Latch	OFF	ON	OFF
Switch Enabled 0:Disable 1:Enable	0	0	0
V-Control	ON	OFF	OFF

Screen example	No.	Buffer memory address					
		Axis 1		Axis 2		Axis 3	
		DEC	HEX	DEC	HEX	DEC	HEX
	1)	624 to 687	0270 to 02AF	624 to 687	0270 to 02AF	624 to 687	0270 to 02AF
	2)	689 to 752	02B1 to 02F0	689 to 752	02B1 to 02F0	689 to 752	02B1 to 02F0
	-	-	-	-	-	-	-
	1)	543 to 622	021F to 026E	543 to 622	021F to 026E	543 to 622	021F to 026E
	2)	462 to 541	01CE to 021D	462 to 541	01CE to 021D	462 to 541	01CE to 021D
	-	-	-	-	-	-	-
	1) 2) 3)	1300 to 2299	0514 to 08FB	2300 to 3299	08FC to 0CE3	3300 to 4299	0CE4 to 10CB
	-	-	-	-	-	-	-

AD75P Error History , Warning History

[Error History]

No.	Ax.	Code	Time
1	1	0	00:00:00.00
2	2	0	00:00:00.00
3	O	0	00:00:00.00
4	3	0	00:00:00.00
5	O	0	00:00:00.00
6	O	0	00:00:00.00
7	O	0	00:00:00.00
8	O	0	00:00:00.00
9	O	0	00:00:00.00
10	O	0	00:00:00.00
11	O	0	00:00:00.00
12	O	0	00:00:00.00
13	O	0	00:00:00.00
14	O	0	00:00:00.00
15	O	0	00:00:00.00
16	O	0	00:00:00.00

[Warning History]

No.	Ax.	Code	Time
1	O	0	00:00:00.00
2	O	0	00:00:00.00
3	O	0	00:00:00.00
4	O	0	00:00:00.00
5	O	0	00:00:00.00
6	O	0	00:00:00.00
7	O	0	00:00:00.00
8	O	0	00:00:00.00
9	O	0	00:00:00.00
10	O	0	00:00:00.00
11	O	0	00:00:00.00
12	O	0	00:00:00.00
13	O	0	00:00:00.00
14	O	0	00:00:00.00
15	O	0	00:00:00.00
16	O	0	00:00:00.00

AD75P Start Error. Start History

[Start Error History]

No.	Ax.	Start	Mode	Time	Res.
1	1	00	0	00:00:00.00	0
2	2	00	0	00:00:00.00	0
3	O	00	0	00:00:00.00	0
4	O	00	0	00:00:00.00	0
5	O	00	0	00:00:00.00	0
6	O	00	0	00:00:00.00	0
7	O	00	0	00:00:00.00	0
8	O	00	0	00:00:00.00	0
9	O	00	0	00:00:00.00	0
10	O	00	0	00:00:00.00	0
11	O	00	0	00:00:00.00	0
12	O	00	0	00:00:00.00	0
13	O	00	0	00:00:00.00	0
14	O	00	0	00:00:00.00	0
15	O	00	0	00:00:00.00	0
16	O	00	0	00:00:00.00	0

[Start History]

No.	Ax.	Start	Mode	Time	Res.
1	O	00	0	00:00:00.00	0
2	O	00	0	00:00:00.00	0
3	O	00	0	00:00:00.00	0
4	O	00	0	00:00:00.00	0
5	O	00	0	00:00:00.00	0
6	O	00	0	00:00:00.00	0
7	O	00	0	00:00:00.00	0
8	O	00	0	00:00:00.00	0
9	O	00	0	00:00:00.00	0
10	O	00	0	00:00:00.00	0
11	O	00	0	00:00:00.00	0
12	O	00	0	00:00:00.00	0
13	O	00	0	00:00:00.00	0
14	O	00	0	00:00:00.00	0
15	O	00	0	00:00:00.00	0
16	O	00	0	00:00:00.00	0

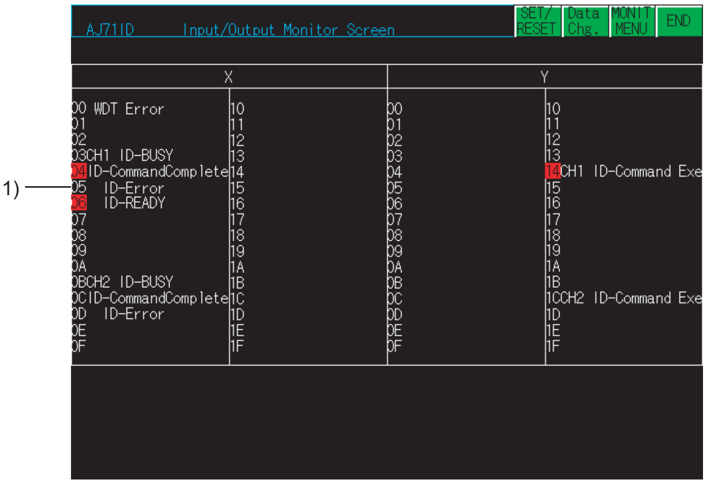
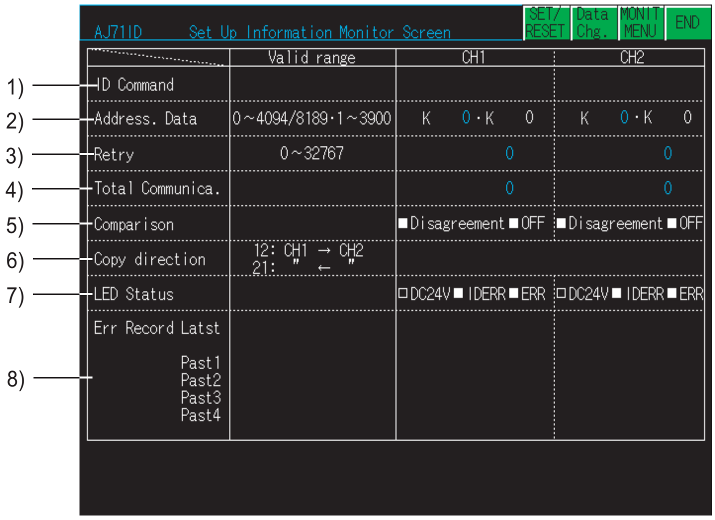
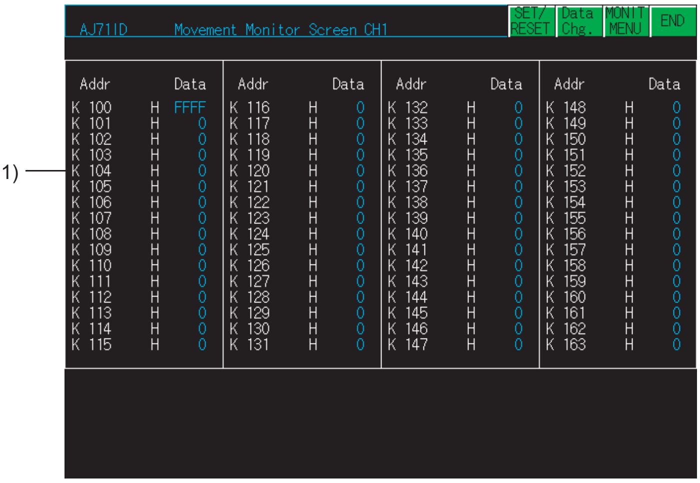
AD75P Positioning Information Monitor Screen

	No.	Pat rn	Me thod	⊿	◺	Address	Arc Address	Speed	Dwell Time	M Code
Ax 1	1	00	0	0	0	0	0	0	0	0
	2	00	0	0	0	0	0	0	0	0
	3	00	0	0	0	0	0	0	0	0
	4	00	0	0	0	0	0	0	0	0
	5	00	0	0	0	0	0	0	0	0

	No.	Pat rn	Me thod	⊿	◺	Address	Arc Address	Speed	Dwell Time	M Code
Ax 2	1	00	0	0	0	0	0	0	0	0
	2	00	0	0	0	0	0	0	0	0
	3	00	0	0	0	0	0	0	0	0
	4	00	0	0	0	0	0	0	0	0
	5	00	0	0	0	0	0	0	0	0

	No.	Pat rn	Me thod	⊿	◺	Address	Arc Address	Speed	Dwell Time	M Code
Ax 3	1	00	0	0	0	0	0	0	0	0
	2	00	0	0	0	0	0	0	0	0
	3	00	0	0	0	0	0	0	0	0
	4	00	0	0	0	0	0	0	0	0
	5	00	0	0	0	0	0	0	0	0

6.5.26 AJ71ID1(ID2)-R4/A1SJ71ID1(ID2)-R4 module monitoring

Screen example	No.	Buffer memory address			
		X axis		Y axis	
		DEC	HEX	DEC	HEX
	1)	-	-	-	-
	-	-	-	-	-
	1)	0	0000	4000	0FA0
	2)	1	0001	4001	0FA1
		2	0002	4002	0FA2
	3)	8	0008	4008	0FA8
	4)	22	0016	4022	0FB6
		23	0017	4023	0FB7
	5)	4	0004	4004	0FA4
		5	0005	4005	0FA5
	6)	-	-	4010	0FAA
	7)	12	000C	4012	0FAC
	8)	14 to 18	000E to 0012	4014 to 4018	0FAE to 0FB2
	-	-	-	-	-
	1)	100 to 163	0064 to 00A3	4100 to 4163	1004 to 1043
	-	-	-	-	-

AJ71ID Input/Output Monitor Screen

X		Y	
00 WDT Error	10	00	10
01	11	01	11
02	12	02	12
03CH1 ID-BUSY	13	03	13
04ID-CommandComplete	14	04	14CH1 ID-Command Exe
05 ID-Error	15	05	15
06 ID-READY	16	06	16
07	17	07	17
08	18	08	18
09	19	09	19
0A	1A	0A	1A
0BCH2 ID-BUSY	1B	0B	1B
0CID-CommandComplete	1C	0C	1CCH2 ID-Command Exe
0D ID-Error	1D	0D	1D
0E	1E	0E	1E
0F	1F	0F	1F

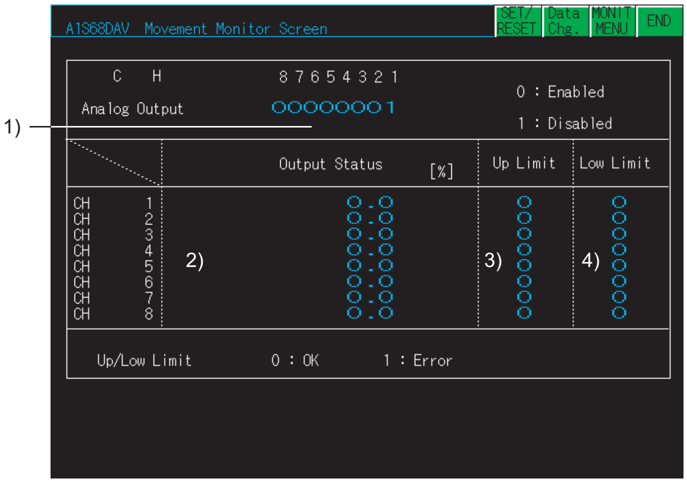
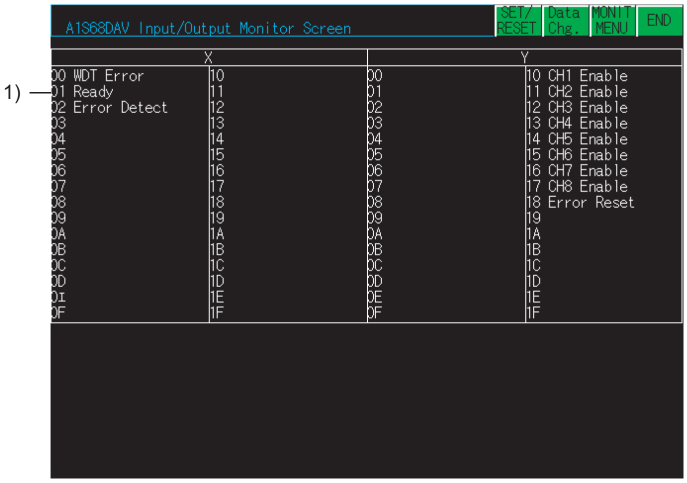
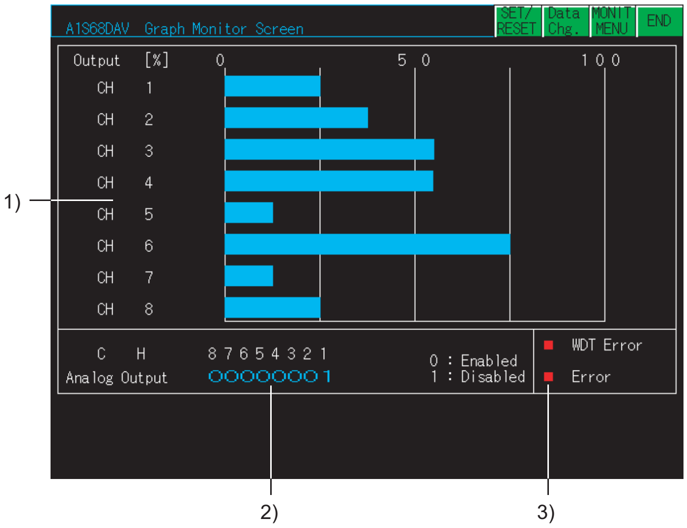
AJ71ID Set Up Information Monitor Screen

	Valid range	CH1	CH2
ID Command			
Address. Data	0～4094/8189·1～3900	K 0·K 0	K 0·K 0
Retry	0～32767	0	0
Total Communica.		0	0
Comparison		■Disagreement ■OFF	■Disagreement ■OFF
Copy direction	12: CH1 → CH2 21: 〃 ← 〃		
LED Status		☐DC24V ■IDERR ■ERR	☐DC24V ■IDERR ■ERR
Err Record Latst Past1 Past2 Past3 Past4			

AJ71ID Movement Monitor Screen CH1

Addr	Data	Addr	Data	Addr	Data	Addr	Data
K 100	H FFFF	K 116	H 0	K 132	H 0	K 148	H 0
K 101	H 0	K 117	H 0	K 133	H 0	K 149	H 0
K 102	H 0	K 118	H 0	K 134	H 0	K 150	H 0
K 103	H 0	K 119	H 0	K 135	H 0	K 151	H 0
K 104	H 0	K 120	H 0	K 136	H 0	K 152	H 0
K 105	H 0	K 121	H 0	K 137	H 0	K 153	H 0
K 106	H 0	K 122	H 0	K 138	H 0	K 154	H 0
K 107	H 0	K 123	H 0	K 139	H 0	K 155	H 0
K 108	H 0	K 124	H 0	K 140	H 0	K 156	H 0
K 109	H 0	K 125	H 0	K 141	H 0	K 157	H 0
K 110	H 0	K 126	H 0	K 142	H 0	K 158	H 0
K 111	H 0	K 127	H 0	K 143	H 0	K 159	H 0
K 112	H 0	K 128	H 0	K 144	H 0	K 160	H 0
K 113	H 0	K 129	H 0	K 145	H 0	K 161	H 0
K 114	H 0	K 130	H 0	K 146	H 0	K 162	H 0
K 115	H 0	K 131	H 0	K 147	H 0	K 163	H 0

6.5.27 A1S68DAV module monitoring

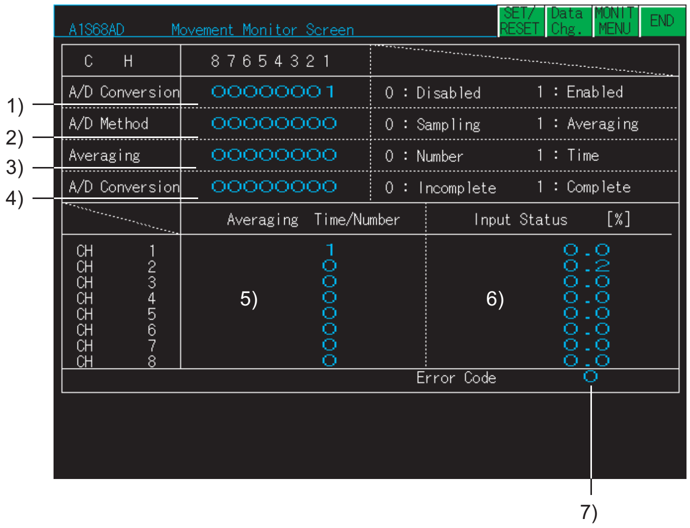
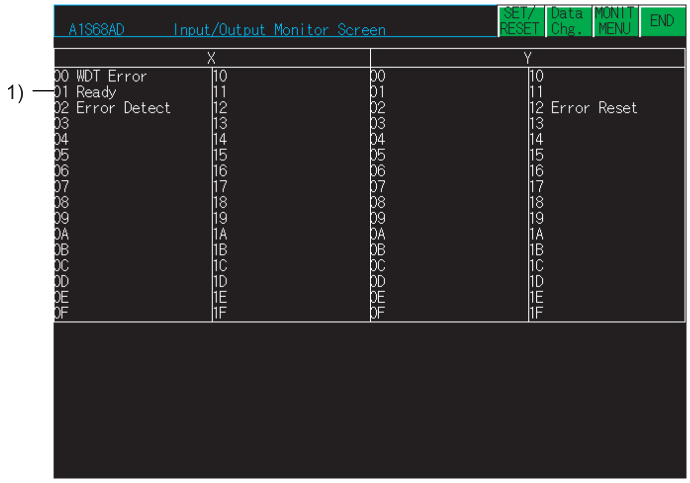
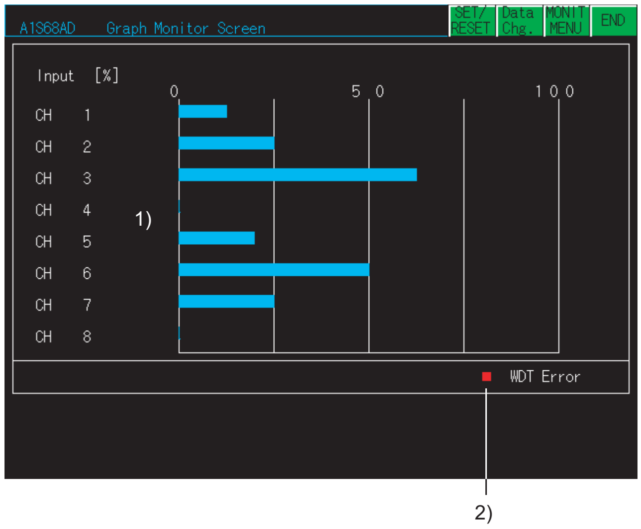
Screen example	No.	Buffer memory address DEC	HEX
 A1S68DAV Movement Monitor Screen SET/RESET · Data Chg. · MONIT MENU · END C H 8 7 6 5 4 3 2 1 Analog Output 00000001 0 : Enabled 1 : Disabled Output Status [%] · Up Limit · Low Limit CH 1 0.0 0 0 CH 2 0.0 0 0 CH 3 0.0 0 0 CH 4 0.0 0 0 CH 5 0.0 0 0 CH 6 0.0 0 0 CH 7 0.0 0 0 CH 8 0.0 0 0 Up/Low Limit 0 : OK 1 : Error 1) 2) 3) 4)	1)	0	0000
	2)	1 to 8	0001 to 0008
	3)	10 to 17	000A to 0011
	4)	10 to 17	000A to 0011
	-	-	-
 A1S68DAV Input/Output Monitor Screen SET/RESET · Data Chg. · MONIT MENU · END X 00 WDT Error 01 Ready 02 Error Detect 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F Y 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 CH1 Enable 11 CH2 Enable 12 CH3 Enable 13 CH4 Enable 14 CH5 Enable 15 CH6 Enable 16 CH7 Enable 17 CH8 Enable 18 Error Reset 19 1A 1B 1C 1D 1E 1F 1)	1)	-	-
	-	-	-
 A1S68DAV Graph Monitor Screen SET/RESET · Data Chg. · MONIT MENU · END Output [%] 0 50 100 CH 1 CH 2 CH 3 CH 4 CH 5 CH 6 CH 7 CH 8 C H 8 7 6 5 4 3 2 1 Analog Output 00000001 0 : Enabled 1 : Disabled 🟥 WDT Error 🟥 Error 1) 2) 3)	1)	1 to 8	0001 to 0008
	2)	0	0000
	3)	-	-
	-	-	-

6.5.28 A1S68DAI module monitoring

Refer to the following for further information about the screen for A1S68DAI and the buffer memory address.

☞ 6.5.27 A1S68DAV module monitoring

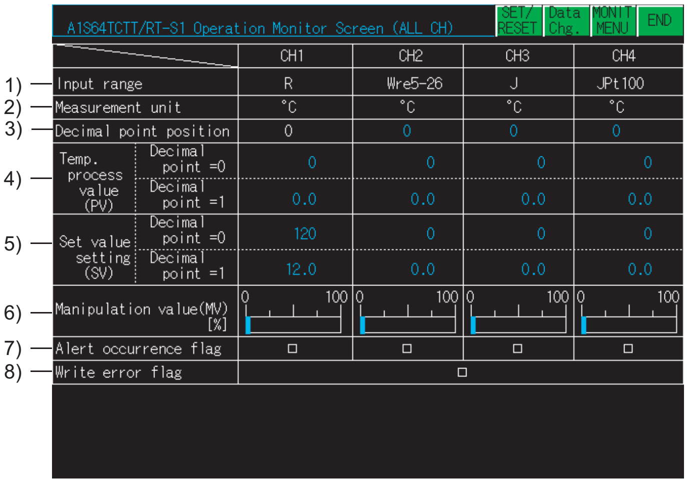
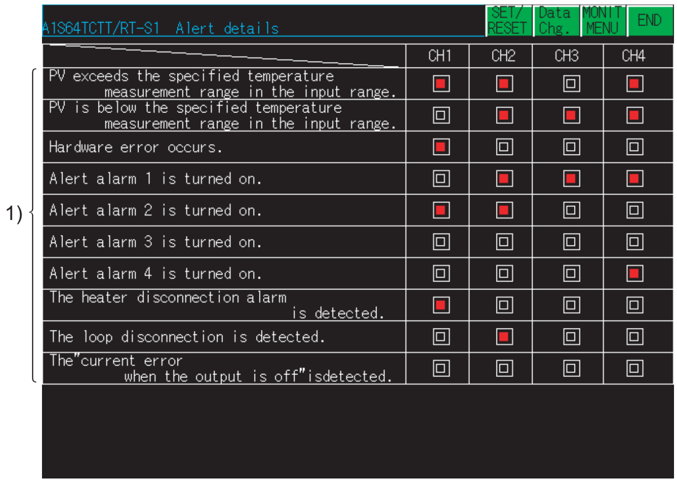
6.5.29 A1S68AD module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	0	0000
	2)	2	0002
	3)	2	0002
	4)	28	001C
	5)	10 to 17	000A to 0011
	6)	20 to 27	0014 to 001B
	7)	1	0001
	-	-	-
	1)	-	-
	-	-	-
	1)	20 to 27	0014 to 001B
	2)	-	-
	-	-	-

```
A1S68AD    Movement Monitor Screen
C    H            8 7 6 5 4 3 2 1
A/D Conversion    00000001    0 : Disabled      1 : Enabled
A/D Method        00000000    0 : Sampling      1 : Averaging
Averaging         00000000    0 : Number        1 : Time
A/D Conversion    00000000    0 : Incomplete    1 : Complete
                  Averaging  Time/Number    Input Status    [%]
CH   1                  1                        0.0
CH   2                  0                        0.2
CH   3                  0                        0.0
CH   4                  0                        0.0
CH   5                  0                        0.0
CH   6                  0                        0.0
CH   7                  0                        0.0
CH   8                  0                        0.0
                              Error Code           0
```

```
A1S68AD      Input/Output Monitor Screen
                X                                 Y
00 WDT Error     10                 00              10
01 Ready         11                 01              11
02 Error Detect  12                 02              12 Error Reset
03               13                 03              13
04               14                 04              14
05               15                 05              15
06               16                 06              16
07               17                 07              17
08               18                 08              18
09               19                 09              19
0A               1A                 0A              1A
0B               1B                 0B              1B
0C               1C                 0C              1C
0D               1D                 0D              1D
0E               1E                 0E              1E
0F               1F                 0F              1F
```

6.5.30 A1S64TCTT(BW)/A1S64TCRT(BW)-S1 monitoring

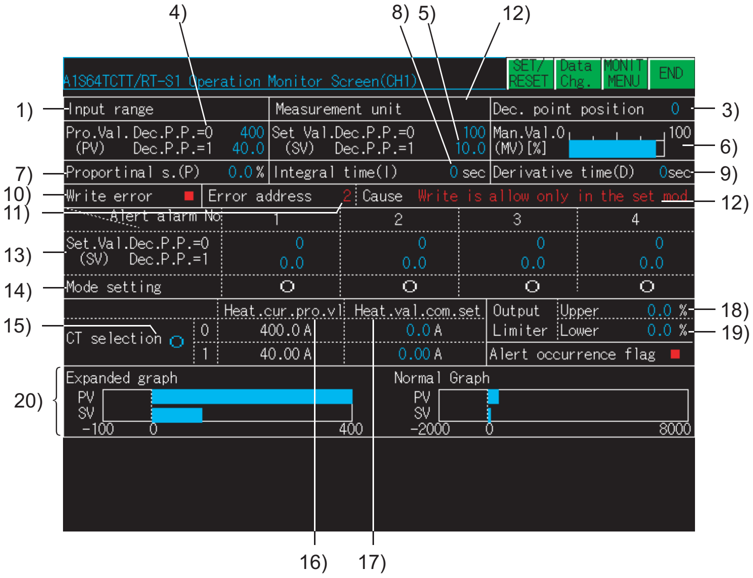
Screen example	No.	Buffer memory address							
		CH1		CH2		CH3		CH4	
		DEC	HEX	DEC	HEX	DEC	HEX	DEC	HEX
	1)	32	0020	64	0040	96	0060	128	0080
	2)	32	0020	64	0040	96	0060	128	0080
	3)	1	0001	2	0002	3	0003	4	0004
	4)	9	0009	10	000A	11	000B	12	000C
	5)	34	0022	66	0042	98	0062	130	0082
	6)	13	000D	14	000E	15	000F	16	0010
	7) 8)	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	1)	5	0005	6	0006	7	0007	8	0008
	-	-	-	-	-	-	-	-	-

A1S64TCTT/RT-S1 Operation Monitor Screen (ALL CH)

		CH1	CH2	CH3	CH4
1)	Input range	R	Wre5-26	J	JPt100
2)	Measurement unit	°C	°C	°C	°C
3)	Decimal point position	0	0	0	0
4)	Temp. process value (PV) — Decimal point =0	0	0	0	0
	Temp. process value (PV) — Decimal point =1	0.0	0.0	0.0	0.0
5)	Set value setting (SV) — Decimal point =0	120	0	0	0
	Set value setting (SV) — Decimal point =1	12.0	0.0	0.0	0.0
6)	Manipulation value(MV) [%]	0 100	0 100	0 100	0 100
7)	Alert occurrence flag	☐	☐	☐	☐
8)	Write error flag	☐			

A1S64TCTT/RT-S1 Alert details

		CH1	CH2	CH3	CH4
1)	PV exceeds the specified temperature measurement range in the input range.	🟥	🟥	☐	🟥
	PV is below the specified temperature measurement range in the input range.	☐	🟥	🟥	🟥
	Hardware error occurs.	🟥	☐	☐	☐
	Alert alarm 1 is turned on.	☐	🟥	🟥	🟥
	Alert alarm 2 is turned on.	🟥	🟥	☐	☐
	Alert alarm 3 is turned on.	☐	☐	☐	☐
	Alert alarm 4 is turned on.	☐	☐	☐	🟥
	The heater disconnection alarm is detected.	🟥	☐	☐	☐
	The loop disconnection is detected.	☐	🟥	☐	☐
	The"current error when the output is off"isdetected.	☐	☐	☐	☐

Screen example	No.	Buffer memory address							
		CH1		CH2		CH3		CH4	
		DEC	HEX	DEC	HEX	DEC	HEX	DEC	HEX
	1)	32	0020	64	0040	96	0060	128	0080
	2)	32	0020	64	0040	96	0060	128	0080
	3)	1	0001	2	0002	3	0003	4	0004
	4)	9	0009	10	000A	11	000B	12	000C
	5)	34	0022	66	0042	98	0062	130	0082
	6)	13	000D	14	000E	15	000F	16	0010
	7)	35	0023	67	0043	99	0063	131	0083
	8)	36	0024	68	0044	100	0064	132	0084
	9)	37	0025	69	0045	101	0065	133	0085
	10)	-	-	-	-	-	-	-	-
	11)	0	0000	0	0000	0	0000	0	0000
	12)	0	0000	0	0000	0	0000	0	0000
	13)	38 to 41	0026 to 0029	70 to 73	0046 to 0049	102 to 105	0066 to 0069	134 to 137	0086 to 0089
	14)	160 to 163	00A0 to 00A3	160 to 163	00A0 to 00A3	160 to 163	00A0 to 00A3	160 to 163	00A0 to 00A3
	15)	57	0039	89	0059	121	0079	153	0099
	16)	25	0019	26	001A	27	001B	28	001C
	17)	171	00AB	172	00AC	173	00AD	174	00AE
	18)	42	002A	74	004A	106	006A	138	008A
		43	002B	75	004B	107	006B	139	008B
	19)	-	-	-	-	-	-	-	-
	20)	9	0009	10	000A	11	000B	12	0000

A1S64TCTT/RT-S1 Operation Monitor Screen(CH1)

Input range

Measurement unit

Dec. point position 0

Pro.Val. Dec.P.P.=0 400

(PV) Dec.P.P.=1 40.0

Set Val.Dec.P.P.=0 100

(SV) Dec.P.P.=1 10.0

Man.Val.(MV)[%] 0 100

Proportinal s.(P) 0.0 %

Integral time(I) 0 sec

Derivative time(D) 0sec

Write error ■

Error address 2

Cause Write is allow only in the set mod

Alert alarm No.	1	2	3	4
Set.Val.Dec.P.P.=0 (SV)	0	0	0	0
Dec.P.P.=1	0.0	0.0	0.0	0.0
Mode setting	○	○	○	○

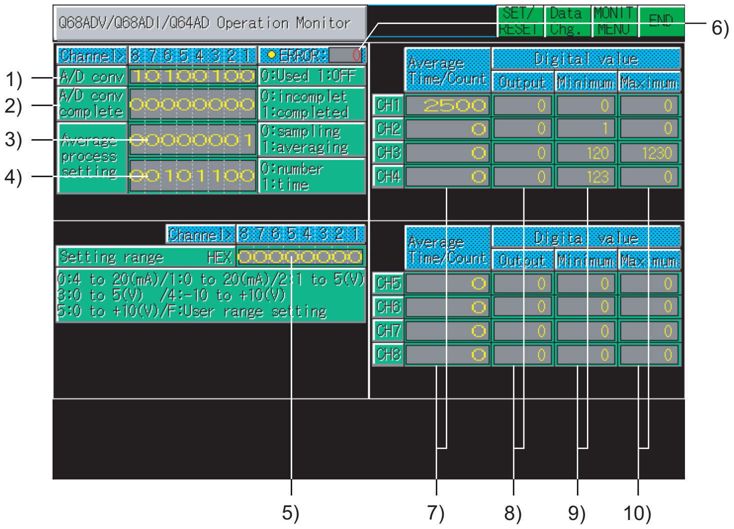
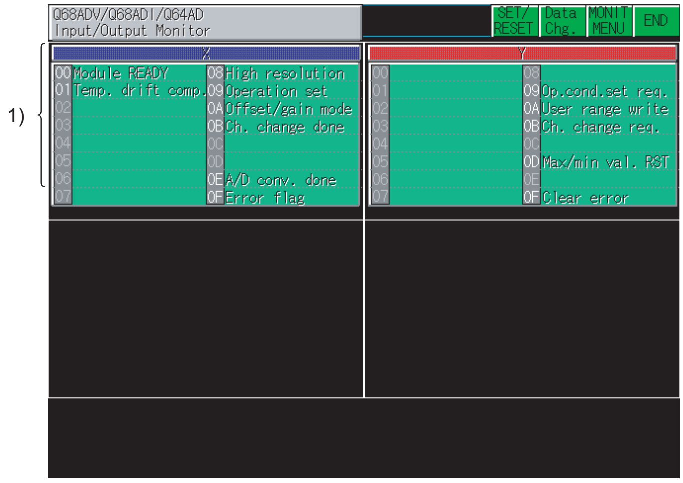
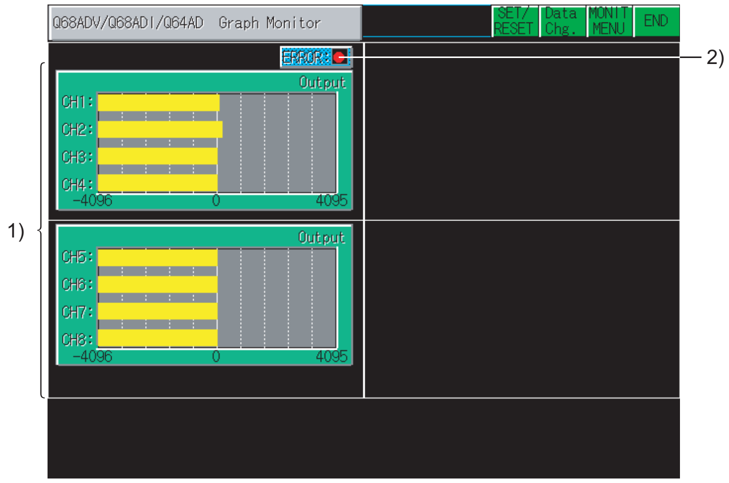
CT selection ○		Heat.cur.pro.vl	Heat.val.com.set
	0	400.0 A	0.0 A
	1	40.00 A	0.00 A

Output Limiter Upper 0.0 %

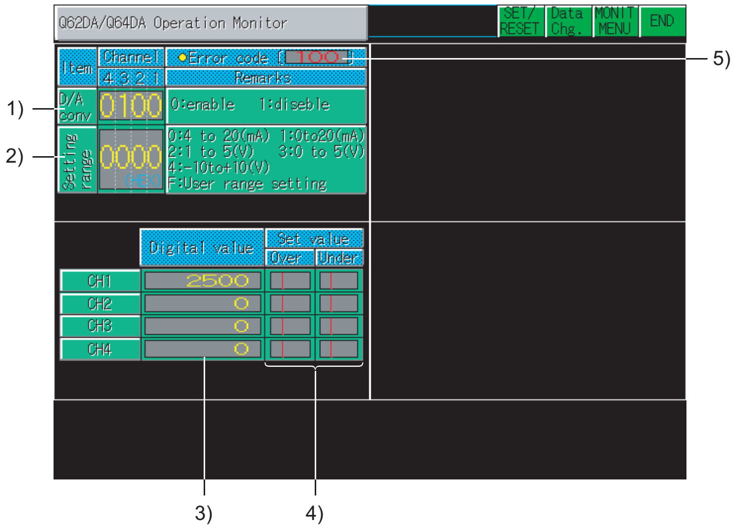
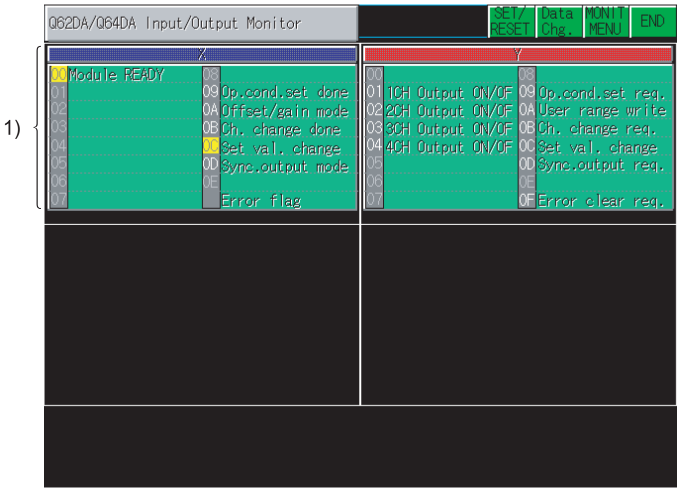
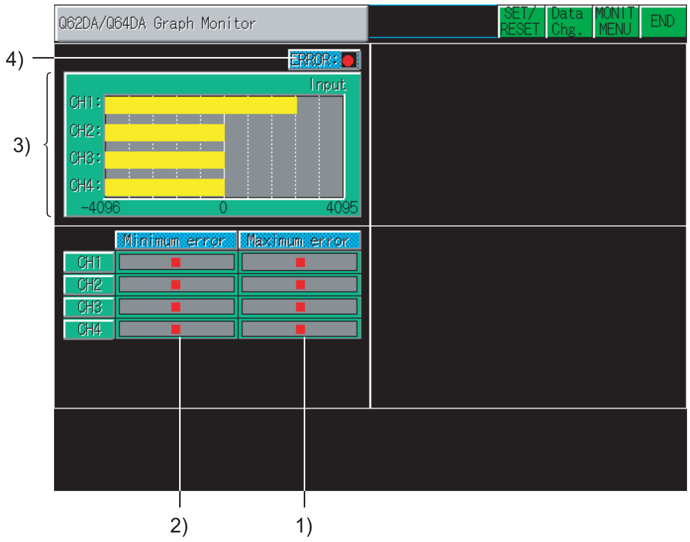
Output Limiter Lower 0.0 %

Alert occurrence flag ■

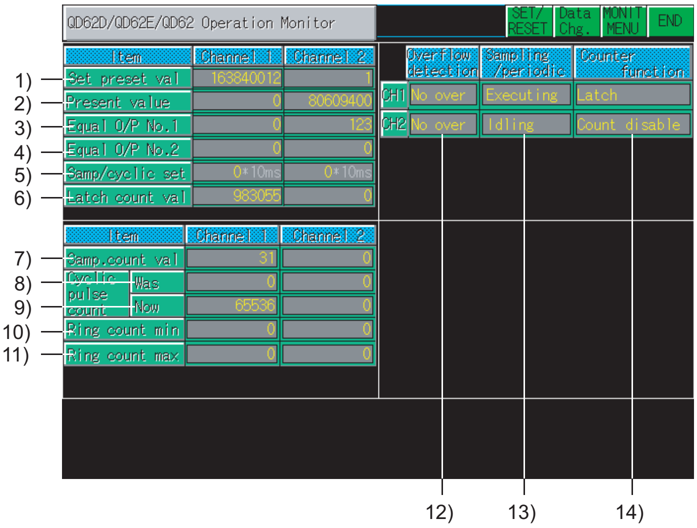
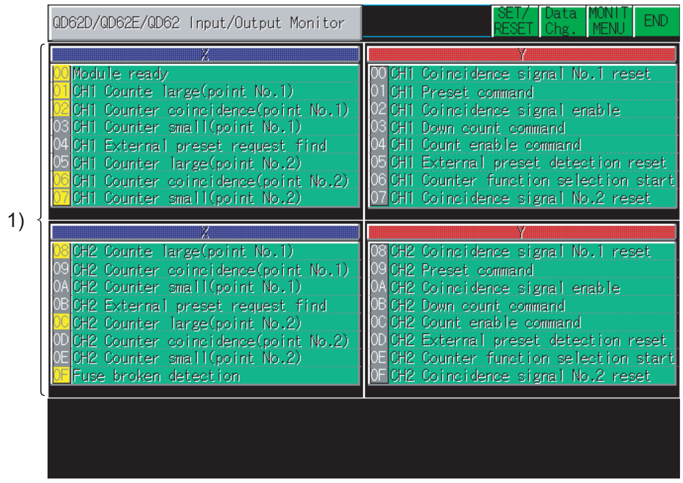
6.5.31 Q68ADV/Q68ADI/Q64AD module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
 Q68ADV/Q68ADI/Q64AD Operation Monitor SET/ RESET Data Chg. MONIT MENU END Channel▷ 8 7 6 5 4 3 2 1 ERROR: A/D conv 10100100 0:Used 1:OFF A/D conv complete 00000000 0:incomplet 1:completed Average process setting 00000001 0:sampling 1:averaging 00101100 0:number 1:time Average Time/Count Digital value Output Minimum Maximum CH1 2500 0 0 0 CH2 0 0 1 0 CH3 0 0 120 1230 CH4 0 0 123 0 Channel▷ 8 7 6 5 4 3 2 1 Setting range HEX 00000000 0:4 to 20(mA)/1:0 to 20(mA)/2:1 to 5(V) 3:0 to 5(V) /4:-10 to +10(V) 5:0 to +10(V)/F:User range setting CH5 0 0 0 0 CH6 0 0 0 0 CH7 0 0 0 0 CH8 0 0 0 0 1) 2) 3) 4) 5) 6) 7) 8) 9) 10)	1)	0	0000
	2)	10	000A
	3)	9	0009
	4)	9	0009
	5)	20, 21	0014, 0015
	6)	19	0013
	7)	1 to 8	0001 to 0008
	8)	11 to 18	000B to 0012
	9)	30, 32, 34, 36, 38, 40, 42, 44	001E, 0020, 0022, 0024, 0026, 0028, 002A, 002C
	10)	31, 33, 35, 37, 39, 41, 43, 45	001F, 0021, 0023, 0025, 0027, 0029, 002B, 002D
	-	-	-
 Q68ADV/Q68ADI/Q64AD Input/Output Monitor SET/ RESET Data Chg. MONIT MENU END X 00 Module READY 01 Temp. drift comp. 02 03 04 05 06 07 08 High resolution 09 Operation set 0A Offset/gain mode 0B Ch. change done 0C 0D 0E A/D conv. done 0F Error flag Y 00 01 02 03 04 05 06 07 08 09 Op.cond.set req. 0A User range write 0B Ch. change req. 0C 0D Max/min val. RST 0E 0F Clear error 1)	1)	-	-
	-	-	-
 Q68ADV/Q68ADI/Q64AD Graph Monitor SET/ RESET Data Chg. MONIT MENU END ERROR: Output CH1: CH2: CH3: CH4: -4096 0 4095 Output CH5: CH6: CH7: CH8: -4096 0 4095 1) 2)	1)	11 to 18	000B to 0012
	2)	-	-
	-	-	-

6.5.32 Q62DA/Q64DA module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
 Q62DA/Q64DA Operation Monitor SET/ RESET Data Chg. MONIT MENU END Item Channel 4 3 2 1 Error code 100 Remarks D/A conv 0100 0:enable 1:diseble Setting range 0000 0:4 to 20(mA) 1:0to20(mA) 2:1 to 5(V) 3:0 to 5(V) 4:-10to+10(V) F:User range setting Digital value Set value Over Under CH1 2500 CH2 0 CH3 0 CH4 0 1) 2) 3) 4) 5)	1) 2) 3) 4) 5) -	0 20 1 to 4 11 to 14 19 -	0000 0014 0001 to 0004 000B to 000E 0013 -
 Q62DA/Q64DA Input/Output Monitor SET/ RESET Data Chg. MONIT MENU END X 00 Module READY 01 02 03 04 05 06 07 08 09 Op.cond.set done 0A Offset/gain mode 0B Ch. change done 0C Set val. change 0D Sync.output mode 0E Error flag Y 00 01 1CH Output ON/OF 02 2CH Output ON/OF 03 3CH Output ON/OF 04 4CH Output ON/OF 05 06 07 08 09 Op.cond.set req. 0A User range write 0B Ch. change req. 0C Set val. change 0D Sync.output req. 0E 0F Error clear req. 1)	1) -	- -	- -
 Q62DA/Q64DA Graph Monitor SET/ RESET Data Chg. MONIT MENU END ERROR: Input CH1: CH2: CH3: CH4: -4096 0 4095 Minimum error Maximum error CH1 CH2 CH3 CH4 4) 3) 2) 1)	1) 2) 3) 4) -	11 to 14 11 to 14 1 to 4 - -	000B to 000E 000B to 000E 0001 to 0004 - -

6.5.33 QD62D/QD62E/QD62 module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	00 to 01 32 to 33	0000 to 0001 0020 to 0021
	2)	02 to 03 34 to 35	0002 to 0003 0022 to 0023
	3)	04 to 05 36 to 37	0004 to 0005 0024 to 0025
	4)	06 to 07 38 to 39	0006 to 0007 0026 to 0027
	5)	10, 42	000A, 002A
	6)	12 to 13 44 to 45	000C to 000D 002C to 002D
	7)	14 to 15 46 to 47	000E to 000F 002E to 002F
	8)	16 to 17 48 to 49	0010 to 0011 0030 to 0031
	9)	18 to 19 50 to 51	0012 to 0013 0032 to 0033
	10)	20 to 21 52 to 53	0014 to 0015 0034 to 0035
	11)	22 to 23 54 to 55	0016 to 0017 0036 to 0037
	12)	08, 40	0008, 0028
	13)	11, 43	000B, 002B
	14)	09, 41	0009, 0029
	1)	-	-
	-	-	-

QD62D/QD62E/QD62 Operation Monitor

Item	Channel 1	Channel 2
Set preset val	163840012	1
Present value	0	80609400
Equal O/P No.1	0	123
Equal O/P No.2	0	0
Samp/cyclic set	0*10ms	0*10ms
Latch count val	983055	0

	Overflow detection	Sampling /periodic	Counter function
CH1	No over	Executing	Latch
CH2	No over	Idling	Count disable

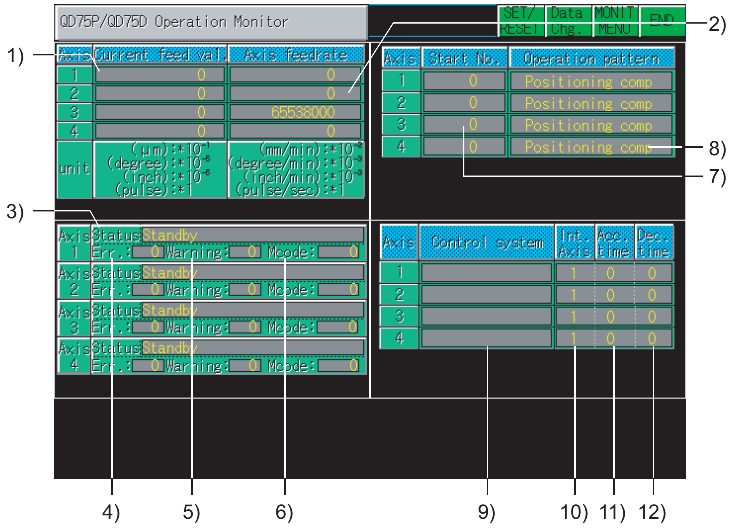
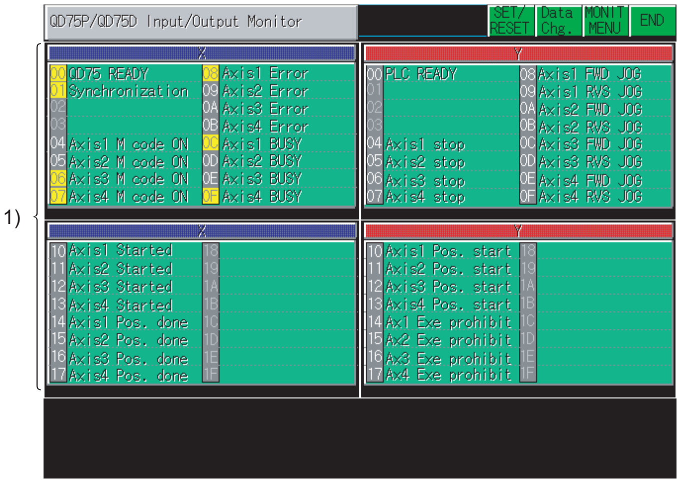
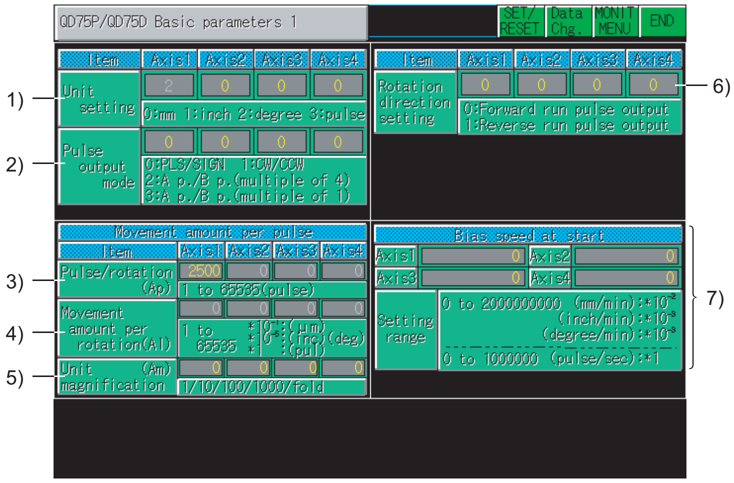
Item		Channel 1	Channel 2
Samp.count val		31	0
Cyclic pulse count	Was	0	0
	Now	65536	0
Ring count min		0	0
Ring count max		0	0

QD62D/QD62E/QD62 Input/Output Monitor

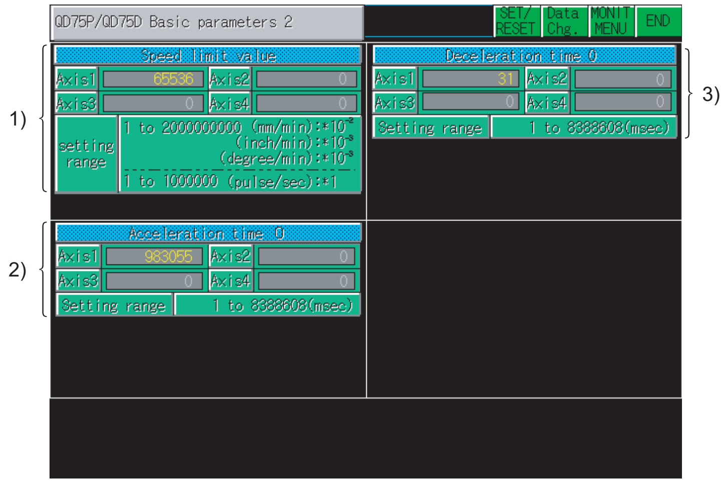
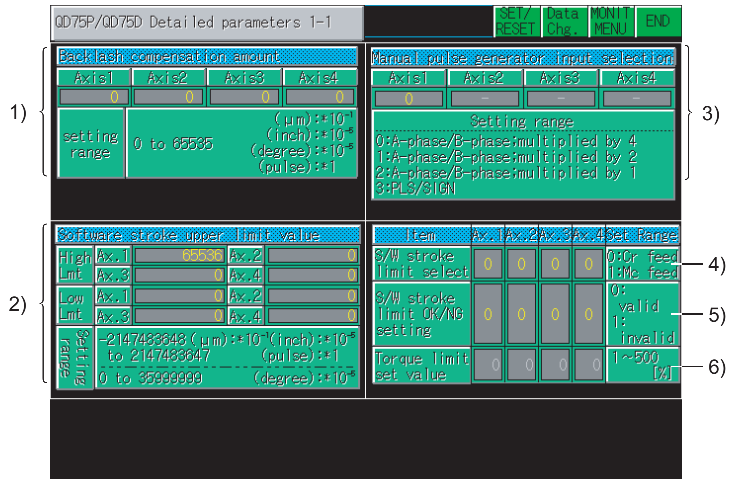
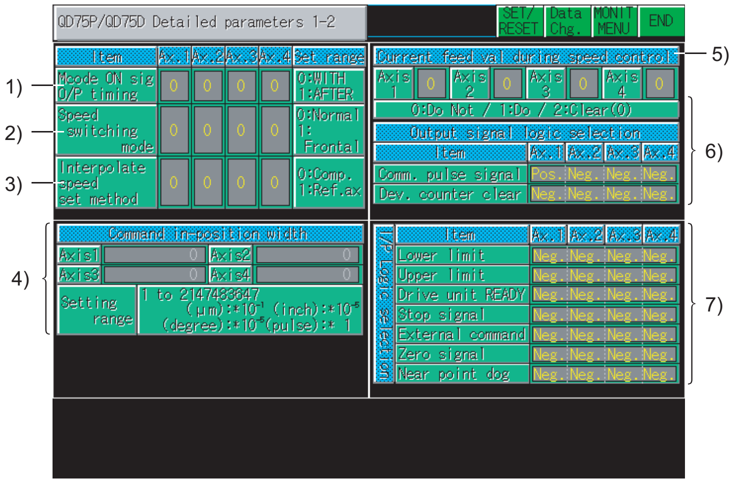
X		Y	
00	Module ready	00	CH1 Coincidence signal No.1 reset
01	CH1 Counte large(point No.1)	01	CH1 Preset command
02	CH1 Counter coincidence(point No.1)	02	CH1 Coincidence signal enable
03	CH1 Counter small(point No.1)	03	CH1 Down count command
04	CH1 External preset request find	04	CH1 Count enable command
05	CH1 Counter large(point No.2)	05	CH1 External preset detection reset
06	CH1 Counter coincidence(point No.2)	06	CH1 Counter function selection start
07	CH1 Counter small(point No.2)	07	CH1 Coincidence signal No.2 reset

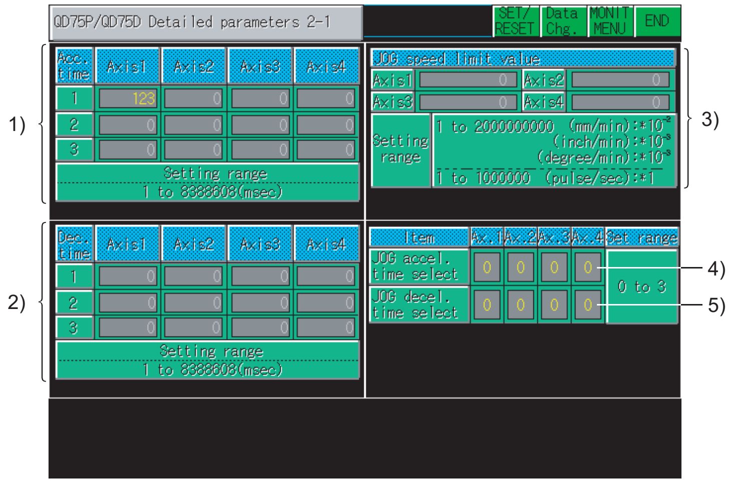
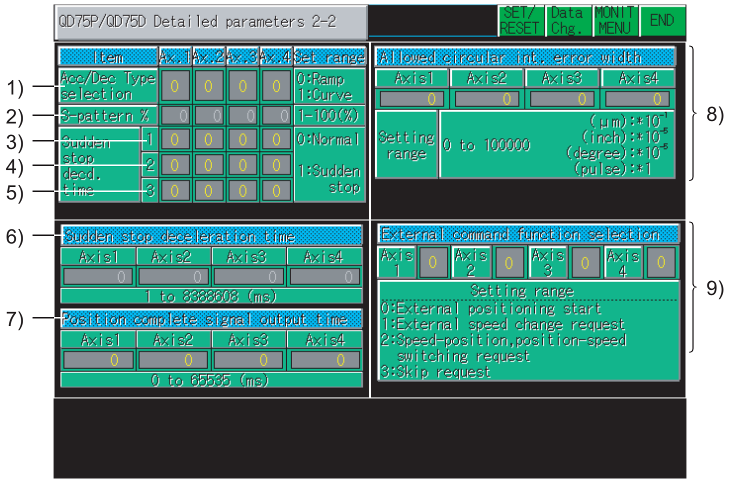
X		Y	
08	CH2 Counte large(point No.1)	08	CH2 Coincidence signal No.1 reset
09	CH2 Counter coincidence(point No.1)	09	CH2 Preset command
0A	CH2 Counter small(point No.1)	0A	CH2 Coincidence signal enable
0B	CH2 External preset request find	0B	CH2 Down count command
0C	CH2 Counter large(point No.2)	0C	CH2 Count enable command
0D	CH2 Counter coincidence(point No.2)	0D	CH2 External preset detection reset
0E	CH2 Counter small(point No.2)	0E	CH2 Counter function selection start
0F	Fuse broken detection	0F	CH2 Coincidence signal No.2 reset

6.5.34 QD75P/QD75D module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	800 to 801	0320 to 0321
		900 to 901	0384 to 0385
		1000 to 1001	03E8 to 03E9
		1100 to 1101	044C to 044D
	2)	812 to 813	032C to 032D
		912 to 913	0390 to 0391
		1012 to 1013	03F4 to 03F5
		1112 to 1113	0458 to 0459
	3)	809, 909, 1009, 1109	0329, 038D, 03F1, 0455
	4)	806, 906, 1006, 1106	0326, 038A, 03EE, 0452
	5)	807, 907, 1007, 1107	0327, 038B, 03EF, 0453
	6)	808, 908, 1008, 1108	0328, 038C, 03F0, 0454
	7)	829, 929, 1029, 1129	033D, 03A1, 0405, 0469
	8) to 12)	838, 938, 1038, 1138	0346, 03AA, 040E, 0472
	1)	-	-
	-	-	-
	1)	0, 150, 300, 450	0000, 0096, 012C, 01C2
	2)	4, 154, 304, 454	0004, 009A, 0130, 01C6
	3)	1, 151, 301, 451	0001, 0097, 012D, 01C3
	4)	2, 152, 302, 452	0002, 0098, 012E, 01C4
	5)	3, 153, 303, 453	0003, 0099, 012F, 01C5
	6)	5, 155, 305, 455	0005, 009B, 0131, 01C7
	7)	6, 156, 306, 456	0006, 009C, 0132, 01C8
	-	-	-

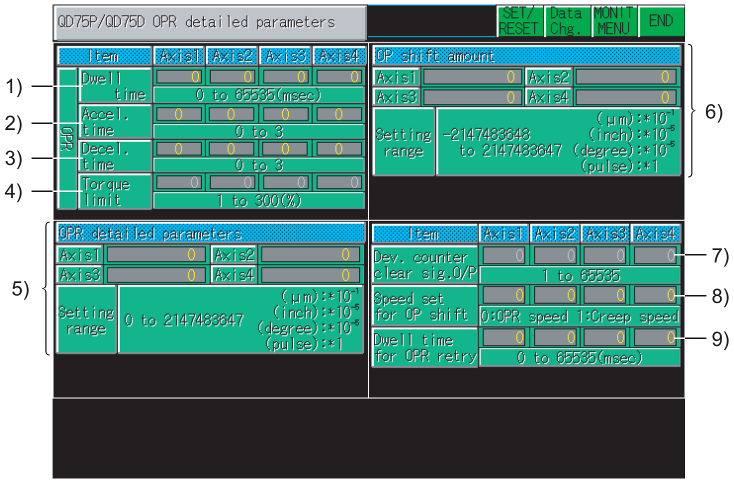
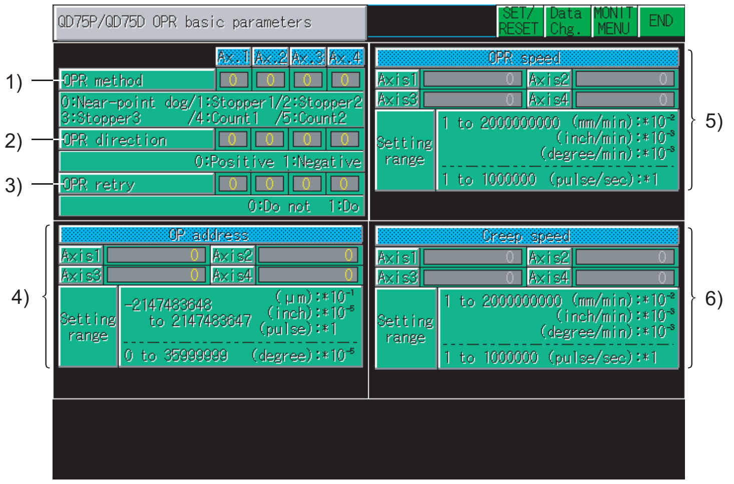
QD75P/QD75D Basic parameters 1
SET/ RESET
Data Chg.
MONIT MENU
END
Item
Axis1
Axis2
Axis3
Axis4
Unit setting
2 0 0 0
0:mm 1:inch 2:degree 3:pulse
Pulse output mode
0 0 0 0
0:PLS/SIGN 1:CW/CCW
2:A p./B p.(multiple of 4)
3:A p./B p.(multiple of 1)
Rotation direction setting
0 0 0 0
0:Forward run pulse output
1:Reverse run pulse output
Movement amount per pulse
Pulse/rotation (Ap)
2500 0 0 0
1 to 65535(pulse)
Movement amount per rotation(Al)
0 0 0 0
1 to 65535
*10⁻¹:(μm) *10⁻⁵:(inc)(deg) *1:(pul)
Unit magnification (Am)
0 0 0 0
1/10/100/1000/fold
Bias speed at start
Axis1 0
Axis2 0
Axis3 0
Axis4 0
Setting range
0 to 2000000000 (mm/min):*10⁻² (inch/min):*10⁻³ (degree/min):*10⁻³
0 to 1000000 (pulse/sec):*1
1)
2)
3)
4)
5)
6)
7)

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75P/QD75D Basic parameters 2 SET/ RESET · Data Chg. · MONIT MENU · END 1) Speed limit value: Axis1 65536, Axis2 0, Axis3 0, Axis4 0 setting range: 1 to 2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*10^{-3}; 1 to 1000000 (pulse/sec):*1 2) Acceleration time 0: Axis1 983055, Axis2 0, Axis3 0, Axis4 0 Setting range: 1 to 8388608(msec) 3) Deceleration time 0: Axis1 31, Axis2 0, Axis3 0, Axis4 0 Setting range: 1 to 8388608(msec)	1)	10 to 11	000A to 000B
		160 to 161	00A0 to 00A1
		310 to 311	0136 to 0137
		460 to 461	01CC to 01CD
	2)	12 to 13	000C to 000D
		162 to 163	00A2 to 00A3
		312 to 313	0138 to 0139
		462 to 463	01CE to 01CF
	3)	14 to 15	000E to 000F
		164 to 165	00A4 to 00A5
		314 to 315	013A to 013B
		464 to 465	01D0 to 01D1
	-	-	-
 QD75P/QD75D Detailed parameters 1-1 SET/ RESET · Data Chg. · MONIT MENU · END 1) Backlash compensation amount: Axis1 0, Axis2 0, Axis3 0, Axis4 0 setting range: 0 to 65535 (μm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5} (pulse):*1 2) Software stroke upper limit value: High Lmt Ax.1 65536, Ax.2 0, Ax.3 0, Ax.4 0; Low Lmt Ax.1 0, Ax.2 0, Ax.3 0, Ax.4 0 Setting range: -2147483648 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (pulse):*1; 0 to 35999999 (degree):*10^{-5} 3) Manual pulse generator input selection: Axis1 0, Axis2 -, Axis3 -, Axis4 - Setting range: 0:A-phase/B-phase;multiplied by 4, 1:A-phase/B-phase;multiplied by 2, 2:A-phase/B-phase;multiplied by 1, 3:PLS/SIGN Item / Ax.1 / Ax.2 / Ax.3 / Ax.4 / Set Range 4) S/W stroke limit select: 0 0 0 0, 0:Cr feed 1:Mc feed 5) S/W stroke limit OK/NG setting: 0 0 0 0, 0: valid 1: invalid 6) Torque limit set value: 0 0 0 0, 1~500 [%]	1)	17, 167, 317, 467	0011, 00A7, 013D, 01D3
	2)	18 to 19	0012 to 0013
		168 to 169	00A8 to 00A9
		318 to 319	013E to 013F
		468 to 469	01D4 to 01D5
		20 to 21	0014 to 0015
		170 to 171	00AA to 00AB
		320 to 321	0140 to 0141
		470 to 471	01D6 to 01D7
	3)	33	0021
	4)	22, 172, 322, 472	0016, 00AC, 0142, 01D8
	5)	23, 173, 323, 473	0017, 00AD, 0143, 01D9
	6)	26, 176, 326, 476	001A, 00B0, 0146, 01DC
 QD75P/QD75D Detailed parameters 1-2 SET/ RESET · Data Chg. · MONIT MENU · END Item / Ax.1 / Ax.2 / Ax.3 / Ax.4 / Set range 1) Mcode ON sig O/P timing: 0 0 0 0, 0:WITH 1:AFTER 2) Speed switching mode: 0 0 0 0, 0:Normal 1: Frontal 3) Interpolate speed set method: 0 0 0 0, 0:Comp. 1:Ref.ax 4) Command in-position width: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Setting range: 1 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5}(pulse):* 1 5) Current feed val during speed control: Axis 1 0, Axis 2 0, Axis 3 0, Axis 4 0 6) 0:Do Not / 1:Do / 2:Clear(0) Output signal logic selection: Item / Ax.1 / Ax.2 / Ax.3 / Ax.4 Comm. pulse signal: Pos. Neg. Neg. Neg. Dev. counter clear: Neg. Neg. Neg. Neg. 7) I/P Logic selection: Item / Ax.1 / Ax.2 / Ax.3 / Ax.4 Lower limit: Neg. Neg. Neg. Neg. Upper limit: Neg. Neg. Neg. Neg. Drive unit READY: Neg. Neg. Neg. Neg. Stop signal: Neg. Neg. Neg. Neg. External command: Neg. Neg. Neg. Neg. Zero signal: Neg. Neg. Neg. Neg. Near point dog: Neg. Neg. Neg. Neg.	1)	27, 177, 327, 477	001B, 00B1, 0147, 01DD
	2)	28, 178, 328, 478	001C, 00B2, 0148, 01DE
	3)	29, 179, 329, 479	001D, 00B3, 0149, 01DF
	4)	24 to 25	0018 to 0019
		174 to 175	00AE to 00AF
		324 to 325	0144 to 0145
		474 to 475	01DA to 01DB
	5)	30, 180, 330, 480	001E, 00B4, 014A, 01E0
	6)	32, 182, 332, 482	0020, 00B6, 014C, 01E2
	7)	31, 181, 331, 481	001F, 00B5, 014B, 01E1

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	36 to 41	0024 to 0029
		186 to 191	00BA to 00BF
		336 to 341	0150 to 0155
		486 to 491	01E6 to 01EB
	2)	42 to 47	002A to 002F
		192 to 197	00C0 to 00C5
		342 to 347	0156 to 015B
		492 to 497	01EC to 01F0
	3)	48 to 49	0030 to 0031
		198 to 199	00C6 to 00C7
		348 to 349	015C to 015D
		498 to 499	01F2 to 01F3
	4)	50, 200, 350, 500	0032, 00C8, 015E, 01F4
	5)	51, 201, 351, 501	0033, 00C9, 015F, 01F5
	1)	52, 202, 352, 502	0034, 00CA, 0160, 01F6
	2)	53, 203, 353, 503	0035, 00CB, 0161, 01F7
	3)	56, 206, 356, 506	0038, 00CE, 0164, 01FA
	4)	57, 207, 357, 507	0039, 00CF, 0165, 01FB
	5)	58, 208, 358, 508	003A, 00D0, 0166, 01FC
	6)	54, 204, 354, 504	0036, 00CC, 0162, 01F8
	7)	59, 209, 359, 509	003B, 00D1, 0167, 01FD
	8)	60 to 61	003C to 003D
		210 to 211	00D2 to 00D3
		360 to 361	0168 to 0169
		510 to 511	01FE to 01FF
	9)	62, 212, 362, 512	003E, 00D4, 016A, 0200

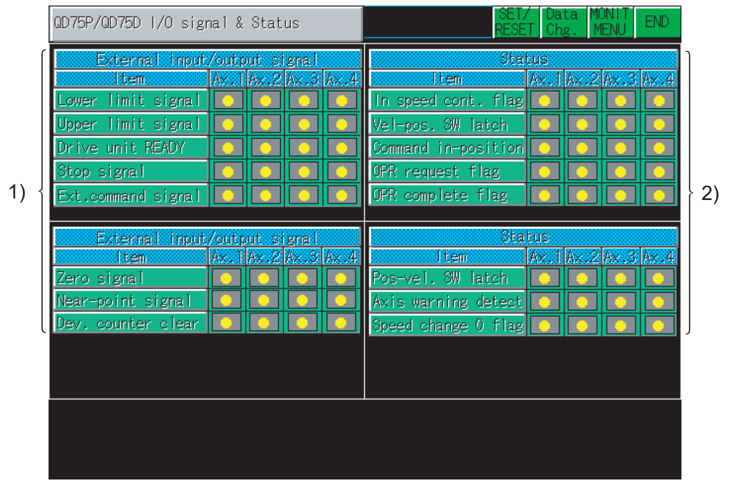
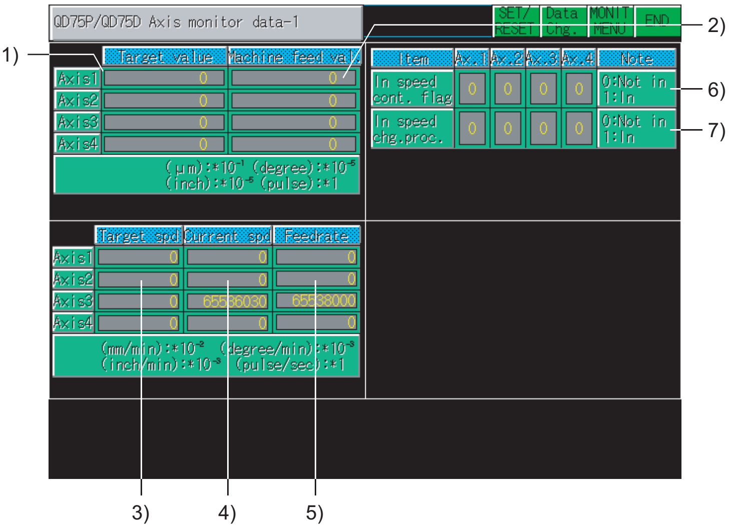
QD75P/QD75D Detailed parameters 2-1
SET/RESET
Data Chg.
MONIT MENU
END
Acc. time
Axis1
Axis2
Axis3
Axis4
Setting range 1 to 8388608(msec)
Dec. time
JOG speed limit value
Setting range
1 to 2000000000 (mm/min):*10^-2 (inch/min):*10^-3 (degree/min):*10^-3
1 to 1000000 (pulse/sec):*1
Item
Ax.1
Ax.2
Ax.3
Ax.4
Set range
JOG accel. time select
JOG decel. time select
0 to 3
1)
2)
3)
4)
5)

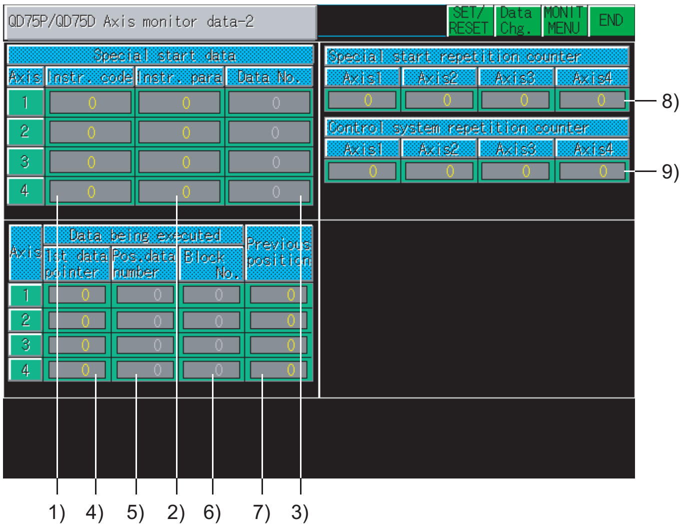
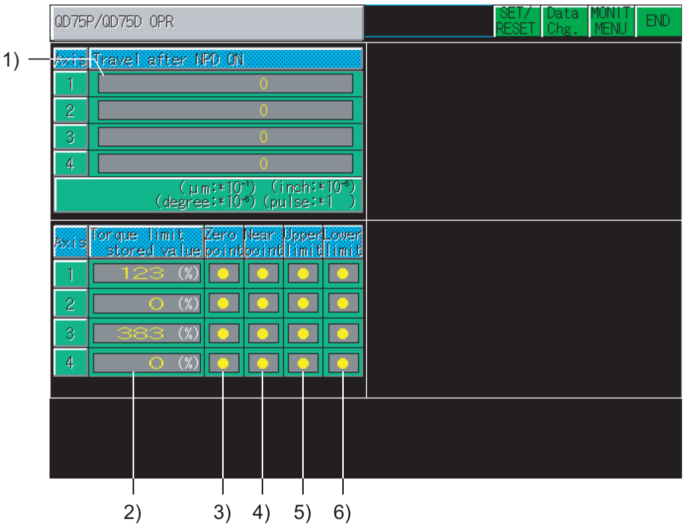
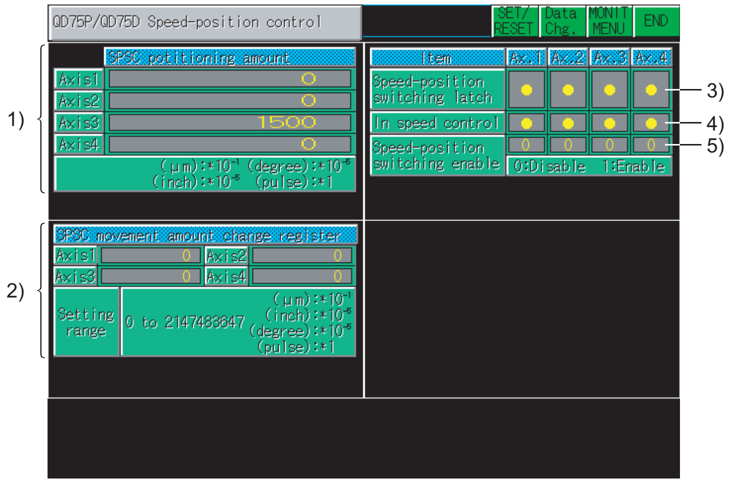
QD75P/QD75D Detailed parameters 2-2
SET/RESET
Data Chg.
MONIT MENU
END
Item
Ax.1
Ax.2
Ax.3
Ax.4
Set range
Acc/Dec Type selection
0:Ramp 1:Curve
S-pattern %
1-100(%)
Sudden stop decel. time
0:Normal
1:Sudden stop
Allowed circular int. error width
Setting range
0 to 100000
(μm):*10^-1 (inch):*10^-5 (degree):*10^-5 (pulse):*1
Sudden stop deceleration time
1 to 8388608 (ms)
Position complete signal output time
0 to 65535 (ms)
External command function selection
Setting range
0:External positioning start
1:External speed change request
2:Speed-position,position-speed switching request
3:Skip request
1)
2)
3)
4)
5)
6)
7)
8)
9)

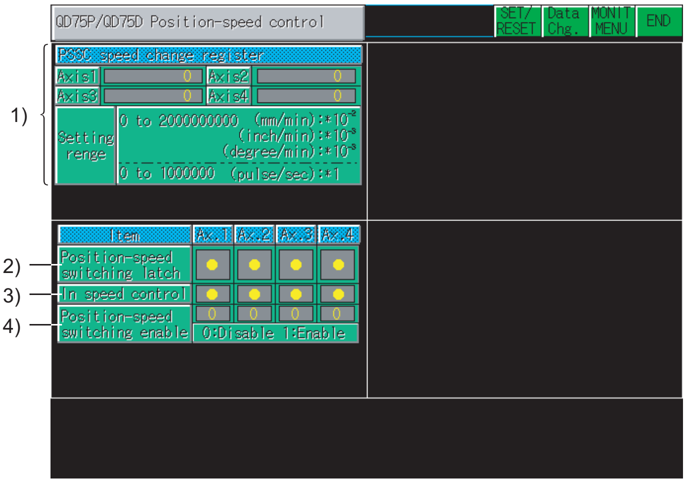
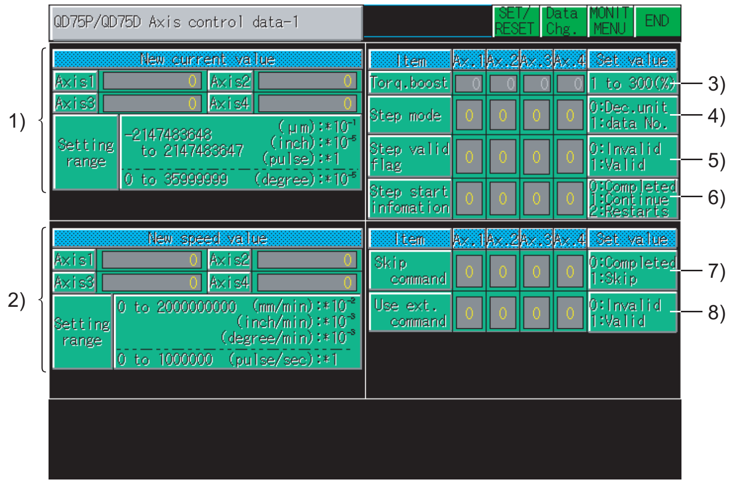
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	79, 229, 379, 529	004F, 00E5, 017B, 0211
	2)	82, 232, 382, 532	0052, 00E8, 017E, 0214
	3)	83, 233, 383, 533	0053, 00E9, 017F, 0215
	4)	86, 236, 386, 536	0056, 00EC, 0182, 0218
	5)	80 to 81	0050 to 0051
		230 to 231	00E6 to 00E7
		380 to 381	017C to 017D
		530 to 531	0212 to 0213
	6)	84 to 85	0054 to 0055
		234 to 235	00EA to 00EB
		384 to 385	0180 to 0181
		534 to 535	0216 to 0217
	7)	87, 237, 387, 537	0057, 00ED, 0183, 0219
	8)	88, 238, 388, 538	0058, 00EE, 0184, 021A
	9)	89, 239, 389, 539	0059, 00EF, 0185, 021B
	1)	70, 220, 370, 520	0046, 00DC, 0172, 0208
	2)	71, 221, 371, 521	0047, 00DD, 0173, 0209
	3)	78, 228, 378, 528	004E, 00E4, 017A, 0210
	4)	72 to 73	0048 to 0049
		222 to 223	00DE to 00DF
		372 to 373	0174 to 0175
		522 to 523	020A to 020B
	5)	74 to 75	004A to 004B
		224 to 225	00E0 to 00E1
		374 to 375	0176 to 0177
		524 to 525	020C to 020D
	6)	76 to 77	004C to 004D
		226 to 227	00E2 to 00E3
		376 to 377	0178 to 0179
		526 to 527	020E to 020F

QD75P/QD75D OPR detailed parameters
SET/ RESET
Data Chg.
MONIT MENU
END
Item
Axis1
Axis2
Axis3
Axis4
OPR
Dwell time
0 to 65535(msec)
Accel. time
0 to 3
Decel. time
0 to 3
Torque limit
1 to 300(%)
OP shift amount
Setting range
-2147483648 to 2147483647
(μm):*10-1 (inch):*10-5 (degree):*10-5 (pulse):*1
OPR detailed parameters
0 to 2147483647
(μm):*10-1 (inch):*10-5 (degree):*10-5 (pulse):*1
Dev. counter clear sig.O/P
1 to 65535
Speed set for OP shift
0:OPR speed 1:Creep speed
Dwell time for OPR retry
0 to 65535(msec)
1)
2)
3)
4)
5)
6)
7)
8)
9)

QD75P/QD75D OPR basic parameters
SET/ RESET
Data Chg.
MONIT MENU
END
Ax.1
Ax.2
Ax.3
Ax.4
OPR method
0:Near-point dog/1:Stopper1/2:Stopper2 3:Stopper3 /4:Count1 /5:Count2
OPR direction
0:Positive 1:Negative
OPR retry
0:Do not 1:Do
OPR speed
Axis1
Axis2
Axis3
Axis4
Setting range
1 to 2000000000 (mm/min):*10-2 (inch/min):*10-3 (degree/min):*10-3
1 to 1000000 (pulse/sec):*1
OP address
-2147483648 to 2147483647 (μm):*10-1 (inch):*10-5 (pulse):*1
0 to 35999999 (degree):*10-5
Creep speed
1 to 2000000000 (mm/min):*10-2 (inch/min):*10-3 (degree/min):*10-3
1 to 1000000 (pulse/sec):*1
1)
2)
3)
4)
5)
6)

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75P/QD75D I/O signal & Status SET/ RESET Data Chg. MONIT MENU END External input/output signal Item Ax.1 Ax.2 Ax.3 Ax.4 Lower limit signal Upper limit signal Drive unit READY Stop signal Ext.command signal Status In speed cont. flag Vel-pos. SW latch Command in-position OPR request flag OPR complete flag Zero signal Near-point signal Dev. counter clear Pos-vel. SW latch Axis warning detect Speed change 0 flag 1) 2)	1)	816, 916, 1016, 1116	0330, 0394, 03F8, 045C
	2)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	-	-	-
 QD75P/QD75D Axis monitor data-1 SET/ RESET Data Chg. MONIT MENU END Target value Machine feed val. Axis1 Axis2 Axis3 Axis4 0 (µm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Item Ax.1 Ax.2 Ax.3 Ax.4 Note In speed cont. flag In speed chg.proc. 0:Not in 1:In Target spd Current spd Feedrate 65536030 65538000 (mm/min):*10⁻² (degree/min):*10⁻³ (inch/min):*10⁻³ (pulse/sec):*1 1) 2) 3) 4) 5) 6) 7)	1)	818 to 819	0332 to 0333
		918 to 919	0396 to 0397
		1018 to 1019	03FA to 03FB
		1118 to 1119	045E to 045F
	2)	802 to 803	0322 to 0323
		902 to 903	0386 to 0387
		1002 to 1003	03EA to 03EB
		1102 to 1103	044E to 044F
	3)	820 to 821	0334 to 0335
		920 to 921	0398 to 0399
		1020 to 1021	03FC to 03FD
		1120 to 1121	0460 to 0461
	4)	810 to 811	032A to 032B
		910 to 911	038E to 038F
		1010 to 1011	03F2 to 03F3
		1110 to 1111	0456 to 0457
	5)	812 to 813	032C to 032D
		912 to 913	0390 to 0391
		1012 to 1013	03F4 to 03F5
		1112 to 1113	0458 to 0459
	6)	830, 930, 1030, 1130	033E, 03A2, 0406, 046A
	7)	831, 931, 1031, 1131	033F, 03A3, 0407, 046B

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75P/QD75D Axis monitor data-2 SET/ RESET · Data Chg. · MONIT MENU · END Special start data Axis · Instr. code · Instr. para · Data No. 1 · 0 · 0 · 0 2 · 0 · 0 · 0 3 · 0 · 0 · 0 4 · 0 · 0 · 0 Special start repetition counter Axis1 · Axis2 · Axis3 · Axis4 0 · 0 · 0 · 0 Control system repetition counter Axis1 · Axis2 · Axis3 · Axis4 0 · 0 · 0 · 0 Axis · Data being executed: 1st data pointer · Pos.data number · Block No. · Previous position 1 · 0 · 0 · 0 · 0 2 · 0 · 0 · 0 · 0 3 · 0 · 0 · 0 · 0 4 · 0 · 0 · 0 · 0 1) 4) 5) 2) 6) 7) 3) 8) 9)	1)	827, 927, 1027, 1127	033B, 039F, 0403, 0467
	2)	828, 928, 1028, 1128	033C, 03A0, 0404, 0468
	3)	829, 929, 1029, 1129	033D, 03A1, 0405, 0469
	4)	834, 934, 1034, 1134	0342, 03A6, 040A, 046E
	5)	835, 936, 1036, 1135	0343, 03A8, 040C, 046F
	6)	836, 936, 1036, 1136	0344, 03A8, 040C, 0470
	7)	837, 937, 1037, 1137	0345, 03A9, 040D, 0471
	8)	832, 932, 1032, 1132	0340, 03A4, 0408, 046C
	9)	833, 933, 1033, 1133	0341, 03A5, 0409, 046D
	-	-	-
 QD75P/QD75D OPR SET/ RESET · Data Chg. · MONIT MENU · END Axis · Travel after NPD ON 1 · 0 2 · 0 3 · 0 4 · 0 (μm:*10⁻¹) (inch:*10⁻⁵) (degree:*10⁻⁵) (pulse:*1) Axis · Torque limit stored value · Zero point · Near point · Upper limit · Lower limit 1 · 123 (%) · ● · ● · ● · ● 2 · 0 (%) · ● · ● · ● · ● 3 · 383 (%) · ● · ● · ● · ● 4 · 0 (%) · ● · ● · ● · ● 1) 2) 3) 4) 5) 6)	1)	824 to 825	0338 to 0339
		924 to 925	039C to 039D
		1024 to 1025	0400 to 0401
		1124 to 1125	0464 to 0465
	2)	826, 926, 1026, 1126	033A, 039E, 0402, 0466
	3) 4) 5) 6)	816, 916, 1016, 1116	0330, 0394, 03F8, 045C
	-	-	-
 QD75P/QD75D Speed-position control SET/ RESET · Data Chg. · MONIT MENU · END SPSC potitioning amount Axis1 · 0 Axis2 · 0 Axis3 · 1500 Axis4 · 0 (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Item · Ax.1 · Ax.2 · Ax.3 · Ax.4 Speed-position switching latch · ● · ● · ● · ● In speed control · ● · ● · ● · ● Speed-position switching enable · 0 · 0 · 0 · 0 0:Disable 1:Enable SPSC movement amount change register Axis1 · 0 · Axis2 · 0 Axis3 · 0 · Axis4 · 0 Setting range · 0 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 1) 2) 3) 4) 5)	1)	814 to 815	032E to 032F
		914 to 915	0392 to 0393
		1014 to 1015	03F6 to 03F7
		1114 to 1115	045A to 045B
	2)	1526 to 1527	05F6 to 05F7
		1626 to 1627	065A to 065B
		1726 to 1727	06BE to 06BF
		1826 to 1827	0722 to 0723
	3)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	4)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	5)	1528, 1628, 1728, 1828	05F8, 065C, 06C0, 0724
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1530 to 1531	05FA to 05FB
		1630 to 1631	065E to 065F
		1730 to 1731	06C2 to 06C3
		1830 to 1831	0726 to 0727
	2)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	3)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	4)	1532, 1632, 1732, 1832	05FC, 0660, 06C4, 0728
	-	-	-
	1)	1506 to 1507	05E2 to 05E3
		1606 to 1607	0646 to 0647
		1706 to 1707	06AA to 06AB
		1806 to 1807	070E to 070F
	2)	1514 to 1515	05EA to 05EB
		1614 to 1615	064E to 064F
		1714 to 1715	06B2 to 06B3
		1814 to 1815	0716 to 0717
	3)	1513, 1613, 1713, 1813	05E9, 064D, 06B1, 0715
	4)	1544, 1644, 1744, 1844	0608, 066C, 06D0, 0734
	5)	1545, 1645, 1745, 1845	0609, 066D, 06D1, 0735
	6)	1546, 1646, 1746, 1846	060A, 066E, 06D2, 0736
	7)	1547, 1647, 1747, 1847	060B, 066F, 06D3, 0737
	8)	1505, 1605, 1705, 1805	05E1, 0645, 06A9, 070D

QD75P/QD75D Position-speed control

PSSC speed change register

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting renge: 0 to 2000000000 (mm/min):$*10^{-2}$ (inch/min):$*10^{-3}$ (degree/min):$*10^{-3}$; 0 to 1000000 (pulse/sec):*1

Item	Ax.1	Ax.2	Ax.3	Ax.4
Position-speed switching latch	●	●	●	●
In speed control	●	●	●	●
Position-speed switching enable	0	0	0	0
	0:Disable 1:Enable			

QD75P/QD75D Axis control data-1

New current value

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: -2147483648 to 2147483647 (μm):$*10^{-1}$ (inch):$*10^{-5}$ (pulse):*1; 0 to 35999999 (degree):$*10^{-5}$

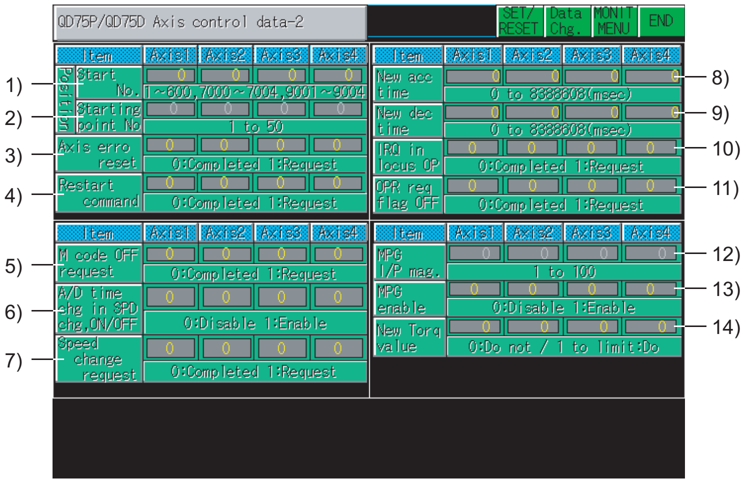
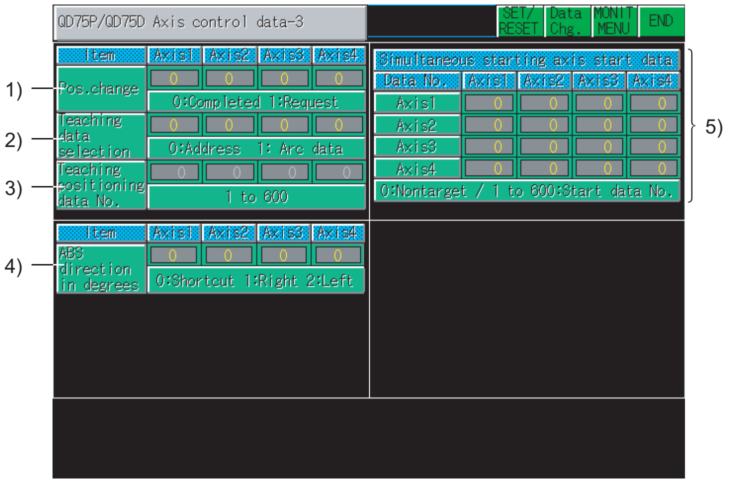
Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Torq.boost	0	0	0	0	1 to 300(%)
Step mode	0	0	0	0	0:Dec.unit 1:data No.
Step valid flag	0	0	0	0	0:Invalid 1:Valid
Step start infomation	0	0	0	0	0:Completed 1:Continue 2:Restarts

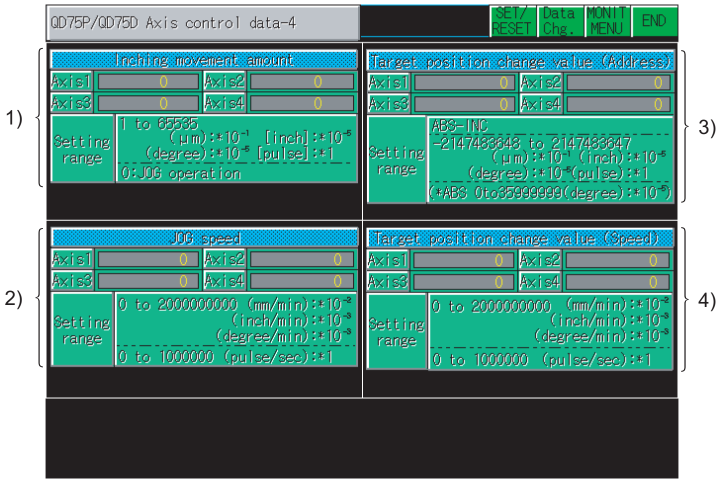
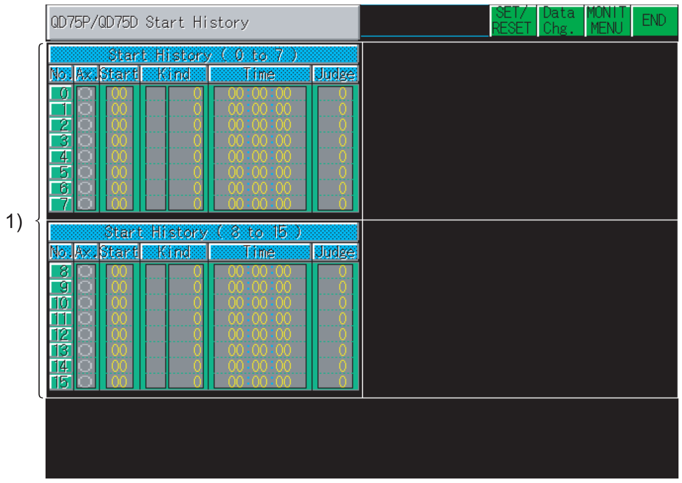
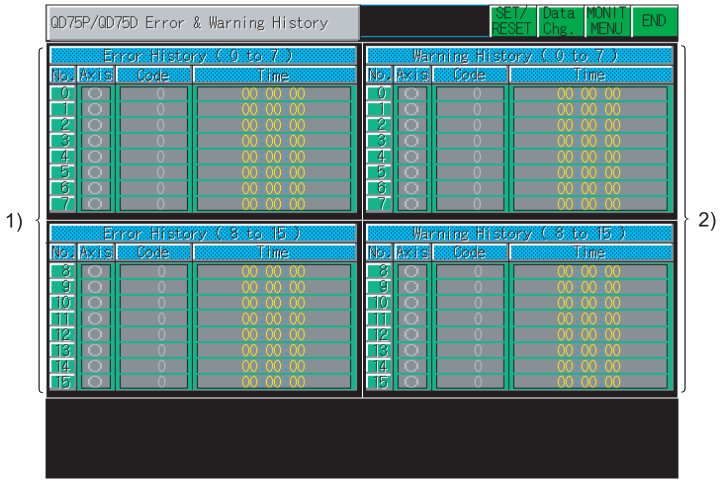
New speed value

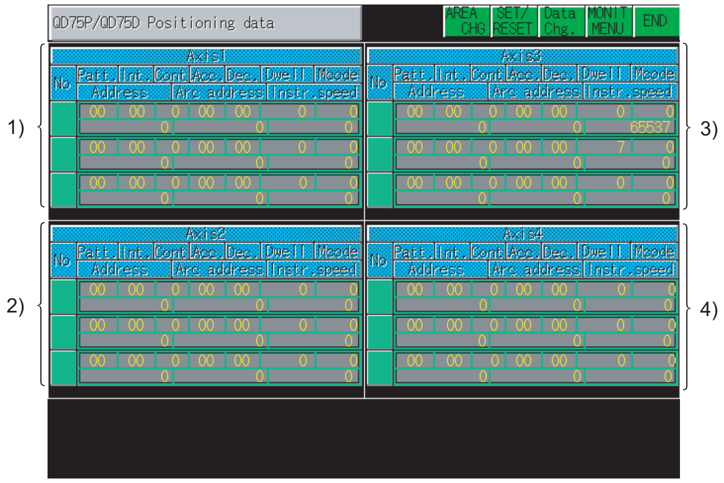
Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: 0 to 2000000000 (mm/min):$*10^{-2}$ (inch/min):$*10^{-3}$ (degree/min):$*10^{-3}$; 0 to 1000000 (pulse/sec):*1

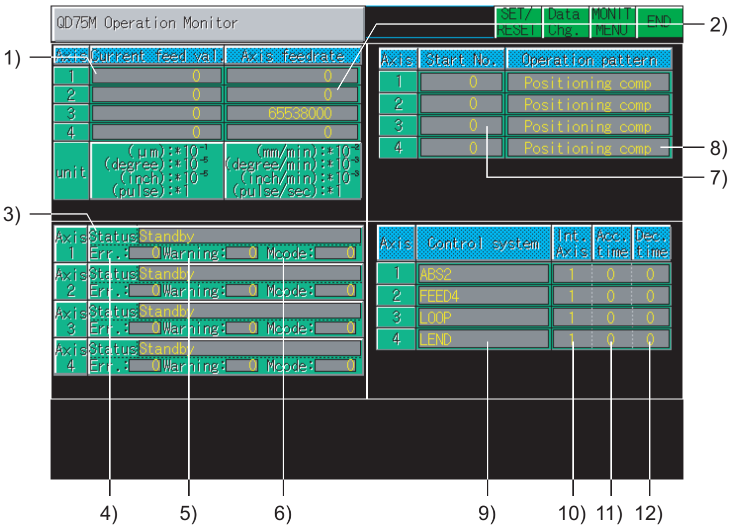
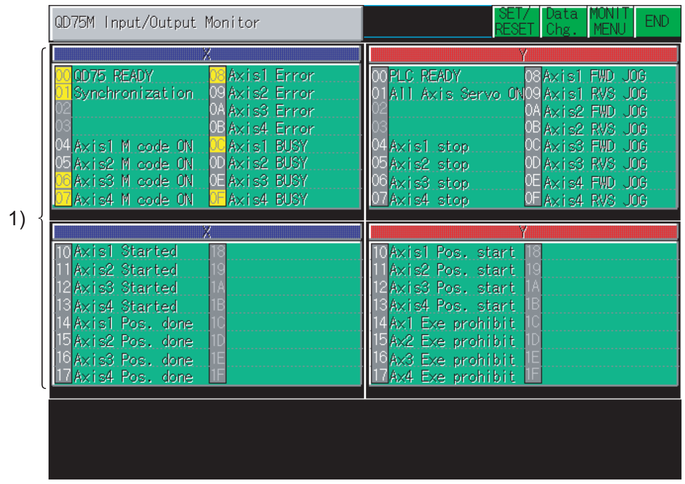
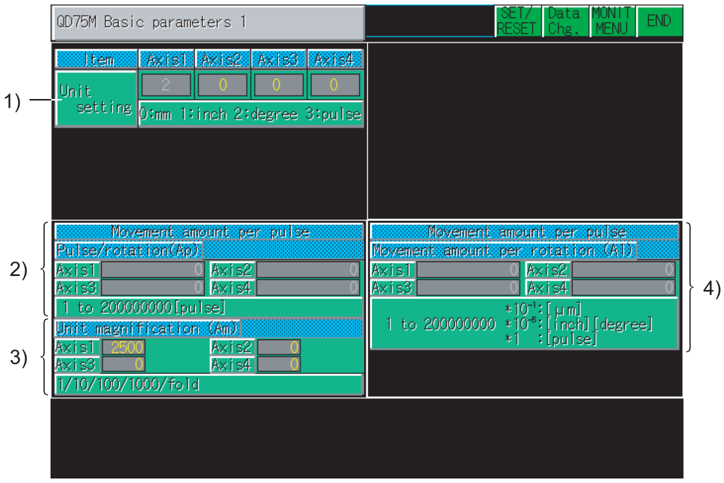
Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Skip command	0	0	0	0	0:Completed 1:Skip
Use ext. command	0	0	0	0	0:Invalid 1:Valid

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1500, 1600, 1700, 1800	05DC, 0640, 06A4, 0708
	2)	1501, 1601, 1701, 1801	05DD, 0641, 06A5, 0709
	3)	1502, 1602, 1702, 1802	05DE, 0642, 06A6, 070A
	4)	1503, 1603, 1703, 1803	05DF, 0643, 06A7, 070B
	5)	1504, 1604, 1704, 1804	05E0, 0644, 06A8, 070C
	6)	1512, 1612, 1712, 1812	05E8, 064C, 06B0, 0714
	7)	1516, 1616, 1716, 1816	05EC, 0650, 06B4, 0718
	8)	1508 to 1509	05E4 to 05E5
		1608 to 1609	0648 to 0649
		1708 to 1709	06AC to 06AD
		1808 to 1809	0710 to 0711
	9)	1510 to 1511	05E6 to 05E7
		1610 to 1611	064A to 064B
		1710 to 1711	06AE to 06AF
		1810 to 1811	0712 to 0713
	10)	1520, 1620, 1720, 1820	05F0, 0654, 06B8, 071C
	11)	1521, 1621, 1721, 1821	05F1, 0655, 06B9, 071D
	12)	1522 to 1523	05F2 to 05F3
		1622 to 1623	0656 to 0657
		1722 to 1723	06BA to 06BB
		1822 to 1823	071E to 071F
	13)	1524, 1624, 1724, 1824	05F4, 0658, 06BC, 0720
	14)	1525, 1625, 1725, 1825	05F5, 0659, 06BD, 0721
	1)	1538, 1638, 1738, 1838	0602, 0666, 06CA, 072E
	2)	1548, 1648, 1748, 1848	060C, 0670, 06D4, 0738
	3)	1549, 1649, 1749, 1849	060D, 0671, 06D5, 0739
	4)	1550, 1650, 1750, 1850	060E, 0672, 06D6, 073A
	5)	1540, 1640, 1740, 1840, 1541, 1641, 1741, 1841, 1542, 1642, 1742, 1842, 1543, 1643, 1743, 1843	0604, 0668, 06CC, 0730, 0605, 0669, 06CD, 0731, 0606, 066A, 06CE, 0732, 0607, 066B, 06CF, 0733
	-	-	-

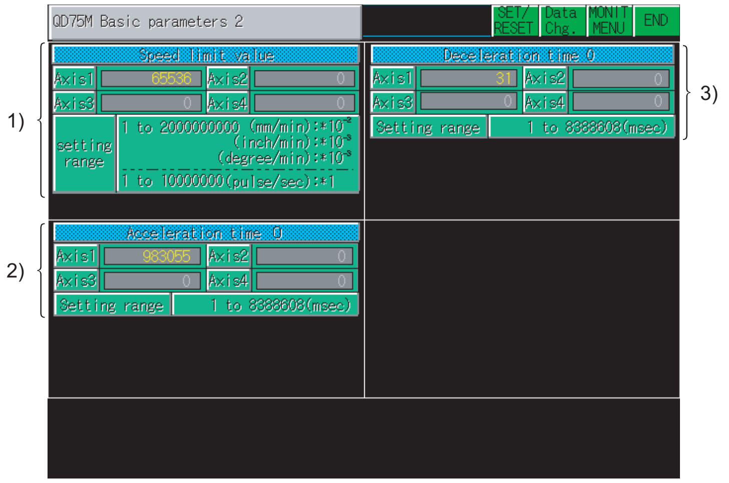
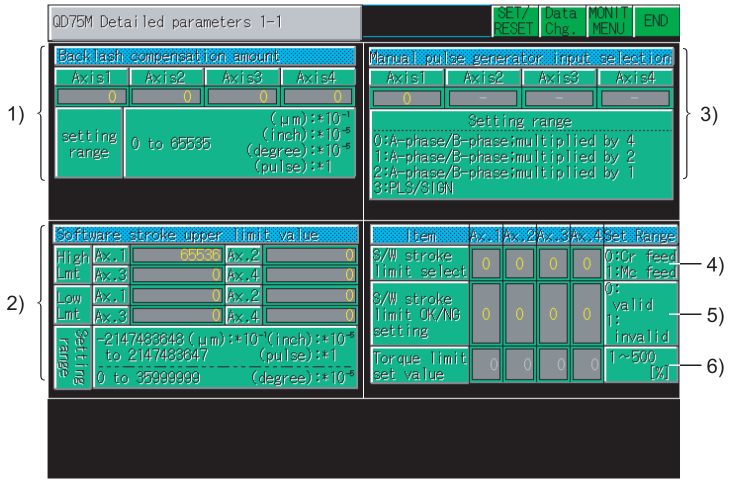
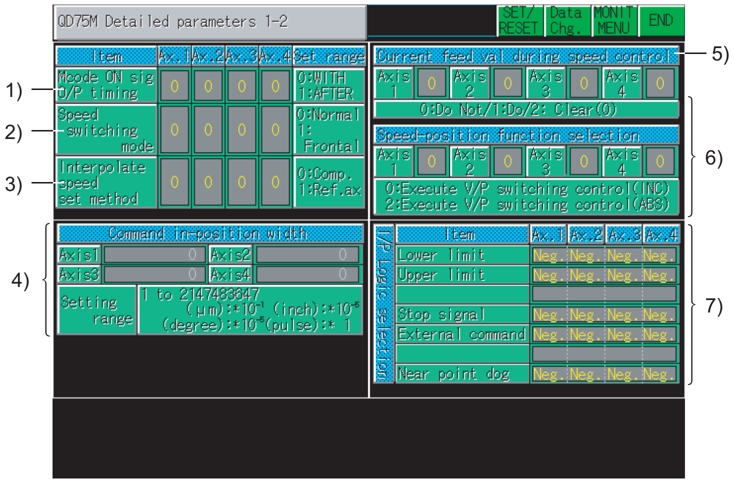
Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75P/QD75D Axis control data-4 SET/ RESET Data Chg. MONIT MENU END Inching movement amount Axis1 0 Axis2 0 Axis3 0 Axis4 0 Setting range 1 to 65535 (µm):*10^{-1} [inch]:*10^{-5} (degree):*10^{-5} [pulse]:*1 0:JOG operation Target position change value (Address) Axis1 0 Axis2 0 Axis3 0 Axis4 0 Setting range ABS-INC -2147483648 to 2147483647 (µm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5}(pulse):*1 (*ABS 0to35999999(degree):*10^{-5}) JOG speed Axis1 0 Axis2 0 Axis3 0 Axis4 0 Setting range 0 to 2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*10^{-3} 0 to 1000000 (pulse/sec):*1 Target position change value (Speed) Axis1 0 Axis2 0 Axis3 0 Axis4 0 Setting range 0 to 2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*10^{-3} 0 to 1000000 (pulse/sec):*1 1) 2) 3) 4)	1)	1517, 1617, 1717, 1817	05ED, 0651, 06B5, 0719
	2)	1518 to 1519	05EE to 05EF
		1618 to 1619	0652 to 0653
		1718 to 1719	06B6 to 06B7
		1818 to 1819	071A to 071B
	3)	1534 to 1535	05FE to 05FF
		1634 to 1635	0662 to 0663
		1734 to 1735	06C6 to 06C7
		1834 to 1835	072A to 072B
	4)	1536 to 1537	0600 to 0601
		1636 to 1637	0664 to 0665
		1736 to 1737	06C8 to 06C9
		1836 to 1837	072C to 072D
	-	-	-
 QD75P/QD75D Start History SET/ RESET Data Chg. MONIT MENU END Start History (0 to 7) No. Ax. Start Kind Time Judge Start History (8 to 15) No. Ax. Start Kind Time Judge 1)	1)	1212 to 1291	04BC to 050B
	-	-	-
 QD75P/QD75D Error & Warning History SET/ RESET Data Chg. MONIT MENU END Error History (0 to 7) No. Axis Code Time Warning History (0 to 7) No. Axis Code Time Error History (8 to 15) No. Axis Code Time Warning History (8 to 15) No. Axis Code Time 1) 2)	1)	1293 to 1356	050D to 054C
	2)	1358 to 1421	054E to 058D
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	2000 to 2002, 2004 to 2012, 2014 to 2022, 2024 to 2029	07D0 to 07D2, 07D4 to 07DC, 07DE to 07E6, 07E8 to 07ED,
	2)	8000 to 8002, 8004 to 8012, 8014 to 8022, 8024 to 8029	1F40 to 1F42, 1F44 to 1F4C, 1F4E to 1F56, 1F58 to 1F5D
	3)	14000 to 14002, 14004 to 14012, 14014 to 14022, 14024 to 14029	36B0 to 36B2, 36B4 to 36BC, 36BE to 36C6, 36C8 to 36CD
	4)	20000 to 20002, 20004 to 20012, 20014 to 20022, 20024 to 20029	4E20 to 4E22, 4E24 to 4E2C, 4E2E to 4E36, 4E38 to 4E3D
	-	-	-

6.5.35 QD75M module monitoring

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	800 to 801	0320 to 0321
		900 to 901	0384 to 0385
		1000 to 1001	03E8 to 03E9
		1100 to 1101	044C to 044D
	2)	812 to 813	032C to 032D
		912 to 913	0390 to 0391
		1012 to 1013	03F4 to 03F5
		1112 to 1113	0458 to 0459
	3)	809, 909, 1009, 1109	0329, 038D, 03F1, 0455
	4)	806, 906, 1006, 1106	0326, 038A, 03EE, 0452
	5)	807, 907, 1007, 1107	0327, 038B, 03EF, 0453
	6)	808, 908, 1008, 1108	0328, 038C, 03F0, 0454
	7)	829, 929, 1029, 1129	033D, 03A1, 0405, 0469
	8) to 12)	838, 938, 1038, 1138	0346, 03AA, 040E, 0472
	1)	-	-
	-	-	-
	1)	0, 150, 300, 450	0000, 0096, 012C, 01C2
	2)	2 to 3, 152 to 153, 302 to 303, 452 to 453	0002 to 0003, 0098 to 0099, 012E to 012F 01C4 to 01C7
	3)	1, 151, 301, 451	0001, 0097, 012D, 01C3
	4)	4 to 5, 154 to 155, 304 to 305, 454 to 455	0004 to 0005, 009A to 009B, 0130 to 0131, 01C6 to 01C7
	-	-	-

QD75M Operation Monitor
SET/ RESET
Data Chg.
MONIT MENU
END
Axis | Current feed val. | Axis feedrate
1 | 0 | 0
2 | 0 | 0
3 | 0 | 65538000
4 | 0 | 0
unit | (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 | (mm/min):*10⁻² (degree/min):*10⁻³ (inch/min):*10⁻³ (pulse/sec):*1
Axis | Start No. | Operation pattern
1 | 0 | Positioning comp
2 | 0 | Positioning comp
3 | 0 | Positioning comp
4 | 0 | Positioning comp
Axis 1 Status: Standby Err.: 0 Warning: 0 Mcode: 0
Axis 2 Status: Standby Err.: 0 Warning: 0 Mcode: 0
Axis 3 Status: Standby Err.: 0 Warning: 0 Mcode: 0
Axis 4 Status: Standby Err.: 0 Warning: 0 Mcode: 0
Axis | Control system | Int. Axis | Acc. time | Dec. time
1 | ABS2 | 1 | 0 | 0
2 | FEED4 | 1 | 0 | 0
3 | LOOP | 1 | 0 | 0
4 | LEND | 1 | 0 | 0
1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	10 to 11	000A to 000B
		160 to 161	00A0 to 00A1
		310 to 311	0136 to 0137
		460 to 461	01CC to 01CD
	2)	12 to 13	000C to 000D
		162 to 163	00A2 to 00A3
		312 to 313	0138 to 0139
		462 to 463	01CE to 01CF
	3)	14 to 15	000E to 000F
		164 to 165	00A4 to 00A5
		314 to 315	013A to 013B
		464 to 465	01D0 to 01D1
	-	-	-
	1)	17, 167, 317, 467	0011, 00A7, 013D, 01D3
	2)	18 to 19	0012 to 0013
		168 to 169	00A8 to 00A9
		318 to 319	013E to 013F
		468 to 469	01D4 to 01D5
		20 to 21	0014 to 0015
		170 to 171	00AA to 00AB
		320 to 321	0140 to 0141
		470 to 471	01D6 to 01D7
	3)	33	0021
	4)	22, 172, 322, 472	0016, 00AC, 0142, 01D8
	5)	23, 173, 323, 473	0017, 00AD, 0143, 01D9
	6)	26, 176, 326, 476	001A, 00B0, 0146, 01DC
	1)	27, 177, 327, 477	001B, 00B1, 0147, 01DD
	2)	28, 178, 328, 478	001C, 00B2, 0148, 01DE
	3)	29, 179, 329, 479	001D, 00B3, 0149, 01DF
	4)	24 to 25	0018 to 0019
		174 to 175	00AE to 00AF
		324 to 325	0144 to 0145
		474 to 475	01DA to 01DB
	5)	30, 180, 330, 480	001E, 00B4, 014A, 01E0
	6)	34, 184, 334, 484	0022, 00B8, 014E, 01E4
	7)	31, 181, 331, 481	001F, 00B5, 014B, 01E1
	-	-	-

QD75M Basic parameters 2

Speed limit value

Axis1 65536 Axis2 0
Axis3 0 Axis4 0
setting range: 1 to 2000000000 (mm/min):$*10^{-2}$ (inch/min):$*10^{-3}$ (degree/min):$*10^{-3}$
1 to 10000000(pulse/sec):*1

Deceleration time 0

Axis1 31 Axis2 0
Axis3 0 Axis4 0
Setting range: 1 to 8388608(msec)

Acceleration time 0

Axis1 983055 Axis2 0
Axis3 0 Axis4 0
Setting range: 1 to 8388608(msec)

QD75M Detailed parameters 1-1

Backlash compensation amount

Axis1	Axis2	Axis3	Axis4
0	0	0	0

setting range: 0 to 65535 (μm):$*10^{-1}$ (inch):$*10^{-5}$ (degree):$*10^{-5}$ (pulse):*1

Manual pulse generator input selection

Axis1	Axis2	Axis3	Axis4
0	-	-	-

Setting range
0:A-phase/B-phase;multiplied by 4
1:A-phase/B-phase;multiplied by 2
2:A-phase/B-phase;multiplied by 1
3:PLS/SIGN

Software stroke upper limit value

High Lmt: Ax.1 65536 Ax.2 0
Ax.3 0 Ax.4 0
Low Lmt: Ax.1 0 Ax.2 0
Ax.3 0 Ax.4 0
Setting range: -2147483648 (μm):$*10^{-1}$(inch):$*10^{-5}$ to 2147483647 (pulse):*1
0 to 35999999 (degree):$*10^{-5}$

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set Range
S/W stroke limit select	0	0	0	0	0:Cr feed 1:Mc feed
S/W stroke limit OK/NG setting	0	0	0	0	0: valid 1: invalid
Torque limit set value	0	0	0	0	1～500 [%]

QD75M Detailed parameters 1-2

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set range
Mcode ON sig O/P timing	0	0	0	0	0:WITH 1:AFTER
Speed switching mode	0	0	0	0	0:Normal 1: Frontal
Interpolate speed set method	0	0	0	0	0:Comp. 1:Ref.ax

Current feed val during speed control

Axis 1 0 Axis 2 0 Axis 3 0 Axis 4 0
0:Do Not/1:Do/2: Clear(0)

Speed-position function selection

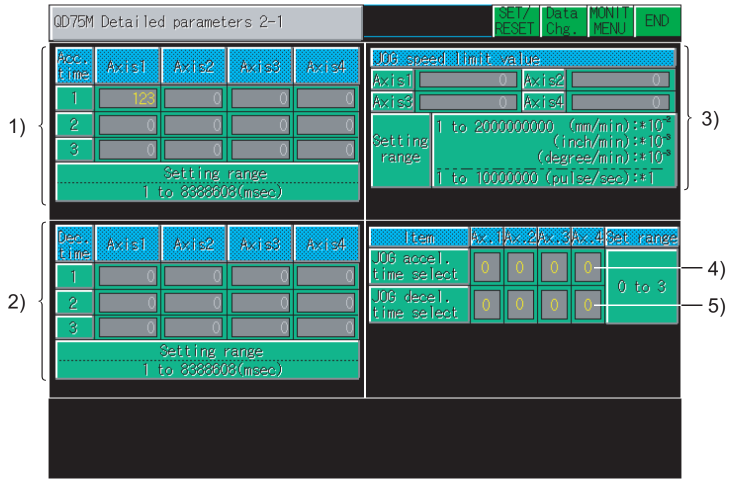
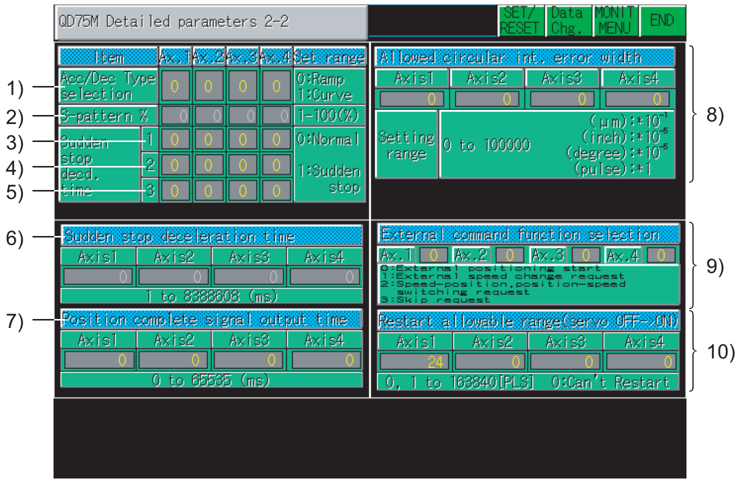
Axis 1 0 Axis 2 0 Axis 3 0 Axis 4 0
0:Execute V/P switching control(INC)
2:Execute V/P switching control(ABS)

Command in-position width

Axis1 0 Axis2 0
Axis3 0 Axis4 0
Setting range: 1 to 2147483647 (μm):$*10^{-1}$ (inch):$*10^{-5}$ (degree):$*10^{-5}$(pulse):* 1

I/P Logic selection

Item	Ax.1	Ax.2	Ax.3	Ax.4
Lower limit	Neg.	Neg.	Neg.	Neg.
Upper limit	Neg.	Neg.	Neg.	Neg.
Stop signal	Neg.	Neg.	Neg.	Neg.
External command	Neg.	Neg.	Neg.	Neg.
Near point dog	Neg.	Neg.	Neg.	Neg.

