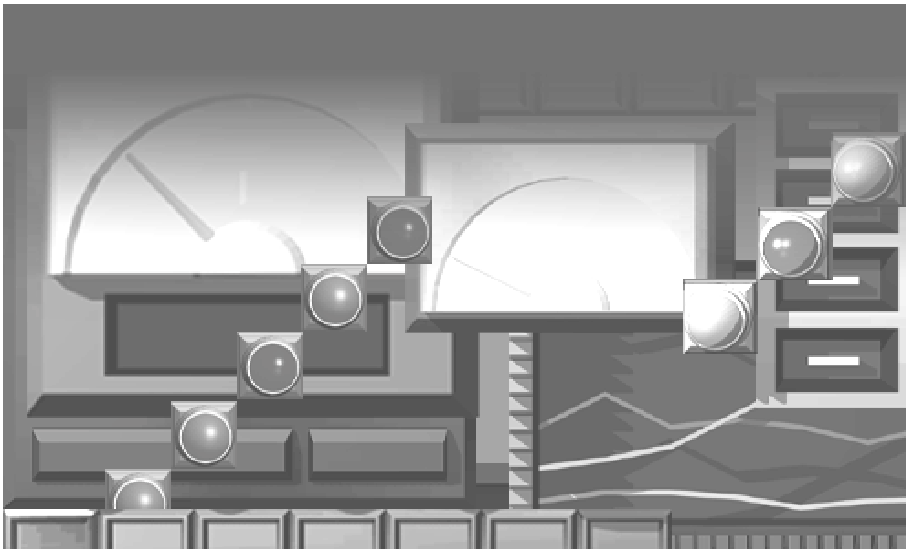
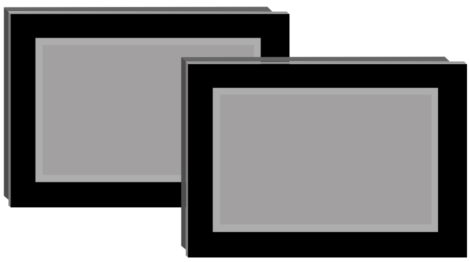
MITSUBISHI

GOT-A900 Series User's Manual

(GT Works2 Version2/GT Designer2 Version2 Compatible
Connection System Manual)



Graphic Operation Terminal
900
series



MITSUBISHI Graphic Operation Terminal

●SAFETY PRECAUTIONS●

(Always read these instructions 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 instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.
In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

DANGER	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 consequence 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 Instructions]

DANGER

- Some failures of the GOT main unit, communication module, communication board 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 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.

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.

[Mounting Instructions]

DANGER

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the panel.
  Not doing so can cause a module failure or malfunction.
- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the communication board, communication unit, memory board, external I/O interface unit, or memory card interface unit onto/from the GOT.
  Not doing so can cause a module failure or malfunction.

CAUTION

- The GOT should be used in the environment given in the general specifications of the GOT user's manual.
  Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT main unit to an enclosure, tighten the mounting screws in the specified torque range.
  Undertightening can cause a drop, short circuit or malfunction.
  Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or module.
- When loading the communication board or communication module to the GOT main unit, fit it to the connection interface of the GOT and tighten the mounting screws in the specified torque range.
  Undertightening can cause a drop, failure or malfunction.
  Overtightening can cause a drop, failure or malfunction due to the damage of the screws or module.
- When loading the memory board into the GOT main unit, load it into its corresponding GOT slot and tighten the mounting screws in the specified torque range.
  Undertightening can cause a malfunction due to a contact fault.
  Overtightening can cause a malfunction due to the damage of the screws or module.
- When loading the memory card into the GOT main unit, insert and push it into its corresponding GOT slot until the memory card eject button comes up.
  Not doing so can cause a malfunction due to a contact fault.
- Before loading or unloading the memory card to or from the GOT, set the memory card access switch to the OFF position.
  Not doing so can cause the memory card data to be corrupted.

[Wiring Instructions]

DANGER

- Before starting wiring, be sure to shut off all phases of external power supply used by the system.
  Not doing so may cause an electric shock, product damage or malfunction.

CAUTION

- Always earth the FG, LG and earth terminals of the GOT power supply section to the protective earth conductor.
  Not doing so may cause an electric shock or malfunction.
- Correctly wire the power supply module on the GOT 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 module.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the module.
  Not doing so can cause a fire, failure or malfunction.
- Plug the bus connection cable by inserting it into the connector of the connected module 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 module 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 module.

[Test Operation Instructions]

DANGER

- Before performing test operation (bit device on/off, word device's present value changing, timer/counter's set value and present value changing, buffer memory's present value changing) for a user-created monitor screen, system monitoring, special module monitoring or ladder monitoring, read the manual carefully to fully understand how to operate the equipment.
  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 Instructions]

⚠ DANGER

- When power is on, do not touch the terminals.
  Doing so can cause an electric shock or malfunction.
- Do not change the extension stage setting switch or the I/O slot setting switch.
  Doing so can cause malfunction.
- Before starting cleaning or terminal screw retightening, be sure to shut off all phases of external power supply used by the system.
  Not switching the power off in all phases can cause a module 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 module.

⚠ CAUTION

- Do not disassemble or modify the module.
  Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the module directly.
  Doing so can cause a module malfunction or failure.
- The cables connected to the module must be run in ducts or clamped.
  Not doing so can cause the module 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 module, do not hold and pull the cable portion.
  Doing so can cause the module or cable to be damaged or can cause a malfunction due to a cable connection fault.

[Disposal Instructions]

⚠ CAUTION

- When disposing of the product, handle it as industrial waste.

REVISIONS

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

Print Date	* Manual Number	Revision
Oct., 2004	SH (NA)-080524ENG-A	First edition
Mar., 2005	SH (NA)-080524ENG-B	Partial correction Abbreviations and generic terms in this manual, CONTENTS, Section 1.1, Section 1.2, Section 2.1.1, Section 2.1.2, Section 2.3.3, Section 2.4, Section 2.4.1, Section 2.4.2, Section 3.1.2, Section 3.2.3, Section 3.2.7, Section 3.4.1, Section 3.4.2, Section 4.1.3, Section 4.1.5, Section 4.3.2, Section 5.2.1, Section 7.1, Section 7.2, Section 7.3, Section 8.1, Section 8.2.1, Section 8.3.5, Section 8.4, Section 9.1, Section 10.1, Chapter 11, Section 11.1, Section 11.2.1, Section 15.3.1, Section 15.3.2, Section 16.3.1, Section 16.3.2, Chapter 18, Section 18.1.1, Section 18.1.2, Section 18.2.1, Section 18.2.2, Section 18.3.1, Section 18.3.2, Section 19.1.3, Section 19.1.4, Section 19.1.5, Section 19.1.6, Section 19.1.7, Section 19.1.8, INDEX Partial additions Section 2.4.9
Jan., 2006	SH (NA)-080524ENG-C	Partial correction SAFETY PRECAUTIONS, About Manuals, Chapter 1, Section 2.1.1, Section 2.1.2, Section 2.3.2, Section 2.3.4, Section 2.3.6, Section 2.4, Section 2.4.7, Section 2.4.8, Section 3.2.1, Section 3.4.3, Section 4.1.5, Section 4.3.3, Section 11.2.1, to 11.2.4, Section 12.3.1, Section 16.3.1, Section 16.3.2
Jun., 2006	SH (NA)-080524ENG-D	Partial correction Section 2.3.2, Section 2.4.8, Section 3.3.1
Nov., 2006	SH(NA)-080524ENG-E	Partial correction Section 11.1, Section 12.1.3, Section 12.3.1

Japanese Manual Version SH-080517-E

INTRODUCTION

Thank you for choosing the Mitsubishi Graphic Operation Terminal.
Before using the equipment, please read this manual carefully to use the equipment to its optimum.

CONTENTS

ABOUT MANUALS

The following manuals related to this product are available. Obtain the manuals as required the according to this table.

- Related manual

Manual name	Manual number (Model code)
GT Works2 Version2/GT Designer2 Version2 Operating Manual (Startup • Introductory Manual) Describes methods of installing GT Designer2 and introductory drawing methods (Sold separately)	SH-080520ENG (1DM215)
GT Designer2 Version2 Operating Manual Describes methods of operating GT Designer2 and transmitting data to GOT (Sold separately)	SH-080521ENG (1DM216)
GT Designer2 Version2 Reference Manual Describes the specifications and settings of each object function used in GT Designer2 (Sold separately)	SH-080522ENG (1DM217)
GT Simulator2 Version1 Operating Manual Explains the system configuration, screen makeup and using methods of GT Simulator2 (Sold separately)	SH-080399E (1DM209)
GOT-A900 Series Operating Manual (GT Works2 Version2/GT Designer2 Version2 compatible Gateway Functions Manual) Describes the gateway function specifications, system configuration and methods of setting GOT-A900 series (Sold separately)	SH-080525ENG (1DM220)
A985GOT/A975GOT/A970GOT/A960GOT User's Manual Provides performance specification, setting method and communication board/communication module installation method of each GOT (Sold separately)	SH-4005 (1DM099)
A950GOT/A951GOT/A953GOT/A956GOT User's Manual Provides performance specification, setting method and communication board/communication module installation method of each GOT (Sold separately)	SH-080018 (1DM103)
GOT-A900 Series Operating Manual (GT Works2 Version2/GT Designer2 Version2 compatible Extended • Option Functions Manual) Describes the following extended functions and optional functions applicable to GOT (Sold separately) Utility / Ladder monitor / System dialog language switching System monitor / Special module monitor Network monitor / List editing Module monitor / Servo amplifier monitor CNC monitor / Font change	SH-080523 (1DM218)
GT SoftGOT2 Version1 Operating Manual Describes the system configuration, screen makeup and usage of GT SoftGOT2 (Sold separately)	SH-080400E (1DM210)