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	36 to 41	0024 to 0029
		186 to 191	00BA to 00BF
		336 to 341	0150 to 0155
		486 to 491	01E6 to 01EB
	2)	42 to 47	002A to 002F
		192 to 197	00C0 to 00C5
		342 to 347	0156 to 015B
		492 to 497	01EC to 01F0
	3)	48 to 49	0030 to 0031
		198 to 199	00C6 to 00C7
		348 to 349	015C to 015D
		498 to 499	01F2 to 01F3
	4)	50, 200, 350, 500	0032, 00C8, 015E, 01F4
	5)	51, 501, 351, 501	0033, 01F5, 015F, 01F5
	1)	52, 202, 352, 502	0034, 00CA, 0160, 01F6
	2)	53, 203, 353, 503	0035, 00CB, 0161, 01F7
	3)	56, 206, 356, 506	0038, 00CE, 0164, 01FA
	4)	57, 207, 357, 507	0039, 00CF, 0165, 01FB
	5)	58, 208, 358, 508	003A, 00D0, 0166, 01FC
	6)	54 to 55, 204 to 205, 354 to 355, 504 to 505	0036 to 0037, 00CC to 00CD, 0162 to 0163, 01F8 to 01F9
	7)	59, 209, 359, 509	003B, 00D1, 0167, 01FD
	8)	60 to 61	003C to 003D
		210 to 211	00D2 to 00D3
		360 to 361	0168 to 0169
		510 to 511	01FE to 01FF
	9)	62, 212, 362, 512	003E, 00D4, 016A, 0200
	10)	64 to 65, 214 to 215, 364 to 365, 514 to 515	0040 to 0041, 00D6 to 00D7, 016C to 016D, 0202 to 0203

QD75M Detailed parameters 2-1

Acc. time	Axis1	Axis2	Axis3	Axis4
1	123	0	0	0
2	0	0	0	0
3	0	0	0	0

Setting range
1 to 8388608(msec)

Dec. time	Axis1	Axis2	Axis3	Axis4
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0

Setting range
1 to 8388608(msec)

JOG speed limit value
Axis1 0
Axis2 0
Axis3 0
Axis4 0
Setting range
1 to 2000000000 (mm/min):$*10^{-2}$
(inch/min):$*10^{-3}$
(degree/min):$*10^{-3}$
1 to 10000000 (pulse/sec):*1

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set range
JOG accel. time select	0	0	0	0	0 to 3
JOG decel. time select	0	0	0	0	

QD75M Detailed parameters 2-2

Item		Ax.1	Ax.2	Ax.3	Ax.4	Set range
Acc/Dec Type selection		0	0	0	0	0:Ramp 1:Curve
S-pattern %		0	0	0	0	1-100(%)
Sudden stop decd. time	1	0	0	0	0	0:Normal 1:Sudden stop
	2	0	0	0	0	
	3	0	0	0	0	

Allowed circular int. error width

Axis1	Axis2	Axis3	Axis4
0	0	0	0

Setting range
0 to 100000 (μm):$*10^{-1}$
(inch):$*10^{-5}$
(degree):$*10^{-5}$
(pulse):*1

Sudden stop deceleration time

Axis1	Axis2	Axis3	Axis4
0	0	0	0

1 to 8388608 (ms)

External command function selection
Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0
0:External positioning start
1:External speed change request
2:Speed-position,position-speed switching request
3:Skip request

Position complete signal output time

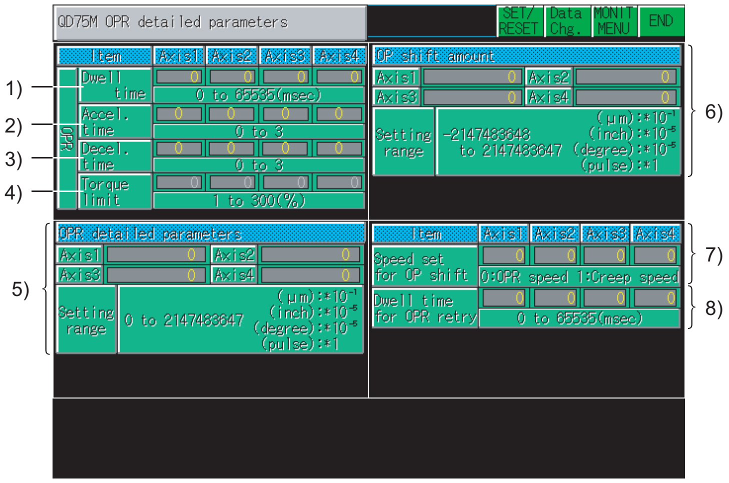
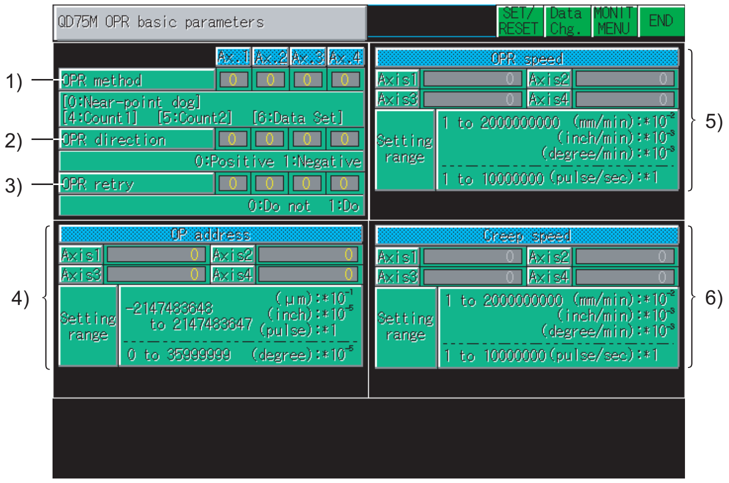
Axis1	Axis2	Axis3	Axis4
0	0	0	0

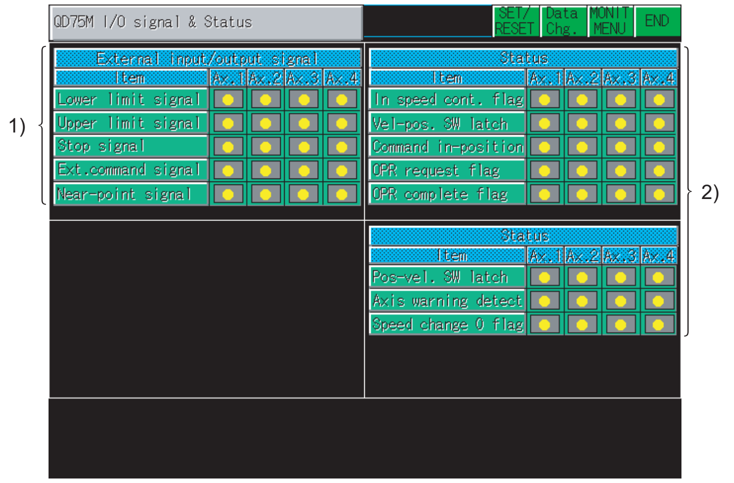
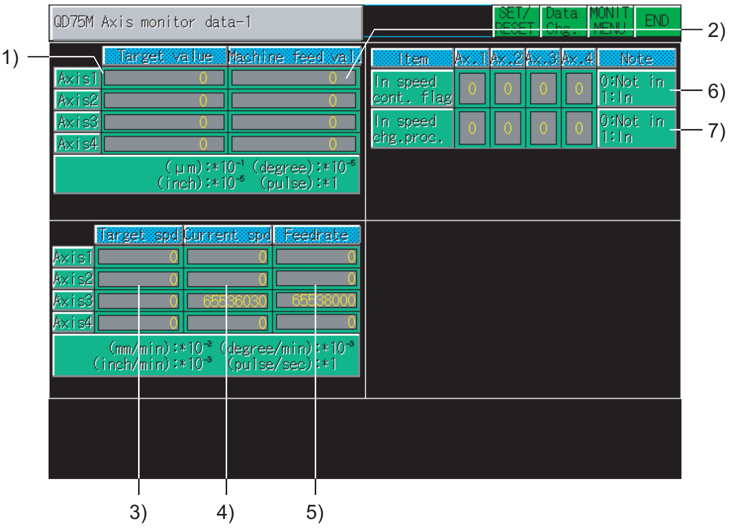
0 to 65535 (ms)

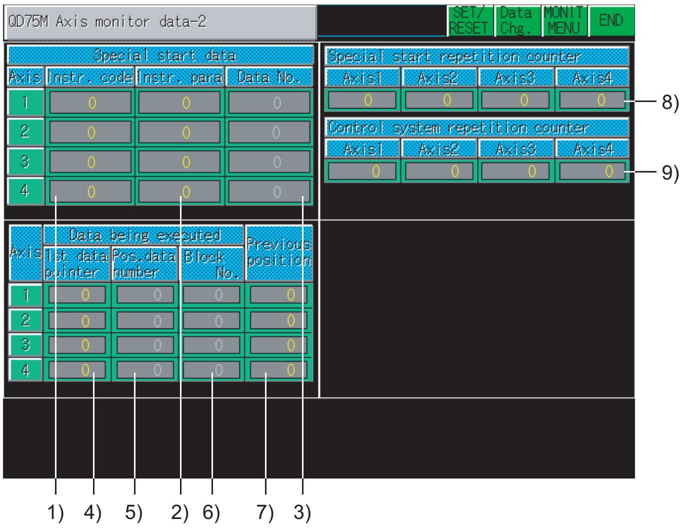
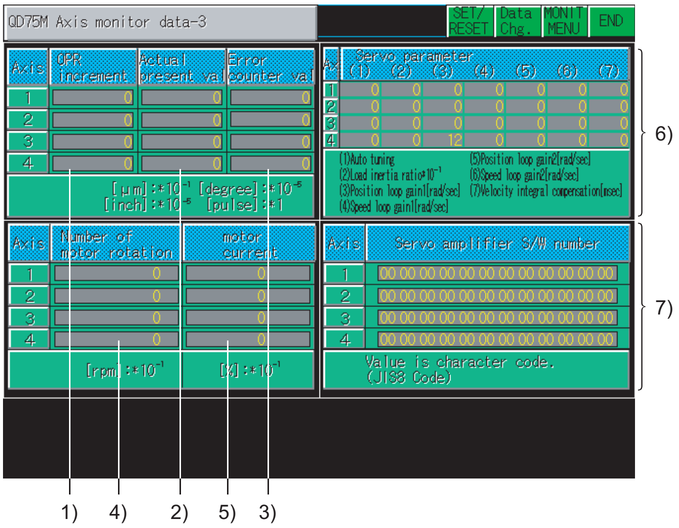
Restart allowable range(servo OFF->ON)

Axis1	Axis2	Axis3	Axis4
24	0	0	0

0, 1 to 163840[PLS] 0:Can't Restart

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	79, 229, 379, 529	004F, 00E5, 017B, 0211
	2)	82, 232, 382, 532	0052, 00E8, 017E, 0214
	3)	83, 233, 383, 533	0053, 00E9, 017F, 0215
	4)	86, 236, 386, 536	0056, 00EC, 0182, 0218
	5)	80 to 81	0050 to 0051
		230 to 231	00E6 to 00E7
		380 to 381	017C to 017D
		530 to 531	0212 to 0213
	6)	84 to 85	0054 to 0055
		234 to 235	00EA to 00EB
		384 to 385	0180 to 0181
		534 to 535	0216 to 0217
	7)	88, 238, 388, 538	0058, 00EE, 0184, 021A
	8)	89, 239, 389, 539	0059, 00EF, 0185, 021B
	1)	70, 220, 370, 520	0046, 00DC, 0172, 0208
	2)	71, 221, 371, 521	0047, 00DD, 0173, 0209
	3)	78, 228, 378, 528	004E, 00E4, 017A, 0210
	4)	72 to 73	0048 to 0049
		222 to 223	00DE to 00DF
		372 to 373	0174 to 0175
		522 to 523	020A to 020B
	5)	74 to 75	004A to 004B
		224 to 225	00E0 to 00E1
		374 to 375	0176 to 0177
		524 to 525	020C to 020D
	6)	76 to 77	004C to 004D
		226 to 227	00E2 to 00E3
		376 to 377	0178 to 0179
		526 to 527	020E to 020F

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75M I/O signal & Status SET/ RESET Data Chg. MONIT MENU END External input/output signal Item Ax.1 Ax.2 Ax.3 Ax.4 Lower limit signal Upper limit signal Stop signal Ext.command signal Near-point signal Status In speed cont. flag Vel-pos. SW latch Command in-position OPR request flag OPR complete flag Pos-vel. SW latch Axis warning detect Speed change 0 flag 1) 2)	1)	816, 916, 1016, 1116	0330, 0394, 03F8, 045C
	2)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	-	-	-
 QD75M Axis monitor data-1 SET/ RESET Data Chg. MONIT MENU END Target value Machine feed val. Axis1 Axis2 Axis3 Axis4 (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Item Ax.1 Ax.2 Ax.3 Ax.4 Note In speed cont. flag In speed chg.proc. 0:Not in 1:In Target spd Current spd Feedrate 65536030 65538000 (mm/min):*10⁻² (degree/min):*10⁻³ (inch/min):*10⁻³ (pulse/sec):*1 1) 2) 3) 4) 5) 6) 7)	1)	818 to 819	0332 to 0333
		918 to 919	0396 to 0397
		1018 to 1019	03FA to 03FB
		1118 to 1119	045E to 045F
	2)	802 to 803	0322 to 0323
		902 to 903	0386 to 0387
		1002 to 1003	03EA to 03EB
		1102 to 1103	044E to 044F
	3)	820 to 821	0334 to 0335
		920 to 921	0398 to 0399
		1020 to 1021	03FC to 03FD
		1120 to 1121	0460 to 0461
	4)	810 to 811	032A to 032B
		910 to 911	038E to 038F
		1010 to 1011	03F2 to 03F3
		1110 to 1111	0456 to 0457
	5)	812 to 813	032C to 032D
		912 to 913	0390 to 0391
		1012 to 1013	03F4 to 03F5
		1112 to 1113	0458 to 0459
	6)	830, 930, 1030, 1130	033E, 03A2, 0406, 046A
	7)	831, 931, 1031, 1131	033F, 03A3, 0407, 046B

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	827, 927, 1027, 1127	033B, 039F, 0403, 0467
	2)	828, 928, 1028, 1128	033C, 03A0, 0404, 0468
	3)	829, 929, 1029, 1129	033D, 03A1, 0405, 0469
	4)	834, 934, 1034, 1134	0342, 03A6, 040A, 046E
	5)	835, 935, 1035, 1135	0343, 03A8, 040B, 046F
	6)	836, 936, 1036, 1136	0344, 03A8, 040C, 0470
	7)	837, 937, 1037, 1137	0345, 03A9, 040D, 0471
	8)	832, 932, 1032, 1132	0340, 03A4, 0408, 046C
	9)	833, 933, 1033, 1133	0341, 03A5, 0409, 046D
	-	-	-
	1)	848 to 849, 948 to 949, 1048 to 1049, 1148 to 1149	0350 to 0351, 03B4 to 03B5, 0418 to 0419, 047C to 047D
	2)	850 to 851, 950 to 951, 1050 to 1051, 1150 to 1151	0352 to 0353, 03B6 to 03B7, 041A to 041B, 047E to 047F
	3)	852 to 853, 952 to 953, 1052 to 1053, 1152 to 1153	0354 to 0355, 03B8 to 03B9, 041C to 041D, 0480 to 0481
	4)	854 to 855, 954 to 955, 1054 to 1055, 1154 to 1155	0356 to 0357, 03BA to 03BB, 041E to 041F, 0482 to 0483
	5)	856, 956, 1056, 1156	0358, 03BC, 0420, 0484
	6)	857, 957, 1057, 1157	0359, 03BD, 0421, 0485
		858, 958, 1058, 1158	035A, 03BE, 0422, 0486
		859, 959, 1059, 1159	035B, 03BF, 0423, 0487
		860, 960, 1060, 1160	035C, 03C0, 0424, 0488
		861, 961, 1061, 1161	035D, 03C1, 0425, 0489
		862, 962, 1062, 1162	035E, 03C2, 0426, 048A
		863, 963, 1063, 1163	035F, 03C2, 0427, 048B
	7)	864 to 869, 964 to 969, 1064 to 1069, 1164 to 1169	0360 to 0365, 03C4 to 03C9, 0428 to 042D, 048C to 0491

QD75M Axis monitor data-2

Special start data

Axis	Instr. code	Instr. para	Data No.
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0

Special start repetition counter

Axis1	Axis2	Axis3	Axis4
0	0	0	0

Control system repetition counter

Axis1	Axis2	Axis3	Axis4
0	0	0	0

Axis	Data being executed			Previous position
	1st data pointer	Pos.data number	Block No.	
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0

QD75M Axis monitor data-3

Axis	OPR increment	Actual present val	Error counter val
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0

[μm]:*10^{-1} [degree]:*10^{-5}
[inch]:*10^{-5} [pulse]:*1

Ax	Servo parameter (1)	(2)	(3)	(4)	(5)	(6)	(7)
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	12	0	0	0	0

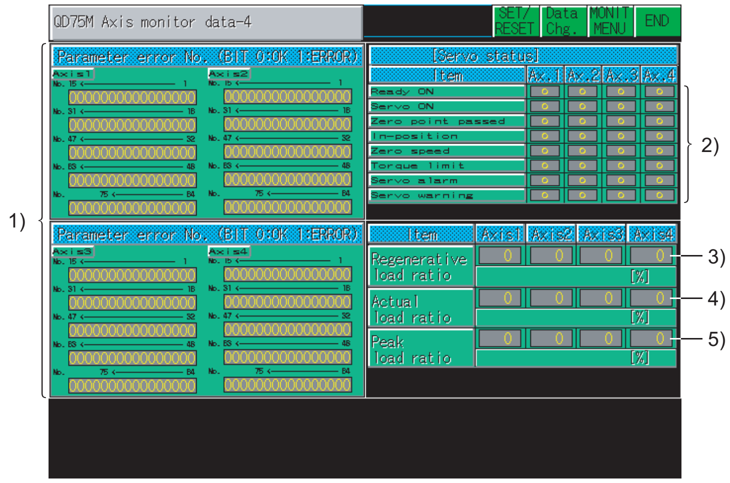
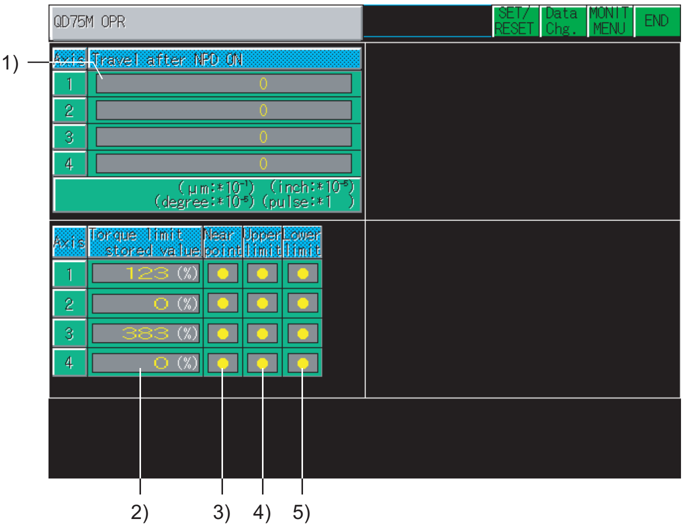
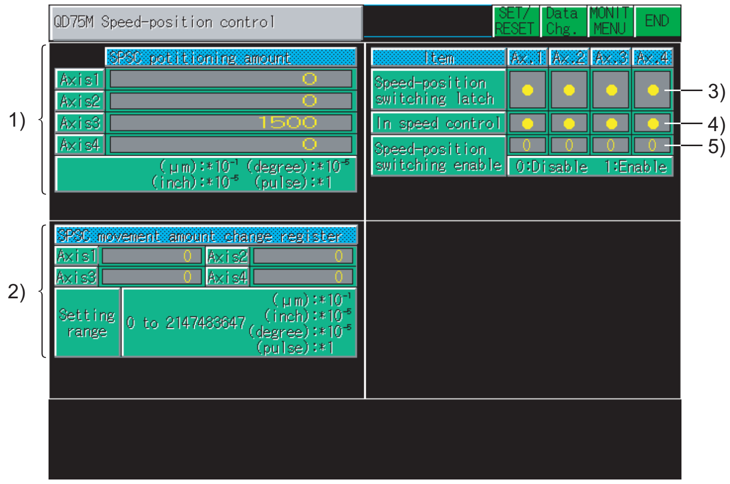
(1)Auto tuning
(2)Load inertia ratio*10^{-1}
(3)Position loop gain1[rad/sec]
(4)Speed loop gain1[rad/sec]
(5)Position loop gain2[rad/sec]
(6)Speed loop gain2[rad/sec]
(7)Velocity integral compensation[msec]

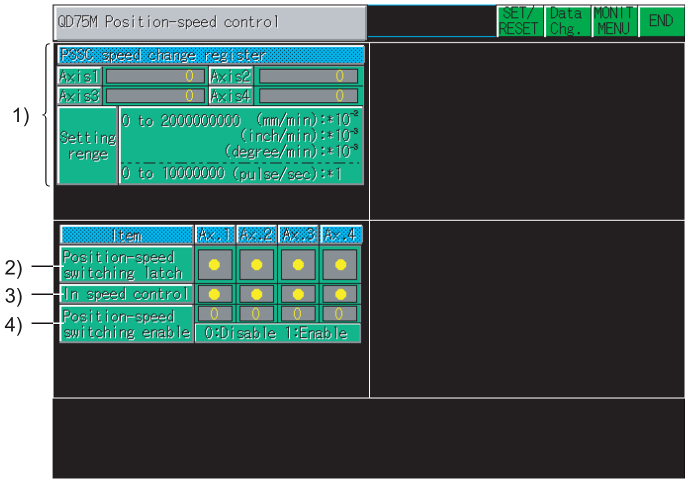
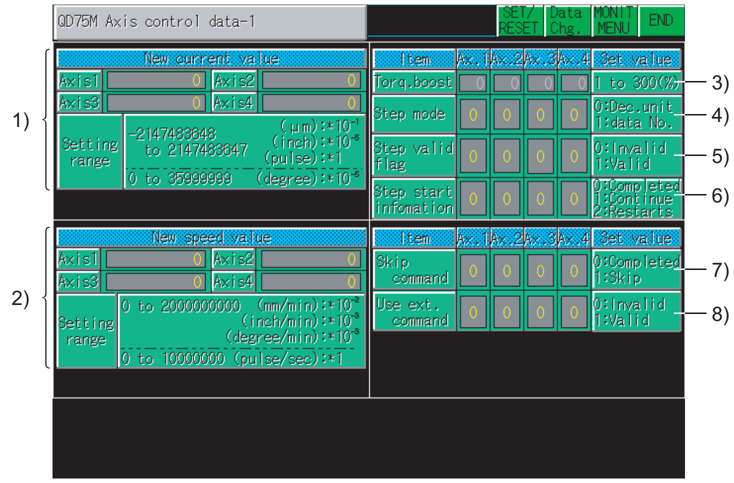
Axis	Number of motor rotation	motor current
1	0	0
2	0	0
3	0	0
4	0	0

[rpm]:*10^{-1} [%]:*10^{-1}

Axis	Servo amplifier S/W number
1	00 00 00 00 00 00 00 00 00 00 00 00
2	00 00 00 00 00 00 00 00 00 00 00 00
3	00 00 00 00 00 00 00 00 00 00 00 00
4	00 00 00 00 00 00 00 00 00 00 00 00

Value is character code.
(JIS8 Code)

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75M Axis monitor data-4 SET/ RESET Data Chg. MONIT MENU END Parameter error No. (BIT 0:OK 1:ERROR) Axis1 Axis2 Axis3 Axis4 [Servo status] Item Ax.1 Ax.2 Ax.3 Ax.4 Ready ON Servo ON Zero point passed In-position Zero speed Torque limit Servo alarm Servo warning Regenerative load ratio Actual load ratio Peak load ratio [%] 1) 2) 3) 4) 5)	1)	870, 970, 1070, 1170	0366, 03CA, 042E, 0492
		871, 971, 1071, 1171	0367, 03CB, 042F, 0493
		872, 972, 1072, 1172	0368, 03CC, 0430, 0494
		873, 973, 1073, 1173	0369, 03CD, 0431, 0495
		874, 974, 1074, 1174	036A, 03CE, 0432, 0496
	2)	877, 977, 1077, 1177	036D, 03D1, 0435, 0499
	3)	878, 978, 1078, 1178	036E, 03D2, 0436, 049A
	4)	879, 979, 1079, 1179	036F, 03D3, 0437, 049B
	5)	880, 980, 1080, 1180	0370, 03D4, 0438, 049C
 QD75M OPR SET/ RESET Data Chg. MONIT MENU END Axis Travel after NPD ON 1 2 3 4 (μm:*10⁻¹) (inch:*10⁻⁵) (degree:*10⁻⁵) (pulse:*1) Torque limit stored value Near point Upper limit Lower limit 123 (%) 0 (%) 383 (%) 0 (%) 1) 2) 3) 4) 5)	1)	824 to 825	0338 to 0339
		924 to 925	039C to 039D
		1024 to 1025	0400 to 0401
		1124 to 1125	0464 to 0465
	2)	826, 926, 1026, 1126	033A, 039E, 0402, 0466
	3) 4) 5)	816, 916, 1016, 1116	0330, 0394, 03F8, 045C
	-	-	-
 QD75M Speed-position control SET/ RESET Data Chg. MONIT MENU END SPSC potitioning amount Axis1 Axis2 Axis3 Axis4 0 1500 (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Item Ax.1 Ax.2 Ax.3 Ax.4 Speed-position switching latch In speed control Speed-position switching enable 0:Disable 1:Enable SPSC movement amount change register Setting range 0 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 1) 2) 3) 4) 5)	1)	814 to 815	032E to 032F
		914 to 915	0392 to 0393
		1014 to 1015	03F6 to 03F7
		1114 to 1115	045A to 045B
	2)	1526 to 1527	05F6 to 05F7
		1626 to 1627	065A to 065B
		1726 to 1727	06BE to 06BF
		1826 to 1827	0722 to 0723
	3)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	4)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	5)	1528, 1628, 1728, 1828	05F8, 065C, 06C0, 0724
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1530 to 1531	05FA to 05FB
		1630 to 1631	065E to 065F
		1730 to 1731	06C2 to 06C3
		1830 to 1831	0726 to 0727
	2)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	3)	817, 917, 1017, 1117	0331, 0395, 03F9, 045D
	4)	1532, 1632, 1732, 1832	05FC, 0660, 06C4, 0728
	-	-	-
	1)	1506 to 1507	05E2 to 05E3
		1606 to 1607	0646 to 0647
		1706 to 1707	06AA to 06AB
		1806 to 1807	070E to 070F
	2)	1514 to 1515	05EA to 05EB
		1614 to 1615	064E to 064F
		1714 to 1715	06B2 to 06B3
		1814 to 1815	0716 to 0717
	3)	1513, 1613, 1713, 1813	05E9, 064D, 06B1, 0715
	4)	1544, 1644, 1744, 1844	0608, 066C, 06D0, 0734
	5)	1545, 1645, 1745, 1845	0609, 066D, 06D1, 0735
	6)	1546, 1646, 1746, 1846	060A, 066E, 06D2, 0736
	7)	1547, 1647, 1747, 1847	060B, 066F, 06D3, 0737
	8)	1505, 1605, 1705, 1805	05E1, 0645, 06A9, 070D

QD75M Position-speed control

PSSC speed change register

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting renge: 0 to 2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*10^{-3}; 0 to 10000000 (pulse/sec):*1

Item	Ax.1	Ax.2	Ax.3	Ax.4
Position-speed switching latch	●	●	●	●
In speed control	●	●	●	●
Position-speed switching enable	0	0	0	0
	0:Disable 1:Enable			

QD75M Axis control data-1

New current value

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: -2147483648 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (pulse):*1; 0 to 35999999 (degree):*10^{-5}

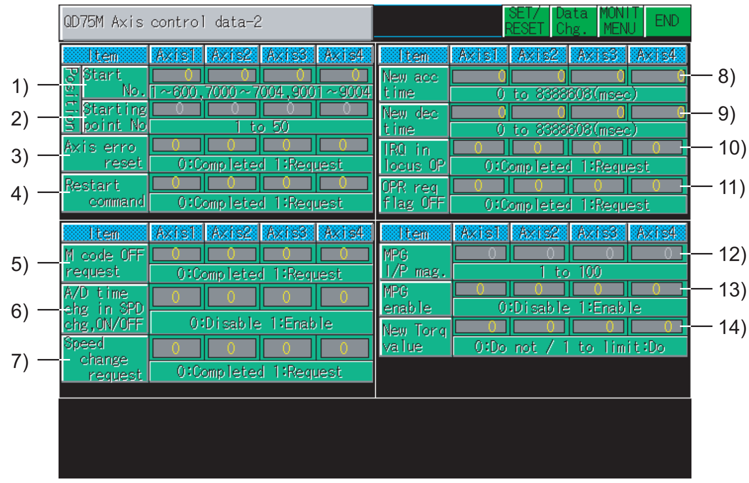
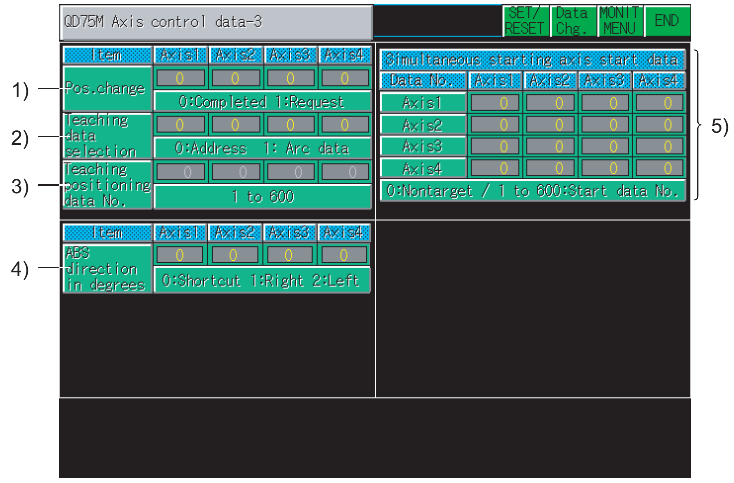
Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Torq.boost	0	0	0	0	1 to 300(%)
Step mode	0	0	0	0	0:Dec.unit 1:data No.
Step valid flag	0	0	0	0	0:Invalid 1:Valid
Step start infomation	0	0	0	0	0:Completed 1:Continue 2:Restarts

New speed value

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: 0 to 2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*10^{-3}; 0 to 10000000 (pulse/sec):*1

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Skip command	0	0	0	0	0:Completed 1:Skip
Use ext. command	0	0	0	0	0:Invalid 1:Valid

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1500, 1600, 1700, 1800	05DC, 0640, 06A4, 0708
	2)	1501, 1601, 1701, 1801	05DD, 0641, 06A5, 0709
	3)	1502, 1602, 1702, 1802	05DE, 0642, 06A6, 070A
	4)	1503, 1603, 1703, 1803	05DF, 0643, 06A7, 070B
	5)	1504, 1604, 1704, 1804	05E0, 0644, 06A8, 070C
	6)	1512, 1612, 1712, 1812	05E8, 064C, 06B0, 0714
	7)	1516, 1616, 1716, 1816	05EC, 0650, 06B4, 0718
	8)	1508 to 1509	05E4 to 05E5
		1608 to 1609	0648 to 0649
		1708 to 1709	06AC to 06AD
		1808 to 1809	0710 to 0711
	9)	1510 to 1511	05E6 to 05E7
		1610 to 1611	064A to 064B
		1710 to 1711	06AE to 06AF
		1810 to 1811	0712 to 0713
	10)	1520, 1620, 1720, 1820	05F0, 0654, 06B8, 071C
	11)	1521, 1621, 1721, 1821	05F1, 0655, 06B9, 071D
	12)	1522 to 1523	05F2 to 05F3
		1622 to 1623	0656 to 0657
		1722 to 1723	06BA to 06BB
		1822 to 1823	071E to 071F
	13)	1524, 1624, 1724, 1824	05F4, 0658, 06BC, 0720
	14)	1525, 1625, 1725, 1825	05F5, 0659, 06BD, 0721
	1)	1538, 1638, 1738, 1838	0602, 0666, 06CA, 072E
	2)	1548, 1648, 1748, 1848	060C, 0670, 06D4, 0738
	3)	1549, 1649, 1749, 1849	060D, 0671, 06D5, 0739
	4)	1550, 1650, 1750, 1850	060E, 0672, 06D6, 073A
	5)	1540, 1640, 1740, 1840, 1541, 1641, 1741, 1841, 1542, 1642, 1742, 1842, 1543, 1643, 1743, 1843	0604, 0668, 06CC, 0730, 0605, 0669, 06CD, 0731, 0606, 066A, 06CE, 0732, 0607, 066B, 06CF, 0733
	-	-	-

QD75M Axis control data-2

Item	Axis1	Axis2	Axis3	Axis4
Position Start No.	0	0	0	0
	1~600,7000~7004,9001~9004			
Position Starting point No	0	0	0	0
	1 to 50			
Axis erro reset	0	0	0	0
	0:Completed 1:Request			
Restart command	0	0	0	0
	0:Completed 1:Request			

Item	Axis1	Axis2	Axis3	Axis4
New acc time	0	0	0	0
	0 to 8388608(msec)			
New dec time	0	0	0	0
	0 to 8388608(msec)			
IRQ in locus OP	0	0	0	0
	0:Completed 1:Request			
OPR req flag OFF	0	0	0	0
	0:Completed 1:Request			

Item	Axis1	Axis2	Axis3	Axis4
M code OFF request	0	0	0	0
	0:Completed 1:Request			
A/D time chg in SPD chg,ON/OFF	0	0	0	0
	0:Disable 1:Enable			
Speed change request	0	0	0	0
	0:Completed 1:Request			

Item	Axis1	Axis2	Axis3	Axis4
MPG I/P mag.	0	0	0	0
	1 to 100			
MPG enable	0	0	0	0
	0:Disable 1:Enable			
New Torq value	0	0	0	0
	0:Do not / 1 to limit:Do			

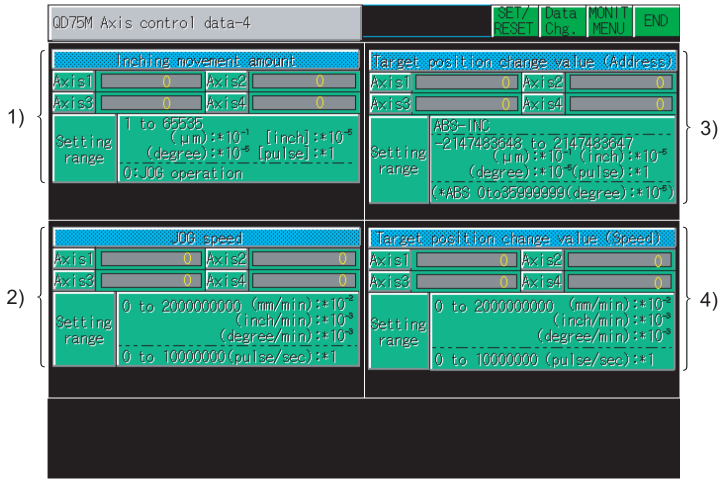
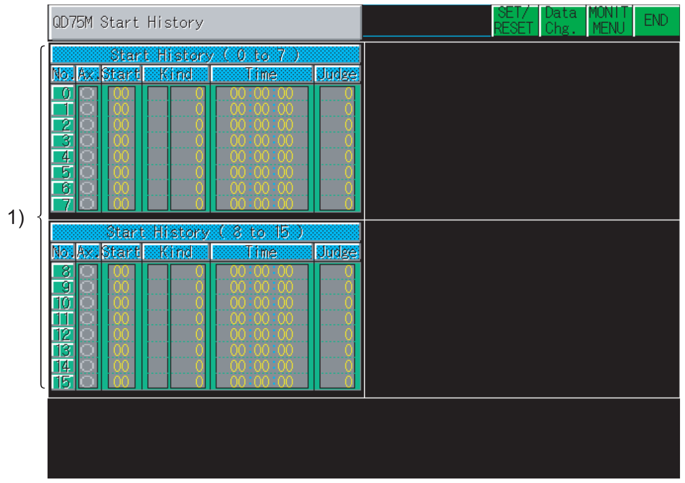
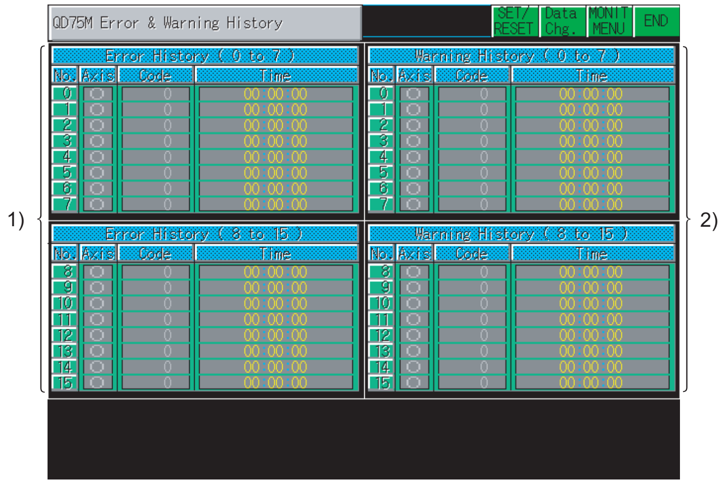
QD75M Axis control data-3

Item	Axis1	Axis2	Axis3	Axis4
Pos.change	0	0	0	0
	0:Completed 1:Request			
Teaching data selection	0	0	0	0
	0:Address 1: Arc data			
Teaching positioning data No.	0	0	0	0
	1 to 600			

Simultaneous starting axis start data

Data No.	Axis1	Axis2	Axis3	Axis4
Axis1	0	0	0	0
Axis2	0	0	0	0
Axis3	0	0	0	0
Axis4	0	0	0	0
0:Nontarget / 1 to 600:Start data No.				

Item	Axis1	Axis2	Axis3	Axis4
ABS direction in degrees	0	0	0	0
	0:Shortcut 1:Right 2:Left			

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1517, 1617, 1717, 1817	05ED, 0651, 06B5, 0719
	2)	1518 to 1519	05EE to 05EF
		1618 to 1619	0652 to 0653
		1718 to 1719	06B6 to 06B7
		1818 to 1819	071A to 071B
	3)	1534 to 1535	05FE to 05FF
		1634 to 1635	0662 to 0663
		1734 to 1735	06C6 to 06C7
		1834 to 1835	072A to 072B
	4)	1536 to 1537	0600 to 0601
		1636 to 1637	0664 to 0665
		1736 to 1737	06C8 to 06C9
		1836 to 1837	072C to 072D
	-	-	-
	1)	1212 to 1291	04BC to 050B
	-	-	-
	1)	1293 to 1356	050D to 054C
	2)	1358 to 1421	054E to 058D
	-	-	-

Inching movement amount

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: 1 to 65535 (μm):*10⁻¹ [inch]:*10⁻⁵ (degree):*10⁻⁵ [pulse]:*1 / 0:JOG operation

Target position change value (Address)

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: ABS-INC -2147483648 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵(pulse):*1 / (*ABS 0to35999999(degree):*10⁻⁵)

JOG speed

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: 0 to 2000000000 (mm/min):*10⁻² (inch/min):*10⁻³ (degree/min):*10⁻³ / 0 to 10000000(pulse/sec):*1

Target position change value (Speed)

Axis1	0	Axis2	0
Axis3	0	Axis4	0

Setting range: 0 to 2000000000 (mm/min):*10⁻² (inch/min):*10⁻³ (degree/min):*10⁻³ / 0 to 10000000 (pulse/sec):*1

Start History (0 to 7)

No.	Ax.	Start	Kind	Time	Judge
0	○	00	0	00:00:00	0
1	○	00	0	00:00:00	0
2	○	00	0	00:00:00	0
3	○	00	0	00:00:00	0
4	○	00	0	00:00:00	0
5	○	00	0	00:00:00	0
6	○	00	0	00:00:00	0
7	○	00	0	00:00:00	0

Start History (8 to 15)

No.	Ax.	Start	Kind	Time	Judge
8	○	00	0	00:00:00	0
9	○	00	0	00:00:00	0
10	○	00	0	00:00:00	0
11	○	00	0	00:00:00	0
12	○	00	0	00:00:00	0
13	○	00	0	00:00:00	0
14	○	00	0	00:00:00	0
15	○	00	0	00:00:00	0

Error History (0 to 7)

No.	Axis	Code	Time
0	○	0	00:00:00
1	○	0	00:00:00
2	○	0	00:00:00
3	○	0	00:00:00
4	○	0	00:00:00
5	○	0	00:00:00
6	○	0	00:00:00
7	○	0	00:00:00

Warning History (0 to 7)

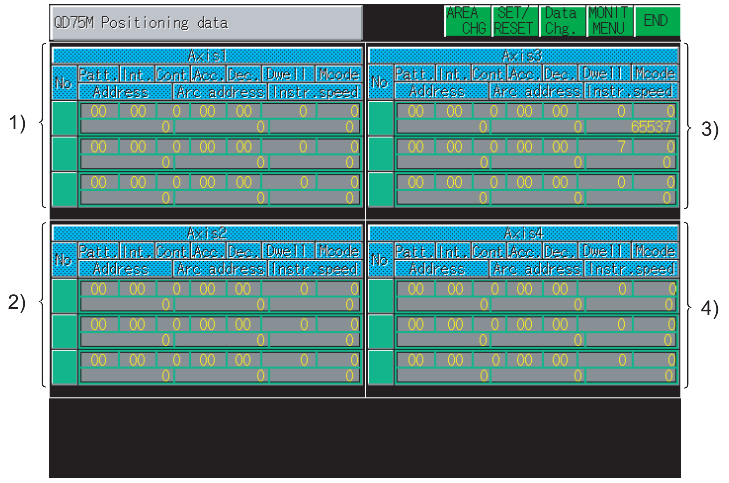
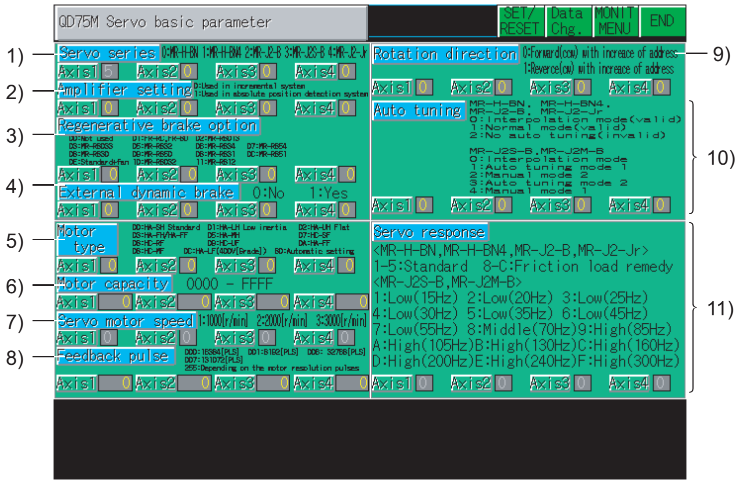
No.	Axis	Code	Time
0	○	0	00:00:00
1	○	0	00:00:00
2	○	0	00:00:00
3	○	0	00:00:00
4	○	0	00:00:00
5	○	0	00:00:00
6	○	0	00:00:00
7	○	0	00:00:00

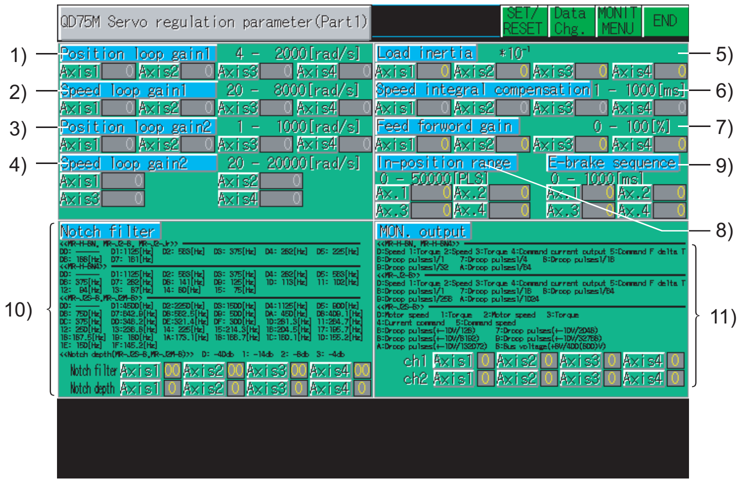
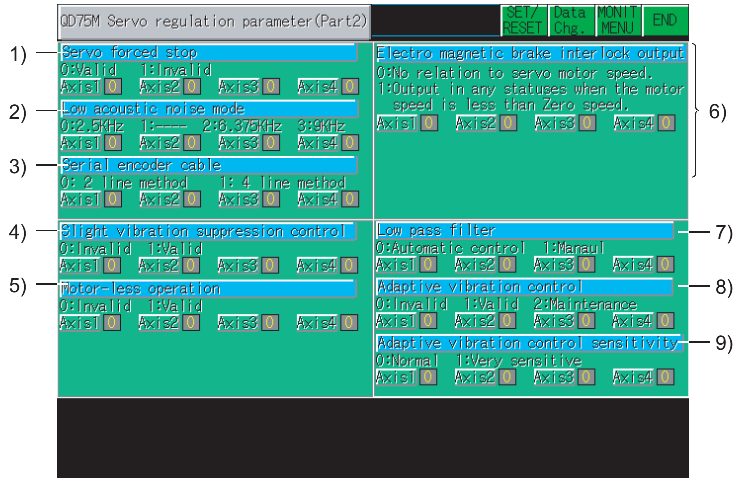
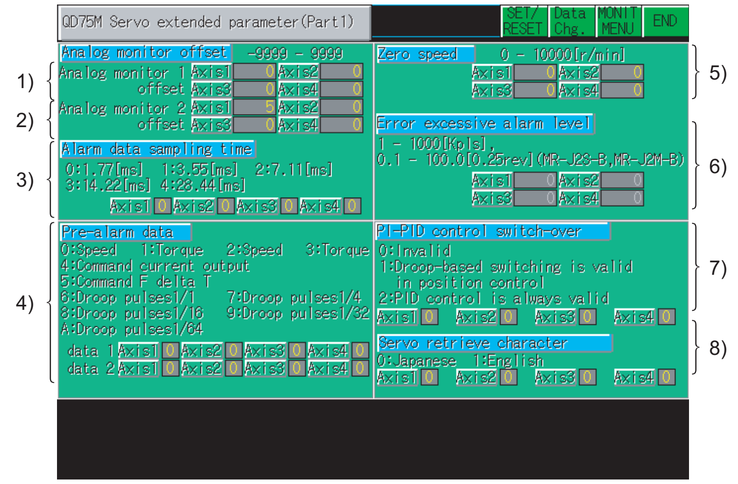
Error History (8 to 15)

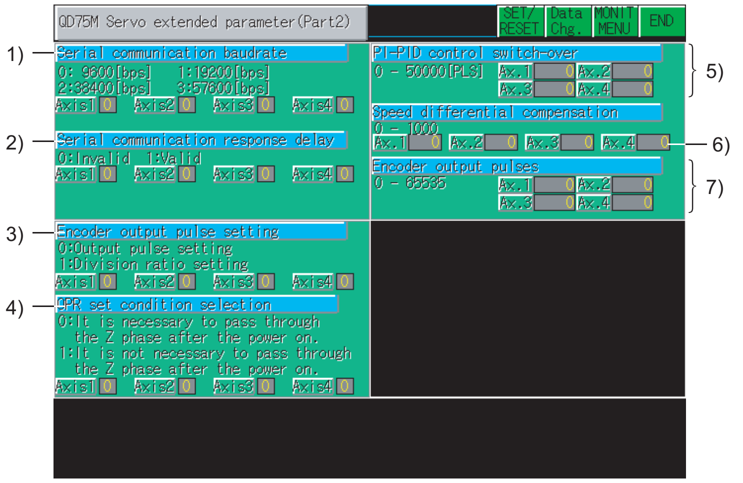
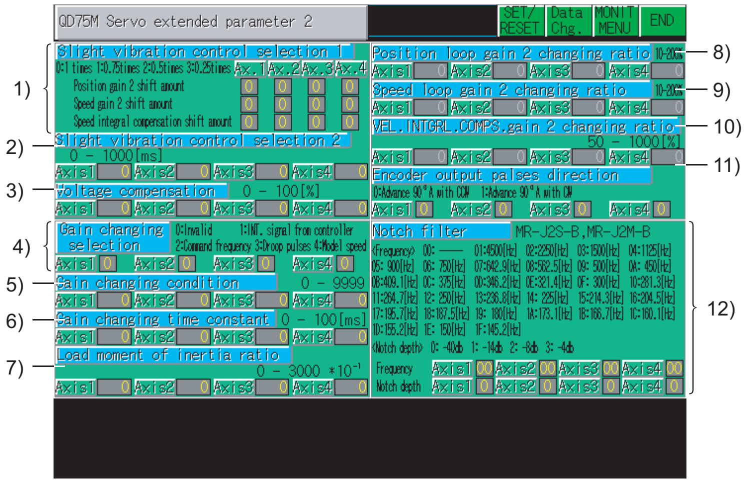
No.	Axis	Code	Time
8	○	0	00:00:00
9	○	0	00:00:00
10	○	0	00:00:00
11	○	0	00:00:00
12	○	0	00:00:00
13	○	0	00:00:00
14	○	0	00:00:00
15	○	0	00:00:00

Warning History (8 to 15)

No.	Axis	Code	Time
8	○	0	00:00:00
9	○	0	00:00:00
10	○	0	00:00:00
11	○	0	00:00:00
12	○	0	00:00:00
13	○	0	00:00:00
14	○	0	00:00:00
15	○	0	00:00:00

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75M Positioning data AREA CHG SET/ RESET Data Chg. MONIT MENU END Axis1 Axis2 Axis3 Axis4 No Patt. Int. Cont Acc. Dec. Dwell Mcode Address Arc address Instr.speed 65537 1) 2) 3) 4)	1)	2000 to 2002, 2004 to 2012, 2014 to 2022, 2024 to 2029	07D0 to 07D2, 07D4 to 07DC, 07DE to 07E6, 07E8 to 07ED
	2)	8000 to 8002, 8004 to 8012, 8014 to 8022, 8024 to 8029	1F40 to 1F42, 1F44 to 1F4C, 1F4E to 1F56, 1F58 to 1F5D
	3)	14000 to 14002, 14004 to 14012, 14014 to 14022, 14024 to 14029	36B0 to 36B2, 36B4 to 36BC, 36BE to 36C6, 36C8 to 36CD
	4)	20000 to 20002, 20004 to 20012, 20014 to 20022, 20024 to 20029	4E20 to 4E22, 4E24 to 4E2C, 4E2E to 4E36, 4E38 to 4E3D
	-	-	-
 QD75M Servo basic parameter SET/ RESET Data Chg. MONIT MENU END Servo series Amplifier setting Regenerative brake option External dynamic brake 0:No 1:Yes Motor type Motor capacity 0000 - FFFF Servo motor speed Feedback pulse Rotation direction Auto tuning Servo response Axis1 Axis2 Axis3 Axis4 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11)	1)	30100, 30200, 30300, 30400	07594, 075F8 0765C, 076C0
	2)	30101, 30201, 30301, 30401	07595, 075F9 0765D, 076C1
	3) 4)	30102, 30202, 30302, 30402	07596, 075FA 0765E, 076C2
	5)	30103, 30203, 30303, 30403	07597, 075FB 0765F, 076C3
	6)	30104, 30204, 30304, 30404	07598, 075FC 07660, 076C4
	7)	30105, 30205, 30305, 30405	07599, 075FD 07661, 076C5
	8)	30106, 30206, 30306, 30406	0759A, 075FE 07662, 076C6
	9)	30107, 30207, 30307, 30407	0759B, 075FF 07663, 076C7
	10)	30108, 30208, 30308, 30408	0759C, 07600 07664, 076C8
	11)	30109, 30209, 30309, 30409	0759D, 07601 07665, 076C9

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75M Servo regulation parameter(Part1) SET/RESET Data Chg. MONIT MENU END 1) Position loop gain1 4 - 2000[rad/s] Axis1 0 Axis2 0 Axis3 0 Axis4 0 2) Speed loop gain1 20 - 8000[rad/s] Axis1 0 Axis2 0 Axis3 0 Axis4 0 3) Position loop gain2 1 - 1000[rad/s] Axis1 0 Axis2 0 Axis3 0 Axis4 0 4) Speed loop gain2 20 - 20000[rad/s] Axis1 0 Axis2 0 Axis3 0 Axis4 0 5) Load inertia *10⁻¹ Axis1 0 Axis2 0 Axis3 0 Axis4 0 6) Speed integral compensation 1 - 1000[ms] Axis1 0 Axis2 0 Axis3 0 Axis4 0 7) Feed forword gain 0 - 100[%] Axis1 0 Axis2 0 Axis3 0 Axis4 0 8) In-position range 0 - 50000[PLS] Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0 9) E-brake sequence 0 - 1000[ms] Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0 10) Notch filter Notch filter Axis1 00 Axis2 00 Axis3 00 Axis4 00 Notch depth Axis1 0 Axis2 0 Axis3 0 Axis4 0 11) MON. output ch1 Axis1 0 Axis2 0 Axis3 0 Axis4 0 ch2 Axis1 0 Axis2 0 Axis3 0 Axis4 0	1)	30113, 30213, 30313, 30413	075A1, 07605 07669, 076CD
	2)	30114, 30214, 30314, 30414	075A2, 07606 0766A, 076CE
	3)	30115, 30215, 30315, 30415	075A3, 07607 0766B, 076CF
	4)	30116, 30216, 30316, 30416	075A4, 07608 0766C, 076D0
	5)	30112, 30212, 30312, 30412	075A0, 07604 07668, 076CC
	6)	30117, 30217, 30317, 30417	075A5, 07609 0766D, 076D1
	7)	30119, 30219, 30319, 30419	075A7, 0760B 0766F, 076D3
	8)	30120, 30220, 30320, 30420	075A8, 0760C 07670, 076D4
	9)	30121, 30221, 30321, 30421	075A9, 0760D 07671, 076D5
	10)	30118, 30218, 30318, 30418	075A6, 0760A 0766E, 076D2
	11)	30122, 30222, 30322, 30422	075AA, 0760E 07672, 076D6
 QD75M Servo regulation parameter(Part2) SET/RESET Data Chg. MONIT MENU END 1) Servo forced stop 0:Valid 1:Invalid Axis1 0 Axis2 0 Axis3 0 Axis4 0 2) Low acoustic noise mode 0:2.5KHz 1:---- 2:6.375KHz 3:9KHz Axis1 0 Axis2 0 Axis3 0 Axis4 0 3) Serial encoder cable 0: 2 line method 1: 4 line method Axis1 0 Axis2 0 Axis3 0 Axis4 0 4) Slight vibration suppression control 0:Invalid 1:Valid Axis1 0 Axis2 0 Axis3 0 Axis4 0 5) Motor-less operation 0:Invalid 1:Valid Axis1 0 Axis2 0 Axis3 0 Axis4 0 6) Electro magnetic brake interlock output 0:No relation to servo motor speed. 1:Output in any statuses when the motor speed is less than Zero speed. Axis1 0 Axis2 0 Axis3 0 Axis4 0 7) Low pass filter 0:Automatic control 1:Manaul Axis1 0 Axis2 0 Axis3 0 Axis4 0 8) Adaptive vibration control 0:Invalid 1:Valid 2:Maintenance Axis1 0 Axis2 0 Axis3 0 Axis4 0 9) Adaptive vibration control sensitivity 0:Normal 1:Very sensitive Axis1 0 Axis2 0 Axis3 0 Axis4 0	1) 2) 3)	30123, 30223, 30323, 30423	075AB, 0760F 07673, 076D7
	4) 5) 6)	30124, 30224, 30324, 30424	075AC, 07610 07674, 076D8
	7) 8) 9)	30125, 30225, 30325, 30425	075AD, 07611 07675, 076D9
	-	-	-
 QD75M Servo extended parameter(Part1) SET/RESET Data Chg. MONIT MENU END Analog monitor offset -9999 - 9999 1) Analog monitor 1 offset Axis1 0 Axis2 0 Axis3 0 Axis4 0 2) Analog monitor 2 offset Axis1 5 Axis2 0 Axis3 0 Axis4 0 3) Alarm data sampling time 0:1.77[ms] 1:3.55[ms] 2:7.11[ms] 3:14.22[ms] 4:28.44[ms] Axis1 0 Axis2 0 Axis3 0 Axis4 0 4) Pre-alarm data 0:Speed 1:Torque 2:Speed 3:Torque 4:Command current output 5:Command F delta T 6:Droop pulses1/1 7:Droop pulses1/4 8:Droop pulses1/16 9:Droop pulses1/32 A:Droop pulses1/64 data 1 Axis1 0 Axis2 0 Axis3 0 Axis4 0 data 2 Axis1 0 Axis2 0 Axis3 0 Axis4 0 5) Zero speed 0 - 10000[r/min] Axis1 0 Axis2 0 Axis3 0 Axis4 0 6) Error excessive alarm level 1 - 1000[Kpls], 0.1 - 100.0[0.25rev](MR-J2S-B,MR-J2M-B) Axis1 0 Axis2 0 Axis3 0 Axis4 0 7) PI-PID control switch-over 0:Invalid 1:Droop-based switching is valid in position control 2:PID control is always valid Axis1 0 Axis2 0 Axis3 0 Axis4 0 8) Servo retrieve character 0:Japanese 1:English Axis1 0 Axis2 0 Axis3 0 Axis4 0	1)	30127, 30227, 30327, 30427	075AF, 07613 07677, 076DB
	2)	30128, 30228, 30328, 30428	075B0, 07614 07678, 076DC
	3) 4)	30129, 30229, 30329, 30429	075B1, 07615 07679, 076DD
	5)	30130, 30230, 30330, 30430	075B2, 07616 0767A, 076DE
	6)	30131, 30231, 30331, 30431	075B3, 07617 0767B, 076DF
	7) 8)	30132, 30232, 30332, 30432	075B4, 07618 0767C, 076E0
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1) to 4)	30133, 30233, 30333, 30433	075B5, 07619 0767D, 076E1
	5)	30134, 30234, 30334, 30434	075B6, 0761A 0767E, 076E2
	6)	30136, 30236, 30336, 30436	075B8, 0761C 07680, 076E4
	7)	30138, 30238, 30338, 30438	075BA, 0761E 07682, 076E6
	-	-	-
	1)	30143, 30243, 30343, 30443	075BF, 07623 07687, 076EB
	2)	30144, 30244, 30344, 30444	075C0, 07624 07688, 076EC
	3)	30145, 30245, 30345, 30445	075C1, 07605 07689, 076ED
	4)	30149, 30249, 30349, 30449	075C5, 07629 0768D, 076F1
	5)	30150, 30250, 30350, 30450	075C6, 0762A 0768E, 076F2
	6)	30151, 30251, 30351, 30451	075C7, 0762B 0768F, 076F3
	7)	30152, 30252, 30352, 30452	075C8, 0762C 07690, 076F4
	8)	30153, 30253, 30353, 30453	075C9, 0762D 07691, 076F5
	9)	30154, 30254, 30354, 30454	075CA, 0762E 07692, 076F5
	10)	30155, 30255, 30355, 30455	075CB, 0762F 07693, 076F6
	11)	30160, 30260, 30360, 30460	075D0, 07634 07698, 076FC
	12)	30161, 30261, 30361, 30461	075D1, 07635 07699, 076FD

QD75M Servo extended parameter(Part2)

Serial communication baudrate
0: 9600[bps] 1:19200[bps]
2:38400[bps] 3:57600[bps]
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Serial communication response delay
0:Invalid 1:Valid
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Encoder output pulse setting
0:Output pulse setting
1:Division ratio setting
Axis1 0 Axis2 0 Axis3 0 Axis4 0

OPR set condition selection
0:It is necessary to pass through the Z phase after the power on.
1:It is not necessary to pass through the Z phase after the power on.
Axis1 0 Axis2 0 Axis3 0 Axis4 0

PI-PID control switch-over
0 - 50000[PLS] Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0

Speed differential compensation
0 - 1000
Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0

Encoder output pulses
0 - 65535 Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0

QD75M Servo extended parameter 2

Slight vibration control selection 1
0:1 times 1:0.75times 2:0.5times 3:0.25times Ax.1 Ax.2 Ax.3 Ax.4
Position gain 2 shift amount 0 0 0 0
Speed gain 2 shift amount 0 0 0 0
Speed integral compensation shift amount 0 0 0 0

Slight vibration control selection 2
0 - 1000[ms]
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Voltage compensation 0 - 100[%]
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Gain changing selection 0:Invalid 1:INT. signal from controller 2:Command frequency 3:Droop pulses 4:Model speed
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Gain changing condition 0 - 9999
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Gain changing time constant 0 - 100[ms]
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Load moment of inertia ratio
0 - 3000 $*10^{-1}$
Axis1 0 Axis2 0 Axis3 0 Axis4 0

Position loop gain 2 changing ratio 10-200%
Axis1 0 Axis2 0 Axis3 0 Axis4 0

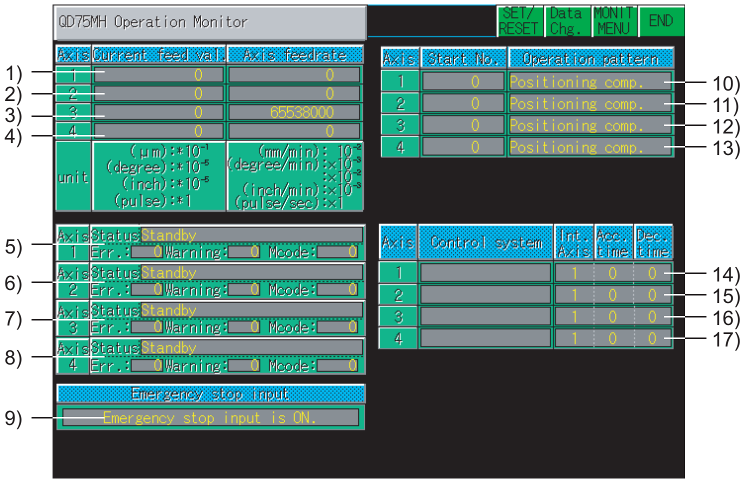
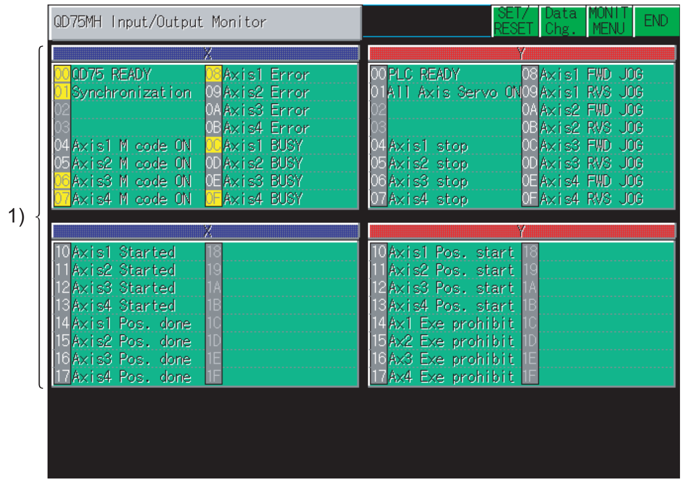
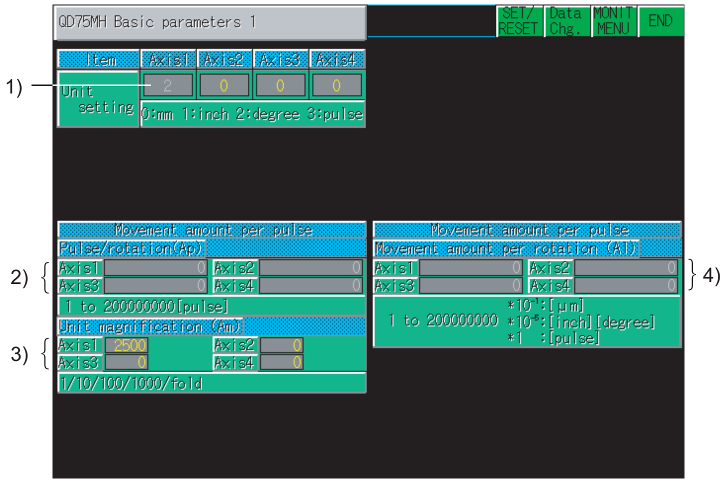
Speed loop gain 2 changing ratio 10-200%
Axis1 0 Axis2 0 Axis3 0 Axis4 0

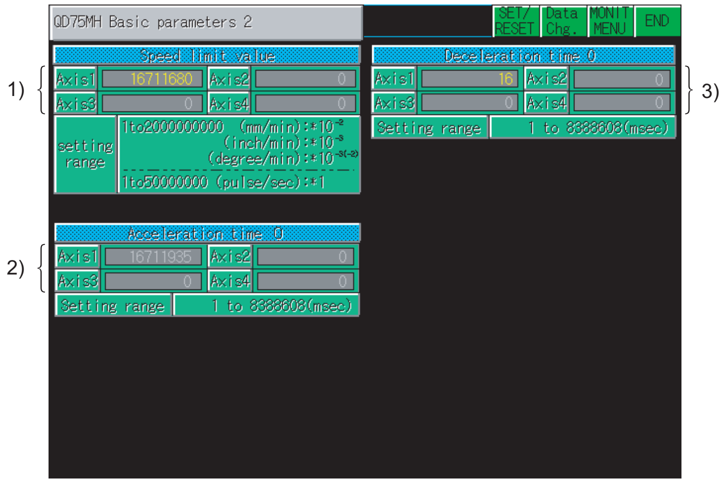
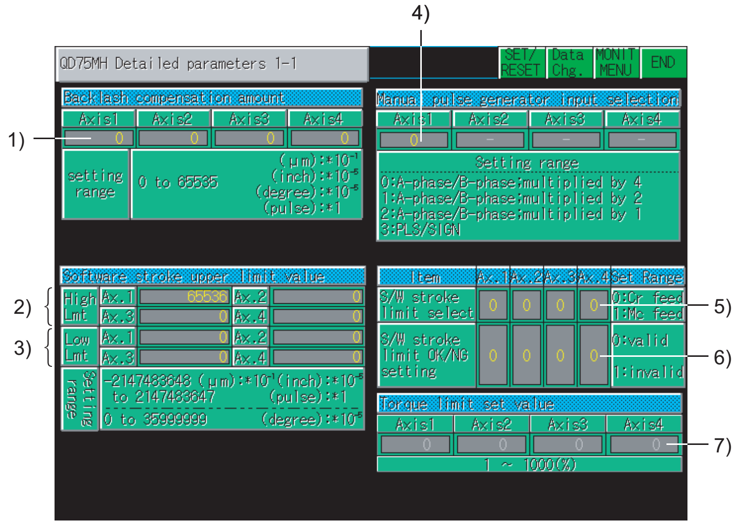
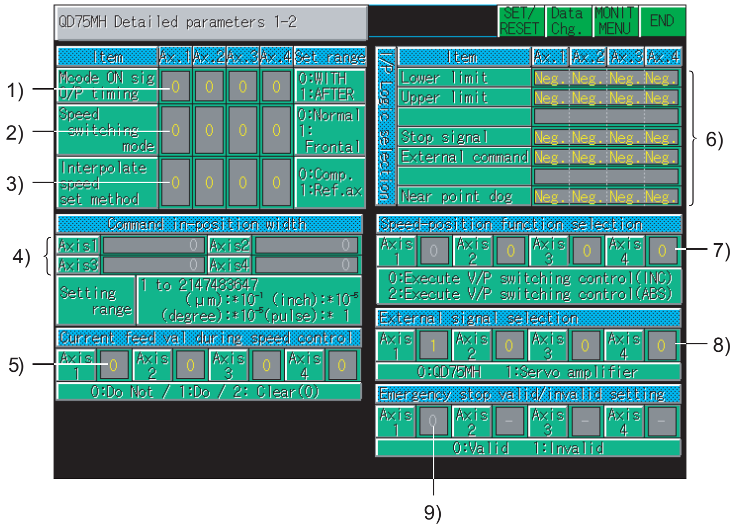
VEL.INTGRL.COMPS.gain 2 changing ratio
50 - 1000[%]
Axis1 0 Axis2 0 Axis3 0 Axis4 0

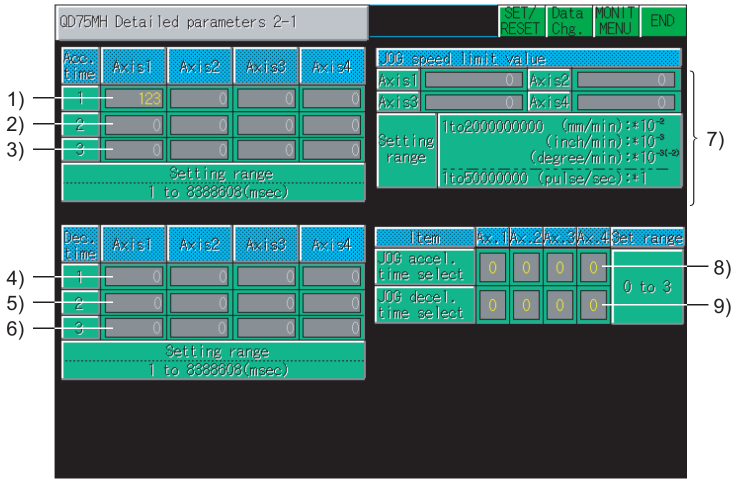
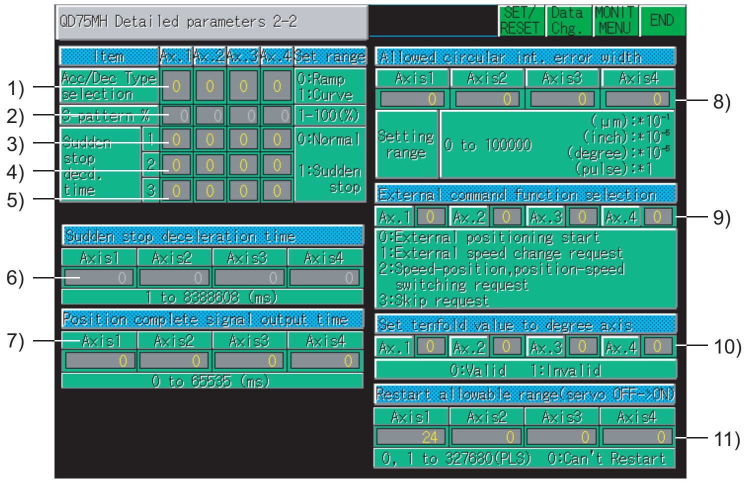
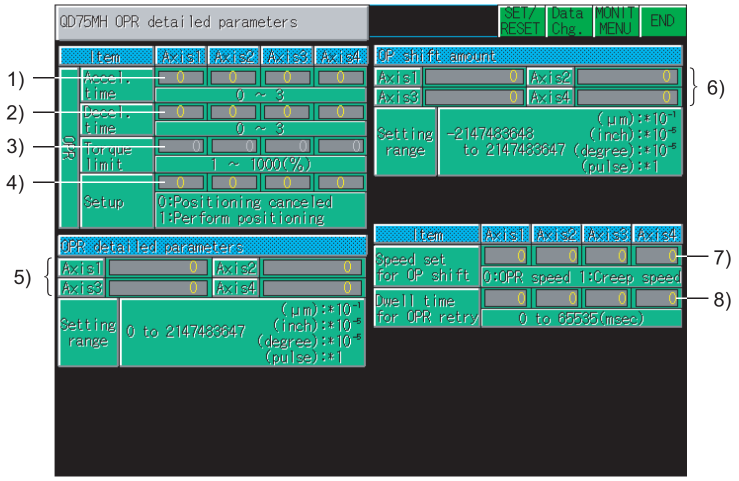
Encoder output palses direction
0:Advance 90°A with CCW 1:Advance 90°A with CW
Axis1 0 Axis2 0 Axis3 0 Axis4 0

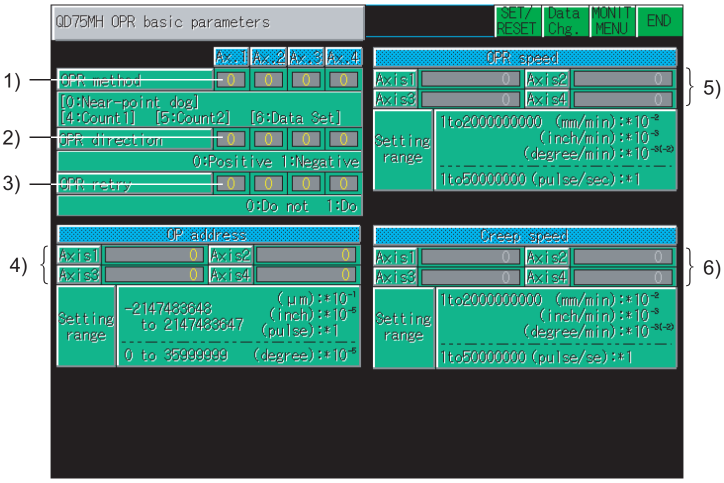
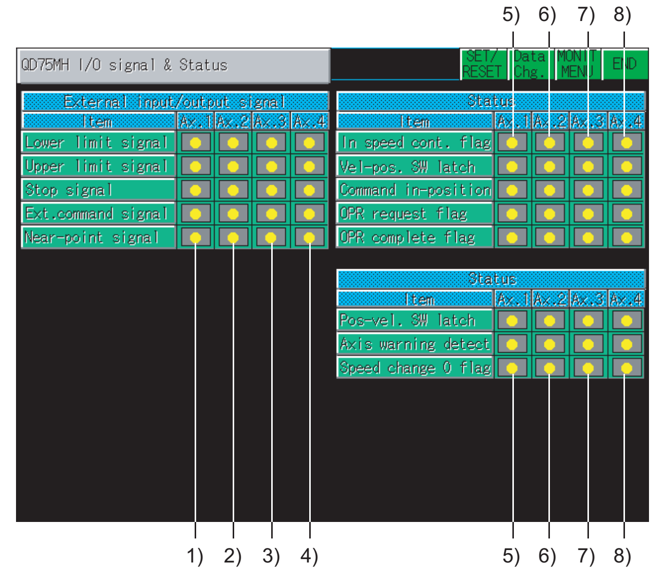
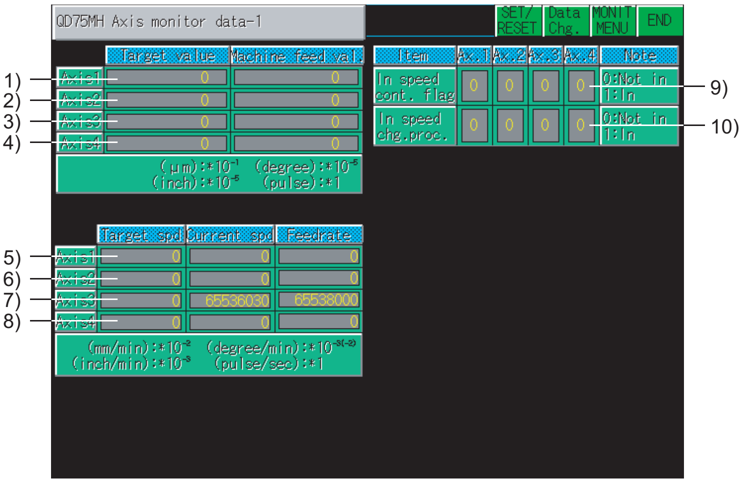
Notch filter MR-J2S-B,MR-J2M-B
<Frequency> 00: —— 01:4500[Hz] 02:2250[Hz] 03:1500[Hz] 04:1125[Hz]
05: 900[Hz] 06: 750[Hz] 07:642.9[Hz] 08:562.5[Hz] 09: 500[Hz] 0A: 450[Hz]
0B:409.1[Hz] 0C: 375[Hz] 0D:346.2[Hz] 0E:321.4[Hz] 0F: 300[Hz] 10:281.3[Hz]
11:264.7[Hz] 12: 250[Hz] 13:236.8[Hz] 14: 225[Hz] 15:214.3[Hz] 16:204.5[Hz]
17:195.7[Hz] 18:187.5[Hz] 19: 180[Hz] 1A:173.1[Hz] 1B:166.7[Hz] 1C:160.1[Hz]
1D:155.2[Hz] 1E: 150[Hz] 1F:145.2[Hz]
<Notch depth> 0: -40db 1: -14db 2: -8db 3: -4db
Frequency Axis1 00 Axis2 00 Axis3 00 Axis4 00
Notch depth Axis1 0 Axis2 0 Axis3 0 Axis4 0

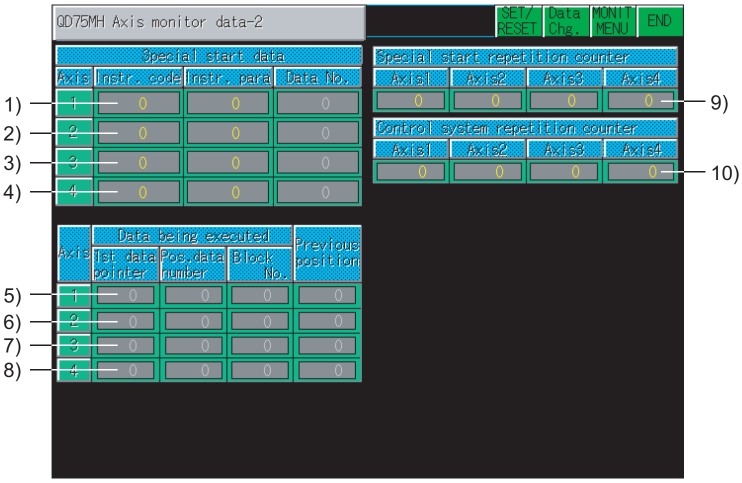
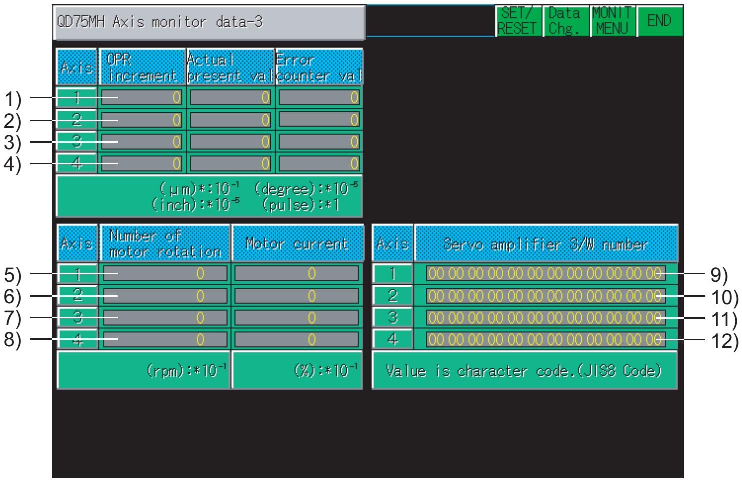
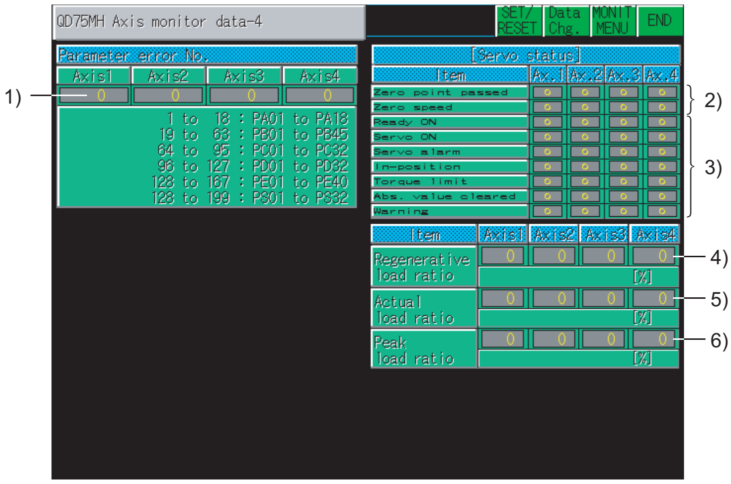
6.5.36 QD75MH module monitoring

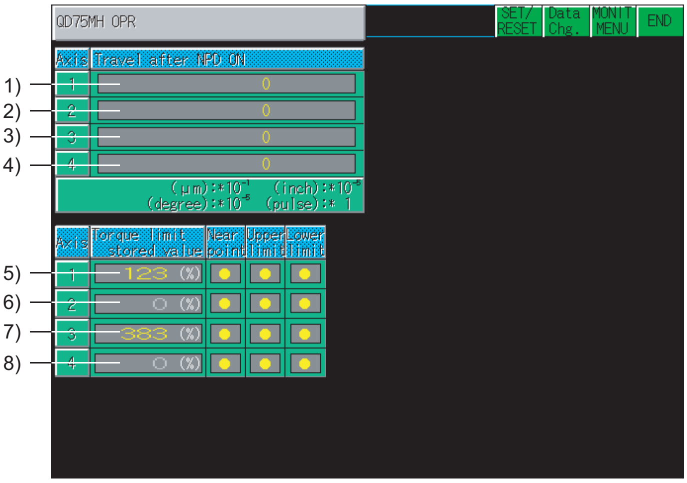
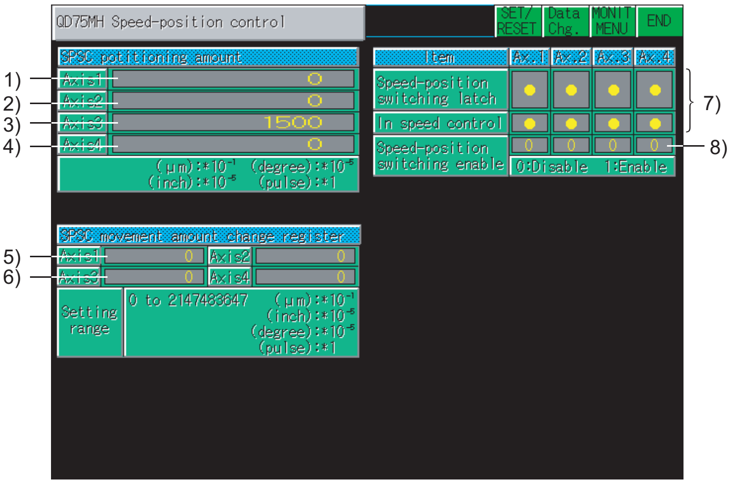
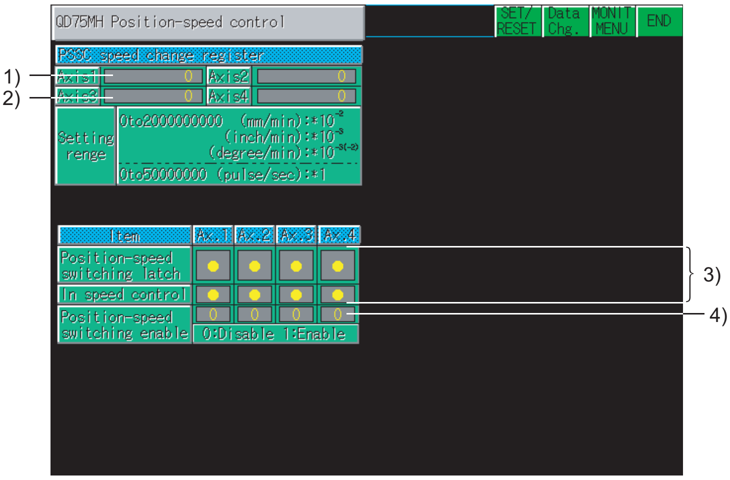
Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH Operation Monitor Axis | Current feed val. | Axis feedrate 1 | 0 | 0 2 | 0 | 0 3 | 0 | 65538000 4 | 0 | 0 unit | (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 | (mm/min): 10⁻² (degree/min):×10⁻³ :×10⁻² (inch/min):×10⁻³ (pulse/sec):×1 Axis | Start No. | Operation pattern 1 | 0 | Positioning comp. 2 | 0 | Positioning comp. 3 | 0 | Positioning comp. 4 | 0 | Positioning comp. Axis 1 Status: Standby Err.: 0 Warning: 0 Mcode: 0 Axis 2 Status: Standby Err.: 0 Warning: 0 Mcode: 0 Axis 3 Status: Standby Err.: 0 Warning: 0 Mcode: 0 Axis 4 Status: Standby Err.: 0 Warning: 0 Mcode: 0 Axis | Control system | Int. Axis | Acc. time | Dec. time 1 | | 1 | 0 | 0 2 | | 1 | 0 | 0 3 | | 1 | 0 | 0 4 | | 1 | 0 | 0 Emergency stop input Emergency stop input is ON. SET/ RESET Data Chg. MONIT MENU END 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) 17)	1)	800, 812	320, 32C
	2)	900, 912	384, 390
	3)	1000, 1012	3E8, 3F4
	4)	1100, 1112	44C, 458
	5)	806 to 809	326 to 329
	6)	906 to 909	38A to 38D
	7)	1006 to 1009	3EE to 3F1
	8)	1106 to 1109	452 to 455
	9)	1431	597
	10)	829, 838	33D, 346
	11)	929, 938	3A1, 3AA
	12)	1029, 1038	405, 40E
	13)	1129, 1138	469, 472
	14)	838	346
	15)	938	3AA
	16)	1038	40E
	17)	1138	472
	-	-	-
 QD75MH Input/Output Monitor X 00 QD75 READY | 08 Axis1 Error 01 Synchronization | 09 Axis2 Error 02 | 0A Axis3 Error 03 | 0B Axis4 Error 04 Axis1 M code ON | 0C Axis1 BUSY 05 Axis2 M code ON | 0D Axis2 BUSY 06 Axis3 M code ON | 0E Axis3 BUSY 07 Axis4 M code ON | 0F Axis4 BUSY Y 00 PLC READY | 08 Axis1 FWD JOG 01 All Axis Servo ON | 09 Axis1 RVS JOG 02 | 0A Axis2 FWD JOG 03 | 0B Axis2 RVS JOG 04 Axis1 stop | 0C Axis3 FWD JOG 05 Axis2 stop | 0D Axis3 RVS JOG 06 Axis3 stop | 0E Axis4 FWD JOG 07 Axis4 stop | 0F Axis4 RVS JOG X 10 Axis1 Started | 18 11 Axis2 Started | 19 12 Axis3 Started | 1A 13 Axis4 Started | 1B 14 Axis1 Pos. done | 1C 15 Axis2 Pos. done | 1D 16 Axis3 Pos. done | 1E 17 Axis4 Pos. done | 1F Y 10 Axis1 Pos. start | 18 11 Axis2 Pos. start | 19 12 Axis3 Pos. start | 1A 13 Axis4 Pos. start | 1B 14 Ax1 Exe prohibit | 1C 15 Ax2 Exe prohibit | 1D 16 Ax3 Exe prohibit | 1E 17 Ax4 Exe prohibit | 1F 	1)	-	-
	-	-	-
 QD75MH Basic parameters 1 Item | Axis1 | Axis2 | Axis3 | Axis4 Unit setting | 2 | 0 | 0 | 0 0:mm 1:inch 2:degree 3:pulse Movement amount per pulse Pulse/rotation(Ap) Axis1 0 | Axis2 0 Axis3 0 | Axis4 0 1 to 200000000[pulse] Unit magnification (Am) Axis1 2500 | Axis2 0 Axis3 0 | Axis4 0 1/10/100/1000/fold Movement amount per pulse Movement amount per rotation (Al) Axis1 0 | Axis2 0 Axis3 0 | Axis4 0 1 to 200000000 *10⁻¹:[μm] *10⁻⁵:[inch][degree] *1 :[pulse] SET/ RESET Data Chg. MONIT MENU END 1) 2) 3) 4)	1)	0, 150, 300, 450	0, 96, 12C, 1C2
	2)	2 to 3, 152 to 153, 302 to 303, 452 to 453	2 to 3, 98 to 99, 12E to 12F, 1C4 to 1C5
	3)	1, 151, 301, 451	1, 97, 12D, 1C3
	4)	4 to 5, 154 to 155, 304 to 305, 454 to 455	4 to 5, 9A to 9B, 130 to 131, 1C6 to 1C7
	-	-	-