ABBREVIATIONS AND GENERIC TERMS IN THIS MANUAL

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

Abbreviations and generic terms		Description
GOT	A985GOT-V	Generic term of A985GOT-TBA-V and A985GOT-TBD-V
	A985GOT	Generic term of A985GOT-TBA, A985GOT-TBD and A985GOT-TBA-EU
	A975GOT	Generic term of A975GOT-TBA-B, A975GOT-TBD-B, A975GOT-TBA, A975GOT-TBD and A975GOT-TBA-EU
	A970GOT	Generic term of A970GOT-TBA-B A970GOT-TBD-B, A970GOT-TBA, A970GOT-TBD, A970GOT-SBA, A970GOT-SBD, A970GOT-LBA, A970GOT-LBD, A970GOT-TBA-EU and A970GOT-SBA-EU
	A97*GOT	Generic term of A975GOT and A970GOT
	A960GOT	Generic term of A960GOT-EBA, A960GOT-EBD and A960GOT-EBA-EU
	A956WGOT	Generic term of A956WGOT-TBD
	A956GOT	Generic term of A956GOT-TBD, A956GOT-SBD, A956GOT-SBD-B, A956GOT-LBD, A956GOT-TBD-M3, A956GOT-SBD-M3, A956GOT-SBD-M3-B and A956GOT-LBD-M3
	A953GOT	Generic term of A953GOT-TBD, A953GOT-SBD, A953GOT-SBD-B, A953GOT-LBD, A953GOT-TBD-M3, A953GOT-SBD-M3, A953GOT-SBD-M3-B and A953GOT-LBD-M3
	A951GOT	Generic term of A951GOT-TBD, A951GOT-SBD, A951GOT-SBD-B, A951GOT-LBD, A951GOT-TBD-M3, A951GOT-SBD-M3, A951GOT-SBD-M3-B and A951GOT-LBD-M3
	A951GOT-Q	Generic term of A951GOT-QTBD, A951GOT-QSBD, A951GOT-QSBD-B, A951GOT-QLBD, A951GOT-QTBD-M3, A951GOT-QSBD-M3, A951GOT-QSBD-M3-B and A951GOT-QLBD-M3
	A950GOT	Generic term of A950GOT-TBD, A950GOT-SBD, A950GOT-SBD-B, A950GOT-LBD, A950GOT-TBD-M3, A950GOT-SBD-M3, A950GOT-SBD-M3-B and A950GOT-LBD-M3
	A950 handy GOT	Generic term of A953GOT-SBD-M3-H and A953GOT-LBD-M3-H
	A95*GOT	Generic term of A956GOT, A953GOT, A951GOT, A951GOT-Q, A950GOT and A950 handy GOT
Communication board	Bus connection board	Generic term of A9GT-QBUSS, A9GT-QBUS2S, A9GT-BUSS and A9GT-BUS2S
	Serial communication board	Generic term of A9GT-RS4, A9GT-RS2 and A9GT-RS2T
Communication unit	Bus connection unit	Generic term of A9GT-QBUS2SU, A9GT-BUS2SU, A9GT-BUS2SU, A7GT-BUSS and A7GT-BUS2S
	Data link unit	Generic term of A7GT-J71AP23, A7GT-J71AR23 and A7GT-J71AT23B
	Network unit	Generic term of A9GT-QJ71LP23, A9GT-QJ71BR13, A7GT-J71LP23 and A7GT-J71BR13
	CC-Link communication unit	Generic term of A8GT-J61BT13 and A8GT-J61BT15
	Ethernet communication unit	Abbreviation of A9GT-J71E71-T

Abbreviations and generic terms		Description
Option	Protection sheet	Abbreviation of A9GT-80PSC, A9GT-70PSC, A9GT-60PSC and A9GT-50PSC type transparent protection sheets
	Backlight	Abbreviation of A9GT-80LTT, A9GT-70LTTB, A9GT-70LTT, A9GT-70LTS, A9GT-70LTTBW and A9GT-50LT type backlights
	Debug stand	Abbreviation of A9GT-80STAND, A9GT-70STAND and A9GT-50STAND type debug stand
	Memory card	Flash PC card/Commercially available flash PC card/SRAM type PC card
	Flash PC card	Generic term of A9GTMEM-10MF, A9GTMEM-20MF and A9GTMEM-40MF
	Compact flash PC card	Commercially available flash PC card
	Memory board	Abbreviation of A9GT-FNB, A9GT-FNB1M, A9GT-FNB2M, A9GT-FNB4M, A9GT-FNB8M, A9GT-QFNB, A9GT-QFNB4M, A9GT-QFNB8M type option function memory board
	Attachment	Generic term of A77GT-96ATT/A85GT-95ATT/A87GT-96ATT/A87GT-97ATT attachments
	Ten-key Panel	Abbreviation of A8GT-TK ten-key Panel
	A7GT-CNB	Abbreviation of A7GT-CNB bus connector conversion box
	A9GT-QCNB	Abbreviation of A9GT-QCNB bus connector conversion box
Option unit	External I/O unit	Abbreviation of A9GT-70KBF and A8GT-50KBF type external I/O interface unit
	Printer interface unit	Abbreviation of A9GT-50PRF type printer interface unit
	Memory card interface unit	Abbreviation of A1SD59J-MIF memory card interface unit
	Video/RGB mixed input interface unit	Abbreviation of A9GT-80V4R1 type Video/RGB mixed input interface unit
	Video input interface unit	Abbreviation of A9GT-80V4 type Video input interface unit
	RGB input interface unit	Abbreviation of A9GT-80R1 type RGB input interface unit
Software	GT Works2 Version2	Generic term of SW2D5C-GTWK2-E, SW2D5C-GTWK2-EV software package
	GT Designer2 Version2	Generic term of SW2D5C-GTD2-E, SW2D5C-GTD2-EV software package
	GT Designer	Abbreviation of image creation software GT Designer for GOT900
	GT Simulator2	Abbreviation of GT Simulator2 screen simulator GOT900
	GT Converter	Abbreviation of data conversion software GT Converter for GOT900
	GT SoftGOT2	Abbreviation of GT SoftGOT2 monitoring software
	GX Developer	Generic term of SW□D5C-GPPW-E/SW□D5F-GPPW-E software packages
	GX Simulator	Generic term of SW□D5C-LLT-E ladder logic test tool function software packages (SW5D5C-LLT-E or later)

Abbreviations and generic terms		Description
Peripheral connection unit	G4	Abbreviation of AJ65BT-G4-S3
Ethernet unit	E71	Generic of AJ71E71-S3, AJ71E71N-B2, AJ71E71N-B5, AJ71E71N-T, AJ71E71N-B5T, AJ71E71N3-T, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, A1SJ71E71N-B2, A1SJ71E71N-B5, A1SJ71E71N-T, A1SJ71E71N-B5T and A1SJ71E71N3-T
	QE71	Generic of AJ71QE71, AJ71QE71-B5, AJ71QE71N-B2, AJ71QE71N-B5, AJ71QE71N-T, AJ71QE71N-B5T, AJ71QE71N3-T, A1SJ71QE71-B2, A1SJ71QE71-B5, A1SJ71QE71N-B2, A1SJ71QE71N-B5, A1SJ71QE71N-T, A1SJ71QE71N-B5T and A1SJ71QE71N3-T
	Q series-compatible E71	Generic of QJ71E71, QJ71E71-B2, QJ71E71-B5 and QJ71E71-100
Others	Memory	abbreviation of memory (flash memory) in the GOT
	OS	Abbreviation of GOT system software
	Object	Setting data for dynamic image
	Personal Computer	Personal computer where the corresponding software package is installed
	Servo amplifier	Generic term of the MR-J2S-□A, MR-J2S-□CP and MR-J2M A series

* In this manual, the following products are called by new names.

Old Name	New Name	Remarks
GPPW	GX Developer	Generic term of SW□D5C-GPPW-E/SW□D5F-GPPW-E software packages

1 OVERVIEW

This manual describes the specifications, system configurations, setting method, connection cables and other information of each connection supported by the GOT.
When applying the following program examples to the actual system, make sure to examine the applicability and confirm that it will not cause system control problems.