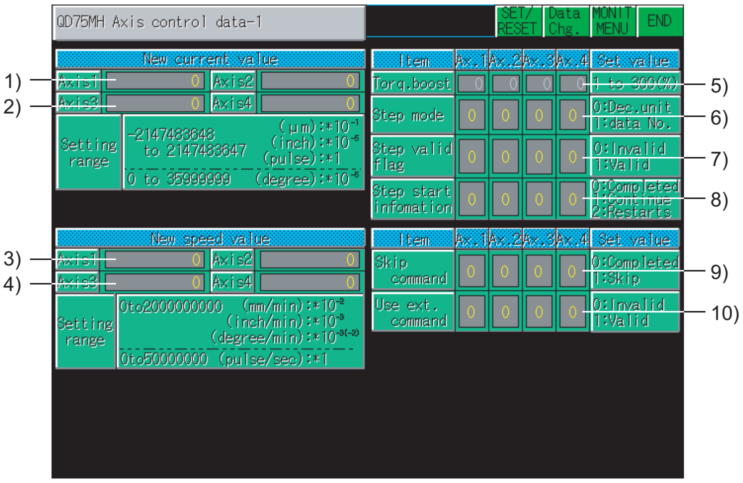
Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH Basic parameters 2 SET/ RESET Data Chg. MONIT MENU END Speed limit value Axis1 16711680 Axis2 0 Axis3 0 Axis4 0 setting range 1to2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*$10^{-3(-2)}$ 1to50000000 (pulse/sec):*1 Acceleration time 0 Axis1 16711935 Axis2 0 Axis3 0 Axis4 0 Setting range 1 to 8388608(msec) Deceleration time 0 Axis1 16 Axis2 0 Axis3 0 Axis4 0 Setting range 1 to 8388608(msec) 	1)	10 to 11, 160 to 161, 310 to 311, 460 to 461	A to B, A0 to A1, 136 to 137, 1CC to 1CD
	2)	12 to 13, 162 to 163, 312 to 313, 462 to 463	C to D, A2 to A3, 138 to 139, 1CE to 1CF
	3)	14 to 15, 164 to 165, 314 to 315, 464 to 465	E to F, A4 to A5, 13A to 13B, 1D0 to 1D1
	-	-	-
 QD75MH Detailed parameters 1-1 SET/ RESET Data Chg. MONIT MENU END Backlash compensation amount Axis1 0 Axis2 0 Axis3 0 Axis4 0 setting range 0 to 65535 (μm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5} (pulse):*1 Manual pulse generator input selection Axis1 0 Axis2 - Axis3 - Axis4 - Setting range 0:A-phase/B-phase;multiplied by 4 1:A-phase/B-phase;multiplied by 2 2:A-phase/B-phase;multiplied by 1 3:PLS/SIGN Software stroke upper limit value High Lmt Ax.1 65536 Ax.2 0 Ax.3 0 Ax.4 0 Low Lmt Ax.1 0 Ax.2 0 Ax.3 0 Ax.4 0 Setting range -2147483648 (μm):*10^{-1}(inch):*10^{-5} to 2147483647 (pulse):*1 0 to 35999999 (degree):*10^{-5} Item Ax.1 Ax.2 Ax.3 Ax.4 Set Range S/W stroke limit select 0 0 0 0 0:Cr feed 1:Mc feed S/W stroke limit OK/NG setting 0 0 0 0 0:valid 1:invalid Torque limit set value Axis1 0 Axis2 0 Axis3 0 Axis4 0 1 ~ 1000(%) 	1)	17, 167, 317, 467	11, A7, 13D, 1D3
	2)	18 to 19, 168 to 169, 318 to 319, 468 to 469	12 to 13, A8 to A9, 13E to 13F, 1D4 to 1D5
	3)	20 to 21, 170 to 171, 320 to 321, 470 to 471	14 to 15, AA to AB, 140 to 141, 1D6 to 1D7
	4)	33	21
	5)	22, 172, 322, 472	16, AC, 142, 1D8
	6)	23, 173, 323, 473	17, AD, 143, 1D9
	7)	26, 176, 326, 476	1A, B0, 146, 1DC
	-	-	-
 QD75MH Detailed parameters 1-2 SET/ RESET Data Chg. MONIT MENU END Item Ax.1 Ax.2 Ax.3 Ax.4 Set range Mcode ON sig O/P timing 0 0 0 0 0:WITH 1:AFTER Speed switching mode 0 0 0 0 0:Normal 1: Frontal Interpolate speed set method 0 0 0 0 0:Comp. 1:Ref.ax I/P Logic selection Item Ax.1 Ax.2 Ax.3 Ax.4 Lower limit Neg. Neg. Neg. Neg. Upper limit Neg. Neg. Neg. Neg. Stop signal Neg. Neg. Neg. Neg. External command Neg. Neg. Neg. Neg. Near point dog Neg. Neg. Neg. Neg. Command in-position width Axis1 0 Axis2 0 Axis3 0 Axis4 0 Setting range 1 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5}(pulse):* 1 Current feed val during speed control Axis 1 0 Axis 2 0 Axis 3 0 Axis 4 0 0:Do Not / 1:Do / 2: Clear(0) Speed-position function selection Axis 1 0 Axis 2 0 Axis 3 0 Axis 4 0 0:Execute V/P switching control(INC) 2:Execute V/P switching control(ABS) External signal selection Axis 1 1 Axis 2 0 Axis 3 0 Axis 4 0 0:QD75MH 1:Servo amplifier Emergency stop valid/invalid setting Axis 1 0 Axis 2 - Axis 3 - Axis 4 - 0:Valid 1:Invalid 	1)	27, 177, 327, 477	1B, B1, 147, 1DD
	2)	28, 178, 328, 478	1C, B2, 148, 1DE
	3)	29, 179, 329, 479	1D, B3, 149, 1DF
	4)	24 to 25, 174 to 175, 324 to 325, 474 to 475	18 to 19, AE to AF, 144 to 145, 1DA to 1DB
	5)	30, 180, 330, 480	1F, B4, 14A, 1E0
	6)	31, 181, 331, 481	20, B5, 14B, 1E1
	7)	34, 184, 334, 484	22, B8, 14E, 1E4
	8)	32, 182, 332, 482	21, B6, 14C, 1E2
	9)	35	23
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH Detailed parameters 2-1 SET/RESET Data Chg. MONIT MENU END Acc. time Axis1 Axis2 Axis3 Axis4 123 Setting range 1 to 8388608(msec) JOG speed limit value Setting range 1to2000000000 (mm/min):*10⁻² (inch/min):*10⁻³ (degree/min):*10⁻³⁽⁻²⁾ 1to50000000 (pulse/sec):*1 Dec. time Item Ax.1 Ax.2 Ax.3 Ax.4 Set range JOG accel. time select JOG decel. time select 0 to 3 1) 2) 3) 4) 5) 6) 7) 8) 9)	1)	36 to 37, 186 to 187, 336 to 337, 486 to 487	24 to 25, BA to BB, 150 to 151, 1E6 to 1E7
	2)	38 to 39, 188 to 189, 338 to 339, 488 to 489	26 to 27, BC to BD, 152 to 153, 1E8 to 1E9
	3)	40 to 41, 190 to 191, 340 to 341, 490 to 491	28 to 29, BE to BF, 154 to 155, 1EA to 1EB
	4)	42 to 43, 192 to 193, 342 to 343, 492 to 493	2A to 2B, C0 to C1, 156 to 157, 1EC to 1ED
	5)	44 to 45, 194 to 195, 344 to 345, 494 to 495	2C to 2D, C2 to C3, 158 to 159, 1EE to 1EF
	6)	46 to 47, 196 to 197, 346 to 347, 496 to 497	2E to 2F, C4 to C5, 15A to 15B, 1F0 to 1F1
	7)	48 to 49, 198 to 199, 348 to 349, 498 to 499	30 to 31, C6 to C7, 15C to 15D, 1F2 to 1F3
	8)	50, 200, 350, 500	32, C8, 15E, 1F4
	9)	51, 201, 351, 501	33, C9, 15F, 1F5
	-	-	-
 QD75MH Detailed parameters 2-2 SET/RESET Data Chg. MONIT MENU END Item Ax.1 Ax.2 Ax.3 Ax.4 Set range Acc/Dec Type selection 0:Ramp 1:Curve S pattern % 1-100(%) Sudden stop decel. time 0:Normal 1:Sudden stop Allowed circular int. error width Setting range 0 to 100000 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 External command function selection 0:External positioning start 1:External speed change request 2:Speed-position,position-speed switching request 3:Skip request Sudden stop deceleration time 1 to 8388608 (ms) Position complete signal output time 0 to 65535 (ms) Set tenfold value to degree axis 0:Valid 1:Invalid Restart allowable range(servo OFF→ON) 24 0, 1 to 327680(PLS) 0:Can't Restart 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11)	1)	52, 202, 352, 502	34, CA, 160, 1F6
	2)	53, 203, 353, 503	35, CB, 161, 1F7
	3)	56, 206, 356, 506	38, CE, 164, 1FA
	4)	57, 207, 357, 507	39, CF, 165, 1FB
	5)	58, 208, 358, 508	3A, D0, 166, 1FC
	6)	54 to 55, 204 to 205, 354 to 355, 504 to 505	36 to 37, CC to CD, 162 to 163, 1F8 to 1F9
	7)	59, 209, 359, 509	3B, D1, 167, 1FD
	8)	60 to 61, 210 to 211, 360 to 361, 510 to 511	3C to 3D, D2 to D3, 168 to 169, 1FE to 1FF
	9)	62, 212, 362, 512	3E, D4, 16A, 200
	10)	63, 213, 363, 513	3F, D5, 16B, 201
	11)	64, 214, 364, 514	40, D6, 16C, 202
	-	-	-
 QD75MH OPR detailed parameters SET/RESET Data Chg. MONIT MENU END Item Axis1 Axis2 Axis3 Axis4 OPR Accel. time 0 ~ 3 Decel. time 0 ~ 3 Torque limit 1 ~ 1000(%) Setup 0:Positioning canceled 1:Perform positioning OPR detailed parameters Setting range 0 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 OP shift amount Setting range -2147483648 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 Speed set for OP shift 0:OPR speed 1:Creep speed Dwell time for OPR retry 0 to 65535(msec) 1) 2) 3) 4) 5) 6) 7) 8)	1)	82, 232, 382, 532	52, E8, 17E, 214
	2)	83, 233, 383, 533	53, E9, 17F, 215
	3)	86, 236, 386, 536	56, EC, 182, 218
	4)	87, 237, 387, 537	57, ED, 183, 219
	5)	80 to 81, 230 to 231, 380 to 381, 530 to 531	50 to 51, E6 to E7, 17C to 17D, 212 to 213
	6)	84 to 85, 234 to 235, 384 to 385, 534 to 535	54 to 55, EA to EB, 180 to 181, 216 to 217
	7)	88, 238, 388, 538	58, EE, 184, 21A
	8)	89, 239, 389, 539	59, EF, 185, 21B
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH OPR basic parameters SET/ RESET · Data Chg. · MONIT MENU · END Ax.1 Ax.2 Ax.3 Ax.4 OPR method 0 0 0 0 [0:Near-point dog] [4:Count1] [5:Count2] [6:Data Set] OPR direction 0 0 0 0 0:Positive 1:Negative OPR retry 0 0 0 0 0:Do not 1:Do OPR speed: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Setting range: 1to2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*$10^{-3(-2)}$; 1to50000000 (pulse/sec):*1 OP address: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Setting range: -2147483648 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (pulse):*1; 0 to 35999999 (degree):*10^{-5} Creep speed: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Setting range: 1to2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*$10^{-3(-2)}$; 1to50000000 (pulse/se):*1 1) 2) 3) 4) 5) 6)	1)	70, 220, 370, 520	46, DC, 172, 208
	2)	71, 221, 371, 521	47, DD, 173, 209
	3)	78, 228, 378, 528	4E, E4, 17A, 210
	4)	72 to 73, 222 to 223, 372 to 373, 522 to 523	48 to 49, DE to DF, 174 to 175, 20A to 20B
	5)	74 to 75, 224 to 225, 374 to 375, 524 to 525	4A to 4B, E0 to E1, 176 to 177, 20C to 20D
	6)	76 to 77, 226 to 227, 376 to 377, 526 to 527	4C to 4D, E2 to E3, 178 to 179, 20E to 20F
	-	-	-
 QD75MH I/O signal & Status SET/ RESET · Data Chg. · MONIT MENU · END External input/output signal — Item, Ax.1, Ax.2, Ax.3, Ax.4: Lower limit signal ● ● ● ●; Upper limit signal ● ● ● ●; Stop signal ● ● ● ●; Ext.command signal ● ● ● ●; Near-point signal ● ● ● ● Status — Item, Ax.1, Ax.2, Ax.3, Ax.4: In speed cont. flag ● ● ● ●; Vel-pos. SW latch ● ● ● ●; Command in-position ● ● ● ●; OPR request flag ● ● ● ●; OPR complete flag ● ● ● ● Status — Item, Ax.1, Ax.2, Ax.3, Ax.4: Pos-vel. SW latch ● ● ● ●; Axis warning detect ● ● ● ●; Speed change 0 flag ● ● ● ● 1) 2) 3) 4) 5) 6) 7) 8)	1)	816	330
	2)	916	394
	3)	1016	3F8
	4)	1116	45C
	5)	817	331
	6)	917	395
	7)	1017	3F9
	8)	1117	45D
	-	-	-
 QD75MH Axis monitor data-1 SET/ RESET · Data Chg. · MONIT MENU · END Target value / Machine feed val.: Axis1 0 0; Axis2 0 0; Axis3 0 0; Axis4 0 0 (μm):*10^{-1} (degree):*10^{-5} (inch):*10^{-5} (pulse):*1 Item, Ax.1, Ax.2, Ax.3, Ax.4, Note: In speed cont. flag 0 0 0 0 0:Not in 1:In; In speed chg.proc. 0 0 0 0 0:Not in 1:In Target spd / Current spd / Feedrate: Axis1 0 0 0; Axis2 0 0 0; Axis3 0 65536030 65538000; Axis4 0 0 0 (mm/min):*10^{-2} (degree/min):*$10^{-3(-2)}$ (inch/min):*10^{-3} (pulse/sec):*1 1) 2) 3) 4) 5) 6) 7) 8) 9) 10)	1)	818 to 819, 802 to 803	332 to 333, 322 to 323
	2)	918 to 919, 902 to 903	396 to 397, 386 to 387
	3)	1018 to 1019, 1002 to 1003	3FA to 3FB, 3EA to 3EB
	4)	1118 to 1119, 1102 to 1103	45E to 45F, 44E to 44F
	5)	820 to 821, 810 to 811, 812 to 813	334 to 335, 32A to 32B, 32C to 32D
	6)	920 to 921, 910 to 911, 912 to 913	398 to 399, 38E to 38F, 390 to 391
	7)	1020 to 1021, 1010 to 1011, 1012 to 1013	3FC to 3FD, 3F2 to 3F3, 3F4 to 3F5
	8)	1120 to 1121, 1110 to 1111, 1112 to 1113	460 to 461, 456 to 457, 458 to 459
	9)	830, 930, 1030, 1130	33E, 3A2, 406, 46A
	10)	831, 931, 1031, 1131	33F, 3A3, 407, 46B
	-	-	-

Screen example	No.	Buffer memory address DEC	Buffer memory address HEX
 QD75MH Axis monitor data-2 SET/RESET, Data Chg., MONIT MENU, END Special start data: Axis, Instr. code, Instr. para, Data No. 1 0 0 0 / 2 0 0 0 / 3 0 0 0 / 4 0 0 0 Special start repetition counter: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Control system repetition counter: Axis1 0, Axis2 0, Axis3 0, Axis4 0 Axis, Data being executed (1st data pointer, Pos.data number, Block No.), Previous position 1 0 0 0 0 / 2 0 0 0 0 / 3 0 0 0 0 / 4 0 0 0 0	1)	827 to 829	33B to 33D
	2)	927 to 929	39F to 3A1
	3)	1027 to 1029	403 to 405
	4)	1127 to 1129	467 to 469
	5)	834 to 837	342 to 345
	6)	934 to 937	3A6 to 3A9
	7)	1034 to 1037	40A to 40D
	8)	1134 to 1137	46E to 471
	9)	832, 932, 1032, 1132	340, 3A4, 408, 46C
	10)	833, 933, 1033, 1133	341, 3A5, 409, 46D
	-	-	-
 QD75MH Axis monitor data-3 SET/RESET, Data Chg., MONIT MENU, END Axis, OPR increment, Actual present val, Error counter val 1 0 0 0 / 2 0 0 0 / 3 0 0 0 / 4 0 0 0 (μm)*:10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Axis, Number of motor rotation, Motor current 1 0 0 / 2 0 0 / 3 0 0 / 4 0 0 (rpm):*10⁻¹ (%):*10⁻¹ Axis, Servo amplifier S/W number 1 00 00 00 00 00 00 00 00 00 00 00 00 2 00 00 00 00 00 00 00 00 00 00 00 00 3 00 00 00 00 00 00 00 00 00 00 00 00 4 00 00 00 00 00 00 00 00 00 00 00 00 Value is character code.(JIS8 Code)	1)	848 to 849, 850 to 851, 852 to 853	350 to 351, 352 to 353, 354 to 355
	2)	948 to 949, 950 to 951, 952 to 953	3B4 to 3B5, 3B6 to 3B7, 3B8 to 3B9
	3)	1048 to 1049, 1050 to 1051, 1052 to 1053	418 to 419, 41A to 41B, 41C to 41D
	4)	1148 to 1149, 1150 to 1151, 1152 to 1153	47C to 47D, 47E to 47F, 480 to 481
	5)	854 to 855, 856 to 857	356 to 357, 358 to 359
	6)	954 to 955, 956 to 957	3BA to 3BB, 3BC to 3BD
	7)	1054 to 1055, 1056 to 1057	41E to 41F, 420 to 421
	8)	1154 to 1155, 1156 to 1157	480 to 481, 482 to 483
	9)	864 to 869	360 to 365
	10)	964 to 969	3C4 to 3C9
	11)	1064 to 1069	428 to 42D
	12)	1164 to 1169	48C to 491
	-	-	-
 QD75MH Axis monitor data-4 SET/RESET, Data Chg., MONIT MENU, END Parameter error No.: Axis1 0, Axis2 0, Axis3 0, Axis4 0 1 to 18 : PA01 to PA18 19 to 63 : PB01 to PB45 64 to 95 : PC01 to PC32 96 to 127 : PD01 to PD32 128 to 167 : PE01 to PE40 128 to 199 : PS01 to PS32 [Servo status] Item, Ax.1, Ax.2, Ax.3, Ax.4 Zero point passed ○ ○ ○ ○ Zero speed ○ ○ ○ ○ Ready ON ○ ○ ○ ○ Servo ON ○ ○ ○ ○ Servo alarm ○ ○ ○ ○ In-position ○ ○ ○ ○ Torque limit ○ ○ ○ ○ Abs. value cleared ○ ○ ○ ○ Warning ○ ○ ○ ○ Item, Axis1, Axis2, Axis3, Axis4 Regenerative load ratio 0 0 0 0 [%] Actual load ratio 0 0 0 0 [%] Peak load ratio 0 0 0 0 [%]	1)	870, 970, 1070, 1170	366, 3CA, 42E, 492
	2)	876, 976, 1076, 1176	36C, 3D0, 434, 498
	3)	877, 977, 1077, 1177	36D, 3D1, 435, 499
	4)	878, 978, 1078, 1178	36E, 3D2, 436, 49A
	5)	879, 979, 1079, 1179	36F, 3D3, 437, 49B
	6)	880, 980, 1080, 1180	370, 3D4, 438, 49C
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH OPR SET/ RESET Data Chg. MONIT MENU END Axis Travel after NPD ON (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):* 1 Torque limit stored value Near point Upper limit Lower limit 123 (%) 0 (%) 383 (%) 0 (%) 1) 2) 3) 4) 5) 6) 7) 8)	1)	824 to 825	338 to 339
	2)	924 to 925	39C to 39D
	3)	1024 to 1025	400 to 401
	4)	1124 to 1125	464 to 465
	5)	826, 816	33A, 330
	6)	926, 916	39E, 394
	7)	1026, 1016	402, 3F8
	8)	1126, 1116	466, 45C
	-	-	-
 QD75MH Speed-position control SET/ RESET Data Chg. MONIT MENU END SPSC positioning amount Axis1 Axis2 Axis3 Axis4 1500 (μm):*10⁻¹ (degree):*10⁻⁵ (inch):*10⁻⁵ (pulse):*1 Item Ax.1 Ax.2 Ax.3 Ax.4 Speed-position switching latch In speed control Speed-position switching enable 0:Disable 1:Enable SPSC movement amount change register Setting range 0 to 2147483647 (μm):*10⁻¹ (inch):*10⁻⁵ (degree):*10⁻⁵ (pulse):*1 1) 2) 3) 4) 5) 6) 7) 8)	1)	814 to 815	32E to 32F
	2)	914 to 915	392 to 393
	3)	1014 to 1015	3F6 to 3F7
	4)	1114 to 1115	45A to 45B
	5)	1526 to 1527, 1626 to 1627	5F6 to 5F7, 65A to 65B
	6)	1726 to 1727, 1826 to 1927	6BE to 6BF, 722 to 723
	7)	817, 917, 1017, 1117	330, 395, 3F9, 45D
	8)	1528, 1628, 1728, 1828	5F8, 65C, 6C0, 724
	-	-	-
 QD75MH Position-speed control SET/ RESET Data Chg. MONIT MENU END PSSC speed change register Axis1 Axis2 Axis3 Axis4 Setting renge 0to2000000000 (mm/min):*10⁻² (inch/min):*10⁻³ (degree/min):*10⁻³⁽⁻²⁾ 0to50000000 (pulse/sec):*1 Item Ax.1 Ax.2 Ax.3 Ax.4 Position-speed switching latch In speed control Position-speed switching enable 0:Disable 1:Enable 1) 2) 3) 4)	1)	1530 to 1531, 1630 to 1631	5FA to 5FB, 65E to 65F
	2)	1730 to 1731, 1830 to 1931	6C2 to 6C3, 726 to 727
	3)	817, 917, 1017, 1117	331, 395, 3F9, 45D
	4)	1532, 1632, 1732, 1832	5FC, 660, 6C4, 728
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1506 to 1507, 1606 to 1607	5E2 to 5E3, 646 to 647
	2)	1706 to 1707, 1806 to 1807	6AA to 6AB, 70E to 70F
	3)	1514 to 1515, 1614 to 1615	5EA to 5EB, 64E to 64F
	4)	1714 to 1715, 1814 to 1815	6B2 to 6B3, 716 to 717
	5)	1513, 1613, 1713, 1813	5E9, 64D, 6B1, 715
	6)	1544, 1644, 1744, 1844	608, 66C, 6D0, 734,
	7)	1545, 1645, 1745, 1845	609, 66D, 6B1, 735
	8)	1546, 1646, 1746, 1846	60A, 66E, 6B2, 736
	9)	1547, 1647, 1747, 1847	60B, 66F, 6B3, 737
	10)	1505, 1605, 1705, 1805	5E1, 645, 6A9, 70D
	-	-	-

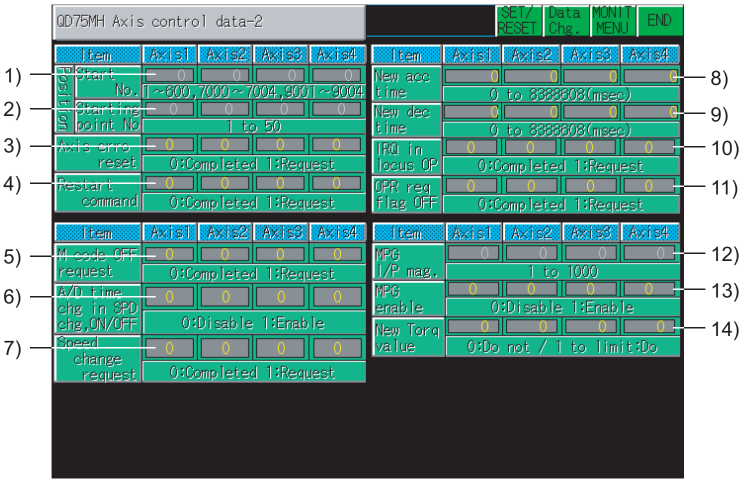
QD75MH Axis control data-1

New current value
Axis1 0 Axis2 0
Axis3 0 Axis4 0
Setting range: -2147483648 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (pulse):*1
0 to 35999999 (degree):*10^{-5}

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Torq.boost	0	0	0	0	1 to 300(%)
Step mode	0	0	0	0	0:Dec.unit 1:data No.
Step valid flag	0	0	0	0	0:Invalid 1:Valid
Step start infomation	0	0	0	0	0:Completed 1:Continue 2:Restarts

New speed value
Axis1 0 Axis2 0
Axis3 0 Axis4 0
Setting range: 0to2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*$10^{-3(-2)}$
0to50000000 (pulse/sec):*1

Item	Ax.1	Ax.2	Ax.3	Ax.4	Set value
Skip command	0	0	0	0	0:Completed 1:Skip
Use ext. command	0	0	0	0	0:Invalid 1:Valid

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1500, 1600, 1700, 1800	5DC, 640, 6A4, 708
	2)	1501, 1601, 1701, 1801	5DD, 641, 6A5, 709
	3)	1502, 1602, 1702, 1802	5DE, 642, 6A6, 70A
	4)	1503, 1603, 1703, 1803	5DF, 643, 6A7, 70B
	5)	1504, 1604, 1704, 1804	5E0, 644, 6A8, 70C
	6)	1512, 1612, 1712, 1812	5E8, 64C, 6B0, 714
	7)	1516, 1616, 1716, 1816	5EC, 650, 6B4, 718
	8)	1508 to 1509, 1608 to 1609, 1708 to 1709, 1808 to 1809	5E4 to 5E5, 648 to 649, 6AC to 6AD, 710 to 711
	9)	1510 to 1511, 1610 to 1611, 1710 to 1711, 1810 to 1811	5E6 to 5E7, 64A to 64B, 6AE to 6AF, 712 to 713
	10)	1520, 1620, 1720, 1820	5F0, 654, 6B8, 71C
	11)	1521, 1621, 1721, 1821	5F1, 655, 6B9, 71D
	12)	1522 to 1523, 1622 to 1623, 1722 to 1723, 1822 to 1823	5F2 to 5F3, 656 to 657, 6BA to 6BB, 71E to 71F
	13)	1524, 1624, 1724, 1824	5F4, 658, 6BC, 720
	14)	1525, 1625, 1725, 1825	5F5, 659, 68D, 721
	-	-	-

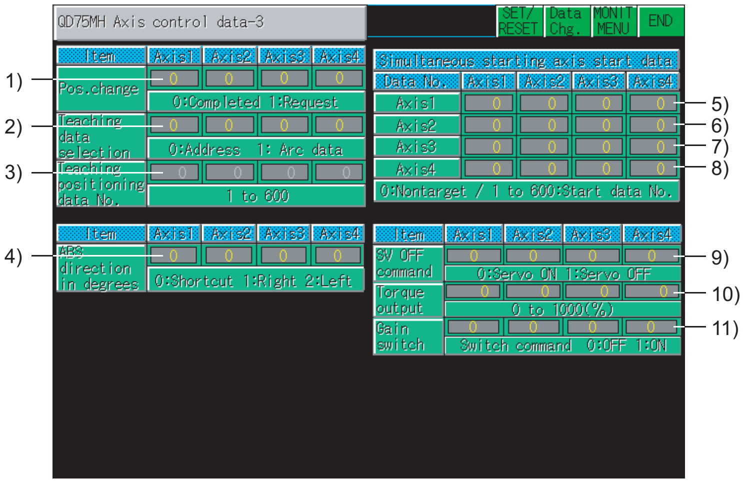
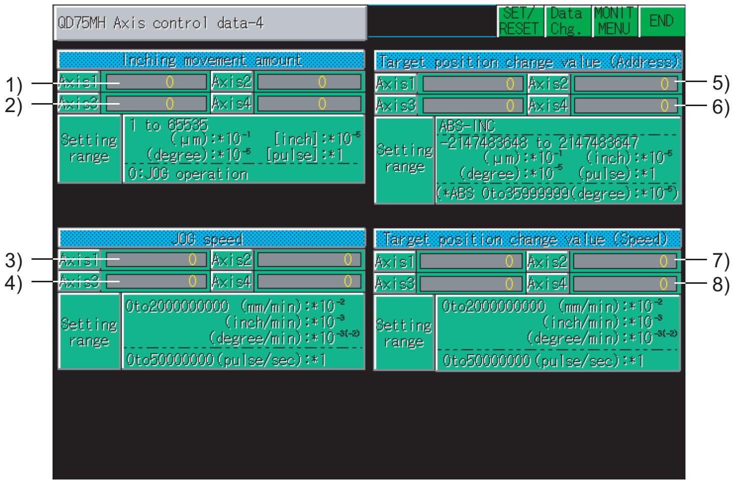
QD75MH Axis control data-2

Item		Axis1	Axis2	Axis3	Axis4
Position	Start No.	0	0	0	0
		1~600,7000~7004,9001~9004			
	Starting point No	0	0	0	0
		1 to 50			
Axis erro reset		0	0	0	0
		0:Completed 1:Request			
Restart command		0	0	0	0
		0:Completed 1:Request			

Item	Axis1	Axis2	Axis3	Axis4
New acc time	0	0	0	0
	0 to 8388608(msec)			
New dec time	0	0	0	0
	0 to 8388608(msec)			
IRQ in locus OP	0	0	0	0
	0:Completed 1:Request			
OPR req flag OFF	0	0	0	0
	0:Completed 1:Request			

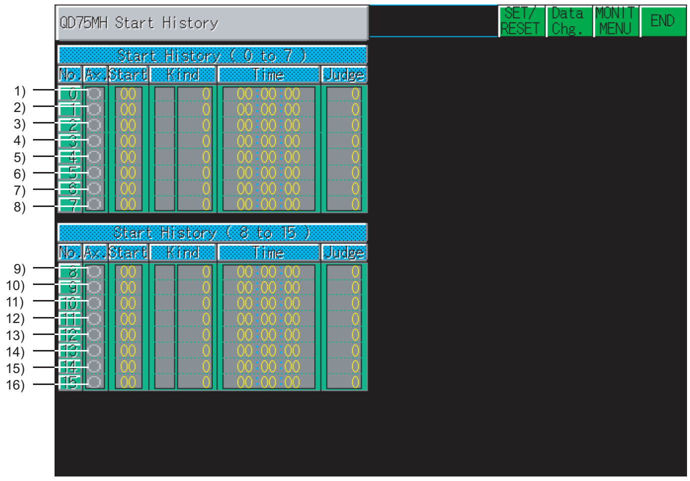
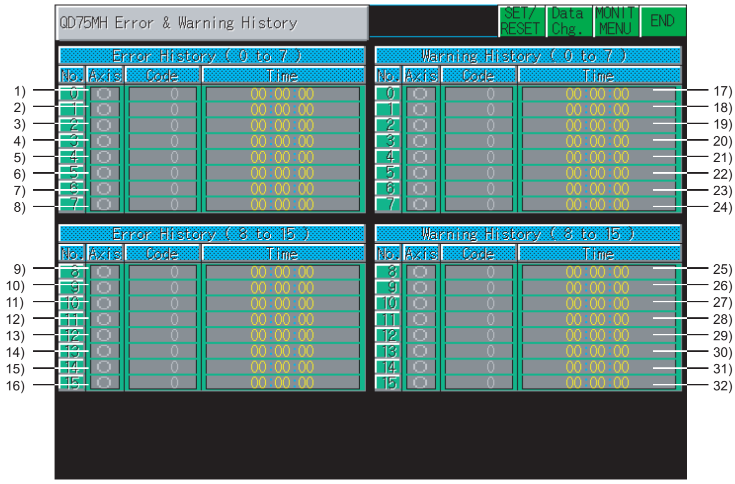
Item	Axis1	Axis2	Axis3	Axis4
M code OFF request	0	0	0	0
	0:Completed 1:Request			
A/D time chg in SPD chg,ON/OFF	0	0	0	0
	0:Disable 1:Enable			
Speed change request	0	0	0	0
	0:Completed 1:Request			

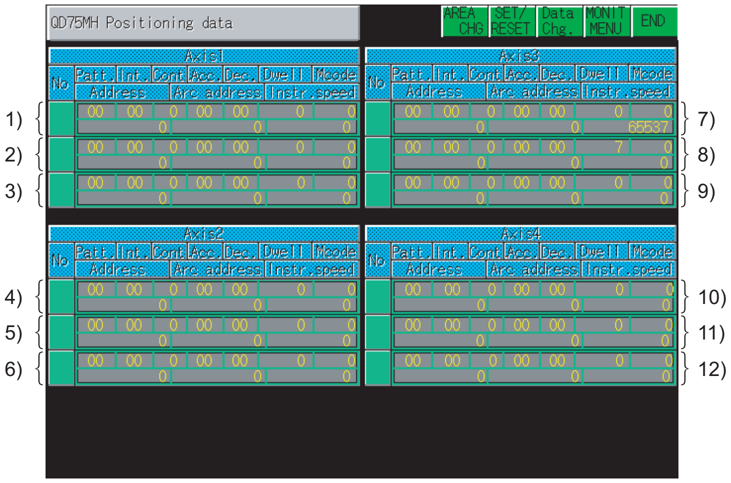
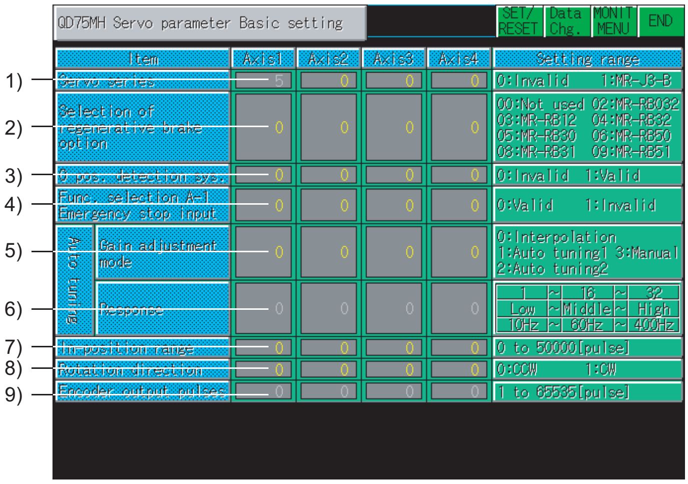
Item	Axis1	Axis2	Axis3	Axis4
MPG I/P mag.	0	0	0	0
	1 to 1000			
MPG enable	0	0	0	0
	0:Disable 1:Enable			
New Torq value	0	0	0	0
	0:Do not / 1 to limit:Do			

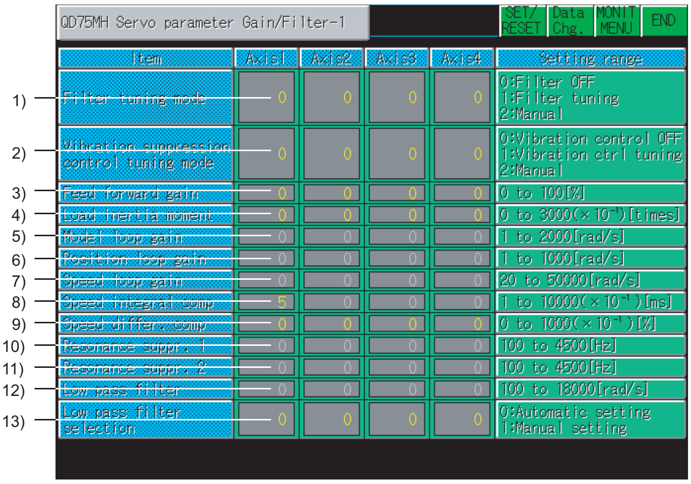
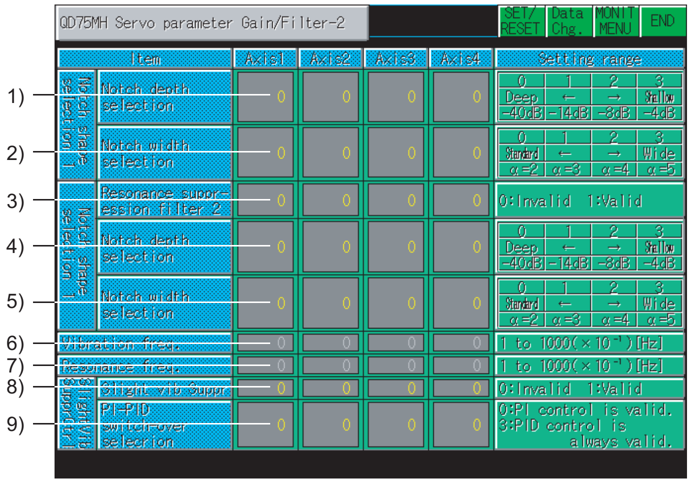
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	1538, 1638, 1738, 1838	602, 670, 6CA, 72E
	2)	1548, 1648, 1748, 1848	60C, 670, 6D4, 738
	3)	1549, 1649, 1749, 1849	60D, 671, 6D5, 739
	4)	1550, 1650, 1750, 1850	60E, 672, 606, 73A
	5)	1540, 1640, 1740, 1840	604, 668, 6CB, 730
	6)	1541, 1641, 1741, 1841	605, 669, 6CD, 731
	7)	1542, 1642, 1742, 1842	606, 66A, 6CE, 732
	8)	1543, 1643, 1743, 1843	607, 66B, 6D0, 733
	9)	1551, 1651, 1751, 1851	60F, 673, 6D7, 73B
	10)	1552 to 1553, 1652 to 1653, 1752 to 1753, 1852 to 1853	610 to 611, 674 to 675, 6D8 to 6D9, 73C to 73D
	11)	1559, 1659, 1759, 1859	617, 67B, 6DF, 743
	-	-	-
	1)	1517, 1617	5ED, 651
	2)	1717, 1817	6B5, 719
	3)	1518 to 1519, 1618 to 1619	5EE to 5EF, 652 to 653
	4)	1718 to 1719, 1818 to 1819	6B6 to 6B7, 71A to 71B
	5)	1534 to 1535, 1634 to 1635	5FE to 5FF, 662 to 663
	6)	1734 to 1735, 1834 to 1835	6C6 to 6C7, 72A to 72B
	7)	1536 to 1537, 1636 to 1637	600 to 601, 664 to 665
	8)	1736 to 1737, 1836 to 1837	6C8 to 6C9, 72C to 72D
	-	-	-

QD75MH Axis control data-3
SET/ RESET
Data Chg.
MONIT MENU
END
Item
Axis1
Axis2
Axis3
Axis4
Pos.change
0:Completed 1:Request
Teaching data selection
0:Address 1: Arc data
Teaching positioning data No.
1 to 600
Simultaneous starting axis start data
Data No.
0:Nontarget / 1 to 600:Start data No.
ABS direction in degrees
0:Shortcut 1:Right 2:Left
SV OFF command
0:Servo ON 1:Servo OFF
Torque output
0 to 1000(%)
Gain switch
Switch command 0:OFF 1:ON
1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)

QD75MH Axis control data-4
SET/ RESET
Data Chg.
MONIT MENU
END
Inching movement amount
Axis1
Axis2
Axis3
Axis4
Setting range
1 to 65535 (μm):*10^{-1} [inch]:*10^{-5} (degree):*10^{-5} [pulse]:*1
0:JOG operation
Target position change value (Address)
ABS-INC
-2147483648 to 2147483647 (μm):*10^{-1} (inch):*10^{-5} (degree):*10^{-5} (pulse):*1
(*ABS 0to35999999(degree):*10^{-5})
JOG speed
0to2000000000 (mm/min):*10^{-2} (inch/min):*10^{-3} (degree/min):*$10^{-3(-2)}$
0to50000000(pulse/sec):*1
Target position change value (Speed)
1)
2)
3)
4)
5)
6)
7)
8)

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH Start History SET/ RESET Data Chg. MONIT MENU END Start History (0 to 7) No. Ax. Start Kind Time Judge Start History (8 to 15) 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16)	1)	1212 to 1216	4BC to 4C0
	2)	1217 to 1221	4C1 to 4C5
	3)	1222 to 1226	4C6 to 4CA
	4)	1227 to 1231	4CB to 4CF
	5)	1232 to 1236	4D0 to 4D4
	6)	1237 to 1241	4D5 to 4D9
	7)	1242 to 1246	4DA to 4DE
	8)	1247 to 1251	4DF to 4E3
	9)	1252 to 1256	4E4 to 4E8
	10)	1257 to 1261	4E9 to 4ED
	11)	1262 to 1266	4EE to 4F2
	12)	1267 to 1271	4F3 to 4F7
	13)	1272 to 1276	4F8 to 4FC
	14)	1277 to 1281	4FD to 501
	15)	1282 to 1286	502 to 506
	16)	1287 to 1291	507 to 50B
	-	-	-
 QD75MH Error & Warning History SET/ RESET Data Chg. MONIT MENU END Error History (0 to 7) Warning History (0 to 7) No. Axis Code Time Error History (8 to 15) Warning History (8 to 15) 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) 17) 18) 19) 20) 21) 22) 23) 24) 25) 26) 27) 28) 29) 30) 31) 32)	1)	1293 to 1296	50D to 510
	2)	1297 to 1300	511 to 514
	3)	1301 to 1304	515 to 518
	4)	1305 to 1308	519 to 51C
	5)	1309 to 1312	51D to 520
	6)	1313 to 1316	521 to 524
	7)	1317 to 1320	525 to 528
	8)	1321 to 1324	529 to 52C
	9)	1325 to 1328	52D to 530
	10)	1329 to 1332	531 to 534
	11)	1333 to 1336	535 to 538
	12)	1337 to 1340	539 to 53C
	13)	1341 to 1344	53D to 540
	14)	1345 to 1348	541 to 544
	15)	1349 to 1352	545 to 548
	16)	1353 to 1356	549 to 54C
	17)	1358 to 1361	54E to 551
	18)	1362 to 1365	552 to 555
	19)	1366 to 1369	556 to 559
	20)	1370 to 1373	55A to 55D
	21)	1374 to 1377	55E to 561
	22)	1378 to 1381	562 to 565
	23)	1382 to 1385	566 to 569
	24)	1386 to 1389	56A to 56D
	25)	1390 to 1393	56E to 571
	26)	1394 to 1397	572 to 575
	27)	1398 to 1401	576 to 579
	28)	1402 to 1405	57A to 57D
	29)	1406 to 1409	57E to 581
	30)	1410 to 1413	582 to 585
	31)	1414 to 1417	586 to 589
	32)	1418 to 1421	58A to 58D
	-	-	-

Screen example	No.	Buffer memory address	
		DEC	HEX
 QD75MH Positioning data AREA CHG SET/ RESET Data Chg. MONIT MENU END Axis1 Axis3 Axis2 Axis4 No Patt. Int. Cont Acc. Dec. Dwell Mcode Address Arc address Instr.speed 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12)	1)	2000 to 2002, 2004 to 2009	7D0 to 7D2, 7D4 to 7D9
	2)	2010 to 2012, 2014 to 2019	7DA to 7DC, 7DE to 7E3
	3)	2020 to 2022, 2024 to 2029	7E4 to 7E6, 7E8 to 7ED
	4)	8000 to 8002, 8004 to 8009	1F40 to 1F41, 1F44 to 1F49
	5)	8010 to 8012, 8014 to 8019	1F4A to 1F4C, 1F4E to 1F53
	6)	8020 to 8022, 8024 to 8029	1F54 to 1F56, 1F58 to 1F5D
	7)	14000 to 14002, 14004 to 14009	36B0 to 36B2, 36B4 to 36B9
	8)	14010 to 14012, 14014 to 14019	36BA to 36BB, 36BE to 36C3,
	9)	14020 to 14022, 14024 to 14029	36C4 to 36C6, 36C8 to 36CD
	10)	20000 to 20002, 20004 to 20009	4E20 to 4E22, 4E24 to 4E29
	11)	20010 to 20012, 20014 to 20019	4E2A to 4E2C, 4E2E to 4E33
	12)	20020 to 20022, 20024 to 20029	4E34 to 4E36, 4E38 to 4E3D
	-	-	-
 QD75MH Servo parameter Basic setting SET/ RESET Data Chg. MONIT MENU END Item Axis1 Axis2 Axis3 Axis4 Setting range Servo series 0:Invalid 1:MR-J3-B Selection of regenerative brake option 00:Not used 02:MR-RB032 03:MR-RB12 04:MR-RB32 05:MR-RB30 06:MR-RB50 08:MR-RB31 09:MR-RB51 0 pos. detection sys. 0:Invalid 1:Valid Func. selection A-1 Emergency stop input 0:Valid 1:Invalid Auto tuning Gain adjustment mode 0:Interpolation 1:Auto tuning1 3:Manual 2:Auto tuning2 Response 1 ~ 16 ~ 32 Low ~ Middle ~ High 10Hz ~ 60Hz ~ 400Hz In-position range 0 to 50000[pulse] Rotation direction 0:CCW 1:CW Encoder output pulses 1 to 65535[pulse] 1) 2) 3) 4) 5) 6) 7) 8) 9)	1)	30100, 30300, 30500, 30700	7594, 765C, 7724, 77EC
	2)	30102, 30302 30502 30702	7596, 765E, 7726, 77EE
	3)	30103, 30303 30503, 30703	7797, 765F, 7727, 77EF
	4)	30104, 30304, 30504, 30704	7798, 7660, 7728, 77F0
	5)	30108, 30308, 30508, 30708	759C, 7664, 772C, 77F4
	6)	30109, 30309, 30509, 30709	759D, 7665, 772D, 77F5
	7)	30110, 30310, 30510, 30710	7591, 7666, 772E, 77F6
	8)	30114, 30314, 30514, 30714	75A2, 766A, 7732, 77FA
	9)	30115, 30315, 30515, 30715	75A3, 766B, 7733, 77FB
	-	-	-

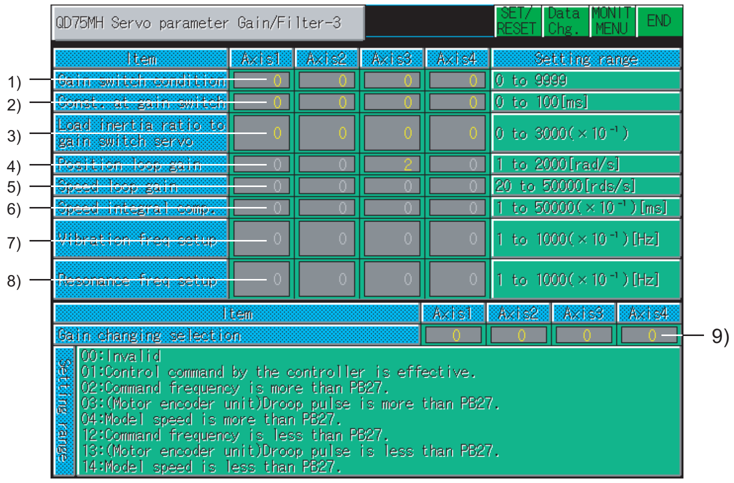
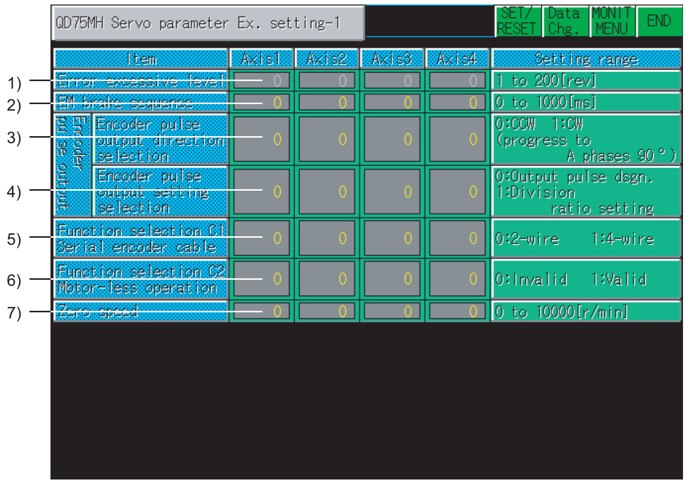
Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	30119, 30319, 30519, 30719	75A7, 766F, 7737, 77FF
	2)	30120, 30320, 30520 30720	75A8, 7670, 7738, 7800
	3)	30122, 30322, 30522, 30722	75AA, 7672, 773A, 7802
	4)	30124, 30324, 30524, 30724	75AC, 7674, 773C, 7804
	5)	30125, 30325, 30525, 30725	75AD, 7675, 773D, 7805
	6)	30126, 30326, 30526, 30726	75AE, 7676, 773E, 7806
	7)	30127, 30327, 30527, 30727	75AF, 7677, 773F, 7807
	8)	30128, 30328, 30528, 30728	75B0, 7678, 7740, 7808
	9)	30129, 30329, 30529, 30729	75B1, 7679, 7741, 7809
	10)	30131, 30331, 30531, 30731	75B3, 767B, 7743, 780B
	11)	30133, 30333, 30533, 30733	75B5, 767D, 7745, 780D
	12)	30136, 30336, 30536, 30736	75B8, 7680, 7748, 7810
	13)	30141, 30341, 30541, 30741	75BD, 7685, 774D, 7815
	-	-	-
	1) 2)	30132, 30332, 30532, 30732	75B4, 767C, 7744, 780C
	3) 4) 5)	30134, 30334, 30534, 30734	75B6, 767E, 7746, 780E
	6)	30137, 30337, 30537, 30737	75B9, 7681, 7749, 7811
	7)	30138, 30338, 30538, 30738	75BA, 7682, 774A, 7812
	8) 9)	30142, 30342, 30542, 30742	75BE, 7686, 774E, 7816
	-	-	-

QD75MH Servo parameter Gain/Filter-1

Item	Axis1	Axis2	Axis3	Axis4	Setting range
Filter tuning mode	0	0	0	0	0:Filter OFF 1:Filter tuning 2:Manual
Vibration suppression control tuning mode	0	0	0	0	0:Vibration control OFF 1:Vibration ctrl tuning 2:Manual
Feed forward gain	0	0	0	0	0 to 100[%]
Load inertia moment	0	0	0	0	0 to 3000(× 10⁻¹)[times]
Model loop gain	0	0	0	0	1 to 2000[rad/s]
Position loop gain	0	0	0	0	1 to 1000[rad/s]
Speed loop gain	0	0	0	0	20 to 50000[rad/s]
Speed integral comp	5	0	0	0	1 to 10000(× 10⁻¹)[ms]
Speed differ. comp	0	0	0	0	0 to 1000(× 10⁻¹)[%]
Resonance suppr. 1	0	0	0	0	100 to 4500[Hz]
Resonance suppr. 2	0	0	0	0	100 to 4500[Hz]
Low pass filter	0	0	0	0	100 to 18000[rad/s]
Low pass filter selection	0	0	0	0	0:Automatic setting 1:Manual setting

QD75MH Servo parameter Gain/Filter-2

Item		Axis1	Axis2	Axis3	Axis4	Setting range
Notch shape selection 1	Notch depth selection	0	0	0	0	0 / 1 / 2 / 3 Deep / ← / → / Shallow -40dB / -14dB / -8dB / -4dB
	Notch width selection	0	0	0	0	0 / 1 / 2 / 3 Standard / ← / → / Wide α =2 / α =3 / α =4 / α =5
Notch shape selection 1	Resonance suppr-ession filter 2	0	0	0	0	0:Invalid 1:Valid
	Notch depth selection	0	0	0	0	0 / 1 / 2 / 3 Deep / ← / → / Shallow -40dB / -14dB / -8dB / -4dB
	Notch width selection	0	0	0	0	0 / 1 / 2 / 3 Standard / ← / → / Wide α =2 / α =3 / α =4 / α =5
Vibration freq.		0	0	0	0	1 to 1000(× 10⁻¹)[Hz]
Resonance freq.		0	0	0	0	1 to 1000(× 10⁻¹)[Hz]
Slight Vib SupprCtrl	Slight vib Suppr	0	0	0	0	0:Invalid 1:Valid
	PI-PID switch-over selecrion	0	0	0	0	0:PI control is valid. 3:PID control is always valid.

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	30145, 30345, 30545, 30745	75C1, 7689, 7751, 7819
	2)	30146, 30346, 30546, 30746	75C2, 768A, 7752, 781A
	3)	30147, 30347, 30547, 30747	75C3, 768B, 7753, 781B
	4)	30148, 30348, 30548, 30748	75C4, 768C, 7754, 781C
	5)	30149, 30349, 30549, 30749	75C5, 768D, 7755, 781D
	6)	30150, 30350, 30550, 30750	75C6, 768E, 7756, 781E
	7)	30151, 30351, 30551, 30751	75C7, 768F, 7757, 781F
	8)	30152, 30352, 30552, 30752	75C8, 7690, 7758, 7820
	9)	30144, 30344, 30544, 30744	75C0, 7688, 7750, 7818
	-	-	-
	1)	30164, 30364, 30564, 30764	75D4, 769C, 7764, 782C
	2)	30165, 30365, 30565, 30765	75D5, 769D, 7765, 782D
	3) 4)	30166, 30366, 30566, 30766	75D6, 769E, 7766, 782E
	5)	30167, 30367, 30567, 30767	75D7, 769F, 7767, 782F
	6)	30168, 30368, 30568, 30768	75D8, 76A0, 7768, 7830
	7)	30170, 30370, 30570, 30770	75DA, 76A2, 776A, 7832
	-	-	-

QD75MH Servo parameter Gain/Filter-3

Item	Axis1	Axis2	Axis3	Axis4	Setting range
Gain switch condition	0	0	0	0	0 to 9999
Const. at gain switch	0	0	0	0	0 to 100[ms]
Load inertia ratio to gain switch servo	0	0	0	0	0 to 3000(×10⁻¹)
Position loop gain	0	0	2	0	1 to 2000[rad/s]
Speed loop gain	0	0	0	0	20 to 50000[rds/s]
Speed integral comp.	0	0	0	0	1 to 50000(×10⁻¹)[ms]
Vibration freq setup	0	0	0	0	1 to 1000(×10⁻¹)[Hz]
Resonance freq setup	0	0	0	0	1 to 1000(×10⁻¹)[Hz]

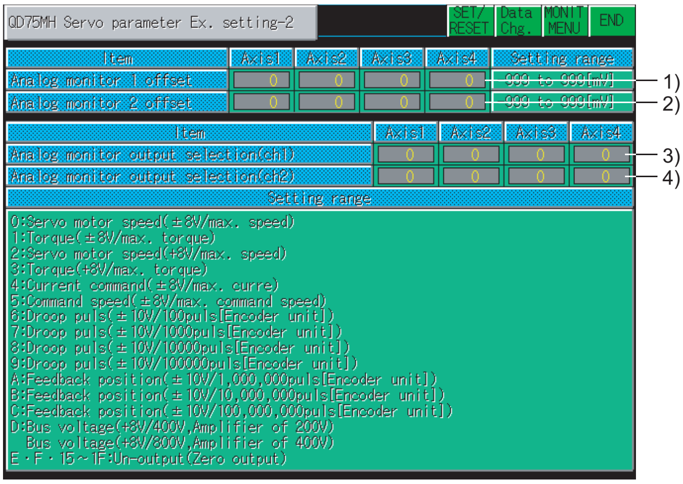
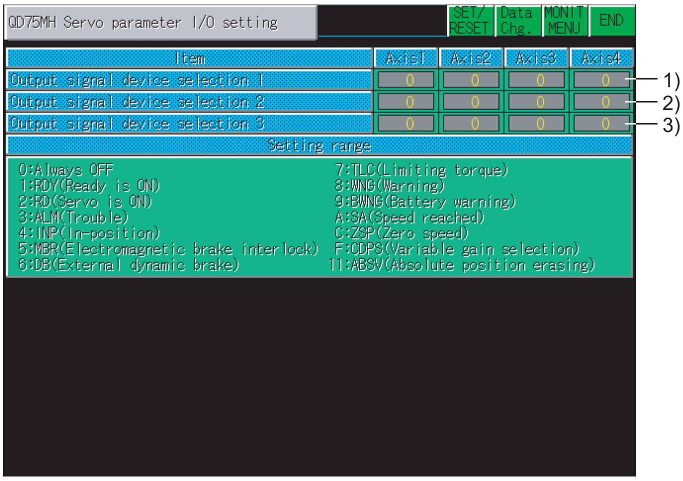
Item	Axis1	Axis2	Axis3	Axis4
Gain changing selection	0	0	0	0

Setting range

00:Invalid
01:Control command by the controller is effective.
02:Command frequency is more than PB27.
03:(Motor encoder unit)Droop pulse is more than PB27.
04:Model speed is more than PB27.
12:Command frequency is less than PB27.
13:(Motor encoder unit)Droop pulse is less than PB27.
14:Model speed is less than PB27.

QD75MH Servo parameter Ex. setting-1

Item		Axis1	Axis2	Axis3	Axis4	Setting range
Error excessive level		0	0	0	0	1 to 200[rev]
EM brake sequence		0	0	0	0	0 to 1000[ms]
Encoder pulse output	Encoder pulse output direction selection	0	0	0	0	0:CCW 1:CW (progress to A phases 90°)
	Encoder pulse output setting selection	0	0	0	0	0:Output pulse dsgn. 1:Division ratio setting
Function selection C1 Serial encoder cable		0	0	0	0	0:2-wire 1:4-wire
Function selection C2 Motor-less operation		0	0	0	0	0:Invalid 1:Valid
Zero speed		0	0	0	0	0 to 10000[r/min]

Screen example	No.	Buffer memory address	
		DEC	HEX
	1)	30174, 30374, 30574, 30774	75DE, 76A6, 776E, 7836
	2)	30175, 30375, 30575, 30775	75DF, 76A7, 776F, 7837
	3)	30172, 30372, 30572, 30772	75DC, 76A4, 776C, 7834
	4)	30173, 30373, 30573, 30773	75DD, 76A5, 776D, 7835
	-	-	-
	1)	30202, 30402, 30602, 30802	75FA, 76C2, 778A, 7852
	2)	30203, 30403, 30603, 30803	75FB, 76C3, 778B, 7853
	3)	30204, 30404, 30604, 30804	75FC, 76C4, 778C, 7854
	-	-	-

QD75MH Servo parameter Ex. setting-2

Item	Axis1	Axis2	Axis3	Axis4	Setting range
Analog monitor 1 offset	0	0	0	0	-999 to 999[mV]
Analog monitor 2 offset	0	0	0	0	-999 to 999[mV]

Item	Axis1	Axis2	Axis3	Axis4
Analog monitor output selection(ch1)	0	0	0	0
Analog monitor output selection(ch2)	0	0	0	0

Setting range

0:Servo motor speed(±8V/max. speed)
1:Torque(±8V/max. torque)
2:Servo motor speed(+8V/max. speed)
3:Torque(+8V/max. torque)
4:Current command(±8V/max. curre)
5:Command speed(±8V/max. command speed)
6:Droop puls(±10V/100puls[Encoder unit])
7:Droop puls(±10V/1000puls[Encoder unit])
8:Droop puls(±10V/10000puls[Encoder unit])
9:Droop puls(±10V/100000puls[Encoder unit])
A:Feedback position(±10V/1,000,000puls[Encoder unit])
B:Feedback position(±10V/10,000,000puls[Encoder unit])
C:Feedback position(±10V/100,000,000puls[Encoder unit])
D:Bus voltage(+8V/400V,Amplifier of 200V)
  Bus voltage(+8V/800V,Amplifier of 400V)
E・F・15～1F:Un-output(Zero output)

QD75MH Servo parameter I/O setting

Item	Axis1	Axis2	Axis3	Axis4
Output signal device selection 1	0	0	0	0
Output signal device selection 2	0	0	0	0
Output signal device selection 3	0	0	0	0

Setting range

0:Always OFF	7:TLC(Limiting torque)
1:RDY(Ready is ON)	8:WNG(Warning)
2:RD(Servo is ON)	9:BWNG(Battery warning)
3:ALM(Trouble)	A:SA(Speed reached)
4:INP(In-position)	C:ZSP(Zero speed)
5:MBR(Electromagnetic brake interlock)	F:CDPS(Variable gain selection)
6:DB(External dynamic brake)	11:ABSV(Absolute position erasing)

6.6 Operating I/O Module Monitor Screen

This section describes the operation of the various screens in the intelligent module monitor function, when monitoring input or output modules.

6.6.1 Specifying the module to be monitored

This section describes how to start monitoring for an input or output module with the intelligent module monitor function.

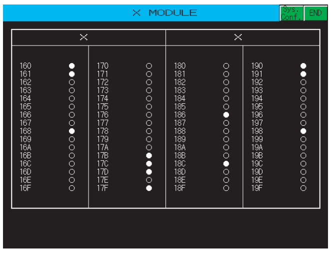
Operation procedure

Display the System Configuration screen. ······· See Sec. 6.4.1

Specify the module to be monitored (Touch the position at which the module is displayed.)

(1) From among the modules installed in the corresponding base unit, specify the module whose "Input" or "Output" is displayed.
Refer to Section 6.4.1 for the way to specify the intelligent function module.

Display the monitor screen for the specified module.



X				X			
160	●	170	○	180	○	190	●
161	●	171	○	181	○	191	●
162	○	172	○	182	○	192	○
163	○	173	○	183	○	193	○
164	○	174	○	184	○	194	○
165	○	175	○	185	○	195	○
166	○	176	○	186	●	196	○
167	○	177	○	187	○	197	○
168	●	178	○	188	○	198	●
169	○	179	○	189	○	199	○
16A	○	17A	○	18A	○	19A	○
16B	○	17B	●	18B	○	19B	○
16C	○	17C	●	18C	●	19C	○
16D	○	17D	●	18D	○	19D	○
16E	○	17E	○	18E	○	19E	○
16F	○	17F	●	18F	○	19F	○

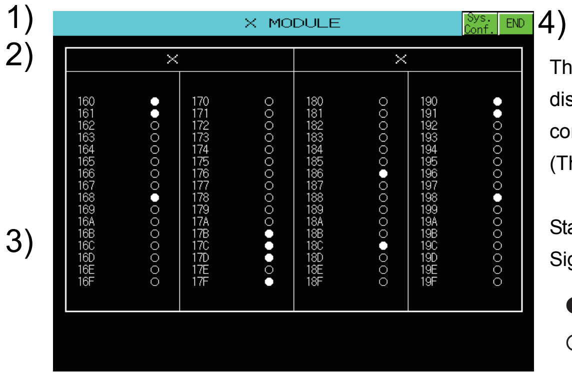
(2) For information on confirming the displayed contents and subsequent operation, please see Sec. 6.6.2.
* Tests cannot be conducted on input or output modules.

To Sec. 13.2

6.6.2 Monitor screen configuration and key functions

This section describes the configuration of monitor screens displayed by specifying the input module on the system configuration screen, and explains the functions of keys displayed on the screen.

1 Displayed contents (for an input module)



X				X			
160	●	170	○	180	○	190	●
161	●	171	○	181	○	191	●
162	○	172	○	182	○	192	○
163	○	173	○	183	○	193	○
164	○	174	○	184	○	194	○
165	○	175	○	185	○	195	○
166	○	176	○	186	●	196	○
167	○	177	○	187	○	197	○
168	●	178	○	188	○	198	●
169	○	179	○	189	○	199	○
16A	○	17A	○	18A	○	19A	○
16B	○	17B	●	18B	○	19B	○
16C	○	17C	●	18C	●	19C	○
16D	○	17D	●	18D	○	19D	○
16E	○	17E	○	18E	○	19E	○
16F	○	17F	●	18F	○	19F	○

The statuses of input and output signals are displayed after they are read out from the corresponding module.
(The OS executes it automatically.)

Statuses for up to 64 points can be displayed.
Signal statuses:

● : ON

○ : OFF

Item	Description
1)	Displays the type of object module (input or output module).
2)	Displays the name of the signal being monitored (X or Y).
3)	Displays the number and status of the I/O signal.
4)	Displays keys used for the operations on the monitor screen shown in 2. (Touch input)

2 Key functions

The table below shows the functions of keys that are used for the operations on the monitor screen.

Key	Function
END	Closes the monitoring and returns the screen to the one for starting the intelligent module monitor.
Sys. Conf.	Closes the current monitor and returns to the System Configuration screen.

6.7 Error Messages and Corrective Action

This section describes the error messages displayed when the intelligent module monitor is executed, and corrective action.

Error message	Description	Corrective action
Communication channel setup error	There is no channel for communication.	Check that the channel number is correctly set in the Communication Settings.
Communications error	Communication could not be established with the PLC CPU.	Check the connection status between the PLC CPU and the GOT (disconnected or cut cables). Has an error occurred in the PLC CPU?
Monitor Data Can Not Find	The special data (intelligent module monitor data) has not been downloaded to the GOT.	Download the special data (intelligent module monitor data) to the GOT.

MEMO

7. NETWORK MONITOR

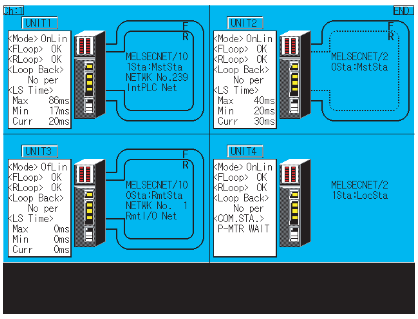
GT16 GT15 GT SOFT GOT1000 GT11 GT10

7.1 Features

The network monitor function enables the GOT to monitor and display the statuses of the MELSECNET/H, MELSECNET/10, MELSECNET(II), and CC-Link IE controller networks.
The features of the network monitor are described below.

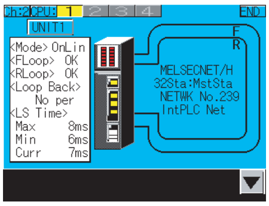
1 Selectable from detailed monitoring or other station monitoring for a desired network by the line monitor

The line monitor enables you to monitor the statuses of all network lines connected to the host.
In addition, you can also perform detailed monitoring of a desired network and monitoring of other stations by touch input on the line monitor.



```
UNIT1
<Mode> OnLin
<FLoop>  OK
<RLoop>  OK
<Loop Back>
    No per
<LS Time>
 Max    86ms
 Min    17ms
 Curr   20ms
MELSECNET/10
1Sta:MstSta
NETWK No.239
IntPLC Net

UNIT2
<Mode> OnLin
<FLoop>  OK
<RLoop>  OK
<Loop Back>
    No per
<LS Time>
 Max    40ms
 Min    20ms
 Curr   30ms
MELSECNET/2
0Sta:MstSta

UNIT3
<Mode> OfLin
<FLoop>  OK
<RLoop>  OK
<Loop Back>
    No per
<LS Time>
 Max     0ms
 Min     0ms
 Curr    0ms
MELSECNET/10
0Sta:RmtSta
NETWK No.  1
RmtI/O Net

UNIT4
<Mode> OnLin
<FLoop>  OK
<RLoop>  OK
<Loop Back>
    No per
<COM.STA.>
 P-MTR WAIT
MELSECNET/2
1Sta:LocSta
```

(GOT wirh VGA or higher resolution)



```
<Mode> OnLin
<FLoop>  OK
<RLoop>  OK
<Loop Back>
    No per
<LS Time>
 Max     8ms
 Min     6ms
 Curr    7ms
MELSECNET/H
32Sta:MstSta
NETWK No.239
IntPLC Net
```

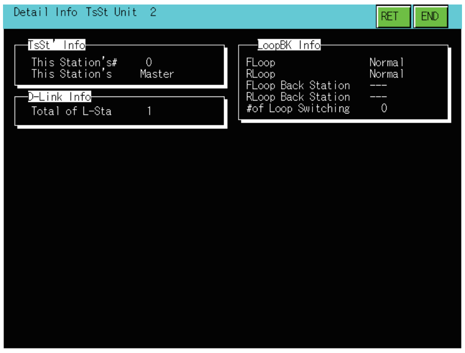
(GOT wirh QVGA resolution)

2 Monitoring available for the detailed network information with the detailed monitor

Dedicated monitor screens are displayed according to the network type of the connected host.

Network type: MELSECNET(II), master station
MELSECNET(II), local station
MELSECNET/10 and MELSECNET/H, control station and normal station
MELSECNET/10 and MELSECNET/H, remote master station
CC-Link IE controller network, control station and normal station

(Display example)



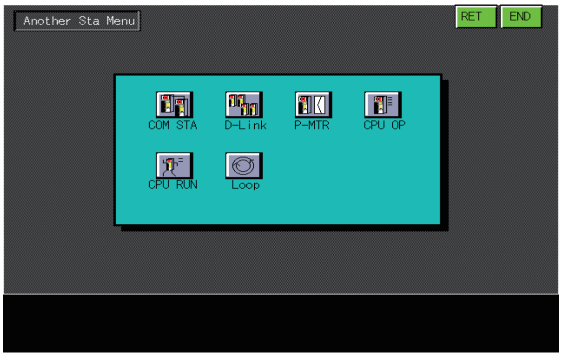
```
Detail Info TsSt Unit  2

This Station's#     0
This Station's     Master

Total of L-Sta      1

FLoop                  Normal
RLoop                  Normal
FLoop Back Station     ---
RLoop Back Station     ---
#of Loop Switching      0
```

3 Monitoring available for other stations statuses with the other station monitor

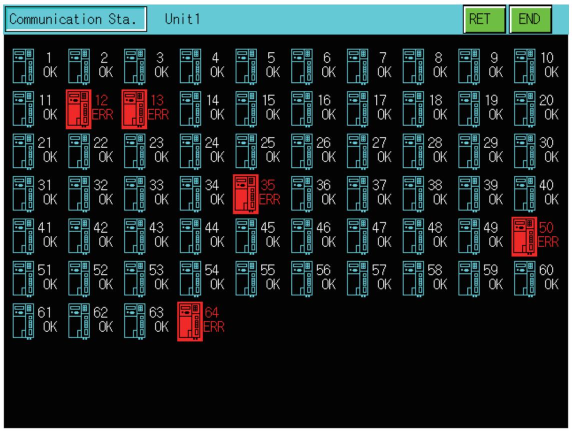
You can monitor the following statuses of other stations connected to the network.

- Communication status of each station
- Data link status of each station
- Parameter status of each station
- CPU action status of each station
- CPU RUN status of each station
- Loop status of each station

Other station monitor menu



Other station communication status monitor



1 OK	2 OK	3 OK	4 OK	5 OK	6 OK	7 OK	8 OK	9 OK	10 OK
11 OK	12 ERR	13 ERR	14 OK	15 OK	16 OK	17 OK	18 OK	19 OK	20 OK
21 OK	22 OK	23 OK	24 OK	25 OK	26 OK	27 OK	28 OK	29 OK	30 OK
31 OK	32 OK	33 OK	34 OK	35 ERR	36 OK	37 OK	38 OK	39 OK	40 OK
41 OK	42 OK	43 OK	44 OK	45 OK	46 OK	47 OK	48 OK	49 OK	50 ERR
51 OK	52 OK	53 OK	54 OK	55 OK	56 OK	57 OK	58 OK	59 OK	60 OK
61 OK	62 OK	63 OK	64 ERR						

7.2 Specifications

7.2.1 System configuration

This section describes the system configuration of the network monitor.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

☞GOT1000 Series Connection Manual

1 Target controller

Controller
QCPU (Q mode), motion controller (Q series)[*1]
QnACPU
ACPU/QCPU (A mode)
Motion controller (A series)

*1 For the motion controller CPU (Q series), only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

2 Connection type

(1) When the GOT is connected to a QCPU (Q mode), motion controller (Q series)[*1], QnACPU, or motion controller (A series)

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection type between GOT and controller								
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link IE[*2]	CC-Link connection		GOT multidrop connection
								ID[*3]	G4[*4]	
Network monitor	Monitors the statuses of the following networks. • MELSECNET/H network • MELSECNET/10 network • MELSECNET(II) network • CC-Link IE controller network	○	○	○	○	△[*5]	○	○	○	×

*1 For the motion controller CPU (Q series), only the PLC CPU area (CPU No.1) in the Q170MCPU can be monitored.

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

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

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

*5 When the GOT is connected to the MELSECNET/H or MELSECNET/10, use a QCPU and a network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, or QJ71BR11) of function version B or a later version.

(2) When the GOT is connected to an ACPU/QCPU (A mode)

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection type between GOT and controller							
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/10 connection	CC-Link connection		GOT multidrop connection
							ID*1	G4*2	
Network monitor	Monitoring the network status of MELSECNET/H, MELSECNET/10 and MELSECNET(II)	○	○	△*3	○	○	○	○	×

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

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

*3 Monitoring is not possible when the target CPU is AnUCPU and a MELSECNET/10 network module is used.

3 Required option OS and option function board

The option OS and option function board shown below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
Network monitor	210KB	370KB	324KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS

Install the option OS in the above table to the GOT.

Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.

Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.

For the GOTs with a built-in option function board, refer to the following.

☞ 1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

☞ GT15 User's Manual (8.10 Option Function Board)

7.2.2 Network information that can be monitored

The network information that can be monitored with the network monitor and the link types are as follows.

(○: Can be monitored, ×: Cannot be monitored)

Function		Network Information	MELSEC NET(II) master station	MELSEC NET(II) local station	MELSEC NET/10, MELSEC NET/H control station	MELSEC NET/10, MELSEC NET/H normal station	MELSEC NET/10, MELSEC NET/H remote master station	CC-Link IE control station[*3]	CC-Link IE normal station[*3]
Line monitor		Network category display	○	○	○	○	○	○	○
		Network number display	×	×	○	○	○	○	○
		Station number display	○	○	○	○	○	○	○
		Host operation mode	○	○	○	○	○	○	○
		Host loop line status	○	○	○	○	○	○	○
		Loopback execution status	○	○	○	○	○	○	○
		Link scan time display	○	×	○	○	○	○	○
		Data link system loop status	○	×	○	○	○	○	○
		Host communication status	×	○[*1]	×	×	×	×	×
Detailed monitor	Host information	Host number	○	○	○	○	○	○	○
		Host	○	○	×	×	×	×	×
		Network number	×	×	○	○	○	○	○
		Group number	×	×	○	○	×	○	○
	Control station information	Specified control station	×	×	○	○	×	○	○
		Current control station	×	×	○	○	×	○	○
		Communication information	×	×	○	○	×	○	○
		Sub-control-station link	×	×	○	○	×	○	○
		Remote-I/O-master-station station number	×	×	○	○	×	○	○
	Data link information	Total of linked stations	○	○	○	○	○	○	○
		Largest connected stations	×	×	○	○	○	○	○
		Largest data-linked station	×	×	○	○	○	○	○
		Communication status	×	○	○	○	○	○	○
		Causes of interrupted communication	×	×	○	○	○	○	○
		Causes of data link stoppage	×	×	○	○	○	○	○
	Constant link scan	Constant link scan	×	×	○	○	○	○	○
	BWY receive	BWY from the master station	×	○	×	×	×	×	×
	BW receive	BW from the master station in the higher loop	×	○	×	×	×	×	×

(Continued to next page)

Function		Network Information	MELSECNET(II) master station	MELSECNET(II) local station	MELSECNET/10, MELSECNET/H control station	MELSECNET/10, MELSECNET/H normal Station	MELSECNET/10, MELSECNET/H remote master station	CC-Link IE control station[3]	CC-Link IE normal station[3]
Detailed monitor	Loopback	Forward loop status	○	○	○[2]	○[2]	○[2]	○[4]	○[4]
		Reverse loop status	○	○	○[2]	○[2]	○[2]	○[4]	○[4]
		Loopback station (forward loop)	○	×	○[2]	○[2]	○[2]	○[4]	○[4]
		Loopback station (reverse loop)	○	×	○[2]	○[2]	○[2]	○[4]	○[4]
		Loop switching frequency	○	×	○[2]	○[2]	○[2]	○	○
	Host status	Parameter settings	×	×	○	○	×	○	○
		Designation of reserved station	×	×	○	○	○	○	○
		Communications mode	×	×	○	○	○	○	○
		Designation of transmission	×	×	○[2]	○[2]	○[2]	○	○
		Transmission status	×	×	○[2]	○[2]	○[2]	○	○
Other station monitor		Communication status of each station	○	×	○	○	○	○	○
		Communications status of each station	×	×	○	○	○	○	○
		Parameter status of each station	○	×	○	○	○	○	○
		CPU action status of each station	○	○	○	○	×	○	○
		CPU RUN status of each station	○	○	○	○	×	○	○
		Loop status of each station	○	×	○[2]	○[2]	○[2]	×	×

*1 Monitoring is only possible when connected to a MELSECNET(II) local station.

*2 Monitoring is possible only when using a MELSECNET/H or MELSECNET/10 loop system.

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

*4 The loop names vary depending on the network system to be monitored as shown below.

MELSECNET/H, MELSECNET/10, MELSECNET(II) network systems	CC-Link IE controller network
Forward loop	OUT-side loop
Reverse loop	IN-side loop

7.2.3 Access range

In bus connection, direct CPU connection, computer link connection, or Ethernet connection, only the host station can be monitored.
In MELSECNET/H connection or MELSECNET/10 connection, only the control station can be monitored.
In CC-Link connection (Intelligent device station), only the master station can be monitored.
In CC-Link connection (via G4), only the host and master stations can be monitored.
When the GOT is connected to the remote I/O station in MELSECNET/H network system, no stations can be monitored.
The GOT cannot monitor stations on the MELSECNET/G network system.
The access range other than above is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

7.2.4 Precautions

(1) Station monitored as the host
The station monitored as the host differs depending on the connection type.

Connection type	Station monitored as the host
Bus connection, direct CPU connection, computer link connection	Connected station (target)
Ethernet connection	Station set as the host with the Ethernet setting of GT Designer2
MELSECNET/H connection, MELSECNET/10 connection CC-Link IE controller network connection	Control station
CC-Link connection (Intelligent device station), CC-Link connection (Via G4)	Master station

(2) When the network monitor cannot be displayed correctly
The network monitor cannot be displayed correctly in the following cases.

(a) When the network module is performing offline testing
The network monitor cannot be displayed correctly during offline testing.
Set the network module mode to online.

(b) When the network parameter has been changed
The network monitor cannot be displayed correctly when the network parameter is changed.
Restart the network monitor.

(c) When there is a network parameter error
The network monitor cannot be displayed correctly when there is a network parameter error.
Review the network parameter.

(d) When the network parameter has not been set to the QCPU
The network monitor cannot be displayed correctly when the network parameter is not set to the QCPU.
Be sure to set the network parameter when monitoring the network with the GOT.

(e) When changing the head addresses on CPU side to which refresh parameter is set
The Network monitor cannot be displayed correctly if the SB and SW head addresses of CPU side are changed while refresh parameter is set in the network parameter for the QCPU.
To monitor the network with the GOT, set the head addresses of SB and SW on CPU side to default.

(f) When mounting MELSECNET/H network module and MELSECNET/G network module on same base unit
The GOT cannot monitor the network status.
For monitoring the network status, execute the network diagnostics with GX Developer.

(3) When monitoring MELSECNET/H
Even if a network module on the MELSECNET/H is being monitored, a MELSECNET/10 display is provided in either of the following cases:

- The normal station has been started due to a communication error (cable disconnection, etc.)
- The monitor target is the remote master station.

(4) When monitoring MELSECNET(II)
When connected to a QnACPU and the master station of the MELSECNET(II), monitoring cannot be done with the keyword being defined.

(5) When the CPU type of the connection target of the GOT is AnNCPU or AnACPU
Even when using the network module of the MELSECNET/10, the network information that can be monitored is the content of the MELSECNET(II).

7.3 Display

1 Operations for display

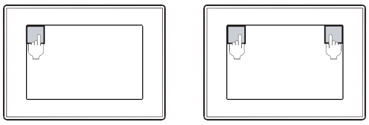
This section describes the flow until the operation screen for the network monitor is displayed after the network monitor (Option OS) is installed in the GOT.

Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.

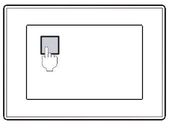


After the utility is displayed, touch [Debug & self check] → [Debug] → [Network monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (Network monitor) set in the project data

Touch the special function switch.

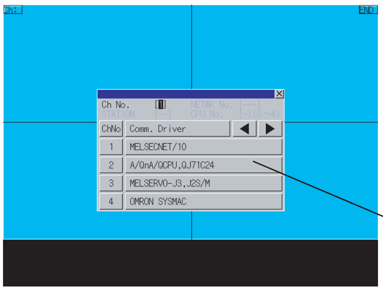


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

Set the channel number.

Set the channel number of the controller targeted to the network.



Ch: END

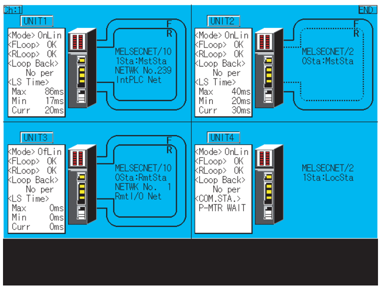
Ch No. [1] NETWK No. [---]
STATION [--] CPU No. [-](0～4)

ChNo	Comm. Driver
1	MELSECNET/10
2	A/QnA/QCPU,QJ71C24
3	MELSERVO-J3,J2S/M
4	OMRON SYSMAC

Communication setting window

The network monitor startup

The network monitor starts after a channel number is selected.



```
Ch:1                                                              END
UNIT1                                  UNIT2
<Mode> OnLin                           <Mode> OnLin
<FLoop>  OK                            <FLoop>  OK
<RLoop>  OK     MELSECNET/10           <RLoop>  OK     MELSECNET/2
<Loop Back>     1Sta:MstSta            <Loop Back>     0Sta:MstSta
    No per      NETWK No.239               No per
<LS Time>       IntPLC Net             <LS Time>
 Max    86ms                            Max    40ms
 Min    17ms                            Min    20ms
 Curr   20ms                            Curr   30ms
UNIT3                                  UNIT4
<Mode> OfLin                           <Mode> OnLin
<FLoop>  OK                            <FLoop>  OK
<RLoop>  OK     MELSECNET/10           <RLoop>  OK     MELSECNET/2
<Loop Back>     0Sta:RmtSta            <Loop Back>     1Sta:LocSta
    No per      NETWK No.  1               No per
<LS Time>       RmtI/O Net             <COM.STA.>
 Max     0ms                            P-MTR WAIT
 Min     0ms
 Curr    0ms
```

Exit

Point

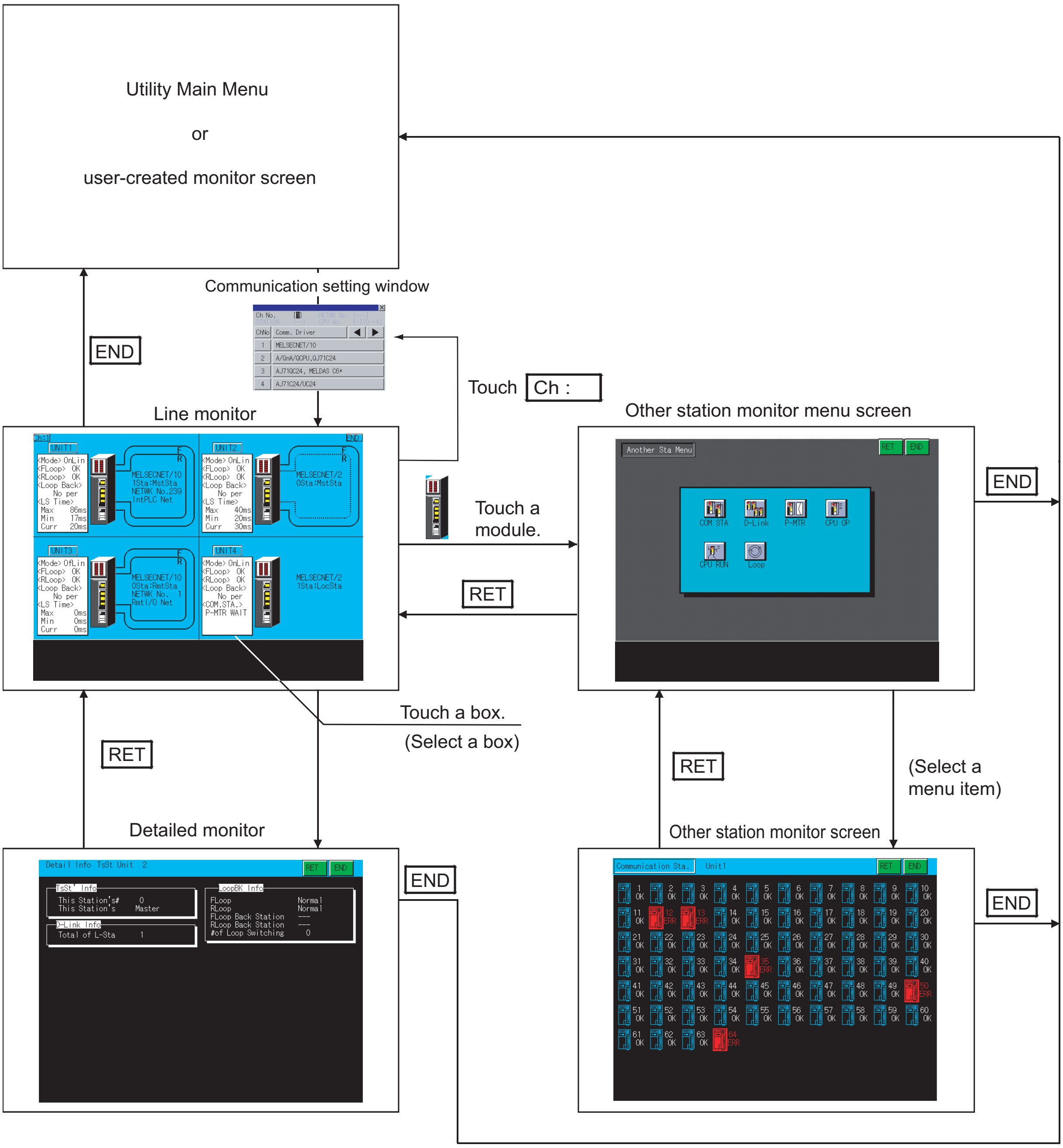
(1) How to display the utility
For how to display the utility, refer to the following.

☞ GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the network monitor only.
For displaying the communication setting window at the second or later startup, touch the Ch : button on the network monitor screen. (☞ 7.4 Operation Procedures)

(3) If the project data has not been downloaded
The network monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens



7.4 Operation Procedures

This section describes the information and key functions displayed on the network monitor screen.
The display on the network monitor screen varies slightly depending on the GOT used, and a screen for the GT1575-V is used for the descriptions in this section.

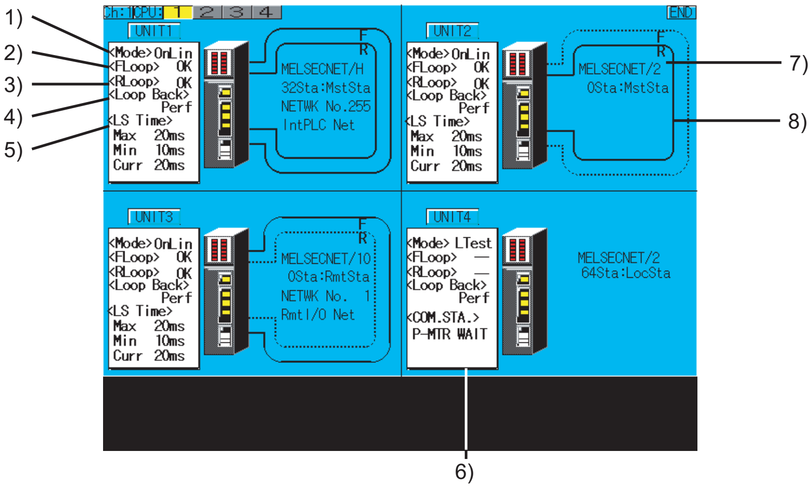
7.4.1 Line monitor

This section describes the structure of the monitor screen and the common operations used when executing the line monitor.

1 Display contents and keys functions

This section describes the line monitor screen configuration and the function of keys displayed on the screen after starting the network monitor.

(1) Displayed contents



```
<Mode>OnLin
<FLoop>   OK
<RLoop>   OK
<Loop Back>
        Perf
<LS Time>
 Max   20ms
 Min   10ms
 Curr  20ms
```

MELSECNET/H
32Sta:MstSta
NETWK No.255
IntPLC Net

```
<Mode>OnLin
<FLoop>   OK
<RLoop>   OK
<Loop Back>
        Perf
<LS Time>
 Max   20ms
 Min   10ms
 Curr  20ms
```

MELSECNET/2
0Sta:MstSta

```
<Mode>OnLin
<FLoop>   OK
<RLoop>   OK
<Loop Back>
        Perf
<LS Time>
 Max   20ms
 Min   10ms
 Curr  20ms
```

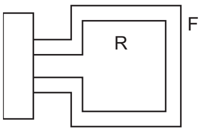
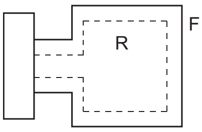
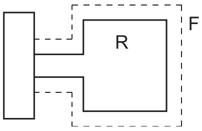
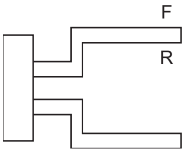
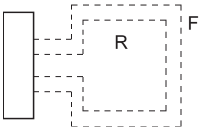
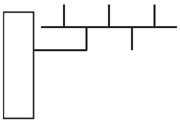
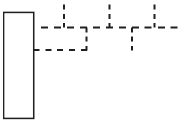
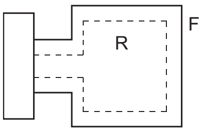
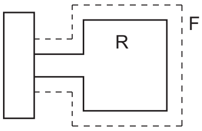
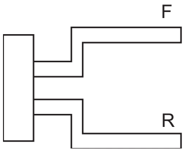
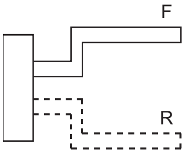
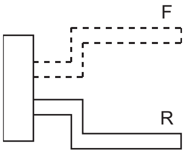
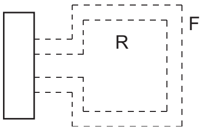
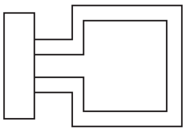
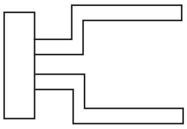
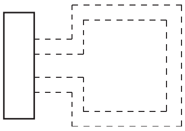
MELSECNET/10
0Sta:RmtSta
NETWK No. 1
RmtI/O Net

```
<Mode> LTest
<FLoop>   —
<RLoop>   —
<Loop Back>
        Perf
<COM.STA.>
 P-MTR WAIT
```

MELSECNET/2
64Sta:LocSta

No.	Display contents
1)	This shows the operation mode of the host. (On-line, Off-line, Test[*1])
2)	This shows the status of the F-loop (Forward loop). (OK, NG)[*2]
3)	This shows the status of the R-loop (Reverse loop). (OK, NG)[*2]
4)	This shows whether the loopback was executed or not. (Executed, Not executed)
5)	This shows the link scan time required for the control station and the normal station, for the remote master station and the remote I/O station, and for the master station and all the sub-stations. Maximum (the maximum value of link scan time) Minimum (the minimum value of link scan time) Current (the current value of link scan time)
6)	This shows the communication status of the host. (Only for MELSECNET(II) local station) P-MTR WAIT: Ready to receive parameters from the master station. Cyclic com: Normal communication Com. suspension: Communication is suspended because the host is disconnected.
7)	This shows the network category, network number, and station number.

(Continued to next page)

No.	Display contents
8)	For the MELSECNET/H and MELSECNET/10 network systems, the loop status is displayed as shown below. (Forward loop: F, Reverse loop: R) (a) Forward loop: OK Reverse loop: OK  (b) Forward loop: OK Reverse loop: NG  (c) Forward loop: NG Reverse loop: OK  (d) Loopback in execution  (e) Forward loop: NG Reverse loop: NG  (f) MELSECNET/10 coaxial bus (OK)  (g) MELSECNET/10 coaxial bus (NG) 
	For the MELSECNET(II)network system, the loop status is displayed as shown below. (Forward loop: F, Reverse loop: R) (a) Data link in execution in forward loop  (b) Data link in execution in reverse loop.  (c) Loopback is performed in the forward/reverse loop direction.  (d) Loopback is performed in the forward loop direction only.  (e) Loopback is performed in the reverse loop direction only.  (f) Data link is not available. 
	For the CC-Link IE controller network, the loop status is displayed as shown below. (a) Normal status  (b) Loopback in execution  (c) All stations with errors 

*1 [Test] is only displayed when using MELSECNET(II).
When using a system other than MELSECNET(II), [Off-line] is displayed even during testing of the forward or reverse loop.

*2 The loop names vary depending on the network system to be monitored as shown below.

MELSECNET/H, MELSECNET/10, MELSECNET(II) network systems	CC-Link IE controller network
Forward loop	OUT-side loop
Reverse loop	IN-side loop

Point

When the GOT target is AnACPU or AnNCPU

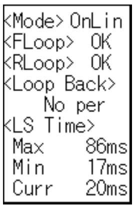
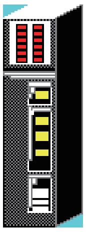
"MELSECNET(II)" is displayed even if a MELSECNET/10 network module is installed.

In addition, if there is a master station and local station, module 1 of the line monitor is displayed as "Master station".

Network module		Display on the GOT	
1st module	2nd module	Module 1	Module 2
Local station	Master station	Master station	Local station

(2) Key functions

This section describes the function of keys to be used for the line monitor operations.

Key	Function
END	Exits the line monitor and returns to the screen where the network monitor function was started.
 <Mode> OnLin <FLoop> OK <RLoop> OK <Loop Back> No per <LS Time> Max 86ms Min 17ms Curr 20ms	Switches to the detailed monitor screen that corresponds to the module displayed on the current monitor screen. This key is effective for each screen.
	Switches to the other station monitor menu that corresponds to the network displayed on the current monitor screen. This key is effective for each screen.
Ch:1	Displays the communication setting window.
CPU: 1 2 3 4	Changes the monitoring destination CPU using the controller number. (For multi-CPU system connection only) The controller number is displayed according to the number of CPUs loaded.

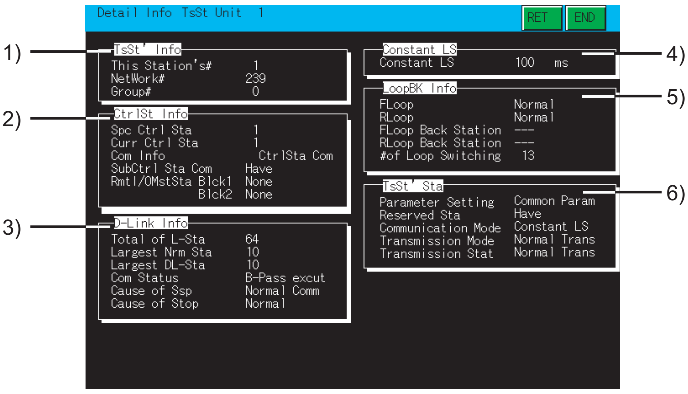
7.4.2 Detailed monitor

This section describes the detailed monitor and the common operations used when executing the line monitor.

1 Display contents and keys functions: acting as a MELSECNET/H or MELSECNET/10 Control station/normal station

This section describes the contents of the detailed monitor and the function of on-screen keys. All these are displayed and used when the host acts as the control station/normal station on the MELSECNET/H, MELSECNET/10.

(1) Displayed contents



```
Detail Info TsSt Unit  1

TsSt' Info                          Constant LS
This Station's#      1              Constant LS          100   ms
NetWork#           239
Group#               0              LoopBK Info
                                    FLoop                Normal
CtrlSt Info                         RLoop                Normal
Spc Ctrl Sta         1              FLoop Back Station   ---
Curr Ctrl Sta        1              RLoop Back Station   ---
Com Info              CtrlSta Com   #of Loop Switching    13
SubCtrl Sta Com    Have
RmtI/OMstSta Blck1 None             TsSt' Sta
             Blck2 None             Parameter Setting    Common Param
                                    Reserved Sta         Have
D-Link Info                         Communication Mode   Constant LS
Total of L-Sta     64               Transmission Mode    Normal Trans
Largest Nrm Sta    10               Transmission Stat    Normal Trans
Largest DL-Sta     10
Com Status         B-Pass excut
Cause of Ssp       Normal Comm
Cause of Stop      Normal
```

No.	Item	Display contents
1)	TsSt' Info	▪ This Station's # : Indicates the station number of the host. ▪ Network # : Indicates the network number. ▪ Group # : Indicates the group number.
2)	Ctrl St Info	▪ Spc Ctrlr Sta : Indicates the station number of the station that is specified as a control station. ▪ Curr Ctrl Sta : Indicates the station number of a station that is currently acting as the control station. ▪ Com Info : Indicates whether the host is communicating with the control station or the sub-control station. ▪ SubCtrl Sta Com : Indicates whether there is a sub-control station link. ▪ Rmt I/OMstSt[*1] : Displays the station number of the remote I/O master station for X/Y communication block1 and block 2. Displays "None" when there is no setting.
3)	D-Link Info	▪ Total of L-Sta : Indicates the maximum number of the stations to be linked. The maximum number is defined by common parameters. ▪ Largest Nrm Sta : Indicates the maximum station number of the station performing a communication in a normal condition. ▪ Largest DL-Sta : Indicates the maximum station number of the station that is data-linked. ▪ Com Status : Shows the current communications status of the host. (D-Link in prog/D-Link Stop (A)/D-Link Stop (H)/B-Pass excut/Disconnection/Loop test/Set Conf. test/Sta Odr. Conf./Com. test/Offline test/Reset. in prgr.) ▪ Causes of Ssp : Indicates the causes why the communications were interrupted. This indicates "Normal" if communications are normal. (Normal/Offline/Offline Test/Line error/Disconnection/Initialize/Others (error codes)) ▪ Causes of Stop : Indicates the causes why the data link was stopped. This indicates "Normal" if communications are normal. (Stop disignat/No common para/ Host Para error/Host CPU error/Com. suspension/Others)

For details of *1, refer to the following page.

(Continued to next page)

No.	Item	Display contents
4)	Constant LS	Indicates the predetermined time of constant link scans.
5)	LoopBK Info*2	▪ FLoop : Shows the status of the forward loop lines of the host. (Normal/LoopBK Trans/D-Link Impo) ▪ RLoop : Shows the status of the reverse loop lines of the host. (Normal/LoopBK Trans/D-Link Impo) ▪ FLoop Back Station : Indicates the station number of a station that executes the loopback along the forward loop. Displays "---" when the loopback is operating normally. ▪ RLoop Back Station : Indicates the station number of a station that executes the loopback along the reverse loop. Displays "---" when the loopback is operating normally. ▪ # of Loop Switching : Indicates the cumulative number of times for which loops have been switched.
6)	TsSt' Sta	▪ Parameter Setting : Common Param, Common + Spec if, Default Param, Default + Specif ▪ Reserved Sta : Indicates the availability of a reserved station. (Have/None) ▪ Communication Mode : Indicates either "Normal mode" or "Constant LS." ▪ Transmission Mode : Indicates either "Normal Trans" or "Multiple Trans."*2 ▪ Transmission Stat : Indicates either "Normal Trans" or "Multiple Trans."*2

*1 This is not displayed when the CPU type of the GOT connection target is AnNCPU or AnACPU

*2 "---" is displayed when coaxial bus connections are established.

(2) Key functions

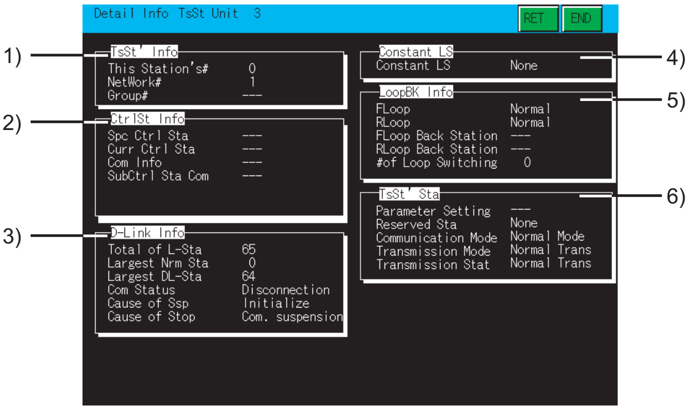
The table below shows the function of keys that are used on the detailed monitor.

Key	Function
RET	Returns to the line monitor.
END	Exits the detailed monitor and returns to the screen where the network monitor function was executed.

2 Display contents and keys functions: acting as a MELSECNET/H, MELSECNET/10 remote master station

This section describes the screen configuration of the detailed monitor and the function of on-screen keys when the host acts as the remote master station on the MELSECNET/H, MELSECNET/10.

(1) Displayed contents



```
Detail Info TsSt Unit  3

TsSt' Info
This Station's#      0
NetWork#             1
Group#              ---

Ctr1St Info
Spc Ctrl Sta        ---
Curr Ctrl Sta       ---
Com Info            ---
SubCtrl Sta Com     ---

D-Link Info
Total of L-Sta      65
Largest Nrm Sta      0
Largest DL-Sta      64
Com Status          Disconnection
Cause of Ssp        Initialize
Cause of Stop       Com. suspension

Constant LS
Constant LS            None

LoopBK Info
FLoop                  Normal
RLoop                  Normal
FLoop Back Station     ---
RLoop Back Station     ---
#of Loop Switching      0

TsSt' Sta
Parameter Setting      ---
Reserved Sta           None
Communication Mode     Normal Mode
Transmission Mode      Normal Trans
Transmission Stat      Normal Trans
```

No.	Item	Display contents
1)	TsStí Info	▪ This Sations # : Indicates the station number of the host. ▪ Network # : Indicates the network number. ▪ Group # : Not displayed. ("---" is displayed.)
2)	Ctrl St Info	▪ Spc Ctrl Sta : Not displayed. ("---" is displayed.) ▪ Curr Ctrl Sta : Not displayed. ("---" is displayed.) ▪ Com Info : Not displayed. ("---" is displayed.) ▪ SubCtrl-Sta Com : Not displayed. ("---" is displayed.)
3)	D-Link Info	▪ Total of L-Sta : Indicates the maximum number of the stations to be linked, which is set by common parameters. ▪ Largest Nrm Sta : Indicates the maximum station number of the station that is connected in a normal condition. ▪ Largest DL-Sta : Indicates the maximum station number of the station that is performing data link. ▪ Com Status : Shows the current communications status of the host. (D-Link in prog/D-Link Stop (A)/D-Link Stop (H)/B-Pass excut/Disconnection/ Loop test/Set Conf. test/Sta Odr. Conf./Com. test/Offline test/Reset. in prgr.) ▪ Causes of Ssp : Indicates the causes why the communications were interrupted. This indicates "Normal" if communications are normal. (Normal/Offline/ Offline Test/Line error/Disconnection/Initialize/Others (error codes)) ▪ Causes of Stop : Indicates the causes why the data link was stopped. This indicates "Normal" if communications are normal. (Stop disignat/No common para/Host Para error/Host CPU error/Com. suspension/Others (error codes))
4)	Constant LS	Indicates the predetermined time of constant link scans.

(Continued to next page)

No.	Item	Display contents
5)	LoopBK Info[1]	▪ FLoop : Shows the status of the forward loop lines of the host. (Normal/LoopBK Trans/D-Link Impo) ▪ RLoop : Shows the status of the reverse loop lines of the host. (Normal/LoopBK Trans/D-Link Impo) ▪ FLoop Back Station : Indicates the station number of a station that executes the loopback along the forward loop. Displays "---" when the loopback is operating normally. ▪ RLoop Back Station : Indicates the station number of a station that executes the loopback along the reverse loop. Displays "---" when the loopback is operating normally. ▪ # of Loop Switching : Indicates the cumulative number of times for which loops have been switched.
6)	TsSt' Sta	▪ Parameter Setting : Not displayed. ("---" is displayed.) ▪ Reserved Sta : Indicates the availability of a reserved station. (Have/None) ▪ Communication Mode : Indicates either "Normal mode" or "Constant LS." ▪ Transmission Mode : Indicates either "Normal Trans" or "Multiple Trans."[1] ▪ Transmission Stat : Indicates either "Normal Trans" or "Multiple Trans."[1]

*1 "---" is displayed when coaxial bus connections are established.

(2) Key functions

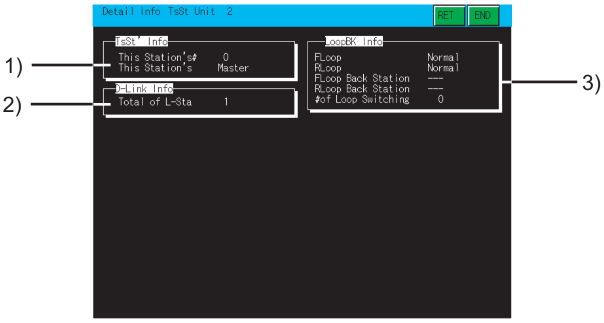
The table below shows the function of keys that are used on the detailed monitor.

Key	Function
RET	Returns to the line monitor.
END	Exits the detailed monitor and returns to the screen where the network monitor function was started.

3 Display contents and keys functions: acting as a MELSECNET(II) master station

This section describes the screen configuration of the detailed monitor and the function of on-screen keys when the host acts as the master station on the MELSECNET(II).

(1) Displayed contents



Detail Info TsSt Unit 2

TsSt' Info
This Station's# 0
This Station's Master

D-Link Info
Total of L-Sta 1

LoopBK Info
FLoop Normal
RLoop Normal
FLoop Back Station ---
RLoop Back Station ---
#of Loop Switching 0

No.	Item	Display contents
1)	TsStí Info	This Stationís # : This shows the station number of the host. This Stationís : Indicates the category of the host.
2)	D-Link Info	Indicates the maximum number of the stations to be linked, which is defined by common parameters.
3)	LoopBK Info	▪ FLoop : Shows the status of the forward loop lines of the host. (Normal/NG) ▪ RLoop : Shows the status of the reverse loop lines of the host. (Normal/NG) ▪ FLoop Back Station : Indicates the station number of a station that executes the loopback along the forward loop. When loopback is normal, "---" is displayed. When there is no loopback station, "F" is displayed. ▪ RLoop Back Station : Indicates the station number of a station that executes the loopback along the reverse loop. When loopback is normal, "---" is displayed. When there is no loopback station, "R" is displayed. ▪ # of Loop Switching : Indicates the cumulative number of times for which loops have been switched.

(2) Key functions

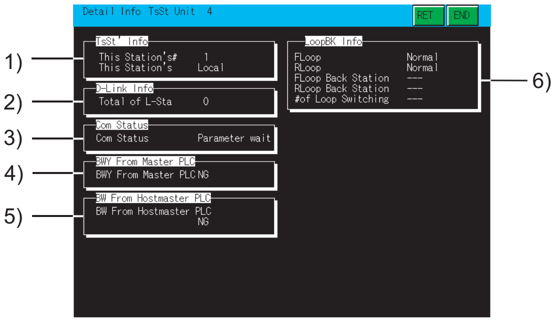
The table below shows the function of keys that are used on the detailed monitor.

Key	Function
RET	Returns to the line monitor.
END	Exits the detailed monitor and returns to the screen where the network monitor function was started.

4 Display contents and keys functions: acting as a MELSECNET(II) local station

This section describes the screen configuration of the detailed monitor and the function of on-screen keys when the host acts as the local station on the MELSECNET(II).

(1) Displayed contents



```
Detail Info TsSt Unit  4

TsSt' Info
 This Station's#     1
 This Station's      Local
D-Link Info
 Total of L-Sta      0
Com Status
Com Status           Parameter wait
BWY From Master PLC
BWY From Master PLC NG
BW From Hostmaster PLC
BW From Hostmaster PLC
                     NG

LoopBK Info
FLoop                      Normal
RLoop                      Normal
FLoop Back Station         ---
RLoop Back Station         ---
#of Loop Switching         ---
```

No.	Item	Display contents
1)	TsStí Info	▪ This Station's # : Indicates the station number of the host. ▪ This Station's : Indicates the category of the host.
2)	D-Link Info	▪ Total of L-Sta : Indicates the maximum number of the stations to be linked, which is defined by common parameters.
3)	Com status	This shows the communication status of the host. (Parameter wait/Cyclic comm/Com. suspension)
4)	BWY From Master	This shows the status of receiving Device BWY from the master station. OK: Data is being received by cyclic communication. NG: Unable to receive because the host is disconnected, etc.
5)	BW From Hostmaster	This shows the status of receiving Device BW from the master station of a dual-layer system. OK: Data is being received by cyclic communication. NG: Unable to receive because the host is disconnected, etc.
6)	LoopBK Info	▪ FLoop : Shows the status of the forward loop lines of the host. (Normal/NG) ▪ RLoop : Shows the status of the reverse loop lines of the host. (Normal/NG) ▪ FLoop Back Station : Not displayed. ("---" is displayed.) ▪ RLoop Back Station : Not displayed. ("---" is displayed.) ▪ # of Loop Switching : Not displayed. ("---" is displayed.)

(2) Key functions

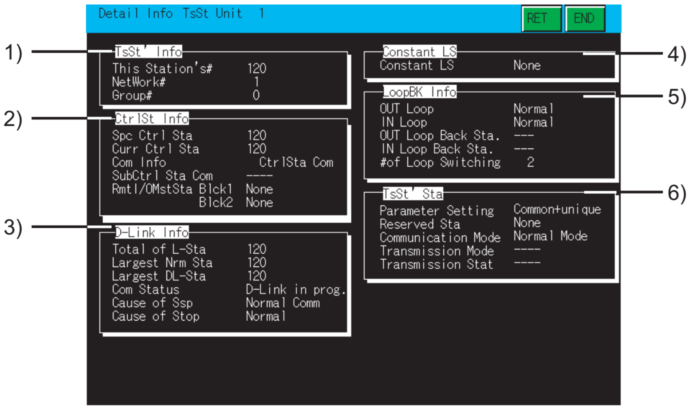
The table below shows the function of keys that are used on the detailed monitor.

Key	Function
RET	Returns to the line monitor.
END	Exits the detailed monitor and returns to the screen where the network monitor function was started.

5 Display contents and keys functions when monitoring CC-Link IE controller network

This section describes the screen configuration of the detailed monitor and the functions of on-screen keys when the GOT monitors a control station or normal station on the CC-Link IE controller network set as the host station.

(1) Displayed contents



```
Detail Info TsSt Unit  1

TsSt' Info
This Station's#     120
NetWork#              1
Group#                0

CtrlSt Info
Spc Ctrl Sta        120
Curr Ctrl Sta       120
Com Info              CtrlSta Com
SubCtrl Sta Com     ----
RmtI/OMstSta Blck1  None
             Blck2  None

D-Link Info
Total of L-Sta      120
Largest Nrm Sta     120
Largest DL-Sta      120
Com Status          D-Link in prog.
Cause of Ssp        Normal Comm
Cause of Stop       Normal

Constant LS
Constant LS             None

LoopBK Info
OUT Loop                Normal
IN Loop                 Normal
OUT Loop Back Sta.      ---
IN Loop Back Sta.       ---
#of Loop Switching        2

TsSt' Sta
Parameter Setting       Common+unique
Reserved Sta            None
Communication Mode      Normal Mode
Transmission Mode       ----
Transmission Stat       ----
```

No.	Item	Display contents
1)	TsSt' Info	▪ This Station's# : Displays the host station number. ▪ NetWork# : Displays the network number. ▪ Group# : Displays the group number.
2)	CtrlSt Info	▪ Spc Ctrl Sta : Displays the station number set as the control station. ▪ Curr Ctrl Sta : Displays the station number of the station currently operating as the control station. ▪ Com Info : Displays whether the GOT communicates with the control station or sub-control station. ▪ SubCtrl Sta Com : Not displayed ([---] is displayed.) ▪ RmtI/OMstSta : Displays the station numbers of the I/O master stations for block 1 and block 2. [None] is displayed with no setting.
3)	D-Link Info	▪ Total of L-Sta : Displays the total number of stations on the monitored network set for common parameters. ▪ Largest Nrm Sta : Displays the maximum station number of the station communicating normally. ▪ Largest DL-Sta : Displays the maximum station number of the station performing a data link. ▪ Com Status : Displays the current communication status of the host station. (D-Link in prog., D-Link stopped, B-Pass excut, B-Pass stopped, Offline test, Offline) ▪ Cause of Ssp[*1] : Displays the reason for the interrupted communication. [Normal Comm] is displayed with normal communications. (Cable disconnct, Wrong cable, Checking cables, Disconnct/retrn, Offline mode, Offline test, Self-check mode) ▪ Cause of Stop[*2] : Displays the reason for the interrupted data link. [Normal] is displayed with normal data links. (Stop disignat, D-Link time up, Testing line, Param not rcvd, Invlid Host No., Set Rsvd Sta., Dup Host No., Dup CtrlSta No., Sta No. not set, Invlid NTWK No., Host Para error, Params in comm., CPU stop error, CPU pwr stp err)

(Continued to next page)

No.	Item	Display contents
4)	Constant LS	Displays the set contact link scan time.
5)	LoopBK Info	・ OUT Loop : Displays the OUT-side loop line status of the host station. (Normal, LoopBK Trans, All Sta. NG) ・ IN Loop : Displays the IN-side loop line status of the host station. (Normal, LoopBK Trans, All Sta. NG) ・ OUT Loop Back Sta. Displays the station number of the OUT-side loopback station. [---] is displayed with normal loopbacks. ・ IN Loop Back Sta. : Displays the station number of the IN-side loopback station. [---] is displayed with normal loopbacks. ・ #of Loop Switching : Displays the accumulated number of switching loops.
6)	TsSt' Sta	・ Parameter Setting : Displays [No parameters], [Common Param], [Unique param], or [Common+unique]. ・ Reserved Sta : Displays whether a reserved station exists or not. ・ Communication Mode : Displays [Normal Mode] or [Constant LS]. ・ Transmission Mode : Not displayed ([---] is displayed.) ・ Transmission Stat : Not displayed ([---] is displayed.)

*1 When the station is in the hardware test mode, self-loopback test mode, circuit test mode, or station-to-station test mode, [Offline test] is displayed.

*2 For duplication of the control station or station number, [Dup CtrlSta No.] is displayed.

(2) Key functions

The table below shows the function of keys that are used on the detailed monitor.

Key	Function
RET	Returns to the line monitor.
END	Exits the detailed monitor and returns to the screen where the network monitor function was started.

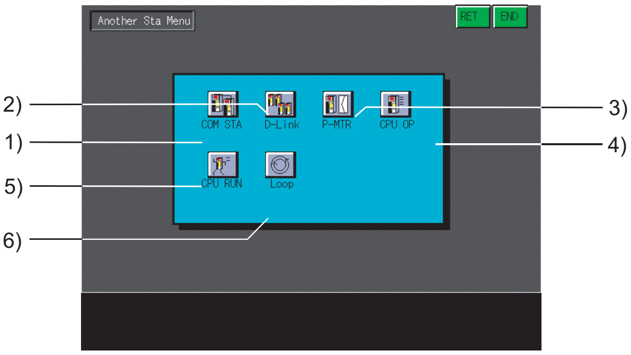
7.4.3 Other station monitor

This section describes the structure of the monitor screen and the common operations used when executing the other station monitor.

1 Display contents and keys functions: other station monitor menu

This section describes the other station monitor menu screen and the function of on-screen keys. The menu screen for the other station monitor is displayed by touching a module number displayed on the host monitor screen.
By this other station monitor menu, each of the other station monitor can be specified.

(1) Displayed contents



No.	Item	Display contents
1)	COM STA	Switches to the communication status monitor for other stations.[*1] (☞ 7.4.4 Other station communication status monitor)
2)	D-Link	Switches to the data link status monitor for other stations.[*2] (☞ 7.4.5 Other station data link status monitor)
3)	P-MTR	Switches to the parameter status monitor for other stations.[*1] (☞ 7.4.6 Other station parameter status monitor)
4)	CPU OP	Switches to the CPU operation status monitor for other stations.[*3] (☞ 7.4.7 Other station CPU operation status monitor)
5)	CPU RUN	Switches to the CPU RUN status monitor for other stations.[*3] (☞ 7.4.8 Other station CPU RUN status monitor)
6)	Loop	Switches to the loop status monitor for other stations.[*4] (☞ 7.4.9 Other station loop status monitor)

[*1] This cannot be selected when a MELSECNET(II) local station is selected using the line monitor.
[*2] This cannot be selected when a MELSECNET(II) master station or local station is selected using the line monitor.
[*3] This cannot be selected when a remote I/O station is selected using the line monitor.
[*4] The other station loop status monitor is not available in the following conditions.
- When a local station on the MELSECNET(II)network system is selected using the line monitor
- When a MELSECNET network system with coaxial cables is used
- When a station on the CC-Link IE controller network is selected using the line monitor

(2) Key functions

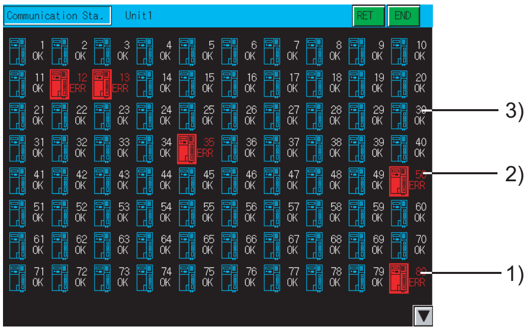
The table below shows the function of keys to be used for the other station monitor operations.

Key	Function
to	Switches to each monitor for other stations.
RET	Returns to the line monitor.
END	Exits the other station monitor screen and returns to the screen where the network monitor function was started.

7.4.4 Other station communication status monitor

This section describes the screen configuration of the other station communication status monitor and the function of keys displayed on it.
This screen cannot be displayed for a MELSECNET(II) local station.

(1) Displayed contents


Communication Sta.
Unit1
RET
END
1 OK 2 OK 3 OK 4 OK 5 OK 6 OK 7 OK 8 OK 9 OK 10 OK
11 OK 12 ERR 13 ERR 14 OK 15 OK 16 OK 17 OK 18 OK 19 OK 20 OK
21 OK 22 OK 23 OK 24 OK 25 OK 26 OK 27 OK 28 OK 29 OK 30 OK
31 OK 32 OK 33 OK 34 OK 35 ERR 36 OK 37 OK 38 OK 39 OK 40 OK
41 OK 42 OK 43 OK 44 OK 45 OK 46 OK 47 OK 48 OK 49 OK 50 ERR
51 OK 52 OK 53 OK 54 OK 55 OK 56 OK 57 OK 58 OK 59 OK 60 OK
61 OK 62 OK 63 OK 64 OK 65 OK 66 OK 67 OK 68 OK 69 OK 70 OK
71 OK 72 OK 73 OK 74 OK 75 OK 76 OK 77 OK 78 OK 79 OK 80 ERR
▼
3)
2)
1)

No.	Display contents
1)	Displays the communication status by station number. (OK/ERR) The station numbers displayed do not indicate the number of station numbers in the network, rather the maximum number of communication stations.
2)	Any station in an abnormal condition is highlighted.
3)	Reserved stations are displayed as normal stations.

(2) Key functions

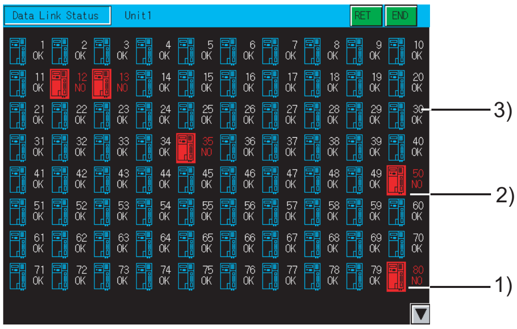
The table below shows the functions of the keys that are used for the other station communications status monitor operations.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station communication statuses monitor screen and returns to the screen where the network monitor was started.
▼ ▲	Switches the screen display of stations. (1 to 80 stations/81 to 120 stations)

7.4.5 Other station data link status monitor

This section describes the screen configuration of the other station data link status monitor and the function of on-screen keys.
This screen cannot be displayed for a MELSECNET(II) master station or local station.

(1) Displayed contents



No.	Display contents
1)	Displays the data link status by station number. (OK/NO) The station numbers displayed do not indicate the number of station numbers in the network, rather the maximum number of communication stations.
2)	Any station to which data link is not performed is highlighted.
3)	Reserved stations are displayed as having a data link established.

(2) Key functions

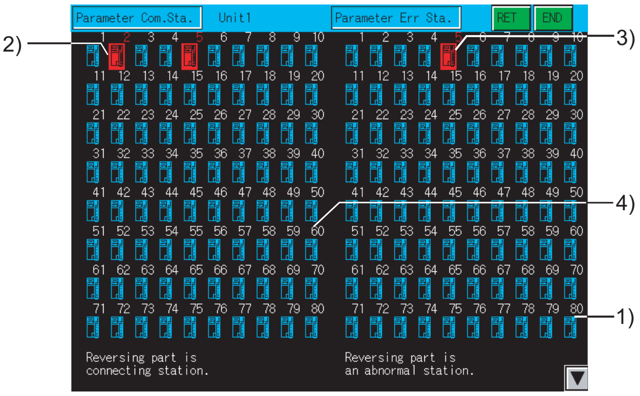
The table below shows the function of keys that are used for the operations of other station data link status monitor.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station data link status monitor screen and returns to the screen where the network monitor was started.
▼ ▲	Switches the screen display of stations. (1 to 80 stations/81 to 120 stations)

7.4.6 Other station parameter status monitor

This section describes the screen configuration of the other station parameter status monitor and the function of on-screen keys.
This screen cannot be displayed for a MELSECNET(II) local station.

(1) Displayed contents



Reversing part is connecting station.

Reversing part is an abnormal station.

No.	Display contents
1)	Displays the parameter status by station number. The station numbers displayed do not indicate the number of station numbers in the network, rather the maximum number of communication stations.
2)	Any station whose parameters are monitored is highlighted.*1
3)	Any station in an abnormal condition is highlighted.
4)	Reserved stations are displayed as normal stations.

*1 Only [Parameter Err Sta.] is displayed when connecting to a MELSECNET(II) master station.

(2) Key functions

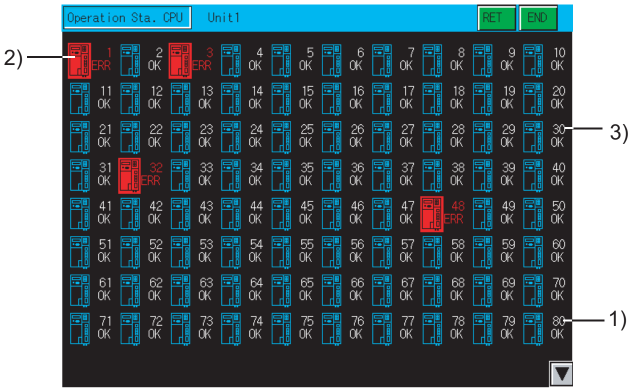
The table below shows the function of keys that are used for the operations of the other station parameter status monitor.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station parameter status monitor screen and returns to the screen where the network monitor was started.
▼ ▲	Switches the screen display of stations. (1 to 80 stations/81 to 120 stations)

7.4.7 Other station CPU operation status monitor

This section describes the screen configuration of the other station CPU operation status monitor and the function of on-screen keys.
This screen cannot be displayed for a remote I/O network system.

(1) Displayed contents



1 ERR	2 OK	3 ERR	4 OK	5 OK	6 OK	7 OK	8 OK	9 OK	10 OK
11 OK	12 OK	13 OK	14 OK	15 OK	16 OK	17 OK	18 OK	19 OK	20 OK
21 OK	22 OK	23 OK	24 OK	25 OK	26 OK	27 OK	28 OK	29 OK	30 OK
31 OK	32 ERR	33 OK	34 OK	35 OK	36 OK	37 OK	38 OK	39 OK	40 OK
41 OK	42 OK	43 OK	44 OK	45 OK	46 OK	47 OK	48 ERR	49 OK	50 OK
51 OK	52 OK	53 OK	54 OK	55 OK	56 OK	57 OK	58 OK	59 OK	60 OK
61 OK	62 OK	63 OK	64 OK	65 OK	66 OK	67 OK	68 OK	69 OK	70 OK
71 OK	72 OK	73 OK	74 OK	75 OK	76 OK	77 OK	78 OK	79 OK	80 OK

No.	Display contents
1)	Displays the CPU operation status by station number. (OK/ERR) The station number displayed does not indicate the station number in the network, rather the maximum number of communication stations.
2)	Any station that stays in an abnormal condition or out of operation is highlighted.
3)	Reserved stations and unconnected stations are displayed as normal stations.

(2) Key functions

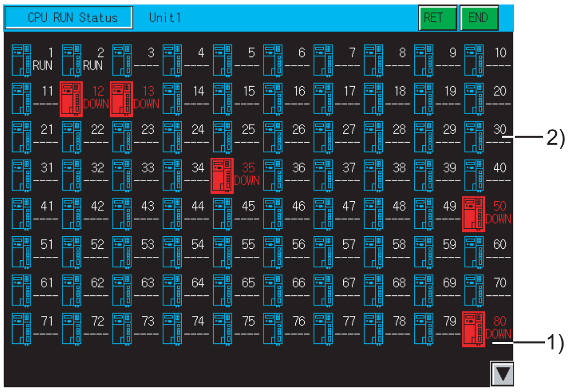
The table below shows the function of keys that are used for the operations of the other station CPU operation status monitor.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station CPU operation status monitor screen and returns to the screen where the network monitor was started.
▼ ▲	Switches the screen display of stations. (1 to 80 stations/81 to 120 stations)

7.4.8 Other station CPU RUN status monitor

This section describes the other station CPU RUN status monitor and the function of on-screen keys.
This screen cannot be displayed for a remote I/O network system.

(1) Displayed contents



No.	Display contents
1)	Displays the CPU operation status by station number. (RUN/STOP) "DOWN" is displayed for stations with communication errors. Up to 64 stations are displayed regardless of the number of stations in a network.
2)	"---" is displayed for a reserved station and the statuses of stations beyond the maximum communication stations, or when a MELSECNET(II) local station has been selected in the line monitor.

(2) Key functions

The table below shows the function of keys that are used for the operations of the other station CPU RUN status monitor.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station CPU RUN status monitor screen and returns to the screen where the network monitor was started.
▼ ▲	Switches the screen display of stations. (1 to 80 stations/81 to 120 stations)

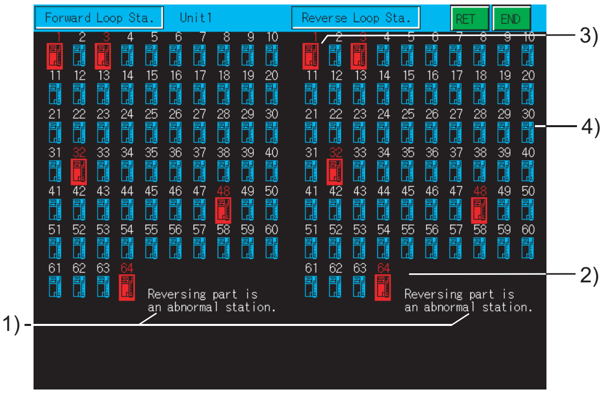
7.4.9 Other station loop status monitor

This section describes the screen configuration of the other station loop status monitor and the function of on-screen keys.

The other station loop status monitor is not available in the following conditions.

- When a local station on the MELSECNET(II)network system is selected using the line monitor
- When a MELSECNET network system with coaxial cables is used
- When a station on the CC-Link IE controller network is selected using the line monitor

(1) Displayed contents



Reversing part is an abnormal station.

Reversing part is an abnormal station.

No.	Display contents
1)	The F-loop (forward loop) status and the R-loop (reverse loop) status are displayed.
2)	The station numbers displayed do not indicate the number of station numbers in the network, rather the maximum number of communication stations.
3)	Any station that stays in an abnormal condition is highlighted.
4)	Reserved stations are displayed as normal stations.

(2) Key functions

The table below shows the function of keys that are used for the operations of the other station loop status monitor.

Key	Function
RET	Returns to the other station monitor.
END	Exits the other station loop status monitor screen and returns to the screen where the network monitor was started.

7.5 Error Message and Corrective Action

The following shows the error messages that are displayed during the network monitor operation and how to handle them.

Error message	Contents of error	Action to take
Communication channel setup error	There is no channel for communication.	Set the channel number in the Communication Settings of the utility.
Can not Communication	Communication could not be established with the PLC CPU.	▪ Check the connections between the controller and the GOT for disconnected connectors and cables. ▪ Check if an error has occurred in the controller.
Key Word error	A keyword has been set in the parameter when monitoring the MELSECNET(II) master station of the QnACPU.	Release the set keyword.

8. Q MOTION MONITOR

GT16 GT15 GT SOFT GOT1000 GT11 GT10

8.1 Features

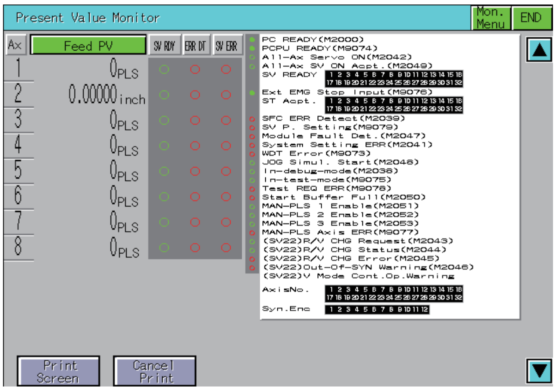
The Q motion monitor enables the servo monitoring and parameter setting of the motion controller CPU.
The following are the features of the Q motion monitor.

1 Various servo monitor data can be displayed on multiple monitor screens

The Q motion monitor function has multiple monitor screens, on which you can monitor servo data in a variety of patterns.

(Display examples)

Present Value Monitor



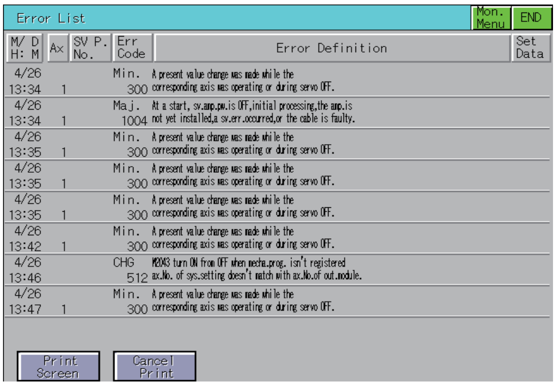
Ax	Feed PV
1	0 PLS
2	0.00000 inch
3	0 PLS
4	0 PLS
5	0 PLS
6	0 PLS
7	0 PLS
8	0 PLS

PC READY(M2000)
PCPU READY(M9074)
All-Ax Servo ON(M2042)
All-Ax SV ON Acpt.(M2049)
SV READY 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
Ext EMG Stop Input(M9076)
ST Acpt. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
SFC ERR Detect(M2039)
SV P. Setting(M9079)
Module Fault Det.(M2047)
System Setting ERR(M2041)
WDT Error(M9073)
JOG Simul. Start(M2048)
In-debug-mode(M2038)
In-test-mode(M9075)
Test REQ ERR(M9078)
Start Buffer Full(M2050)
MAN-PLS 1 Enable(M2051)
MAN-PLS 2 Enable(M2052)
MAN-PLS 3 Enable(M2053)
MAN-PLS Axis ERR(M9077)
(SV22)R/V CHG Request(M2043)
(SV22)R/V CHG Status(M2044)
(SV22)R/V CHG Error(M2045)
(SV22)Out-Of-SYN Warning(M2046)
(SV22)V Mode Cont.Op.Warning
AxisNo. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
Syn.Enc 1 2 3 4 5 6 7 8 9 10 11 12

- Monitors and displays the feed current values and actual current values of all running axes.

(8.4.3 Present Value Monitor screen)

Error List

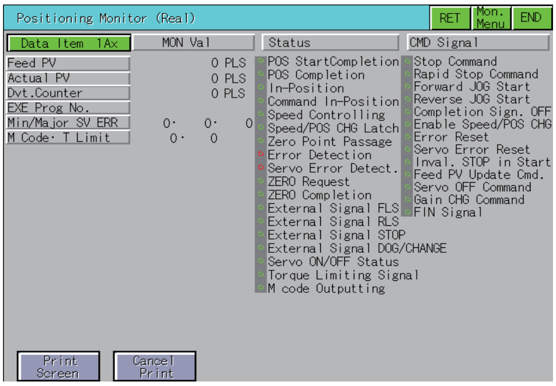


M/ D H: M	Ax	SV P. No.	Err Code	Error Definition	Set Data
4/26 13:34	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:34	1		Maj. 1004	At a start, sv.amp.pw.is OFF,initial processing,the amp.is not yet installed,a sv.err.occurred,or the cable is faulty.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:42	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:46			CHG 512	M2043 turn ON from OFF when mecha.prog. isn't registered ax.No. of sys.setting doesn't match with ax.No.of out.module.	
4/26 13:47	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	

- Displays the history of errors that occurred on and after the leading edge of PLC ready (M2000).

(8.4.5 Error List screen)

Positioning Monitor



Data Item 1Ax	MON Val
Feed PV	0 PLS
Actual PV	0 PLS
Dvt.Counter	0 PLS
EXE Prog No.	
Min/Major SV ERR	0· 0· 0
M Code· T Limit	0· 0

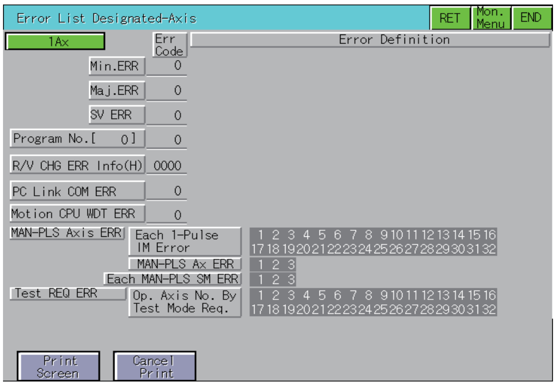
Status:
POS StartCompletion
POS Completion
In-Position
Command In-Position
Speed Controlling
Speed/POS CHG Latch
Zero Point Passage
Error Detection
Servo Error Detect.
ZERO Request
ZERO Completion
External Signal FLS
External Signal RLS
External Signal STOP
External Signal DOG/CHANGE
Servo ON/OFF Status
Torque Limiting Signal
M code Outputting

CMD Signal:
Stop Command
Rapid Stop Command
Forward JOG Start
Reverse JOG Start
Completion Sign. OFF
Enable Speed/POS CHG
Error Reset
Servo Error Reset
Inval. STOP in Start
Feed PV Update Cmd.
Servo OFF Command
Gain CHG Command
FIN Signal

- Monitors the details of the positioning data set to any axis.

(8.4.7 Positioning Monitor screen)

Error List Designated-Axis



1Ax	Err Code	Error Definition
Min.ERR	0	
Maj.ERR	0	
SV ERR	0	
Program No.[0]	0	
R/V CHG ERR Info(H)	0000	
PC Link COM ERR	0	
Motion CPU WDT ERR	0	

MAN-PLS Axis ERR
Each 1-Pulse IM Error 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
MAN-PLS Ax ERR 1 2 3
Each MAN-PLS SM ERR 1 2 3
Test REQ ERR
Op. Axis No. By Test Mode Req. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

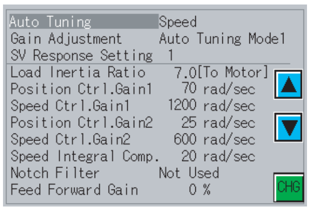
- Displays the latest errors that occurred on the specified axis.

(8.4.6 Error List Designated-Axis screen)

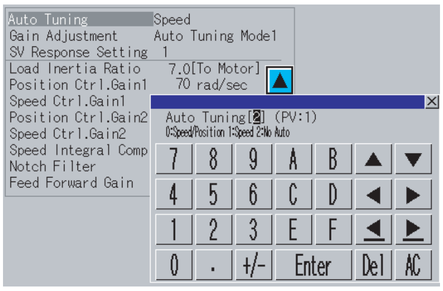
2 Servo parameters can be changed by writing

(Write example: Disabling the auto tuning function)

Parameter setting screen


Auto Tuning Speed
Gain Adjustment Auto Tuning Mode1
SV Response Setting 1
Load Inertia Ratio 7.0[To Motor]
Position Ctrl.Gain1 70 rad/sec
Speed Ctrl.Gain1 1200 rad/sec
Position Ctrl.Gain2 25 rad/sec
Speed Ctrl.Gain2 600 rad/sec
Speed Integral Comp. 20 rad/sec
Notch Filter Not Used
Feed Forward Gain 0 %

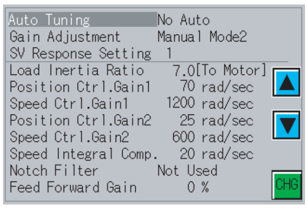
Parameter setting window appears


Auto Tuning Speed
Gain Adjustment Auto Tuning Mode1
SV Response Setting 1
Load Inertia Ratio 7.0[To Motor]
Position Ctrl.Gain1 70 rad/sec
Speed Ctrl.Gain1
Position Ctrl.Gain2
Speed Ctrl.Gain2
Speed Integral Comp
Notch Filter
Feed Forward Gain

Auto Tuning[2] (PV:1)
0:Speed/Position 1:Speed 2:No Auto

Change auto tuning from "1" to "2" (No Auto).

Parameter setting screen


Auto Tuning No Auto
Gain Adjustment Manual Mode2
SV Response Setting 1
Load Inertia Ratio 7.0[To Motor]
Position Ctrl.Gain1 70 rad/sec
Speed Ctrl.Gain1 1200 rad/sec
Position Ctrl.Gain2 25 rad/sec
Speed Ctrl.Gain2 600 rad/sec
Speed Integral Comp. 20 rad/sec
Notch Filter Not Used
Feed Forward Gain 0 %

Parameter setting is changed.

① By performing writing from the parameter setting screen, write the servo parameter setting (basic parameters/adjustment parameters) to the motion controller CPU.

② To change a servo parameter setting, enter the necessary numerical value or option number from the automatically displayed key window, and write it to the motion controller CPU.

8.2 Specifications

8.2.1 System configuration

This chapter describes the system configuration of the Q motion monitor.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

☞ GOT1000 Series Connection Manual

1 Target motion controller CPU of the Q motion monitor

Motion controller CPU*1*2
Q172CPU, Q173CPU, Q172CPUN, Q173CPUN, Q172HCPU, Q173HCPU, Q172DCPU, Q173DCPU, Q170MCPU

*1 For the Q172CPU and Q173CPU, only the following production number module can be used.

- For bus connection and direct CPU connection
  Q172CPU: Production number K******* or later
  Q173CPU: Production number J******* or later
- For a connection other than bus connection and direct CPU connection
  Q172CPU: Production number N******* or later
  Q173CPU: Production number M******* or later

*2 When using SV13 or SV22 with the Q172CPU, Q173CPU, Q172CPUN, or Q173CPUN, install the following version of the OS.
SW6RN-SV13Q □: 00H or later (00E or later when using the Q172CPU or Q173CPU with a bus connection or direct CPU connection)
SW6RN-SV22Q □: 00H or later (00E or later when using the Q172CPU or Q173CPU with a bus connection or direct CPU connection)

2 Connection type

(1) When the GOT is connected to a QCPU (Q mode), QnACPU, or motion controller CPU

(○: Available, △: Partly restricted, ×: Unavailable)

Function		Connection type between GOT and controller								
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link IE*1	CC-Link connection		GOT multidrop connection
								ID*2	G4*3	
Servo monitor	Monitors the present value, positioning error and other servo-related items on a variety of monitor screens.	△*4			○	○	○	○	×	×
Parameter settings	Changes the setting of the servo parameter.									

*1 Indicates the CC-Link IE controller network connection.
*2 Indicates CC-Link connection (Intelligent device station).
*3 Indicates CC-Link connection (via G4).
*4 Only the motion controller CPU on the host station can be monitored.
Monitoring or setting of parameters of other station cannot be performed.

3 Required option OS and option function board

The option function OS and option function board shown below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
Q motion monitor	390KB	770KB	607KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS
Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space
The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16
No option function board is required.

(b) For GT15
Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

GT15 User's Manual (8.10 Option Function Board)

4 Required special data

The following special data is required.

Special data	GOT	Memory space (KB)
Motion monitor data	GT1695M-X, GT1685M-S, GT1675M-S, GT1665M-S, GT1595-X, GT1585V-2, GT1585-S, GT1575V-S, GT1575-S	398
	GT1675M-V, GT1665M-V, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V, GT1562-VN, GT1555-V	396
	GT1555-Q, GT1550-Q	168

(1) Special data
Download the special data indicated in the table above to the GOT.
Refer to the following manual for the procedure for downloading the data.

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

(2) Memory space for special data
The available memory space shown in the table above is required in the user area to download the special data to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

8.2.2 Access range

In bus connection, direct CPU connection, or computer link connection, only the motion controller CPU on host station can be monitored. (Monitoring of other stations cannot be performed.)
For the MELSECNET/H, MELSECNET/10, and CC-Link IE controller network connections, the GOT can monitor the motion controller CPU on the control station only.
In CC-Link connection (Intelligent device station), only the motion controller CPU in master station can be monitored.
In Ethernet connection, only the motion controller CPU in host station can be monitored.
The access range other than that mentioned above is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be Monitored and Access Range)

8.2.3 Precautions

(1) Main OS software package for motion controller
The only Main OS software package that can be used is SV13 or SV22.

(2) When using GT1555-Q and GT1550-Q
The present value history monitor is not supported.

(3) When setting parameters for Q172HCPU or Q173HCPU
When setting parameters for Q172HCPU or Q173HCPU, after parameter entry, set the switch on the CPU to STOP and RUN again, or reset the CPU.

8.3 Display

1 Operations for display

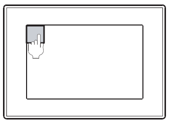
This section describes the flow until the Q motion monitor operation screen is displayed after the Q motion monitor (Option OS) is installed in the GOT.

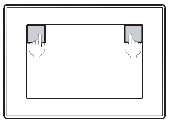
Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.



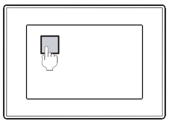


After the utility is displayed, touch [Debug & self check] → [Debug] → [Motion monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (Q motion monitor) set in the project data

Touch the special function switch.

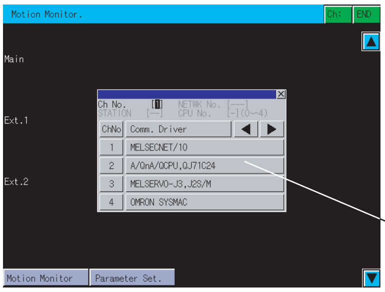


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

Set the channel number.

Set the channel number of the controller monitoring the Q motion.



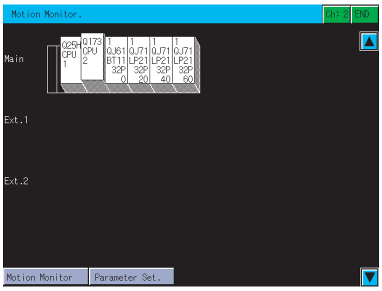
Ch No. [1] NETWK No. [---]
STATION [--] CPU No. [-](0~4)

ChNo	Comm. Driver
1	MELSECNET/10
2	A/QnA/QCPU,QJ71C24
3	MELSERVO-J3,J2S/M
4	OMRON SYSMAC

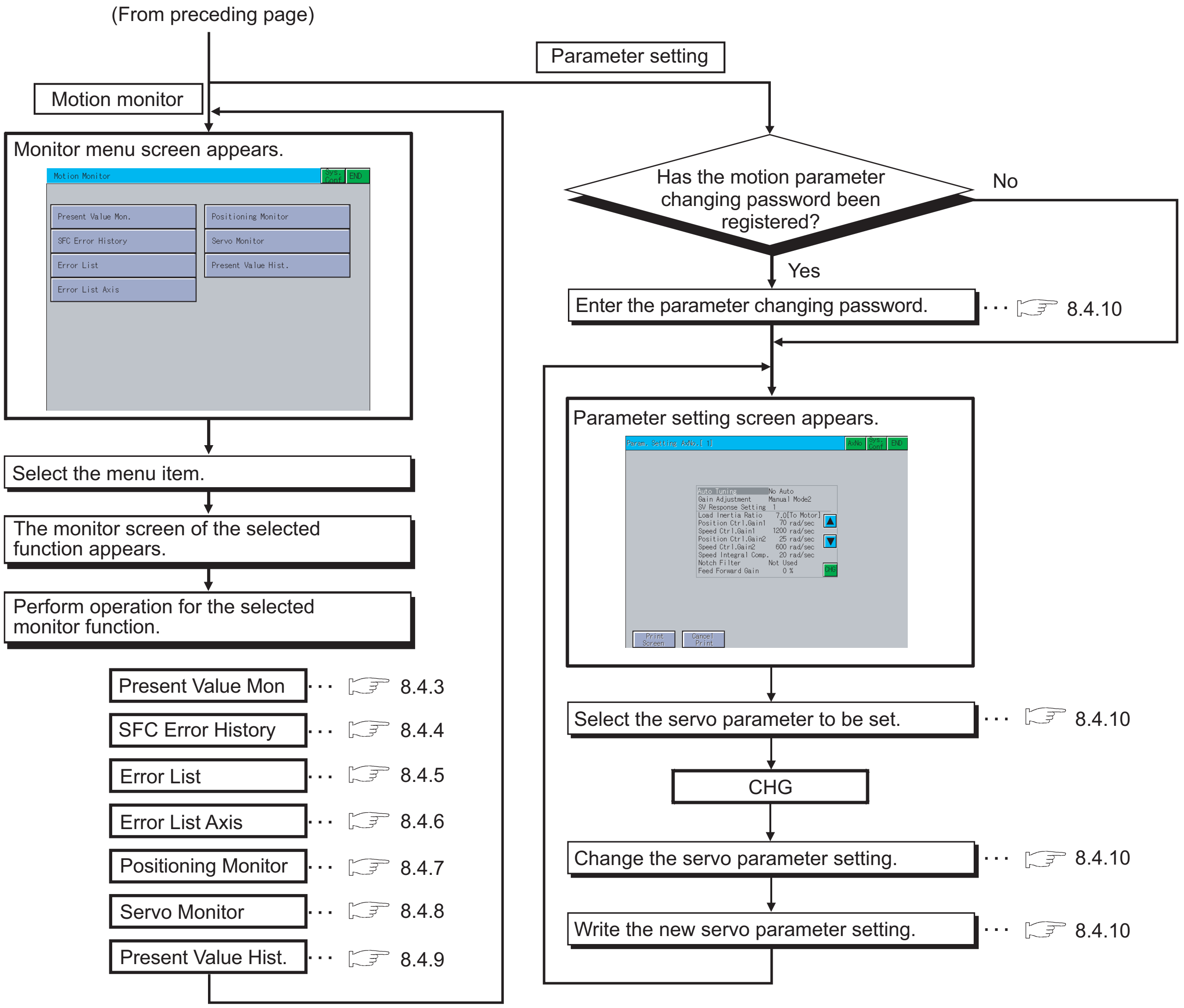
Communication setting window

The System Configuration screen is displayed.

Touch a motion controller CPU to monitor. Touching Motion Monitor displays the monitor menu.



Continued on the next page


(From preceding page)
Motion monitor
Parameter setting
Monitor menu screen appears.
Motion Monitor
Sys. Conf
END
Present Value Mon.
Positioning Monitor
SFC Error History
Servo Monitor
Error List
Present Value Hist.
Error List Axis
Select the menu item.
The monitor screen of the selected function appears.
Perform operation for the selected monitor function.
Present Value Mon ··· 8.4.3
SFC Error History ··· 8.4.4
Error List ··· 8.4.5
Error List Axis ··· 8.4.6
Positioning Monitor ··· 8.4.7
Servo Monitor ··· 8.4.8
Present Value Hist. ··· 8.4.9
Has the motion parameter changing password been registered?
No
Yes
Enter the parameter changing password. ··· 8.4.10
Parameter setting screen appears.
Param. Setting AxNo.[1]
AxNo
Sys. Conf
END
CHG
Print Screen
Cancel Print
Select the servo parameter to be set. ··· 8.4.10
CHG
Change the servo parameter setting. ··· 8.4.10
Write the new servo parameter setting. ··· 8.4.10

Auto Tuning No Auto
Gain Adjustment Manual Mode2
SV Response Setting 1
Load Inertia Ratio 7.0[To Motor]
Position Ctrl.Gain1 70 rad/sec
Speed Ctrl.Gain1 1200 rad/sec
Position Ctrl.Gain2 25 rad/sec
Speed Ctrl.Gain2 600 rad/sec
Speed Integral Comp. 20 rad/sec
Notch Filter Not Used
Feed Forward Gain 0 %

Point

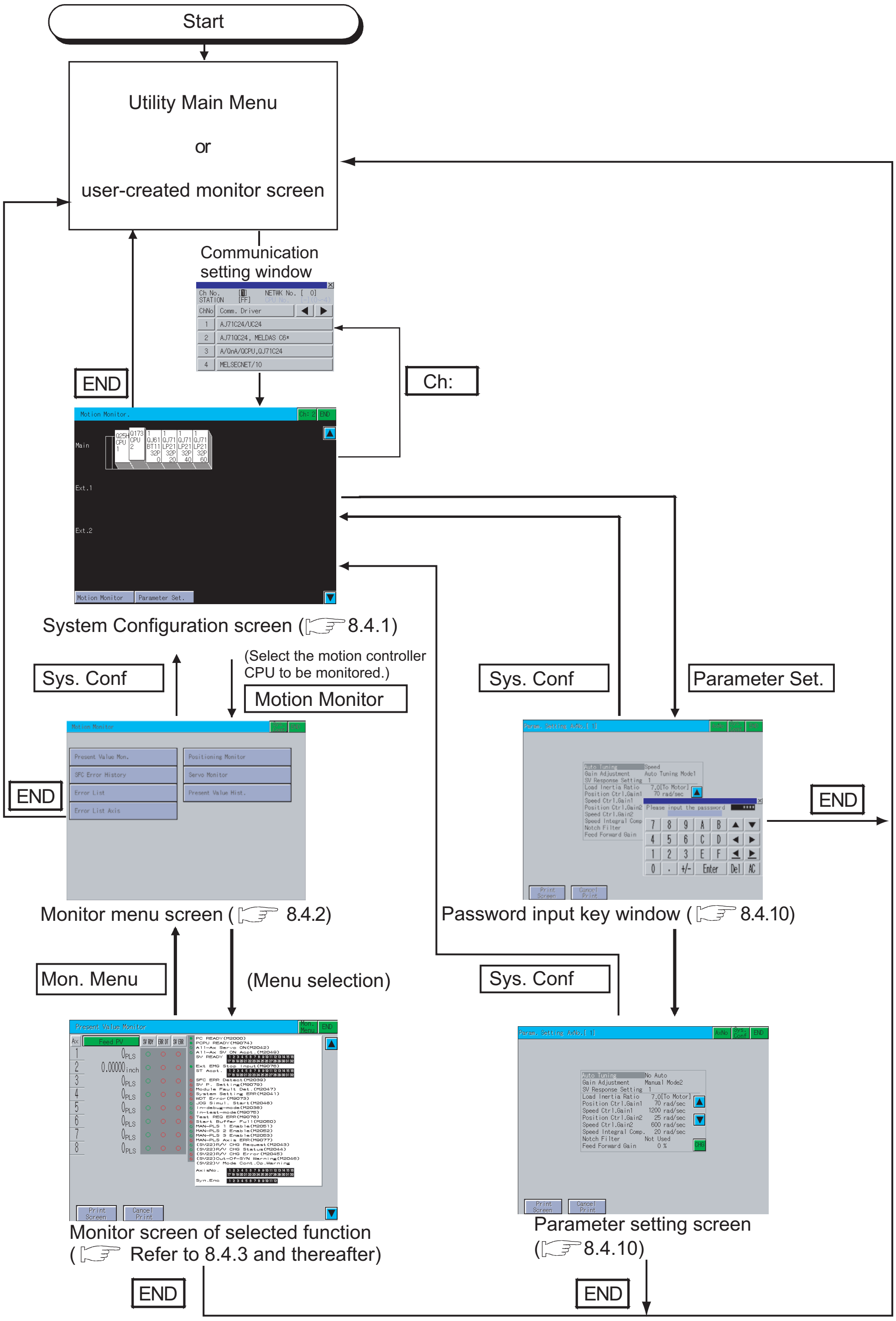
(1) How to display the utility
For how to display the utility, refer to the following.

GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the Q motion monitor only.
For displaying the communication setting window at the second or later startup, touch the Ch: button on the Q motion monitor screen. (8.4 Operation Procedures)

(3) If the project data has not been downloaded
The Q motion monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens


Start
Utility Main Menu
or
user-created monitor screen
Communication setting window
END
Ch:
System Configuration screen (☞8.4.1)
Sys. Conf
(Select the motion controller CPU to be monitored.)
Motion Monitor
Sys. Conf
Parameter Set.
END
Monitor menu screen (☞ 8.4.2)
END
Password input key window (☞ 8.4.10)
Mon. Menu
(Menu selection)
Sys. Conf
Monitor screen of selected function
(☞ Refer to 8.4.3 and thereafter)
Parameter setting screen
(☞8.4.10)
END
END

Remark Screen displayed at next startup

At next startup, the last exited screen is displayed.
However, the last exited screen will not be displayed when the GOT is restarted due to an installation of the OS, turning the GOT power from off to on, or a reset.

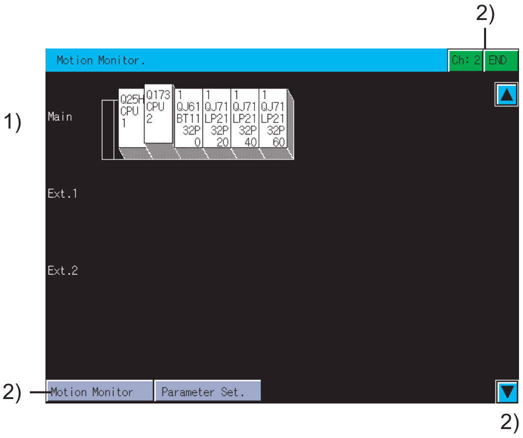
8.4 Operation Procedures

This section explains screen operations to be performed when using the Q motion monitor.
The display screen of the Q motion monitor varies slightly with the GOT used.
This section mainly uses the screen of the GT1575-V for explanation.

8.4.1 System configuration screen layout

This section describes the configuration of the System Configuration screen that is displayed after startup of the Q motion monitor and the functions of the keys displayed on the screen.

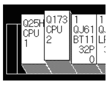
1 Displayed contents



No.	Description
1)	The CPU numbers are displayed for CPUs and the control CPU number for the installed module. To choose the motion controller CPU for servo monitor/servo parameter setting, touch the respective display position.
2)	Displays the keys used with the operation on the System Configuration screen shown in 2 . (Touch input)

2 Key functions

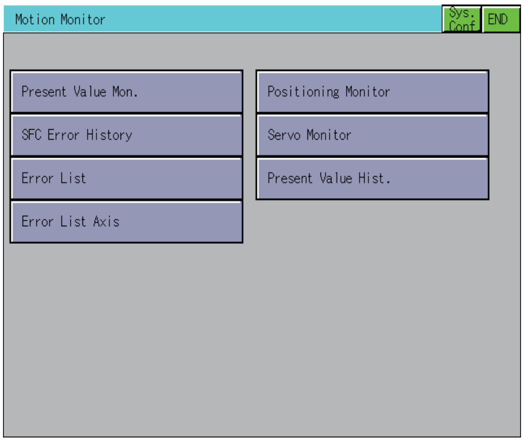
The table below shows the functions of the keys that are used for the operation on the System Configuration screen.

Key	Function
Ch: 2	Displays the communication setting window.
END	Exits the monitor and returns to the screen where the Q motion monitor was started.
	Selects the motion controller CPU where servo monitor/servo parameter setting is performed.
Motion Monitor	Changes the System Configuration screen to the monitor menu screen. (☞ 8.4.2 Monitor Menu screen)
Parameter Set.	Changes the System Configuration screen to parameter setting screen. (☞ 8.4.10 Parameter setting screen)
▲ ▼	Scrolls the display one stage up or down to display the system configuration of the currently undisplayed stage immediately before/after the currently displayed stage. ▲ : Scrolls down one stage. ▼ : Scrolls up one stage.

8.4.2 Monitor Menu screen

The Q motion monitor allows you to monitor various servo monitor data on multiple monitor screens.
To display any of the monitor screens, make a selection on the monitor menu screen.

(Monitor menu screen)

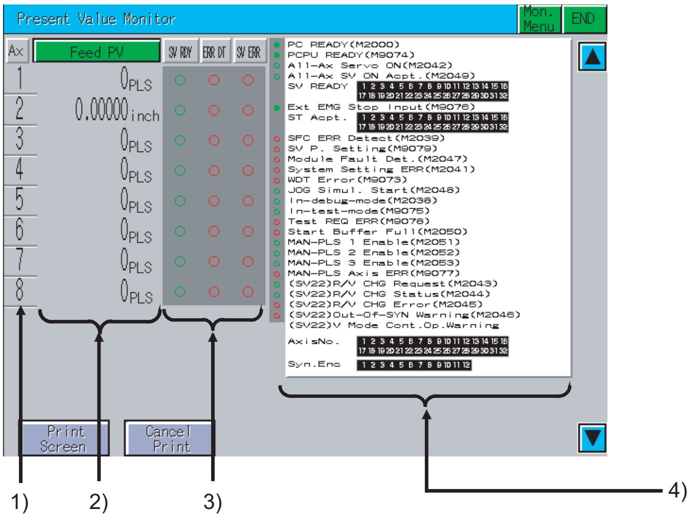


Item	Description
Present Value Mon.	Monitors and displays the feed current values and actual current values of all running axes. (☞ 8.4.3 Present Value Monitor screen)
SFC Error History	Displays the history of errors that occurred in SFC programs from when the motion CPU was powered on or reset. (☞ 8.4.4 SFC Error History screen)
Error List	Displays the history of errors that occurred on and after the leading edge of PLC ready (M2000). (☞ 8.4.5 Error List screen)
Error List Axis	Displays the latest errors that occurred on the specified axis. (☞ 8.4.6 Error List Designated-Axis screen)
Positioning Monitor	Monitors the details of the positioning data set to any axis. (☞ 8.4.7 Positioning Monitor screen)
Servo Monitor	Monitors the servo monitor/servo amplifier. (☞ 8.4.8 Servo Monitor screen)
Present Value Hist.	Displays the history of encoder present values, servo command values and monitor present values of the ABS axis at servo amplifier power-on/off or at home position return. (☞ 8.4.9 Present Value History Monitor screen) Not displayed when using the GT155□.

8.4.3 Present Value Monitor screen

This section describes the display data of the Present Value Monitor screen and the key functions displayed on the screen.

1 Displayed contents



No.	Item	Function
1)	Ax	The axis numbers of the running axes being monitored are displayed.
2)	Feed PV/Actual PV	The feed present values or actual present values of the running axes are displayed.Touching the display part of the monitored value switches to the positioning monitor screen of the touched axis number. (☞ 8.4.7 Positioning Monitor screen)
3)	SV RDY, ERR DT, SV ERR	Whether the servo ready signals, major/minor errors and servo error detection signals are ON (lit) or OFF (not lit) are displayed.Touching the error indication part "●" switches to the Error List Designated-Axis screen of the touched axis number. (☞ 8.4.6 Error List Designated-Axis screen)
4)	Bit device screen	The common bit devices are always monitored and displayed. ・ Error detection type bit devices .... Displayed in red ・ General status type bit devices .... Displayed in green

2 Key functions

The table below shows the functions of the keys used for operation of the Present Value Monitor screen.

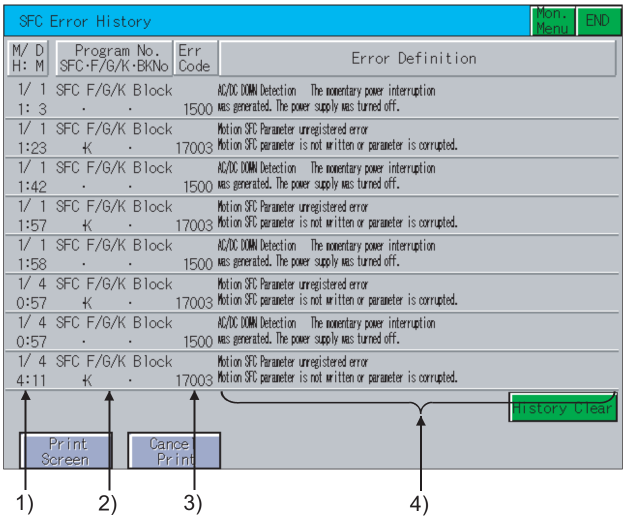
Key	Function
Feed PV / Actual PV	Touching the key alternates the monitor item between the "feed present value" and "actual present value". (Only in the real mode)
Mon. Menu	Returns to the monitor menu screen.
END	Exits the present value monitor and returns to the screen where the Q motion monitor was started.
▲ ▼	Switches the displayed axis number. (Displayed only for Q173CPU, Q173HCPU and Q173CPUN monitoring.)
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The operation of this key is invalid.

8.4.4 SFC Error History screen

This section describes the display data of the SFC Error History screen and the key functions displayed on the screen.

1 Displayed contents

The SFC Error History screen displays the history of error which occurs in the motion SFC programs.



M/ D H: M	Program No. SFC·F/G/K·BKNo	Err Code	Error Definition
1/ 1 1: 3	SFC F/G/K Block · ·	1500	AC/DC DOWN Detection The momentary power interruption was generated. The power supply was turned off.
1/ 1 1:23	SFC F/G/K Block K ·	17003	Motion SFC Parameter unregistered error Motion SFC parameter is not written or parameter is corrupted.
1/ 1 1:42	SFC F/G/K Block · ·	1500	AC/DC DOWN Detection The momentary power interruption was generated. The power supply was turned off.
1/ 1 1:57	SFC F/G/K Block K ·	17003	Motion SFC Parameter unregistered error Motion SFC parameter is not written or parameter is corrupted.
1/ 1 1:58	SFC F/G/K Block · ·	1500	AC/DC DOWN Detection The momentary power interruption was generated. The power supply was turned off.
1/ 4 0:57	SFC F/G/K Block K ·	17003	Motion SFC Parameter unregistered error Motion SFC parameter is not written or parameter is corrupted.
1/ 4 0:57	SFC F/G/K Block · ·	1500	AC/DC DOWN Detection The momentary power interruption was generated. The power supply was turned off.
1/ 4 4:11	SFC F/G/K Block K ·	17003	Motion SFC Parameter unregistered error Motion SFC parameter is not written or parameter is corrupted.

No.	Item	Description
1)	M/D H:M	Displays the dates and time when SFC errors occurred. The eight latest errors are displayed for the history of errors.
2)	Program No.	Displays the SFC program numbers where SFC errors occurred.
3)	Err Code	Displays the error codes of the errors that occurred.
4)	Error Definition	Displays the definitions of the SFC errors that occurred.

2 Key functions

The table below shows the functions of the keys used for operation of the SFC Error History screen.

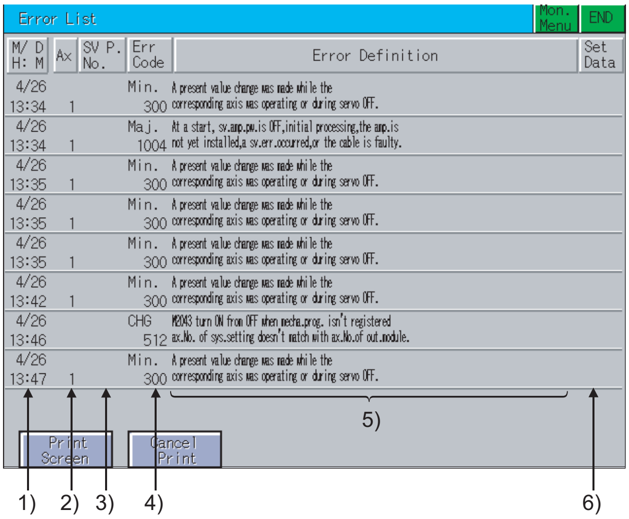
Key	Function
Mon. Menu	Returns to the monitor menu screen.
END	Exits the SFC Error History screen and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: (☞ 8.4.11 Hard copy output)
Cancel Print	The operation of this key is invalid.
History Clear	Clears the error history. (Only with Q172DCPU and Q173DCPU)

8.4.5 Error List screen

This section describes the display data of the Error List screen and the key functions displayed on the screen.

1 Displayed contents

The Error List screen displays the error which occurs in the motion controller CPU.
(Errors caused in motion SFC programs are also displayed.)



M/ D H: M	Ax	SV P. No.	Err Code	Error Definition	Set Data
4/26 13:34	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:34	1		Maj. 1004	At a start, sv.amp.pw.is OFF,initial processing,the amp.is not yet installed,a sv.err.occurred,or the cable is faulty.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:35	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:42	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	
4/26 13:46			CHG 512	M2043 turn ON from OFF when mecha.prog. isn't registered ax.No. of sys.setting doesn't match with ax.No.of out.module.	
4/26 13:47	1		Min. 300	A present value change was made while the corresponding axis was operating or during servo OFF.	

No.	Item	Description
1)	M/D H:M	The dates and time when errors occurred are displayed. The eight latest errors are displayed.
2)	Ax	The axis numbers and axis types of the axes where errors occurred are displayed. Virtual axis : Virtual Synchronous encoder axis: Sync
3)	SV P. No.	The servo program numbers that were being executed when the error occurred are displayed. The execution destination of the servo program in error is not displayed.Using the servo program number, refer to the execution destination.
4)	Err Code	Displays the types and error codes of the errors that occurred. The error types are displayed as indicated below. ・ Minor error.. Minor ・ Major error.. Major ・ Servo error .... Servo ・ Servo program setting error .... Servo P ・ Real/virtual switching.. Switch ・ Test mode request error .... Test ・ Manual pulse generator setting error .... Manual ・ PCPU ERROR .... P-WDT ・ SSCNET ERROR... Communication error
5)	Error Definition	The definitions of the errors that occurred are displayed.
6)	Set Data	The program number in error is displayed if the set data has any errors.

2 Key functions

The table below shows the functions of the keys that are used for the operation on the Error List screen.

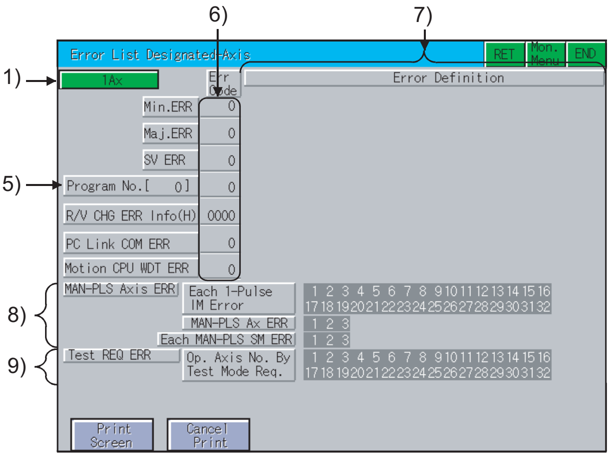
Key	Function
Mon. Menu	Returns to the monitor menu screen.
END	Exits the Error List screen and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The touch operation of this key is invalid.

8.4.6 Error List Designated-Axis screen

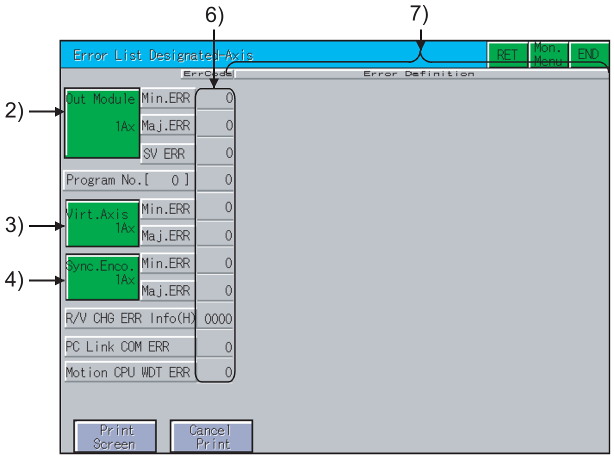
This section describes the display data of the Error List Designated-Axis screen and the key functions displayed on the screen.

1 Displayed contents

(In real mode)



(In virtual mode)



No.	Item		Description
1)	Axis No.		Displays the axis number currently being monitored.
2)	Out Module		Displays the output module axis number currently being monitored.
3)	Virt. Axis		Displays the virtual axis number currently being monitored.
4)	Sync. Enco.		Displays the synchronous encoder axis number currently being monitored.
5)	Program No.		Displays the servo program numbers that were being executed when the error occurred.
6)	Err Code		Displays the error codes of the minor/major/servo error, servo program setting error, real/virtual switching error information (error code: hexadecimal), personal computer link communication error code and motion CPU WDT error that are currently occurring.
7)	Error Definition		Displays the definitions of the errors that occurred.
8)	MAN-PLS Axis ERR	Each 1-Pulse 1M Error	Displays the axes where a 1-pulse input magnification setting error occurred.
		MAN-PLS Ax ERR	Displays the errors of the axis numbers set to the manual pulse generators P1 to P3.
		Each MAN-PLS SM ERR	Displays the errors of the smoothing magnifications set to the manual pulse generators P1 to P3.
9)	Test REQ ERR		Displays the axis numbers that are being started at a test mode request.

2 Key functions

The table below shows the functions of the keys that are used for the operation of the Error List Designated-Axis screen.

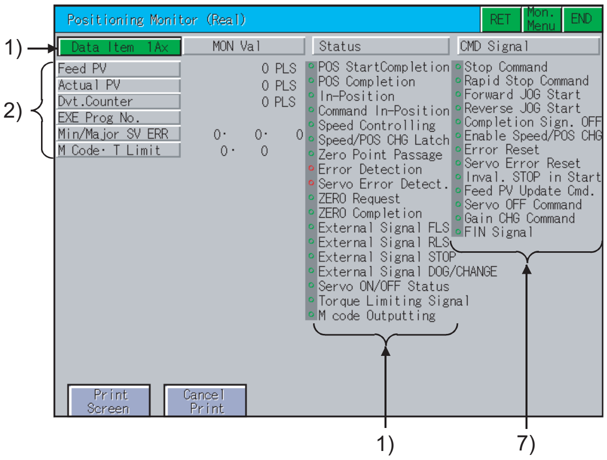
Key	Function
1Ax (Only in the real mode) Out Module 1Ax / Virt.Axis 1Ax / Sync.Enco. 1Ax (Only in the virtual mode) (Display example: When axis 1 is monitored)	Switches the axes to be monitored.
RET	Returns to the previous screen.
Mon. Menu	Returns to the monitor menu screen.
END	Exits the Error List Designated-Axis monitor screen and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The touch operation of this key is invalid.

8.4.7 Positioning Monitor screen

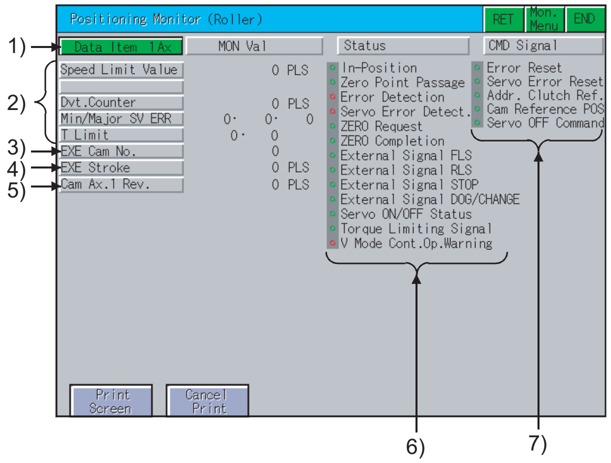
This section describes the display data of the Positioning Monitor screen and the key functions displayed on the screen.

1 Displayed contents

(In real mode)



(In virtual mode)



No.	Item	Description
1)	Data Item	Displays the axis numbers of the running axes being monitored. For the virtual axis, the axis type is displayed. ・ Roller ・ Ballscrew ・ Rotary table ・ Cam
2)	Feed PV	Displays the data during positioning control of the PCPU. ・ Feed PV :Target address output to the servo amplifier (value of the roller surface speed for the roller axis) ・ Actual PV :Actually traveled present value (no value is displayed for the roller axis) ・ Dvt. Counter :Difference between feed present value and actual present value ・ EXE Prog No. :Servo program number in execution ・ Min/Major SV ERR :Error code of the latest minor/major/servo error ・ M Code・ T Limit :The M code and torque limit of the servo program in execution
3)	EXE Cam No.	Displays the cam number currently controlled.
4)	EXE Stroke	Displays the stroke amount currently controlled.
5)	Cam Ax. 1 Rev.	Displays the present value within one cam axis revolution pulse.
6)	Status	Displays ON and OFF of the symbols that represent the axis-by-axis control statuses. ・ In the ON status, the symbol is lit green. ・ At error or servo error detection, the symbol is lit red.
7)	CMD Signal	Displays ON and OFF of the positioning command signals. In the ON status, the signal is lit green.

2 Key functions

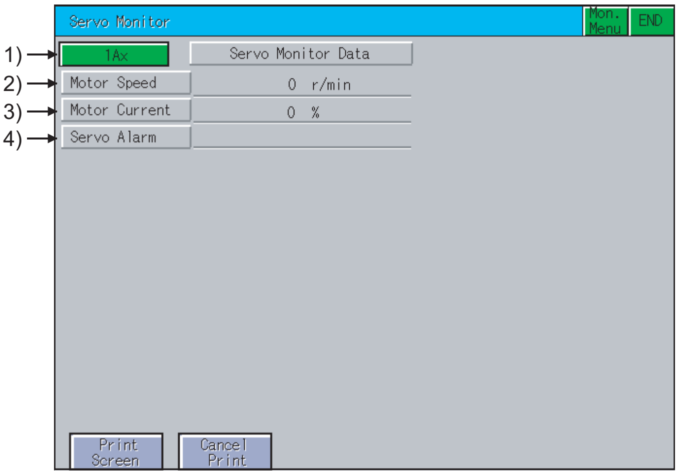
The table below shows the functions of the keys used for operation of the positioning monitor screen.

Key	Function
Data Item 1Ax (Display example: When axis 1 is monitored)	Changes the axes to be monitored.
RET	Returns to the previous screen.
Mon. Menu	Returns to the monitor menu screen.
END	Exits the positioning monitor and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The operation of this key is invalid.

8.4.8 Servo Monitor screen

This section describes the display data of the Servo Monitor screen and the key functions displayed on the screen.

1 Displayed contents



Servo Monitor Data
Motor Speed 0 r/min
Motor Current 0 %
Servo Alarm

No.	Item	Description
1)	Ax	Displays the axis number currently being monitored.
2)	Motor Speed	Displays the actual speed of the servo motor.
3)	Motor Current	Displays the motor current value at the rated current of 100%.
4)	Servo Alarm	Displays the alarm detected by the servo amplifier.

2 Key functions

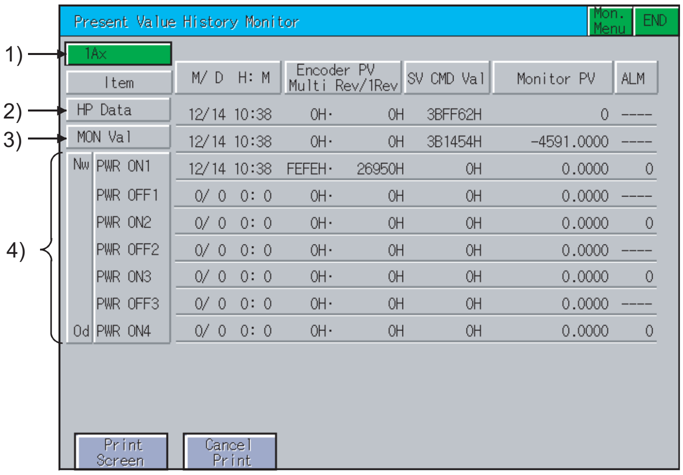
The table below shows the functions of the keys that are used for operation of the servo monitor screen.

Key	Function
1Ax (Display example: When axis 1 is monitored)	Changes the axes to be monitored.
Mon. Menu	Returns to the monitor menu screen.
END	Exits the servo monitoring and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The operation of this key is invalid.

8.4.9 Present Value History Monitor screen

This section describes the display data of the Present Value History Monitor screen and the key functions displayed on the screen.

1 Displayed contents



Present Value History Monitor

1Ax

	Item	M/ D H: M	Encoder PV Multi Rev/1Rev		SV CMD Val	Monitor PV	ALM
	HP Data	12/14 10:38	0H·	0H	3BFF62H	0	----
	MON Val	12/14 10:38	0H·	0H	3B1454H	-4591.0000	----
Nw	PWR ON1	12/14 10:38	FEFEH·	26950H	0H	0.0000	0
	PWR OFF1	0/ 0 0: 0	0H·	0H	0H	0.0000	----
	PWR ON2	0/ 0 0: 0	0H·	0H	0H	0.0000	0
	PWR OFF2	0/ 0 0: 0	0H·	0H	0H	0.0000	----
	PWR ON3	0/ 0 0: 0	0H·	0H	0H	0.0000	0
	PWR OFF3	0/ 0 0: 0	0H·	0H	0H	0.0000	----
Od	PWR ON4	0/ 0 0: 0	0H·	0H	0H	0.0000	0

No.	Item	Description
1)	Ax	Displays the axis number of the axis currently being monitored.
2)	HP Data	Displays the following values monitored at home position return. · Home position return completion time · Encoder present value Multi-revolution data of absolute position reference point data Within-one-revolution position of absolute position reference point data · Servo command value · Monitor present value
3)	MON Val	Displays the following present monitor values. · Present time · Encoder present value Present multi-revolution data of encoder present value Present within-one-revolution position of encoder present value · Present servo command value · Present monitor present value
4)	PWR ON/PWR OFF	Displays the four past present values of the ABS axis at servo amplifier power-on/off. [At power-on] · Power-on time · Encoder present value Multi-revolution data of initial encoder Single-revolution data of initial encoder · Servo command value after recovery · Monitor present value after recovery · Alarm occurrence information at present value recovery (error code of minor/major error) [At power-off] · Servo amplifier power-off time · Encoder present value Multi-revolution data of encoder present value before servo amplifier power-off Single-revolution data of encoder present value before servo amplifier power-off · Servo command at servo amplifier power-off · Monitor present value at servo amplifier power-off

2 Key functions

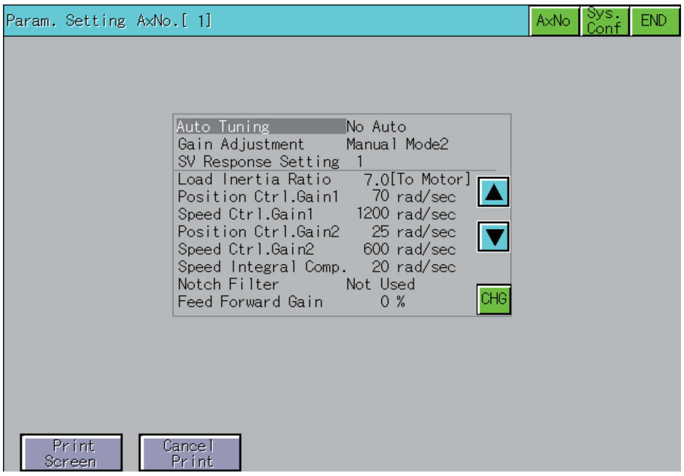
The table below shows the functions of the keys used for operation of the Present Value History Monitor screen.

Key	Function
1Ax (Display example: When axis 1 is monitored)	Changes the axes to be monitored.
Mon. Menu	Returns to the monitor menu screen.
END	Exits the Present Value History Monitor screen and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The touch operation of this key is invalid.

8.4.10 Parameter setting screen

You can set the servo parameters (basic parameters/adjustment parameters) of the connected motion controller CPU.
This section describes the display data of the parameter setting screen and the key functions displayed on the screen.

1 Displayed screen



Param. Setting AxNo.[1]

Auto Tuning	No Auto
Gain Adjustment	Manual Mode2
SV Response Setting	1
Load Inertia Ratio	7.0[To Motor]
Position Ctrl.Gain1	70 rad/sec
Speed Ctrl.Gain1	1200 rad/sec
Position Ctrl.Gain2	25 rad/sec
Speed Ctrl.Gain2	600 rad/sec
Speed Integral Comp.	20 rad/sec
Notch Filter	Not Used
Feed Forward Gain	0 %

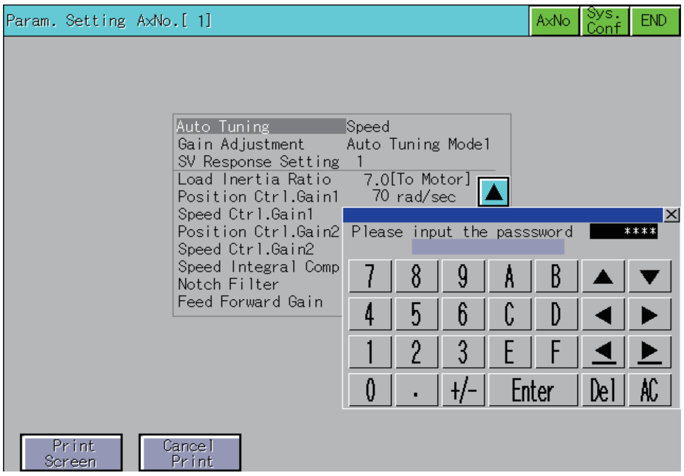
2 Key functions

The table below shows the functions of the keys that are used with the operation on the parameter setting screen.

Key	Function
CHG	Changes the servo parameter setting of the selected item.
▲ ▼	Selects the servo parameter setting item.
AxNo	Changes the axis whose parameter setting will be made.
Sys. Conf	Returns to the System Configuration screen.
END	Exits the parameter setting and returns to the screen where the Q motion monitor was started.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The touch operation of this key is invalid.

3 Inputting the password

The password input key window appears for accessing the parameter setting screen when the password setting data for changing motion parameters is written to the GOT with GT Designer2.



Auto Tuning Speed
Gain Adjustment Auto Tuning Mode1
SV Response Setting 1
Load Inertia Ratio 7.0[To Motor]
Position Ctrl.Gain1 70 rad/sec
Speed Ctrl.Gain1
Position Ctrl.Gain2
Speed Ctrl.Gain2
Speed Integral Comp
Notch Filter
Feed Forward Gain

Please input the password ****

(1) Function

- If the password matches, the parameter setting screen is displayed.
- If the password does not match, an error message is displayed. Touching Sys. Conf returns to the System Configuration screen.
- Only numbers and letters A to F can be used for the password setting. (Up to 8 characters)
- The password for changing the motion parameters is set with GT Designer2.
  Refer to GT Designer2 Version □ Screen Design Manual (3.5 Password Setting) for details on setting the password.

(2) Operations

(a) Inputting the password

Touch the key window and enter a password.

After entering the password, touch Enter to set the password.

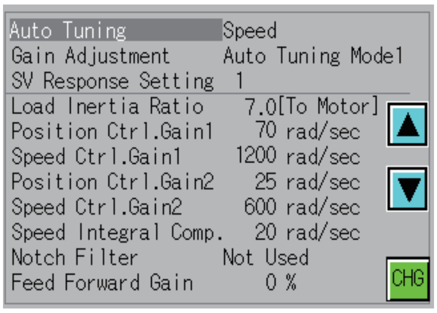
To edit the input characters, touch Del to delete the characters, and then input the new characters.

(b) Canceling password input

Touch ☒ to return to the monitor screen.

4 Parameter setting operation

The following describes the procedure of changing the setting of the [Auto Tuning] item as an example of the parameter setting operation.



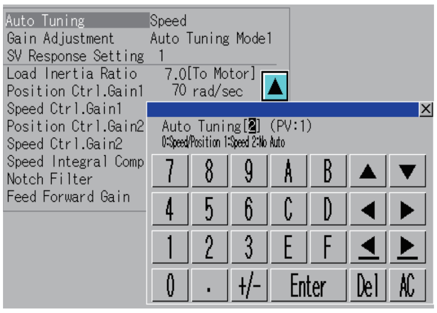
```
Auto Tuning             Speed
Gain Adjustment         Auto Tuning Mode1
SV Response Setting     1
Load Inertia Ratio        7.0[To Motor]
Position Ctrl.Gain1        70 rad/sec
Speed Ctrl.Gain1         1200 rad/sec
Position Ctrl.Gain2        25 rad/sec
Speed Ctrl.Gain2          600 rad/sec
Speed Integral Comp.       20 rad/sec
Notch Filter            Not Used
Feed Forward Gain           0 %
```

① Select the item whose parameter is to be set with the ▲, ▼ keys, and touch the CHG key.

↓

CHG (Touch)

↓



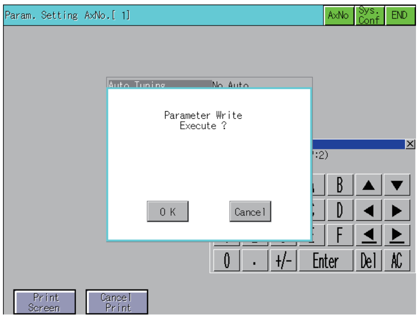
```
Auto Tuning             Speed
Gain Adjustment         Auto Tuning Mode1
SV Response Setting     1
Load Inertia Ratio        7.0[To Motor]
Position Ctrl.Gain1        70 rad/sec
Speed Ctrl.Gain1
Position Ctrl.Gain2
Speed Ctrl.Gain2
Speed Integral Comp
Notch Filter
Feed Forward Gain

Auto Tuning[2] (PV:1)
0:Speed/Position 1:Speed 2:No Auto
```

② As the parameter setting window appears, enter the parameter setting with Alphanumeric, and touch Enter to confirm the setting.
To cancel the parameter setting operation, touch ☒ at the top right of the screen to close the parameter setting window.

↓

Enter (Touch)

↓



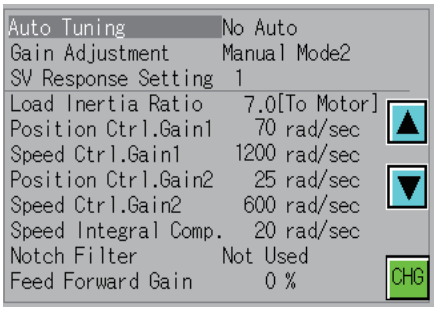
```
Param. Setting AxNo.[ 1]

Parameter Write
Execute ?
```

③ As the confirmation window appears, touch OK to write the parameter setting to the motion controller CPU.
To cancel writing of the parameter setting, touch Cancel.

↓

O K (Touch)

↓



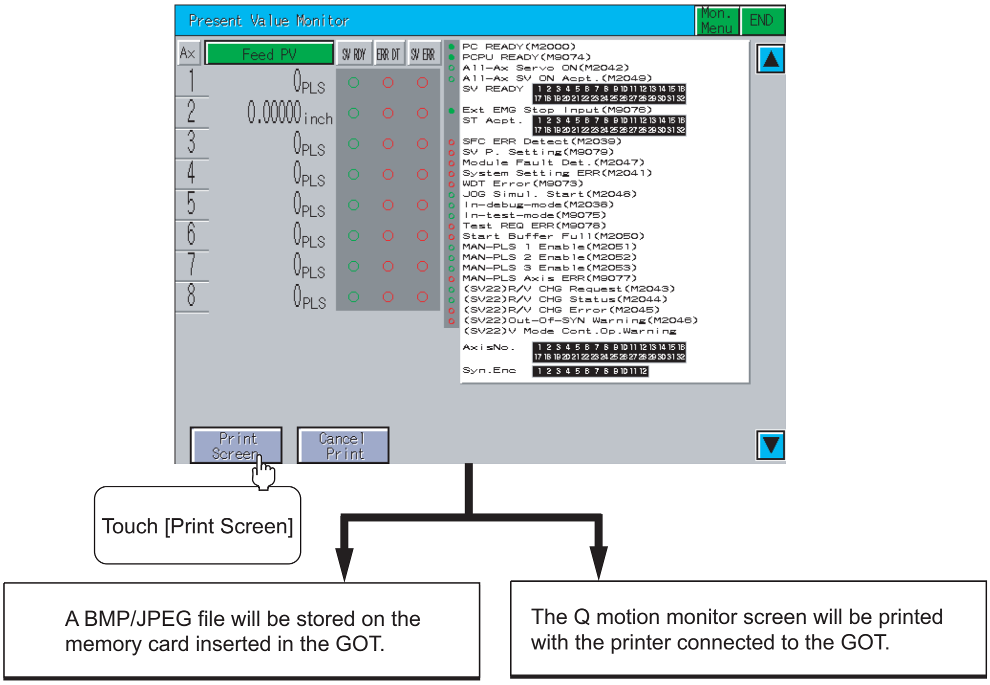
```
Auto Tuning             No Auto
Gain Adjustment         Manual Mode2
SV Response Setting     1
Load Inertia Ratio        7.0[To Motor]
Position Ctrl.Gain1        70 rad/sec
Speed Ctrl.Gain1         1200 rad/sec
Position Ctrl.Gain2        25 rad/sec
Speed Ctrl.Gain2          600 rad/sec
Speed Integral Comp.       20 rad/sec
Notch Filter            Not Used
Feed Forward Gain           0 %
```

④ After writing is completed, the parameter setting screen whose display has been updated to the new parameter setting is displayed.

8.4.11 Hard copy output

This section describes how to store a screen to the memory card in BMP/JPEG file format or print it with a printer when executing the Q motion monitor.
Hard copy methods differ depending on the GOT to be used.

(1) GOT with VGA or higher resolution
Hard copy output operations are performed by touching the "Print Screen" or "Cancel Print" key displayed on the screen.



Touch [Print Screen]

A BMP/JPEG file will be stored on the memory card inserted in the GOT.

The Q motion monitor screen will be printed with the printer connected to the GOT.

(2) GOT with QVGA resolution
Hard copy output operations are performed by turning ON/OFF the start or abort trigger device that has been set in the GT Designer2.

Point

- Install the extended function OS (Printer) to the GOT when printing a Q motion monitor screen.
- The output target (CF card/printer) of hard copy can be set in [Hard Copy] of GT Designer2.
  For details of the hard copy setting, refer to the following.

  ☞ GT16 User's Manual (Basic Utility) (Chapter 6 DATA CONTROL)
  GT15 User's Manual (Chapter 13 FILE DISPLAY AND COPY)

  ☞ GT Designer2 Version□ Screen Design Manual (Section 13.2 Hard Copy)

8.5 Error Messages and Corrective Action

This section describes the error messages that may be displayed during Q motion monitor operation and their corrective action.

Error message	Error definition	Corrective action
No. PLC Communications	Communication cannot be established with the PLC CPU of the monitor target.	· Check the status of the connection between the controller and the GOT (disconnected or cut cables). · Check if an error has occurred in the controller.
This PLC type is not supported	A motion controller CPU that cannot be monitored was selected on the System Configuration screen.	Select a motion controller CPU that can be monitored on the System Configuration screen. (☞ 8.2.1 1 Target motion controller CPU of the Q motion monitor)
Controller's OS type is different	The motion controller OS installed in the motion controller CPU (Q172CPU, Q173CPU) of the monitor target is other than SV13 or SV22.	Install SV13 or SV22 in the motion controller CPU (Q172CPU, Q173CPU) of the monitor target as the motion controller OS.
It is not a version for GOT	The version of the motion controller OS installed in the motion controller CPU of the monitor target is not compatible with the Q motion monitor.	Install a motion controller OS that is compatible with the Q motion monitor in the motion controller. (☞ GT Designer2 Version ☐ Screen Design Manual (2.7 Controllers that can be Monitored and the Access Range))
Monitor data not found	The monitor data was not installed or was deleted.	Download the monitor data of the motion monitor.
Unused axis selected	The axis number selected has not been set.	· Select the axis number that has been set. · Set the axis using the peripheral software.
It is not possible to select	During servo parameter setting, an item that cannot be set has been selected.	Select an item that can be set.
Incorrect setting range	A value that is outside the setting range has been set.	Set the value within the setting range.
Unmatched password	The password that was input as the motion parameter changing password is incorrect.	Input the correct password.
Communication channel setup error	A communication driver that is compatible with the Q motion monitor is not installed.	Install a compatible communication driver.

Point

How to clear a displayed error message

For errors that occur with the connection to a controller (communication error, etc.), the error message does not disappear even after the cause of the error has been removed.
To delete the error message, restart the GOT.

9. SERVO AMPLIFIER MONITOR

GT16 GT15 GT SOFT GOT1000 GT11 GT10

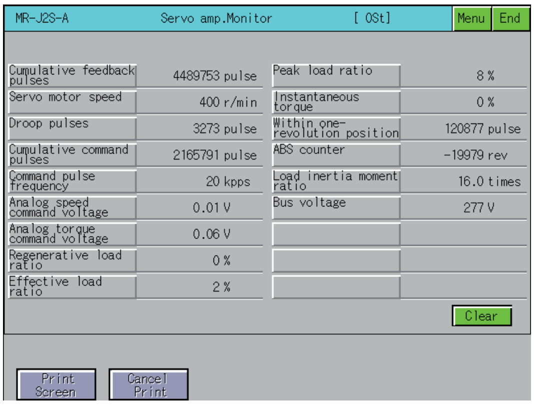
9.1 Features

Various monitor functions, changes to the parameter settings and test operations can be performed on the servo amplifier connected to the GOT.
The features of the servo amplifier monitor are described below.

1 Real-time display of the servo amplifier status (☞ 9.4.3 9.4.4)

A list of the status of the servo amplifier connected to the GOT and the alarm details can be displayed in real-time.
(Display examples)

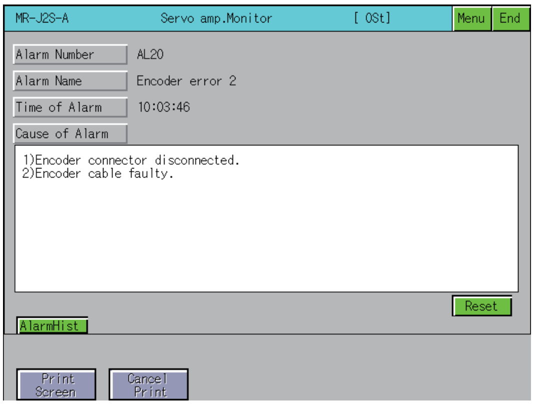
Monitor



Cumulative feedback pulses	4489753 pulse	Peak load ratio	8 %
Servo motor speed	400 r/min	Instantaneous torque	0 %
Droop pulses	3273 pulse	Within one-revolution position	120877 pulse
Cumulative command pulses	2165791 pulse	ABS counter	-19979 rev
Command pulse frequency	20 kpps	Load inertia moment ratio	16.0 times
Analog speed command voltage	0.01 V	Bus voltage	277 V
Analog torque command voltage	0.06 V		
Regenerative load ratio	0 %		
Effective load ratio	2 %		

- Displays monitor data of the servo amplifier in a list.

Alarm display



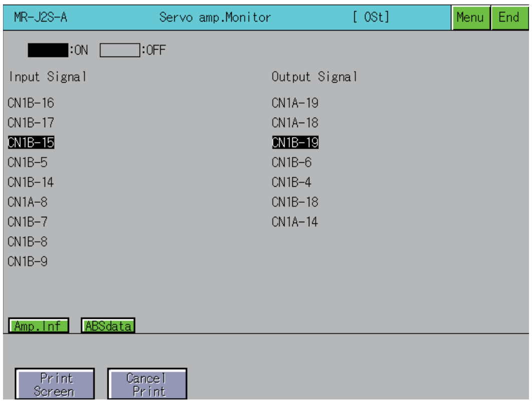
Alarm Number AL20
Alarm Name Encoder error 2
Time of Alarm 10:03:46
Cause of Alarm
1)Encoder connector disconnected.
2)Encoder cable faulty.

- Displays the details (number, name, occurrence time and cause of alarm) of the alarm currently occurring in the servo amplifier. The alarm can also be reset.

2 Various diagnostics of the servo amplifier can be performed (☞9.4.5)

There are multiple diagnostics functions to enable various diagnostics of the servo amplifier to be performed.
(Display examples)

DI/DO display

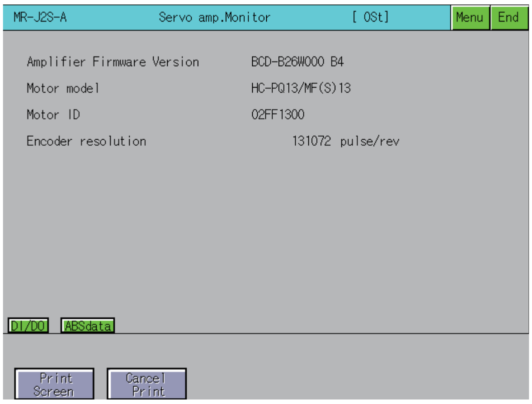


■:ON ☐:OFF

Input Signal	Output Signal
CN1B-16	CN1A-19
CN1B-17	CN1A-18
CN1B-15	CN1B-19
CN1B-5	CN1B-6
CN1B-14	CN1B-4
CN1A-8	CN1B-18
CN1B-7	CN1A-14
CN1B-8	
CN1B-9	

- Displays a list of the ON/OFF status of the external I/O signals of the servo amplifier.

Amplifier information display

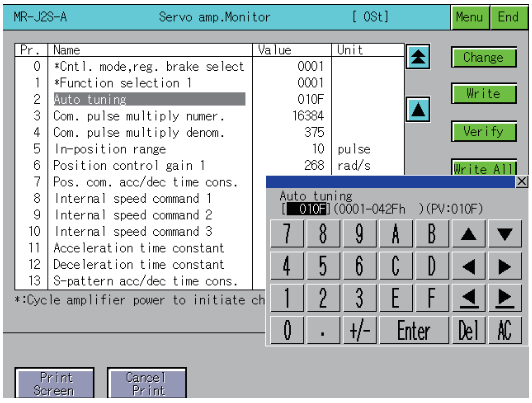


Amplifier Firmware Version	BCD-B26W000 B4
Motor model	HC-PQ13/MF(S)13
Motor ID	02FF1300
Encoder resolution	131072 pulse/rev

- Displays the servo amplifier software number and servo motor information (model name, ID and encoder resolution).

3 Writing of the servo parameters is enabled (☞9.4.6)

The servo amplifier parameters can be read, changed and written to the servo amplifier.



Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.		
8	Internal speed command 1		
9	Internal speed command 2		
10	Internal speed command 3		
11	Acceleration time constant		
12	Deceleration time constant		
13	S-pattern acc/dec time cons.		

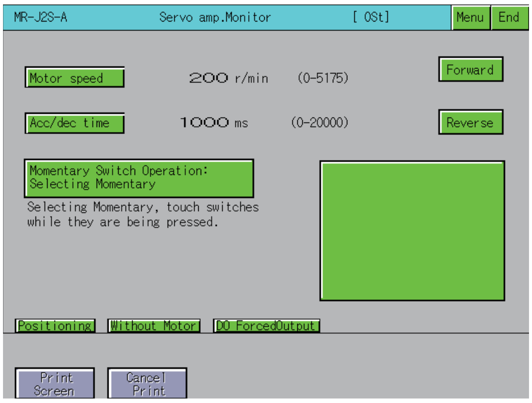
*:Cycle amplifier power to initiate ch

Auto tuning
[010F](0001-042Fh)(PV:010F)

4 Various test operations can be performed (☞9.4.6)

Various test operations can be performed on the connected servo amplifier.
(Display examples)

JOG operation



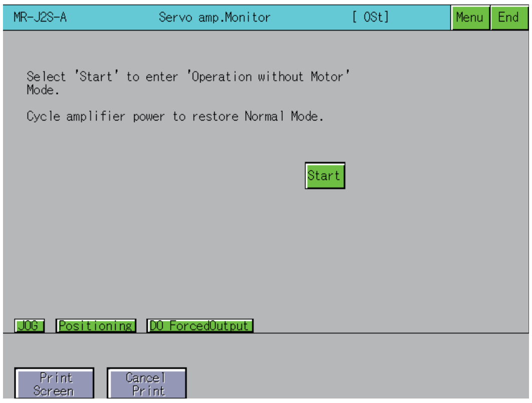
Motor speed	200 r/min	(0-5175)
Acc/dec time	1000 ms	(0-20000)

Momentary Switch Operation:
Selecting Momentary

Selecting Momentary, touch switches while they are being pressed.

- The servo amplifier rotates while the Forward or Reverse key is touched.

Motor less operation



Select 'Start' to enter 'Operation without Motor' Mode.

Cycle amplifier power to restore Normal Mode.

- Simulates motion of the servo motor within the servo amplifier even when the servo motor is not connected.

9.2 Specifications

9.2.1 System configuration

This section describes the system configuration of the servo amplifier monitor.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

☞GOT1000 Series Connection Manual

1 Servo amplifiers targeted for the servo amplifier monitor

Servo amplifier
MELSERVO-J2-Super series
MELSERVO-J2M series
MELSERVO-J3 series

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection type between GOT and servo amplifier	
Name	Description	Direct connection	GOT multidrop connection
Servo amplifier monitor	Servo amplifier monitor, changing the servo parameter settings and test operations	○	×

3 Required option OS and option function board

The option OS and option function board shown below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
Servo amplifier monitor	390KB	770KB	524KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS

Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

☞ 1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

☞ GT15 User's Manual (8.10 Option Function Board)

4 List of servo amplifier types that can be monitored and functions

The list of servo amplifier types that can be monitored and their functions is shown below.

(○: Monitoring is possible with the servo amplifier monitor ×: Monitoring is not possible with the servo amplifier monitor - : Function unavailable)

Function	Servo Amplifier	MR-J2-Super series		MR-J2M series		MR-J3 series
		MR-J2S-□A	MR-J2S-□CP	MR-J2M-P8A	MR-J2M-□DU	MR-J3-□A
Setup	Model selection	○	○	○	○	○
	Baud rate[*1]	○	○	○	○	○
	Station No. Selection[*1]	○	○	-	-	-
	Station selection	○	○	○	○	○
	Axis selection	-	-	○	○	-
	Automatic demo	×	-	-	×	×
Monitor	Display all	○	○	○	○	○
	High speed monitor	×	×	×	×	×
	Multi-axis listing	-	-	×	×	-
	Trend graph	×	×	-	×	×
	I/O Input/Output display[*2]	-	-	-	-	○
Alarm	Display	○	○	○	○	○
	History	○	○	○	○	○
	Amplifier data	×	×	×	×	×
Diagnostic	I/O display	○	○	○	-	-
	Function device display	-	○	○	○	-
	No motor rotation	×	×	-	×	×
	Total power-on time	×	×	×	×	×
	Software number display	○	○	○	○	○
	Motor data display	○	○	-	○	○
	Tuning data	×	×	-	×	×
	Amplifier information	○	○	○	○	○
	Absolute encoder data	○	○	-	○	○
	Automatic voltage control	×	-	-	-	-
	Axis name setting	×	×	-	×	×
	Unit composition listing	-	-	○	○	-
Parameters	Parameter list	○	○	-	-	○
	Tuning	×	×	-	×	×
	Change list	×	×	×	×	×
	IFU parameter	-	-	○	○	-
	DRU parameter	-	-	○	○	-
	Parameter copy	-	-	-	-	×
	Device setting	-	×	×	×	×
	Basic setting	-	-	-	-	○
	Gain/Filter	-	-	-	-	○
	Extension setting	-	-	-	-	○
	I/O setting	-	-	-	-	○
Test	Jog	○	○	-	○	○
	Positioning	○	○	-	○	○
	Operation w/o motor	○	○	-	○	○
	Forced output	○	○	○	-	○
	Program test	×	-	-	×	×
	Single-step feed	-	×	-	-	-

(Continued to next page)

(○: Monitoring is possible with the servo amplifier monitor ×: Monitoring is not possible with the servo amplifier monitor - : Function unavailable)

Function	Servo Amplifier	MR-J2-Super series		MR-J2M series		MR-J3 series
		MR-J2S-□A	MR-J2S-□CP	MR-J2M-P8A	MR-J2M-□DU	MR-J3-□A
Point-data	Point table	-	×	-	-	-
Advanced-function	Machine analyzer	×	-	-	×	×
	Gain search	×	-	-	×	×
	Machine simulation	×	-	-	×	×
	Robust disturbance compensation	-	-	-	-	×

*1 Set the baud rate and station number setting with Communication Settings.
Refer to the following manual for setting Communication Settings.

☞ GT Designer2 Version □ Screen Design Manual (3.7 Communication Interface Setting (Communication Settings))

*2 For the MR-J3 series, it is displayed with "I/O display" in "Diagnostic".

5 Required special data

The following special data is required.

(a) When using GT16 □ □ M-X, GT16 □ □ M-S, GT16 □ □ M-V, GT15 □ □ -X, GT15 □ □ V-S, or GT15 □ □ -S

(- : Unavailable)

Function details			Stored screen data	Memory space (KB)				
				For MR-J2S-□A monitoring	For MR-J2S-□CP monitoring	For MR-J2M-P8A monitoring	For MR-J2M-□DU monitoring	For MR-J3-□A monitoring
Servo amplifier monitor data common information				21.0				
	Monitor		600 "Monitor: ALL"	4.4				
	Alarm	Alarm display	602 "Alarm: ALL"	2.6				
		Alarm history	604 "Alarm Hist.: ALL"	3.3				
	Diagnostics function	DI/DO display	610 "I/O Display: S-A"	2.7	-	-	-	-
			611 "I/O Display: S-CP"	-	3.0	-	-	-
			612 "I/O Display: M-A IFU"	-	-	4.8	-	-
			613 "I/O Display: M-A D01"	-	-	-	3.9	-
			614 "I/O Display: J3-A"	-	-	-	-	2.8
		Function device display	620 "Function Dev.: S-CP"	-	3.3	-	-	-
			621 "Function Dev.: M-A IFU"	-	-	5.1	-	-
			622 "Function Dev.: M-A DRU"	-	-	-	5.1	-
		Amplifier information display	630 "Amp inf.: S-A"	2.4	-	-	-	-
			631 "Amp inf.: S-CP"	-	2.5	-	-	-
			632 "Amp inf.: M-A IFU"	-	-	2.4	-	-
			633 "Amp inf.: M-A DRU"	-	-	-	2.6	-
			634 "Amp inf.: J3-A"	-	-	-	-	2.7
		ABS data display	640 "ABS data: S-A/J3-A"	2.9	-	-	-	2.9
			642 "ABS data: S-CP"	-	3.4	-	-	-
			644 "ABS data: M-A DRU"	-	-	-	3.4	-
		Unit composition list display	647 "Unit Comp.: M-A IFU"	-	-	3.8	-	-
			648 "Unit Comp.: M-A DRU"	-	-	-	3.8	-
	Parameter setting		650 "Parameters: S-*"	4.4		-	-	-
			651 "Parameters: M-A IFU"	-	-	4.6		-
			652 "Parameters: M-A DRU"	-	-	5.0		-
			653 "Parameter Basic setting: J3-A"	-	-	-	-	5.1
			654 "Parameters Gain/Filter: J3-A"	-	-	-	-	5.2
			655 "Parameters Ext. setting: J3-A"	-	-	-	-	5.2
			656 "Parameters I/O setting: J3-A"	-	-	-	-	5.2
	Test	JOG operation	660 "JOG operation: S-*/J3-A"	3.8		-	-	3.8
			661 "JOG operation: M-A DRU"	-	-	-	3.5	-
		Positioning operation	663 "Positioning: S-*"	3.8		-	-	-
			664 "Positioning: M-A DRU"	-	-	-	3.6	-
			665 "Positioning: J3-A"	-	-	-	-	4.3
		Motor-less operation	666 "Motor-less op: S-*/J3-A"	2.7		-	-	2.7
			667 "Motor-less op: M-A DRU"	-	-	-	2.5	-
		DO forced output	669 "DO Forced Out: S-A"	4.1	-	-	-	-
			670 "DO Forced Out: S-CP"	-	3.8	-	-	-
			671 "DO Forced Out: M-A IFU"	-	-	8.2	-	-
			672 "DO Forced Out: M-A D01"	-	-	3.8	-	-
			673 "DO Forced Out: J3-A"	-	-	-	-	4.0

(b) When using GT15□□-V

(- : Unavailable)

Function details		Stored screen data	Memory space (KB)				
			For MR-J2S-□A monitoring	For MR-J2S-□CP monitoring	For MR-J2M-P8A monitoring	For MR-J2M-□DU monitoring	For MR-J3-□A monitoring
Servo amplifier monitor data common information			21.0				
Monitor		600 "Monitor: ALL"	4.4				
Alarm	Alarm display	602 "Alarms: ALL"	2.6				
	Alarm history	604 "Alarms Hist.: ALL"	3.3				
Diagnostics function	DI/DO display	610 "I/O Display: S-A"	2.7	-	-	-	-
		611 "I/O Display: S-CP"	-	3.0	-	-	-
		612 "I/O Display: M-A IFU"	-	-	4.8	-	-
		613 "I/O Display: M-A D01"	-	-	3.9	-	-
		614 "I/O Display: J3-A"	-	-	-	-	2.7
	Function device display	620 "Function Dev.: S-CP"	-	3.3	-	-	-
		621 "Function Dev.: M-A IFU"	-	-	5.3	-	-
		622 "Function Dev.: M-A DRU"	-	-	-	5.3	-
	Amplifier information display	630 "Amp inf.: S-A"	2.4	-	-	-	-
		631 "Amp inf.: S-CP"	-	2.5	-	-	-
		632 "Amp inf.: M-A IFU"	-	-	2.4	-	-
		633 "Amp inf.: M-A DRU"	-	-	-	2.6	-
		634 "I/O Display: J3-A"	-	-	-	-	2.7
	ABS data display	640 "ABS data: S-A/J3-A"	2.4	-	-	-	2.9
		642 "ABS data: S-CP"	-	3.4	-	-	-
		644 "ABS data: M-A DRU"	-	-	-	3.4	-
	Unit composition list display	647 "Unit Comp.: M-A IFU"	-	-	3.8	-	-
		648 "Unit Comp.: M-A DRU"	-	-	-	3.8	-
Parameter setting		650 "Parameters: S-*"	4.4		-	-	-
		651 "Parameters: M-A IFU"	-	-	4.6		-
		652 "Parameters: M-A DRU"	-	-	-	5.0	-
		653 "Parameters Basic setting: J3-A"	-	-	-	-	5.2
		654 "Parameters Gain/Filter: J3-A"	-	-	-	-	5.2
		655 "Parameters Ext. setting: J3-A"	-	-	-	-	5.2
		656 "Parameters I/O setting: J3-A"	-	-	-	-	5.2
Test	JOG operation	660 "JOG operation: S-*/J3-A"	3.8		-	-	3.8
		661 "JOG operation: M-A DRU"	-	-	-	3.5	-
	Positioning operation	663 "Positioning: S-*"	3.8		-	-	-
		664 "Positioning: M-A DRU"	-	-	-	3.6	-
		665 "Positioning: J3-A"	-	-	-	-	4.3
	Motor-less operation	666 "Motor-less op: S-*/J3-A"	2.7		-	-	2.7
		667 "Motor-less op: M-A DRU"	-	-	-	2.5	-
	DO forced output	669 "DO Forced Out: S-A"	4.1	-	-	-	-
		670 "DO Forced Out: S-CP"	-	3.8	-	-	-
		671 "DO Forced Out: M-A"	-	-	8.2	-	-
		672 "DO Forced Out: M-A D01"	-	-	3.9	-	-
		673 "DO Forced Out: J3-A"	-	-	-	-	4.0

(c) When using GT155□-V

(- : Unavailable)

Function details		Stored screen data	Memory space (KB)				
			For MR-J2S-□A monitoring	For MR-J2S-□CP monitoring	For MR-J2M-P8A monitoring	For MR-J2M-□DU monitoring	For MR-J3-□A monitoring
Servo amplifier monitor data common information			42.0				
Monitor		600 "Monitor: ALL"	2.5				
Alarm	Alarm display	602 "Alarms: ALL"	1.8				
	Alarm history	604 "Alarms Hist.: ALL"	2.3				
Diagnostics function	DI/DO display	610 "I/O Display: S-A"	2.2	-	-	-	-
		611 "I/O Display: S-CP"	-	2.4	-	-	-
		612 "I/O Display: M-A IFU"	-	-	3.7	-	-
		613 "I/O Display: M-A D01"	-	-	-	3.1	-
		614 "I/O Display: J3-A"	-	-	-	-	2.0
	Function device display	620 "Func. Dev.: S-CP"	-	2.4	-	-	-
		621 "Func. Dev. In1: M-A IFU"	-	-	3.1	-	-
		622 "Func. Dev. In2: M-A IFU"	-	-	3.1	-	-
		623 "Func. Dev. Out1: M-A IFU"	-	-	3.2	-	-
		624 "Func. Dev. Out2: M-A IFU"	-	-	2.7	-	-
		625 "Func. Dev. In1: M-A DRU"	-	-	-	3.1	-
		626 "Func. Dev. In2: M-A DRU"	-	-	-	3.0	-
		627 "Func. Dev. Out1: M-A DRU"	-	-	-	3.1	-
		628 "Func. Dev. Out2: M-A DRU"	-	-	-	2.7	-
	Amplifier information display	630 "Amp inf.: S-A"	1.6	-	-	-	-
		631 "Amp inf.: S-CP"	-	1.7	-	-	-
		632 "Amp inf.: M-A IFU"	-	-	1.6	-	-
		633 "Amp inf.: M-A DRU"	-	-	-	1.8	-
		634 "Amp. inf.1: J3-A"	-	-	-	-	2.1
		635 "Amp. inf. 2: J3-A"	-	-	-	-	2.1
	ABS data display	640 "ABS data Cur.: S-A/J3-A"	1.9	-	-	-	1.9
		641 "ABS data Orig: S-A/J3-A"	2.0	-	-	-	2.0
		642 "ABS data Cur.: S-CP"	-	2.2	-	-	-
		643 "ABS data Orig: S-CP"	-	2.2	-	-	-
		644 "ABS data Cur.: M-A DRU"	-	-	-	2.2	-
		645 "ABS data Orig: M-A DRU"	-	-	-	2.2	-
	Unit composition list display	647 "Unit Comp.: M-A IFU"	-	-	2.8	-	-
		648 "Unit Comp.: M-A DRU"	-	-	-	2.8	-
Parameter setting		650 "Parameters: S-*"	3.5		-	-	-
		651 "Parameters: M-A IFU"	-	-	3.7	-	-
		652 "Parameters: M-A DRU"	-	-	-	4.0	-
		653 "Parameters Basic setting: J3-A"	-	-	-	-	4.2
		654 "Parameters Gain/Filter: J3-A"	-	-	-	-	4.2
		655 "Parameters Ext. setting: J3-A"	-	-	-	-	4.2
		656 "Parameters I/O setting: J3-A"	-	-	-	-	4.2
Test	JOG operation	660 "Jog operation: S-*/J3-A"	2.8		-	-	2.8
		661 "Jog operation: M-A DRU"	-	-	-	2.5	-
	Positioning operation	663 "Positioning: S-*"	2.9		-	-	-
		664 "Positioning: M-A DRU"	-	-	-	2.6	-
		665 "Positioning: J3-A"	-	-	-	-	3.3
	Motor-less operation	666 "Motor-less op: S-*/J3-A"	1.9		-	-	1.9
		667 "Motor-less op: M-A DRU"	-	-	-	1.7	-
	DO forced output	669 "DO Forced Out: S-A"	3.3	-	-	-	-
		670 "DO Forced Out: S-CP"	-	3.1	-	-	-
		671 "DO Forced Out: M-A IFU"	-	-	6.7	-	-
		672 "DO Forced Out: M-A D01"	-	-	-	3.0	-
		673 "DO Forced Out: J3-A"	-	-	-	-	3.3

(1) Special data

Download the special data indicated in the table above to the GOT.
Refer to the following manual for the procedure for downloading the data.