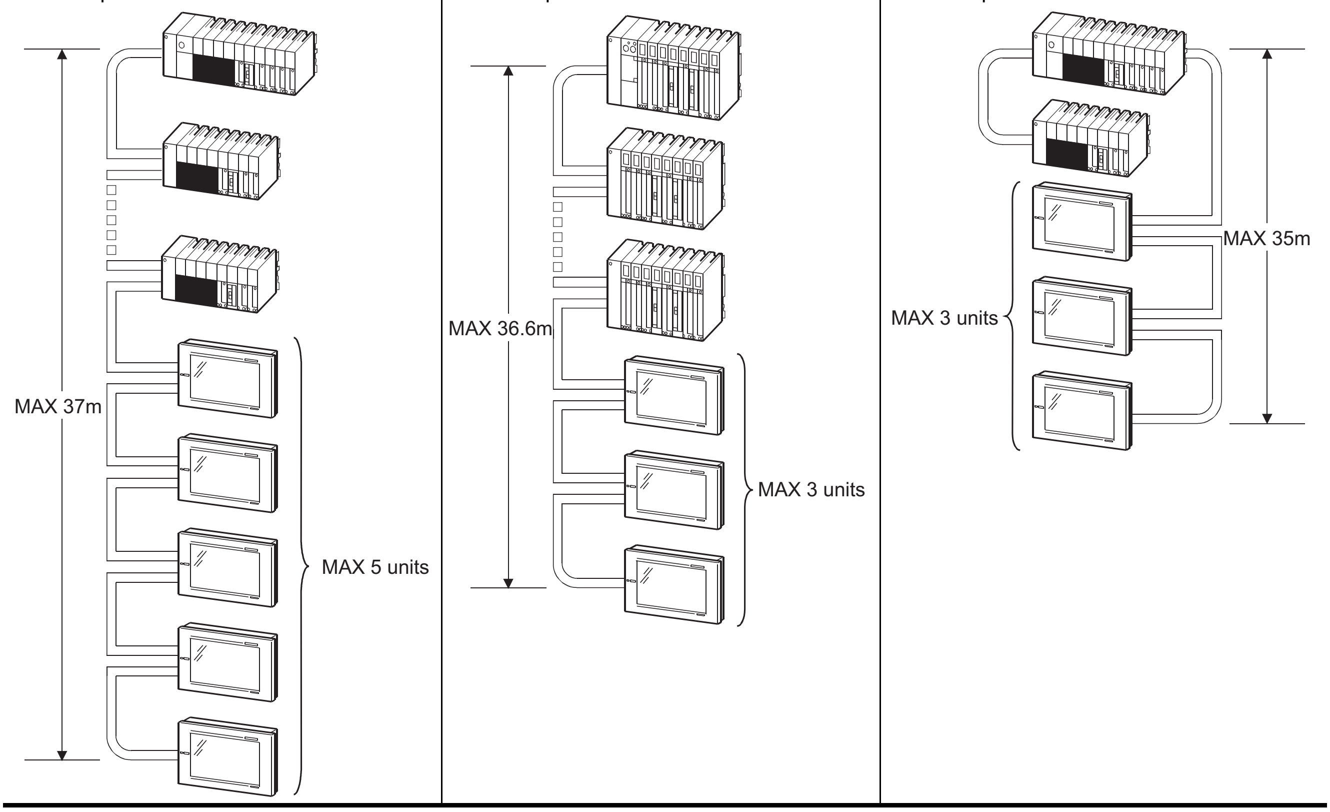
Point

For connection of GT SoftGOT2, refer to the GT SoftGOT2 Version1 Operating Manual.

1.1 Connection supported by GOT

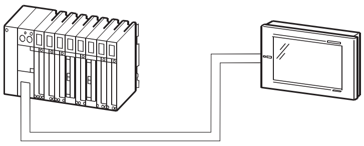
(1) Bus connection (Refer to Chapter 3)
Bus connection is a way of using the extension connector of a base unit for connection of the GOT (connection by I/O bus) and this connection form has the fastest response to a PLC CPU among the GOT connection forms.
Multiple GOTs can be connected in a position away from the PLC CPU to be connected to.
However, only one GOT may be connected depending on the PLC CPU to be connected to.

Connection with QCPU (Q Mode)	Connection with QnACPU type/AnCPU Type	Connection with QnASCPU type/AnSCPU Type
Example: Connection with Q25HCPU	Example: Connection with Q2ACPU	Example: Connection with A2USCPU



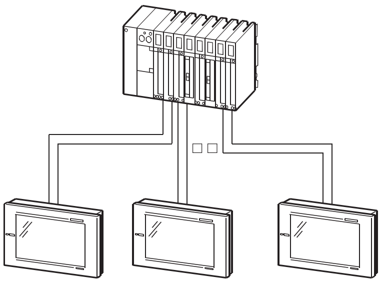
*There are various precautions for bus connection according to the system selected. For details, refer to Chapter 3.

(2) Direct connection to CPU (Refer to Chapter 4)
You can connect the GOT with the PLC CPU by an RS-422/RS-232C cable and this is the most economical way of connection.