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

(2) Memory space for special data

The available memory space shown in the table above is required in the user area to download the special data to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

9.2.2 Access range

The access range is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controller that can be Monitored and the Accessible Range)

9.2.3 Precautions

(1) Before using the servo amplifier monitor
Read the manual of the connected servo amplifier carefully and make sure you understand the contents before performing servo amplifier monitoring.

(2) Test operation
Be sure to read the precautions listed below before performing a test operation.

☞ 9.4.7 Test operations

(3) Time displayed on the servo amplifier monitor
If the time data of the GOT is incorrect, the time on the servo amplifier monitor will not be displayed correctly.
Refer to the following manual for the GOT clock data.

☞ GT Designer2 Version □ Screen Design Manual (2.5 Clock Function)

(4) Setting details
Use the same settings for the servo amplifier monitor on the GOT (Setup screen (☞9.4.2)) and the servo amplifier.
If the settings are different, proper communications may not be performed.

(5) Servo amplifier monitored
One servo amplifier can be selected to be monitored among 32 servo amplifiers.
If multiple servo amplifiers are connected, select one servo amplifier to monitor.

9.3 Display

1 Operation procedure until the start of the servo amplifier monitor

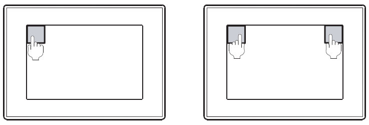
This section describes the flow until the servo amplifier monitor operation screen is displayed after the servo amplifier monitor (Option OS) is installed in the GOT.

Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.

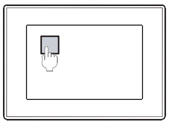


After the utility is displayed, touch [Debug & self check] → [Debug] → [Servo amplifier monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (Servo Amplifier Monitor) set in the project data

Touch the special function switch.

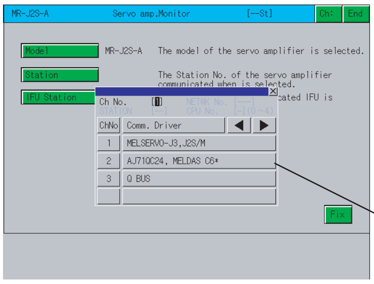


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version□Screen Design Manual (6.2 Touch Switch)

Set the channel number.

Set the channel number of the servo amplifier connected to the GOT.



MR-J2S-A The model of the servo amplifier is selected.

The Station No. of the servo amplifier communicated when is selected.

…cated IFU is

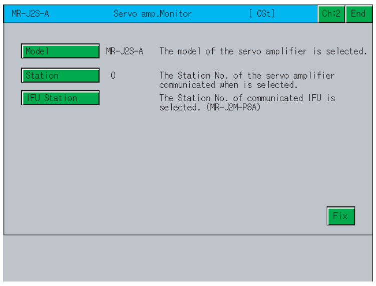
Ch No. [1] NETWK No. [---]
STATION [--] CPU No. [-](0~4)

ChNo	Comm. Driver
1	MELSERVO-J3,J2S/M
2	AJ71QC24, MELDAS C6*
3	Q BUS

Communication setting window

Set the setup.

Set the model type etc. of the servo amplifier to be monitored.

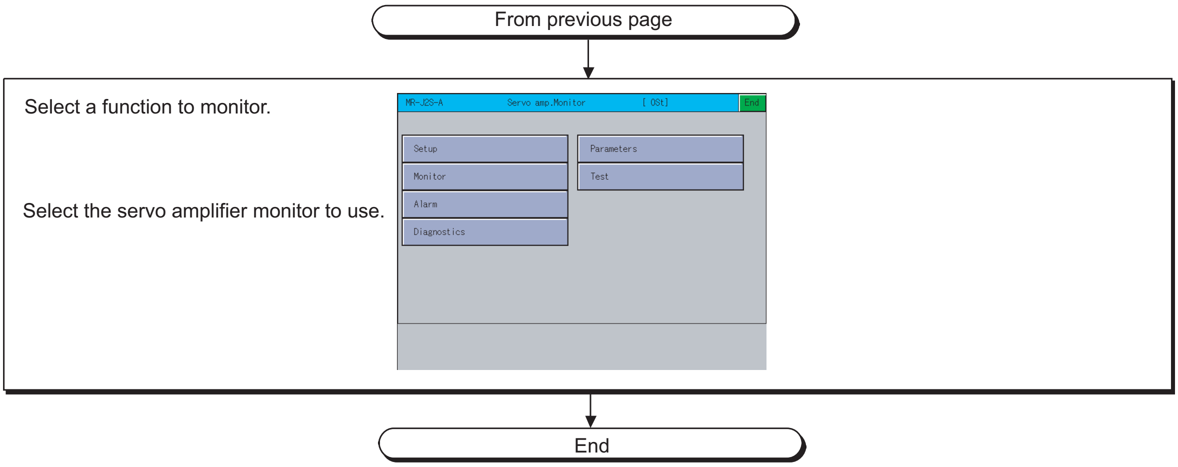


Model: MR-J2S-A The model of the servo amplifier is selected.

Station: 0 The Station No. of the servo amplifier communicated when is selected.

IFU Station: The Station No. of communicated IFU is selected. (MR-J2M-P8A)

Continued to next page



Select a function to monitor.

Select the servo amplifier monitor to use.

Point

(1) How to display the utility
For how to display the utility, refer to the following.

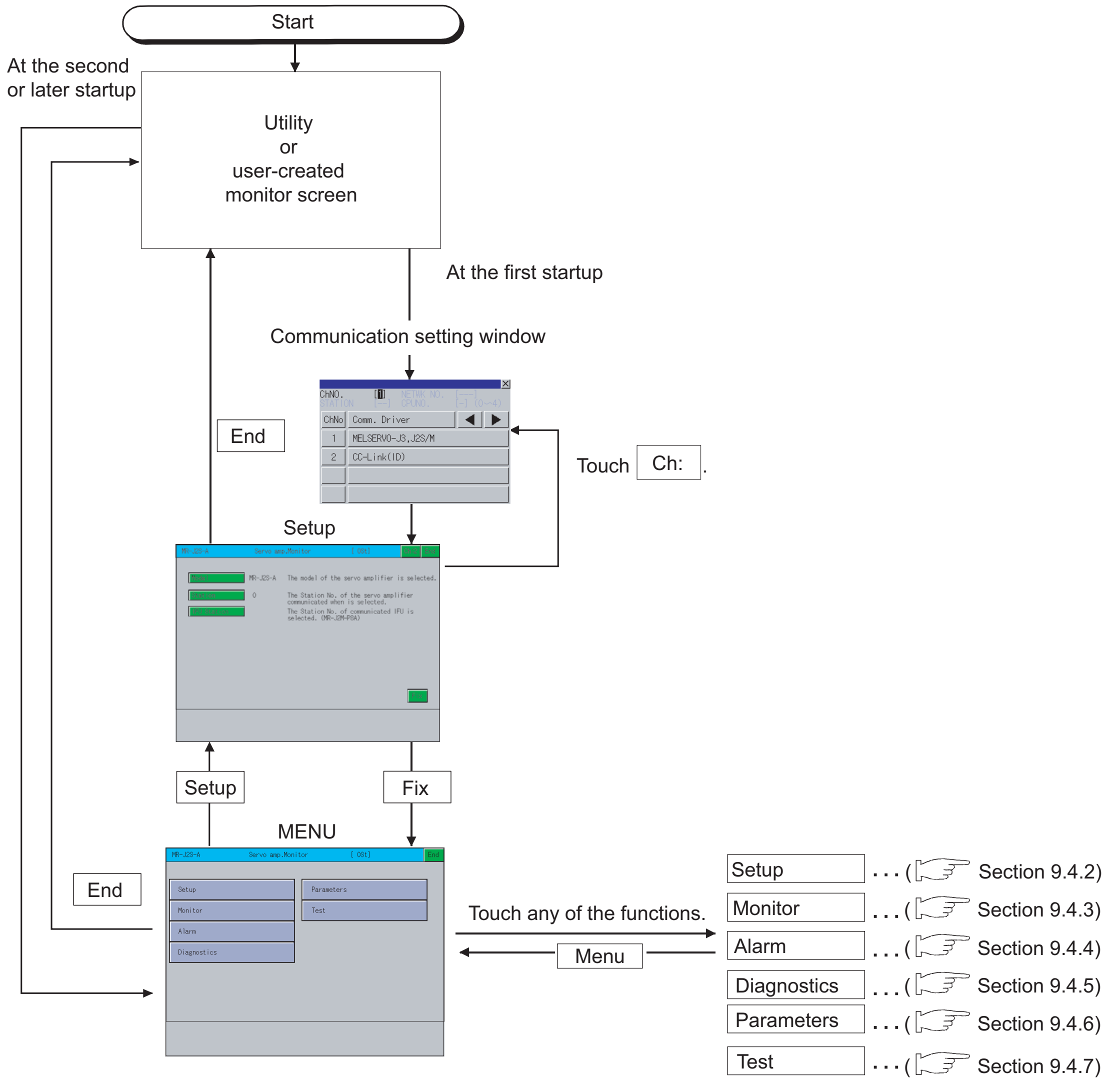
GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the servo amplifier monitor only.
For displaying the communication setting window at the second or later startup, touch the Ch: button on the servo amplifier monitor screen.
(9.4 Operations of Servo Amplifier Monitor Screens)

(3) If the project data has not been downloaded
The servo amplifier monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens

The following describes how to change the screen.


Start
At the second or later startup
Utility or user-created monitor screen
At the first startup
Communication setting window
ChNo
Comm. Driver
1 MELSERVO-J3,J2S/M
2 CC-Link(ID)
End
Touch Ch: .
Setup
Setup
Fix
MENU
End
Setup
Monitor
Alarm
Diagnostics
Parameters
Test
Touch any of the functions.
Menu
Setup . . . (Section 9.4.2)
Monitor . . . (Section 9.4.3)
Alarm . . . (Section 9.4.4)
Diagnostics . . . (Section 9.4.5)
Parameters . . . (Section 9.4.6)
Test . . . (Section 9.4.7)

Hint!

To exit by touching End

At next startup of the servo amplifier monitor, the last exited screen is displayed.

If using the same screen frequently, exiting with the End button is convenient.
However, the last exited screen is not displayed if the servo amplifier monitor screen data was deleted due to an installation of the OS, turning the GOT power from off to on, or a reset.

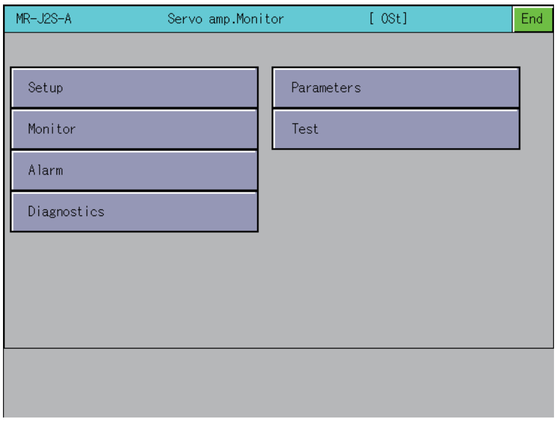
9.4 Operations of Servo Amplifier Monitor Screens

This section describes the operations of the screens when using the servo amplifier monitor.
The display screen of the servo amplifier monitor varies slightly with the GOT used. This section mainly uses the screen of the GT1575-V for explanation.

9.4.1 Servo amplifier monitor

With the servo amplifier monitor, various monitor functions, parameter setting changes and test operations can be performed on the servo amplifier connected to the GOT.
To display a function, make a selection on the function selection menu screen.

(Function selection menu screen)



1) Setup. . . . . (☞ 9.4.2)	Selects the servo amplifier type to monitor, the station number setting (station number selection), and the IFU station number.
2) Monitor . . . . (☞ 9.4.3)	Displays all monitor data of the servo amplifier in real-time.
3) Alarm. . . . . (☞ 9.4.4)	Displays the alarm that is currently occurring and the history. Also resets the alarm and clears the history.
4) Diagnostics . . . . (☞ 9.4.5)	Performs the following various diagnostics on the connected servo amplifier. ▪ DI/DO display : Displays the ON/OFF status of the external I/O signals. ▪ Function device display : Displays the ON/OFF status of the I/O function devices. ▪ Amplifier information display : Displays the model name, ID and encoder resolution of the servo motor connected to the servo amplifier. ▪ ABS data display : Displays the absolute position data of the absolute position detection system. ▪ Unit composition list display : Displays a list of servo amplifier unit composition.
5) Parameters . . . . (☞ 9.4.6)	Displays the parameter data and changes the parameter settings.
6) Test . . . . (☞ 9.4.7)	Performs various test operations (JOG operation, positioning operation, motor-less operation and DO forced output).

9.4.2 Setup

This is used to set the communication with the servo amplifier.

Point

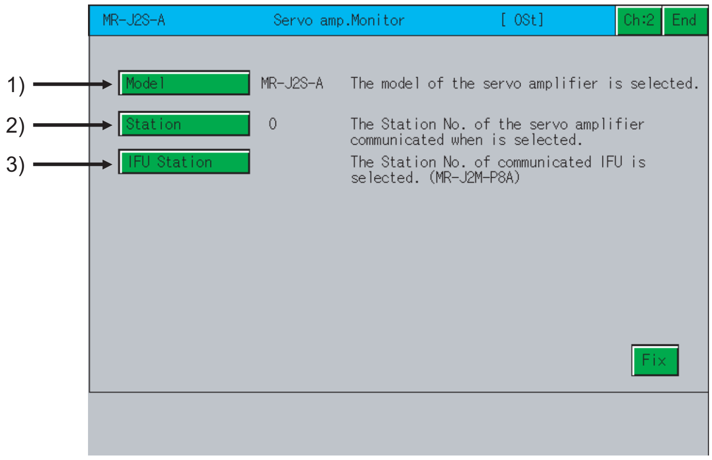
(1) Before making the settings on the setup screen, also make the same settings on the servo amplifier side.
If the settings on this screen and the settings on the servo amplifier do not match, proper communications may not be performed.

(2) The settings on the setup screen return to the initial state when the GOT is turned off or reset.
After turning on the power to the GOT, perform the settings on the setup screen again.

1 Setup screen

This section describes the display data of the setup screen and the key functions displayed on the screen.

(1) Displayed contents



Model MR-J2S-A The model of the servo amplifier is selected.

Station 0 The Station No. of the servo amplifier communicated when is selected.

IFU Station The Station No. of communicated IFU is selected. (MR-J2M-P8A)

* [Axis number] and [Capacity setting] cannot be set.

No.	Item	Description
1)	Model	Displays the model of the servo amplifier to be connected.
2)	Station	Displays the station number (00 to 31) of the servo amplifier to communicate with.
3)	IFU Station	Displays the serial communication station number of the IFU (interface unit).

(2) Key functions

The table below shows the functions of the keys that are used for the operations of the setup screen.

Key	Function
Model	Sets the model of the servo amplifier to be connected.
Station	Sets the station number (00 to 31) of the servo amplifier to communicate with.
IFU Station *1	Sets the serial communication station number of the IFU (interface unit).
Fix	Sets the setup details and returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Ch:2	Displays the communication setting window.

*1: This is valid only when the MR-J2M A series is connected.

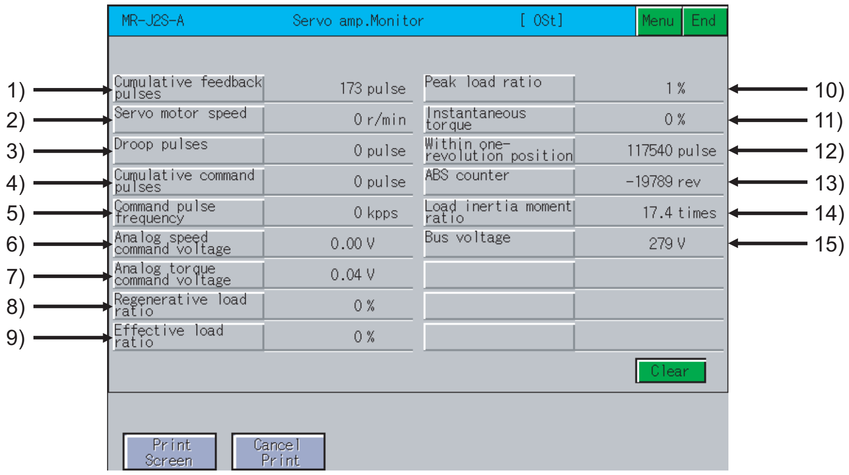
9.4.3 Monitor functions

Displays all monitor data of the servo amplifier in real-time.

1 Monitor screen

The following describes the display data of the monitor screen and the key functions displayed on the screen.

(1) Displayed contents



MR-J2S-A Servo amp.Monitor [0St]

Cumulative feedback pulses	173 pulse	Peak load ratio	1 %
Servo motor speed	0 r/min	Instantaneous torque	0 %
Droop pulses	0 pulse	Within one-revolution position	117540 pulse
Cumulative command pulses	0 pulse	ABS counter	-19789 rev
Command pulse frequency	0 kpps	Load inertia moment ratio	17.4 times
Analog speed command voltage	0.00 V	Bus voltage	279 V
Analog torque command voltage	0.04 V		
Regenerative load ratio	0 %		
Effective load ratio	0 %		

No.	Item	Description
1)	Cumulative feedback pulses	Counts the feedback pulses from the servo motor encoder and displays the result. • When the set value exceeds "9999999", counting begins from "0". • During reverse rotation, the – sign is added.
2)	Servo motor speed	Displays the speed of the servo motor. • The value is displayed with the 0.1r/min unit rounded off. • During reverse rotation, the – sign is added.
3)	Droop pulses	Displays the droop pulses of the deviation counter. • During reverse rotation, the – sign is added.
4)	Cumulative command pulses	Counts the position command input pulses and displays the result. • Since the value before multiplication of the electrical gear (CMX/CDV) is displayed, it may not match the cumulative feedback pulse display. • During reverse rotation command, the – sign is added.
5)	Command pulse frequency	Displays the frequency of the position command input pulse. • The value before multiplication of the electrical gear (CMX/CDV) is displayed. • During reverse rotation command, the – sign is added.
6)	Analog speed command voltage (during speed control mode)[*1]	Displays the input voltage of the analog speed command (VC).
	Analog speed limit voltage (during torque control mode)[*1]	Displays the input voltage of the analog speed limit (VLA).
7)	Analog torque command voltage (during position/ speed control mode)[*1]	Displays the voltage of the analog torque limit (TLA).
	Analog torque limit voltage (during torque control mode)[*1]	Displays the voltage of the analog torque limit (TC).

(Continued to next page)

[*1] This is displayed only when the MR-J2S-☐ A is connected.

No.	Item	Description
8)	Regenerative load ratio	Displays the ratio of the regenerative power to the permissible regenerative power in %. • The permissible regenerative power differs depending on the presence/absence of the regenerative brake option. Set parameter No. 0 correctly according to the regenerative brake option. (Set to 80% or lower as a guide.)
9)	Effective load ratio	Displays the continuous effective load torque. • The effective value is displayed on the assumption that the rated torque is 100%.
10)	Peak load ratio	Displays the maximum torque generated. • The maximum value for the past 15 seconds is displayed on the assumption that the rated torque is 100%.
11)	Instantaneous torque	Displays the instantaneous torque. • The value of the generated torque is displayed in real time on the assumption that the rated torque is 100%.
12)	Within one-revolution position	Displays the within one-revolution position in the servo motor in pulse units of the encoder. • When the value exceeds the maximum pulse count, it returns to 0.
13)	ABS counter	Displays the distance from the home position (0) in the absolute position detection system as the multi-revolution counter value of the absolute position encoder.
14)	Load inertia moment ratio	Displays the estimated ratio of the servo motor shaft-equivalent load inertia moment to the servo motor's inertia moment.
15)	Bus voltage	Displays the voltage (between P and N) of the main circuit converter.

(2) Key functions

The table below shows the functions of the keys that are used for the operations on the monitor screen.

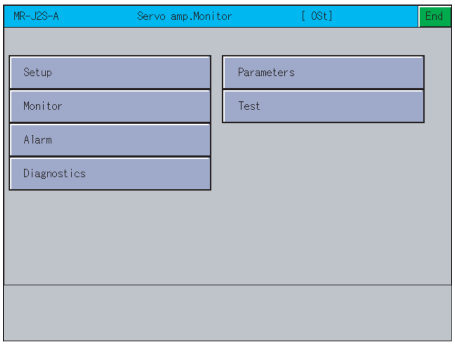
Key	Function
Clear	Clears the values of [Cumulative feedback pulses] and [Cumulative command pulses] to 0.
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 8.4.11 Hard copy output
Cancel Print	The touch operation of this key is invalid.

9.4.4 Alarm function

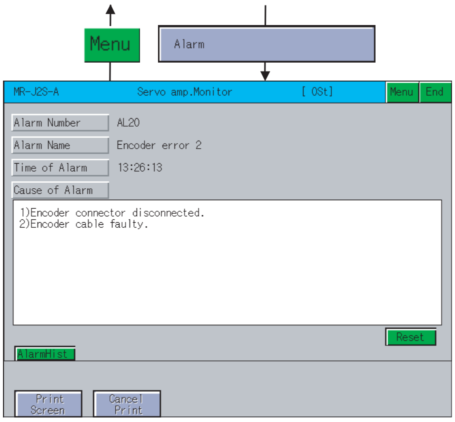
The following alarms are displayed.

- Alarm display : Displays the alarm that is currently occurring. (☞ This section 1)
- Alarm history : Displays the history of alarms that occurred. (☞ This section 2)

The screen changes as follows after Alarm is selected on the function selection menu screen.



Function selection menu screen



Alarm Number AL20

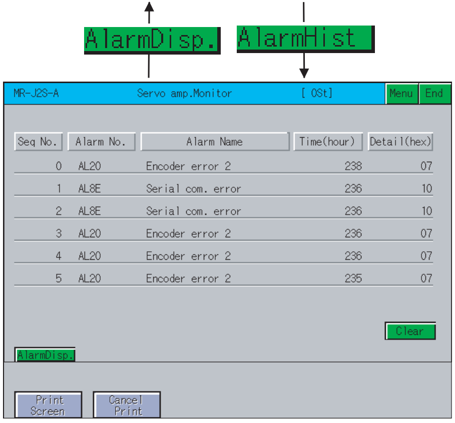
Alarm Name Encoder error 2

Time of Alarm 13:26:13

Cause of Alarm

1)Encoder connector disconnected.
2)Encoder cable faulty.

Alarm display screen



Seq No.	Alarm No.	Alarm Name	Time(hour)	Detail(hex)
0	AL20	Encoder error 2	238	07
1	AL8E	Serial com. error	236	10
2	AL8E	Serial com. error	236	10
3	AL20	Encoder error 2	236	07
4	AL20	Encoder error 2	236	07
5	AL20	Encoder error 2	235	07

Alarm history screen

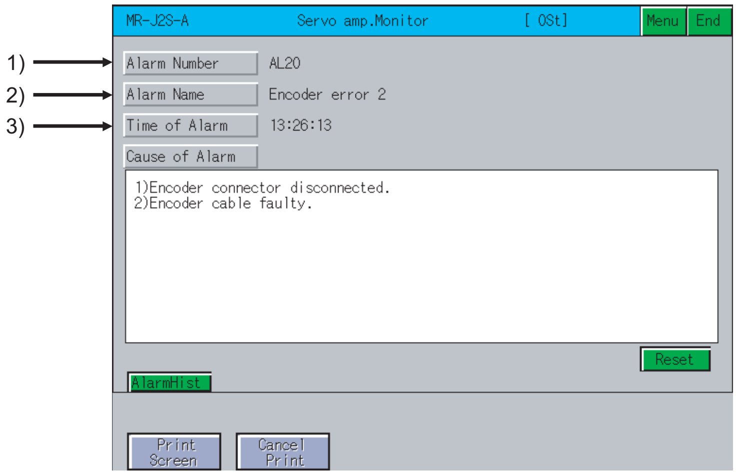
Point

If the alarm display screen data has not been downloaded to the GOT, the message "Monitor data not found" is displayed and the subsequent screens are not displayed.

1 Alarm display screen

The following describes the display data of the alarm display screen and the key functions displayed on the screen.

(1) Displayed contents



MR-J2S-A Servo amp.Monitor [0St]

Alarm Number AL20

Alarm Name Encoder error 2

Time of Alarm 13:26:13

Cause of Alarm

1)Encoder connector disconnected.
2)Encoder cable faulty.

No.	Item	Description
1)	Alarm Number	Displays the number of the alarm that occurred.
2)	Alarm Name	Displays the name of the alarm that occurred.
3)	Time of Alarm	Displays the date and time when the alarm occurred. • The alarm occurrence time is displayed on the basis of the clock data of the GOT. • If there is an error in the servo amplifier before it is connected to the GOT, an alarm is displayed when the servo amplifier is connected to the GOT. In this case, the time when the servo amplifier is connected to the GOT is displayed as the alarm occurrence time.

(2) Key functions

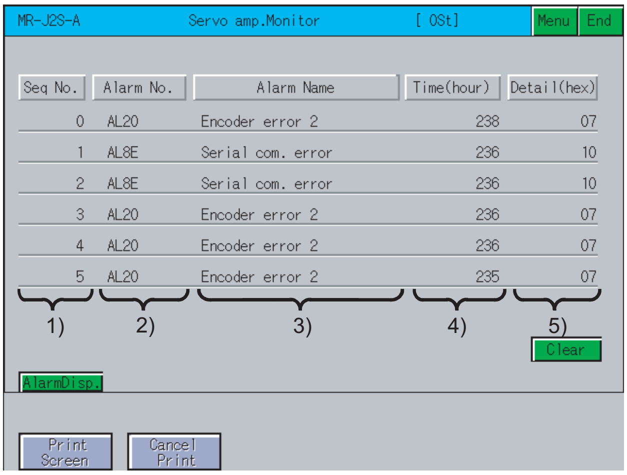
The table below shows the functions of the keys that are used for operations of the alarm display screen.

Key	Function
Reset	Resets the alarm. • The reset alarm is stored as the latest alarm.
AlarmHist	Changes to the alarm history screen (☞ This section 2).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

2 Alarm history screen

The following describes the display data of the alarm history screen and the key functions displayed on the screen.

(1) Displayed contents



MR-J2S-A Servo amp.Monitor [0St]

Seq No.	Alarm No.	Alarm Name	Time(hour)	Detail(hex)
0	AL20	Encoder error 2	238	07
1	AL8E	Serial com. error	236	10
2	AL8E	Serial com. error	236	10
3	AL20	Encoder error 2	236	07
4	AL20	Encoder error 2	236	07
5	AL20	Encoder error 2	235	07

No.	Item	Description
1)	Seq No.	Displays the alarm history, starting from the latest alarm, in order. • Later alarms have smaller Seq Nos. (0 indicates the latest alarm) • Up to six alarms can be displayed in the alarm history.
2)	Alarm No.	Displays the number of the alarm that occurred.
3)	Alarm Name	Displays the name of the alarm that occurred.
4)	Time (hour)	Displays the energization time of the servo amplifier until alarm occurrence on the assumption that the time at factory shipment is "0".
5)	Detail (hex)	Displays the code for detailed alarm information.

(2) Key functions

The table below shows the functions of the keys that are used for operations of the alarm history screen.

Key	Function
Clear	Clears the alarm history stored in the servo amplifier.
AlarmDisp.	Changes to the Alarm Display screen (This section 1).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

9.4.5 Diagnostics function

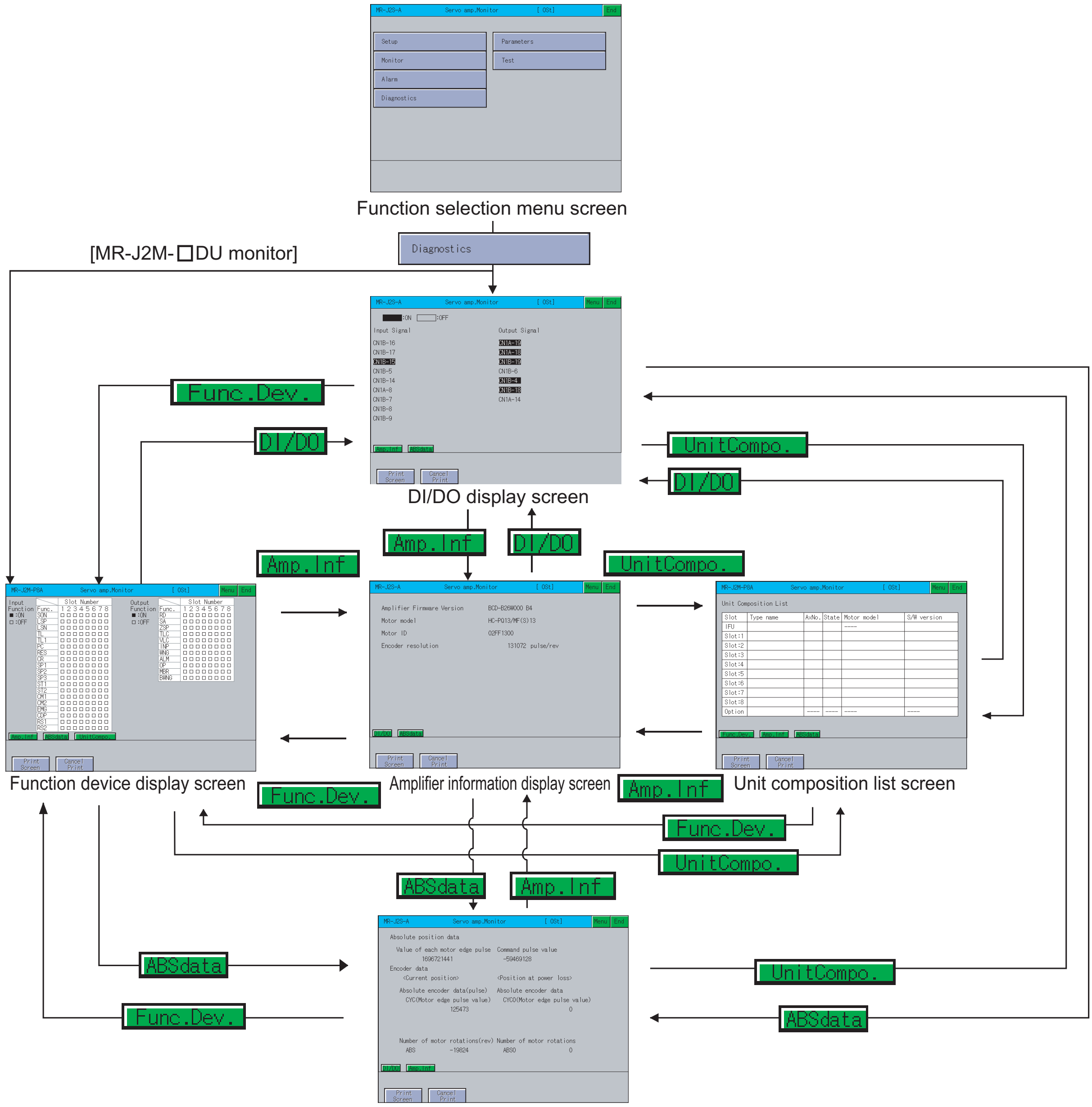
This function performs the following various diagnostics on the connected servo amplifier.

• DI/DO display:	Displays the ON/OFF status of the external I/O signals.(☞ This section 1)
• Function device display:	Displays the ON/OFF status of the I/O function devices.(☞ This section 2)
• Amplifier information display:	Displays the model name, ID and encoder resolution of the servo motor connected to the servo amplifier.(☞ This section 3)
• ABS data display:	Displays the absolute position data of the absolute position detection system.(☞ This section 4)
• Unit composition list display:	Displays a list of servo amplifier unit compositions.(☞ This section 5)

(1) Changing screens

The screen changes as follows after Diagnostics is selected on the function selection menu screen.
Depending on the model of the connected servo amplifier, some screens may not be displayed.
Refer to the following for the screens that cannot be displayed.

☞ 9.2.1 4 List of servo amplifier types that can be monitored and functions



DI/DO display screen (MR-J2S-A Servo amp.Monitor [0St])

■:ON ☐:OFF

Input Signal	Output Signal
CN1B-16	CN1A-19
CN1B-17	CN1A-18
CN1B-15	CN1B-19
CN1B-5	CN1B-6
CN1B-14	CN1B-4
CN1A-8	CN1B-18
CN1B-7	CN1A-14
CN1B-8	
CN1B-9	

Function device display screen (MR-J2M-P8A Servo amp.Monitor [0St])

Input Function ■:ON ☐:OFF

Func.	1	2	3	4	5	6	7	8
SON	☐	☐	☐	☐	☐	☐	☐	☐
LSP	☐	☐	☐	☐	☐	☐	☐	☐
LSN	☐	☐	☐	☐	☐	☐	☐	☐
TL	☐	☐	☐	☐	☐	☐	☐	☐
TL1	☐	☐	☐	☐	☐	☐	☐	☐
PC	☐	☐	☐	☐	☐	☐	☐	☐
RES	☐	☐	☐	☐	☐	☐	☐	☐
CR	☐	☐	☐	☐	☐	☐	☐	☐
SP1	☐	☐	☐	☐	☐	☐	☐	☐
SP2	☐	☐	☐	☐	☐	☐	☐	☐
SP3	☐	☐	☐	☐	☐	☐	☐	☐
ST1	☐	☐	☐	☐	☐	☐	☐	☐
ST2	☐	☐	☐	☐	☐	☐	☐	☐
CM1	☐	☐	☐	☐	☐	☐	☐	☐
CM2	☐	☐	☐	☐	☐	☐	☐	☐
EMG	☐	☐	☐	☐	☐	☐	☐	☐
CDP	☐	☐	☐	☐	☐	☐	☐	☐
RS1	☐	☐	☐	☐	☐	☐	☐	☐
RS2	☐	☐	☐	☐	☐	☐	☐	☐

Output Function ■:ON ☐:OFF

Func.	1	2	3	4	5	6	7	8
RD	☐	☐	☐	☐	☐	☐	☐	☐
SA	☐	☐	☐	☐	☐	☐	☐	☐
ZSP	☐	☐	☐	☐	☐	☐	☐	☐
TLC	☐	☐	☐	☐	☐	☐	☐	☐
VLC	☐	☐	☐	☐	☐	☐	☐	☐
INP	☐	☐	☐	☐	☐	☐	☐	☐
WNG	☐	☐	☐	☐	☐	☐	☐	☐
ALM	☐	☐	☐	☐	☐	☐	☐	☐
OP	☐	☐	☐	☐	☐	☐	☐	☐
MBR	☐	☐	☐	☐	☐	☐	☐	☐
BWNG	☐	☐	☐	☐	☐	☐	☐	☐

Amplifier information display screen (MR-J2S-A Servo amp.Monitor [0St])

Amplifier Firmware Version BCD-B26W000 B4
Motor model HC-PQ13/MF(S)13
Motor ID 02FF1300
Encoder resolution 131072 pulse/rev

Unit composition list screen (MR-J2M-P8A Servo amp.Monitor [0St])

Unit Composition List

Slot	Type name	AxNo.	State	Motor model	S/W version
IFU				----	
Slot:1					
Slot:2					
Slot:3					
Slot:4					
Slot:5					
Slot:6					
Slot:7					
Slot:8					
Option		----	----	----	----

ABS data display screen (MR-J2S-A Servo amp.Monitor [0St])

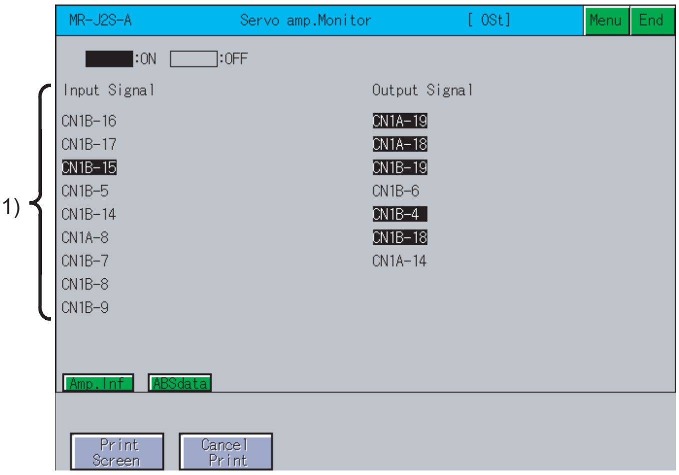
Absolute position data
Value of each motor edge pulse 1696721441
Command pulse value -59469128
Encoder data
<Current position>
Absolute encoder data(pulse)
CYC(Motor edge pulse value) 125473
Number of motor rotations(rev)
ABS -19824
<Position at power loss>
Absolute encoder data
CYC0(Motor edge pulse value) 0
Number of motor rotations
ABS0 0

Point If the DI/DO display screen data or function device display screen data (only when monitoring the MR-J2M-☐ DU) has not been downloaded to the GOT, “Monitor data not found” is displayed and the subsequent screens are not displayed.

1 DI/DO display screen

The following describes the display data of the DI/DO display screen and the key functions displayed on the screen.

(1) Displayed contents



Input Signal	Output Signal
CN1B-16	CN1A-19
CN1B-17	CN1A-18
CN1B-15	CN1B-19
CN1B-5	CN1B-6
CN1B-14	CN1B-4
CN1A-8	CN1B-18
CN1B-7	CN1A-14
CN1B-8	
CN1B-9	

No.	Item	Description
1)	Input/Output Signal	Displays whether the DI/DO signal is ON (lit) or OFF (not lit).

(2) Key functions

The table below shows the functions of the keys that are used for the operations of the DI/DO display screen.

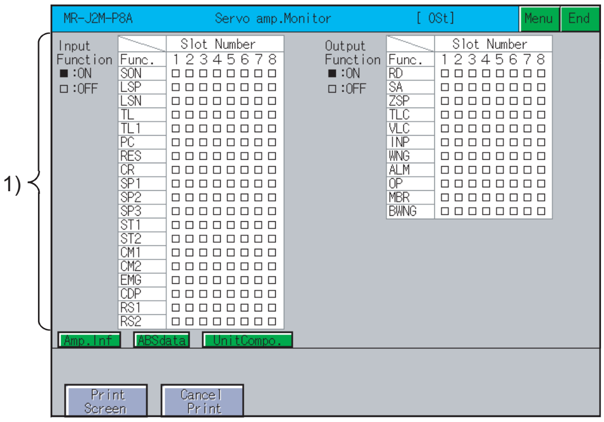
Key	Function
DO1 *1	Displays the DI/DO signal of the extension IO unit.
Func.Dev.	Changes to the function device screen (☞This section 2).
Amp.Inf	Changes to the amplifier information screen (☞This section 3).
UnitCompo.	Changes to the unit composition list screen (☞This section 5).
ABSdata	Changes to the ABS data screen (☞This section 4).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

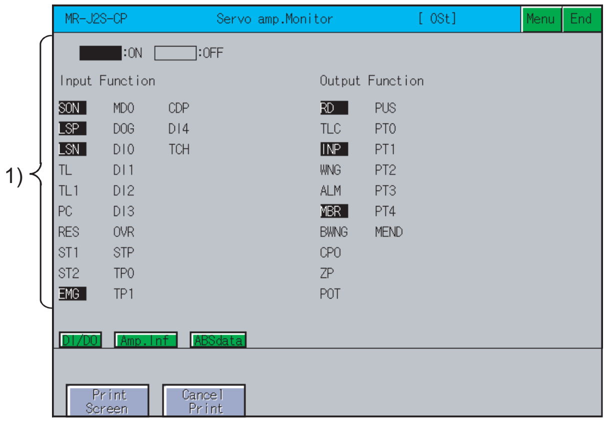
*1: This is displayed only when the MR-J2M A series is connected.

2 Function device display screen

The following describes the display data of the function device display screen and the key functions displayed on the screen.

(1) Displayed contents





[When MR-J2S-□CP is monitored]

No.	Item	Description
1)	Input/Output Function	Displays the ON (■) or OFF (□) status for each I/O signal.

(2) Key functions

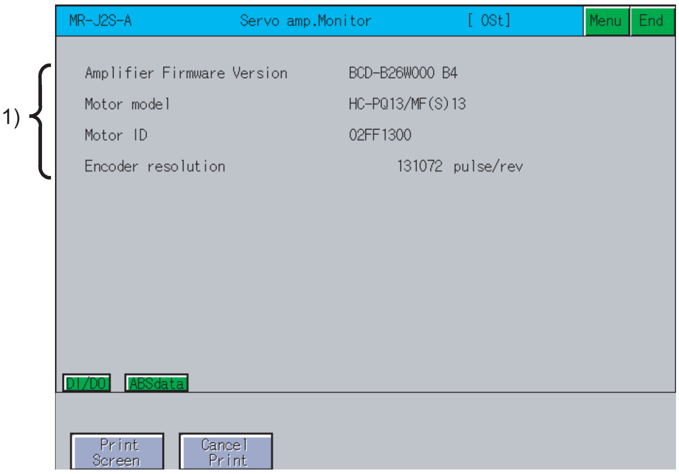
The table below shows the functions of the keys that are used for the operations of the function device display screen.

Key	Function
DI/DO	Changes to the DI/DO display screen (☞This section 1).
ABSdata	Changes to the ABS data screen (☞This section 4).
Amp.Inf	Changes to the amplifier information screen (☞This section 3).
UnitCompo.	Changes to the unit composition list screen (☞This section 5).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

3 Amplifier information display screen

The following describes the display data of the amplifier information display screen and the key functions displayed on the screen.

(1) Displayed contents



MR-J2S-A Servo amp.Monitor [0St]

1)
Amplifier Firmware Version BCD-B26W000 B4
Motor model HC-PQ13/MF(S)13
Motor ID 02FF1300
Encoder resolution 131072 pulse/rev

No.	Item	Description
1)	Servo amplifier model.*1	Displays the model name of the servo amplifier.
	Amplifier Firmware Version	Displays the software number of the servo amplifier connected to the GOT.
	Accumulated power-on time*1	Displays the cumulative time of the control power-on after the product was shipped from the factory.
	Num. of inrush cur. sw. time*1	Displays the number of times the rush relay has been turned on/off after the product was shipped from the factory.
	Optional card model*1	Displays the model name of the option card installed in the servo amplifier. If no option card is installed, then "No connection" is displayed.
	Motor model*2	Displays the model name of the servo motor connected to the servo amplifier.
	Motor ID*2	Displays the ID of the servo motor connected to the servo amplifier.
	Encoder resolution*2	Displays the encoder resolution of the servo motor connected to the servo amplifier.

*1 This is displayed only for the MR-J3 series.
*2 This is not displayed when monitoring the MR-J2M-P8A.

(2) Key functions

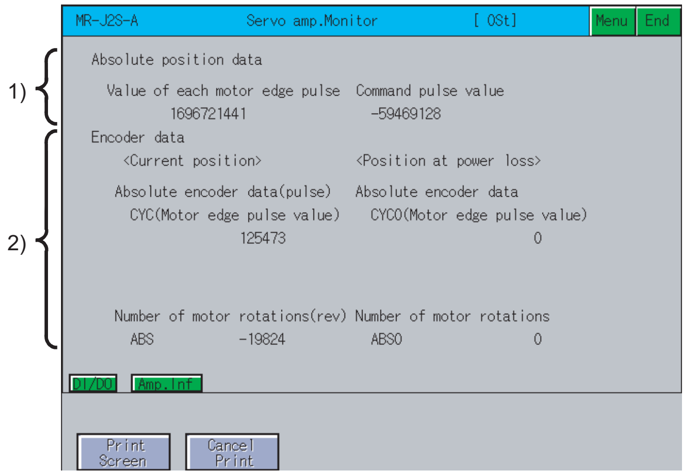
The table below shows the functions of the keys that are used for the operations of the amplifier information display screen.

Key	Function
DI/DO	Changes to the DI/DO display screen (☞This section 1).
ABSdata	Changes to the function device screen (☞This section 2).
Amp.Inf	Changes to the ABS data screen (☞This section 4).
UnitCompo.	Changes to the unit composition list screen (☞This section 5).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

4 ABS data display screen

The following describes the display data of the ABS data display screen and the key functions displayed on the screen.

(1) Displayed contents



MR-J2S-A Servo amp.Monitor [0St]

Absolute position data

Value of each motor edge pulse: 1696721441
Command pulse value: -59469128

Encoder data

<Current position>
Absolute encoder data(pulse)
CYC(Motor edge pulse value): 125473
Number of motor rotations(rev)
ABS: -19824

<Position at power loss>
Absolute encoder data
CYC0(Motor edge pulse value): 0
Number of motor rotations
ABS0: 0

No.	Item	Description
1)	Absolute position data	Displays the absolute position data in the absolute position detection system with the following items. • Motor edge pulse value • Command pulse value
2)	Encoder data	Displays the encoder data with the following items. Current position • Absolute encoder data • CYC (Motor edge pulse value) • CYC (Command pulse value) • Number of motor rotations ABS Position at power loss • Absolute encoder data • CYC0 (Motor edge pulse value) • CYC0 (Command pulse value) • Number of motor rotations ABS0

(2) Key functions

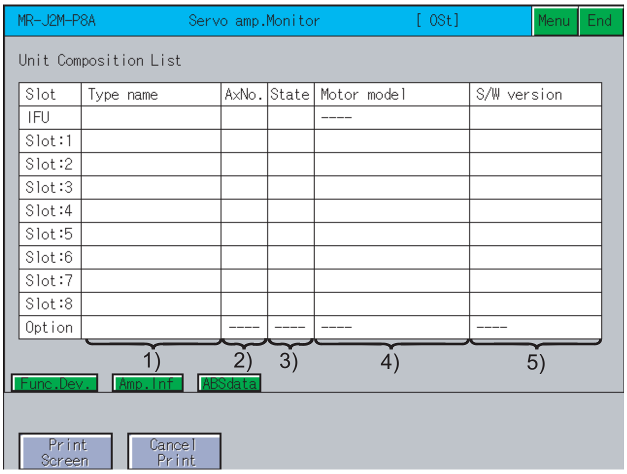
The table below shows the functions of the keys that are used for the operations of the ABS data display screen.

Key	Function
DI/DO	Changes to the DI/DO display screen (☞This section 1).
Func.Dev.	Changes to the function device screen (☞This section 2).
UnitCompo.	Changes to the unit composition list screen (☞This section 5).
Amp.Inf	Changes to the amplifier information screen (☞This section 3).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

5 Unit composition list display screen

The following describes the display data of the unit composition list screen and the key functions displayed on the screen.

(1) Displayed contents



Unit Composition List

Slot	Type name	AxNo.	State	Motor model	S/W version
IFU				----	
Slot:1					
Slot:2					
Slot:3					
Slot:4					
Slot:5					
Slot:6					
Slot:7					
Slot:8					
Option		----	----	----	----

No.	Item	Description
1)	Type name	Displays the model name of the drive unit (DRU), interface unit (IFU) and option unit installed in each slot.
2)	AxNo.	Displays the axis number of the drive unit (DRU) and interface unit (IFU).
3)	State	Displays status of the drive unit (DRU) and interface unit (IFU) and the alarm/warning number.
4)	Motor model	Displays the model name of the motor connected to the drive unit (DRU).
5)	S/W version	Displays the software number of the drive unit (DRU) and interface unit (IFU).

(2) Key functions

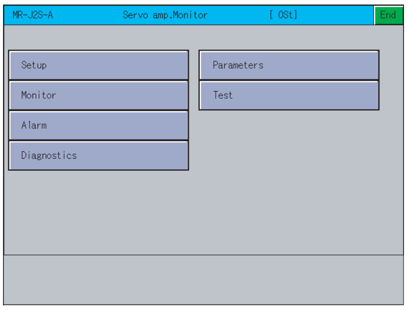
The table below shows the functions of the keys that are used for the operations of the unit composition list screen.

Key	Function
DI/DO	Changes to the DI/DO display screen (☞ This section 1).
ABSdata	Changes to the ABS data screen (☞ This section 4).
Amp.Inf	Changes to the amplifier information screen (☞ This section 3).
Func.Dev.	Changes to the function device screen (☞ This section 2).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

9.4.6 Parameter setting

You can use the parameter setting function to set the servo parameters (basic parameters/expansion parameter 1, 2) of the connected servo amplifier.
The password input key window appears for accessing the parameter setting screen of the servo amplifier monitor when the password is set with GT Designer2.

The screen changes as follows after Parameters is selected on the function selection menu screen.



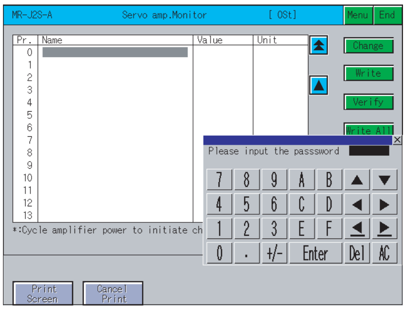
Function selection menu screen (☞ Section 9.4.2)

Have you registered the servo amplifier parameter changing password? *1

No

Yes

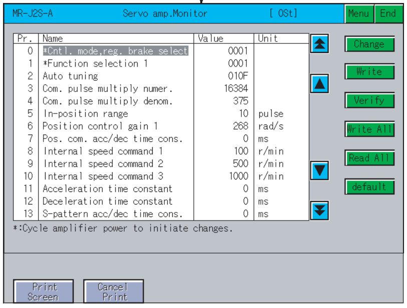
*1 Set the servo parameter changing password on GT Designer2.
For details of the parameter setting, refer to the GT Designer2 Version☐ Screen Design Manual.



*:Cycle amplifier power to initiate ch

Password input key window

Enter the parameter changing password. … ☞ This section 1



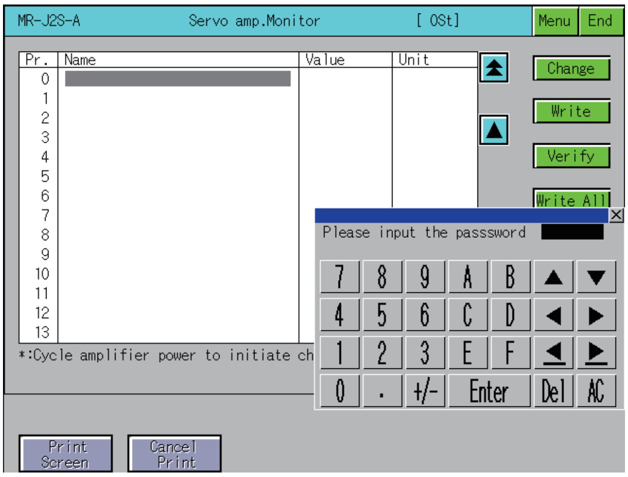
Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.

Parameter setting screen

1 Password input operation procedure

The following describes the procedure for inputting the password for changing the servo parameters.



Please input the password

*:Cycle amplifier power to initiate ch

(1) Functions

- If the input password matches, the parameter setting screen is displayed.
- If the input password does not match, an error message is displayed.
  Touching ☒ returns to the function selection menu screen.
- Numerical numbers and letters A to F can be used for a password.

(2) Operations

(a) Inputting the password

Touch 0 to 9 and A to F to input the password.

After inputting the password, touch Enter to set the password.

To edit the input characters, touch Del to delete the characters, and then input the new characters.

(b) Canceling password input

Touch ☒ to return to the monitor screen.

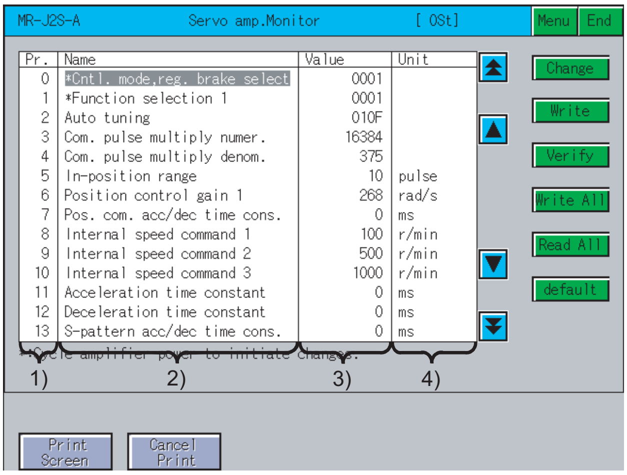
2 Parameter setting screen

The following describes the display data of the parameter setting screen and the key functions displayed on the screen.

Point

Parameters with an asterisk (*) preceding the name become valid after the parameters are set and the power of the servo amplifier is turned off and then on again.

(1) Display screen



Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.

No.	Item	Description
1)	Pr.	Displays the parameter number.
2)	Name	Displays the parameter name.
3)	Value	Displays the present set value of the parameter.
4)	Unit	Displays the setting unit for each parameter.

(2) Key functions

The table below shows the functions of the keys that are used with the operations on the parameter setting screen.

Key	Function
▲ ▼	Selects the servo parameter setting item.
⏫ ⏬	Displays the parameter items with scrolling a page up/down.
Change	Changes the servo parameter settings read to the GOT internal memory.
Write	Writes the servo parameter settings of the selected items to the servo amplifier.
Verify	Matches all parameter values presently displayed on the GOT with the servo amplifier parameter values.
Write All	Writes all parameter values presently displayed on the GOT to the parameters of the servo amplifier.
Read All	Reads all parameter values from the servo amplifier to the GOT and displays those values.
default	Returns all parameter values to their initial values.
Param.IFU / Param.DRU *1	Switches between the parameter display for the drive unit (DRU) and interface unit (IFU) each time this is touched.
Slot:1 *1	Selects the slot number of the drive unit (DRU).
Gain/Filter *2	Changes the gain filter parameter.
Ext.setting *2	Changes the extension setting parameter.
I/O setting *2	Changes the I/O setting parameter.
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

*1: This is displayed only when the MR-J2M A series is connected.

*2: This is displayed only when the MR-J3 series is connected.

Point

When default is executed for the MR-J3 series parameters

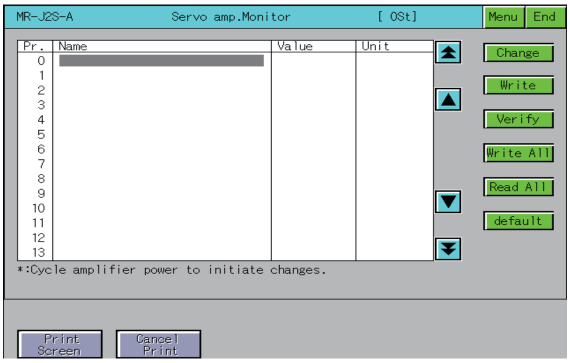
The operation when default is executed differs depending on the displayed parameter screen, as shown in (1) and (2) below.

(1) When the basic setting, gain/filter or extension setting parameter screen is displayed:
The 000BH processing (reference/writing is possible only for basic setting, gain/filter and extension setting parameter) is performed.

(2) When the I/O setting parameter screen is displayed:
The 000CH processing (reference/writing is possible for all parameters) is performed.

3 Parameter setting operation

The following describes the procedure of changing the setting of the "Auto tuning" item as an example of the parameter setting operation.

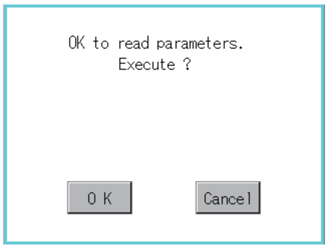


Pr.	Name	Value	Unit
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

*:Cycle amplifier power to initiate changes.

1. Touch the Read All key.

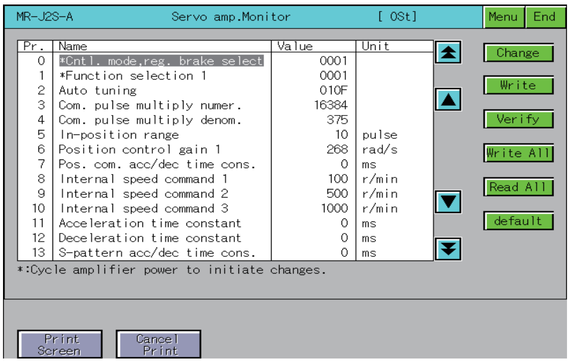
   The parameter values within the servo amplifier are displayed on the screen.



OK to read parameters.
Execute ?

2. The parameter read confirmation window is displayed.

   Touch the OK key to read the parameter values within the servo amplifier to the GOT.

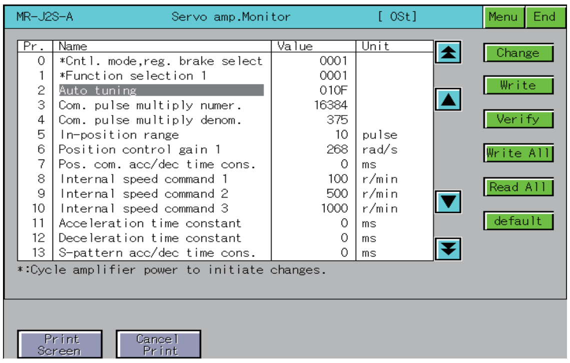


Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.

3. The read parameter values within the servo amplifier are displayed on the screen.

   Parameters that cannot be written or read are not displayed on the parameter setting screen.



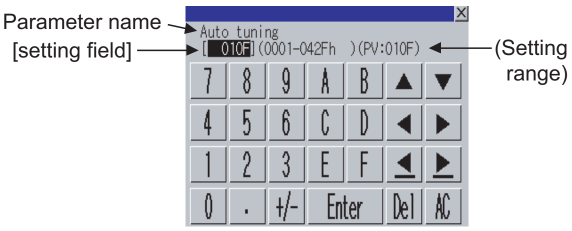
Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.

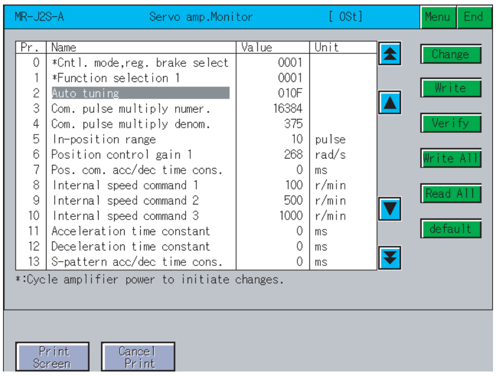
4. Select the item whose parameter is to be set with the ▲ or ▼ key, and touch the Change key.

(To next page)

(From previous page)



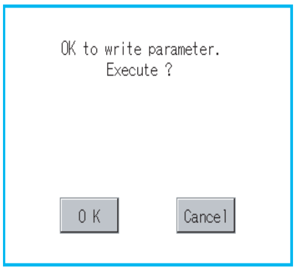
Auto tuning
[010F] (0001-042Fh)(PV:010F)



MR-J2S-A Servo amp.Monitor [0St]

Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.



OK to write parameter.
Execute ?

5. As the parameter setting window appears, enter the parameter setting with alphanumeric keys, and touch Enter to confirm the setting.
   To cancel the parameter setting operation, touch ☒ to close the parameter setting window.
6. The parameter setting is changed on the parameter setting screen. Select the changed parameter item, and touch the Write key.
   If there are multiple parameter items with changed settings, touch the Write All key to write all parameter items with changed settings.
7. A confirmation window appears.
   Touch the OK key to write the parameter setting(s) to the servo amplifier.
   To cancel writing of the parameter setting(s), touch Cancel key.
   This completes the writing operation of the parameter setting.

Point

(1) The changes to the parameter setting are written to the E2PROM of the servo amplifier.
Consequently, the written parameter setting is retained even if the power of the amplifier is off.

(2) If the following parameter settings are changed on the servo amplifier, be sure to also change the settings on the GOT setup screen (☞9.4.2) in the same way.
If the settings on the setup screen and the servo amplifier do not match, normal communications with the servo amplifier may not be performed.

- Station number setting
- IFU station number setting

9.4.7 Test operations

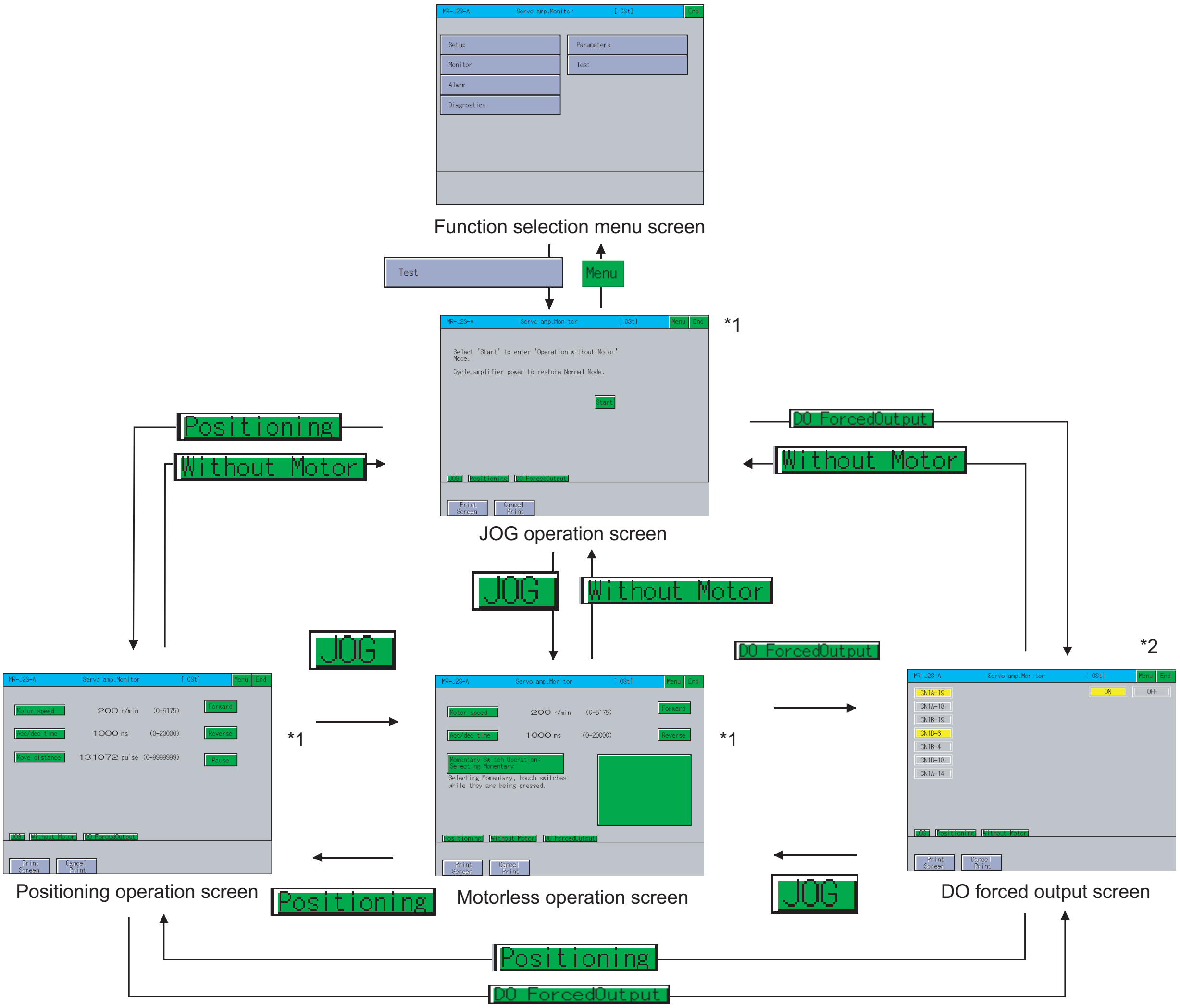
This function performs the following test operations on the connected servo amplifier.

- JOG operation : The servo motor rotates while the Forward or Reverse key is touched. (☞ This section 3)
- Positioning operation : This operation starts when the Forward or Reverse key is touched, and the servo motor rotates by the preset distance. (☞ This section 4)
- Motor-less operation : Simulates the motion of the servo motor within the servo amplifier even when the servo motor is not connected. (☞ This section 5)
- DO forced output : Forcibly turns the output signals ON/OFF regardless of the output conditions of the servo amplifier output signals. (☞ This section 6)

(1) Changing screens

The screen changes as follows after Test is selected on the function selection menu screen. Depending on the model of the connected servo amplifier, some screens may not be displayed. Refer to the following for the screens that cannot be displayed.

☞ 9.2.1 4 List of servo amplifier types that can be monitored and functions



Select 'Start' to enter 'Operation without Motor' Mode.

Cycle amplifier power to restore Normal Mode.

Selecting Momentary, touch switches while they are being pressed.

*1 Not displayed for MR-J2M-P8A monitor

*2 Not displayed for MR-J2M-☐DU monitor

Point

If the JOG operation screen data has not been downloaded to the GOT, "Monitor data not found" is displayed and the subsequent screens are not displayed.

1 Precautions for test operations

The following describes the precautions when performing a test operation of the servo amplifier monitor.

⚠WARNING

- **Do not operate the servo amplifier switches with wet hands. Doing so can cause an electric shock.**
- **Do not perform operations with the front cover of the servo amplifier removed. Doing so can cause an electric shock since the high-voltage terminals and live parts are exposed.**
- **Do not open the front cover of the servo amplifier when the power is on or during operation. Doing so can cause an electric shock.**

⚠CAUTION

- **Be sure to read the precautions for test operation in the manuals of the servo amplifier before performing a test operation.**
- **Check parameters of the servo amplifier before starting operation. Unexpected operations may occur depending on the machine.**
- **The heat sink, regenerative brake resistor, servo motor and other parts of the servo amplifier may be hot while the power is on or for a period after the power is turned off; therefore, do not touch or bring parts (cables etc.) close to them. Doing so can cause fire or damage to the parts.**

(1) Servo on

For test operation of JOG operation/positioning operation, the SON digital input signal of the servo amplifier is turned on automatically in the servo amplifier to start operation, regardless of the ON/OFF status of the SON signal of the digital I/O signal of the servo amplifier.
In addition, the servo amplifier does not accept any external command pulses and input signals (excluding emergency stop) until the test operation screen is exited.

The SON automatically turns on when touching the Forward or Reverse key on the JOG operation screen or positioning operation screen of the servo amplifier monitor.

(2) Stop

Point

To perform an emergency stop, turn off the emergency stop signal of the servo amplifier or turn off the input power.

(a) Use the following procedure to stop test operation from the servo amplifier monitor.

- JOG operation: Release the Forward or Reverse key.
- Positioning operation: Touch the Pause key.

(b) The servo motor stops if any of the following states occurs during test operation.

- The communication cable is disconnected.
- The screen is switched to another servo amplifier monitor screen or the servo amplifier monitor is exited.
  However, during motor-less operation, the test mode is not canceled until the servo amplifier is powered off.

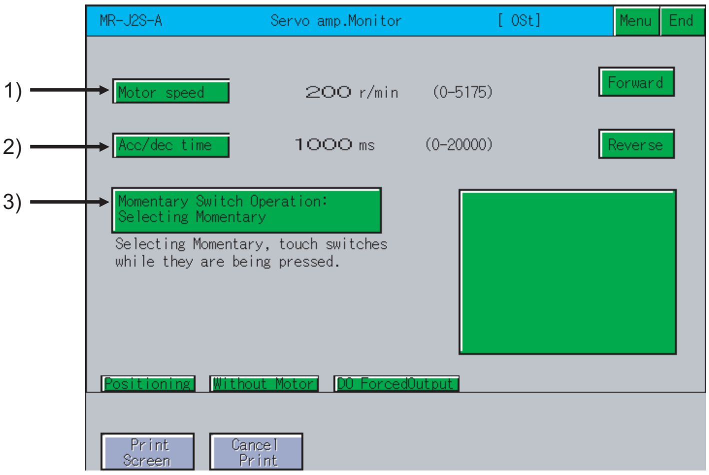
2 Preparations for test operations

When performing test operations, it is necessary to make the test operation settings on the connected servo amplifier.
Refer to the manual of the connected servo amplifier for details of making settings on the servo amplifier to perform test operations.

3 JOG operation screen

This section describes the display data of the JOG operation screen and the key functions displayed on the screen.

(1) Displayed contents



Motor speed 200 r/min (0-5175)

Acc/dec time 1000 ms (0-20000)

Momentary Switch Operation: Selecting Momentary

Selecting Momentary, touch switches while they are being pressed.

No.	Item	Description
1)	Motor speed	Displays the set speed of the servo motor.
2)	Acc/dec time	Displays the set acceleration/deceleration time constant.
3)	Momentary Switch Operation	Displays how to operate the JOG operation.

(2) Operation

(a) When selecting Momentary Switch Operation: Selecting Momentary

- Start operation

  Touch the Forward or Reverse key.

- Stop operation

  Release the Forward or Reverse key.

(b) When selecting Momentary Switch Operation: Not Selecting Momentary

- Start operation

  Touch the Forward or Reverse key.

- Stop operation

  Touch the Pause key.

(3) Key functions

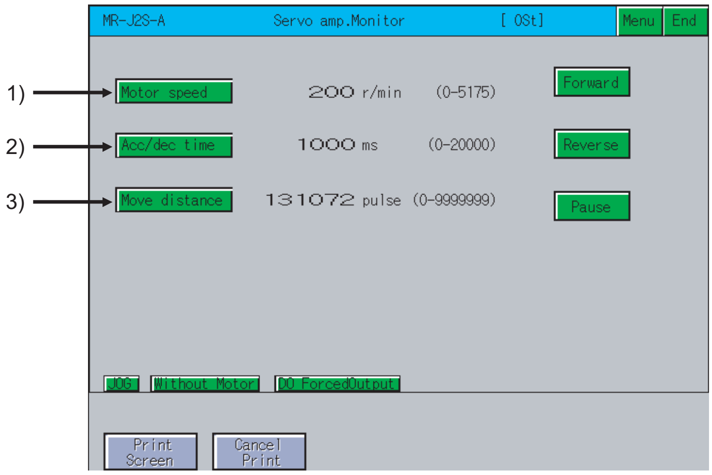
The table below shows the functions of the keys that are used for the operations of the JOG operation screen.

Key	Function
Forward	Runs the servo motor in the forward rotation (CCW) direction.
Reverse	Runs the servo motor in the reverse rotation (CW) direction.
Motor speed	Changes the speed of the servo motor.
Acc/dec time	Changes the acceleration/deceleration time constant.
Momentary Switch Operation: Selecting Momentary Momentary Switch Operation: Not Selecting Momentary	Touching this changes the operation mode (momentary operation/no momentary operation). Momentary Switch Operation: Selecting Momentary The servo motor rotates while the Forward or Reverse key is touched. (Releasing your finger from these keys stops the operation.) Momentary Switch Operation: Not Selecting Momentary The servo motor rotates while the Forward or Reverse key is touched, stops when the Pause key is touched.
Positioning	Changes to the positioning operation screen (☞This section 4).
Without Motor	Changes to the motor-less operation screen (☞This section 5).
DO ForcedOutput	Changes to the DO forced output screen (☞This section 6).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

4 Positioning operation screen

The following describes the display data of the positioning operation screen and the key functions displayed on the screen.

(1) Displayed contents



Motor speed 200 r/min (0-5175)

Acc/dec time 1000 ms (0-20000)

Move distance 131072 pulse (0-9999999)

No.	Item	Description
1)	Motor speed	Displays the set speed of the servo motor.
2)	Acc/dec time	Displays the set acceleration/deceleration time constant.
3)	Move distance	Displays the set distance.

(2) Operation

(a) For MR-J2-Super series and MR-J2M series

- Start operation

  Touch the Forward or Reverse key.

  To resume operation that has been paused, touch the Forward key to resume forward rotation or the Reverse key to resume reverse rotation.

- Stop operation

  When the set distance has been reached, operation stops.

  Touching the Pause key pauses the operation.

  If touch the Pause key again after the operation is paused, the remaining distance is erased.

(b) For MR-J3 series

- Start operation

  Touch the Forward or Reverse key.

  To resume the operation that has been paused, touch the Restart key to resume the rotation.

- Stop operation

  When the set distance has been reached, operation stops.

  Touching the Pause key pauses the operation. If touch the Clear key again after the operation is paused, the remaining distance is erased.

(3) Key functions

The table below shows the functions of the keys that are used for the operations of the positioning operation screen.

Key	Function
Forward	Runs the servo motor in the forward rotation (CCW) direction.
Pause [*1]	Stops the rotation of the servo motor temporarily.
Reverse	Runs the servo motor in the reverse rotation (CW) direction.
Restart [*2]	Resumes the rotation of the paused servo motor.
Clear [*2]	Deletes the remaining distance of the paused servo motor.
Motor speed	Changes the rotation speed of the servo motor.
Acc/dec time	Changes the acceleration/deceleration time constant.
Move distance	Changes the distance.
JOG	Changes to the JOG operation screen (☞This section 3).
Without Motor	Changes to the motor-less operation screen (☞This section 5).
DO ForcedOutput	Changes to the DO forced output screen (☞This section 6).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

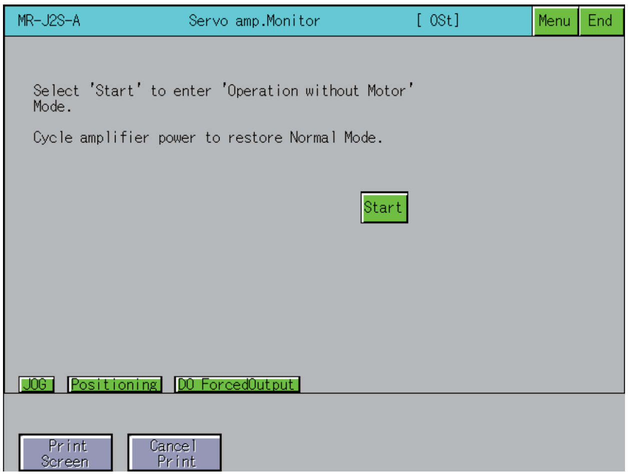
[*1] This is displayed only when the MR-J2-Super series or MR-J2M series is connected.

[*2] This is displayed only when the MR-J3 series is connected.

5 Motor-less operation screen

The following describes the display data of the motor-less operation screen and the key functions displayed on the screen.

(1) Displayed contents



Select 'Start' to enter 'Operation without Motor' Mode.

Cycle amplifier power to restore Normal Mode.

(2) Operation

- Start operation

  Touch the Start key.

- Stop operation

  To cancel the motor-less operation, turn the power of the servo amplifier off.

(3) Key functions

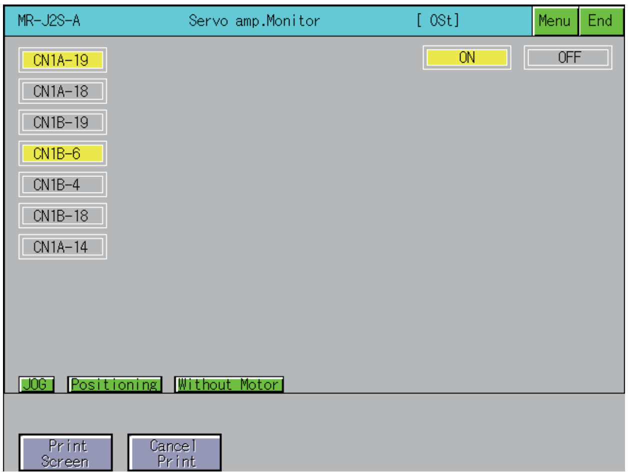
The table below shows the functions of the keys that are used for the operations of the motor-less operation screen.

Key	Function
Start	Starts motor-less operation.
JOG	Changes to the JOG operation screen (☞This section 3).
Positioning	Changes to the positioning operation screen (☞This section 4).
DO ForcedOutput	Changes to the DO forced output screen (☞This section 5).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

6 DO forced output screen

The following describes the display data of the DO forced output screen and the key functions displayed on the screen.

(1) Displayed contents



No.	Item	Description
1)	ON/OFF status of output signals	Displays the ON/OFF status of the servo amplifier output signals. • After this screen has been switched to another screen, all external I/O signals are turned off.

(2) Operation
When the name of an output signal is touched, the ON/OFF status of that signal is inverted and written to the servo amplifier.

(3) Key functions
The table below shows the functions of the keys used for the operations of the DO forced output screen.

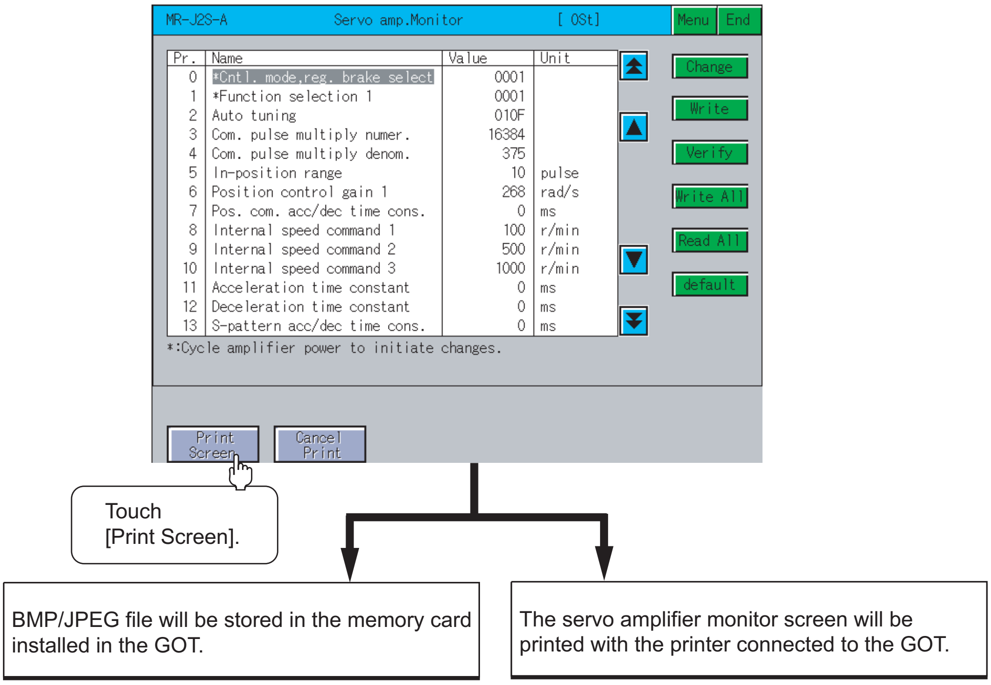
Key	Function
CN1A-19 (Output signal name)	Touching the signal name of an output signal sets or resets the status for that signal. • If the present output signal is ON, then the signal is turned off (RESET). • If it is OFF, then it is turned on (SET).
DO1 [*1]	Displays the external output signals of the extension I/O unit.
JOG	Changes to the JOG operation screen (☞This section 3).
Positioning	Changes to the positioning operation screen (☞This section 4).
Without Motor	Changes to the motor-less operation screen (☞This section 5).
Menu	Returns to the function selection menu screen.
End	Exits the servo amplifier monitor.
Print Screen	Stores the displayed screen to the memory card in BMP/JPEG file format or prints it with a printer. For further information about hard copies, refer to the following: ☞ 9.4.8 Hard copy output
Cancel Print	The touch operation of this key is invalid.

[*1]: This is displayed only when the MR-J2M-P8A is connected.

9.4.8 Hard copy output

This section describes how to store a screen to the memory card in BMP/JPEG file format or print it with a printer when executing the amplifier monitor.
Hard copy methods differ depending on the GOT to be used.

(1) GOT with VGA or higher resolution
Hard copy output operations are performed by touching the "Print Screen" or "Cancel Print" key displayed on the screen.



Pr.	Name	Value	Unit
0	*Cntl. mode,reg. brake select	0001	
1	*Function selection 1	0001	
2	Auto tuning	010F	
3	Com. pulse multiply numer.	16384	
4	Com. pulse multiply denom.	375	
5	In-position range	10	pulse
6	Position control gain 1	268	rad/s
7	Pos. com. acc/dec time cons.	0	ms
8	Internal speed command 1	100	r/min
9	Internal speed command 2	500	r/min
10	Internal speed command 3	1000	r/min
11	Acceleration time constant	0	ms
12	Deceleration time constant	0	ms
13	S-pattern acc/dec time cons.	0	ms

*:Cycle amplifier power to initiate changes.

Touch
[Print Screen].

BMP/JPEG file will be stored in the memory card installed in the GOT.

The servo amplifier monitor screen will be printed with the printer connected to the GOT.

(2) GOT with QVGA resolution
Hard copy output operations are performed by turning ON/OFF the start or abort trigger device that has been set in the GT Designer2.

Point

- Install the extended function OS (Printer) to the GOT when printing a servo amplifier monitor screen.
- The output target (CF card/printer) of hard copy can be set in [Hard Copy] of GT Designer2.
  For details of the hard copy setting, refer to the following.

  ☞ GT16 User's Manual (Basic Utility) (Chapter 6 DATA CONTROL)
  GT15 User's Manual (Chapter 13 FILE DISPLAY AND COPY)

  ☞ GT Designer2 Version□ Screen Design Manual (Section 13.2 Hard Copy)

9.5 Error Messages and Corrective Action

This section describes the error messages that may be displayed during servo amplifier monitor operation and their corrective action.

Error message	Error definition	Corrective action
Monitor data not found	The monitor data have not installed or have been deleted.	Download the monitor data of the servo amplifier monitor.
It is not possible to set.	An item that cannot be set was selected.	Select an item that can be set.
No AMP Communications	Communication can not be established with the servo amplifier set as the monitor destination.	• Check the connection state between the servo amplifier and the GOT (connector disconnection, cable wire break). • Check if an error has occurred in the servo amplifier. • Set the same values to the setup screen on the servo amplifier monitor and the parameter setting on the servo amplifier.
This test mode cannot be selected. Operation without Motor rotation.	Another test operation function has started.	Exit the other test operation function.
SON Make sure that operation is at a stop.	The servo amplifier SON signal is ON.	Turn off the servo amplifier SON signal.
Incorrect setting range	A value outside the setting range was set when setting the servo parameter of the servo amplifier.	Set the servo parameter of the servo amplifier within the setting range.
Servo alarm has occurred. Alarm:**	An alarm occurred on the connected servo amplifier.	Reset the alarm on the servo amplifier.
Unit not found	The drive unit is not installed in the selected slot.	Select the slot where the drive unit is installed.
Unmatched password	The password that was input as the password for changing the servo amplifier parameter is incorrect.	Input the correct password.
Can't write to servo amp. Normally.	Failed to write the parameter.	Check the write data. Check the setup information.
Please confirm forward or reversal stroke end (LSP or LSN)	The servo amplifier LSP/LSN signal is OFF.	Turn on the servo amplifier LSP/LSN signal.
Communication channel setup error	The channel No. setting or communication driver setting is incorrect.	Check the communication settings.
It is not possible to select.	• MR-J2M-P8A or MR-J3-A was selected with the station No. selection setting set to [No]. • A channel with no station number was selected for the MR-J2M-P8A.	• Set the station No. selection setting to [Yes]. • Select a channel with a station number.

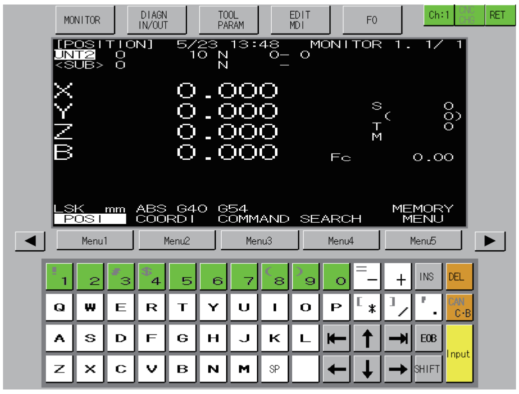
10. CNC MONITOR FUNCTIONS

GT16 GT15 GT SOFT GOT1000 GT11 GT10

10.1 Features

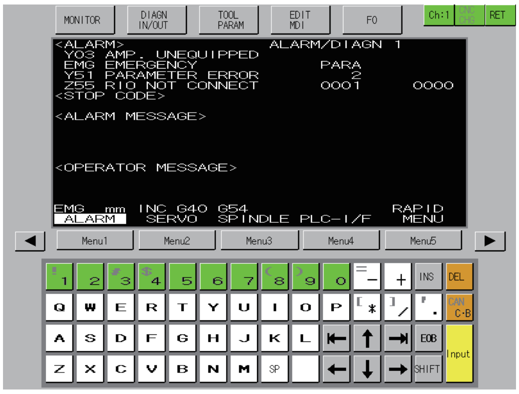
Functions, such as Position Display Monitor, Alarm Diagnosis Monitor, Tool Offset/Param, Program Monitor and APLC Release Screen, equivalent to the MELDAS dedicated display are available for the MELDAS connected to the GOT.

Position Display Monitor



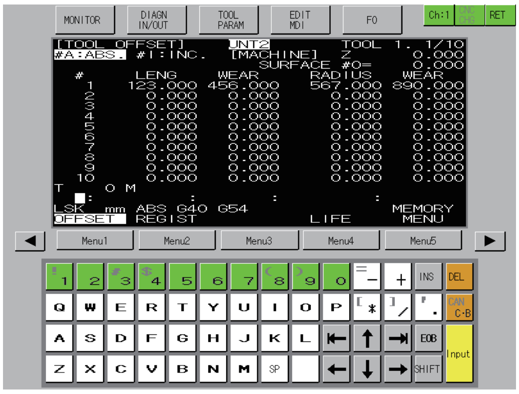
```
[POSITION]  5/23 13:48    MONITOR 1.  1/  1
UNT2   0        10 N    0- 0
<SUB>  0           N      -
X           0.000
Y           0.000                 S         0
Z           0.000                  (        0)
B           0.000                 T         0
                                  M
                               Fc        0.00

LSK   mm ABS G40 G54                 MEMORY
 POSI    COORDI  COMMAND SEARCH       MENU
```

Alarm Diagnosis Monitor



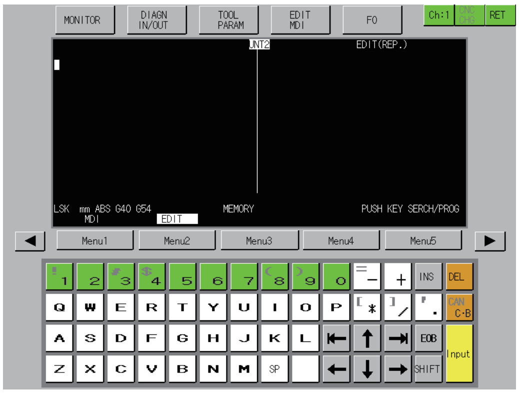
```
<ALARM>                   ALARM/DIAGN 1
 Y03 AMP. UNEQUIPPED
 EMG EMERGENCY                PARA
 Y51 PARAMETER ERROR             2
 Z55 RIO NOT CONNECT          0001      0000
<STOP CODE>

<ALARM MESSAGE>



<OPERATOR MESSAGE>


EMG   mm  INC G40 G54                RAPID
 ALARM     SERVO  SPINDLE PLC-I/F     MENU
```

Tool Offset Monitor



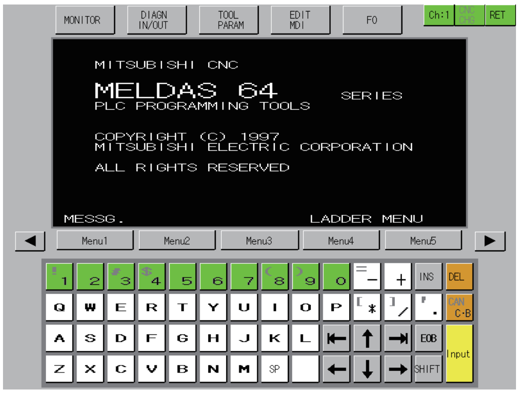
```
[TOOL OFFSET]      UNT2         TOOL 1.  1/10
#A:ABS.  #I:INC.   [MACHINE]   Z        0.000
                        SURFACE #0=     0.000
  #      LENG     WEAR      RADIUS    WEAR
    1   123.000  456.000   567.000  890.000
    2     0.000    0.000     0.000    0.000
    3     0.000    0.000     0.000    0.000
    4     0.000    0.000     0.000    0.000
    5     0.000    0.000     0.000    0.000
    6     0.000    0.000     0.000    0.000
    7     0.000    0.000     0.000    0.000
    8     0.000    0.000     0.000    0.000
    9     0.000    0.000     0.000    0.000
   10     0.000    0.000     0.000    0.000
T     O M
  █:         :        :          :
LSK   mm ABS G40 G54                 MEMORY
OFFSET   REGIST            LIFE       MENU
```

Program Monitor



```
                        UNT2              EDIT(REP.)
█






LSK  mm ABS G40 G54          MEMORY        PUSH KEY SERCH/PROG
      MDI          EDIT
```

APLC function



```
    MITSUBISHI CNC
    MELDAS 64          SERIES
    PLC PROGRAMMING TOOLS

    COPYRIGHT (C) 1997
    MITSUBISHI ELECTRIC CORPORATION

    ALL RIGHTS RESERVED



 MESSG.                      LADDER MENU
```

10.2 Specifications

10.2.1 System configuration

This section describes the target CNC of the CNC monitor and the connection type between the GOT and CNC.
For connection type settings and precautions regarding the communication unit/cable and connection type, refer to the following manual.

☞GOT1000 Series Connection Manual

1 Target CNC of the CNC monitor

CNC
C70, C6/C64

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection type between GOT and CNC							
Name	Details	Bus connection	Direct connection	Computer link connection	Ethernet connection	MELSEC NET/10 connection	CC-Link connection		GOT multidrop connection
							ID[*1]	G4[*2]	
CNC monitor	Monitors the CNC (C70, C6/C64) and changes the parameters	○[*3]	×	×	○	○[*4]	×	×	×

[*1] Indicates CC-Link connection (Intelligent device station).
[*2] Indicates CC-Link connection (via G4).
[*3] Applicable to the CNC C70 only
[*4] Applicable to the CNC C6/C64 only

3 Required option OS and option function board

The option function OS and option function board shown below are required.

Option OS	OS memory space (user area)			Option function board	
	GT16		GT15	GT16	GT15
	Built-in flash memory (ROM)	User memory (RAM)			
CNC monitor	390KB	770KB	588KB	Not required	GT15-FNB, GT15-QFNB, GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M

(1) Option OS

Install the option OS in the above table to the GOT.
Refer to the following manual for the procedure for installing the option OS.

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

(2) OS memory space

The available memory space shown in the table above is required in the user area to install the option OS to the GOT.
Refer to the following manual for the procedure for checking the available memory space of the user area and information about the data using other user areas.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.

For the GOTs with a built-in option function board, refer to the following.

☞ 1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

☞ GT15 User's Manual (8.10 Option Function Board)

4 CNC functions that can be monitored

The CNC monitor function allows the following functions to be monitored.
For details of each function, refer to the manual for each CNC.

Item	Description	CNC C70	MELDAS C6/C64
Position Display Monitor	Position	○	○
	Coordinate	○	○
	Command	○	○
	Program search	○	○
	PLC switch	×	○
	Common variable	○	○
	Local variable	○	○
Alarm Diagnosis Monitor	Alarm message	○	○
	Servo monitor	○	○
	Spindle monitor	○	○
	PLC interface diagnosis	○	○
	Absolute position monitor	○	○
	Adjustment	×	○
	NC data sampling	○	×
	Operation history	○	○
	Configuration	○	○
	Data input	×	○
	Data output	×	○
	Program erase	○	○
	Program file	○	○
	Program copy	○	○
	Flash ATA card I/F	×	○
	Auxiliary axis parameter	×	○
	Auxiliary axis monitor	×	○
Tool Offset/Param	Wear data (L system)	○	○
	Tool length data (L system)	○	○
	Tool nose data (L system)	○	○
	Tool life management (L system)	○	○
	Tool offset (L/M system)	○	○
	Tool registration (L system)	○	○
	Workpiece coordinate	○	○
	Machining parameter	○	○
	I/O parameter	×	○
	Other parameters	○	○
Program Monitor	MDI editing	○	○
APLC Release Screen	APLC Release Screen	○	○

10.2.2 Access range

(1) Bus connection
One GOT can monitor up to two CNCs by switching the CNCs.
Up to five GOTs can simultaneously monitor one CNC.

(2) Ethernet connection
One GOT can monitor up to 64 CNCs by switching the CNCs.
Up to eight GOTs can simultaneously monitor one CNC.

(3) MELSECNET/10 connection
GOT monitors the control station only.

10.2.3 Precautions

(1) Before using the CNC monitor
Read the manual of the connected CNC carefully and make sure you understand the contents before using the CNC monitor function.

(2) Inapplicable GOT
The CNC monitor cannot be used with the GT1675M-V, GT1665M-V, GT1575-V, GT1575-VN, GT1572-VN, GT156□, and GT155□.

(3) Usable CNC
The CNC monitor is applicable to the CNC C70 and MELDAS C6/C64.

(a) CNC C70
Use the CNC C70 with the system software version of BND-1006W000-A0 or later.

(b) MELDAS C6/64
Use the MELDAS C6/C64 with the system software version of BND-377W010-D0 or later.

10.3 Display

1 Display operations

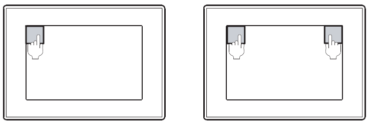
This section describes the flow until the operation screen of the CNC monitor is displayed after the CNC monitor (Option OS) is installed in the GOT.

Start

Turn on the power to the GOT.

Starting from the utility

Display the utility

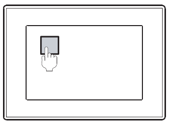


After the utility is displayed, touch [Debug & self check] → [Debug] → [CNC monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (CNC monitor) set in the project data

Touch the special function switch.

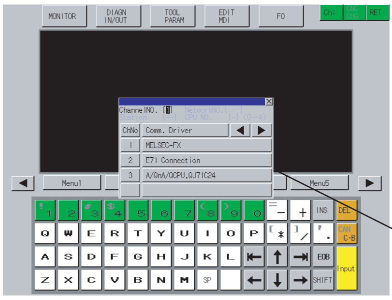


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version□Screen Design Manual (6.2 Touch Switch)

Set the channel.

Set the channel number of the CNC connected to the GOT.



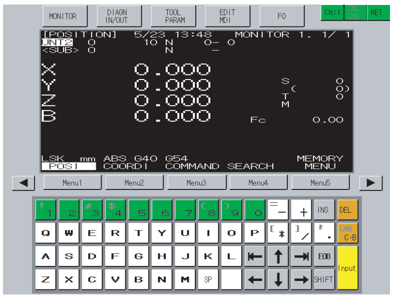
ChannelNO. [1] NetworkNO.[---]
Station [--] CPU NO. [-] (0~4)

ChNo	Comm. Driver
1	MELSEC-FX
2	E71 Connection
3	A/QnA/QCPU,QJ71C24

Communication setting window

CNC monitor startup

The CNC monitor starts after a channel number is selected.



```
[POSITION]   5/23 13:48    MONITOR 1. 1/ 1
UNT2  0        10 N     0- 0
<SUB> 0           N       -

X          0.000
Y          0.000                 S        0
Z          0.000                  (       0)
B          0.000                 T        0
                                 M
                              Fc       0.00

LSK   mm ABS  G40  G54                MEMORY
 POSI    COORDI    COMMAND  SEARCH     MENU
```

End

Point

(1) How to display the utility
For how to display the utility, refer to the following.

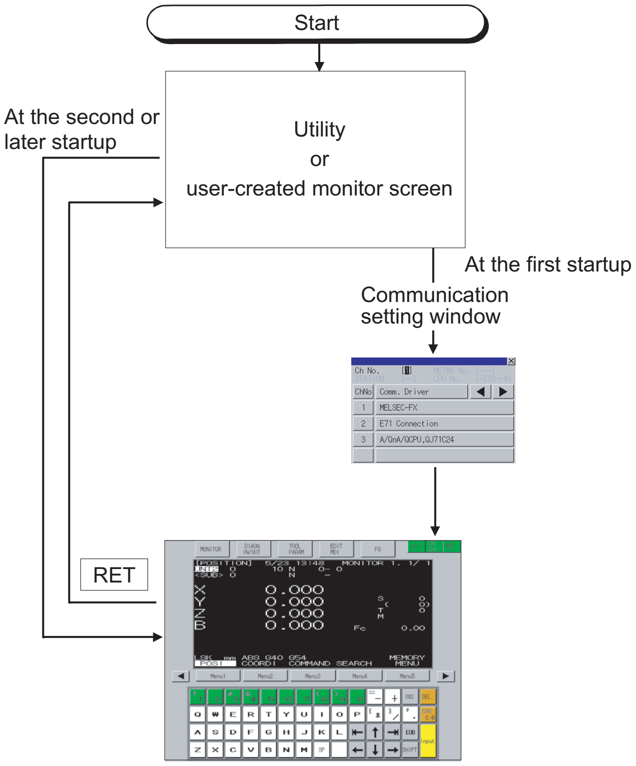
☞ GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Communication setting window display
The communication setting window is displayed only at initial startup of the CNC monitor after turning on the GOT power.
To display the communication setting window at startup from the second time or after, touch the Ch: button on the CNC monitor screen.
(☞ 10.4 Operation Procedures)

(3) If the project data has not been downloaded
The CNC monitor can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens

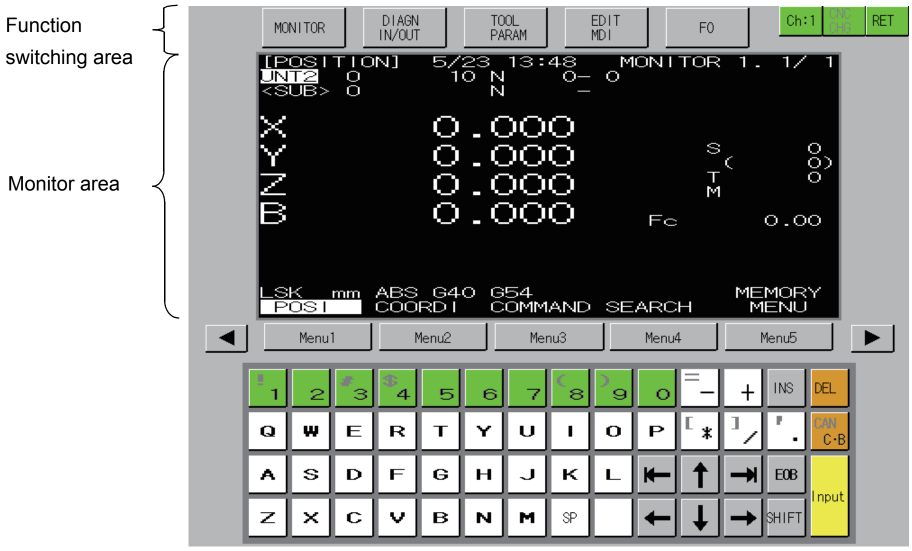
This section describes how to change the screen.


Start
At the second or later startup
Utility
or
user-created monitor screen
At the first startup
Communication setting window
RET

When exiting the CNC monitor function by touching RET, the last exited screen will be displayed when the CNC monitor function is started next time.

10.4 Operation Procedures

This section describes the display data of the CNC monitor screen and the key functions displayed on the screen.



Item	Display data
Function switching area	Selects the function to be displayed and CNC monitor termination.
MONITOR	Switches the monitor area to position display monitor.
DIAGN IN/OUT	Switches the monitor area to alarm diagnosis monitor.
TOOL PARAM	Switches the monitor area to tool compensation parameter.
EDIT MDI	Switches the monitor area to program monitor.
F0	Switches the monitor area to the APLC screen. If the monitored CNC unit does not include the APLC release function, the screen turns blank (nothing is displayed). (In this case, use a function switching key to switch the monitor to another function.)
Ch:1	Displays the communication setting window.
CNC CHG	▪ For bus connection The button does not function. (Specify the monitoring target in the communication setting window.) ▪ For Ethernet connection Switches the monitor among the CNC units when connected to multiple CNC units. The MELDAS C6/C64 units are switched in the order set in the Ethernet setting of GT Designer2. ▪ For MELSECNET/10 connection Cannot be operated because only control station can be monitored (switching not required).
RET	Terminates the CNC monitor function and returns to a monitor screen or the utility of the GOT.
Monitor area	Functions, such as Position Display Monitor, Alarm Diagnosis Monitor, Tool Offset/Param and Program Monitor, equivalent to the MELDAS dedicated display are available. The graphic and ladder editor functions are not available.
Menu1 to Menu5	Switches to the monitor that corresponds to the items in the menu area. In the case of the above screen, the menu items are as follows. Menu1 : Relative value Menu2 : PLC switch Menu3 : Common editing Menu4 : Local variable Menu5 : Menu switching When the MELDAS dedicated display is valid, the "Other display operating" message and "Key operation right" menu are displayed. Select the "Key operation right" menu when operating keys on the GOT.

(Continued to next page)

Item	Display data
◀	Switches to the previous page when there are multiple pages displayed on the screen.
▶	Switches to the next page when there are multiple pages displayed on the screen.
Keyboard	Sets data to the monitor area.
Alphanumeric/symbol key	Enters alphabets (upper case only), numerals, spaces or symbols. The grayed symbol can be entered after the Shift key is touched.
↑ ↓ ← →	Moves the cursor up, down, left or right. (Repeat function is available)
⇤ ⇥	Moves the cursor to the previous or subsequent block. (Repeat function is available)
DEL	Deletes one character at the cursor position.
INS	Switches the Insert mode.
CAN C·B	Deletes one block while editing machining program. After touching the Shift key, touch the CAN C-B key to delete all blocks being displayed on the screen.
EOB	Enters EOB(;) into the machining program.
Input	Determines the entry.
SHIFT	Switches the key function.

10.5 Error Messages and Corrective Action

This section describes the error messages that may be displayed during CNC monitor operation and their corrective action.
If two or more of the following errors have occurred, the error with the higher priority is displayed.

Priority	Error message	Error definition	Corrective action
Higher ↕ Lower	Support communication driver is not installed. (CNC MONITOR)	The compatible communication driver is not installed in the GOT.	Install the compatible communication driver in the GOT. Bus connection: Bus(Q) Ethernet connection: QJ71E71/AJ71(Q)E71, Q17nNC MELSECNET/10 connection: MELSECNET/10
	The IP address of CNC to monitor is not set up. (CNC MONITOR)	The IP address of the CNC has not been set.	After setting the IP address of the CNC to be monitored in the Ethernet setting of GT Designer2, download the project data to the GOT.
	Communication channel setup error	There is no channel for communication.	Check that the channel No. is correctly set in the communication settings.

11. BACKUP/RESTORE

11.1 Features

Setting data, including a sequence program, parameters, and setting values, 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 following shows features of the backup/restore function.

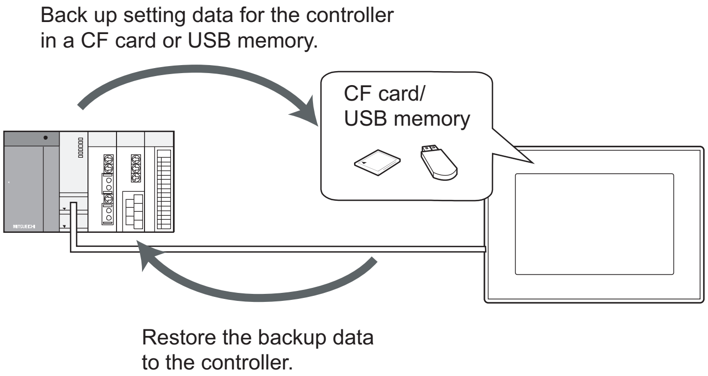
Remark GOT backup

The backup/restore function is applicable to controllers connected to the GOT.
For backing up the GOT setting data, use the GOT data package acquisition function.
For the GOT data package acquisition function, refer to the following manual.

☞ GT16 User's Manual (Basic Utility) (Section 4.3.3 GOT data package acquisition)
GT15 User's Manual (Chapter 13 FILE DISPLAY AND COPY)

1 Backing up or restoring system without personal computer for reducing downtime

Setting data for a controller connected to the GOT can be backed up, and the data can be restored to the controller.
With backing up setting data for a controller, the data can be restored to the controller with the GOT connected to the controller even though the controller has to be replaced because of problems, including failures. As a result, the system can be easily restored.