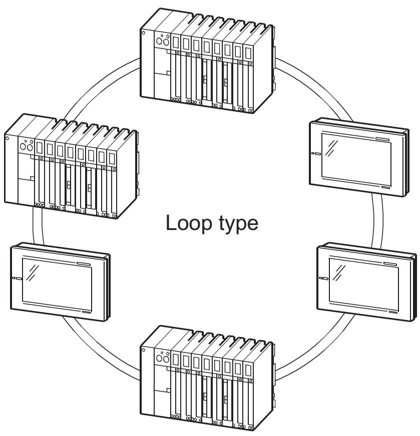


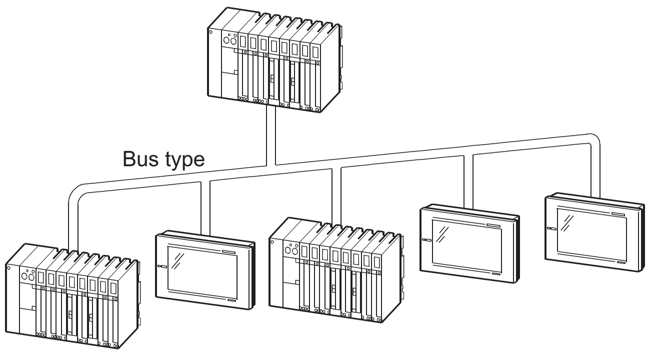
The network module (remote I/O module) on the remote I/O station of the MELSECNET/H network system and GOT can also be connected by the RS-232 cable. (Refer to Section 2.3.6 for connection to the remote I/O station of the MELSECNET/H network system.)

(3) Computer link connection (Refer to Chapter 5)
The computer link module/serial communication module and GOT can be connected on 1:1 or 1:2 basis (QJ71C24(N)(-R2/-R4) function version B only). Therefore, multiple GOTs can be connected according to the number of computer link modules/serial communication modules mounted on the main base unit of the PLC CPU or the remote I/O station of the MELSECNET/H network system. (Refer to Section 2.3.6 for connection to the remote I/O station of the MELSECNET/H network system.)
Also, while monitoring is performed on the GOT, a sequence program can be debugged on the peripheral device, e.g. GX Developer, connected to the PLC CPU or serial communication unit (QJ71C24(N)(-R2/-R4) function version B only).
For connection of MELSECNET/H network system to the remote I/O station, refer to Section 2.3.6.

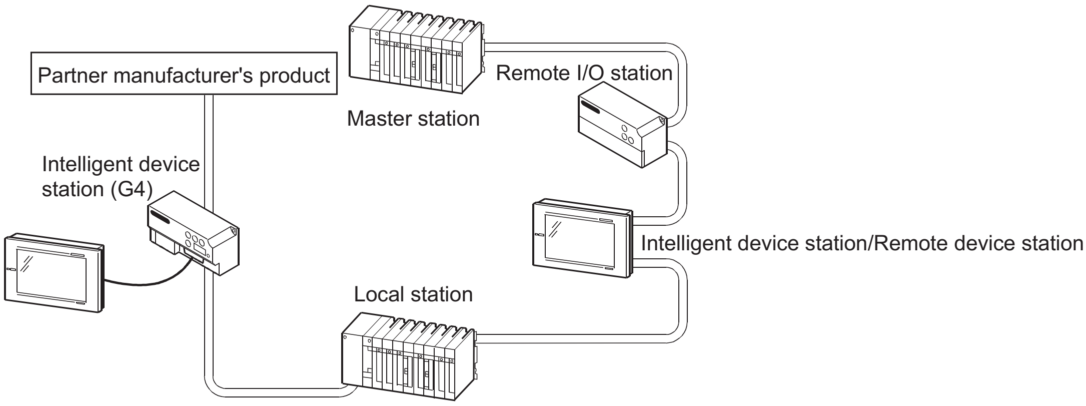


(4) MELSECNET connection (Refer to Chapter 6, Chapter 7)
The GOT is used as a local station of the data link system or a normal station of the network system and allows remote control via network.

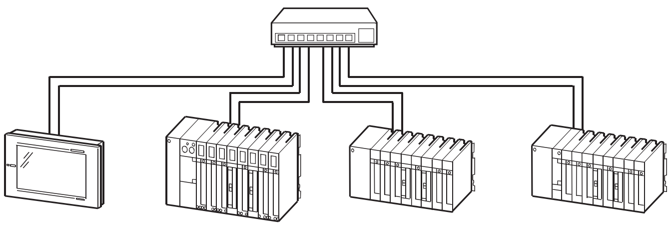




(5) CC-Link connection (Refer to Chapter 8 to Chapter 10)
The GOT is used as an intelligent device station or a remote device station of the CC-Link system and allows remote control via network.
Via the G4, the GOT can also be integrated into the CC-Link system.
(When the GOT is connected via the G4, only the QCPU (Q mode) may be monitored.)

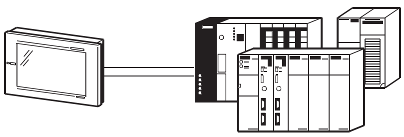


(6) Ethernet connection (refer to Chapter 11)
By incorporating the GOT into the Ethernet system (UDP/IP communication protocol), the PLC CPU can be remote-controlled via the network.