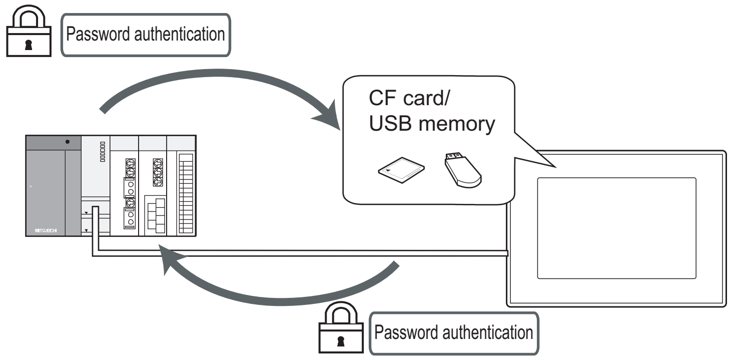

Back up setting data for the controller in a CF card or USB memory.
CF card/ USB memory
Restore the backup data to the controller.

2 Enabling creating the same system without personal computer

With restoring the backed up setting data to controllers in other systems, the same system can be created without a personal computer.

3 Improving security

When the backup/restore function is used, browsing and changing setting data is limited with a password and the security is improved.



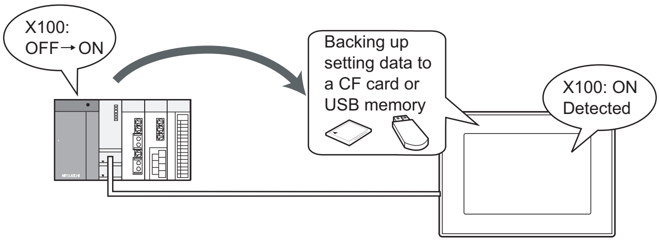
4 Automatically backing up data with trigger

By setting the trigger device or the days and time, the GOT can automatically back up setting data for controllers.

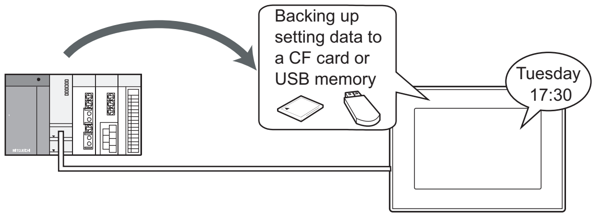
By controlling the backup with the set trigger device, the GOT can automatically back up setting data for controllers after the data are changed.

By setting the days and time, the GOT can back up setting data for controllers periodically.

Trigger device: X100



Setting GOT to back up data at 17:30 on Tuesdays



11.2 Specifications

11.2.1 System configuration

This section describes the system configuration for the backup/restore function.
For connection type settings, and precautions on the communication unit/cable and connection type, refer to the following manual.

☞GOT1000 Series Connection Manual

1 Target controller

Controller	
Q series[1][2]	QCPU (Q mode)
CNC C70	CNC C70
Motion controller CPU[3][4]	Q172CPU, Q173CPU, Q172CPUN, Q173CPUN, Q172HCPU, Q173HCPU, Q172DCPU, Q173DCPU, Q170MCPU

[1] Use a PLC CPU with the function version of B or later.

[2] The backup/restore function cannot be used with the redundant CPU.

[3] Use the following production number motion controller CPU when using the Q172CPU or Q173CPU.
- For bus connection and direct CPU connection
  Q172CPU: Production number K******* or later
  Q173CPU: Production number J******* or later
- For connections other than bus connection and direct CPU connection
  Q172CPU: Production number N******* or later
  Q173CPU: Production number M******* or later

[4] The operation system software of SV13 and SV22 are available only.
Use a motion controller CPU with the following OS installed when using the Q172CPU, Q173CPU, Q172CPUN, or Q173CPUN.
- SW6RN-SV13Q□:00H or later (00E or later for using the Q172CPU or Q173CPU with the bus connection or direct CPU connection)
- SW6RN-SV22Q□:00H or later (00E or later for using the Q172CPU or Q173CPU with the bus connection or direct CPU connection)

2 Connection type

(○: Applicable, △: Partly restricted, ×: Inapplicable)

Function		Connection type between GOT and controller							
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection	CC-Link connection		GOT multidrop connection
							ID[1]	G4[2]	
Backup/ restore	Backs up setting data for a controller connected to the GOT and restores the data to the controller.	○	○	○	○	×	×	×	×

[1] Indicates CC-Link connection (Intelligent device station).

[2] Indicates CC-Link connection (via G4).

3 Required extended function OS

The following extended function OS is required.

Extended function OS	OS memory space (user area)			Option function board
	GT16		GT15	
	Built-in flash memory (ROM)	User memory (RAM)		
Backup/Restore	420KB	766KB	820KB	Not required

(1) Extended function OS
Install the extended function OS shown in the above table on the GOT.
For how to install the OS, refer to the following manual.

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

(2) OS memory space
For installing the extended function OS, the available space shown in the above table is required in the user area.
For checking the available space in the user area and the data that uses other user areas, refer to the following manual.

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

4 Required hardware

The following hardware is required.

GOT	Hardware
GT16	CF card/USB memory
GT15	CF card

5 Data to be backed up and restored

The following shows data to be backed up and restored.
Data other than the the following data cannot be backed up and restored.

(1) Basic model QCPU

Item	Description	File name
Parameter	Parameter for operating a programmable controller	PARAM.QPA
Intelligent function module parameter	Parameter for intelligent function modules	IPARAM.QPA
Sequence program	Program that the CPU operates	MAIN.QPG
SFC program	Sequence program with the SFC programming format	MAIN-SFC.QPG
File register	Data stored in file registers	MAIN.QDR
Device comment	Device comment to be stored in a programmable controller	MAIN.QCD
Device initial value	Setting the device initial value	MAIN.QDI

*1 The GOT always restores file register in the Flash card installed in the CPU module without checking if the data are overwritten.
For the file registers in the SRAM card and the standard RAM, you can select whether to restore them.
When not restored, the existing file register will be deleted. Therefore, programs of the controller may not work normally.
If a problem occurs in the operation of the controller after restoration, perform the restoration again, including to the file register.

(2) High Performance model QCPU

Item	Description	File name
Parameter	Parameter for operating a programmable controller	PARAM.QPA
Intelligent function module parameter	Parameter for intelligent function modules	IPARAM.QPA
Program	Program that the CPU operates (Including SFC program)	***.QPG
Device comment	Device comment to be stored in a programmable controller	***.QCD
Boot operation specification file	Batch file for starting programs stored in ROM and others	AUTOEXEC.QBT
Device initial value	Setting the device initial value	***.QDI
File register*1	Data stored in file registers	***.QDR
Sampling trace file*2	Sampling trace data that the specified device data is continuously collected with the specified timing	***.QTD
Failure history data*2	Failure history data that are recorded self-diagnostic results	***.QFD
Programmable controller user data	Any user-created data stored in a memory card	***.*** (Optional)

*1 The GOT always restores file register in the Flash card installed in the CPU module without checking if the data are overwritten.
For the file registers in the SRAM card and the standard RAM, you can select whether to restore them.
When not restored, the existing file register will be deleted. Therefore, programs of the controller may not work normally.
If a problem occurs in the operation of the controller after restoration, perform the restoration again, including the file register.

*2 The item can be backed up only.

(3) Universal model QCPU

Item	Description	File name
Parameter	Parameter for operating a programmable controller	PARAM.QPA
Intelligent function module parameter	Parameter for intelligent function modules	IPARAM.QPA
Program	Program that the CPU operates (Including SFC program)	***.QPG
Device comment	Device comment to be stored in a programmable controller	***.QCD
Boot operation specification file	Batch file for starting programs stored in ROM and others	AUTOEXEC.QBT
Device initial value	Setting the device initial value	***.QDI
File register*1	Data stored in file registers	***.QDR
Sampling trace file*2	Sampling trace data that the specified device data is continuously collected with the specified timing	***.QTD
Programmable controller user data	Any user-created data stored in a memory card	***.*** (Optional)
File for storing device data	Device data used for the SP.DEVST and S.DEVLD instructions	DEVSTORE.QST

*1 The GOT always restores file register in the Flash card installed in the CPU module without checking if the data are overwritten.
For the file registers in the SRAM card and the standard RAM, you can select whether to restore them.
When not restored, the existing file register will be deleted. Therefore, programs of the controller may not work normally.
If a problem occurs in the operation of the controller after restoration, perform the restoration again, including the file register.

*2 The item can be backed up only.

(4) CNC C70

Item	Description	File name
Machining program	All programs for operating a machine tool with a CNC	ALL.PRG
Parameter	Parameter for operating a CNC	ALL.PRM
Tool offset data	Offset data of the tool length compensation and tool radius compensation	TOOL.OFS
Workpiece offset data	Offset data between the machine coordinate system and workpiece coordinate system	WORK.OFS
Common variable	Macro variables applicable to different machining programs	COMMON.VAR
CNC ladder	User-created PLC program (ladder)	USERPLC.LAD

(5) Q series motion controller CPU

Item	Description	File name
Motion SFC program conversion file (control code)	File where SFC code, G-code and F/FS code files are combined and converted into CPU's Motion SFC program code memory storage format	sfcprog.cod
Motion SFC program conversion file (text)	File where G list and F/FS list files are combined and converted into CPU's Motion SFC program text memory storage format	sfcprog.bin
Motion SFC parameter file	Motion SFC control parameter setting information files	sfcprmD.bin*1
		sfcprm.bin*2
K code file	Internal code files of servo program	svprog.bin
System setting data file	System setting data information files	svsystemD.bin*1
		svsystemH.bin*3
		svsystem.bin*4
High speed read setting file	High speed read setting information files	svlatchD.bin*1
		svlatch.bin*2
Optional data monitor setting file	Optional data monitor information files	svsysmonD.bin*1
		svsysmon.bin*2
Servo data file	Axis data parameter block information files	svdataD.bin*1
		svdataH.bin*3
	Servo parameter information files	svparaH.bin*6
	Servo parameter information files	svdata.bin*4
		svdata2.bin*4
	Limit switch setting data information files	svls.bin
Mechanical system program conversion file	File after conversion of mechanical system program edit information file into internal codes	svmchprm.bin*5
Cam data conversion file	Cam data files of cam No.1 to 64	svcamprm.bin*5
	Cam data files of cam No.101 to 164	svcampr2.bin*5
	Cam data files of cam No.201 to 264	svcampr3.bin*5
	Cam data files of cam No.301 to 364	svcampr4.bin*5
Q series PLC common parameter file	Data files of Multiple CPU setting, I/O assignment, and others	param.wpa
Multiple CPU high speed refresh setting	Multiple CPU high speed refresh setting information files	svrefresh.bin*1

*1 The data can be backed up or restored only with the Q172DCPU, Q173DCPU, or Q170MCPU.

*2 The data can be backed up or restored only with the Q172HCPU, Q173HCPU, Q172CPU, Q173CPU, Q172CPUN, or Q173CPUN.

*3 The data can be backed up or restored only with the Q172HCPU or Q173HCPU.

*4 The data can be backed up or restored only with the Q172CPU, Q173CPU, Q172CPUN, or Q173CPUN.

*5 The data can be backed up or restored with the SV22 operating system software only.

*6 The data can be backed up or restored only with the Q172HCPU, Q173HCPU, Q172DCPU, Q173DCPU, or Q170MCPU.

(6) Data for software

Item	Description	File name
Label program	Data for GX Developer	PROJINFO.CAB
Symbolic data	Symbolic data for PX Developer	#FBDQINF.BIN

Point

(1) Data that cannot be backed up
The GOT cannot back up device current values and data stored in device memories.
For collecting device current values, use the advanced recipe function.
For how to use the advanced recipe function, refer to the following manual.

GT Designer2 Version2 Screen Design Manual
(Section 12.3 Advanced Recipe Function)

For collecting data stored in device memories, use GX Developer.

(2) Names of files to be backed up
When characters other than the characters defined in the shift JIS code and ASCII code are used for file names, the file names may not be correctly displayed with the data backed up on the GOT.
For using the backup/restore function, use characters in the JIS code and ASCII code for file names.

(3) Backing up data stored in file registers
Because backing up data stored in file registers takes a long time, some file register data may have different time stamps in one backup data. Therefore, synchronism of the data is not assured.
When file register data with the same time stamp are required, take actions with the PLC system. For example, execute a sequence program that stops updating file registers, and then back up data stored in the file registers.

(4) Editing CNC data
The backed up CNC data includes machining programs, parameters, and others. Those data are related one another.
Therefore, when any of the data is changed with a text editor and others, the GOT cannot restore the backed up CNC data to the CNC.
For editing CNC data, use the CNC data I/O function.

12. CNC DATA I/O

(5) Motion controller CPU

(a) OS for motion controller CPU
The OS for the motion controller CPU cannot be backed up or restored.
For backing up or restoring setting data for the motion controller CPU, install an appropriate OS on the motion controller CPU in advance.

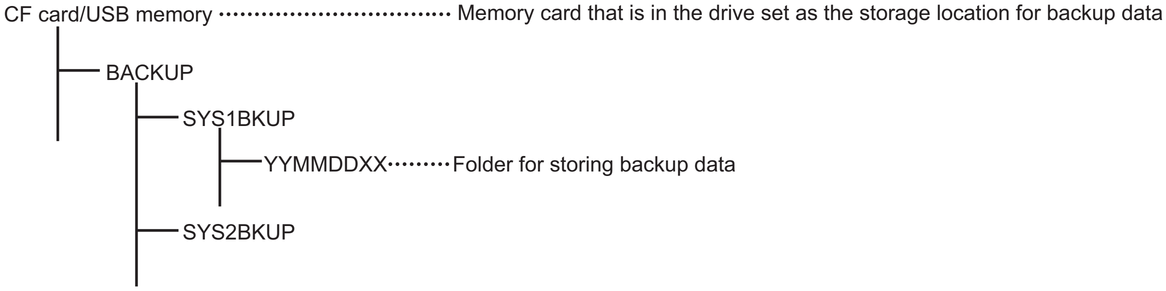
(b) Backup/restore for motion controller CPU

The GOT backs up or restores data stored in the SRAM built in the motion controller CPU, regardless of the operation mode.
For writing data to the FLASH ROM built in the motion controller CPU, restore the data to the SRAM, and then write the data in the SRAM to the FLASH ROM with MT Developer.

6 Backup data

(1) Storing backup data
When backups for the same channel are executed several times, the backup data are stored in a CF card or USB memory. (Backup data stored in the CF card or USB memory are not overwritten.)

(2) Storing backup data
Backup data are stored in a CF card or USB memory with the following folder structure.


CF card/USB memory
Memory card that is in the drive set as the storage location for backup data
BACKUP
SYS1BKUP
YYMMDDXX
Folder for storing backup data
SYS2BKUP

(3) Folders for backup data
Backup data are stored by the folder, and a folder name (YYMMDDXX) is set as follows.
Example) Folder name for the 10th backup data for Ch.1 on November 22nd, 2006
Folder name: 06112209

Folder name		Description
YYMMDDXX	YY	Backup year (the last two digits of the year)
	MM	Backup month (01 to 12)
	DD	Backup date (01 to 31)
	XX	Serial number (00 to 99)

When names of folders for backup data include XX of 99, the backup data cannot be stored.
Up to 100 backups can be executed per channel in a day.

11.2.2 Access range

(1) Access range with connection types
The following shows a target controller of the backup/restore execution with each connection type.

Connection type	Target controller
Bus connection, Direct CPU connection, computer link connection, Ethernet connection	Host station

(2) With multi-channel function
With the multi-channel function, the backup and restoration is executed per channel.

(3) Multiple CPU system
When the target controller of the backup/restore is the multiple CPU, the backup is collectively executed for CPU No.1 to 4.
The restoration is executed with specifying target controllers of the restoration (multiple controllers possible).

11.2.3 Precautions

(1) Password for backup/restore
When a password for a controller is changed after setting the password for the backup/restore, set a new password for the backup/restore.
For setting the password for the backup/restore, refer to the following.

☞Subsection 11.3.3 Security and password

(2) Restoration

(a) Communication status between GOT and target controllers
For restoring data, enable the target controllers of the restoration to communicate with the GOT.
When the target controllers of the restoration cannot communicate with the GOT, the restoration cannot be executed.

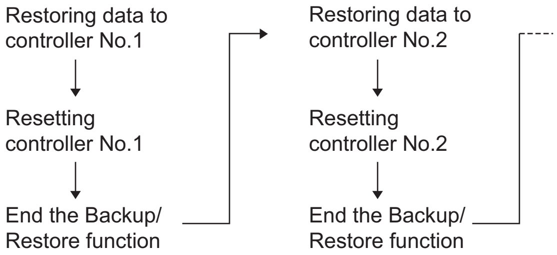
(b) STOP status during restoration
CPUs for the programmable controller and motion controller are in the STOP status with the remote STOP before the restoration.
For the CNC C70, the CNC ladder is in the STOP status.
The CPUs and CNC ladder remain in the STOP status after the restoration is completed. Restart the controllers.

(c) When restoration is canceled
When the restoration is canceled, all the data are not restored to the controllers and the controllers may not correctly operate.
When the restoration is canceled, be sure to execute the restoration again.
The CPUs and CNC ladder remain in the STOP status after the restoration is canceled. Restart the controllers.

(d) System configuration with controllers for restoration
Set the same system configuration with the controllers for the restoration as those for the backup.
Failure to do so disables the GOT to restore data to the controllers.
When the system configuration with the controllers for the restoration is the same as those for the backup, the GOT can restore data to the controllers even if the connection type and CH No. for the restoration differ from those for the backup.

(e) Controller operations
Controllers may malfunction by changing set values, device values, and others during the restoration.
Check that data to be restored is the appropriate data, and then execute the restoration with paying attention to the controller operations.

(f) Restoration for a QCPU with factory-settings or whose memory is formatted
When using the single CPU system, the restoration can be performed only if the connection type is the bus connection or direct CPU connection.
When using the multiple CPU system, the restoration can be performed only if the connection type is the direct CPU connection.
However, in a multiple CPU system which includes a QCPU with the factory-settings or whose memory is formatted, batch restoration to multiple controllers cannot be performed.
Restore each controller with the following procedure.


Restoring data to controller No.1
Resetting controller No.1
End the Backup/ Restore function
Restoring data to controller No.2
Resetting controller No.2
End the Backup/ Restore function

(3) Operations for backup/restore

(a) Precautions for GT Designer2
Do not execute the following operations with GT Designer2 during the backup/restore.

Operation with GT Designer2			
OS installation,	BootOS installation,	CoreOS installation,	Project download,
Special data download			

When the above operations are executed, the backup/restore is stopped.

(b) Precautions for GX Developer

- Do not access the target controller of the backup/restore with GX Developer during the backup/restore.
  Doing so stops the backup/restore.
- Do not execute the backup/restore on the GOT while the target controller of the backup/restore is accessed by GX Developer.
  Doing so causes a communication error on GX Developer. (The backup/restore is executed.)

(4) Motion controller CPU

(a) Backup

For backing up data for controllers including the motion controller CPU, do not set the motion controller CPU to the installation mode.

When the motion controller CPU is set to the installation mode, the GOT does not back up data for the motion controller CPU. (The GOT backs up data for the other controllers on the same base unit.)

(b) Restoration

For restoring data to controllers including the motion controller CPU, do not set the motion controller CPU to the installation mode or test mode.

Doing so stops the restoration operation of the GOT.

When the restoration is stopped, be sure to execute the restoration again.

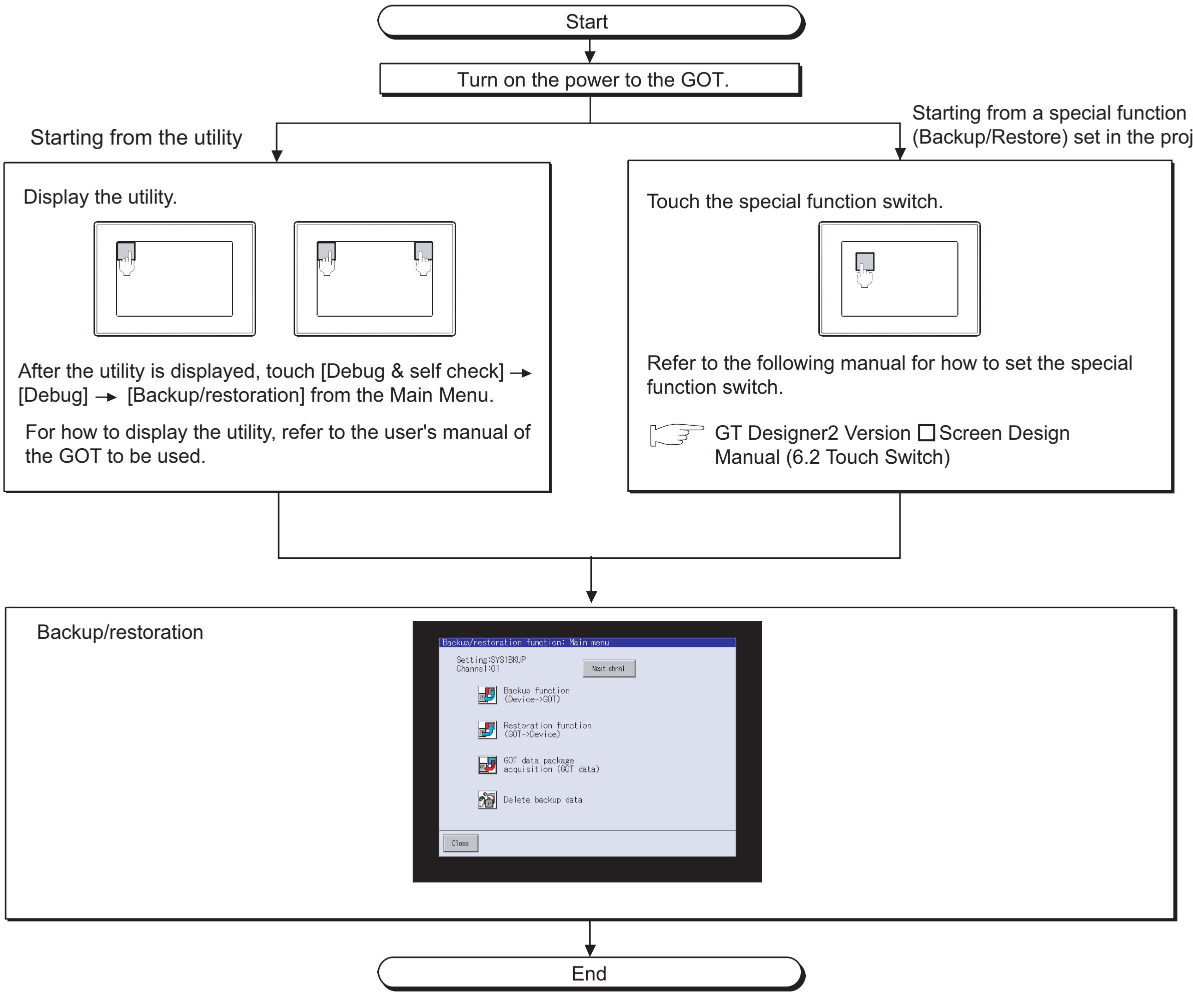
Failure to do so causes the GOT not to write all the data into the controllers, resulting in incorrect operations of the controllers.

11.3 Display Operation

11.3.1 Outline before starting

1 Operations before displaying

The following describes the outline for displaying the operation screen for the backup/restore after installing Backup/Restore (extended function OS) on the GOT.


Start
Turn on the power to the GOT.
Starting from the utility
Starting from a special function switch (Backup/Restore) set in the project data
Display the utility.
Touch the special function switch.
Backup/restoration
Backup/restoration function: Main menu
Setting:SYS1BKUP
Channel:01
Next chnnl
Backup function (Device->GOT)
Restoration function (GOT->Device)
GOT data package acquisition (GOT data)
Delete backup data
Close
End

After the utility is displayed, touch [Debug & self check] → [Debug] → [Backup/restoration] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

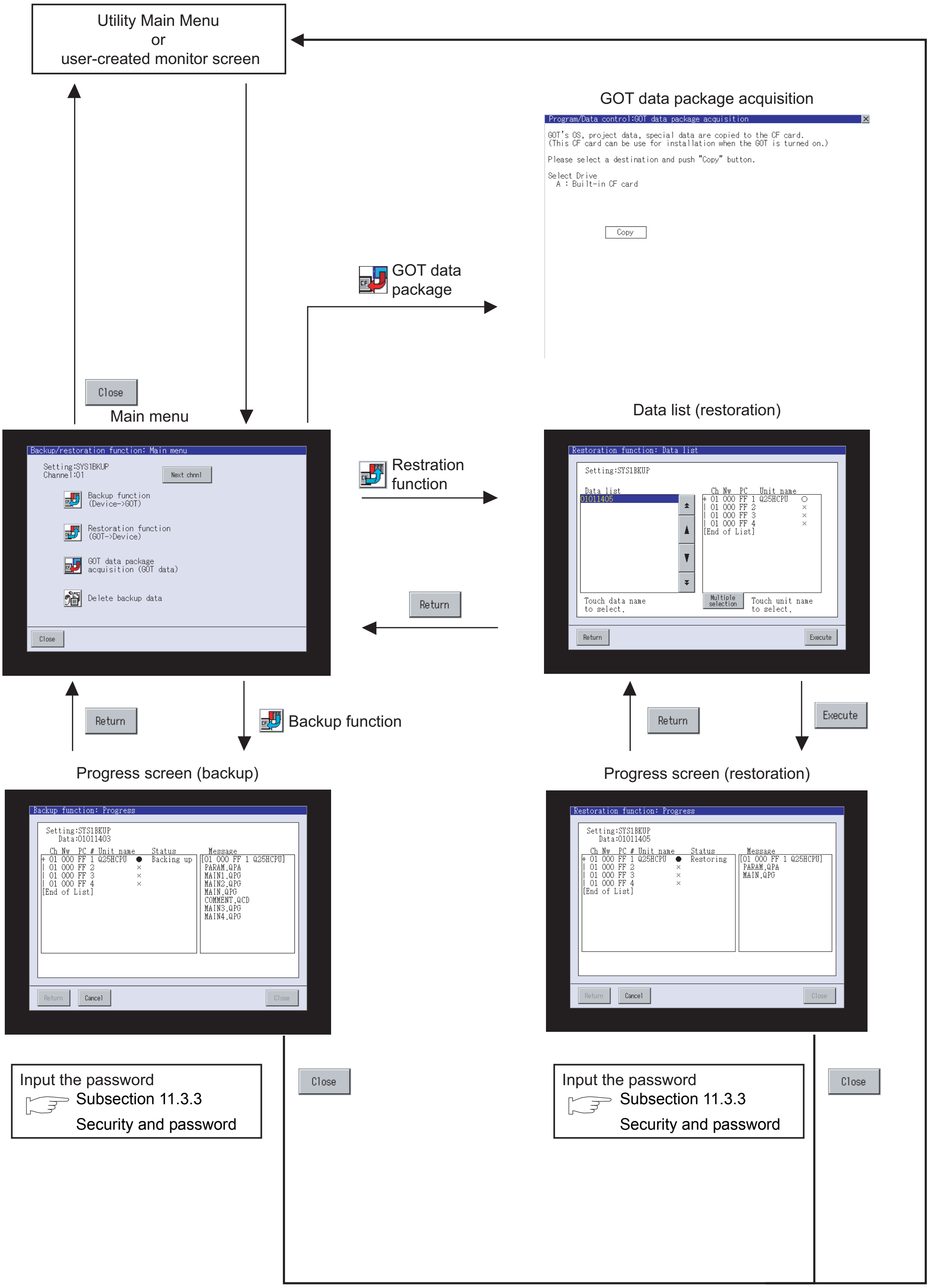
Point

(1) How to display the utility
For how to display the utility, refer to the following.

☞ GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) When GOT has no project data
The backup/restoration can be started with the utility even though the GOT has no project data.

2 Changing screens



GOT data package acquisition screen:

```
Program/Data control:GOT data package acquisition

GOT's OS, project data, special data are copied to the CF card.
(This CF card can be use for installation when the GOT is turned on.)

Please select a destination and push "Copy" button.

Select Drive
  A : Built-in CF card

                    Copy
```

Main menu screen:

```
Backup/restoration function: Main menu

Setting:SYS1BKUP                 Next chnnl
Channel:01

     Backup function
     (Device->GOT)

     Restoration function
     (GOT->Device)

     GOT data package
     acquisition (GOT data)

     Delete backup data

Close
```

Data list (restoration) screen:

```
Restoration function: Data list

 Setting:SYS1BKUP

 Data list                Ch Nw  PC   Unit name
01011405                 + 01 000 FF 1 Q25HCPU    ○
                         | 01 000 FF 2            ×
                         | 01 000 FF 3            ×
                         | 01 000 FF 4            ×
                         [End of List]

 Touch data name         Multiple   Touch unit name
 to select.              selection  to select.

Return                                      Execute
```

Progress screen (backup):

```
Backup function: Progress

 Setting:SYS1BKUP
    Data:01011403
  Ch Nw  PC # Unit name     Status       Message
+ 01 000 FF 1 Q25HCPU   ●   Backing up  [01 000 FF 1 Q25HCPU]
| 01 000 FF 2           ×                PARAM.QPA
| 01 000 FF 3           ×                MAIN1.QPG
| 01 000 FF 4           ×                MAIN2.QPG
[End of List]                            MAIN.QPG
                                         COMMENT.QCD
                                         MAIN3.QPG
                                         MAIN4.QPG

Return  Cancel                                Close
```

Progress screen (restoration):

```
Restoration function: Progress

 Setting:SYS1BKUP
    Data:01011405
  Ch Nw  PC # Unit name     Status       Message
+ 01 000 FF 1 Q25HCPU   ●   Restoring   [01 000 FF 1 Q25HCPU]
| 01 000 FF 2           ×                PARAM.QPA
| 01 000 FF 3           ×                MAIN.QPG
| 01 000 FF 4           ×
[End of List]

Return  Cancel                                Close
```

Input the password
☞ Subsection 11.3.3
Security and password

Input the password
☞ Subsection 11.3.3
Security and password

11.3.2 Setting storage location for backup data

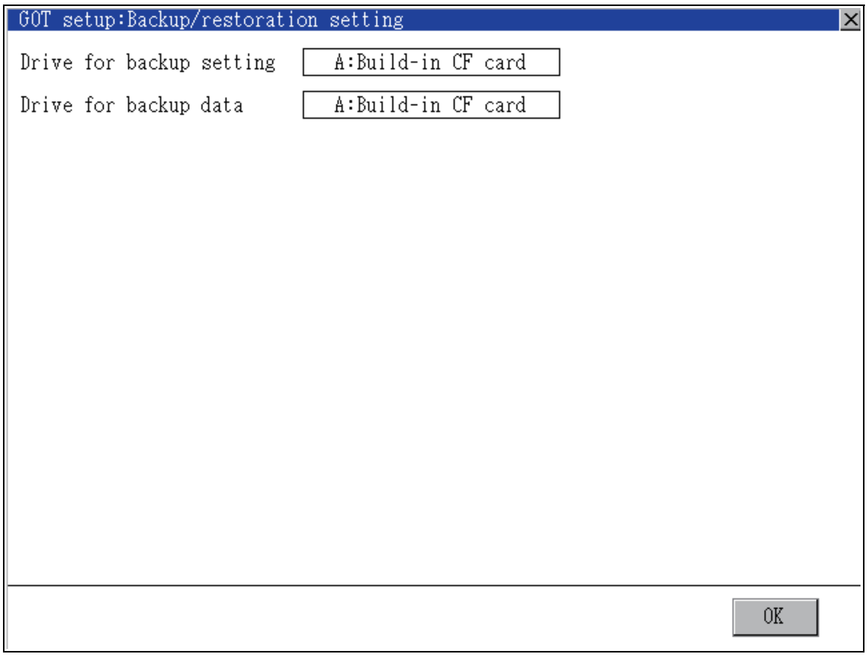
Set the storage location that backup data are stored.
Set the storage location for backup data in the backup/restoration setting of the utility.

1 Display procedure

(1) For GT16
Select [Debug] → [Debug setting] → [Backup/restoration setting] from the utility.

(2) For GT15
Select [GOT setup] → [Backup/restoration setting] from the utility.

2 Settings



GOT setup:Backup/restoration setting

Drive for backup setting: A:Build-in CF card

Drive for backup data: A:Build-in CF card

Item	Description
Drive for backup setting	Specify the drive for storing backup settings, including parameters and passwords for controllers.
Drive for backup data	Specify the drive for storing backup data.
Trigger backup setting	The GOT automatically backs up data when triggers (Rise, Time) specified for each backup setting are met.
Max. of backup data	Set the maximum number of backup data to be stored. (When 0 is specified, the GOT does not check the number of backup data to be stored.)

Point

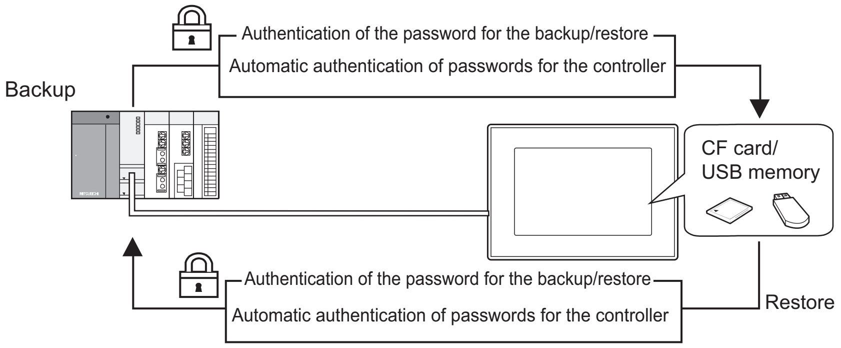
Backup/restoration setting

The backup/restoration setting can also be set in the GOT setup on GT Designer2.
For the GOT setup of GT Designer2, refer to the following manual.

☞ GT Designer2 Version □ Screen Design Manual
(Section 3.8 Setting of GOT Display and Operations (GOT Setup))

11.3.3 Security and password

By setting the passwords, the password authentication is available when the backup/restore is executed.
The password authentication uses the password for the backup/restore and passwords for controllers.


Authentication of the password for the backup/restore
Automatic authentication of passwords for the controller
Backup
CF card/
USB memory
Authentication of the password for the backup/restore
Automatic authentication of passwords for the controller
Restore

The following shows the passwords used for the backup/restore.

Password	Description
Password for backup/restore	Password for the backup/restore function Set the password on the GOT at the first backup. Before setting the password, set passwords for controllers in advance.
Passwords for controllers	Passwords set for the files for the target controllers of the backup/restore Set the passwords with software for the controllers when writing the files to the controllers.

After the first backup (after setting the password for the backup/restore), the user has no need to input the passwords for the controllers. (The passwords for the controllers are automatically verified.)
The following shows the security advantages.

User	Advantage
Administrator	No need to disclose the passwords for the controllers to the operator (Preventing anyone other than the administrator to browse or edit setting data for the controllers.)
Operator	The backup/restore is executed by using the password for the backup/restore only. (No need to input passwords for the controllers)

Point

Before setting password for backup/restore

When the user forgets the password for the backup/restore, the backup/restore cannot be executed.
In that case, execute the backup again by using a formatted or new CF card or USB memory.

For how to set the password for the backup/restore, refer to the following.

☞ This section 1 Setting password for backup/restore

How to use the password for the backup/restore, refer to the following.

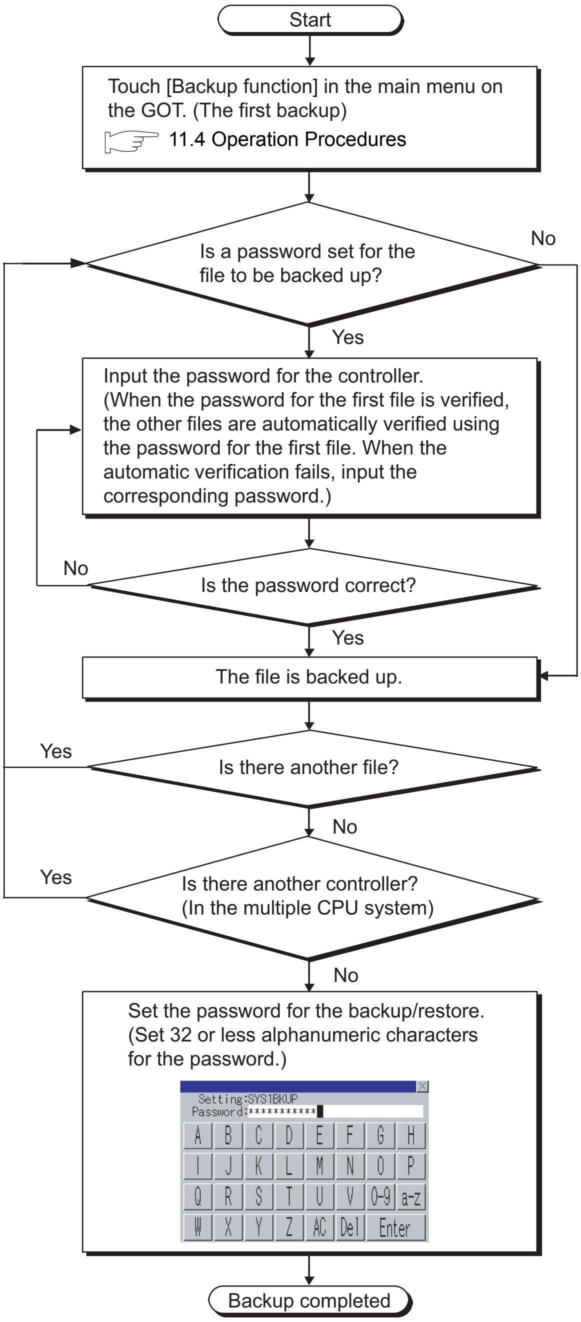
☞ This section 2 How to use password for backup/restore

1 Setting password for backup/restore

The password for the backup/restore can be set only when the following condition is satisfied at the first backup.

- When passwords are set for the files for the backup target controller

At the first backup, the password authentication for the controller is required.
The following shows the operating procedure at the first backup.


Start
Touch [Backup function] in the main menu on the GOT. (The first backup)
11.4 Operation Procedures
Is a password set for the file to be backed up?
No
Yes
Input the password for the controller. (When the password for the first file is verified, the other files are automatically verified using the password for the first file. When the automatic verification fails, input the corresponding password.)
Is the password correct?
No
Yes
The file is backed up.
Is there another file?
Yes
No
Is there another controller? (In the multiple CPU system)
Yes
No
Set the password for the backup/restore. (Set 32 or less alphanumeric characters for the password.)
A B C D E F G H
I J K L M N O P
Q R S T U V 0-9 a-z
W X Y Z AC Del Enter
Backup completed

Setting:SYS1BKUP
Password:***********

Point

(1) Setting password
For ensuring the security, setting a password of 8 or more characters that cannot be easily guessed is recommended.
When the password is leaked, the same system can be created. Pay enough attention to managing the password.

(2) Passwords for motion controller CPU
   (a) File name

   When a password for a motion controller CPU data is input, the GOT does not display the file name.
   The GOT displays the data type only.

   (b) Setting passwords for data without any contents

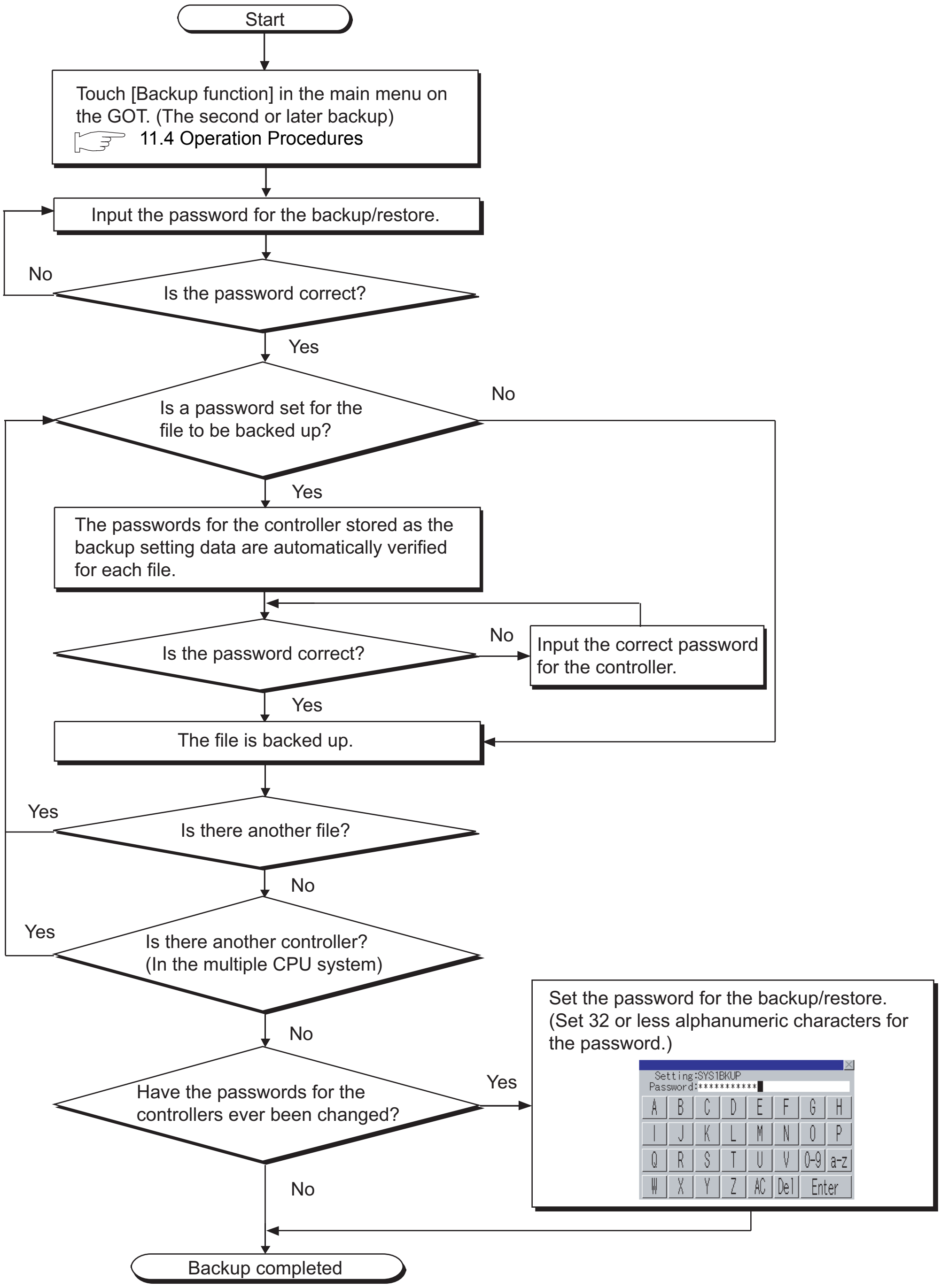
   When contents of the following motion controller CPU data do not exist, do not set any passwords for the data.
   - SFC program
   - Mechanical system program
   - Cam data

   When passwords are set for the data without any contents, the automatic password authentication is unavailable when the GOT executes the backup.
   As a result, the user must input the passwords each time.

2 How to use password for backup/restore

(1) Backup

The following shows the operating procedure for the backup after setting the password for the backup/restore.


Start
Touch [Backup function] in the main menu on the GOT. (The second or later backup)
11.4 Operation Procedures
Input the password for the backup/restore.
Is the password correct?
No
Yes
Is a password set for the file to be backed up?
No
Yes
The passwords for the controller stored as the backup setting data are automatically verified for each file.
Is the password correct?
No
Input the correct password for the controller.
Yes
The file is backed up.
Is there another file?
Yes
No
Is there another controller? (In the multiple CPU system)
Yes
No
Have the passwords for the controllers ever been changed?
Yes
Set the password for the backup/restore. (Set 32 or less alphanumeric characters for the password.)
Setting:SYS1BKUP
Password:************
A B C D E F G H
I J K L M N O P
Q R S T U V 0-9 a-z
W X Y Z AC Del Enter
No
Backup completed

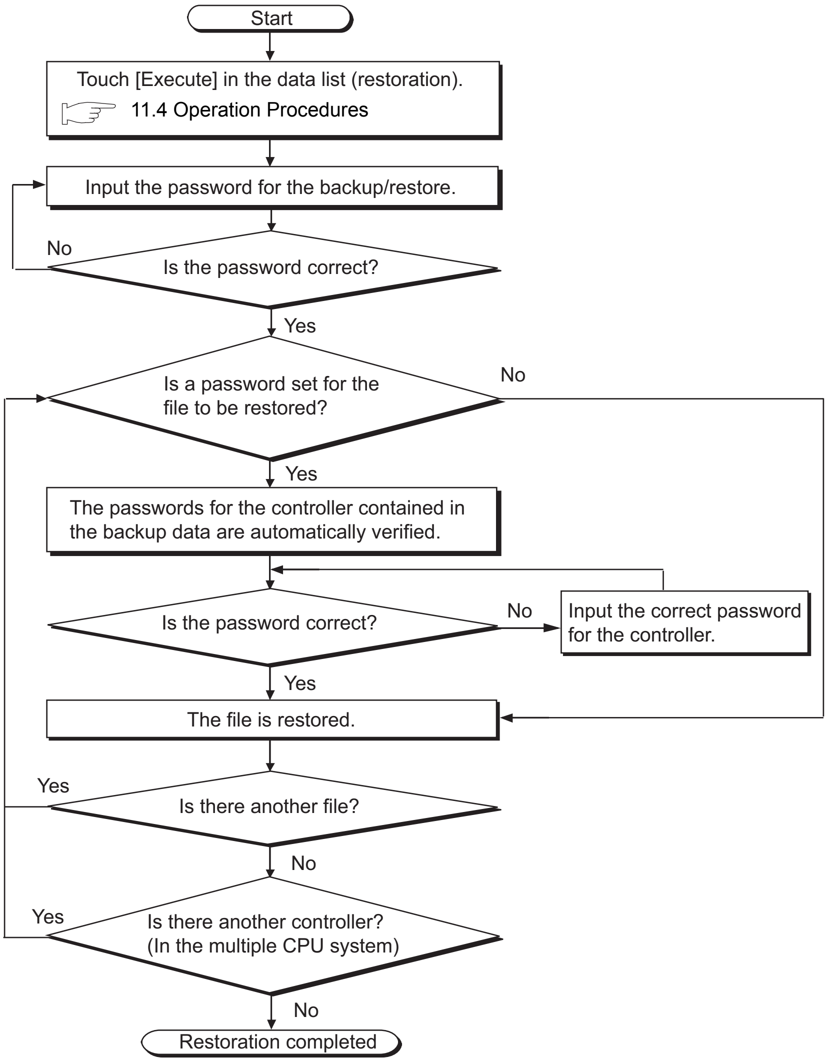
Point

When passwords for controllers are changed

When the password input is cancelled and the backup is stopped, the backed up files until the backup is stopped are all deleted.

(2) Restoration

The following shows the operating procedure for the restoration after setting the password for the backup/restore.

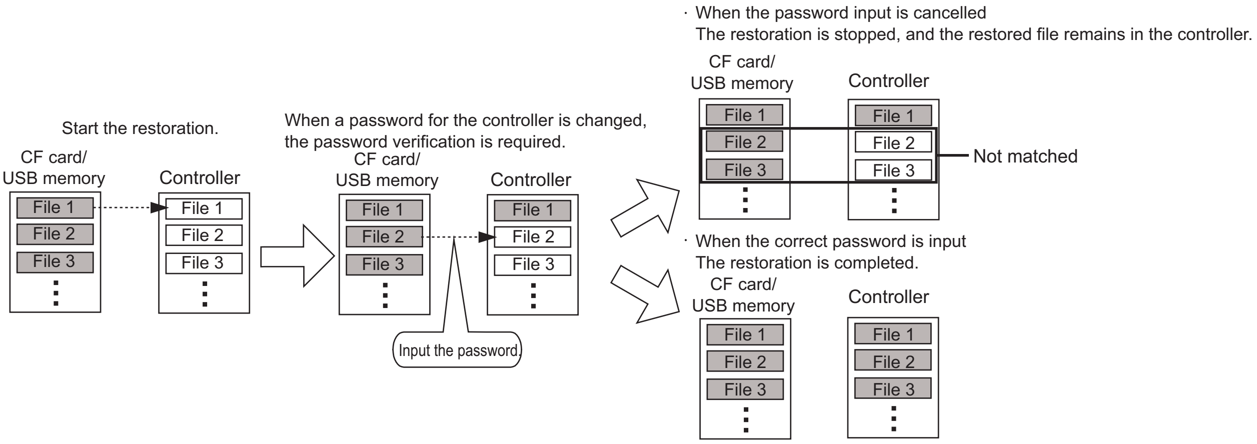

Start
Touch [Execute] in the data list (restoration).
11.4 Operation Procedures
Input the password for the backup/restore.
No
Is the password correct?
Yes
Is a password set for the file to be restored?
No
Yes
The passwords for the controller contained in the backup data are automatically verified.
Is the password correct?
No
Input the correct password for the controller.
Yes
The file is restored.
Yes
Is there another file?
No
Yes
Is there another controller? (In the multiple CPU system)
No
Restoration completed

Point

When passwords for controllers are changed

When the password input is cancelled and the restoration is stopped, the restored files until the restoration is stopped remain in the controller.

When only any of the files are restored, the data can be inconsistent in the entire system.

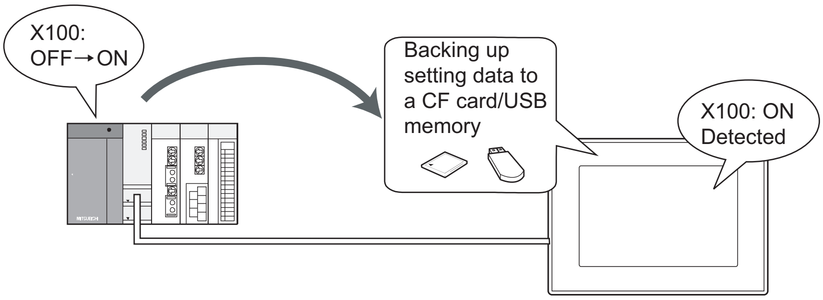

· When the password input is cancelled
The restoration is stopped, and the restored file remains in the controller.
CF card/ USB memory
Controller
File 1
File 2
File 3
Not matched
Start the restoration.
When a password for the controller is changed, the password verification is required.
Input the password.
· When the correct password is input
The restoration is completed.

11.3.4 Trigger backup

The GOT can automatically back up setting data for controllers with the trigger device or the days and time set.
Setting the trigger type selects whether to execute the backup with the trigger device or with the days and time.

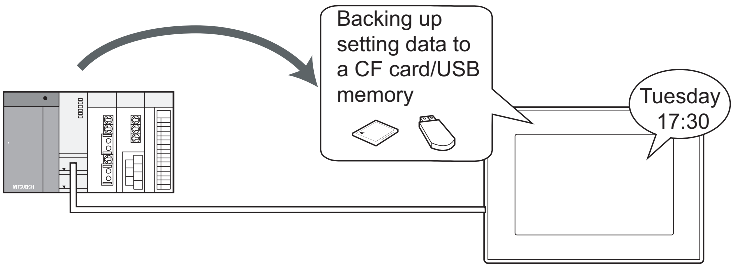
(1) When trigger type is set to [Rise]
The GOT executes the backup when the set trigger device turns on.
Use the backup with the trigger device for automatically backing up setting data for controllers after the setting data are changed.

Trigger device: X100



(2) When trigger type is set to [Time]
The GOT executes the backup at the specified time on the specified days.
Use the backup with the time for backing up setting data periodically.

Setting GOT to back up data at 17:30 on Tuesdays



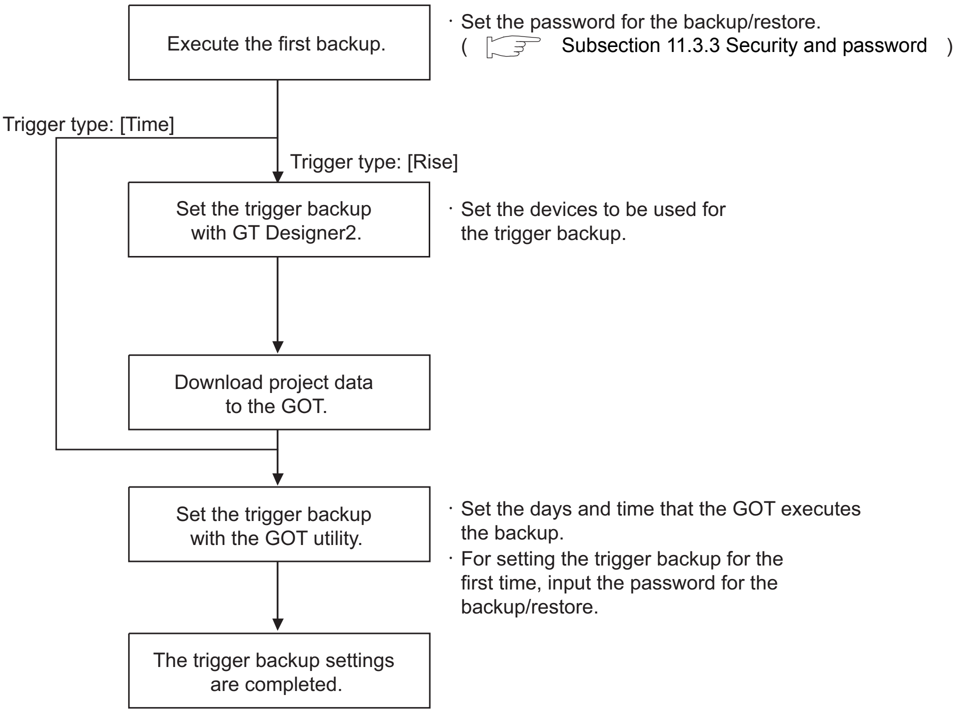
(3) Maximum number of backup data
With the trigger backup, the maximum number of backup data to be stored can be specified.
When the number of backup data exceeds the maximum number of backup data, the GOT automatically deletes the oldest backup data.
Therefore, the GOT does not fail to store the latest backup data.

(4) Comparing and updating backup data
For the backup, the GOT compares the previous backup data with current setting data for each controller on the same base unit.
When the current setting data for any of the controllers differ from the previous backup data, the GOT backs up setting data for all the controllers on the same base unit.
When the current setting data for all the controllers are the same as the previous backup data, the GOT does not execute the backup.
Therefore, the GOT does not store the same backup data.

1 How to set trigger backup

(1) Flow of settings

The following shows the flow of settings for using the trigger backup.


Execute the first backup.
· Set the password for the backup/restore.
(☞ Subsection 11.3.3 Security and password)
Trigger type: [Time]
Trigger type: [Rise]
Set the trigger backup with GT Designer2.
· Set the devices to be used for the trigger backup.
Download project data to the GOT.
Set the trigger backup with the GOT utility.
· Set the days and time that the GOT executes the backup.
· For setting the trigger backup for the first time, input the password for the backup/restore.
The trigger backup settings are completed.

Point

Inputting password for backup/restore

The GOT automatically executes the backup when the trigger condition is met.
The password authentication with the password for the backup/restore is not executed.
By executing the password authentication with the password for the backup/restore when setting the trigger backup with the GOT utility, unauthorized users cannot execute the backup.
Without inputting the password for the backup/restore when setting the trigger backup, an error occurs and the GOT does not execute the backup even if the trigger condition is met.
Input the password for the backup/restore in the trigger backup setting of the GOT utility.
For setting the trigger backup with the GOT utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 4.2.3 Trigger backup settings)
GT15 User's Manual (Section 11.13 Trigger Backup Settings)

(2) Setting items for trigger backup

Set the trigger backup with GT Designer2 and the GOT utility.

For the setting items for GT Designer2, refer to the following.

☞ GT Designer2 Version2 Screen Design Manual
(Section 3.8 Setting of GOT Display and Operations (GOT Setup))

For the setting items for the GOT utility, refer to the following.

☞ GT16 User's Manual (Basic Utility) (Section 4.2.3 Trigger backup settings)
GT15 User's Manual (Section 11.13 Trigger Backup Settings)

2 Controlling backup with devices

The GOT controls the trigger backup with devices.

The following shows the devices to be used for the trigger backup.

- Trigger device
- Process notification device
- Backup error notification device
- Trigger backup processing setting No. notification (GS657)
- Trigger backup data send delay (GS521)

For the devices and how to set the devices, refer to the following.

☞ GT Designer2 Version2 Screen Design Manual
(Section 2.9.1 GOT internal devices)
(Section 3.8 Setting of GOT Display and Operations (GOT Setup))

(1) When normal backup is executed

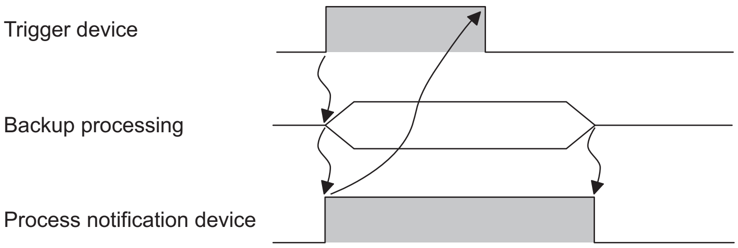
(a) When trigger type is set to [Rise]

Turn on the trigger device, and then the GOT starts the backup.

When the backup is started, the process notification device turns on.

Turn off the trigger device right after the process notification device turns on. (The trigger device does not automatically turn off.)

When the backup is completed, the process notification device turns off.

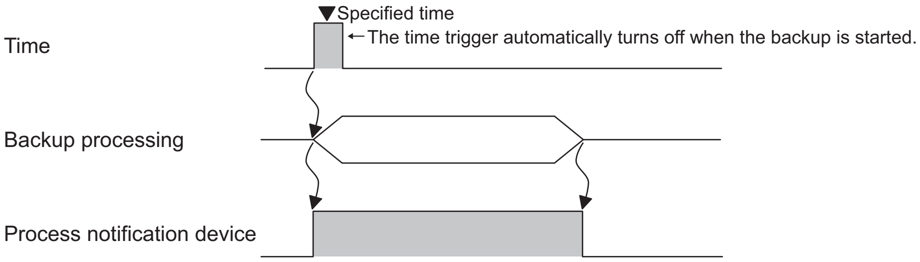


(b) When trigger type is set to [Time]

The GOT starts the backup at the time specified for the trigger backup.

When the backup is started, the process notification device turns on, and the time trigger automatically turns off.

When the backup is completed, the process notification device turns off.


▼Specified time
←The time trigger automatically turns off when the backup is started.
Time
Backup processing
Process notification device

(2) Error handling

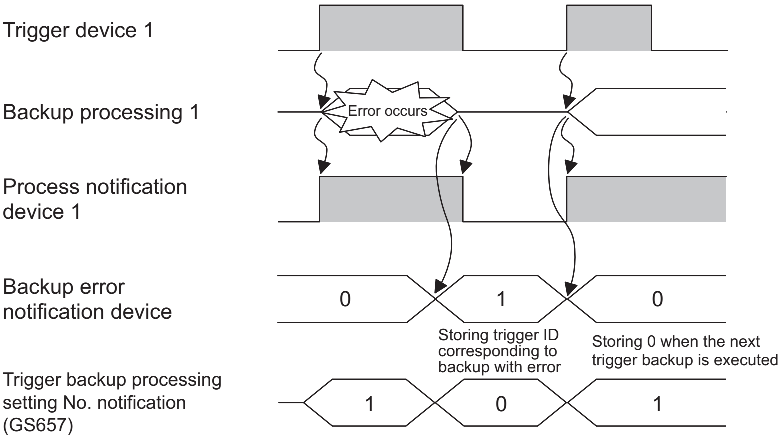
When an error occurs during the trigger backup, the backup error notification device stores the trigger ID corresponding to the trigger setting set for the backup with the error, and a system alarm occurs.

Check the system alarm, and then remove error causes.

For system alarms and corrective actions, refer to the following manual.

☞ GT15 User's Manual

The backup error notification device stores 0 when the next trigger backup is executed.


Trigger device 1
Backup processing 1
Error occurs
Process notification device 1
Backup error notification device
0
1
0
Storing trigger ID corresponding to backup with error
Storing 0 when the next trigger backup is executed
Trigger backup processing setting No. notification (GS657)
1
0
1

(3) Setting send delay time

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).

3 Precautions for trigger backup

The following shows precautions for the trigger backup.

(1) GOT operations during trigger backup
The GOT may take a long time to monitor devices and to operate during the trigger backup.
Execute the trigger backup when the operator does not operate the GOT.
Updating data with the functions that collect device values, including the logging function, may also take a long time.

(2) Displaying device name on GOT
When the trigger device is set to [Rise], the GOT displays the device name of [??] without the extended function OS of the device name converter installed.
For displaying the device name correctly, install the extended function OS of the device name converter on the GOT.

(3) First backup
The trigger backup is unavailable for the first backup.
Manually execute the first backup, and then set the password for the backup/restore and passwords for controllers. After the settings, set the trigger backup.

(4) Passwords for controllers
When passwords for controllers stored in the backup setting differ from current passwords for the controllers, the backup operation is canceled.
For executing the trigger backup, check that passwords for controllers have no changes.
When the backup operation is canceled, manually execute the backup again, and then input correct passwords.

(5) Checking file register changes
When the trigger backup is frequently executed, set [Check the file register changes] to [Not execute] with the GOT utility because data stored in file registers frequently changes.
When [Check the file register changes] is set to [Execute], the GOT backs up data stored in the file registers every time the trigger condition is met even if the other setting data for the controller are not changed.
As a result, the number of backup data increases in the CF card. When the number of backup data exceeds the maximum number of backup data, old backup data are deleted.
For obtaining data stored in file registers only, use the advanced recipe function.
For how to use the advanced recipe function, refer to the following.

☞ GT Designer2 Version2 Screen Design Manual
(Section 12.3 Advanced Recipe Function)

(6) Backing up data when CNC and motion controller CPU are on one base unit
When the CNC and/or the motion controller CPU are on one base unit, the GOT does not compare the previous backup data with current setting data for the controllers.
As a result, the GOT executes the backup even if the setting data for the controllers have no changes.
For backing up setting data only when the data are changed, set the trigger type to [Rise].
Create a sequence program so that the trigger device turns on only when the setting data are changed. Therefore, the number of backup data can be minimized.

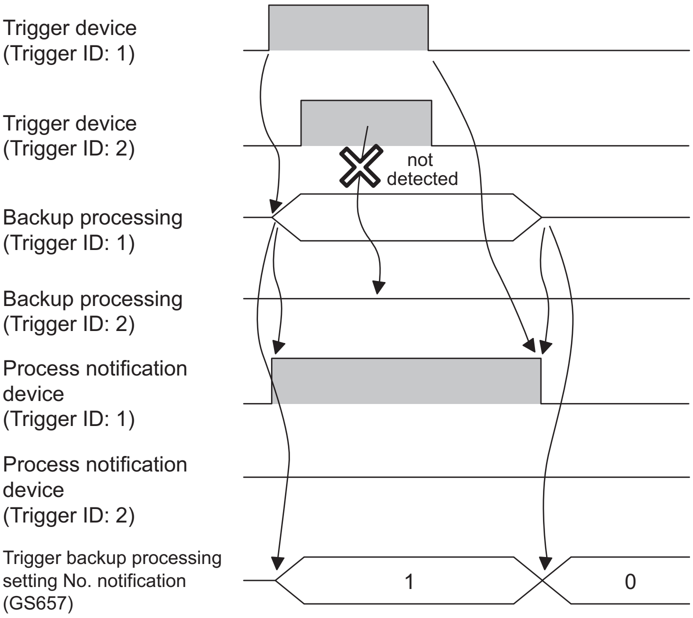
(7) Screens that trigger backup can be executed
The trigger backup can be executed only when the GOT displays a monitor screen.

(a) When the trigger condition is met while the GOT displays a screen other than monitor screens, including the utility screen and ladder monitor screen, the GOT does not execute the backup.
When a screen other than monitor screens is switched to a monitor screen, the GOT executes the backup.

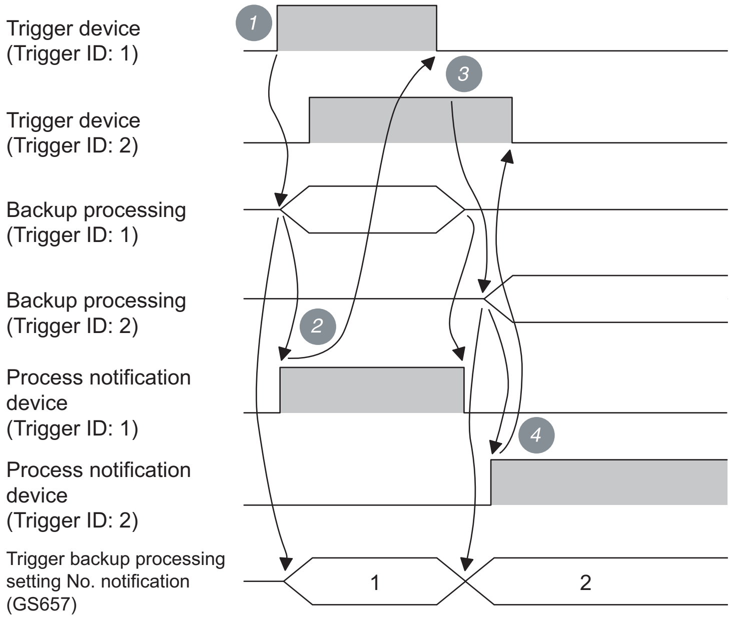
(b) When a monitor screen is switched to a screen other than monitor screens during the trigger backup, the GOT stops the backup and the GOT deletes the data in process.
When the screen is switched to a monitor screen, the GOT executes the backup again.

(c) When the following are operated, the GOT does not execute the backup even if a screen other than monitor screens is switched to a monitor screen.
- Restarting the GOT
- Changing the trigger backup setting with the GOT utility

(8) When another trigger condition is met during backup
The GOT cannot detect that another trigger condition is met.



For ensuring the trigger backup, establish a handshake with the trigger device and the process notification device.
An example of a handshake is shown on the next page.



1 The trigger device (Trigger ID: 1) turns on, and then the GOT starts the backup (Trigger ID: 1).

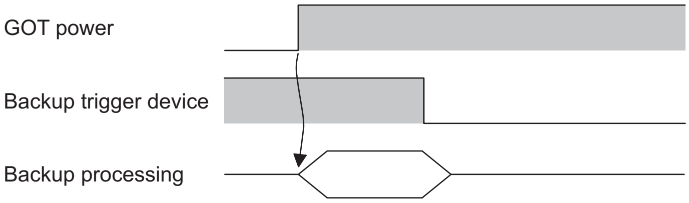
2 When the backup is started, the process notification device (Trigger ID: 1) turns on, and the trigger backup processing setting No. notification (GS657) stores the trigger ID.
When the process notification device turns on, the trigger device (Trigger ID: 1) turns off.

3 When the backup (Trigger ID: 1) is completed, the GOT recognizes that the trigger device (Trigger ID: 2) is on and the GOT starts the backup (Trigger ID: 2).

4 When the backup is started, the process notification device (Trigger ID: 2) turns on, and the trigger backup processing setting No. notification (GS657) stores the trigger ID.
When the process notification device turns on, the trigger device (Trigger ID: 2) turns off.

(9) When multiple trigger conditions are simultaneously met
The GOT executes the backup with the smallest trigger ID first.

(10) When trigger device is on at GOT startup
The GOT recognizes that the trigger condition is met, and then the GOT executes the backup.
Create a sequence program so that the trigger device turns off after the GOT checks that the process notification device turns on.



11.4 Operation Procedures

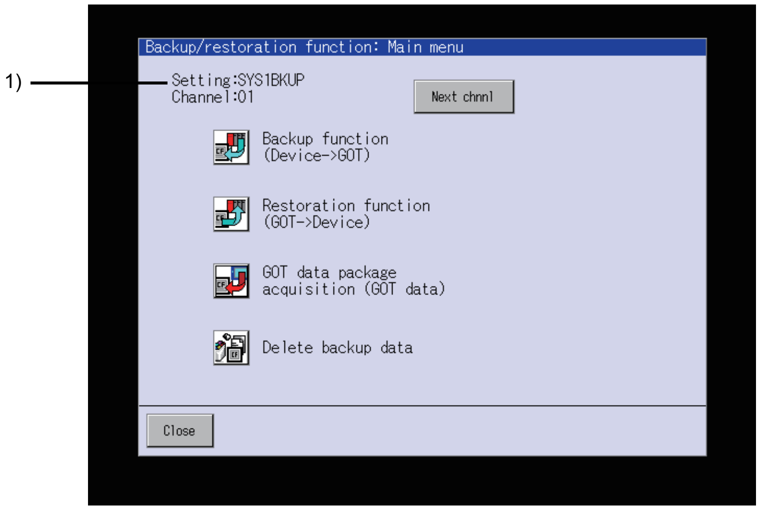
This section describes the backup/restore display details and the functions of the keys displayed on the screen.

The display screen for the backup/restore differs depending on the GOT to be used. This section explains the display screen with the GT1575-V screen.

11.4.1 Main menu

The following describes the display and the key functions on the Bakcup/restoration function : Main menu screen.

1 Display details



Backup/restoration function: Main menu

Setting:SYS1BKUP
Channel:01

1)
Next chnl
Backup function (Device->GOT)
Restoration function (GOT->Device)
GOT data package acquisition (GOT data)
Delete backup data
Close

No.	Display details
1)	Displays the target channel No. of the backup and the setting name for the backup/restore (Fixed).

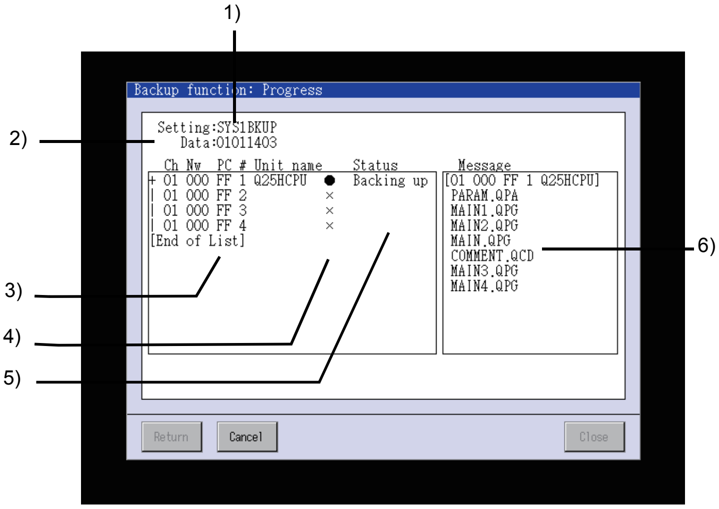
2 Key functions

Key	Function
Next chnl	Switches the target channels of the backup/restore.
Backup function	Starts the backup.
Restoration function	Switches the screen to the Restoration function: Data list screen.
GOT data package	Switches the screen to the setting screen of the GOT data package acquisition. ☞ GT16 User's Manual (Basic Utility) (Section 4.3.3 GOT data package acquisition) GT15 User's Manual (Section 13.12 GOT Data Package Acquisition) The key is not displayed on the GT1555-Q and GT1550-Q.
Delete backup data	Deletes the oldest data among backup data already stored in a CF card or USB memory in the GOT.
Close	Ends the backup/restore, and then the screen is switched to the backup/restore startup screen.

11.4.2 Progress screen (backup)

This following describes the display details and the key functions on the Backup function: Progress screen.

1 Display details



```
Setting:SYS1BKUP
   Data:01011403
 Ch Nw  PC # Unit name     Status        Message
+ 01 000 FF 1 Q25HCPU  ●  Backing up   [01 000 FF 1 Q25HCPU]
| 01 000 FF 2          ×                PARAM.QPA
| 01 000 FF 3          ×                MAIN1.QPG
| 01 000 FF 4          ×                MAIN2.QPG
[End of List]                           MAIN.QPG
                                        COMMENT.QCD
                                        MAIN3.QPG
                                        MAIN4.QPG
```

No.	Display details
1)	Displays the setting name for the backup/restore (Fixed).
2)	Displays the backup data name.
3)	Displays the channel No., network No., station No., module No., and unit name for the target controller of the backup.
4)	Displays the target controller status of the backup. ● : Backup target ○ : Not backup target × : Access disabled
5)	Displays the backup progress status. Backing up : The backup is in processing. Aborting : The backup cancellation is in processing. Completed : The backup is completed.
6)	Displays the file name in processing.

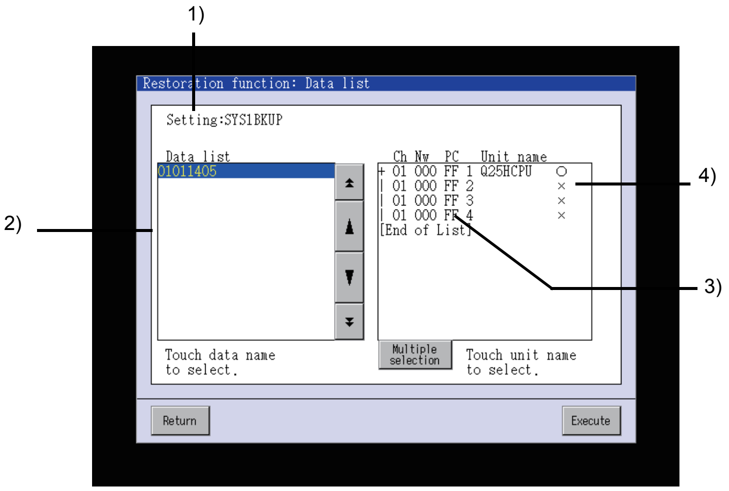
2 Key functions

Key	Function
Return	Switches the screen to the Backup/restoration function: Main menu screen.
Cancel	Cancels the backup.
Close	Ends the backup/restore, and then the screen is switched to the backup/restore startup screen.

11.4.3 Data list (restoration)

The following describes the display details and the key functions on the Restoration function: Data list screen .

1 Display detail



Restoration function: Data list

Setting:SYS1BKUP

Data list

01011405

```
  Ch Nw  PC   Unit name
+ 01 000 FF 1 Q25HCPU    ○
| 01 000 FF 2            ×
| 01 000 FF 3            ×
| 01 000 FF 4            ×
[End of List]
```

Touch data name to select.

Touch unit name to select.

No.	Display details
1)	Displays the setting name for the backup/restore (Fixed).
2)	Displays backup data stored in a CF card or USB memory. Select a backup data to be restored with touching the data.
3)	Displays the channel No., network No., station No., module No., and unit name for the target controller of the restoration.
4)	Displays the target controller status of the restoration. Select a target controller of the restoration with touching the controller. ● : Restoration target ○ : Not restoration target × : Access disabled

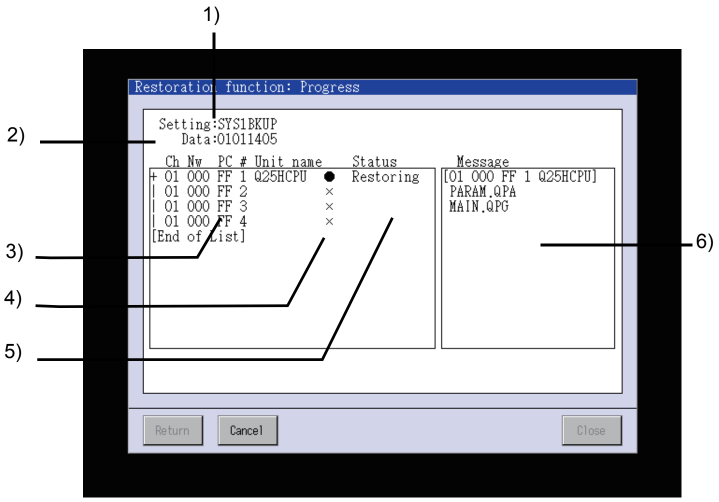
2 Key functions

Key	Function
▲ ▼	Scrolls the data list up and down by one line.
⏫ ⏬	Scrolls the data list up and down by one page.
Multiple selection / Single selection	Switches the number of target controllers of the restoration. • Single selection: Select [Single selection] when selecting only one target controller of the restoration. • Multiple selection: Select [Multiple selection] when selecting multiple target controllers of the restoration.
Return	Switches the screen to the Backup/restoration function: Main menu screen.
Execute	Starts the restoration.

11.4.4 Progress screen (restoration)

This following describes the display details and the key functions on the Restoration function: Progress screen.

1 Display details



```
Restoration function: Progress

 Setting:SYS1BKUP
    Data:01011405
  Ch Nw  PC # Unit name     Status       Message
+ 01 000 FF 1 Q25HCPU  ●  Restoring    [01 000 FF 1 Q25HCPU]
| 01 000 FF 2          ×                PARAM.QPA
| 01 000 FF 3          ×                MAIN.QPG
| 01 000 FF 4          ×
[End of List]
```

No.	Display details
1)	Displays the setting name for the backup/restore (Fixed).
2)	Displays the backup data name.
3)	Displays the channel No., network No., station No., module No., and unit name for the target controller of the restoration.
4)	Displays the target controller status of the restoration. ● : Restoration target ○ : Not restoration target × : Access disabled ? : Restoration failed
5)	Displays the restoration progress status. Restoring : The restoration is in processing. Aborting : The restoration cancellation is in processing. Completed : The restoration is completed. Abort : The restoration cancellation is completed. Comm.error : The restoration is failed with the communication failed. Data error : The restoration is failed with backup data errors.
6)	Displays the file name in processing.

2 Key functions

Key	Function
Return	Switches the screen to the Backup/restoration function: Main menu screen.
Cancel	Cancels the restoration.
Close	Ends the backup/restore, and then the screen is switched to the backup/restore startup screen.

11.5 Backup Data Conversion Tool

Backup data are created by the backup/restore function, and the backup data are stored in a CF card. Backup Data Conversion Tool enables the backup data to convert into data editable with GX Developer. The tool also enables backup data edited by GX Developer to convert into data for the restoration on the GOT.

Point

Data to be converted

Only backup data created by the backup/restore function can be converted with Backup Data Conversion Tool.

The following data cannot be converted with Backup Data Conversion Tool.

- Newly-created data by GX Developer
- Backup data with new files added by GX Developer

11.5.1 Operating environment

Use Backup Data Conversion Tool in the following operating environment.

Item		Description
Personal computer		PC/AT compatible personal computer that Windows® runs on
Operating system		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)
Computer		Refer to the following "Applicable operating system and performance required for personal computer".
	CPU	
	Memory	
Hard disk space		500KB or more
Disk drive		CF card drive
Display color		High Color (16 bits) or more
Display		Resolution 640 × 480 dots or more
Hardware		CF card
Others		The mouse and keyboard must be compatible with the above OS.

Applicable operating system and performance required for personal computer

Operating system	Performance required for personal computer	
	CPU	Memory
Microsoft® Windows® 2000 Professional Operating System (English version)	Pentium® 200MHz or more	64MB or more
Microsoft® Windows® XP Professional Operating System (English version) Microsoft® Windows® XP Home Edition Operating System (English version)	Pentium Ⅱ® 300MHz or more	128MB or more

11.5.2 How to install and start Backup Data Conversion Tool

Installing Backup Data Conversion Tool is not required.
Start Backup Data Conversion Tool with the following procedures.

1 Copy BkupRstrDataConv.exe to the hard disk and others on the personal computer.
Get the above file from one of the followings.

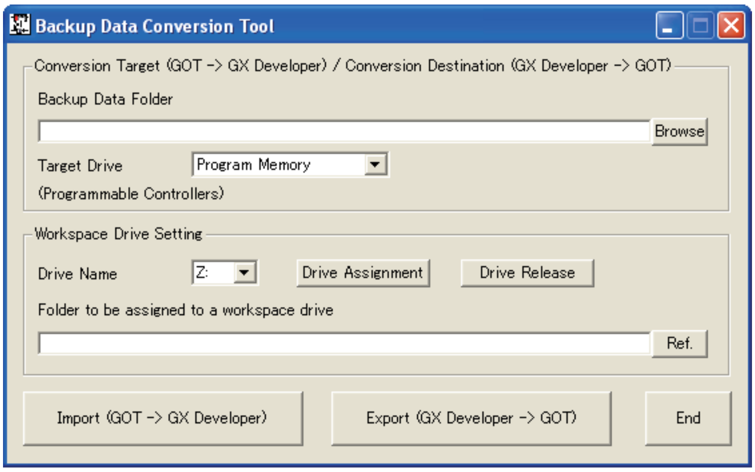
- BkupRstrDataConv folder in the Disc2 CD-ROM of GT Works2 or GT Designer2
- GTD2 folder on the personal computer
- MITSUBISHI ELECTRIC FA NETWORK SERVICE website
  (MELFANSweb website: http://wwwf2.mitsubishielectric.co.jp/english/index.html)

2 Double-click the copied BkupRstrDataConv.exe, and then the tool starts. Refer to the following, and set the tool.

11.5.3 How to use Backup Data Conversion Tool

1 Setting items

The following shows the setting items of Backup Data Conversion Tool.


Backup Data Conversion Tool
Conversion Target (GOT -> GX Developer) / Conversion Destination (GX Developer -> GOT)
Backup Data Folder
Browse
Workspace Drive Setting
Drive Assignment
Drive Release
Folder to be assigned to a workspace drive
Ref.
Import (GOT -> GX Developer)
Export (GX Developer -> GOT)
End

Target Drive (Programmable Controllers): Program Memory

Drive Name: Z:

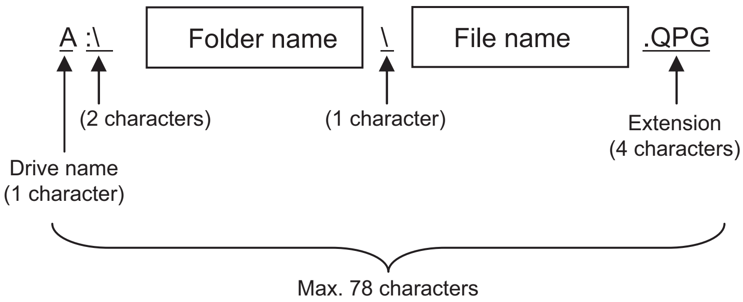
Item		Description
Conversion Target		Specify data to be converted.
	Backup Data Folder*1	Specify the storage location of the backup data (setting data: UNITINFO.G1B) created with the backup/restore function by clicking the Browse button.
	Target Drive	Select the PLC drive that has setting data to be converted.
Workspace Drive Setting		Set the settings for editing backup data with GX Developer.
	Drive Name	Specify [IC Card drive] to be specified for [Read IC memory card] and [Write IC memory card] on GX Developer.
	Folder to be assigned to a workspace drive*1	Specify the target folder of [Drive Name] by clicking the Ref. button.
	Drive Assignment	Click the item, and then [Folder to be assigned to a workspace drive] is assigned to [Drive Name]. ([Folder to be assigned to a workspace drive] is automatically assigned to [Drive Name] normally. Use the button when the drive assignment setting is canceled by clicking the Drive Release button and a drive is assigned again.)
	Drive Release	Click the item, and then the drive assignment setting is canceled.
Import (GOT → GX Developer)		Converts the backup data to data editable with GX Developer
Export (GX Developer → GOT)		Converts data edited by GX Developer to data applicable to the backup/restore.
End		Ends Backup Data Conversion Tool.

For details of *1, refer to the following.

*1 Folder name and file name

(a) Number of characters set for folder and file names
The GOT recognizes the file location with a path as shown below.
Set the folder and file names so that the total number of characters in the path is within 78 characters.
The user can set the folder name and file name only.
(Other than the folder and file names are automatically set.)

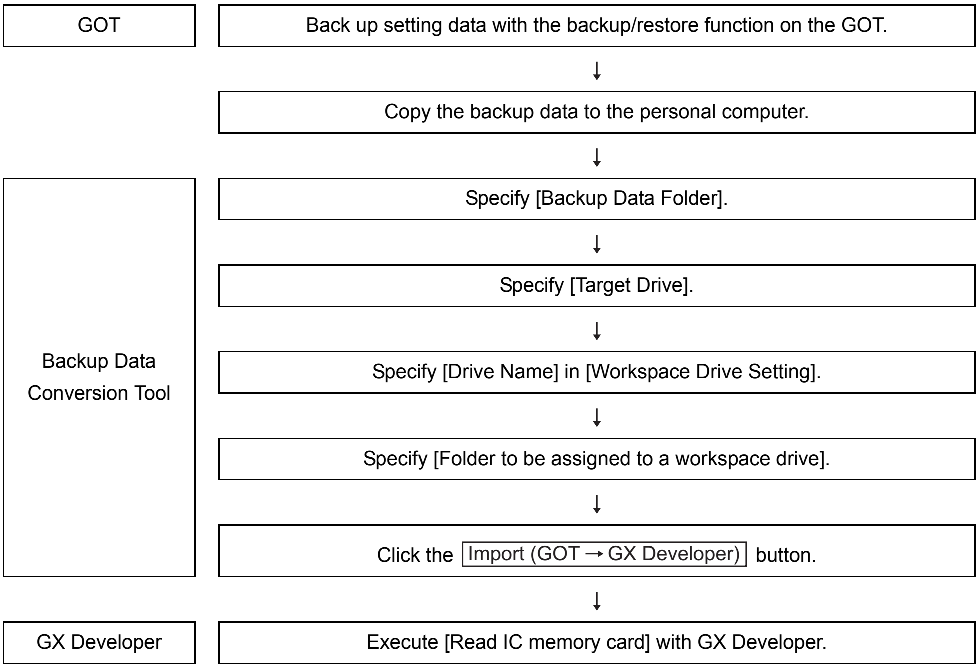
Example) Path of QPG file to be stored in CF card



2 Operation flow

The following shows the operation flow for Backup Data Conversion Tool.

(1) Editing backup data with GX Developer



GOT

Back up setting data with the backup/restore function on the GOT.

↓

Copy the backup data to the personal computer.

↓

Backup Data Conversion Tool

Specify [Backup Data Folder].

↓

Specify [Target Drive].

↓

Specify [Drive Name] in [Workspace Drive Setting].

↓

Specify [Folder to be assigned to a workspace drive].

↓

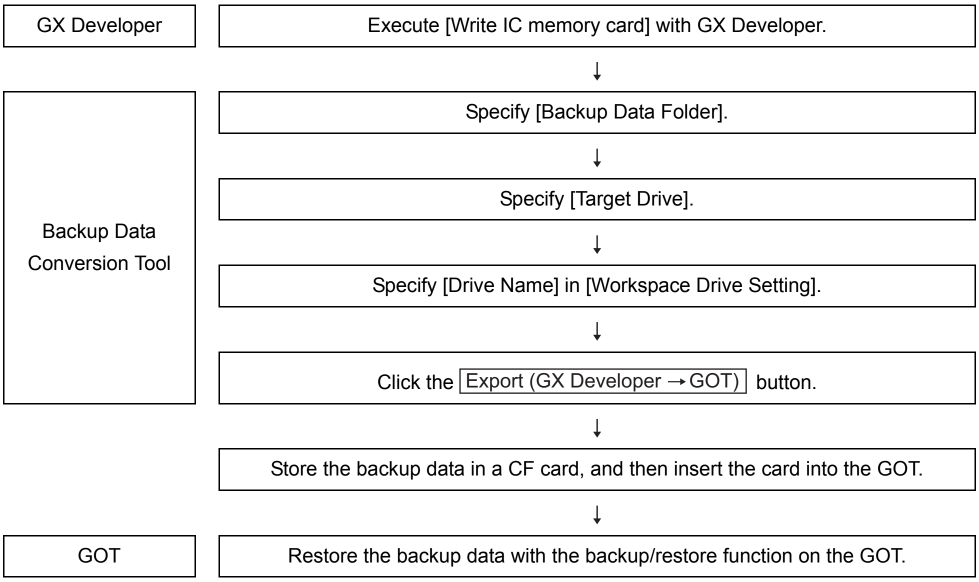
Click the Import (GOT → GX Developer) button.

↓

GX Developer

Execute [Read IC memory card] with GX Developer.

(2) Restoring data edited by GX Developer



GX Developer

Execute [Write IC memory card] with GX Developer.

↓

Backup Data Conversion Tool

Specify [Backup Data Folder].

↓

Specify [Target Drive].

↓

Specify [Drive Name] in [Workspace Drive Setting].

↓

Click the Export (GX Developer → GOT) button.

↓

Store the backup data in a CF card, and then insert the card into the GOT.

↓

GOT

Restore the backup data with the backup/restore function on the GOT.

11.5.4 Precautions

(1) Backup data that Backup Data Conversion Tool cannot be used
The backup data of the CPU without IC memory card cannot be read and written to the IC memory card by GX Developer.
Therefore, these backup data cannot be edited using the Backup Data Conversion Tool and GX Developer.

11.6 Errors and Corrective Actions

1 Common to backup and restoration

Error	Cause	Corrective action
The backup/restore function cannot be used.	The extended function OS of the backup/restore is not installed on the GOT.	Install the extended function OS on the GOT.
The backup setting is not found.	The backup setting is not stored in the CF card or USB memory in the GOT. No CF card or USB memory is installed to the drive specified for storing the backup setting.	• Install a CF card or USB memory with the backup setting stored. • Check the storage location for the backup setting with the utility.
The backup data are not found.	The backup data are not stored in the CF card or USB memory in the GOT. No CF card or USB memory is installed to the drive specified for storing the backup data.	• Install a CF card or USB memory with the backup data stored. • Check the storage location for the backup data with the utility.
The backup/restore cannot be executed because the user does not know the password for the backup/restore.	The user does not remember the password. The password is incorrect.	• Check with the administrator of the system regarding the password for the backup/restore. • Execute the backup again by using a formatted or new CF card or USB memory.
The backup/restore cannot be completed because a communication error occurs between the GOT and a controller during the backup/restore.	The communication settings and communication driver for the GOT are incorrectly set.	Check if the communication settings and communication driver for the GOT are correctly set.
	Because parameters for the controller are incorrectly set, the controller dose not recognize the GOT.	Check if the parameters for the controller is correctly set with tools, including GX Developer, for the controller.
	The controller is turned off.	Turn on the controller.
	The cable is not correctly connected.	Check the cable.

2 Backup

Error	Cause	Corrective action
The backup data cannot be written into a CF card or USB memory.	No CF card or USB memory is installed to the GOT.	Install a CF card or USB memory to the drive specified for storing the backup setting or backup data.
	The CF card or USB memory does not have free space.	Install a CF card or USB memory with enough free space. Delete unnecessary files in the CF card or USB memory.
	The CF card or USB memory is set to write-protect.	Set the CF card or USB memory to writable. The attributes of backup data files stored in the CF card or USB memory cannot be changed with the GOT. Set the files to writable with a personal computer.
	The drive does not exist.	Check if the drive specified for storing the backup setting or backup data exists. (Check if the CF card unit is installed on the GOT.)
Setting data (files and data) cannot be obtained from the controller.	The GOT cannot communicate with the controller.	Check the following. GOT • Check if the cable is correctly connected to the GOT. • Check if the correct communication driver is installed on the GOT. • Check if the communication settings are correctly set. Controller • Check if the parameters are set. • Check if the cable is correctly connected to the controller. • Check if the controller is turned on.
The backup cannot be executed because passwords for files of the controller are set.	• The user does not remember the password. The password is incorrect. (The first backup) • Passwords for files of the controller are changed.	Check with the administrator of the system regarding the passwords for files of the controller.

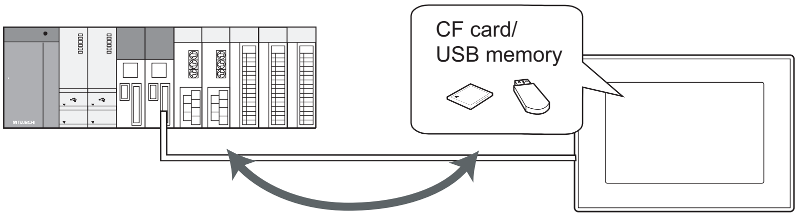
3 Restoration

Error	Cause	Corrective action
Setting data (files and data) cannot be written into the controller.	The GOT cannot communicate with the controller.	Check the following. GOT • Check if the cable is correctly connected to the GOT. • Check if the correct communication driver is installed on the GOT. • Check if the communication settings are correctly set. Controller • Check if the parameters are set. • Check if the cable is correctly connected to the controller. • Check if the controller is turned on.
	The target controller of the restoration is a different kind of controller from the target controller of the backup.	• Check if the system configuration for the restoration is the same as that for the backup. • Check if the target controller of the restoration is the same as that of the backup or the same kind of controller.
The restoration cannot be executed because passwords for files of the controller are set.	• The passwords for files written in the controller are changed.	Check with the administrator of the system regarding the passwords for files of the controller.

12. CNC DATA I/O

12.1 Features

Machining programs, parameters, and others of the CNC connected to the GOT can be copied or deleted.



Copy or delete the CNC data.

12.2 Specifications

12.2.1 System configuration

This section describes the target CNC of the CNC data I/O and the connection types for connecting the GOT to the CNC.
For connection type settings and precautions regarding the communication unit/cable and connection type, see the following manual.

GOT1000 Series Connection Manual

1 Target CNC of CNC data I/O

CNC
CNC C70

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection type between GOT and CNC							
Name	Description	Bus connection	Direct connection	Computer link connection	Ethernet connection	MELSECNET/10 connection	CC-Link connection		GOT multidrop connection
							ID*1	G4*2	
CNC data I/O	Data I/O between the CNC and GOT	○	×	×	○*3	×	×	×	×

*1 Indicates CC-Link connection (Intelligent device station).
*2 Indicates CC-Link connection (via G4).
*3 Applicable only with the Display I/F connection.

3 Required extended function OS

The following extended function OS is required.

Extended function OS	OS memory space (user area)			Option function board
	GT16		GT15	
	Built-in flash memory (ROM)	User memory (RAM)		
CNC Data I/O	210KB	383KB	437KB	Not required
GOT Platform Library	77KB	200KB	100KB	

(1) Extended function OS
Install the extended function OS shown in the above table on the GOT.
For how to install the OS, refer to the following manual.

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

(2) OS memory space
For installing the extended function OS, the available space shown in the above table is required in the user area.
For checking the available space in the user area and the data that uses other user areas, refer to the following manual.

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

4 Required hardware

The following hardware is required.

GOT	Hardware
GT16	CF card/USB memory
GT15	CF card

5 CNC data that can be input and output

The following data can be input and output with the CNC data I/O function.

For details of the data, refer to the manual for the CNC to be used. .

Description			
Machining program,	Parameter,	Tool offset data,	
Common variable,	Workpiece offset data,	Maintenance data,	Cycle monitor data

12.2.2 Access range

(1) Bus connection
One GOT can execute the CNC data I/O on up to two CNCs by switching the CNCs.

(2) Ethernet connection
One GOT can execute the CNC data I/O on up to 64 CNCs by switching the CNCs.

12.2.3 Precautions

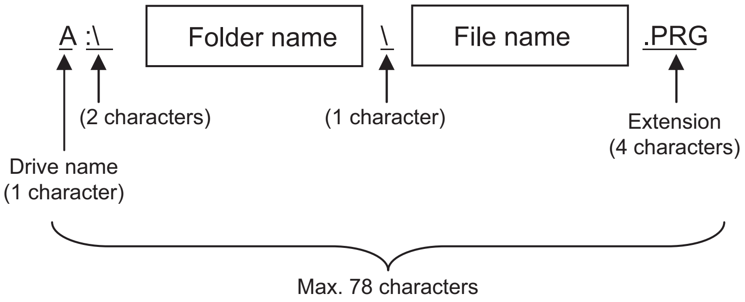
(1) Before using CNC data I/O
Read the manual of the connected CNC carefully and make sure you understand the contents before using the CNC data I/O.

(2) Inapplicable GOT
The CNC data I/O cannot be used with the GT1675M-V, GT1665M-V, GT1575-V, GT1575-VN, GT1572-VN, GT156□, and GT155□.

(3) Folder name and file name

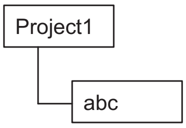
(a) Number of characters set for folder and file names
The GOT recognizes the file location with a path as shown below.
Set the folder and file names so that the total number of characters in the path is within 78 characters.
The user can set the folder name and file name only.
(Other than the folder and file names are automatically set.)

Example) Path of file to be stored in CF card



Remark When setting hierarchy to folder

For 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



(b) Character strings that cannot be set

The following character strings cannot be used in a folder name and a file name.
(The character strings cannot be used irrespective of capital or small letters.)

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

The following folder names and file names also cannot be used.

- Folder names starting with G1
- Folder and file names starting with a period or \
- Folder and file names ending with a period or \
- Folder and file names with a period or two periods only

(4) Protect for data I/O

When the data protection key 1,2, or 3 and edit lock B or C is set, the data I/O is restricted.
For the data protection key 1, 2, 3 and edit lock B, C, refer to the following manual.

Manual for CNC to be used

(5) Changing CNC file names

When outputting a file in the CNC and changing the file name, do not change the extension of a maintenance data file. If the extension is changed, the maintenance data file is not recognized.

12.3 Display

1 Display operations

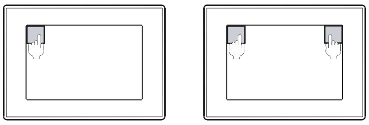
The following describes the outline for displaying the operation screen for the CNC data I/O after installing CNC Data I/O and GOT Platform Library (extended function OS) on the GOT.

Start

Turn on the power to the GOT.

Starting from the utility

Display the utility.

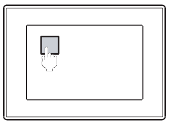


After the utility is displayed, touch [Debug & self check] → [Debug] → [CNC data I/O] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from the special function switch (CNC data I/O) set in the project data

Touch the special function switch.



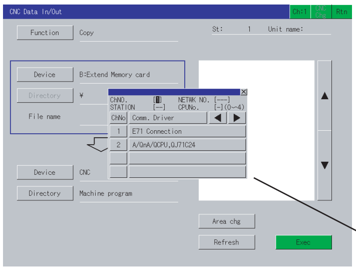
Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version □ Screen Design Manual (6.2 Touch Switch)

Set the channel.

Set the channel No. of the CNC connected to the GOT

When closing the communication setting window by touching ☒ in the upper right corner without setting the channel No., the channel No.1 is set.



CNC Data In/Out

Function: Copy

St: 1 Unit name:

Device: B:Extend Memory card

Directory: ¥

File name

Device: CNC

Directory: Machine program

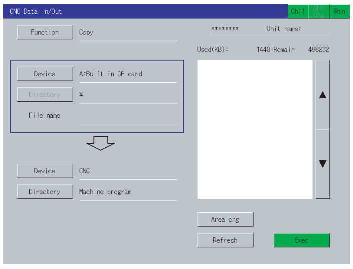
ChNO. [1] NETWK NO. [---]
STATION [--] CPUNo. [-](0~4)

ChNo	Comm. Driver
1	E71 Connection
2	A/QnA/QCPU,QJ71C24

Communication setting window

Start the CNC data I/O.

Select the channel No. , and then the CNC data I/O starts.



CNC Data In/Out

Function: Copy

******** Unit name:

Used(KB): 1440 Remain 498232

Device: A:Built in CF card

Directory: ¥

File name

Device: CNC

Directory: Machine program

End

Point

(1) How to display the utility
For how to display the utility, refer to the following.

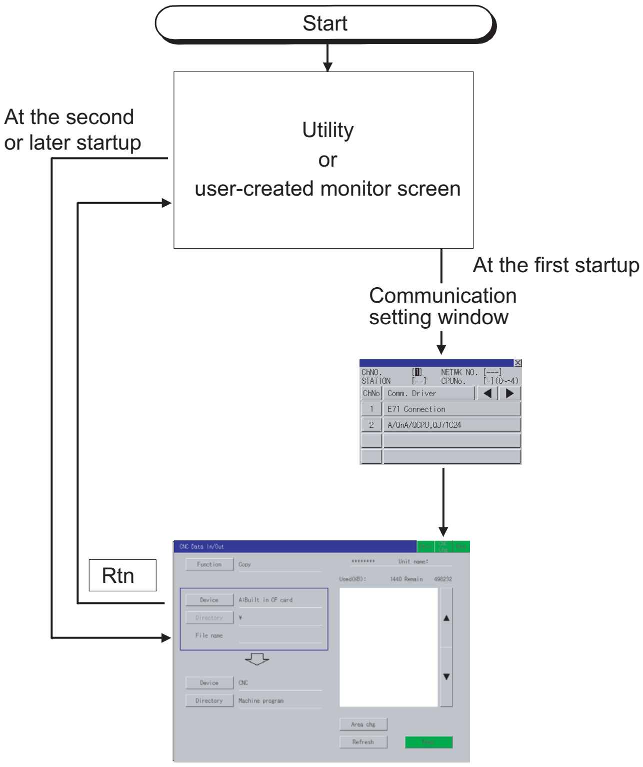
GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Displaying communication setting window
After turning on the GOT, the communication setting window is displayed at the first startup of the CNC data I/O only.
For displaying the communication setting window at the second or later startup, touch the Ch: button on the CNC data I/O screen.
(12.4 Operation Procedures)

(3) If the project data has not been downloaded
The CNC data I/O can be started from the utility even if the project data has not been downloaded to the GOT.

2 Changing screens

The following describes how to change the screen.

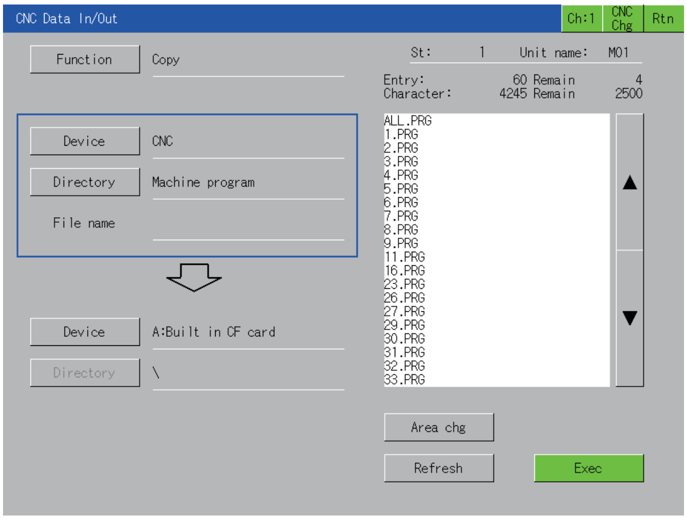

Start
At the second or later startup
Utility or user-created monitor screen
At the first startup
Communication setting window
Rtn

For exiting the CNC data I/O by touching Rtn, the last exited screen is displayed when the CNC data I/O starts next time.

12.4 Operation Procedures

1 Displayed contents

This section describes the display details for the CNC data I/O and the functions of the keys displayed on the screen.



CNC Data In/Out | Ch:1 | CNC Chg | Rtn

Function: Copy

St: 1 Unit name: M01
Entry: 60 Remain 4
Character: 4245 Remain 2500

Device: CNC
Directory: Machine program
File name:

Device: A:Built in CF card
Directory: \

ALL.PRG
1.PRG
2.PRG
3.PRG
4.PRG
5.PRG
6.PRG
7.PRG
8.PRG
9.PRG
11.PRG
16.PRG
23.PRG
26.PRG
27.PRG
29.PRG
30.PRG
31.PRG
32.PRG
33.PRG

Area chg
Refresh
Exec

Select a copy source device or the target to be deleted.

Select a copy destination device.

List

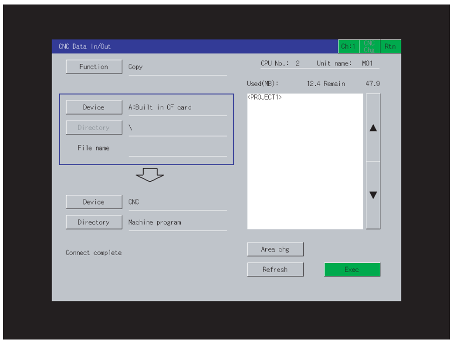
Item	Description
Ch:1	Displays the communication setting window.
CNC Chg	• For bus connection Switches CNCs to be monitored when multiple CNCs are connected. The monitoring target is switched in order of the module number. • For Ethernet connection Switches CNCs to be monitored when multiple CNCs are connected. The monitoring target is switched in order of the setting for the Ethernet on GT Designer2.
Rtn	Ends the CNC data I/O, and then the screen is returned to the monitor screen or the screen for the utility of the GOT.
Function	Displays the function selection window. Select a function to be executed ([Copy]/[Delete]/[Create a directory]/[USB Drive Stop]*1). • For [Copy] or [Delete] After selecting a function, the selected function is displayed. • For [Create a directory] The key window to create any directory is displayed. (☞ 2 Creating a directory) • For [USB Drive Stop]*1 The window for confirming to stop the USB drive is displayed.
Device	Displays the device selection window. Select the target of [Function] ([CNC]/[E:USB Drive]*1/[B:Extend Memory card]/[A:Built in CF card]). After selecting the target, the selected target is displayed.
Directory	The settings and display details differ depending on the setting for [Device]. • For [CNC] Displays the CNC data selection window. Select a CNC data that [Function] is executed. After selecting a CNC data, the selected CNC data is displayed. • For [E:USB Drive]*1, [B:Extend Memory card], or [A:Bulit in CF card] Displays the directory selected in the list. (The Directory button cannot be touched.) Up to 28 characters are displayed as the directory.

Item	Description
File name	Displays the file name selected in the list. When outputting a file, the file name can be changed by using a key window. (☞ 3 Changing the file name when outputting the file)
Above the list	The display details differ depending on the setting for [Device]. • For [CNC] [Entry], [Remain]: Displays the number of programs registered and the number of registerable programs left as user-created machining programs. [Character], [Remain]: Displays the number of characters registered and the number of registerable characters left as user-created machining programs. The number of registerable characters left is displayed by 250 characters. • For [E:USB Drive]*1, [B:Extend Memory card], or [A:Bulit in CF card] [Used(KB)], [Remain]: Displays the used space and available space of the memory card.
List	Displays the data in the target selected for [Device]. When [E:USB Drive]*1, [B:Extend Memory card], or [A:Built in CF card] is selected, the directory is displayed as < >. Touching < > displays the data in the directory. (Touching <..> displays the upper directory.) The copy source device is set to [E:USB Drive]*1, [B:Extend Memory card], or [A:Built in CF card], the directory for the file is displayed in the directory field of the copy destination device (CNC).
▲	Scrolls the list up by one page.
▼	Scrolls the list down by one page.
Area chg	Switches the setting targets (blue frame in the left side of the screen) up and down. When [Function] is selected for [Delete], the setting targets cannot be switched.
Refresh	Updates the list.
Exec	Executes the settings.

*1 The USB drive is applicable to GT16 only.

2 Creating a directory

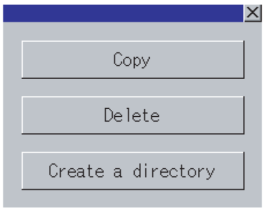
Any directory can be created in a CF card or USB memory.
The following explains an example of creating the "SAMPLE01" directory in a CF card.



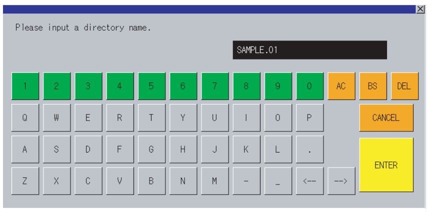
CNC Data In/Out
CPU No.: 2 Unit name: M01
Function: Copy
Used(MB): 12.4 Remain 47.9
Device: A:Built in CF card
Directory: \
File name
Device: CNC
Directory: Machine program
<PROJECT1>
Connect complete

① Touch the Area chg key to switch the setting target to the CF card.

② Touch the Function key.
The function selection window appears.



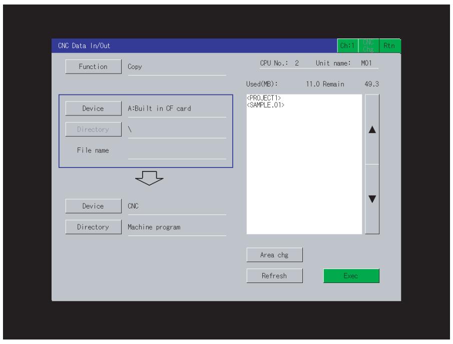
③ Touch the Create a directory key.
A key window appears.



Please input a directory name.
SAMPLE.01

④ Input "SAMPLE01".

⑤ Touch the ENTER key.
The key window is closed.
The list is updated, and the "SAMPLE01" directory is created.

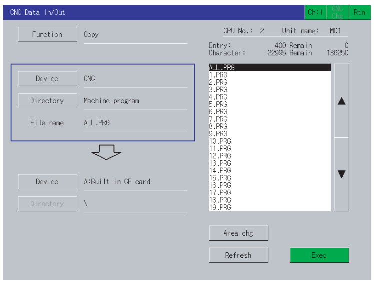


CNC Data In/Out
CPU No.: 2 Unit name: M01
Function: Copy
Used(MB): 11.0 Remain 49.3
Device: A:Built in CF card
Directory: \
File name
Device: CNC
Directory: Machine program
<PROJECT1>
<SAMPLE.01>

3 Changing the file name when outputting the file

When copying a file to a CF card or USB memory, the file name in the copy destination device can be changed.

The following explains an example of outputting a CNC machining program file to a directory in a CF card with changing the file name from "ALL.PRG" to "SAMPLE.PRG"."


CNC Data In/Out

Function: Copy

CPU No.: 2 Unit name: M01

Entry: 400 Remain 0

Character: 22995 Remain 136250

Device: CNC

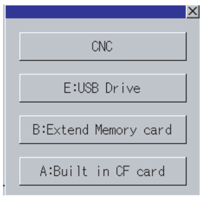
Directory: Machine program

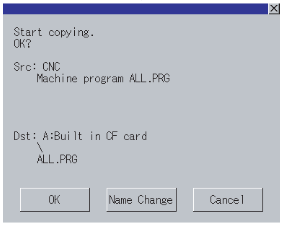
File name: ALL.PRG

Device: A:Built in CF card

Directory: \

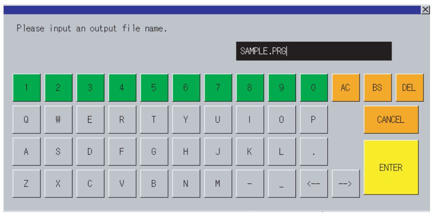
ALL.PRG
1.PRG
2.PRG
3.PRG
4.PRG
5.PRG
6.PRG
7.PRG
8.PRG
9.PRG
10.PRG
11.PRG
12.PRG
13.PRG
14.PRG
15.PRG
16.PRG
17.PRG
18.PRG
19.PRG




Start copying.
OK?

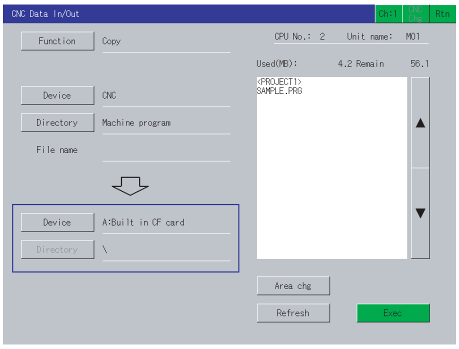
Src: CNC
Machine program ALL.PRG

Dst: A:Built in CF card
\
ALL.PRG


Please input an output file name.

SAMPLE.PRG

1 2 3 4 5 6 7 8 9 0 AC BS DEL
Q W E R T Y U I O P CANCEL
A S D F G H J K L .
Z X C V B N M - _ <-- --> ENTER


CNC Data In/Out

Function: Copy

CPU No.: 2 Unit name: M01

Used(MB): 4.2 Remain 56.1

Device: CNC

Directory: Machine program

File name:

Device: A:Built in CF card

Directory: \

<PROJECT1>
SAMPLE.PRG

1. Touch the Function key.
   The device selection window appears.
   Set the copy source device to [CNC] and the directory to [Machine program].
2. Touch the Area chg key to switch the setting target to the copy destination device.
   Set the copy destination device to [A:Built in CF card].
3. Touch "ALL.PRG" in the list.
4. Touch the Exec key.
   The copy confirmation window as shown in the left appears.
5. Touch the Name Change key.
   (Touching the OK key copies the file with the old file name.)
   A key window appears.
6. Touch the AC key to delete the old file name from the input value display area.
7. Input "SAMPLE.PRG".
8. Touch the ENTER key.
   The key window closes and the copy confirmation window appears.
   Touching the OK key starts copying the file with the new file name.
   The file name is changed to "SAMPLE.PRG" in the copy destination device.

4 Display details in list

The following shows file names to be displayed in the list on the CNC data I/O screen.

Target data	Description	File name to be displayed in list
Machining program[*1]	Machining program	ALL.PRG, O_PRG
Parameter	Parameter	ALL.PRM
Tool offset data	Tool offset data	TOOL.OFS
Workpiece offset data	Workpiece offset data	WORK.OFS
Common variable	Common variable	COMMON.VAR
Maintenance data	CNC ladder	USERPLC.LAD
	R resister data	RREG.REG
	C resister data	CREG.REG
	T resister data	TREG.REG
	Operation history data	TRACE.TRC
	CNC sampling data	NCSAMP.CSV
	SRAM data files	SRAM.BIN
Cycle monitor data	Sampling related package file	ALL.SMP
	Sampling setting file	SAMPLING.PRM
	PLC data collection setting file	FLCSAMP.CTF
	PLC draw setting file	PLCSAMP.MMG
	PLC collection data file	PLCSAMPH.CSV
	CNC collection data file	NCSAMPH.CSV

[*1] When the base specifications parameter of #1166 fixpro is set to 1, the fixed cycle program is the target data. When the CNC has machining programs, ALL.PRG is displayed at the top of the list.

12.5 Error Messages and Corrective Actions

The following shows the error messages for the CNC data I/O and the corrective actions.

Error message	Error	Corrective action
Communication error	The GOT fails to communicate with the CNC.	Set the correct connection and settings.
Memory Card not exist	No USB memory, extended memory card, or CF card is inserted into the GOT.	Check that a USB memory, extended memory card, or CF card is inserted into the GOT.
Failed to stop USB drive	The GOT fails to stop the USB drive.	Check the USB memory.
Unable to exec : PLC built in CNC running	The PLC CPU built in the CNC is in operation.	Stop the operation of the PLC CPU built in the CNC, and then execute the CNC data I/O again.
Unable to exec : Program running	The GOT cannot execute the CNC data I/O because the CNC is in operation.	Stop the CNC operation, and then execute the CNC data I/O again.
Out of memory	The capacity of the data to be written exceeds the CNC memory capacity.	Make enough space in the CNC memory by operations, including deleting machining programs, and then execute the CNC data I/O again.
File not found	The file to be copied does not exist.	Set the correct settings, and then execute the CNC data I/O again.
Timeout	The GOT fails to communicate with the CNC.	Check the connection.
Directory illegal	The directory is invalid.	Set the correct directory settings, and then execute the CNC data I/O again.
Data protect	The data is protected.	Check if data protection keys, edit locks, and others turn on. Check if the data is a read-only data. Then, execute the CNC data I/O again.
No. of registration over	The number of registerable programs is exceeded.	Delete unnecessary machining programs, and then execute the CNC data I/O again.
File is not specified	The Exec button is pressed even though a file is not specified.	Specify a file, and then execute the CNC data I/O again.
Some error found in file system	Errors occur in file systems.	File system errors Format the NC memory.
Can not write file	The file cannot be written in the copy destination device.	• Check if the copy destination device is ready for data writing. • TRACE.TRC and NCSAMP.CSV cannot be copied to the CNC.
Can not write file Format Error	The format is incorrect.	Check the format of the parameter.
Can not write file Range Over	The value is invalid.	Check the set value of the parameter.
Can not write file In sampling	The GOT cannot write the file to the CNC because sampling is in progress.	Write the file to the CNC after sampling is completed.

Error message	Error	Corrective action
Can not write file Can't set superposition waveform	The superposition waveform cannot be set because the parameters of the wave type 1 and the wave type 2 are not matched when inputting the wave type 2. For example, [Superposition] is set to [OFF] in the parameters of the cycle monitor.	Configure the correct parameter settings or input the correct data.
Can not read out file	The file to be copied cannot be read.	Check if the copy source device is ready for data reading.
Filename illegal	The file name is invalid.	Check the file name, and then execute the CNC data I/O again.
Program No. duplicate	The GOT tries to copy ALL.ORG to the CNC, but the machining program with the same number already exists in the CNC, so the GOT cannot execute the CNC data I/O.	Delete the machining program in the CNC, and then execute the CNC data I/O again.
Error	Other errors	Turn off the GOT and CNC. Check data in the CF card and the connection status. Then, execute the CNC data I/O again.

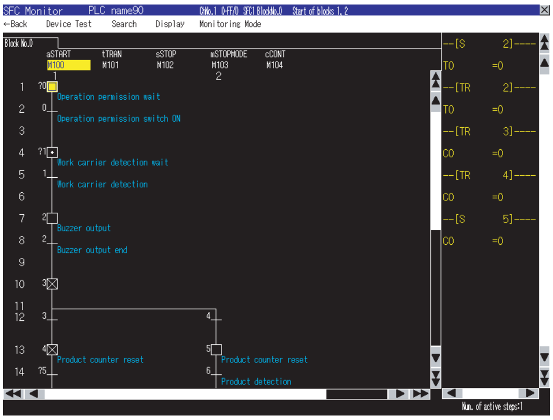
13. SFC MONITOR

13.1 Features

With the SFC monitor function, the GOT can monitor SFC programs of controllers, and changing device values of the programs is available.
The function improves the efficiency in troubleshooting and maintenance of PLC systems with SFC programs.
The following shows features of the SFC monitor function.

1 Displaying SFC programs in SFC diagram format

The GOT can monitor SFC programs of the PLC CPU and display the programs in the SFC diagram format (MELSAP3 or MELSAP-L format).

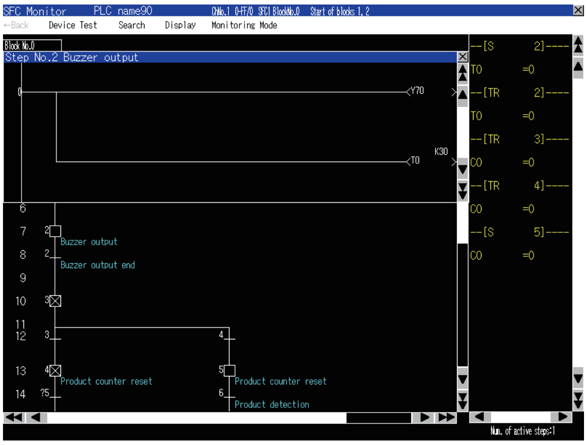


SFC diagram monitor screen

The following screens are displayed with the SFC monitor function.

- PLC read screen (☞ 13.5 How to Operate PLC Read Screen)
- Block list screen (☞ 13.6 How to Operate Block List Screen)
- SFC diagram monitor screen (☞ 13.7 How to Operate SFC Diagram Monitor Screen)

Touching a step or transition condition on the SFC diagram monitor screen displays an enlarged operation output/transition condition sequence program.



2 Switching display formats, device comment display, and languages

The following are available.

- Switching the display formats of device values
- Switching whether to display or hide device comments
- Switching languages for file names of SFC programs, comments, and others

(1) Switching display formats

On the SFC diagram monitor screen, the display formats for the current values of word devices can be switched between decimal and hexadecimal numbers.

(2) Switching device comment display

Whether to display or hide device comments used in SFC programs can be switched.

(3) Switching languages

Block titles, file titles, and comments can be displayed in the language set for the language switching in the GOT utility with comment files created with the SJIS code, KS code, and/or ASCII code.

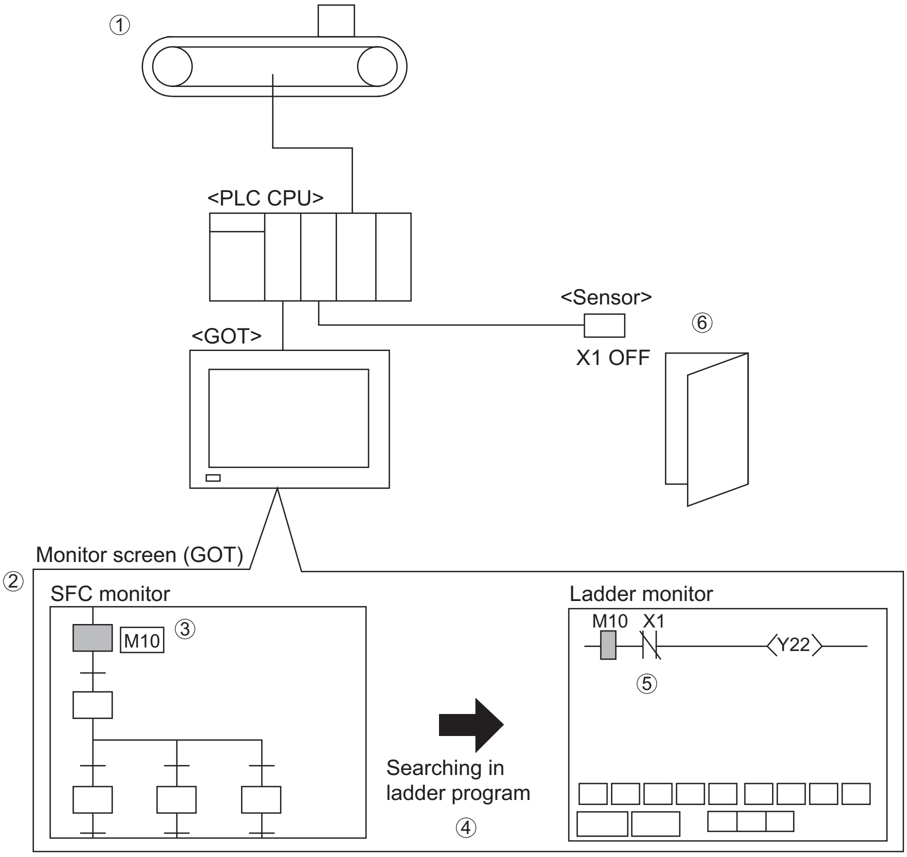
With a CF card storing comment files created with the SJIS code, KS code, and/or ASCII code, comments can be displayed in the language corresponding to any character code in the CF card, regardless of the language set in the GOT utility.

3 Interaction with ladder monitor function

By only selecting a device on the SFC diagram monitor screen and starting the ladder monitor, the GOT can search and display the device in a ladder program.

(☞ 13.7.3 2 Display menu)
The function is useful for searching for a device used within both a SFC program and a ladder program in the ladder program.

Example) When turning on Y22 device with ladder program including interlock circuit



1. Finding that the machine stops
2. Checking an active step with the SFC monitor
3. Checking that the machine operation command (M10) is on
4. Touching M10 and starting the ladder monitor
5. Finding out that Y22 (machine operation) is off because X1 is off
6. Finding out that the machine stops because the door is open (X1 is off)

13.2 Specifications

13.2.1 System configuration

This section describes the system configuration for the SFC monitor function.
For connection type settings, and precautions on the communication unit/cable and connection type, refer to the following manual.

☞ GOT1000 Series Connection Manual

1 Target controller

Controller
QCPU (Q mode)[1]

*1 Excluding the Q00UJCPU, Q00UCPU, Q01UCPU, Q10UD(E)HCPU, and Q20UD(E)HCPU
For creating a multiple CPU system with the Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, and/or Q25HCPU, use CPUs with the function version B or later.

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection form between GOT and controller								
Name	Description	Bus connection	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection[1]	CC-Link IE[2]	CC-Link connection		GOT multidrop connection
								ID[3]	G4[4]	
SFC monitor	Monitors SFC programs.	○[5][6]	○	○	○	○	○	○	○	×

*1 For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, and QJ71BR11) with the function version B or later.
*2 Indicates the CC-Link IE controller network connection.
*3 Indicates CC-Link connection (Intelligent device station).
*4 Indicates CC-Link connection (via G4).
*5 The Q12PRHCPU and Q25PRHCPU are not available.

3 Required extended function OS, option OS, and option function board

The following extended function OS, option OS, and option function board are required.

Category	Option OS	OS memory space (user area)			Option function board	
		GT16		GT15	GT16	GT15
		Built-in flash memory (ROM)	User memory (RAM)			
Extended function OS[*1]	GOT Platform Library	77KB	200KB	100KB	Not required	GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M
Option OS[*1]	SFC Monitor	442KB	2108KB	1373KB		
	GOT Function Expansion Library	4729KB	19381KB	4729KB		

*1 For using the SFC monitor function, a capacity of 6201KB or more is required in the user area of the specified drive for installing the extended function OS and option OS. (For using the GOT with the built-in flash memory of 5MB, set the OS boot drive to [A: Standard CF Card].)
For operating GOT Function Expansion Library (option OS), a capacity of 8192KB is required in the user area of the GOT memory. (A total memory capacity of 14393KB is required for using the SFC monitor function.)
Therefore, the following settings are required depending on the GOT to be used.

GOT	Required setting
GT1575-VN, GT1572-VN, GT1562-VN	• Setting the OS boot drive to [A: Standard CF Card] • Memory expansion (Installing an option function board with add-on memory)
GT15 other than the above	• Memory expansion (Installing an option function board with add-on memory)

For setting the OS boot drive, refer to the following.

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

(1) Extended function OS and option OS

Install the above extended OS and option OS on the GOT.
For how to install the operating systems, refer to the following manual.

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

(2) OS memory space

For installing the extended function OS and option OS, the available space shown in the above table is required in the user area.
For checking the available space in the user area and the data that uses other user areas, refer to the following manual.

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

(3) Option function board

(a) For GT16

No option function board is required.

(b) For GT15

Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.

☞ 1.1.2 Hardware and OS' required for each function

For how to mount an option function board on the GOT, refer to the following manual.

☞ GT15 User's Manual (8.10 Option Function Board)

4 Required hardware

The following hardware is required.

Hardware
CF card

13.2.2 Devices and range that can be monitored

(○: Possible, ×: Impossible)

Device	Device range	Program display	Device monitor display	Search operation
Input	X0 to 1FFF, DX0 to FFF	○	○	○
Output	Y0 to 1FFF, DY0 to FFF	○	○	○
Internal relay[*1]	M0 to 61439	○	○	○
Latch relay	L0 to 8191	○	○	○
Link relay[*2]	B0 to FFFF	○	○	○
Timer	T0 to 2047	○	○	○
Retentive timer	ST0 to 2047	○	○	○
Counter	C0 to 1023	○	○	○
Data register	D0 to 12287	○	○	○
Link register	W0 to 1FFF	○	○	○
Annunciator	F0 to 2047	○	○	○
Edge relay	V0 to 2047	○	×	○
File register[*3]	R0 to 32767	○	○	○
	ZR0 to 32767	○	○	○
	ZR32768 to 4184063	○	○	×
Extended data register	D0 to 32767	○	○	○
	D32768 to 4212223	○	○	×
Extension file register	W0 to 7FFF	○	○	○
	W8000 to 4045FF	○	○	×
Link special relay	SB0 to 7FF	○	○	○
Link special register	SW0 to 7FF	○	○	○
Step relay	S0 to 8191, BL □ ¥S □	○	×	○
Index register[*4]	Z0 to 19	○ [*5]	○	○
Special relay	SM0 to 2047	○	○	○
Special register	SD0 to 2047	○	○	○
Function input	FX0 to F	○	×	○
Function output	FY0 to F	○	×	○
Function register	FD0 to 4	○	×	○
Link direct device	J □ □ ¥ □ □	○	×	×
Module access device	U □ □ ¥ □ □ U3En □ □ ¥ □ □	○	×	×
Nesting	N0 to 14	×	×	×
Pointer	P0 to 4095	×	×	×
Interrupt pointer	I0 to 255	×	×	×
SFC block device	BL0 to 319	○	×	○
SFC transition device	TR0 to 511, BL □ ¥TR □	○	×	○
Network No. specification device	J0 to 255	○	×	×
I/O No. specification device	U0 to 1FF 3E0 to 3E3	○	×	×
Macro instruction argument device	VD0 to	×	×	×

[*1] M8192 to 61439 are applicable to Universal model QCPU only.
[*2] B2000 to FFFF are applicable to Universal model QCPU only.
[*3] ZR1042432 to 4184063 are applicable to Universal model QCPU only.
[*4] Z16 to 19 are applicable to Universal model QCPU only.
[*5] When a ZZ device is used, "ZZ" can be displayed.

13.2.3 Access range

The access range is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

13.2.4 Precautions

(1) Inapplicable GOT
The SFC monitor cannot be used with the GT1555-Q and GT1550-Q.

(2) Precautions for operations during SFC monitor startup
Do not operate the following with the GOT during the SFC monitor startup.
Doing so may delete stored data and cause the SFC monitor to operate incorrectly.

- Turning on or off the CF card access switch
- Inserting or removing a CF card

(3) Precautions for devices

(a) The GOT cannot search for indexing devices.

(b) The GOT cannot monitor local devices.

(4) Precautions for setting [Locus] for line graphs
The SFC monitor function is not available when [Locus] is set for line graphs.
For using the SFC monitor function, do not set [Locus] for line graphs.

(5) Precautions for file names (program names) of comment files to be read
Only files with the file names (program names) with one-byte alphanumeric characters are applicable to the GOT.
When project data are created on GX Developer, use only one-byte alphanumeric characters for file names (program names).

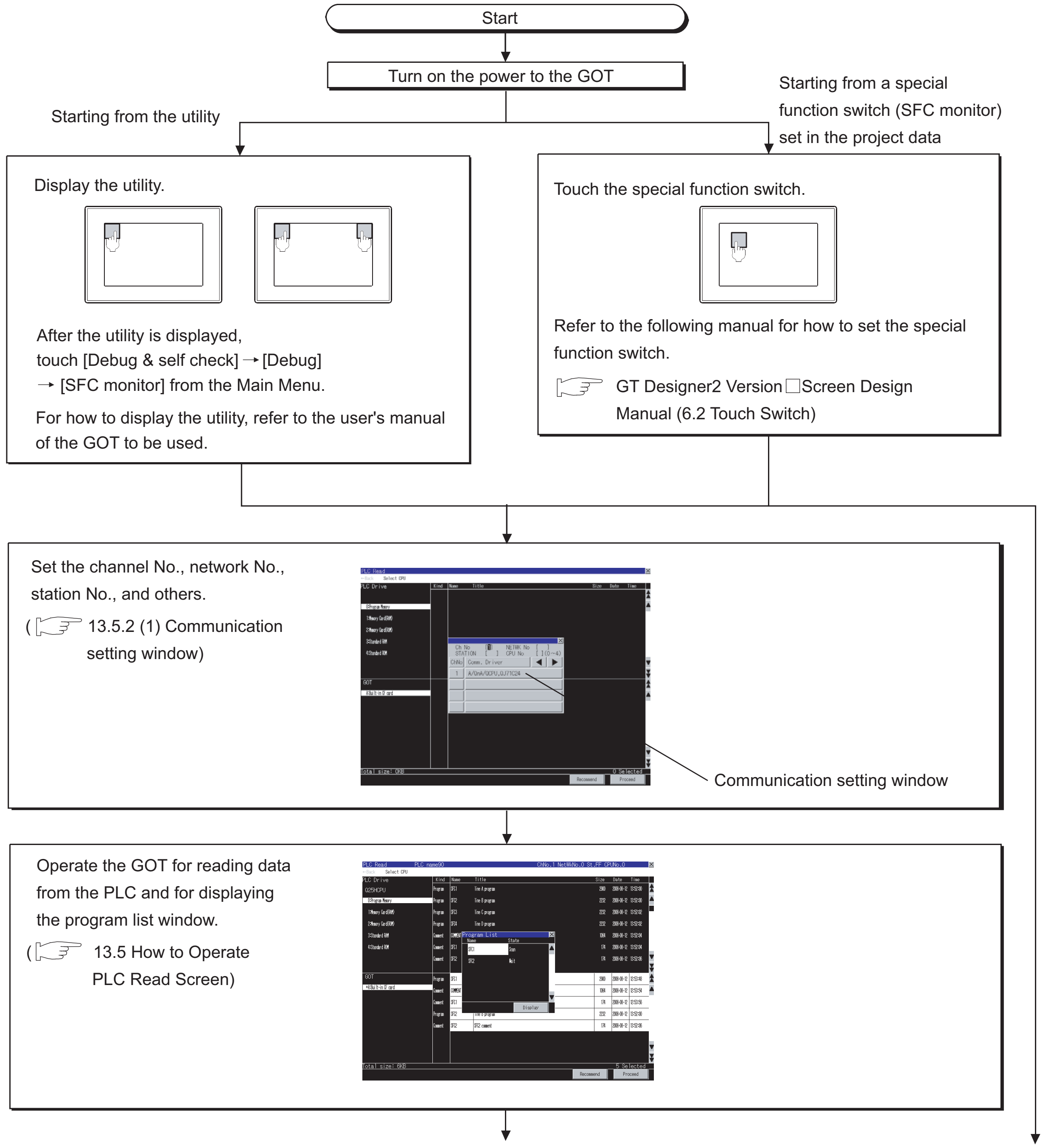
13.3 Display Operation

This section describes procedures for displaying the SFC monitor operation screens after turing on the GOT.

13.3.1 Outline before starting

1 Operations before displaying

The following describes the outline for displaying the SFC monitor operation screens after installing GOT Platform Library (extended function OS), SFC Monitor (option OS), and GOT Function Expansion Library (option OS) on the GOT.



Start
Turn on the power to the GOT
Starting from the utility
Starting from a special function switch (SFC monitor) set in the project data

Display the utility.

After the utility is displayed, touch [Debug & self check] → [Debug] → [SFC monitor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Touch the special function switch.

Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version□Screen Design Manual (6.2 Touch Switch)

Set the channel No., network No., station No., and others.

(☞ 13.5.2 (1) Communication setting window)

Operate the GOT for reading data from the PLC and for displaying the program list window.

(☞ 13.5 How to Operate PLC Read Screen)

(Continued to next page)

(Continued to next page)

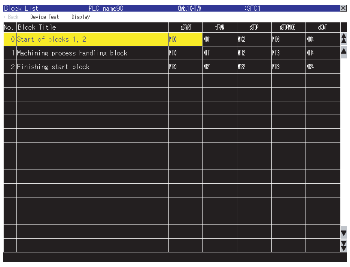
From previous page

Specifying [Block List] for [Display Screen] in the SFC monitor detail settings of the special function switch

From previous page

Select a program from the program list to display the block list screen.

(13.6 How to Operate Block List Screen)

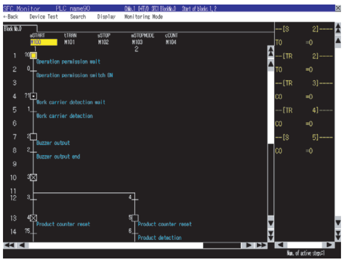


No.	Block Title	aSTART	tTRAN	sSTOP	mSTOPMODE	cCONT
0	Start of blocks 1, 2	M100	M101	M102	M103	M104
1	Machining process handling block	M110	M111	M112	M113	M114
2	Finishing start block	M120	M121	M122	M123	M124

Specifying [SFC Diagram] for [Display Screen] in the SFC monitor detail settings of the special function switch

Select a block on the block list screen to display the SFC diagram monitor screen.

(13.7 How to Operate SFC Diagram Monitor Screen)



End

Point

(1) How to display the utility
For how to display the utility, refer to the following.

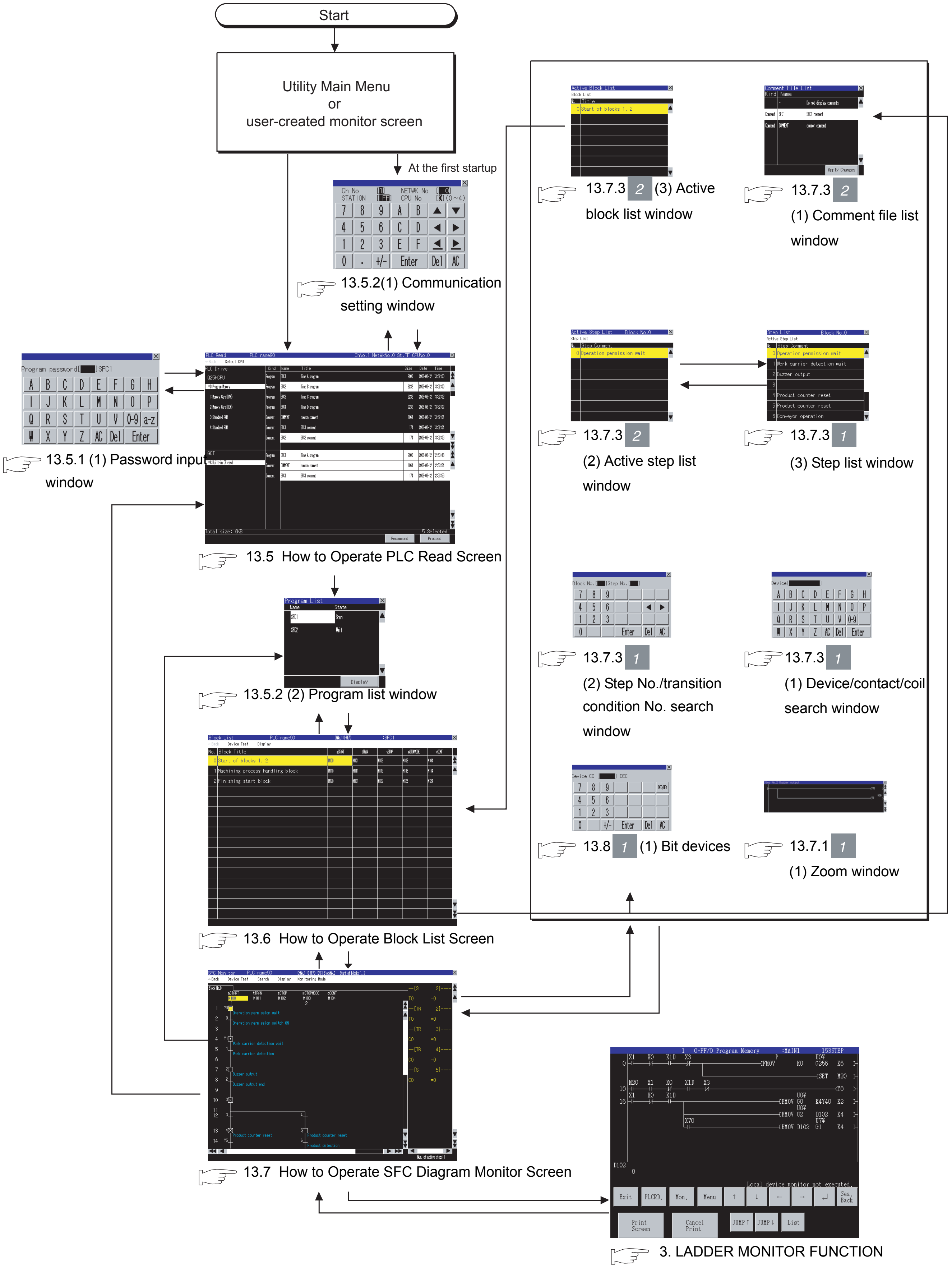
GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Reading data from PLC when reclosing GOT
Reading data from the PLC is not required when reclosing the GOT power, because SFC programs and comment files are stored in a CF card for the SFC monitor function.
(13.3.2 Setting SFC data storage location)

(3) When GOT has no project data
The SFC monitor can be started with the utility even though the GOT has no project data.

2 Changing screens

The following describes how to change the screen.


Start
Utility Main Menu
or
user-created monitor screen
At the first startup
13.5.2(1) Communication setting window
13.5.1 (1) Password input window
13.5 How to Operate PLC Read Screen
13.5.2 (2) Program list window
13.6 How to Operate Block List Screen
13.7 How to Operate SFC Diagram Monitor Screen
13.7.3 2 (3) Active block list window
13.7.3 2 (1) Comment file list window
13.7.3 2 (2) Active step list window
13.7.3 1 (3) Step list window
13.7.3 1 (2) Step No./transition condition No. search window
13.7.3 1 (1) Device/contact/coil search window
13.8 1 (1) Bit devices
13.7.1 1 (1) Zoom window
3. LADDER MONITOR FUNCTION

13.3.2 Setting SFC data storage location

1 Setting SFC data storage location

The selected drive of the GOT (CF card) can store up to 512 files of SFC data (SFC programs, device comments) used for the SFC monitor function.

SFC data are stored in the storage location that stores ladder data for the ladder monitor function.
Only the A drive (standard CF card) or B drive (extended memory card) is available for storing SFC data.
For setting the storage location for ladder data, refer to the following manuals.
When setting with GOT utility

☞ GT16 User's Manual (Basic Utility) (Section 4.2.1 Q/L/QnA ladder monitor setting)
GT15 User's Manual (Section 11.7 Q/QnQ Ladder Monitor)

When setting with GT Designer2

☞ GT Designer2 Version □ Screen Design Manual (Section 3.8 Setting of GOT Display and Operations (GOT Setup))

13.3.3 Reading comment files from CF card

The SFC monitor function uses comment files stored in a CF card installed in the GOT.

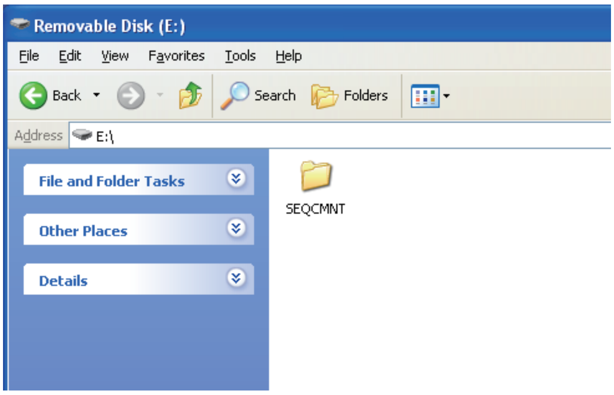
1 Procedure for using comment files stored in CF cards

The following shows the procedure for using a comment file stored in a CF card.

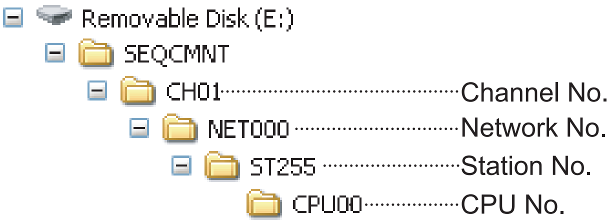
(1) When displaying comments in language set for language switching of GOT utility
Store comment files in a CF card on the PLC read screen.
For how to store comment files in a CF card on the PLC read screen, refer to the following.

☞ 13.5 How to Operate PLC Read Screen

(2) When displaying comments in any language regardless of language set for language switching of GOT utility



① Create a SEQCMNT folder in a CF card. When the SEQCMNT folder already exists, creating a new SEQCMNT folder is not required.



② In the SEQCMNT folder, create folders for CH No., network No., station No., and CPU No. of the monitored controller with a hierarchy as shown left.

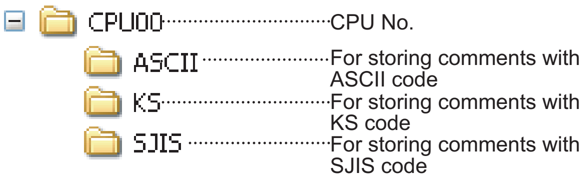
Item	Folder name
CH No.	CH**
Network No.	NET***
Station No.	ST***
CPU No.	CPU**

Assign numbers to "*" marks.
(When the CH No. is 1, the folder name is CH01. When the monitor target is the host station, the folder name is ST255.)

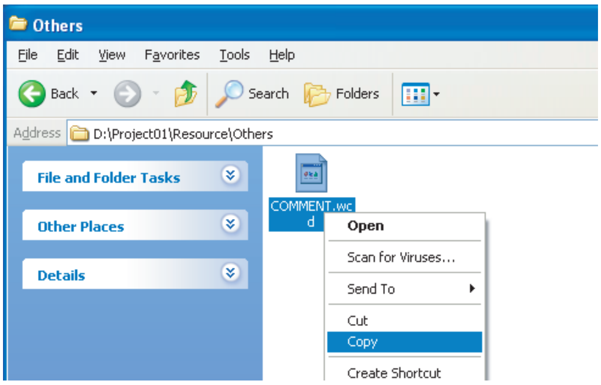
(Continued to next page)

③ In the CPU No. folder, create folders for storing comment files by character code.

Item	Folder name
Folder for SJIS code	SJIS
Folder for KS code	KS
Folder for ASCII code	ASCII


CPU00
CPU No.
ASCII
For storing comments with ASCII code
KS
For storing comments with KS code
SJIS
For storing comments with SJIS code

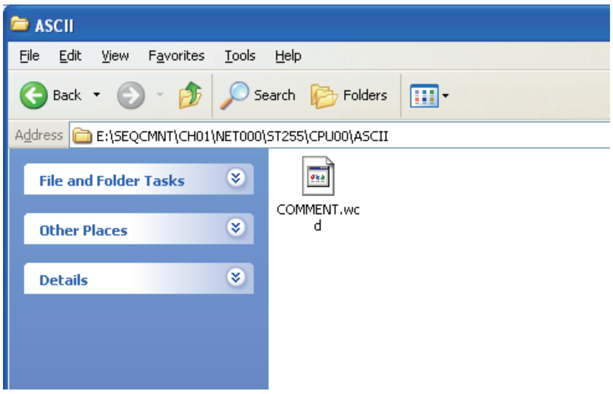
④ Copy a comment file (.wcd) from the project data of GX Developer.



Address D:\Project01\Resource\Others

⑤ Store the copied comment files in the folders for each character code in the CF card.

Comment character code	Storage folder name
SJIS code	SJIS
KS code	KS
ASCII code	ASCII



Address E:\SEQCMNT\CH01\NET000\ST255\CPU00\ASCII

(Example: Storing comment files with ASCII code in the ASCII folder.)

⑥ Install the CF card with the comment file on the GOT.

⑦ Switch comment files on the SFC diagram monitor screen for displaying the comments in an appropriate language.

13.4 Setting Display Format

The display format of word device values displayed on the SFC diagram monitor screen, language, the display mode of SFC programs, and others can be set.

13.4.1 Switching languages of SFC programs

Languages of comments to be displayed on the SFC monitor screens can be switched during monitoring. For switching languages, comment files in the language to be displayed must be created in advance.
(☞ 13.3.3 Reading comment files from CF card)
The following shows the relations between the language selected in the GOT utility and comment files with each character code.

Language	Comment file
Japanese	Comment files with SJIS code
Korean	Comment files with KS code
Other than the above	Comment files with ASCII code

13.4.2 Setting display mode of SFC programs

The display mode of SFC programs on the SFC diagram monitor screen can be set.
(☞ 13.7.3 2 Display menu)
The MELSAP-L program display mode is available regardless of the read SFC program format (MELSAP3, MELSAP-L).
In the MELSAP-L program display mode, operation output/transition condition sequence programs are displayed as [?????] when the GOT displays a SFC program with the MELSAP3 format.
The following shows how the GOT displays sequence programs with and without the MELSAP-L program display mode.

Item	With MELSAP-L program display mode	Without MELSAP-L program display mode
Displayed operation output/transition condition sequence program	The GOT displays a sequence program on the SFC diagram monitor screen.	The GOT displays a sequence program in the zoom window by touching a step or transition condition on the SFC diagram monitor screen.

13.4.3 Setting zoom comment display mode

Whether to display or hide comments and notes in the zoom window can be set.
(☞ 13.7.3 3 Monitoring Mode menu)

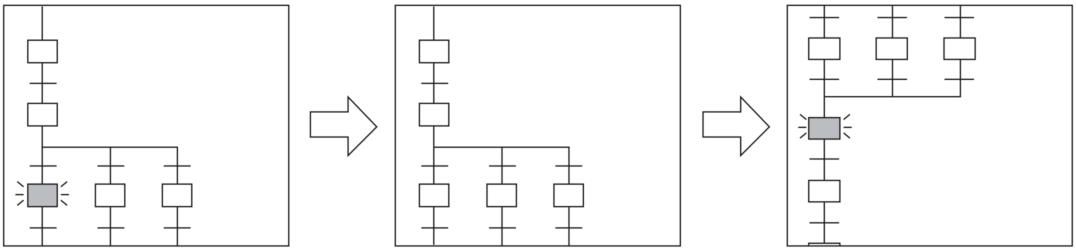
13.4.4 Switching display formats between decimal and hexadecimal numbers

The display formats of word device values on the SFC diagram monitor screen can be switched between decimal and hexadecimal numbers.
(☞ 13.7.3 2 Display menu)

13.4.5 Setting automatic scroll mode

The automatic scroll can be switched between enabled or disabled states.
In the automatic scroll mode, the GOT displays active steps on the SFC diagram monitor screen by automatically scrolling the screen when all the following conditions are satisfied.

- No active step is displayed on the SFC diagram monitor screen.
- The displayed block has an active step.



The step status becomes inactive.

An active step in the block is displayed by automatically scrolling the screen.

For setting the automatic scroll mode, refer to the following.

☞ 13.7.3 2 Display menu

For the SFC diagram monitor screen, refer to the following.

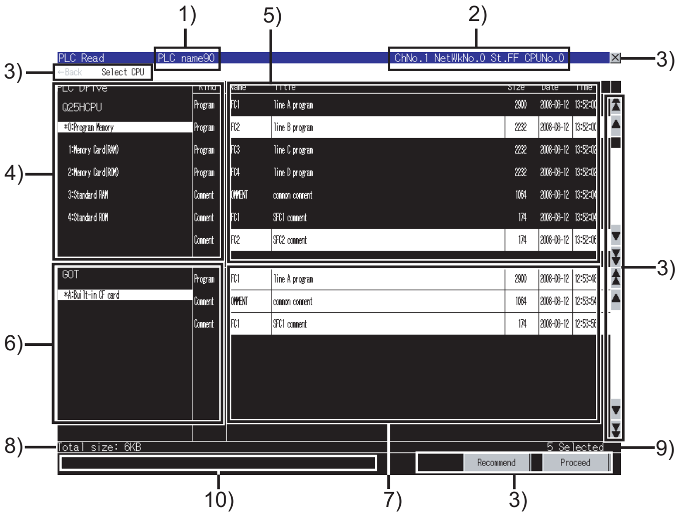
☞ 13.7 How to Operate SFC Diagram Monitor Screen

13.5 How to Operate PLC Read Screen

On the PLC read screen, the GOT reads SFC programs and comment files used for the SFC monitor function from the PLC.
The following describes how to operate the PLC read screen.

13.5.1 Displayed contents

The following describes the configuration of the PLC read screen displayed after the SFC monitor starts and key functions on the screen.



Kind	Name	Title	Size	Date	Time
Program	FC1	line A program	2900	2008-08-12	13:52:00
Program	FC2	line B program	2232	2008-08-12	13:52:00
Program	FC3	line C program	2232	2008-08-12	13:52:02
Program	FC4	line D program	2232	2008-08-12	13:52:02
Comment	OMMENT	common comment	1064	2008-08-12	13:52:04
Comment	FC1	SFC1 comment	174	2008-08-12	13:52:04
Comment	FC2	SFC2 comment	174	2008-08-12	13:52:06

Program	FC1	line A program	2900	2008-08-12	12:53:48
Comment	OMMENT	common comment	1064	2008-08-12	12:53:54
Comment	FC1	SFC1 comment	174	2008-08-12	12:53:56

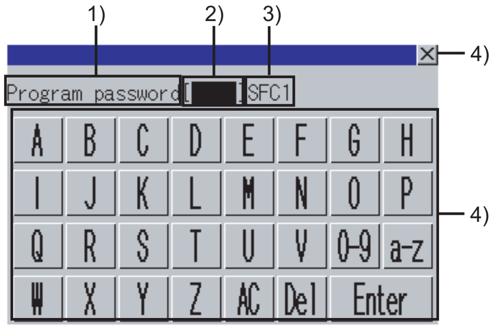
No.	Item	Description
1)	PLC name	Displays the label set in the PLC name setting for the target PLC CPU.
2)	Target controller	Displays CH No., network No., station No., and CPU No. of the target PLC CPU.
3)	Keys	Keys for operations on the PLC read screen shown in section 13.5.2. (Touch input)
4)	Target drive list (target controller)	Displays the target PLC CPU model and the drives in a list. Selecting a drive displays files within the drive in the file list (target controller). For the drive that stores files selected in the file list (target controller), [*] is displayed to the left of the drive name.
5)	File list (target controller)	Displays the program types, file names, titles, sizes, dates, and times of all the files within the drive selected in the target drive list (target controller). (The date and time show those of updated files.) A file to be read can be selected from the file list. (The selected file is highlighted.) For program files, only SFC program files in the program memory can be selected. For selecting the file name selected in the file list (GOT), the file selection in the file list (GOT) is canceled. When a password is set for the selected file, the password input window appears. (☞ This section (1) Password input window)

(Continued to next page)

No.	Item	Description
6)	Target drive list (GOT)	Displays the drive set for [Data save location] in the MELSEC-Q/QnA ladder monitor settings. (For the SFC monitor function, only the A drive (standard CF card) or B drive (extended memory card) is available.) For the drive that stores files displayed in the file list (GOT), [*] is displayed to the left of the drive name.
7)	File list (GOT)	Displays the program types, file names, titles, sizes, dates, and times of all the files within the drive selected in the target drive list (GOT). (The date and time show those of updated files.) A file to be read can be selected from the file list. (The selected file is highlighted.) For selecting the file name selected in the file list (target controller), the file selection in the file list (target controller) is canceled.
8)	Total file size	Displays the total data size of files selected in the file list (target controller) and file list (GOT).
9)	Number of selected files	Displays the total number of files selected in the file list (target controller) and file list (GOT).
10)	Message display area	Displays error messages and others.

(1) Password input window

(a) Displayed screen



The following table shows the displayed contents.

No.	Item	Description
1)	Password type	Displays the type of the password to be input. (Program password/Comment password)
2)	Password input area	Set the password.
3)	File name	Displays the file name.
4)	Keys	Keys for operations in the password input window shown in (b) (Touch input)

(b) Key functions

Key	Function
☒	Closes the password input window and cancels the password input operation.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet (uppercase).
a-z	Switches the key type to the alphabet (lowercase).
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
Enter	Verifies the password set in the password input area. When the password verification for the first file is successful, the password verification for the other files is automatically executed with the same password.

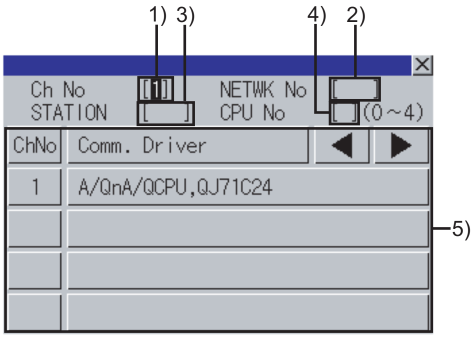
13.5.2 Key functions

The following shows the functions of the keys used for operating the PLC read screen.

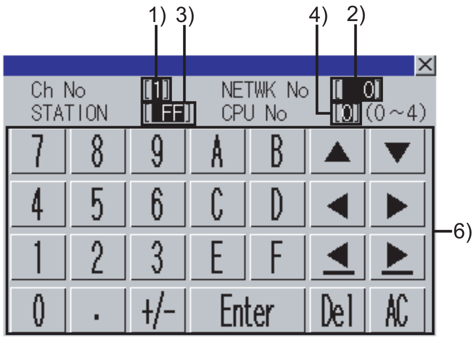
Key	Function
←Back	Returns the screen to the last screen that is displayed right before the PLC read screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Select CPU	Displays the communication setting window. (☞ 13.5.2 (1) Communication setting window)
☒	Exits the SFC monitor and returns the screen to the SFC monitor startup screen.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.
Recommend	Available only when [0:Program Memory] is selected from the target drive list (target controller). Touching the key selects all the SFC program files, common comment files, and comment files for the selected SFC program files in the file list (target controller). When files with the same name are displayed in the file list (target controller) and file list (GOT), touching the key selects a file as shown below. • For SFC program files When the updated dates and times differ between the files, touching the key selects the file in the file list (target controller). When the updated dates and times are the same between the files, touching the key selects the file in the file list (GOT). • For comment files When the updated dates and times differ between the files, touching the key selects the latest file. When the updated dates and times are the same between the files, touching the key selects the file in the file list (GOT).
Proceed	Writes the file selected in the file list (target controller) into the CF card displayed in the target drive list (GOT). The file written into the CF card on the PLC read screen is stored in the SEQDAT folder. After writing, among files other than comment files in the CF card, files that are not selected in the file list (GOT) are deleted. Then, the program list window appears. ☞ This section (2) Program list window

(1) Communication setting window

(a) Displayed screen



(When the CH No. is input)



(When the network No., station No., and CPU No. are input)

The following table shows the displayed contents.

No.	Item	Description
1)	CH No. input area	Set the CH No. for the target controller.
2)	Network No. input area	Set the network No. for the target controller.
3)	Station No. input area	Set the station No. of the target controller. When the station No. is set to the host station (FF), set the network No. to 0.
4)	CPU No. input area	Set the CPU No.
5)	CH No. selection key	Select a CH No.
6)	Keys	Keys for operations in the communication setting window shown in (b). (Touch input)

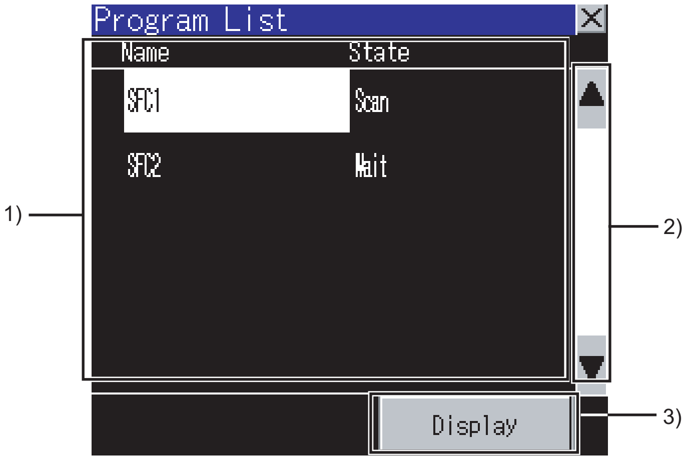
(b) Key functions

Key	Function
☒	Closes the communication setting window. When any of the CH No., network No., station No., and CPU No. is not input and the monitor target is not set, the communication setting window does not close.
◀ ▶	Moves the cursor among the input areas.
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
Enter	Moves the cursor when the cursor is in the CH No. input area, network No. input area, or station No. input area. When the cursor is in the CPU No. input area and settings for the CH No., network No., and station No. are completed, the communication setting window closes and the PLC read screen appears.

(2) Program list window

The GOT displays the read SFC programs in a list.

(a) Displayed screen



Program List

Name	State
SFC1	Scan
SFC2	Wait

The following table shows the displayed contents.

No.	Item	Description
1)	SFC program file list	Displays the file names and execution statuses of the read SFC programs. The execution statuses show execution types set for the programs. A touched SFC program file is highlighted.
2)	Keys	Keys for operations in the program list window shown in (b). (Touch input)

(b) Key functions

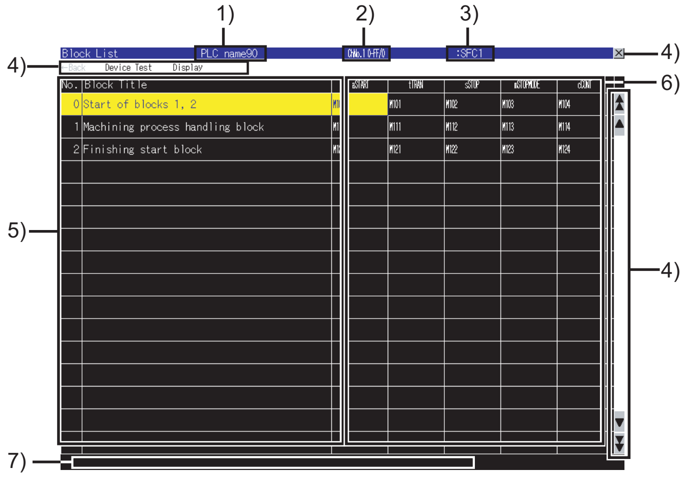
Key	Function
▲ ▼	Scrolls the display area up and down by one line.
Display	Displays the blocks of the SFC program file selected in the SFC program file list on the block list screen. (☞ 13.6 How to Operate Block List Screen)

13.6 How to Operate Block List Screen

On the block list screen, the GOT displays blocks within the read SFC program in a list.
The following describes how to operate the block list screen.

13.6.1 Displayed contents

The following describes the configuration of the block list screen, menus and key functions on the screen.



No.	Block Title	aSTART	tTRAN	sSTOP	mSTOPMODE	cCONT
0	Start of blocks 1, 2		M101	M102	M103	M104
1	Machining process handling block		M111	M112	M113	M114
2	Finishing start block		M121	M122	M123	M124

No.	Item	Description
1)	PLC name	Displays the label set in the PLC name setting for the target PLC CPU.
2)	Target controller	Displays the CH No., network No., station No., and CPU No of the target PLC CPU as shown below. • CH No. network No.-station No./CPU No.
3)	Program name	Displays the file name (without the extension) of the displayed program.
4)	Keys	Keys for operations on the block list screen shown in section 13.6.2. (Touch input)
5)	Block list	Displays the block numbers and block titles in the displayed program. The block numbers are not displayed with no block. Active blocks are highlighted. Selecting a block title displays the block data on the SFC diagram monitor screen. (☞ 13.7 How to Operate SFC Diagram Monitor Screen)
6)	Block information list	Displays block information for each block. When devices are set for the block information, the set devices are displayed in the corresponding cells.
7)	Message display area	Displays error messages and others.

13.6.2 Key functions

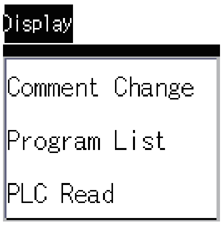
The following shows the functions of the keys used for operating the block list screen.

Key	Function
←Back	Returns the screen to the last screen that is displayed right before the block list screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Device Test	Sets the device test mode. Touching the key in the device test mode cancels the device test mode. (☞ 13.8 Test Operation)
Display	Displays menus used for operations on the block list screen. (☞ 13.6.3 1 Display menu)
☒	Exits the SFC monitor and returns the screen to the SFC monitor startup screen.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.

13.6.3 Menus

The following shows operations for the menus displayed on the block list screen.

1 Display menu



Key	Function	Reference section
Comment Change	Displays the comment file list window.	13.7.3 2 (1)
Program List	Displays the program list window.	13.5.2 (2)
PLC Read	Displays the PLC read screen.	13.5

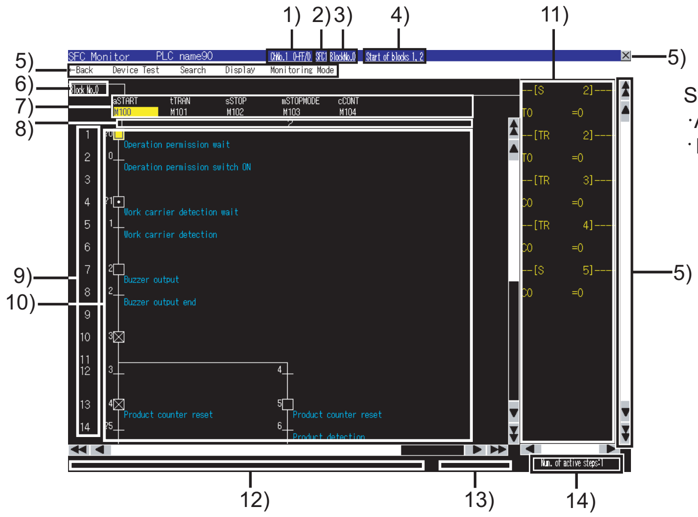
13.7 How to Operate SFC Diagram Monitor Screen

On the SFC diagram monitor screen, the GOT monitors and displays data of the block selected on the block list screen in the SFC diagram.
The following describes how to operate the SFC diagram monitor screen.

13.7.1 Displayed contents

1 SFC diagram monitor screen

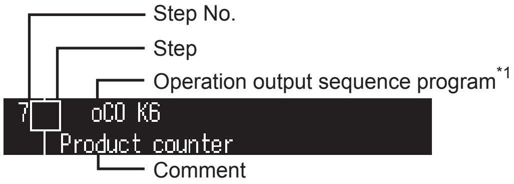
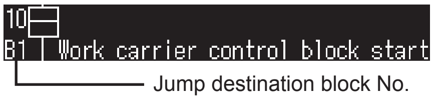
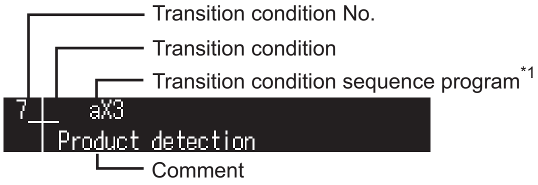
The following describes the configuration of the SFC diagram monitor screen, menus and key functions on the screen.



Step status display
·Active : 🟨
·Inactive : ■

No.	Item	Description
1)	Target controller	Displays the CH No., network No., station No., and CPU No. of the target PLC CPU as shown below. • CH No. network No.-station No./CPU No.
2)	Program name	Displays the file name of the displayed program.
3)	Block No.	Displays the block No. of the displayed block.
4)	Block title	Displays the block title of the displayed block.
5)	Keys	Keys for operations on the SFC diagram monitor screen shown in section 13.7.2. (Touch input)
6)	Block switching tab	Displays the block No. of the block displayed in the SFC diagram display area. Touching a tab displays the corresponding block data in the SFC diagram display area. (Tabs displayed to the right of the touched tab are removed.)
7)	Block information display area	Displays the block information of the displayed block. When the displayed block is in any status of the block information, the corresponding device is highlighted. When the block information is set, the set devices are displayed.
8)	Column No.	Displays the column numbers.
9)	Row No.	Displays the row numbers.

(Continued to next page)

No.	Item	Description
10)	SFC diagram display area	Displays a SFC program in the SFC diagram format. • Step display  Step No. Step Operation output sequence program*1 7 oC0 K6 Product counter Comment  10 B1 Work carrier control block start Jump destination block No. Touching a step displays the zoom window. (☞ This section (1) Zoom window) Touching a step with a jump destination block No. displays a block switching tab, and then the jump destination block data is displayed in the SFC diagram display area. • Transition condition display  Transition condition No. Transition condition Transition condition sequence program*1 7 aX3 Product detection Comment Touching a transition condition displays the zoom window. (☞ This section (1) Zoom window)
11)	Device current value display area	Displays the current values of word devices displayed in the SFC diagram display area.
12)	Message display area	Displays error messages and others.
13)	Automatic scroll status display area	Displays [Scrolling automatically] with the automatic scroll mode. Nothing is displayed without the automatic scroll mode. (☞ 13.4.5 Setting automatic scroll mode)
14)	Number of active steps	Displays the number of active steps in the displayed block. Touching the item displays the active step list window. (☞ 13.7.3 2 (2) Active step list window)

[1] Operation output/transition condition sequence programs are displayed in the MELSAP-L program display mode only.
(☞ 13.7.3 2 Display menu)

Point

Displayed contents of SFC diagram monitor screen

(1) Display mode at first display of SFC diagram monitor screen
The display mode state at the first display of the SFC diagram monitor screen differs depending on the SFC program format.

SFC program format	State at the first display
MELSAP3 format	Without MELSAP-L program display mode
MELSAP-L format	With MELSAP-L program display mode

For the display mode of SFC programs, refer to the following.

☞ 13.4.2 Setting display mode of SFC programs

(2) Comment display at first display of SFC diagram monitor screen

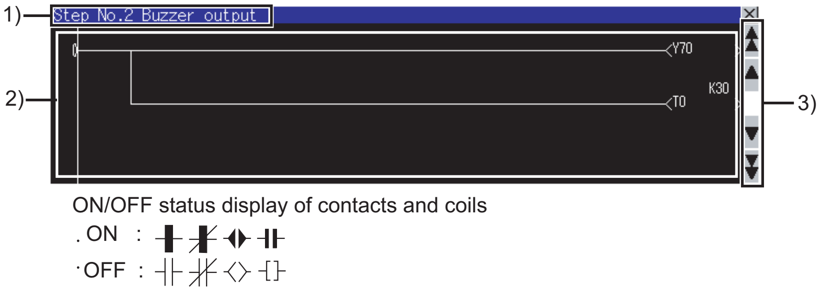
The following shows the order of comment files to be used at the first display of the SFC diagram monitor screen after reading data from the PLC. (When the CF card has no comment file, no comment is displayed.)

Priority order	Comment files used for SFC diagram monitor screen
1	Comment files by program within the SEQCMNT folder in the CF card
2	Common comment files within the SEQCMNT folder in the CF card
3	Comment files by program within the SEQDAT folder in the CF card
4	Common comment files within the SEQDAT folder in the CF card

(1) Zoom window

The GOT can display operation output/transition condition sequence programs in the ladder format.

(a) Displayed screen



ON/OFF status display of contacts and coils

. ON :

·OFF :

The following table shows the displayed contents.

No.	Item	Description
1)	Type	• For displaying operation output sequence program The step number and step comment are displayed. • For displaying transition condition sequence program The transition condition number and transition condition comment are displayed.
2)	Ladder program display area	Displays an operation output/transition condition sequence program. Comments and notes are displayed in the zoom comment display mode. (☞ 13.7.3 2 Display menu)
3)	Keys	Keys for operations in the zoom window shown in (b). (Touch input)

(b) Key functions

Key	Function
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.

13.7.2 Key functions

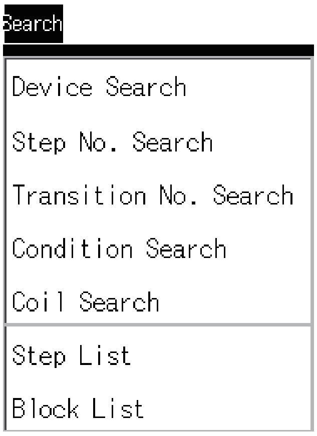
The following shows the functions of keys used for operating the SFC diagram monitor screen.

Key	Function
←Back	Returns the screen to the last screen that is displayed right before the SFC diagram monitor screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Device Test	Sets the device test mode. Touching the key in the device test mode cancels the device test mode. (☞ 13.8 Test Operation)
Search	Displays menus used for operations on the SFC diagram monitor screen. (☞ 13.7.3 1 Search menu)
Display	Displays menus used for operations on the SFC diagram monitor screen. (☞ 13.7.3 2 Display menu)
Monitoring Mode	Displays menus used for operations on the SFC diagram monitor screen. (☞ 13.7.3 3 Monitoring Mode menu)
☒	Exits the SFC monitor and returns the screen to the SFC monitor startup screen.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.
◀ ▶	Scrolls the display area right and left by one column.
⏪ ⏩	Scrolls the display area right and left by one page.

13.7.3 Menus

The following shows operations for the menus displayed on the SFC diagram monitor screen.

1 Search menu

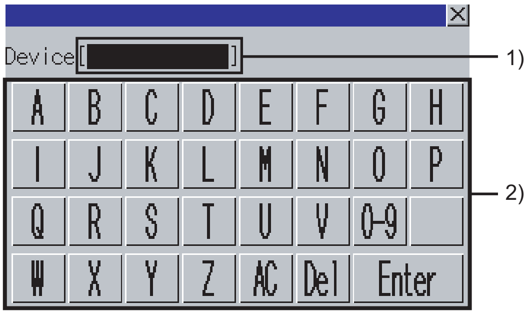


Key	Function	Reference section
Device Search	Displays the device/contact/coil search window.	This section 1 (1)
Step No. Search	Displays the step No./transition condition No. search window.	This section 1 (2)
Transition No. Search	Displays the step No./transition condition No. search window.	This section 1 (2)
Condition Search	Displays the device/contact/coil search window.	This section 1 (1)
Coil Search	Displays the device/contact/coil search window.	This section 1 (1)
Step List	Displays the step list window.	This section 1 (3)
Block List	Displays the block list screen.	13.6

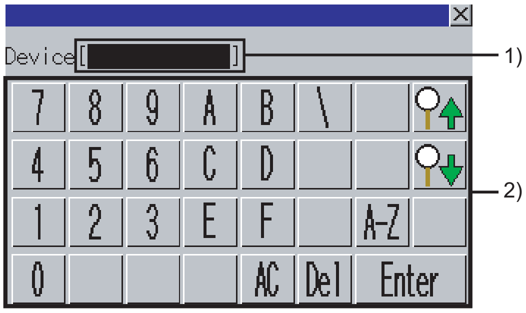
(1) Device/contact/coil search window

The GOT can search for devices in a SFC program.

(a) Displayed screen



(For alphabet input)



(For numerical input)

The following table shows the displayed contents.

No.	Item	Description
1)	Device input area	Set a device to be searched.
2)	Keys	Keys for operations in the device/contact/coil search window shown in (b) (Touch input)

(b) Key functions

Key	Function
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet.
🔍↑	Searches for the input device in the upward direction. When multiple blocks are set, the GOT searches for the device in descending order of the block No. When the device is found without the MELSAP-L program display mode, the GOT displays an operation output/transition condition sequence program corresponding to the step or transition condition with the device in the zoom window.
🔍↓	Search for the input device in the downward direction. When multiple blocks are set, the GOT searches for the device in ascending order of the block No. When the device is found without the MELSAP-L program display mode, the GOT displays an operation output/transition condition sequence program corresponding to the step or transition condition with the device in the zoom window.
Enter	

Remark

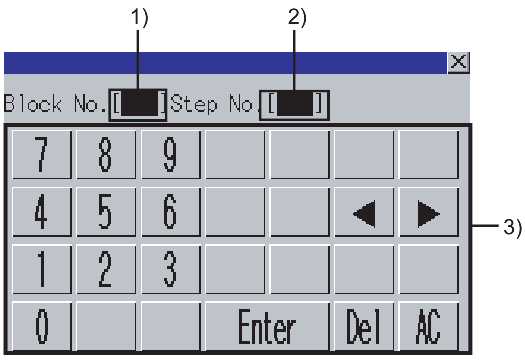
Precautions for device/contact/coil search window

Searching for any bits in word devices is not available.
Specify word devices for searching for any bits.

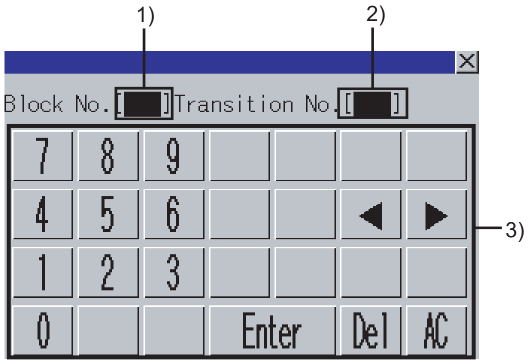
(2) Step No./transition condition No. search window

The GOT can search for steps and transition conditions in a block.

(a) Displayed screen



(Step No. search window)



(Transition condition No. search window)

The following table shows the displayed contents.

No.	Item	Description
1)	Block No. input area	Set the block No. of the block to be searched. The GOT searches for a step or transition condition in the set block.
2)	Step No./transition condition No. input area	Set the step No. or transition condition No. of the step or transition condition to be searched.
3)	Keys	Keys for operations in the step No./transition condition No. search window shown in (b) (Touch input)

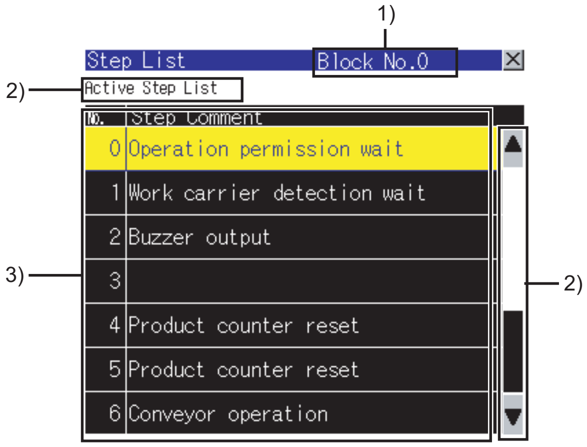
(b) Key functions

Key	Function
◀ ▶	Moves the cursor among the input areas.
Enter	• When the cursor is in the block No. input area Moves the cursor to the step No./transition condition No. input area. • When the cursor is in the step No./transition condition No. input area Searches for a step or transition condition in the set block. When the searched step or transition condition is found, the step No./transition condition No. search window closes and the GOT displays data of the step or transition condition on the SFC diagram monitor screen. (The step or transition condition is highlighted.)
Del	Deletes an input value or character.
AC	Deletes all the input values and characters.

(3) Step list window

The GOT displays steps in a block.

(a) Displayed screen



No.	Step Comment
0	Operation permission wait
1	Work carrier detection wait
2	Buzzer output
3	
4	Product counter reset
5	Product counter reset
6	Conveyor operation

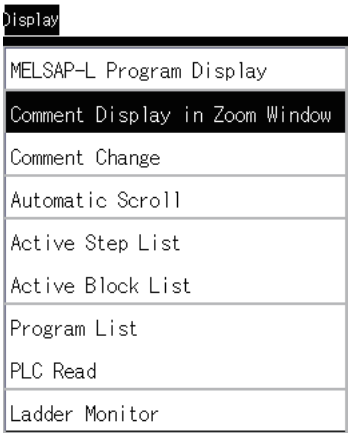
The following table shows the displayed contents.

No.	Item	Description
1)	Block No.	Displays the block No. of the displayed block.
2)	Keys	Keys for operations in the step list window shown in (b) (Touch input)
3)	Step list	Displays the step numbers and step comments of the steps in the displayed block. Selecting a step searches for the step, and the GOT displays the step data on the SFC diagram monitor screen. (Active steps are highlighted.)

(b) Key functions

Key	Function
Active Step List	Displays the active step list window. (☞ This section 2 (2) Active step list window)
▲ ▼	Scrolls the display area up and down by one line.

2 Display menu

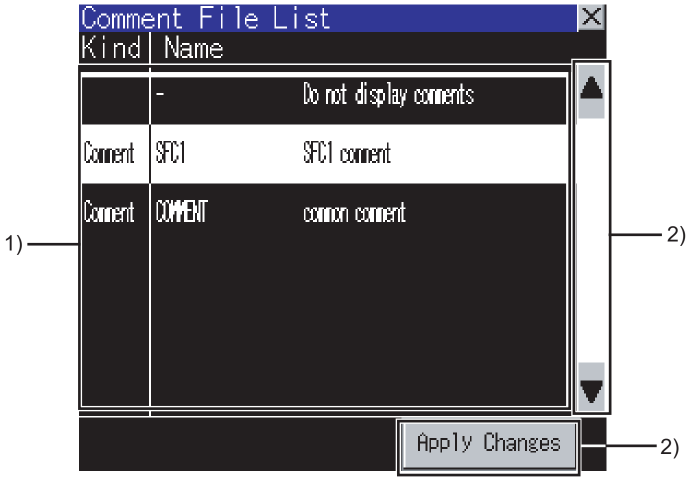


Key	Function	Reference section
MELSAP-L Program Display	Sets the MELSAP-L program display mode. Touching the key in the MELSAP-L program display mode cancels the MELSAP-L program display mode.	13.4.2
Comment Display in Zoom Window	Sets the zoom comment display mode. Touching the key in the zoom comment display mode cancels the zoom comment display mode.	13.4.3
Comment Change	Displays the comment file list window.	This section 2 (1)
Automatic Scroll	Sets the automatic scroll mode. Touching the key in the automatic scroll mode cancels the automatic scroll mode.	13.4.5
Active Step List	Displays the active step list window.	This section 2 (2)
Active Block List	Displays the active block list window.	This section 1 (3)
Program List	Displays the program list window.	13.5.2 (2)
PLC Read	Displays the PLC read screen.	13.5
Ladder Monitor	Starts the ladder monitor. Touching the key with a device selected can automatically search for the device with the ladder monitor.*1	Chapter 3

*1 For the automatic search with the ladder monitor, settings for automatically reading sequence programs are required.
For settings for automatically reading sequence programs, refer to the following.
When setting with GOT utility
☞ GT15 User's Manual (Section 11.7 Q/QnA Ladder Monitor)
When setting with GT Designer2
☞ GT Designer2 Version ☐ Screen Design Manual (Section 3.8 Setting of GOT Display and Operations (GOT Setup))

(1) Comment file list window
The GOT displays the comment file list.

(a) Displayed screen



Kind	Name	
	-	Do not display comments
Comment	SFC1	SFC1 comment
Comment	COMMENT	common comment

The following table shows the displayed contents.

No.	Item	Description
1)	Comment file list	Among comment files stored in the CF card, the file names and titles of the comment files and common comment files used for the displayed SFC program are displayed. For switching comments, select a comment file to be used. For hiding comments, select [Do not display comments]. A selected comment file is highlighted.
2)	Keys	Keys for operations in the comment file list window shown in (b) (Touch input)

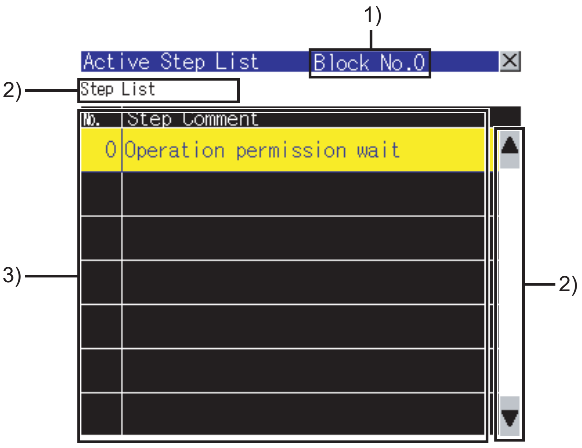
(b) Key functions

Key	Function
▲ ▼	Scrolls the display area up and down by one line.
Apply Changes	Closes the comment file list window and displays the SFC diagram monitor screen with the comments of the file selected from the comment file list.

(2) Active step list window

The GOT displays active steps in the displayed block.

(a) Displayed screen



The following table shows the displayed contents.

No.	Item	Description
1)	Block No.	Displays the block No. of the displayed block.
2)	Keys	Keys for operations in the active step list window shown in (b) (Touch input)
3)	Active step list	Displays the step numbers and step comments of the active steps in the displayed block. Selecting a step searches for the step, and the GOT displays the step data on the SFC diagram monitor screen.

(b) Key functions

Key	Function
Step List	Displays the step list window. (☞ This section 1 (3) Step list window)
▲ ▼	Scrolls the display area up and down by one line.

Point

Precautions for active step list window

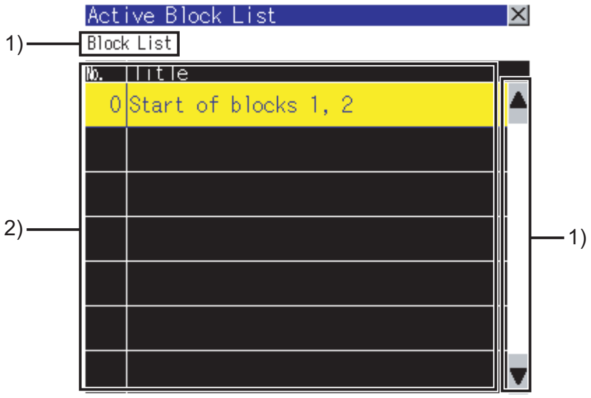
When the statuses of steps change, the displayed contents of the active step list in the active step list window change. Therefore, selecting a step may be difficult depending on the frequency of the step status change.
When selecting a step is difficult, select a step from the step list in the step list window.

☞ This section 1 (3) Step list window

(3) Active block list window

The GOT displays active blocks in the read SFC program.

(a) Displayed screen



0 Start of blocks 1, 2

The following table shows the displayed contents.

No.	Item	Description
1)	Keys	Keys for operations in the active block list window shown in (b) (Touch input)
2)	Active block list	Displays the block numbers and block titles of active blocks in the read SFC program. Selecting a block displays the block data on the SFC diagram monitor screen.

(b) Key functions

Key	Function
Block List	Displays the block list screen. (☞ 13.6 How to Operate Block List Screen)
▲ ▼	Scrolls the display area up and down by one line.

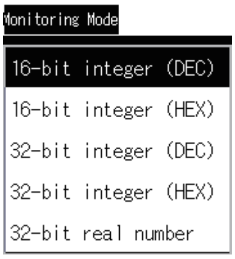
Point

Precautions for active block list window

When the statuses of blocks change, the displayed contents of the active block list in the active block list window change. Therefore, selecting a block may be difficult depending on the frequency of the block status change.
When selecting a block is difficult, select a block from the block list on the block list screen.

☞ 13.6 How to Operate Block List Screen

3 Monitoring Mode menu



Key	Function	Reference section
16-bit integer (DEC)	Displays the device values in the device current value display area as 16-bit decimal numbers.	13.4.4
16-bit integer (HEX)	Displays the device values in the device current value display area as 16-bit hexadecimal numbers.	13.4.4
32-bit integer (DEC)	Displays the device values in the device current value display area as 32-bit decimal numbers.	13.4.4
32-bit integer (HEX)	Displays the device values in the device current value display area as 32-bit hexadecimal numbers.	13.4.4
32-bit real number	Displays the device values in the device current value display area as 32-bit floating-point numbers with the exponential representation.	13.4.4

13.8 Test Operation

In the device test mode of the SFC monitor, device values can be changed on the screen.
For setting the device test mode, refer to the following.

☞ 13.6.2 Key functions
13.7.2 Key functions

The test operation of devices is available by touching devices on the following screens in the device test mode.

Screen applicable to device test mode	Reference section
Block information list on the block list screen	13.6.1
SFC diagram display area on the SFC diagram monitor screen	13.7.1 1
Device current value display area on the SFC diagram monitor screen	
Ladder program display area in the zoom window	13.7.1 1 (1)

Touching a device displays the device test window.

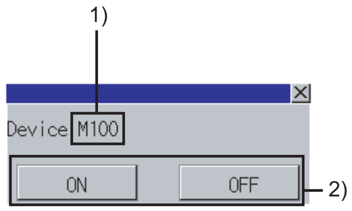
(1) When touching bit devices
A bit device is switched between ON and OFF states in the device test window.

(2) When touching word devices
The GOT writes the value input in the device test window into the selected word device.

1 How to operate device test window

(1) Bit devices

(a) Displayed screen



The following table shows the displayed contents.

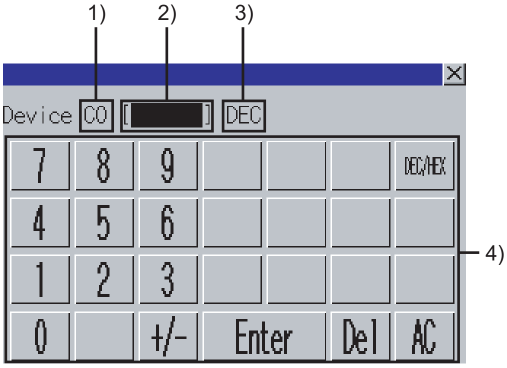
No.	Item	Description
1)	Device	Displays the selected device.
2)	Keys	Keys for operations in the device test window shown in (b).

(b) Key functions

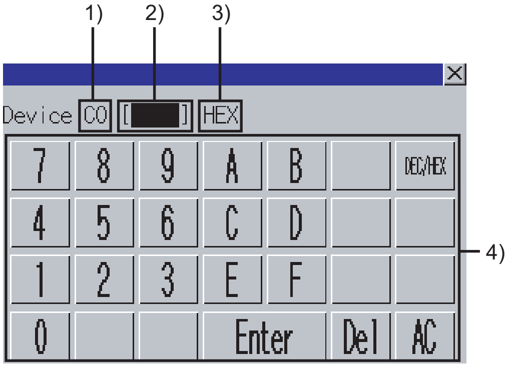
Key	Function
ON	Turns on the bit device and writes the device state to the PLC CPU.
OFF	Turns off the bit device and writes the device state to the PLC CPU.

(2) Word devices

(a) Displayed screen



(Monitoring mode : 16-bit integer (DEC))



(Monitoring mode : 32-bit integer (HEX))

The following table shows the displayed contents.

No.	Item	Description
1)	Device	Displays the selected device.
2)	Device value input area	Set the value to be written into the selected device.
3)	Input mode	Displays the current input mode. (DEC: decimal number. HEX: hexadecimal number)
4)	Keys	Keys for operations in the device test window shown in (b).

(b) Key functions

Key	Function
☒	Closes the device test window.
DEC/HEX	Switches the input modes. (DEC, HEX)
Enter	Writes the value input in the device value input area into the PLC CPU.
Del	Deletes an input value or character.
AC	Deletes all the input values and characters.

9 SERVO AMPLIFIER MONITOR
10 CNC MONITOR FUNCTION
11 BACKUP/RESTORE
12 CNC DATA I/O
13 SFC MONITOR
14 LADDER EDITOR
APPENDICES
INDEX

13.9 Error Messages and Corrective Action

The following shows the error messages for the SFC monitor and the corrective actions.

Error message	Description	Corrective action
Failed to write the value to the device.	In the device test mode, the GOT fails to write the value into the device of the PLC CPU.	(1) Check the communications between the GOT and PLC CPU, and make sure that the GOT communicates with the PLC CPU. (2) Check if the target device is writable with prameters of the target PLC CPU.
Failed to communicate with CPU.	The GOT cannot communicate with the target PLC CPU.	Check the communications between the GOT and PLC CPU, and make sure that the GOT communicates with the PLC CPU.
File access error. Confirm the CF card.	A file access error occurs.	(1) When no CF card is installed, install a CF card. (2) When the CF card access switch is off, turn on the switch. (3) Check if the CF card is formatted with FAT16. When the CF card is not formatted with FAT16, format the CF card with FAT16 and install the card in the GOT.
Failed to get the information of CPU because of bad connection.	The GOT fails to collect data from the PLC CPU.	Check the communications between the GOT and PLC CPU, and make sure that the GOT communicates with the PLC CPU.
Failed to save files because of an insufficient capacity of CF card.	The CF card has insufficient space for storing files.	(1) Delete files in the CF card. (2) Install a large capacity CF card.
The file(file name) is broken. The file is unselected.	The file read from the CF card is broken.	(1) Do not select broken files. (2) Overwrite the broken file with the unbroken file.
Failed to write (file name) to CF card.	The GOT fails to write the file into the CF card.	(1) When no CF card is installed, install a CF card. (2) When the CF card access switch is off, turn on the switch. (3) Check if folders and files within the SEQDAT folder in the CF card are writable. When the folders and files are not writable, make sure that the folders and files are writable. (4) Check if the CF card is formatted with FAT16. When the CF card is not formatted with FAT16, format the CF card with FAT16 and install the card in the GOT.
Change the Data save location of Q/QnA ladder monitor to A: or B:	The SFC monitor is started with [Data save location] is set to a drive other than [A: Built-in CF card] and [B:Memory card] in the MELSEC-Q/QnA ladder monitor setting.	Set [Data save location] to [A: Built-in CF card] or [B:Memory card] in the MELSEC-Q/QnA ladder monitor setting of the GOT utility.
The ladder block is too big to display.	The GOT cannot display a sequence program in the zoom window because the program has a ladder block with 25 or more lines.	Split the ladder block.
The specified block does not exist. Confirm the program.	The GOT cannot display the specified block data in the SFC diagram because the specified block does not exist.	Correct the program with GX Developer and operate the GOT for reading the file from the PLC.

(Continued to next page)

Error message	Description	Corrective action
The file(file name) is broken. Perform PLC Read and read the file again.	The GOT cannot display the program file data on the block list screen or SFC diagram monitor screen because the program file is broken.	Operate the GOT for reading the file from the PLC.
The device range has been changed. Please read the file again.	The GOT cannot read the target device values of the SFC monitor because the device range is changed in the PLC parameter setting during the SFC monitor.	Operate the GOT for reading the file from the PLC.
Cannot read programs other than SFC program.	The program file specified by a key on the block list screen or the SFC diagram monitor screen is not a SFC program.	Specify a SFC program by a key on the block list screen or the SFC diagram monitor screen.

14. LADDER EDITOR

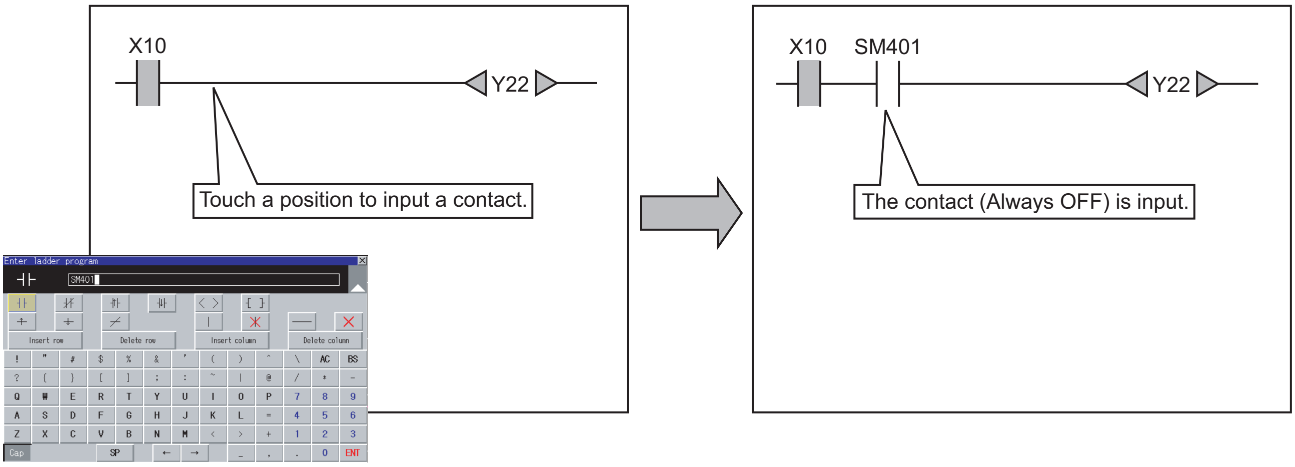
GT16 GT15 GT SOFT GOT1000 GT11 GT10

14.1 Features

With the ladder editor function, the GOT can monitor and edit a sequence program in the ladder diagram format of a controller, and changing current device values of the program is available.
The features of the ladder editor are shown below.

1 Editing sequence programs by using the GOT

Editing sequence programs in the ladder diagram format is available.



The following screens are displayed with the ladder editor function.

- PLC read screen (☞ 14.5 How to Operate PLC Read Screen)
- Ladder monitor screen (☞ 14.6 How to Operate Ladder Monitor Screen)
- Ladder editor screen (☞ 14.7 How to Operate Ladder Editor Screen)

2 Switching display formats, device comment display, and languages

The following are available.

- Switching the display formats of device values
- Switching whether to display or hide device comments
- Switching languages for file names of sequence programs, comments, and others

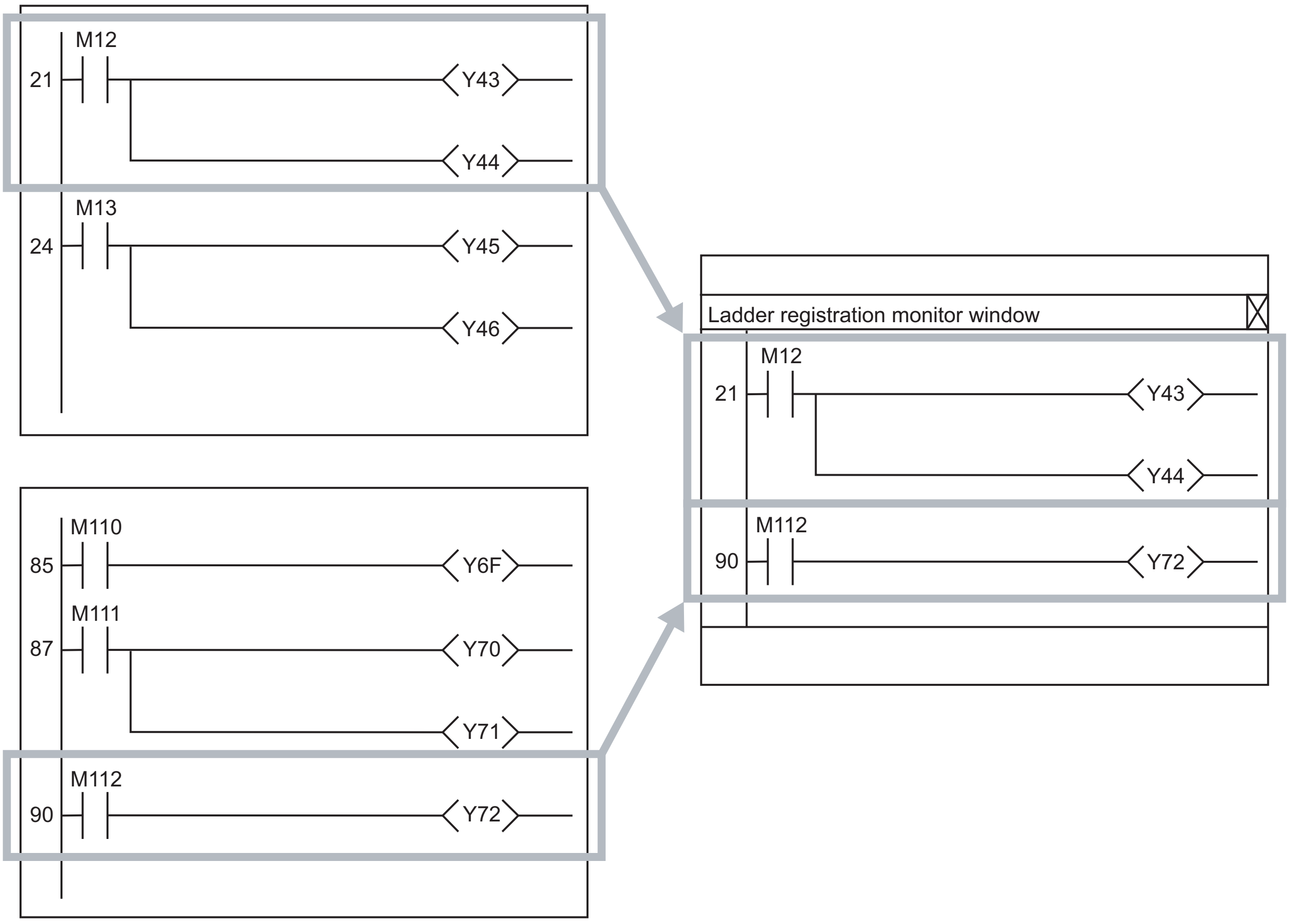
(1) Switching display formats
On the Ladder monitor screen, the display formats for the current values of word devices can be switched between decimal and hexadecimal numbers.

(2) Switching device comment display
Whether to display or hide device comments used in sequence programs can be switched.

(3) Switching languages
File titles and comments can be displayed in the language set for the language switching in the GOT utility with comment files created with the SJIS code, KS code, GB code, and/or ASCII code. With a CF card storing comment files created with the SJIS code, KS code, GB code, and/or ASCII code, comments can be displayed in the language corresponding to any character code in the CF card, regardless of the language set in the GOT utility.

3 Displaying registered ladder blocks is available

On the Ladder registration monitor window, displaying registered ladder blocks is available.
(☞ 14.6.3 Menus)



14.2 Specifications

14.2.1 System configuration

This section describes the system configuration for the ladder editor function.
For connection type settings, and precautions on the communication unit/cable and connection type, refer to the following manual.

☞ GOT1000 Series Connection Manual

1 Target controller

Controller
QCPU[*1]
CNC (C70)

*1 Excluding the Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU, Q00UJCPU, Q00UCPU, Q01UCPU, Q10UD(E)HCPU, and Q20UD(E)HCPU
For creating a multiple CPU system with the Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, and/or Q25HCPU, use CPUs with the function version B or later.

2 Connection type

(○: Available, ×: Unavailable)

Function		Connection form between GOT and controller								
Name	Description	Bus connection [*5]	Direct CPU connection	Computer link connection	Ethernet connection	MELSECNET/H connection, MELSECNET/10 connection[*1]	CC-Link IE[*2]	CC-Link connection		GOT multidrop connection
								ID[*3]	G4[*4]	
Ladder editor	Monitors and edits a sequence program in the ladder diagram format in a controller, or changes current device values of the program.	○	○	○	○	○	○	○	○	×

*1 For the MELSECNET/10 connection, use a QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, and QJ71BR11) with the function version B or later.
*2 Indicates the CC-Link IE controller network connection.
*3 Indicates CC-Link connection (Intelligent device station).
*4 Indicates CC-Link connection (via G4).
*5 With the Q00JCPU, the bus extension connector box (A9GT-QCNB) can be connected to an extension base unit only. (The bus extension connector box cannot be connected to a main base unit.)

3 Required extended function OS, option OS, and option function board

The following extended function OS, option OS, and option function board are required.

Category	OS memory space (user area)			Option function board	
	GT16		GT15*1	GT16	GT15*1
	Built-in flash memory (ROM)	User memory (RAM)			
GOT Platform Library	77KB	200KB	100KB	Not required	GT15-QFNB16M, GT15-QFNB32M, GT15-QFNB48M, GT15-MESB48M
Ladder editor	2567KB	8192KB	5121KB		
GOT Function Expansion Library	4729KB	19381KB	4729KB		

*1 For using the ladder editor function, a capacity of 9949KB or more is required in the user area of the specified drive for installing the extended function OS and option OS.
A total memory capacity of 21212KB is required for using the ladder editor function.
For using the ladder editor function, set the OS boot drive to [A: Standard CF Card] and mount an option function board with 16MB or more memory on the GOT.
For setting the OS boot drive, refer to the following.
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8 TRANSFERRING DATA)

(1) Extended function OS and option OS
Install the above extended OS and option OS on the GOT.
For how to install the operating systems, refer to the following manual.
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8. TRANSFERRING DATA)

(2) OS memory space
For installing the extended function OS and option OS, the available space shown in the above table is required in the user area.
For checking the available space in the user area and the data that uses other user areas, refer to the following manual.
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8. TRANSFERRING DATA)

(3) Option function board
(a) For GT16
No option function board is required.
(b) For GT15
Mount one of the option function boards in the above table on the GOT.
For the GOTs with a built-in option function board, refer to the following.
☞ 1.1.2 Hardware and OS' required for each function
For how to mount an option function board on the GOT, refer to the following manual.
☞ GT15 User's Manual (8.10 Option Function Board)

4 Required hardware

The following hardware is required.

Hardware
CF card

14.2.2 Devices and range that can be monitored

(○: Possible, ×: Impossible)

Device[1]	Device range	Program display	Device monitor display	Search operation
Input	X0 to 1FFF, DX0 to FFF	○	○	○
Output	Y0 to 1FFF, DY0 to FFF	○	○	○
Internal relay[1]	M0 to 8191 to 61439	○	○	○
Latch relay	L0 to 8191	○	○	○
Link relay[2]	B0 to 1FFF to EFFF	○	○	○
Timer	T0 to 2047	○	○	○
Retentive timer	ST0 to 2047	○	○	○
Counter	C0 to 1023	○	○	○
Data register	D0 to 12287	○	○	○
Link register	W0 to 1FFF	○	○	○
Annunciator	F0 to 2047	○	○	○
Edge relay	V0 to 2047	○	×	○
File register	R0 to 32767	○	○	○
	ZR0 to 32767	○	○	○
	ZR32768 to 1042431	○	○	○
Extended data register	ZR32768 to 4184063	○	○	○
	D0 to 32767	○	○	○
Extension file register	D32768 to 4212223	○	○	○
	W0 to 7FFF	○	○	○
Link special relay	W8000 to W4045FF	○	○	○
Link special register	SB0 to 7FF	○	○	○
Step relay	SW0 to 7FF	○	○	○
Index register[4]	Z0 to 19 Z0 to 15	○	○	○
Special relay	SM0 to 2047	○	○	○
Special register	SD0 to 2047	○	○	○
Function input	FX0 to F	○	×	○
Function output	FY0 to F	○	×	○
Function register	FD0 to 4	○	×	○
Link direct device	J□□\□□	○	×	×
Module access device	J□□\□□ U3En□□\□□	○	×	×
Nesting	N0 to 14	○	×	×
Pointer	P0 to 4095	○	×	×
Interrupt pointer	I0 to 255	○	×	×
SFC block device	BL0 to 319	○	×	○
SFC transition device	TR0 to 511, BL□\TR□	○	×	○
Network No. specification device	J0 to 255	○	×	×
I/O No. specification device	U0 to 1FF 3E0 to 3	○	×	×
Macro instruction argument device	VD0 to	○	×	×

[1] The GOT can monitor local devices. For applicable devices and device ranges, refer to manual of the PLC CPU.

[2] The extended data register and extended link register are applicable to Universal model QCPU only.

14.2.3 Access range

The access range is the same as the access range when the GOT is connected to a controller.
Refer to the following manual for details of the access range.

☞ GT Designer2 Version □ Screen Design Manual (2.7 Controllers that can be monitored and the Access Range)

14.2.4 Precautions

(1) Inapplicable GOT
The ladder editor cannot be used with the GT1555-V, GT1555-Q, and GT1550-Q.

(2) Precautions for operations during SFC monitor startup
Do not operate the following with the GOT during the ladder editor startup.
Doing so may delete stored data and cause the ladder editor function to operate incorrectly.
- Turning on or off the CF card access switch
- Inserting or removing a CF card

(3) Backup
Before editing the program with the ladder editor function, backup the program with the backup/restore function to restore an original sequence program.
(☞ 11. BACKUP/RESTORE)

(4) Precautions for setting [Locus] for line graphs (For GT15)
For GT15, the ladder editor function is not available when [Locus] is set for line graphs.
For using the ladder editor function with GT15, do not set [Locus] for line graphs.

(5) Writing a sequence program into the PLC CPU during the RUN status
While the PLC CPU is running in operation, the GOT cannot writes the program into the PLC CPU.
Set the PLC CPU to the STOP status, and write the program into the PLC CPU.
(☞ 14.7.3 4 Online menu)

(6) Instructions that cannot be displayed or edited by using the ladder editor function

For the ladder editor function, ladder blocks that use the following instructions cannot be displayed or edited.

When the following instructions are input during editing, an error message is displayed and the instructions cannot be input.

The program with the following instructions cannot be written into the PLC CPU.

Sequence instruction	Shift instruction	n-bit shift of n-bit data	SFTBR(P), SFTBL(P)
		n-words shift of n-words data	SFTWR(P), SFTWL(P)
	Contact instruction	Contact	LDPI, LDFI, ANDPI, ANDFI, ORPI, ORFI
Basic instruction	Comparison operation instruction	BIN 32-bit block data comparisons	DBKCMP=(P), DBKCMP<>(P), DBKCMP>(P), DBKCMP>=(P), DBKCMP<(P), DBKCMP<=(P)
	Arithmetic operation instruction	BIN 32-bit data block addition and subtraction operations	DBK+(P), DBK-(P)
	Data transfer instruction	Identical 32-bit data block transfers	DFMOV(P)
Application instruction	Data processing instruction	Calculation of averages	MEAN(P), DMEAN(P)
	Special function instruction	Exponentiation operation	POW(P), POWD(P)
		Common logarithm operation	LOG10(P), LOG10D(P)
	Data control instruction	Scaling (point-by-point coordinate data)	SCL(P), DSCL(P)
		Scaling (X or Y coordinate data)	SCL2(P), DSCL2(P)
	Clock instruction	Date comparison	LDDT=, ANDDT=, ORDT=, LDDT<>, ANDDT<>, ORDT<>, LDDT>, ANDDT>, ORDT>, LDDT>=, ANDDT>=, ORDT>=, LDDT<, ANDDT<, ORDT<,
		Clock comparison	LDTM<=, ANDTM<=, ORTM<=, LDTM=, ANDTM=, ORTM=, LDTM<>, ANDTM<>, ORTM<>, LDTM>, ANDTM>, ORTM>, LDTM<=, ANDTM<=, ORTM<=, LDTM>, ANDTM<, ORTM<, LDTM>=, ANDTM>=, ORTM>=,
QCPU instruction	Select refresh instruction		CCOM(P)

14.3 Display Operation

This section describes procedures for displaying a sequence program after turing on the GOT.

14.3.1 Outline before starting

1 Operations before displaying

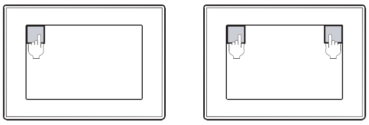
The following describes the outline for displaying the ladder editor operation screens after installing GOT Platform Library (extended function OS), Ladder editor (option OS), and GOT Function Expansion Library (option OS) on the GOT.

Start

Turn on the power to the GOT

Starting from the utility

Display the utility.

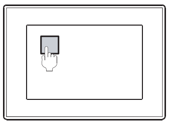


After the utility is displayed,
touch [Debug & self check] → [Debug]
→ [Ladder editor] from the Main Menu.

For how to display the utility, refer to the user's manual of the GOT to be used.

Starting from a special function switch (Ladder editor) set in the project data

Touch the special function switch.

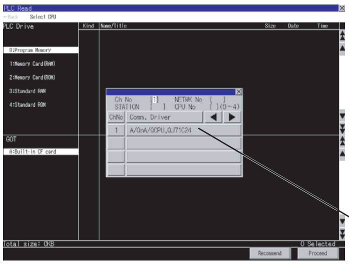


Refer to the following manual for how to set the special function switch.

☞ GT Designer2 Version□Screen Design Manual (6.2 Touch Switch)

Set the channel No., network No., station No., and others.

(☞ 14.5.2 (1) Communication setting window)



PLC Read

←Back Select CPU

PLC Drive: 0:Program Memory, 1:Memory Card(RAM), 2:Memory Card(ROM), 3:Standard RAM, 4:Standard ROM

GOT: A:Built-in CF card

Ch No [1] NETWK No [ ]
STATION [ ] CPU No [ ](0~4)

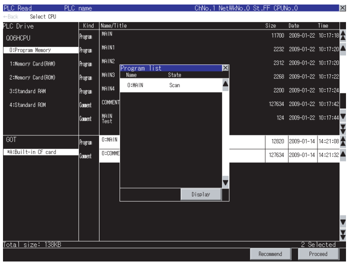
ChNo	Comm. Driver
1	A/QnA/QCPU,QJ71C24

Total size: 0KB 0 Selected

Communication setting window

Operate the GOT for reading data from the PLC and for displaying the program list window.