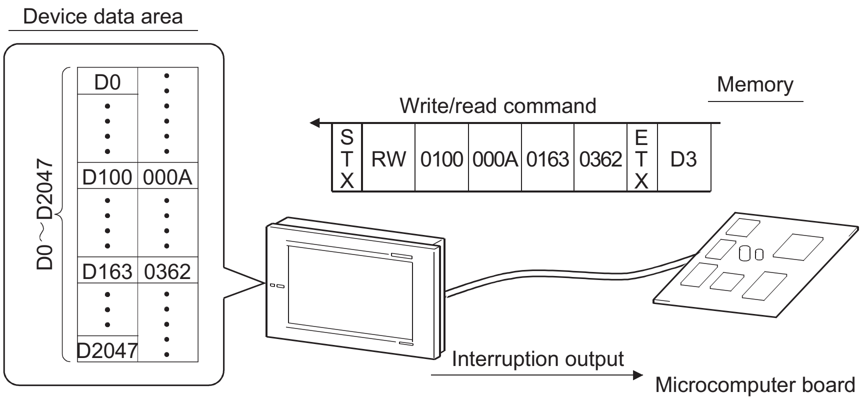


(7) Third party PLC connection (refer to Chapter 12 to 19)
The GOT can be connected with any of the following third party PLC CPUs for monitoring.

• OMRON PLC	• Yaskawa PLC
• Allen-Bradley PLC	• Sharp PLC
• Toshiba PLC	• SIEMENS PLC
• Hitachi PLC	• Matsushita Electric Works PLC

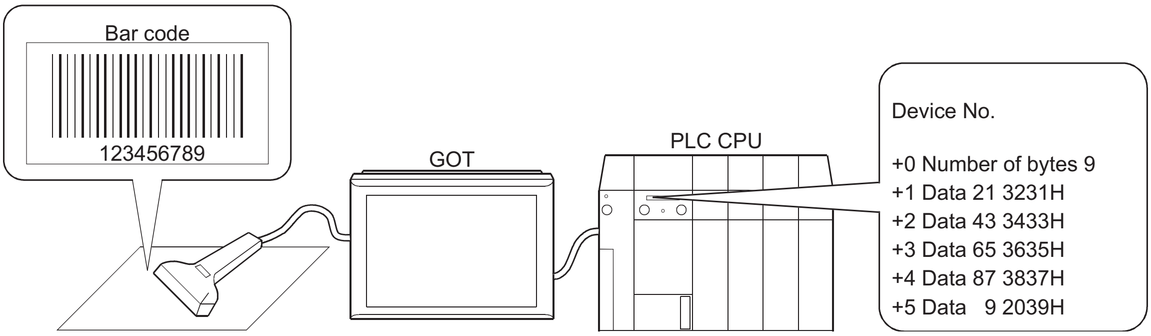


(8) Microcomputer connection (Refer to Chapter 16)
Virtual device (D) of the GOT can be monitored by sending/receiving data from/to a personal computer, microcomputer board, PLC, etc. (hereinafter referred to as "host")

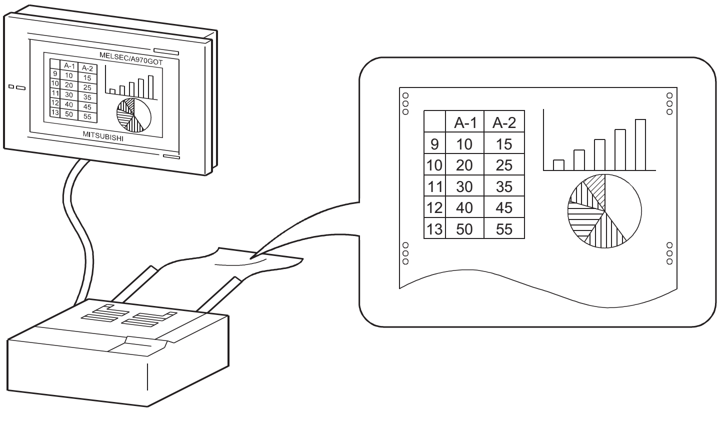


(9) Optional devices connection (Refer to Chapter 21)

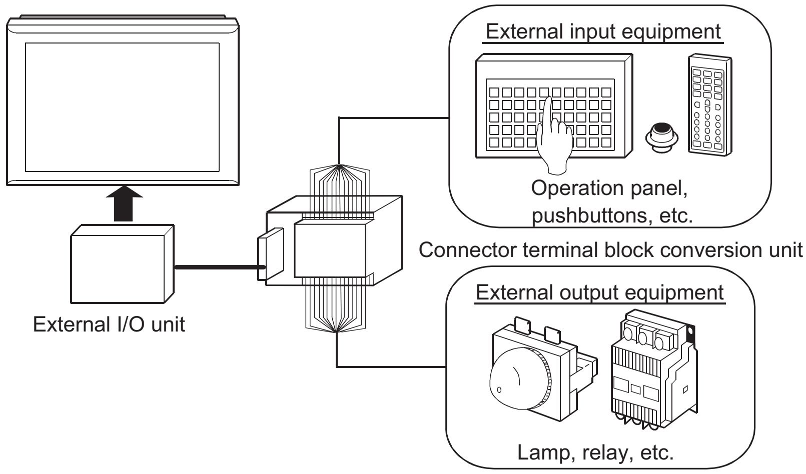
(a) Bar code reader
If connected to a bar code reader, the GOT can write data read with the bar code reader to the PLC CPU.