(☞ 14.5 How to Operate PLC Read Screen)



PLC Read PLC name ChNo.1 NetWkNo.0 St.FF CPUNo.0

←Back Select CPU

PLC Drive: Q06HCPU, 0:Program Memory, 1:Memory Card(RAM), 2:Memory Card(ROM), 3:Standard RAM, 4:Standard ROM

Kind	Name/Title	Size	Date	Time
Program	MAIN	11700	2009-01-22	10:17:18
Program	MAIN1	2232	2009-01-22	10:17:20
Program	MAIN2	2312	2009-01-22	10:17:20
Program	MAIN3	2268	2009-01-22	10:17:22
Program	MAIN4	2200	2009-01-22	10:17:24
Comment	COMMENT	127634	2009-01-22	10:17:42
Comment	MAIN Test	124	2009-01-22	10:17:44

GOT: *A:Built-in CF card

Kind	Name/Title	Size	Date	Time
Program	0:MAIN	12820	2009-01-14	14:21:08
Comment	0:COMME	127634	2009-01-14	14:21:32

Program list

Name	State
0:MAIN	Scan

Total size: 138KB 2 Selected

(Continued to next page)

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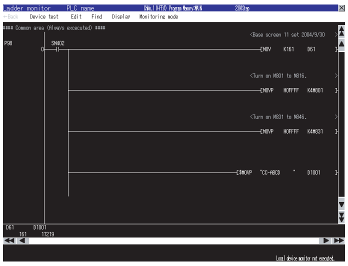
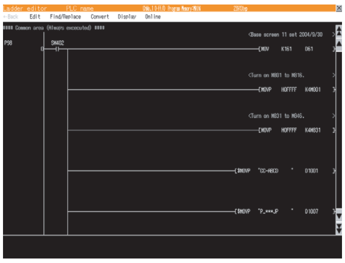
Select a program from the program list to display the Ladder monitor screen.
(14.6 How to Operate Ladder Monitor Screen)


Ladder monitor PLC name CH.No.1 0-FF/0 Program Memory:MAIN 2391Step
←Back
Device test
Edit
Find
Display
Monitoring mode

```
#### Common area (Always excecuted) ####
                                                        <Base screen 11 set 2004/9/30   >
P98           SM402
            0--| |---------------------------------------[MOV    K161    D61            ]
                                                        <Turn on M801 to M816.          >
                  ---------------------------------------[MOVP   H0FFFF  K4M801         ]
                                                        <Turn on M831 to M846.          >
                  ---------------------------------------[MOVP   H0FFFF  K4M831         ]

                  ----------------------------------[$MOVP  "CC-ABCD    "   D1001      ]
D61      D1001
    161      17219
                                                          Local device monitor not executed.
```

Display the Ladder editor screen from the Edit menu in the Ladder monitor screen.
(14.7 How to Operate Ladder Editor Screen)


Ladder editor PLC name CH.No.1 0-FF/0 Program Memory:MAIN 2391Step
←Back
Edit
Find/Replace
Convert
Display
Online

```
#### Common area (Always excecuted) ####
                                                        <Base screen 11 set 2004/9/30   >
P98           SM402
            0--| |---------------------------------------[MOV    K161    D61            ]
                                                        <Turn on M801 to M816.          >
                  ---------------------------------------[MOVP   H0FFFF  K4M801         ]
                                                        <Turn on M831 to M846.          >
                  ---------------------------------------[MOVP   H0FFFF  K4M831         ]

                  ----------------------------------[$MOVP  "CC-ABCD    "   D1001      ]

                  ----------------------------------[$MOVP  "P_***JP    "   D1007      ]
```

End

Point

(1) How to display the utility

For how to display the utility, refer to the following.

GT16 User's manual (Basic Utility) (1.3 Utility Display)
GT15 User's manual (9.3 Utility Display)

(2) Reading data from PLC when reclosing GOT

Reading data from the PLC is not required when reclosing the GOT power, because sequence programs and comment files are stored in a CF card for the ladder editor function.

(14.3.2 Setting ladder data storage location)

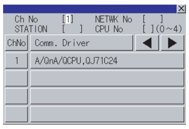
2 Changing screens

The following describes how to change the screen.

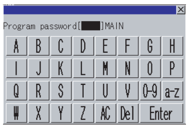
Start

Utility Main Menu
or
user-created monitor screen

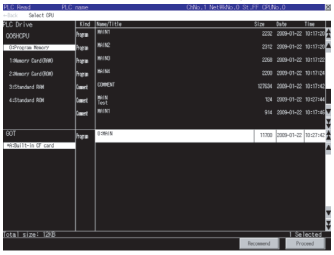
At the first startup



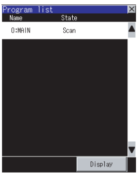
14.5.2 (1)
Communication setting window



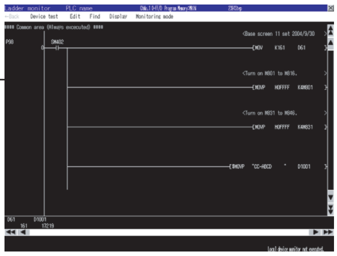
14.5.1 (1) Password input window



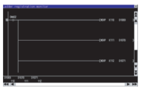
14.5 How to Operate PLC Read Screen



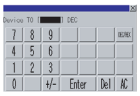
14.5.2 (2) Program list window



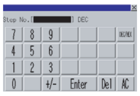
14.6 How to Operate Ladder Monitor Screen



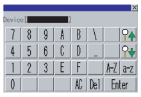
14.6.3 3 (1)
Ladder registration monitor window



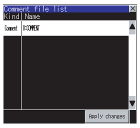
14.8 1 How to operate device test window



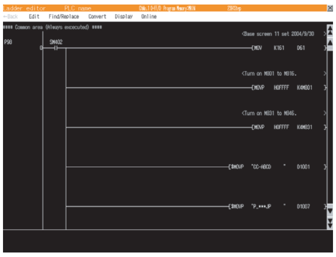
14.7.3 2 (1)
Jump window



14.7.3 2 (2) Device search window



14.7.3 3 (1)
Comment file list window

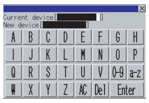


14.7 How to Operate Ladder Editor Screen

(Continued to next page)

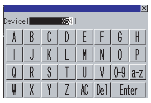
From previous page

↑ ↓



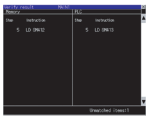
14.7.3 2 (3)

Replace device window



14.7.3 2 (4)

Change open/close contact window


Verify result MAIN

Memory

Step Instruction

5 LD SM412

PLC

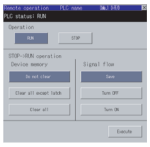
Step Instruction

5 LD SM413

Unmatched items:1

14.7.3 4

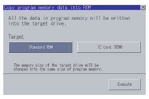
(1) Verify result window


Remote operation PLC name

PLC status: RUN

14.7.3 4 (2)

Remote operation window


Copy program memory data into ROM

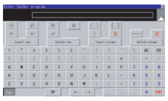
All the data in program memory will be written into the target drive.

Target

The memory size of the target drive will be changed into the same size of program memory.

14.7.3 4 (3)

Copy program memory data into ROM window



14.7.1 1 (1)

Enter ladder program window

14.3.2 Setting ladder data storage location

1 Setting ladder data storage location

Ladder data (sequence programs and device comments) for the ladder editor function are stored in the storage location that stores ladder data for the Q/QnA ladder monitor. Only the A drive (standard CF card) or B drive (extended memory card) is available for storing ladder data.

For setting the storage location for ladder data, refer to the following manuals.

When setting with GOT utility

☞ GT16 User's Manual (Basic Utility) (Section 4.2.1 Q/L/QnA ladder monitor setting)

GT15 User's Manual (Section 11.7 Q/QnQ Ladder Monitor)

When setting with GT Designer2

☞ GT Designer2 Version □ Screen Design Manual
(Section 3.8 Setting of GOT Display and Operations (GOT Setup))

14.3.3 Reading comment files from CF card

The ladder editor function uses comment files stored in a CF card installed in the GOT.

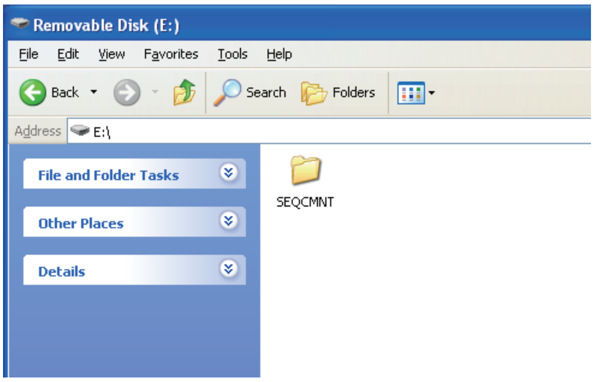
1 Procedure for using comment files stored in CF cards

The following shows the procedure for using a comment file stored in a CF card.

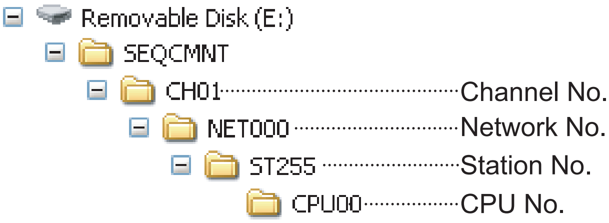
(1) When displaying comments in language set for language switching of GOT utility
Store comment files in a CF card on the PLC read screen.
For how to store comment files in a CF card on the PLC read screen, refer to the following.

☞ 14.5 How to Operate PLC Read Screen

(2) When displaying comments in any language regardless of language set for language switching of GOT utility



① Create a SEQCMNT folder in a CF card.
When the SEQCMNT folder already exists, creating a new SEQCMNT folder is not required.



② In the SEQCMNT folder, create folders for CH No., network No., station No., and CPU No. of the monitored controller with a hierarchy as shown left.

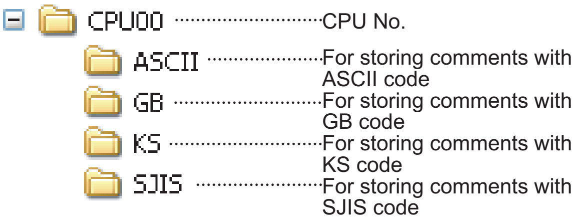
Item	Folder name
CH No.	CH**
Network No.	NET***
Station No.	ST***
CPU No.	CPU**

Assign numbers to "*" marks.
(When the CH No. is 1, the folder name is CH01. When the monitor target is the host station, the folder name is ST255.)

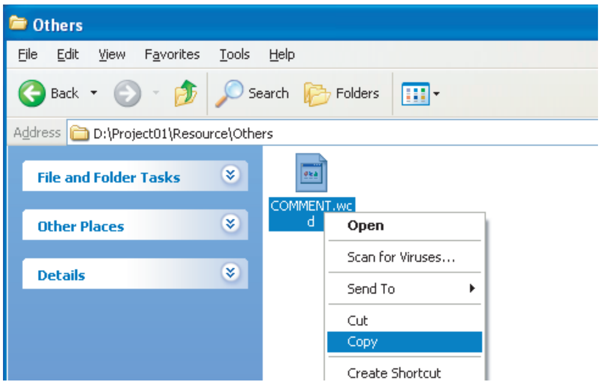
(Continued to next page)

3 In the CPU No. folder, create folders for storing comment files by character code.

Item	Folder name
Folder for SJIS code	SJIS
Folder for KS code	KS
Folder for GB code	GB
Folder for ASCII code	ASCII


CPU00
CPU No.
ASCII
For storing comments with ASCII code
GB
For storing comments with GB code
KS
For storing comments with KS code
SJIS
For storing comments with SJIS code

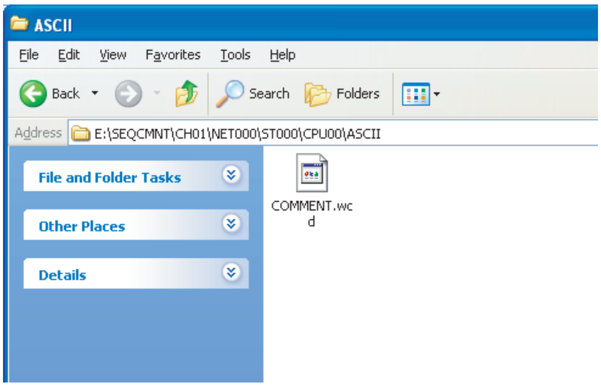
4 Copy a comment file (.wcd) from the project data of GX Developer.



Address D:\Project01\Resource\Others

5 Store the copied comment files in the folders for each character code in the CF card.

Comment character code	Storage folder name
SJIS code	SJIS
KS code	KS
GB code	GB
ASCII code	ASCII



Address E:\SEQCMNT\CH01\NET000\ST000\CPU00\ASCII

(Example: Storing comment files with ASCII code in the ASCII folder.)

6 Install the CF card with the comment file on the GOT.

7 Switch comment files on the Ladder monitor screen for displaying the comments in appropriate language.

14.4 Setting Display Format

The display format of word device values displayed on screens for the ladder editor function, language, the display mode of sequence programs, and others can be set.

14.4.1 Switching languages of sequence programs

Languages (Japanese, Korean, or Simplified Chinese) of comments to be displayed on screens for the ladder editor function can be switched when monitoring.
For switching languages, comment files in the language to be displayed must be created in advance.
(☞ 14.3.3 Reading comment files from CF card)
The following shows the relations between the language selected in the GOT utility and comment files with each character code.

Language	Comment file
Japanese	Comment files with SJIS code
Korean	Comment files with KS code
Simplified Chinese	Comment files with GB code
Other than the above	Comment files with ASCII code

14.4.2 Switching comment display mode

Whether to display or hide comments, notes, and local devices in the Ladder monitor screen and Ladder editor screen can be set.

14.4.3 Switching display formats between decimal and hexadecimal numbers

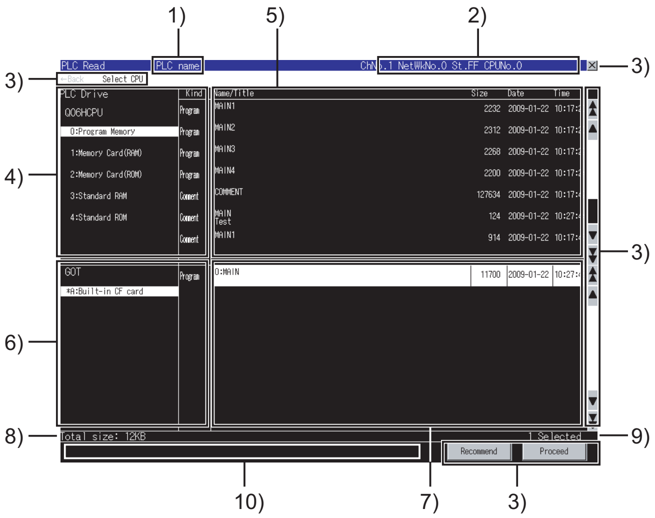
The display formats of word device values on the Ladder monitor screen can be switched between decimal and hexadecimal numbers.
(☞ 14.6.3 4 Monitoring Mode menu)

14.5 How to Operate PLC Read Screen

On the PLC read screen, the GOT reads sequence programs and comment files used for the ladder editor function from the PLC.
The following describes how to operate the PLC read screen.

14.5.1 Displayed contents

The following describes the configuration of the PLC read screen displayed after the ladder editor starts and key functions on the screen.



Name/Title	Size	Date	Time
MAIN1	2232	2009-01-22	10:17:
MAIN2	2312	2009-01-22	10:17:
MAIN3	2268	2009-01-22	10:17:
MAIN4	2200	2009-01-22	10:17:
COMMENT	127634	2009-01-22	10:17:
MAIN Test	124	2009-01-22	10:27:
MAIN1	914	2009-01-22	10:17:

0:MAIN	11700	2009-01-22	10:27:

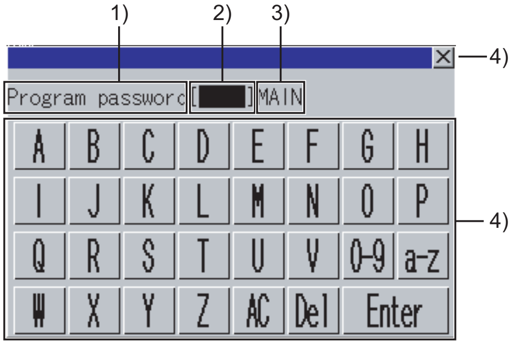
No.	Item	Description
1)	PLC name	Displays the label set in the PLC name setting for the target PLC CPU.
2)	Target controller	Displays CH No., network No., station No., and CPU No. of the target PLC CPU.
3)	Keys	Keys for operations on the PLC read screen shown in section 14.5.2. (Touch input)
4)	Target drive list (target controller)	Displays the target PLC CPU model and the drives in a list. Selecting a drive displays files within the drive in the file list (target controller). For the drive that stores files selected in the file list (target controller), [*] is displayed to the left of the drive name.
5)	File list (target controller)	Displays the program types, file names, titles, sizes, dates, and times of all the files within the drive selected in the target drive list (target controller). (The date and time show those of updated files.) A file to be read can be selected from the file list. (The selected file is highlighted.) For program files, only sequence program files in the program memory can be selected. For selecting the file name selected in the file list (GOT), the file selection in the file list (GOT) is canceled. When a password is set for the selected file, the password input window appears. (☞ This section (1) Password input window)

(Continued to next page)

No.	Item	Description
6)	Target drive list (GOT)	Displays the drive set for [Data save location] in the MELSEC-Q/QnA ladder monitor settings. (For the ladder editor function, only the A drive (standard CF card) or B drive (extended memory card) is available.) For the drive that stores files displayed in the file list (GOT), [*] is displayed to the left of the drive name.
7)	File list (GOT)	Displays the program types, file names, titles, sizes, dates, and times of all the files within the drive selected in the target drive list (GOT). (The date and time show those of updated files.) A file to be read can be selected from the file list. (The selected file is highlighted.) For selecting the file name selected in the file list (target controller), the file selection in the file list (target controller) is canceled.
8)	Total file size	Displays the total data size of files selected in the file list (target controller) and file list (GOT).
9)	Number of selected files	Displays the total number of files selected in the file list (target controller) and file list (GOT).
10)	Message display area	Displays error messages and others.

(1) Password input window

(a) Displayed screen



The following table shows the displayed contents.

No.	Item	Description
1)	Password type	Displays the type of the password to be input. (Program password/Comment password)
2)	Password input area	Set the password.
3)	File name	Displays the file name.
4)	Keys	Keys for operations in the password input window shown in (b) (Touch input)

(b) Key functions

No.	Description
☒	Closes the password input window and cancels the password input operation.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet (uppercase).
a-z	Switches the key type to the alphabet (lowercase).
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
Enter	Verifies the password set in the password input area. When the password verification for the first file is successful, the password verification for the other files is automatically executed with the same password.

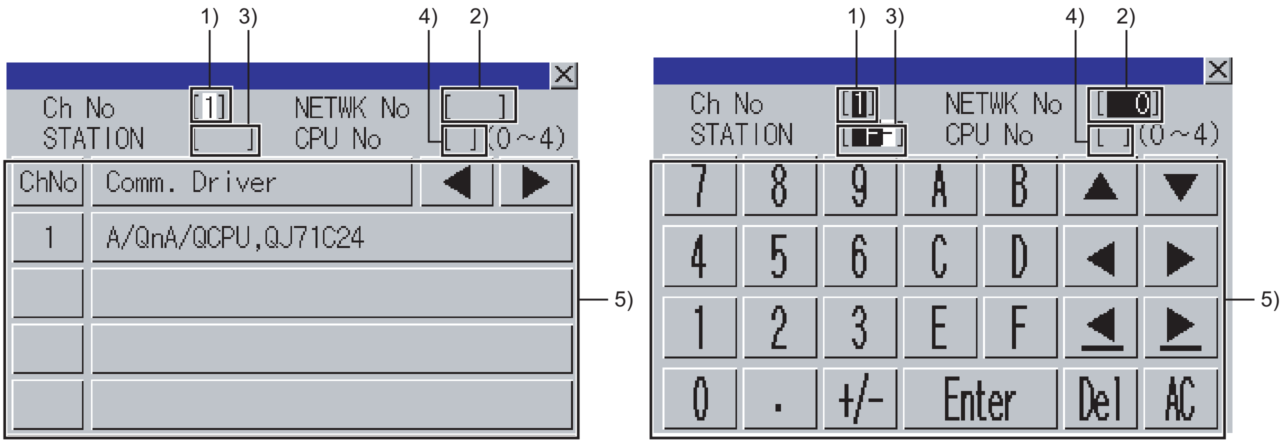
14.5.2 Key functions

The following shows the functions of the keys used for operating the PLC read screen.

Key	Function
←Back	Returns the screen to the last screen that is displayed right before the PLC read screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Select CPU	Displays the communication setting window. (☞ This section (1) Communication setting window)
☒	Exits the ladder editor and returns the screen to the ladder editor startup screen.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.
Recommend	Available when program files are displayed in the target drive list (target controller). Touching the key selects all the sequence program files, common comment files, and comment files for the selected sequence program files in the file list (target controller). When files with the same name are displayed in the file list (target controller) and file list (GOT), touching the key selects a file as shown below. • For sequence program files When the updated dates and times differ between the files, touching the key selects the file in the file list (target controller). When the updated dates and times are the same between the files, touching the key selects the file in the file list (GOT). • For comment files When the updated dates and times differ between the files, touching the key selects the latest file. When the updated dates and times are the same between the files, touching the key selects the file in the file list (GOT).
Proceed	Writes the file selected in the file list (target controller) into the CF card displayed in the target drive list (GOT). The file written into the CF card on the PLC read screen is stored in the SEQDAT folder. After writing, among files other than comment files in the CF card, files that are not selected in the file list (GOT) are deleted. Then, the program list window appears. (☞ This section (2) Program list window)

(1) Communication setting window

(a) Displayed screen



The following table shows the displayed contents.

No.	Item	Description
1)	CH No. input area	Set the CH No. for the target controller.
2)	Network No. input area	Set the network No. for the target controller.
3)	Station No. input area	Set the station No. of the target controller. When the station No. is set to the host station (FF), set the network No. to 0.
4)	CPU No. input area	Set the CPU No.
5)	CH No. selection key	Select a CH No.
6)	Keys	Keys for operations in the communication setting window shown in (b). (Touch input)

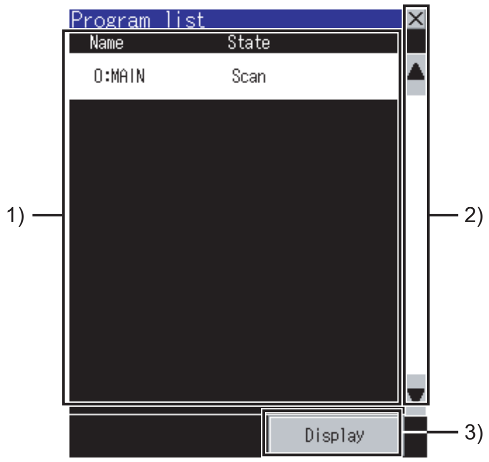
(b) Key functions

Key	Function
☒	Closes the communication setting window. When any of the CH No., network No., station No., and CPU No. is not input and the monitor target is not set, the communication setting window does not close.
◀ ▶	Moves the cursor among the input areas.
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
Enter	Moves the cursor when the cursor is in the CH No. input area, network No. input area, or station No. input area. When the cursor is in the CPU No. input area and settings for the CH No., network No., and station No. are completed, the communication setting window closes and the PLC read screen appears.

(2) Program list window

Displaying the read sequence programs in a list is available.

(a) Displayed screen



The following table shows the displayed contents.

No.	Item	Description
1)	Sequence program file list	Displays the file names and execution statuses of the read sequence programs. The execution statuses show execution types set for the programs. A touched sequence program file is highlighted.
2)	Keys	Keys for operations in the program list window shown in (b). (Touch input)

(b) Key functions

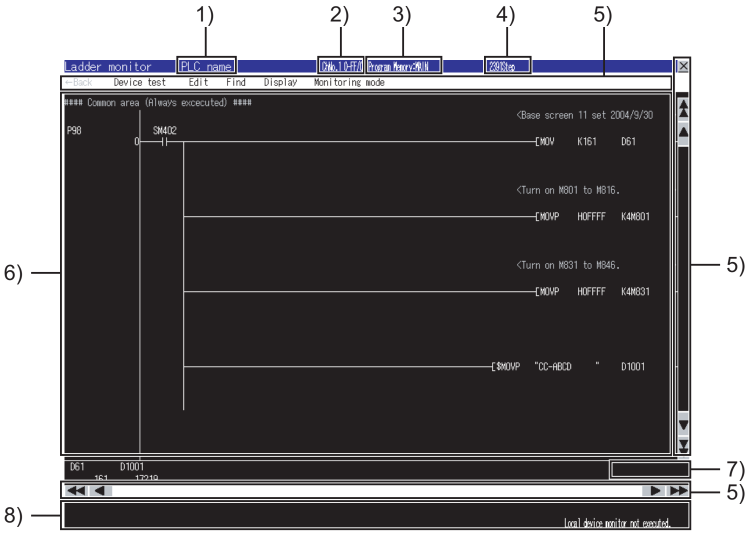
Key	Function
☒	Closes the Program List window.
▲ ▼	Scrolls the display area up and down by one line.
Display	Displays the sequence program file selected in the sequence program file list on the Ladder monitor screen. (☞ 14.6 How to Operate Ladder Monitor Screen)

14.6 How to Operate Ladder Monitor Screen

On the Ladder monitor screen, the GOT displays the read sequence program.
The following describes how to operate the Ladder monitor screen.

14.6.1 Displayed contents

The following describes the configuration of the Ladder monitor screen, menus and key functions on the screen.



```
#### Common area (Always excecuted) ####
<Base screen 11 set 2004/9/30
[MOV    K161    D61
<Turn on M801 to M816.
[MOVP   H0FFFF  K4M801
<Turn on M831 to M846.
[MOVP   H0FFFF  K4M831
[$MOVP  "CC-ABCD    "   D1001
```

Local device monitor not executed.

No.	Item	Description
1)	PLC name	Displays the label set in the PLC name setting for the target PLC CPU.
2)	Target controller	Displays the CH No., network No., station No., and CPU No of the target PLC CPU as shown below. • CH No. network No.-station No./CPU No.
3)	Program name	Displays the file name of the displayed sequence program.
4)	Number of steps	Displays the number of steps for the displayed sequence program.
5)	Keys	Keys operations for the Ladder monitor screen shown in 14.6.2. (Touch input)
6)	Ladder display area	Displays the read sequence program. • The following shows the conductive status Non-conductive status / Conductive status Contact: ┤├ / ┤├ Coil: ⟨Y10 ⟩ / ◀Y10 ▶ Instruction*1: [SET M0] / ▌SET M0 ▌ • When contacts, coils, and outputs are the selection status, touching the area displays the device search window. (☞ 14.7.3 2 (2) Device search window) • Displaying the first step number When the Ladder registration monitor window is opened, the first step number of registerable ladder blocks is highlighted. Touching the area registers the specified ladder block in the window. (☞ 14.6.3 2 (1) Ladder registration monitor window)
7)	Current device value display area	Displays the current value of the displayed word device.
8)	Message display area	Displays error messages and others.

*1 The conductive status of the following instructions is displayed only on the screen.
SET, RST, PLS, PLF, SFT, SFTP, FF, DELTA, DELTAP, MC

14.6.2 Key functions

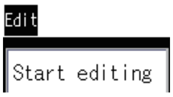
The following shows the functions of the keys used for operating the Ladder monitor screen.

Key	Function
←Back	Returns the screen to the last screen that is displayed right before the Ladder monitor screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Edit	Displays the Edit menu. Touching [Start editing] displays the Ladder editor screen. (☞ 14.7 How to Operate Ladder Editor Screen)
Device test	Sets the device test mode. Touching the key in the device test mode cancels the device test mode. (☞ 14.8 Test Operation)
Find	Displays the Find menu. (☞ 14.6.3 2 Find menu)
Display	Displays the Display menu. (☞ 14.6.3 3 Display menu)
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.

14.6.3 Menus

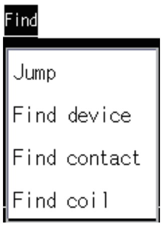
The following shows operations for the menus displayed on the Ladder monitor screen.

1 Edit menu



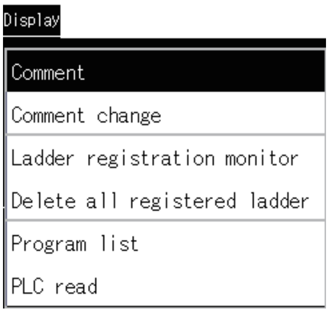
Key	Function	Reference section
Start editing	Switches to the Ladder editor screen.	14.7

2 Find menu



Key	Function	Reference section
Jump	Displays the jump window.	14.7.3 2 (1)
Find device	Displays the device search window.	14.7.3 2 (2)
Find contact	Displays the device search window	14.7.3 2 (2)
Find coil	Displays the device search window	14.7.3 2 (2)

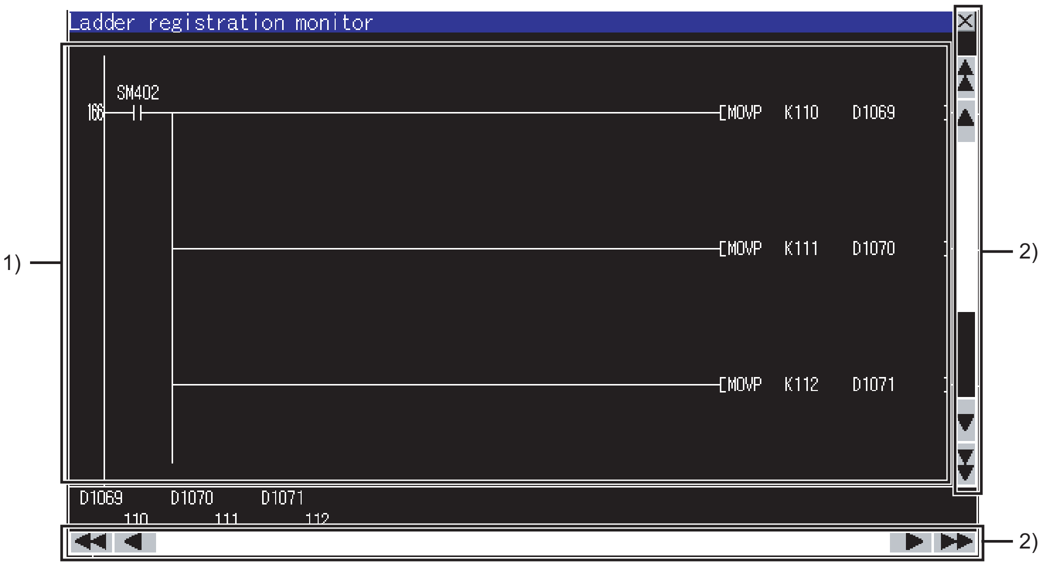
3 Display menu



Key	Function	Reference section
Comment	Sets the comment display mode. Touching the key in the comment display mode cancels the comment display mode.	14.4.2
Comment change	Displays the comment file list window.	14.7.3 3 (1)
Ladder registration monitor	Displays the Ladder registration monitor window.	This section 3 (1)
Delete all registered ladder	Deletes all registered ladder blocks in the Ladder registration monitor window.	This section 3 (1)
Program list	Displays the program list window	14.5.2 (2)
PLC read	Displays the PLC read screen.	14.5

(1) Ladder registration monitor window
Displaying or deleting the registered ladder blocks is available.

(a) Displayed screen



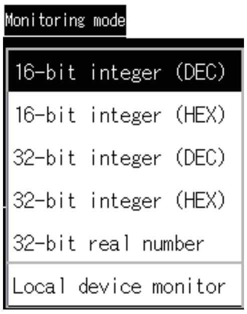
The following table shows the displayed contents.

No.	Item	Description
1)	Ladder display area	A ladder block selected on the Ladder monitor screen is added as the last registered ladder block on the Ladder registration monitor window. Touching the first step number displays the dialog box to delete the ladder block.
2)	Keys	Keys for operations in the Ladder registration monitor window shown in (b). (Touch input)

(b) Key functions

Item	Description
☒	Closes the Ladder registration monitor window.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.
◀ ▶	Scrolls the display area right and left by one column.
⏪ ⏩	Scrolls the display area right and left by one page.

4 Monitoring Mode menu



Key	Function	Reference section
16-bit integer (DEC)	Displays the device values in the device current value display area as 16-bit decimal numbers.	-
16-bit integer (HEX)	Displays the device values in the device current value display area as 16-bit hexadecimal numbers.	-
32-bit integer (DEC)	Displays the device values in the device current value display area as 32-bit decimal numbers.	-
32-bit integer (HEX)	Displays the device values in the device current value display area as 32-bit hexadecimal numbers.	-
32-bit real number	Displays the device values in the device current value display area as 32-bit floating-point numbers with the exponential representation.	-
Local device monitor	Displays local devices monitored by the GOT.	This section (1)

(1) Monitoring local devices

(a) When the GOT monitors local devices, the scan time increases.

(b) When local devices are displayed on the screen, touching the Local device monitor key cancels the display of local devices.

(c) When the Ladder monitor screen is switched to other screen, or the displayed program is switched to other program, the GOT cancels the display of local devices.

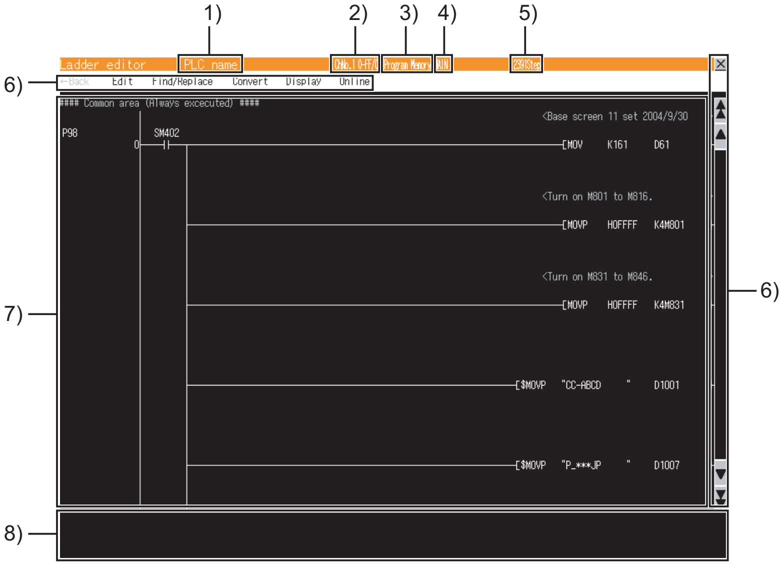
14.7 How to Operate Ladder Editor Screen

On the Ladder editor screen, editing sequence programs, finding devices, and displaying comments are available.
The following describes how to operate the Ladder editor screen.

14.7.1 Displayed contents

1 Ladder editor screen

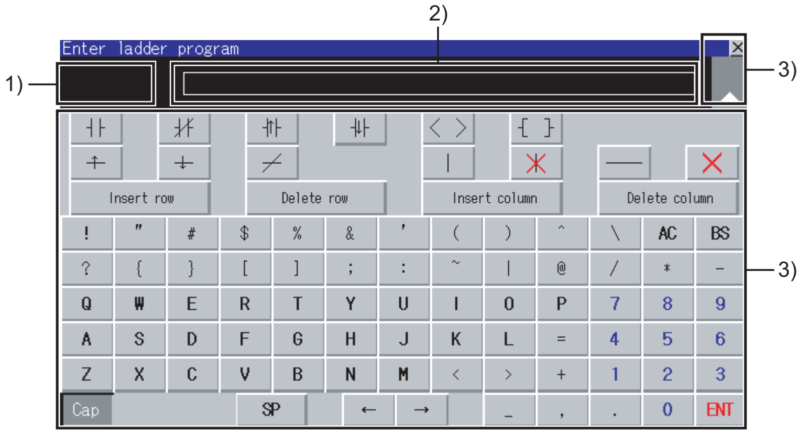
The following describes the configuration of the Ladder editor screen, menus and key functions on the screen.

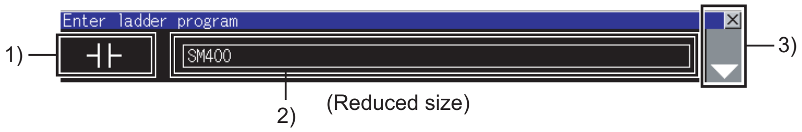


```
#### Common area (Always excecuted) ####
                                              <Base screen 11 set 2004/9/30
P98          SM402
            0──┤├──────────────────────────────[MOV     K161     D61
                                              <Turn on M801 to M816.
                   ────────────────────────────[MOVP    H0FFFF   K4M801
                                              <Turn on M831 to M846.
                   ────────────────────────────[MOVP    H0FFFF   K4M831
                   ────────────────────────[$MOVP   "CC-ABCD   "   D1001
                   ────────────────────────[$MOVP   "P_***JP   "   D1007
```

No.	Item	Description
1)	PLC name	Displays the label set in the PLC name setting for the target PLC CPU.
2)	Target controller	Displays the CH No., network No., station No., and CPU No. of the target PLC CPU as shown below. • CH No. network No.-station No./CPU No.
3)	Drive name	Displays the drive of the controller for the displayed sequence program.
4)	Program name	Displays the file name of the displayed program.
5)	Number of steps	Displays the number of steps for the displayed sequence program.
6)	Keys	Keys for operations for the Ladder editor screen shown in 14.7.2. (Touch input)
7)	Ladder display area	Displays the read sequence program. • Touching a contact, coil, output, and statement highlights the touched position, and displays the Enter ladder program window. (☞ This section (1) Enter ladder program window) • Displaying notes Selecting the comment from the Display menu displays notes. • Displaying the first step number Displays the first step number of ladder blocks. Touching the first step number of ladder blocks highlights the touched position, and displays the Enter ladder program window. (☞ This section (1) Enter ladder program window)
8)	Message display area	Displays error messages and others.

(1) Enter ladder program window
Editing sequence programs is available.





(Reduced size)

(a) Displayed contents

No.	Item	Description
1)	Ladder symbol display area	Displays the ladder symbol selected in the ladder display area.
2)	Text display area	Displays the device or the sequence program selected in the ladder display area.
3)	Keys	Keys for operations in the Enter ladder program window shown in (b). (Touch input)

(b) Key functions

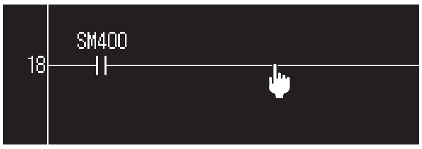
Key	Function
⊠	Closes the Enter ladder program window. The displayed contents are not reflected.
┤├	Touch the key to input a normally open contact.
┤/├	Touch the key to input a normally closed contact.
┤↑├	Touch the key to input a leading edge pulse.
┤↓├	Touch the key to input a trailing edge pulse.
─↑─	Touch the key to input a conversion of operation result to leading edge pulse.
─↓─	Touch the key to input a conversion of operation result to trailing edge pulse.
< >	Touch the key to input a coil.
[ ]	Touch the key to input an application instruction.
|	Touch the key to input a vertical line.
✕	Touch the key to delete a vertical line.

Key	Function
—	Touch the key to input a horizontal line.
✕	Touch the key to delete a ladder.
Insert row	Inserts one row in the specified position.
Delete row	Deletes the specified row.
Insert column	Inserts one column in the specified position.
Delete column	Deletes the specified column.
ENT	Reflects the displayed contents, and closes the Enter ladder program window.
▲	Reduces the size of the Enter ladder program window.
▼	Changes the Enter ladder program window from the reduced size to the default size.
Cap	Switches the alphabetic characters between the uppercase and the lowercase.

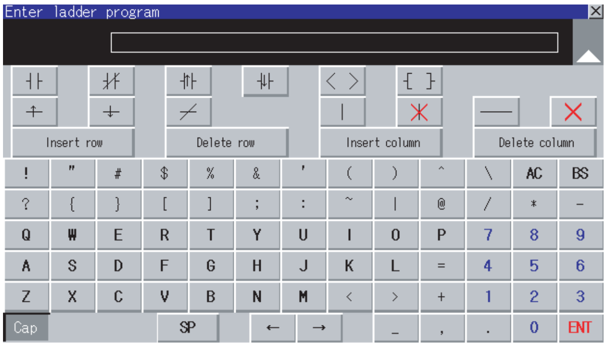
(c) Inputting or deleting ladders

- Inputting contacts or instructions

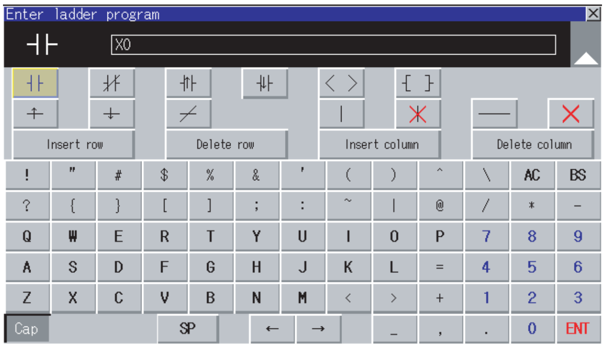
(Operation example: Inputting a contact (X0))



1 Touch a position to input a contact (X0).



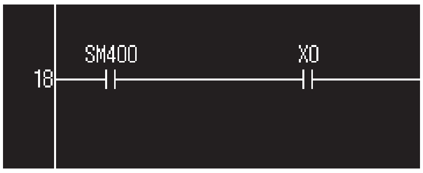
2 The Enter ladder program window appears.



3 Touch the ⊣⊢ key.

The ladder symbol corresponding to the touched key is displayed on the ladder symbol display area.

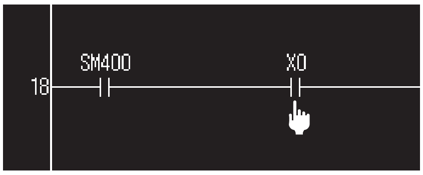
Input X0 in the text display area, and touch the ENT key.



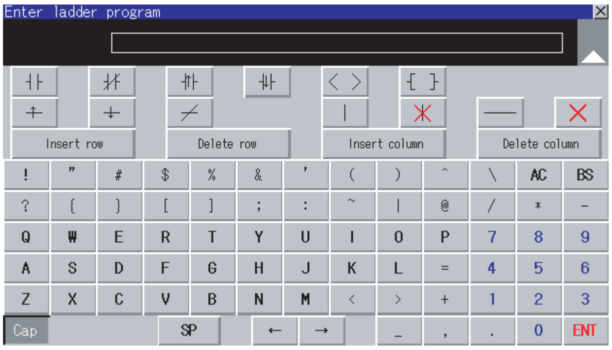
4 The contact (X0) is input.

- Deleting contacts or instructions

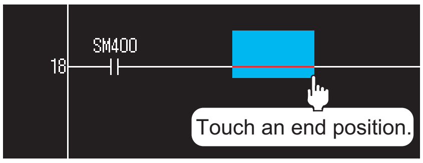
(Operation example: Deleting a contact (X0))



① Touch a contact (X0) to be deleted.

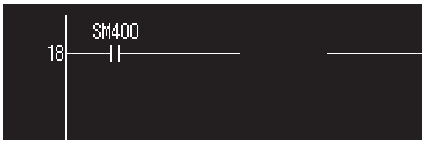


② The Enter ladder program window appears.



Touch an end position.

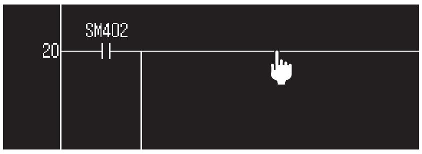
③ Touch the ✕ key.
Touch the end position of the contact (X0).



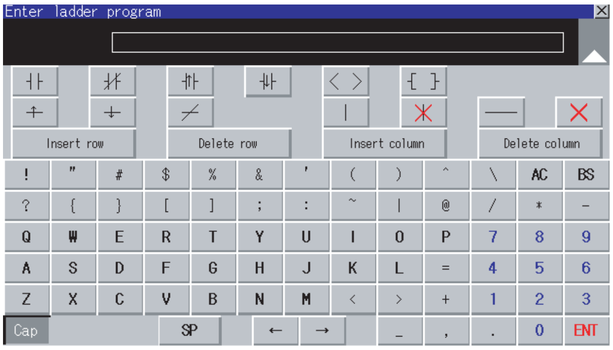
④ The contact (X0) is deleted.

- Inputting vertical lines or horizontal lines

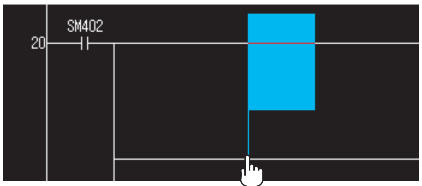
(Operation example: Inputting a vertical line)



1 Touch a position to input a vertical line.

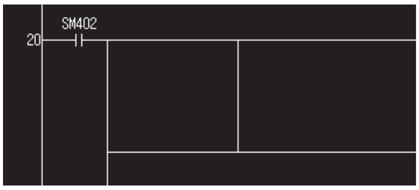


2 The Enter ladder program window appears.



Touch an end position.

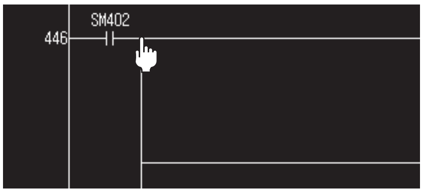
3 Touch the | key.
Touch the end position to input the vertical line.



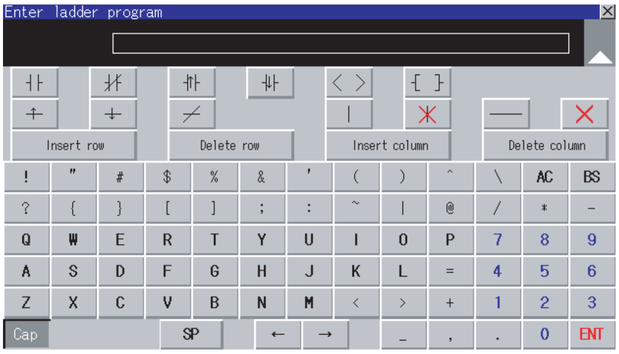
4 The vertical line is input.

- Deleting vertical lines or horizontal lines

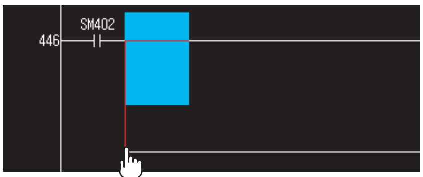
(Operation example: Deleting a vertical line)



① Touch a position to delete a vertical line.



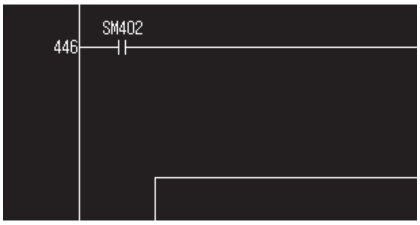
② The Enter ladder program window appears.



Touch an end position.

③ Touch ✳ key.

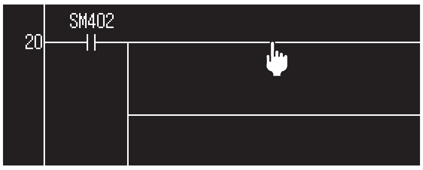
Touch the end position to delete the vertical line.



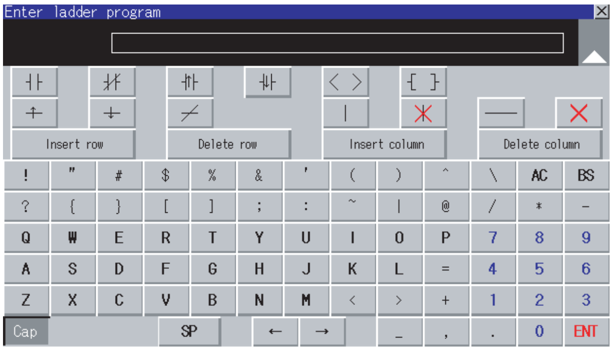
④ The vertical line is deleted.

- Inputting rows and columns

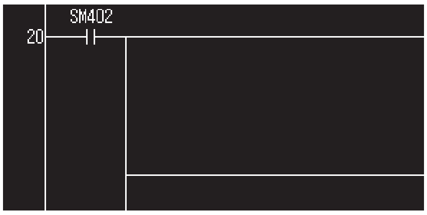
(Operation example: Inputting a row)



① Touch a position to insert a row.



② The Enter ladder program window appears.

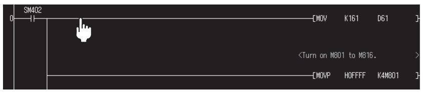


③ Touch the Insert row key.

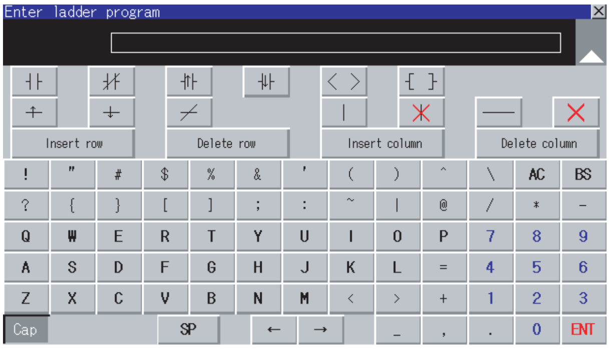
The Enter ladder program window is closed, and the row is inserted.

- Deleting rows and columns

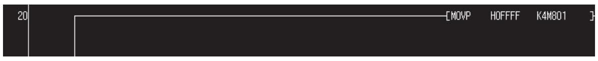
(Operation example: Deleting a row)



① Touch a position to delete a row.



② The Enter ladder program window appears.



③ Touch the Delete row key.

The Enter ladder program window is closed, and the row is deleted.

14.7.2 Key functions

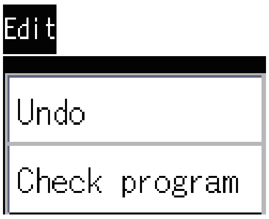
The following shows the functions of keys used for operating the Ladder editor screen.

Key	Function
←Back	Returns the screen to the last screen that is displayed right before the Ladder editor screen appears. The key is disabled when the last screen is the GOT utility screen or user-created monitor screen.
Edit	Displays the Edit menu. (☞ 14.7.3 1 Edit menu)
Find/Replace	Displays the Find/Replace menu. When the Find/Replace menu is displayed, touching the key closes the menu. (☞ 14.7.3 2 Find/Replace menu)
Convert	Converts the editing program to the execution program.
Display	Displays the Display menu. (☞ 14.7.3 3 Display menu)
Online	Displays the Online menu. (☞ 14.7.3 4 Online menu)
☒	Exits the Ladder editor screen and returns the screen to the ladder editor startup screen.
▲ ▼	Scrolls the display area up and down by one line.
⏫ ⏬	Scrolls the display area up and down by one page.

14.7.3 Menus

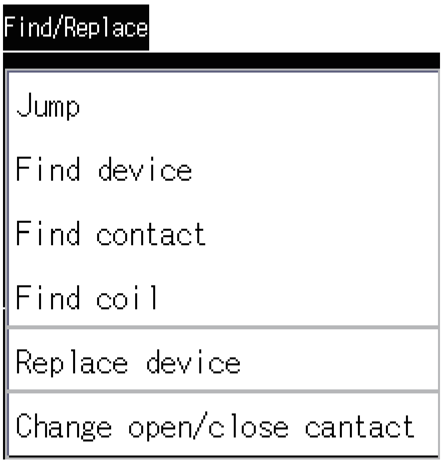
The following shows operations for the menus displayed on the Ladder editor screen.

1 Edit menu



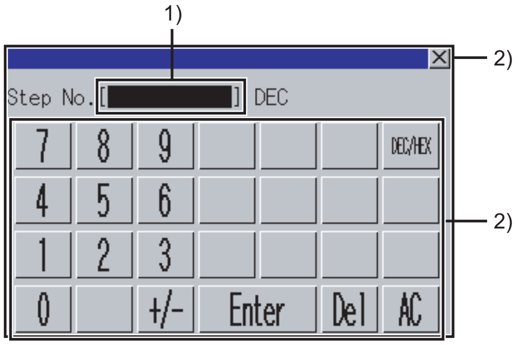
Key	Function
Undo	Undoes the last edit operation. If the edited contents are converted, the contents cannot be undone.
Check program	Executes the program check to check if programs have consistency or double coils do not exist.

2 Find/Replace menu



Key	Function	Reference section
Jump	Displays the jump window.	This section 2 (1)
Find device	Displays the device search window.	This section 2 (2)
Find contact	Displays the device search window	This section 2 (2)
Find coil	Displays the device search window	This section 2 (2)
Replace device	Displays the replace device window.	This section 2 (3)
Change open/close cantact	Displays the change open/close contact window.	This section 2 (4)

(1) Jump window



(a) Displayed contents

No.	Item	Description
1)	Jump destination step number input area	Displays the input step number.
2)	Keys	Keys for operations in the jump window shown in (b). (Touch input)

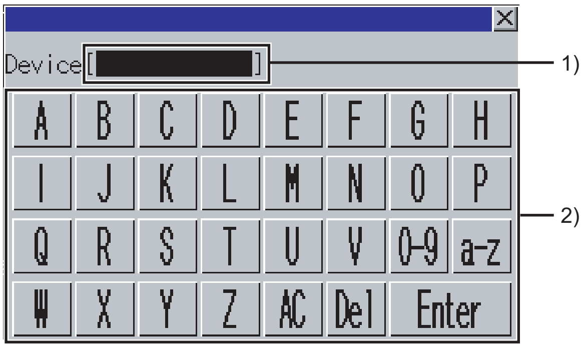
(b) Key functions

Key	Function
×	Closes the jump window.
Enter	Displays a row that includes the input step number on the center of the ladder display area.
Del	Deletes an input value or character.
AC	Deletes all the input values and characters.

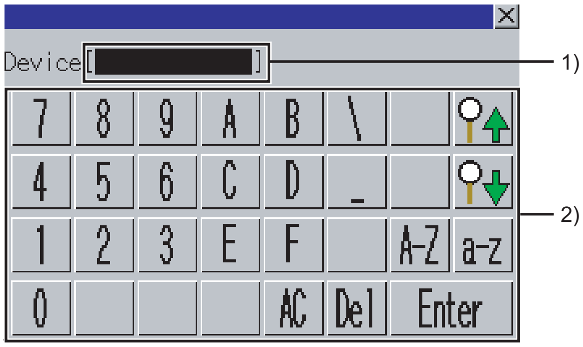
(2) Device search window

Searching devices in sequence programs is available.

(a) Displayed screen



(For alphabet input)



(For numerical input)

The following table shows the displayed contents.

No.	Item	Description
1)	Device input area	Set a device to be searched.
2)	Keys	Keys for operations in the device search window shown in (b). (Touch input)

(b) Key functions

Key	Function
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet.
🔍↑	Searches the input device in descending order of the step number.
🔍↓	Searches the input device in ascending order of the step number.
Enter	

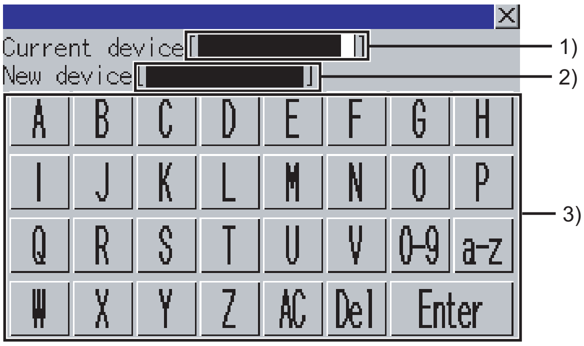
Remark

Precautions for search device window

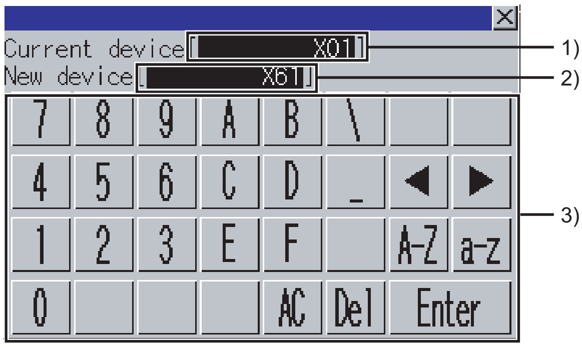
Searching for any bits in word devices is not available.
Specify word devices for searching for any bits.

(3) Replace device window

Replacing a device is available. Once the device is set, the same devices as the set device are changed automatically.



(For alphabet input)



(For numerical input)

(a) Displayed contents

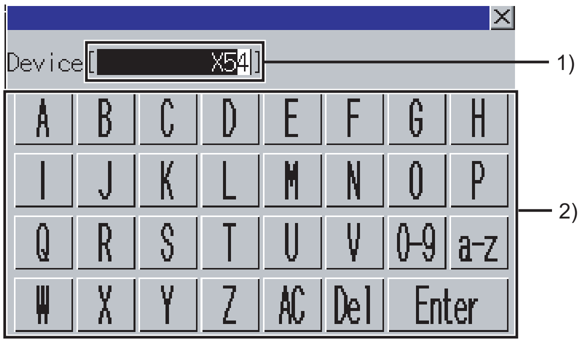
No.	Item	Description
1)	Current device display area	Set a current device.
2)	New device display area	Set a new device.
3)	Keys	Keys for operations in the replace device window shown in (b). (Touch input)

(b) Key functions

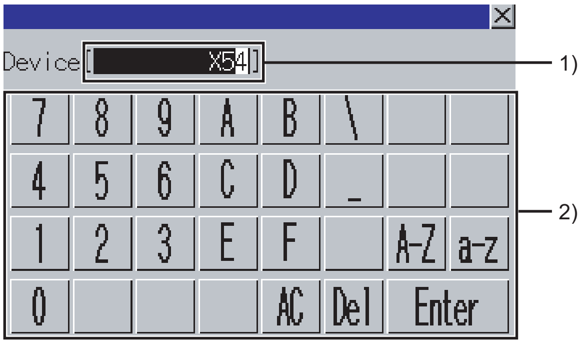
Key	Function
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet (uppercase).
a-z	Switches the key type to the alphabet (lowercase).
◀	Touching the key after inputting a current device moves the cursor to the new device display area.
▶	
Enter	Replaces the current device to the new device.

(4) Change open/close contact window

Switching a normally open contact to a normally closed contact is available. The set normally open contact or the normally closed contact can be switched to the other contact automatically.


Device[X54]

(For alphabet input)


Device[X54]

(For numerical input)

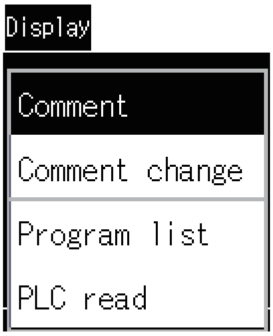
(a) Displayed contents

No.	Item	Description
1)	Device input area	Set a device for changing a normally open contact or a normally closed contact.
2)	Keys	Keys for operations in the the change open/close contact window shown in (b). (Touch input)

(b) Key functions

Key	Function
AC	Deletes all the input values and characters.
Del	Deletes an input value or character.
0-9	Switches the key type to the value.
A-Z	Switches the key type to the alphabet (uppercase).
a-z	Switches the key type to the alphabet (lowercase).
Enter	Changes a normally open contact or a normally closed contact.

3 Display menu

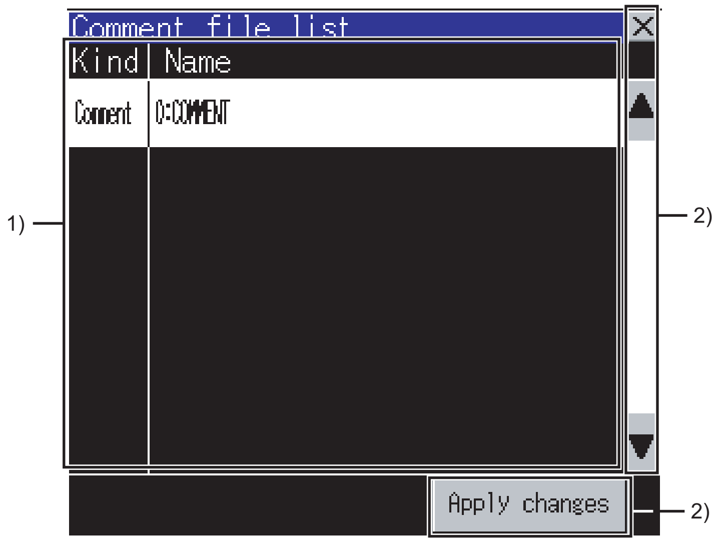


Key	Function	Reference section
Comment	Sets the comment display mode. Touching the key in the comment display mode cancels the comment display mode.	14.4.2
Comment change	Displays the comment file list window.	This section 3 (1)
Program list	Displays the program list window	14.5.2 (2)
PLC read	Displays the PLC read screen.	14.5

(1) Comment file list window

The GOT displays the comment file list.

(a) Displayed screen



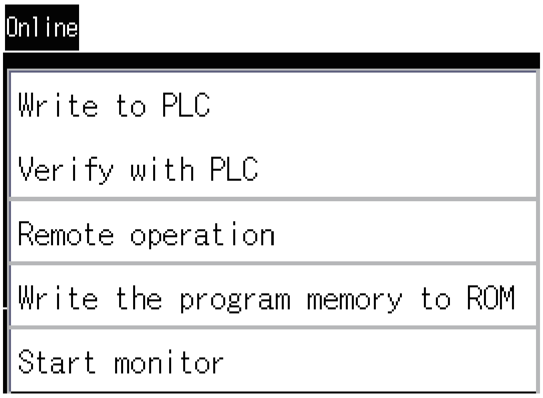
The following table shows the displayed contents.

No.	Item	Description
1)	Comment file list	Among comment files stored in the CF card, the file names and titles of the comment files, and common comment files used for the displayed sequence program are displayed. For switching comments, select a comment file to be used. A selected comment file is highlighted.
2)	Keys	Keys for operations in the comment file list window shown in (b) (Touch input)

(b) Key functions

Key	Function
☒	Closes the Comment file list window.
▲ ▼	Scrolls the display area up and down by one line.
Apply changes	Closes the Comment file list window and displays the ladder display area with the comments of the file selected from the comment file list.

4 Online menu

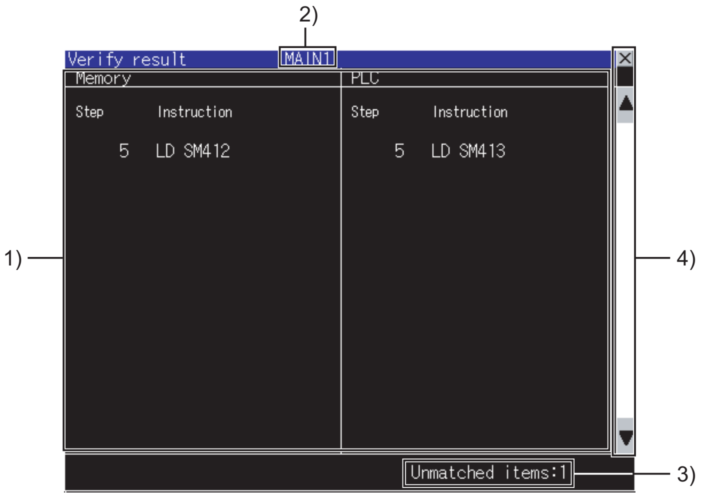


Key	Function
Write to PLC	Checks the edited sequence program, and writes the program into the PLC CPU. While the PLC CPU is running in operation, the GOT cannot writes the program into the PLC CPU. Set the PLC CPU to the STOP status, and write the program into the PLC CPU.
Verify with PLC	Verifies the sequence program displayed on the ladder display area and the program in the PLC CPU. If the programs do not match, the Verify result window is displayed. (☞ This section (1) Verify result window)
Remote operation	Displays the Remote operation window. (☞ This section (2) Remote operation window)
Write the program memory to ROM	Displays the Copy program memory data into ROM window. (☞ This section (3) Copy program memory data into ROM window)
Start monitor	Displays the Ladder monitor screen. (☞ 14.6 How to Operate Ladder Monitor Screen)

(1) Verify result window

Displaying the result of the program verification with the PLC is available.

(a) Displayed screen



```
Verify result        MAIN1
Memory                         PLC
Step     Instruction           Step     Instruction
   5     LD SM412                 5     LD SM413

                                        Unmatched items:1
```

The following table shows the displayed contents.

No.	Item	Description
1)	Verification result display area	Displays the unmatched items. Up to 100 items are displayed. The program verification is stopped when unmatched items are more than 100.
2)	Program name display area	Displays the file name of the verified program.
3)	Unmatched item count display area	Displays the number of unmatched items displayed on the Verify result window.
4)	Keys	Keys for operations in the Verify result window shown in (b). (Touch input)

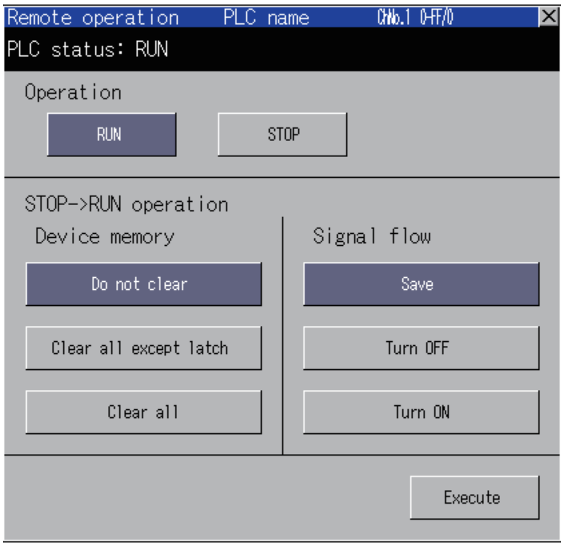
(b) Key functions

Key	Function
☒	Closes the Verify result window.
▲ ▼	Scrolls the display area up and down by one line.

(2) Remote operation window

Changing the operation status of the PLC CPU by using the remote operation is available.

(a) Displayed screen



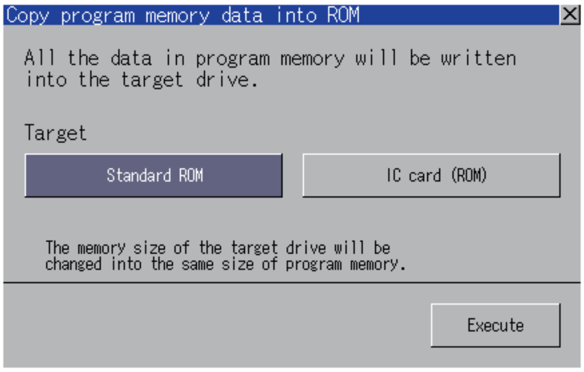
PLC status: RUN

The following table shows the displayed contents.

No.	Item	Description
1)	Operation	Select an operation (RUN or STOP key), and touch the Execute key. RUN: The PLC CPU becomes the remote RUN status. STOP: The PLC CPU becomes the remote STOP status.
2)	STOP → RUN operation	Set the status of devices and signals when executing the remote RUN. Device memory Do not clear: The PLC CPU operates device values prior to the remote STOP. Clear all except latch: Clears all device values to zero except the latched devices. Clear all: Clears all device values to zero. Signal flow Save: Keeps signals prior to the remote STOP, and outputs the signals. Turn OFF: Turns off the signal. Turn ON: Turns on the signal.
3)	Execute	Executes the remote RUN or STOP.

(3) Copy program memory data into ROM window
Writing data in the program memory into a ROM is available.

(a) Displayed screen



All the data in program memory will be written into the target drive.

Target

The memory size of the target drive will be changed into the same size of program memory.

The following table shows the displayed contents.

No.	Item	Description
1)	Target	Touch the target ROM. Standard ROM: Set the standard ROM in the PLC CPU as the target. IC card (ROM): Set the IC memory card (Flash card) inserted in the PLC CPU as the target.
2)	Execute	Touching the key writes data in the program memory into the target ROM.

14.8 Test Operation

In the device test mode, device values can be changed on the screen.
For setting the device test mode, refer to the following.

☞ 14.6.2 Key functions

The test operation of devices is available by touching devices on the following screens in the device test mode.

Screen applicable to device test mode	Reference section
Ladder monitor screen	14.6.2

Touching a device displays the device test window.

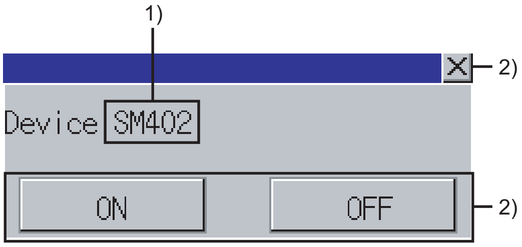
(1) When touching bit devices
A bit device is switched between ON and OFF states in the device test window.

(2) When touching word devices
The GOT writes the value input in the device test window into the selected word device.

1 How to operate device test window

(1) Bit devices

(a) Displayed screen



Device SM402

The following table shows the displayed contents.

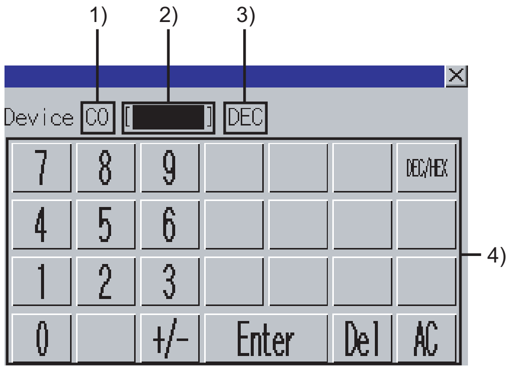
No.	Item	Description
1)	Device	Displays the selected device.
2)	Keys	Keys for operations in the device test window shown in (b).

(b) Key functions

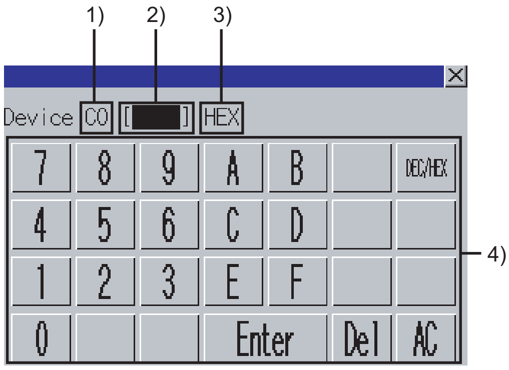
Key	Function
☒	Closes the device test window.
ON	Turns on the bit device and writes the device state to the PLC CPU.
OFF	Turns off the bit device and writes the device state to the PLC CPU.

(2) Word devices

(a) Displayed screen



(Monitoring mode : 16-bit integer (DEC))



(Monitoring mode : 32-bit integer (HEX))

The following table shows the displayed contents.

No.	Item	Description
1)	Device	Displays the selected device.
2)	Device value input area	Set the value to be written into the selected device.
3)	Input mode	Displays the current input mode. (DEC: decimal number. HEX: hexadecimal number)
4)	Keys	Keys for operations in the device test window shown in (b).

(b) Key functions

Key	Function
X	Closes the device test window.
DEC/HEX	Switches the input modes. (DEC, HEX)
Enter	Writes the value input in the device value input area into the PLC CPU.
Del	Deletes an input value or character.
AC	Deletes all the input values and characters.

14.9 Error Messages and Corrective Action

The following shows the error messages for the ladder editor and the corrective actions.

1 Error messages for CF card access

Error message	Description	Corrective action
File access error. Confirm the CF card.	• No CF card is inserted in the GOT. • The CF card access switch is off. • A CF card with a format error is inserted in the GOT. • The CF card has insufficient free space for writing a file. • The folder for the ladder editor function in the CF card is write-protected.	(1) Insert a CF card without a format error in the GOT. (2) If the CF card access switch is off, turn on the switch. (3) Delete files in the CF card. (4) Insert a CF card with a large capacity. (5) Cancel the write-protect setting for the folder that is used for the ladder editor function in the CF card.
Failed to write (file name) to CF card. Confirm the CF card.	• No CF card is inserted in the GOT. • The CF card access switch is off. • A CF card with a format error is inserted in the GOT. • The CF card has insufficient free space for writing a file. • The folder for the ladder editor function in the CF card is write-protected.	(1) Insert a CF card without a format error in the GOT. (2) If the CF card access switch is off, turn on the switch. (3) Delete files in the CF card. (4) Insert a CF card with a large capacity. (5) Cancel the write-protect setting for the folder that is used for the ladder editor function in the CF card.
Failed to save files because of an insufficient capacity of CF card.	The CF card has insufficient free space for writing a file.	(1) Delete files in the CF card. (2) Insert a CF card with a large capacity.
The file (file name) is broken. The file is unselected.	The read file in the CF card is corrupted.	Read the file from the PLC CPU again.
The file (file name) is broken. Perform PLC Read and read the file again.	The temporary file used on the Ladder editor screen or the Ladder monitor screen in the CF card is corrupted.	Read the file from the PLC CPU again.
The file (file name) is broken. Please read the file in the program list again.	The temporary file used on the Ladder editor screen or the Ladder monitor screen in the CF card is corrupted.	Select the program displayed in the Program list window again.
The file (file name) is broken.	When searching for devices in an undisplayed program, a file in the CF card is corrupted.	Read the file from the PLC CPU again.
Failed to check program. Confirm the CF card.	The GOT cannot access the temporary file in the CF card during a program check.	(1) Insert a CF card without a format error in the GOT. (2) If the CF card access switch is off, turn on the switch. (3) Delete files in the CF card. (4) Insert a CF card with a large capacity. (5) Cancel the write-protect setting for the folder that is used for the ladder editor function in the CF card.
Failed to verify with PLC. Please check the CF card.	The GOT cannot access the temporary file in the CF card during the PLC program verification.	(1) Insert a CF card without a format error in the GOT. (2) If the CF card access switch is off, turn on the switch. (3) Delete files in the CF card. (4) Insert a CF card with a large capacity. (5) Cancel the write-protect setting for the folder that is used for the ladder editor function in the CF card.
Parameter file is corrupted. Please restart the ladder editor.	The parameter file in the CF card is corrupted.	Exit the ladder editor function, and then start the function again.

2 Error messages for communication

Error message	Description	Corrective action
Failed to communicate with CPU.	The GOT cannot communicate with the PLC CPU.	(1) Check the line status between the GOT and the PLC CPU, and make the GOT communicate with the PLC CPU. (2) Check if the PLC CPU supports the ladder editor function.
Failed to communicate with CPU.	The GOT cannot communicate with the PLC CPU.	Check the line status between the GOT and the PLC CPU, and make the GOT communicate with the PLC CPU.
Failed to get the information of CPU because of bad connection.	The GOT cannot communicate with the PLC CPU.	Check the line status between the GOT and the PLC CPU, and make the GOT communicate with the PLC CPU.
The CPU protect switch is ON. Turn OFF the protect switch.	• The system protect switch of the PLC CPU is on. • The PLC CPU is in the boot process.	(1) Turn off the system protect switch of the PLC CPU. (2) Wait until the boot process of the PLC CPU is completed.
The CPU is not in STOP mode. Please change the CPU to STOP mode.	Any operation that the PLC CPU cannot execute during running is performed.	Set the PLC CPU to the STOP status.
CPU drive error. Please confirm the drive status.	The target drive does not function.	Format the target drive by using GX Developer.
The specified file does not exist in the CPU. Please confirm the file in the drive.	The specified file does not exist in the PLC CPU.	Check files in the specified drive of the PLC CPU.
The specified file in the CPU is invalid. Please confirm the file in the drive.	The specified file in the PLC CPU is corrupted.	Delete the specified file by using GX Developer, and then create the file again.
You cannot access the file while it is being used by other connected equipment.	Other GOTs or GX Developer access the connected PLC CPU.	Access the file when other devices do not access the connected PLC CPU.
The data cannot be written to the specified CPU because the total data size may exceed the drive capacity.	The specified drive of the PLC CPU runs out of space.	Reduce the capacity of the file to be written.
The specified file is invalid.	The specified file in the PLC CPU is corrupted.	Format the target drive by using GX Developer, and then write the specified file.
There is no consecutive free space in the drive of the specified CPU. Please clean up the drive.	The specified drive of the PLC CPU does not have consecutive free space.	Execute [Arrange PLC memory] with GX Developer.
Failed to write data to the specified CPU. Please check if the target flash ROM has an error or not.	An error occurs when writing/deleting data to/from the specified drive of the PLC CPU.	Check the specified drive by using GX Developer.
The specified file does not exist.	The specified drive or file does not exist in the PLC CPU.	Read data from the PLC, and check if the specified drive exists.
The file (file name) does not exist. Please check if the file exists using PLC Read.	When reading data from the PLC, the program file corresponding to the specified program on the ladder display area does not exist in the PLC CPU.	Read data from the PLC, and check if the specified file exists.
The specified CPU drive has an error. Please check the drive.	The specified drive of the PLC CPU is faulty.	(1) Execute [Format PLC memory] with GX Developer. (2) If the specified drive is the flash ROM, write data to the PLC (flash ROM) again.

Error message	Description	Corrective action
The specified file is under processing.	The specified drive of the PLC CPU is in use.	Execute the same operation later.
Invalid password.	The password to access the specified file is incorrect.	Input the correct password.
The specified CPU drive is write-protected.	Data is written to the write-protect drive of the PLC CPU.	Cancel the write-protect setting for the specified drive of the PLC CPU.
Too many files are being accessed at the same time.	Other devices are accessing too many files in the PLC CPU at the same time.	Reduce the number of files being accessed by other devices.
The specified CPU drive cannot be accessed.	The specified drive does not exist in the PLC CPU.	Read data from the PLC, and specify a drive that exists in the PLC CPU.
Failed to access the specified CPU drive. Please check the drive status.	• No memory card is inserted in the specified drive of the PLC CPU. • The memory card is faulty.	(1) Insert a memory card in the specified drive of the PLC CPU. (2) Format the memory card in the specified drive by using GX Developer.
The specified CPU drive has an error. Please check the drive status.	The specified drive in the PLC CPU does not function.	Format the specified drive by using GX Developer.
The specified CPU drive is not formatted.	The specified drive of the PLC CPU is not formatted.	Format the specified drive by using GX Developer.
CPU memory card is not inserted.	No memory card is inserted in the specified drive of the PLC CPU.	Insert a memory card in the specified drive.
The type of the CPU memory card is wrong. Please check the memory card.	• An unsupported memory card is inserted in the specified drive of the PLC CPU. • No memory card is inserted in the specified drive of the PLC CPU.	Insert a supported memory card in the specified drive.
The CPU is write protected. Please remove the protection.	The PLC CPU is write-protected.	Cancel the write-protect setting for the PLC CPU.
The specified CPU drive cannot be used. Please check the drive.	The specified drive of the PLC CPU does not exist.	Read data from the PLC, and check if the specified drive exists.
PLC types of the program (file name) and the connected PLC are not the same. Perform PLC Read and read the data again.	The PLC CPU type of the program file stored in the CF card differs from the connected PLC CPU type.	Read a program file that exists in the PLC CPU.
The program before modification on the GOT and the program being registered on the CPU do not match. Please perform PLC Read and read the program again.	When a program is written into the PLC, the target file does not exist in the PLC CPU, or the type of the program differs from that of the target file.	Read a program file that exists in the PLC CPU
Failed to write the value to the device.	The GOT cannot write device values to the PLC CPU with the device test.	Read the program being displayed from the PLC again.
Parameter file is corrupted. The ladder editor cannot be used.	The GOT cannot read parameters from the PLC CPU.	Write the parameters to the PLC CPU by using GX Developer.

3 Error messages for editing

Error message	Description	Corrective action
The instruction is incorrect.	The input instruction is incorrect.	Input the correct instruction.
The specified device is not available.	The input device name is incorrect.	Input the correct device name.
The device number is out of range.	The device number outside the range is input.	Input the correct device number.
Statements cannot be entered.	A statement is input.	Do not input a statement.
Statements cannot be edited.	When a statement is selected, the statement is edited except to delete rows.	Close the Enter ladder program window because the statement cannot be edited except to delete rows.
Too many rows are being edited. Data cannot be entered.	On the edited ladder, 49 or more rows are input.	Delete rows to be 48 or less per edited ladder.
The ladder block is too large. Data cannot be entered.	On a ladder block, 25 or more rows are input.	Delete rows to be 24 or less per ladder block.
The edit position is incorrect.	• A specified position is incorrect to input a ladder. • A space of a specified position is too narrow to input a ladder. • A start position and end position are not specified in the same column to input a vertical line. • An end position is specified in an upper row of the start position to input a vertical line. • A start position and end position are not specified in the same row to input a horizontal line. • A start position and end position are not specified in the same row to delete a ladder.	(1) Input a ladder in a correct position. (2) Insert columns, and then input a ladder. (3) Specify a correct end position for a vertical line or horizontal line, and then input the line. (4) Specify a correct end position, and then delete a ladder.
Line statements exist in the ladder program and the data cannot be edited. Please delete the line statements from the ladder program.	A vertical line that overlaps an interlinear statement is input.	Delete the interlinear statement, and then input a vertical line.
PI devices exist in the ladder program and the data cannot be edited. Please delete the PI devices from the ladder program.	A vertical line that overlaps a pointer or interrupt pointer is input.	Delete the pointer or interrupt pointer, and then input a vertical line.
There is a ladder block which cannot be displayed in the ladder program. Data cannot be edited.	• On a ladder block, 25 or more rows are edited. • An incomplete ladder block is edited.	(1) Edit the ladder block in 24 rows or less by using GX Developer, and then write the program into the PLC CPU. (2) Write the program into the PLC CPU by using GX Developer again because the program may be corrupted.

4 Error messages for conversion

Error message	Description	Corrective action
There is a ladder which cannot be converted. Correct the ladder at the cursor position.	When a ladder block is converted, the ladder block is not completed.	Complete the ladder block, and then convert the ladder block.

APPENDICES

Appendix1 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 2.98C).
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.1.1 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.**]

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Target Models	Version of GT Designer2	Version of OS
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.**]
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 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.**] Communication driver 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.**] Communication driver Multidrop(Host) [04.04.**] Multidrop(Slave) [04.04.**]
GT16M-V4, GT16M-R2, GT16M-V4R1, GT16M-ROUT	2.90U	Extended function OS Video/RGB [04.02.**]
GT16M-MMR	2.90U	Extended function OS Multimedia [04.02.**]
GT15-CFCD	2.43V	Standard monitor OS [03.01.**] BootOS [03.01.**.M]
GT15-CFEX-C08SET	2.45X	Standard monitor OS [03.02.**] BootOS [03.02.**.N]
GT15-SOUT	2.58L	Extended function OS Sound Output [03.03.**]
GT15-DIO	2.58L	Extended function OS External I/O / Operation Panel [03.03.**]
GT15-DIOR	2.90U	Extended function OS External I/O / Operation Panel [04.02.**]
GT15-80FPA	2.91V	Extended function OS Operator authentication [04.03.**] 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 Bus(Q)[04.02.**] Bus(A/QnA) [04.02.**]

(Continued to next page)

Item	Description	Version of GT Designer2	Version of OS
Bus connection	Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU	2.91V	Communication driver Bus(Q)[04.03.**]
	Supporting connection to Q170MCPU	2.96A	Communication driver Bus(Q)[04.04.**]
Direct connection to CPU	Supporting the direct CPU connection	2.90U	Communication driver A/QnA/Q CPU, QJ71C24 [04.02.**] MELSEC-FX [04.02.**]
	Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU	2.91V	Communication driver A/QnA/Q CPU, QJ71C24 [04.03.**]
	Supporting connection to Q170MCPU	2.96A	Communication driver A/QnA/Q CPU, QJ71C24 [04.04.**]
Computer link connection	Supporting the computer link connection	2.90U	Communication driver A/QnA/Q CPU, QJ71C24 [04.02.**] AJ71QC24, MELDAS C6* [04.02.**] AJ71C24/UC24 [04.02.**]
	Supporting connection to Q00UJCPU, Q00UCPU, Q01UCPU, Q10UDHCPU, Q20UDHCPU, Q10UDEHCPU, and Q20UDEHCPU	2.91V	Communication driver A/QnA/Q CPU, QJ71C24 [04.03.**]
	Supporting connection to Q170MCPU	2.96A	Communication driver 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 MELSECNET/H [04.02.**]
	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)	2.90U	Communication driver MELSECNET/H [04.02.**]
	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.**]
CC-Link IE controller network connection	Supporting connection to CC-Link IE controller network	2.90U	Communication driver CC-Link IE Controller Network [04.02.**]
	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)	2.90U	Communication driver CC-Link Ver2 (ID) [04.02.**]
	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.**]

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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 CC-Link(G4) [04.02.**]
	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	2.90U	Communication driver Ethernet(MELSEC),Q17nNC, CRnD-700 [04.02.**]
	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	Supporting connection to OMRON PLC	2.90U	Communication driver OMRON SYSMAC [04.02.**]
KEYENCE PLC connection	Supporting connection to KEYENCE PLC	2.90U	Communication driver KEYENCE KV700/1000 [04.02.**]
KOYO EI PLC connection	Supporting connection to KOYO EI PLC	2.90U	Communication driver KOYO KOSTAC/DL [04.02.**]
SHARP PLC connection	Supporting connection to SHARP PLC	2.90U	Communication driver SHARP JW [04.02.**]
TOSHIBA PLC connection	Supporting connection to TOSHIBA PLC	2.90U	Communication driver TOSHIBA PROSEC T/V [04.02.**]
TOSHIBA MACHINE PLC connection	Supporting connection to TOSHIBA MACHINE PLC	2.90U	Communication driver TOSHIBA MACHINE TCmini [04.02.**]
JTEKT PLC connection	Supporting connection to JTEKT PLC	2.90U	Communication driver JTEKT TOYOPUC-PC [04.02.**]
HITACHI IES PLC connection	Supporting connection to HITACHI IES PLC	2.90U	Communication driver HITACHI HIDIC H [04.02.**] HITACHI HIDIC H (Protocol 2) [04.02.**]
HITACHI PLC connection	Supporting connection to HITACHI PLC	2.90U	Communication driver HITACHI S10mini/S10V [04.02.**]
FUJI FA PLC connection	Supporting connection to FUJI FA PLC	2.90U	Communication driver FUJI MICREX-F [04.02.**]
PANASONIC PLC connection	Supporting connection to PANASONIC PLC	2.90U	Communication driver MATSUSHITA MEWNET-FP [04.02.**]
	Communication driver name has been changed.	2.96A	Communication driver Panasonic MEWNET-FP [04.04.**]
YASKAWA PLC connection	Supporting connection to YASKAWA PLC	2.90U	Communication driver YASKAWA GL/CP9200(SH/H)/ CP9300MS [04.02.**] Ethernet(YASKAWA) [04.02.**]

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Item	Description	Version of GT Designer2	Version of OS
YOKOGAWA PLC connection	Supporting connection to YOKOGAWA PLC	2.90U	Communication driver YOKOGAWA FA500/FA-M3/ STARDOM [04.02.**] Ethernet(YOKOGAWA) [04.02.**] MODBUS/TCP [04.02.**]
ALLEN-BRADLEY PLC connection	Supporting connection to ALLEN-BRADLEY PLC	2.90U	Communication driver AB SLC500, AB 1:N [04.02.**] AB MicroLogix [04.02.**] AB Control/CompactLogix [04.02.**] EtherNet/IP(AB) [04.02.**]
GE FANUC PLC connection	Supporting connection to GE FANUC PLC	2.90U	Communication driver GE Fanuc Automation(SNP-X) [04.02.**]
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	2.90U	Communication driver MODBUS/TCP [04.02.**]
SIEMENS PLC connection	Supporting connection to SIEMENS PLC	2.90U	Communication driver SIEMENS S7-300/400 [04.02.**] SIEMENS S7-200 [04.02.**]
Microcomputer connection	Supporting connection to a microcomputer	2.90U	Communication driver Computer [04.02.**]
MODBUS® /RTU connection	Supporting MODBUS® /RTU connection	2.96A	Communication driver MODBUS/RTU [04.04.**]
MODBUS® /TCP connection	Supporting connection to the MODBUS® /TCP	2.90U	Communication driver MODBUS/TCP [04.02.**]
OMRON temperature controller connection	Supporting connection to OMRON temperature controller	2.90U	Communication driver OMRON THERMAC / INPANEL NEO [04.02.**]
SHINKO indicating controller connection	Supporting connection to SHINKO indicating controller	2.90U	Communication driver SHINKO TECHNOS CONTROLLER [04.02.**]
CHINO controller connection	Supporting connection to CHINO controller	2.90U	Communication driver CHINO Controllers(MODBUS) [04.02.**]
FUJI SYS temperature controller connection	Supporting connection to FUJI SYS temperature controller	2.90U	Communication driver FUJI PXR/PXG/PXH [04.02.**]
YAMATAKE temperature controller connection	Supporting connection to YAMATAKE temperature controller	2.90U	Communication driver YAMATAKE SDC/DMC [04.02.**]
YOKOGAWA temperature controller connection	Supporting connection to YOKOGAWA temperature controller	2.90U	Communication driver YOKOGAWA GREEN/UT100/ UT2000 [04.02.**]
RKC temperature controller connection	Supporting connection to RKC temperature controller	2.90U	Communication driver RKC SR Mini HG(MODBUS) [04.02.**]
Inverter connection	Supporting connection to inverter	2.90U	Communication driver FREQROL 500/700 [04.02.**]
Robot controller connection	Supporting connection to robot controller	2.90U	Communication driver 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 MELSERVO-J3, J2S/M [04.02.**]
	Supporting connection to MR-J2S-*CL	2.96A	Communication driver MELSERVO-J3, J2S/M [04.04.**]
CNC connection (MELDAS C6/C64)	Supporting connection to CNC (MELDAS C6/C64 series)	2.90U	Communication driver AJ71QC24, MELDAS C6* [04.02.**] MELSECNET/H [04.02.**] CC-Link Ver2 (ID) [04.02.**] 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 Barcode [04.02.**]
Printer connection	Supporting connection to printer	2.90U	Extended function OS 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 External I/O / Operation Panel [04.02.**]
RFID connection	Supporting connection to the RFID controller	2.90U	Extended function OS 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 Bus(Q)[01.00.**] Bus(A/QnA) [01.00.**]	○	×	×	×
		2.58L	GT15 Communication driver Bus(Q) [03.03.**] Bus(A/QnA) [03.03.**] GT11 BootOS [03.03.**.P] Standard monitor OS [03.03.**] Communication driver Bus(Q) [03.03.**] Bus(A/QnA) [03.03.**]	○	○	○	×
	Supporting connection to Q172HCPU, Q173HCPU	2.09K	Communication driver Bus(Q) [01.02.**]	○	×	○	×
	Priority order of data load can be set.	2.43V	Communication driver Bus connection Q [03.01.**]	○	×	○	×
	Supporting connection to Universal model QCPU	2.63R	Communication driver 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 Bus connection Q [03.09.**]	○	○	○	×
	Supporting connection to Q13UDHCPU and Q26UDHCPU	2.77F	Communication driver Bus connection Q [03.12.**]	○	○	○	×
	Supporting connection to Q02PHCPU and Q06PHCPU	2.82L	Communication driver 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 Bus connection Q [04.03.**]	○	○	○	×
	Supporting connection to Q170MCPU	2.96A	Communication driver Bus connection Q [04.04.**]	○	○	○	×
Direct connection to CPU	Supporting connection to Q172HCPU, Q173HCPU	2.09K	Communication driver A/QnA/QCPU,QJ71C24 [01.02.**]	○	×	×	○
	Supporting connection to FX3U series	2.18U	Communication driver MELSEC-FX[02.02.**]	○	○	×	○
	Supporting automatic system switching for QCPU redundant system	2.32J	Communication driver A/QnA/QCPU, QJ71C24, MELDAS C6* [03.00.**]	○	○	×	○
	Communication driver name has been changed.	2.43V	Communication driver A/QnA/QCPU, QJ71C24 [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 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.**] MELSEC-FX[03.09.**]	○	×	×	○
	Supporting connection to Q13UDHCPU and Q26UDHCPU	2.77F	Communication driver A/QnA/QCPU, QJ71C24 [03.12.**]	○	○	×	○
	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 QS001CPU			×	○	×	×
	Supporting connection to FX3G series	2.90U	Communication driver MELSEC-FX[04.02.**]	○	○	×	○

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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.**]	○	○	×	×

(Continued to next page)

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^2PROM area in parameter writing	2.32J	Communication driver MELSERVO-J3, J2S/M [03.00.**]	○	×	×	○

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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 FX Configurator-FP is added as compatible software.	2.82L	Standard monitor OS [03.13.**]	○	×	○	○
	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	-	○	○	○

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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 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	-	○	○	○

(Continued to next page)

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. • +/- buttons have been added. • 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. • 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	-	○	○	○

(Continued to next page)

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.		
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 Operator authentication [04.03.**] RFID [04.03.**]
	Supporting the fingerprint authentication for the operator authentication		Extended function OS Operator authentication [04.03.**] Fingerprint Authentication [04.03.**]
	Enables notifying the login operator name.	2.96A	Extended function OS 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.**] Extended function OS 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.**] Extended function OS 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.**] Extended function OS 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 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 SoftGOT1000	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. • Japanese 12dot • Japanese 16dot Gothic • Japanese 16dot Mincho	2.04E	Standard monitor OS [01.01**]	○	○	○
	The following fonts are supported. • Japanese (supporting Europe) 12dot • Japanese (supporting Europe) 16dot Gothic • Japanese (supporting Europe) 16dot Mincho • Chinese (Simplified) 12dot • Chinese (Simplified) 16dot Mincho • Chinese (Simplified) (supporting Europe) 12dot • Chinese (Simplified) (supporting Europe) 16dot Mincho	2.27D	Standard monitor OS [02.04.**] Boot OS [G]	○	○	○
Standard font	Supporting 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.**] 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. • Stroke Standard Font(JPN) • The following fonts are added. • Stroke Standard Font(China GB) • Stroke Standard Font(China GB)(supporting Hangul)	2.58L	Extended function OS Stroke Standard Font [03.03.**]	○	×	×
	The following font is added. • Stroke Font(JPN)	2.58L	Option OS Stroke Font(JPN) [03.03.**]	○	×	×
KANJI Region	Supporting Chinese (Traditional)	2.18U	Standard monitor OS [02.02.**] Option OS 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.**] Option OS 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 Operator authentication [03.03.**]	○	○	×
	Supporting the external authentication (RFID) for the operator authentication	2.91V	Extended function OS Operator authentication [04.03.**] RFID [04.03.**]	○	×	×
	Supporting the fingerprint authentication for the operator authentication		Extended function OS Operator authentication [04.03.**] Fingerprint Authentication [04.03.**]	○	×	×
	Enables notifying the login operator name.	2.96A	Extended function OS 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.**] 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]	○	×	×
GT11 Handy GOT Setting	Setting of the grip switch LED of GT11 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.**] Option OS 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.**] Option OS Operation Log [03.03.**] Extended function OS 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.**] Option OS 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.**] Option OS 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.**]	○	○	○

(Continued to next page)

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.**] Option OS 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 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.**] Option OS Recipe [02.04.**]	○	○	○
	Function to save recipe data of GT11 in CSV file format	2.27D	Standard monitor OS [02.04.**] Option OS Recipe [02.04.**]	○	○	○

(Continued to next page)

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.**] Option OS Recipe [02.04.**]	○	○	○
Advanced Recipe	The extended function of the existing recipe function	2.09K	Standard monitor OS [01.02.**] Option OS 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.**] Option OS Advanced Recipe [03.03.**]	○	○	×
Report function	Function to print the colleted data	2.27D	Standard monitor OS [02.04.**] Extended function OS Report [02.04.**]	○	○	×
Hard copy function	Compatible with the printer output	2.27D	Standard monitor OS [02.04.**] Extended function OS 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 External I/O / Operation Panel [03.03.**]	○	×	×
Sound output function	Enables setting the sound output.	2.58L	Extended function OS 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 RFID [03.09.**]	○	×	○
	Supporting the dedicated protocol (ICU-60S and ICU-215(Mifare) manufactured by MARS TECHNO SCIENCE Corp.)	2.91V	Extended function OS 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.**] Extended function OS Video/RGB [03.00.**]	○	×	×
RGB display	Function to display the personal computer screen on the GOT	2.32J	Standard monitor OS [03.00.**] Extended function OS 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.**] Extended function OS 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.**]	○	○	○

(Continued to next page)

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 Object Script [02.02.**]	○	○	×
	"width", "height", and "decimal_point" are added to the object property.	2.90U	Option OS 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 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 Backup/Restore [04.02.**]
	Supporting Q170MCPU	2.96A	Extended function OS 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 CNC Data I/O [04.02.**]
	Cycle monitor data can be input and output	2.96A	Extended function OS 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 GOT Platform Library [04.04.**] Option OS Ladder editor [04.04.**] 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.**] Communication driver 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.**] 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.**] BootOS [03.01.**.M]	○	×	○

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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. Extended function OS and option OS can be operated up to 21. (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. (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] 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 System monitor [01.02.**]	○	×	○
	Supporting display of Chinese (Simplified/ Traditional), German, Korean	2.27D	Extended function OS System monitor [02.04.**]	○	×	○
	Supporting connection to Universal model QCPU	2.63R	Extended function OS System monitor [03.07.**]	○	×	○
	Supporting connection to CC-Link IE controller network	2.77F	Extended function OS System monitor [03.12.**]	○	×	×
Network monitor function	Function to monitor the network status of MELSECNET/H, MELSECNET/10, etc.	2.18U	Option OS Network monitor [02.02.**]	○	×	×
	Supporting display of Chinese (Simplified/ Traditional), German, Korean	2.27D	Option OS Network monitor [02.04.**]	○	×	×
	Enables monitoring the status of the CC-Link IE controller network.	2.77F	Option OS Network monitor [03.12.**]	○	×	×
Ladder monitoring function	Function for displaying sequence program loaded to CPU on GOT	2.09K	Option OS Ladder monitor for MELSEC-A [01.02.**] Ladder monitor for MELSEC-Q /QnA [01.02.**] Ladder monitor for MELSEC-FX [01.02.**]	○	×	×
	Supporting display of Chinese (Simplified/ Traditional), German, Korean	2.27D	Option OS Ladder monitor for MELSEC-Q /QnA [02.04.**] 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 Ladder monitor for MELSEC-Q/QnA [02.04.**]	○	×	×
	Supporting the read of programs/ comments	2.43V	Option OS Ladder monitor for MELSEC-Q/QnA [03.01.**]	○	×	×

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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 Ladder monitor for MELSEC-Q/QnA [03.03.**]	○	×	×
	Supporting monitoring local devices	2.58L		○	×	×
	Supporting connection to Universal model QCPU	2.63R	Option OS 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 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 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 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 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 Intelligent module monitor [02.02.**]	○	×	×
	Supporting connection to CC-Link IE controller network	2.77F	Option OS 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 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 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 List editor for MELSEC-FX [02.02.**]	○	×	○
	Supporting display of Chinese (Simplified)	2.27D	Extended function OS 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 List editor for MELSEC-FX [02.04.**]	○	×	○

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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 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 Q motion monitor [03.07.**]	○	×	×
	Enables clearing the SFC error history. (Universal model QCPU only)	2.63R	Option OS Q motion monitor [03.07.**]	○	×	×
	Supporting connection to CC-Link IE controller network	2.77F	Option OS Q motion monitor [03.12.**]	○	×	×
	Supporting Q170MCPU	2.96A	Option OS 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 Servo amplifier monitor [02.02.**]	○	×	×
CNC monitor function	Function to monitor the MELDAS that is connected to the GOT	2.18U	Option OS CNC monitor [02.02.**]	○	×	×
	Supporting connection to CNC C70	2.63R	Option OS 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 Backup/Restore [03.07.**]	○	×	×
	Supporting Backup Data Conversion Tool	2.63R	-	○	×	×
	Supporting the trigger backup	2.73B	Extended function OS Backup/Restore [03.09.**]	○	×	×
	Supporting Q170MCPU	2.96A	Extended function OS 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 CNC Data I/O [03.07.**]	○	×	×
	Cycle monitor data can be input and output	2.96A	Extended function OS 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 GOT Platform Library [03.12.**] Option OS SFC Monitor [03.12.**] 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 GOT Platform Library [04.04.**] Option OS Ladder editor [04.04.**] 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.**] Communication driver Use the communication driver, [02.02.**] or later for each connection.	○	×	×

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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 Gateway function (Mail) [01.02.**] Gateway function (Server, Client) [01.02.**]	○	×	×
	Supporting the FTP server function	2.18U	Option OS Gateway functionFTP [02.02.**]	○	×	×
	Enables transfer of binary data by the FTP server function.	2.32J	Option OS Gateway (FTP) [03.00.**]	○	×	×
Document display function	Function to display document on the GOT	2.32J	Standard monitor OS [03.00.**] Option OS 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.**] Option OS MES Interface [03.01.**]	○	×	×
	Oracle 8i, ACCESS2000, ACCESS2003, and MSDE2000 are added to the applicable database.	2.47Z	Standard monitor OS [03.02.**] Option OS 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.**] Option OS MES Interface [03.03.**]	○	×	×
	Access 2007 is added as an applicable database.	2.82L	Standard monitor OS [03.13.**] Option OS 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.1.2 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.**] Communication driver MELSEC-FX[01.06.**]	○	○	○
Computer link connection	Supporting connection to A series PLC	2.82L	Standard monitor OS [01.09.**] Communication driver AJ71C24/UC24[01.04.**]	-	○	○
CC-Link connection (Via G4)	Supporting connection to CC-Link (Via G4)	2.73B	Standard monitor OS [01.07.**] Communication driver CC-Link(G4)[01.00.**]	-	○	○
GOT multidrop connection	Supporting the GOT multidrop connection	2.96A	Standard monitor OS [01.11.**] Communication driver Multidrop(Host) [01.11.**] Multidrop(Slave) [01.11.**]	○	○	○
Microcomputer connection	Supporting the data formats of Format 1 and Format 2.	2.47Z	Standard monitor OS [01.02.**] Communication driver Computer[01.02.**]	-	-	○
MODBUS® / RTU connection	Supporting MODBUS® /RTU connection	2.96A	Standard monitor OS [01.12.**] MODBUS/ RTU [01.07.**]	○	○	○
OMRON PLC connection	Supporting connection to OMRON PLC	2.47Z	Standard monitor OS [01.02.**] Communication driver OMRON SYSMAC [01.02.**]	-	-	○
KEYENCE PLC connection	Supporting connection to KEYENCE PLC	2.73B	Standard monitor OS [01.07.**] Communication driver KEYENCE KV-700/1000[01.00.**]	-	○	○
	Supporting connection to KV-3000 and KV-5000	2.77F	Communication driver KEYENCE KV700/1000 [01.03.**]	-	○	○

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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 Supporting Japanese (supporting Europe) Supporting Chinese (Simplified)(supporting Europe) 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] 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. Supporting the following fonts when the OS is installed. Japanese Chinese (Simplified)(supporting Europe) Chinese (Traditional)(supporting Europe) TrueType numerical font (7-segment) 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	-	○	×	×

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MEMO

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for thirty-six (36) months after the date of purchase or delivery to a designated place.
Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be forty-two (42) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

(1) The customer shall be responsible for the primary failure diagnosis unless otherwise specified.
If requested by the customer, Mitsubishi Electric Corporation or its representative firm may carry out the primary failure diagnosis at the customer’s expence.
The primary failure diagnosis will, however, be free of charge should the cause of failure be attributable to Mitsubishi Electric Corporation.

(2) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.

(3) Even within the gratis warranty term, repairs shall be charged for in the following cases.

1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
2. Failure caused by unapproved modifications, etc., to the product by the user.
3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
4. Failure that could have been avoided if consumable parts designated in the instruction manual had been correctly serviced or replaced.
5. Replacing consumable parts such as the battery, backlight and fuses.
6. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
7. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
8. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

(1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued.
Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.

(2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

6. Product application

(1) In using the Mitsubishi graphic operation terminal, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the graphic operation terminal device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.

(2) The Mitsubishi graphic operation terminal has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or Public service purposes shall be excluded from the graphic operation terminal applications.
In addition, applications in which human life or property that could be greatly affected, such as in aircraft, medical applications, incineration and fuel devices, manned transportation equipment for recreation and amusement, and safety devices, shall also be excluded from the graphic operation terminal range of applications.
However, in certain cases, some applications may be possible, providing the user consults the local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at our discretion.
In some of three cases, however, Mitsubishi Electric Corporation may consider the possibility of an application, provided that the customer notifies Mitsubishi Electric Corporation of the intention, the application is clearly defined and any special quality is not required.

SH(NA)-080544ENG-O

GRAPHIC OPERATION TERMINAL

GOT1000

GOT1000 Series Extended/Option Functions Manual

MODEL	GT1000-O(SYS)-E
MODEL CODE	1D7M32
SH(NA)-080544ENG-O(1209)MEE	

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