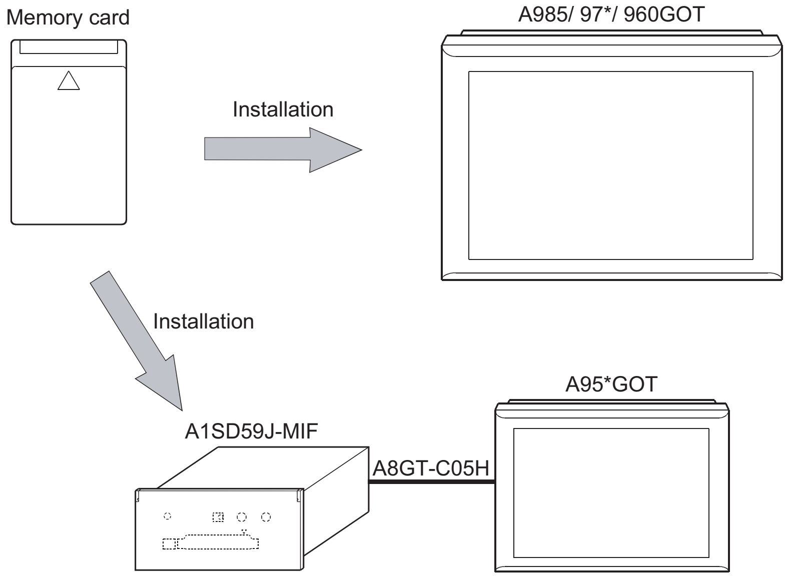
(b) Printer
If connected to a printer, the GOT can print data of alarm history and hard copy functions.



(c) External I/O equipment
By connection of input equipment (operation panel, ten-key panel, pushbuttons, etc.), you can write to devices, e.g. touch input, numerical input and screen switching, from outside the GOT. In addition, you can connect output equipment (lamps, relays, etc.) to provide outputs from the GOT to the outside.

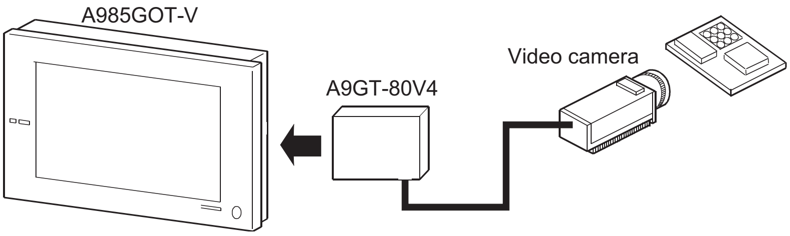


(d) Memory card
Installation of memory card on the GOT allows storage of data used in the transfer data (system program, monitor screen data) and object function (alarm history function, recipe function, etc.).



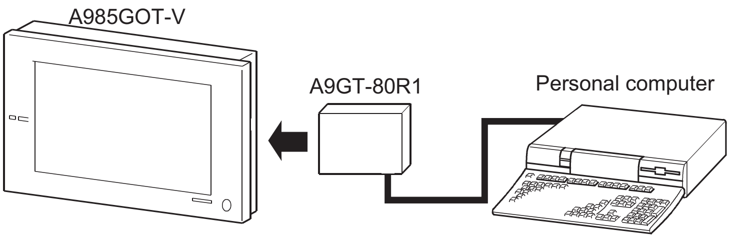
(e) Video camera

By connecting a video camera to the GOT, you can display a picture taken with the video camera in the GOT video window.



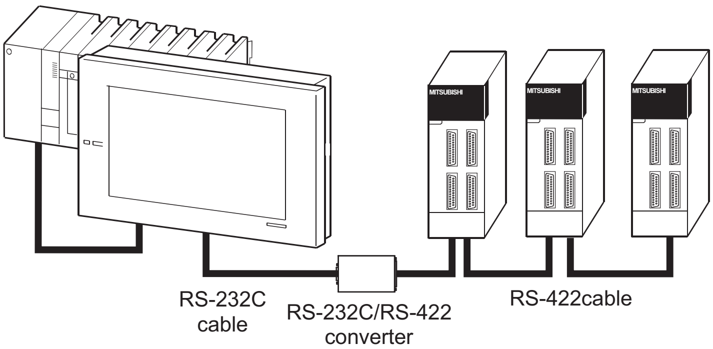
(f) Personal computer

By connecting a personal computer to the GOT, you can display the personal computer screen on the GOT.



(g) Servo amplifier

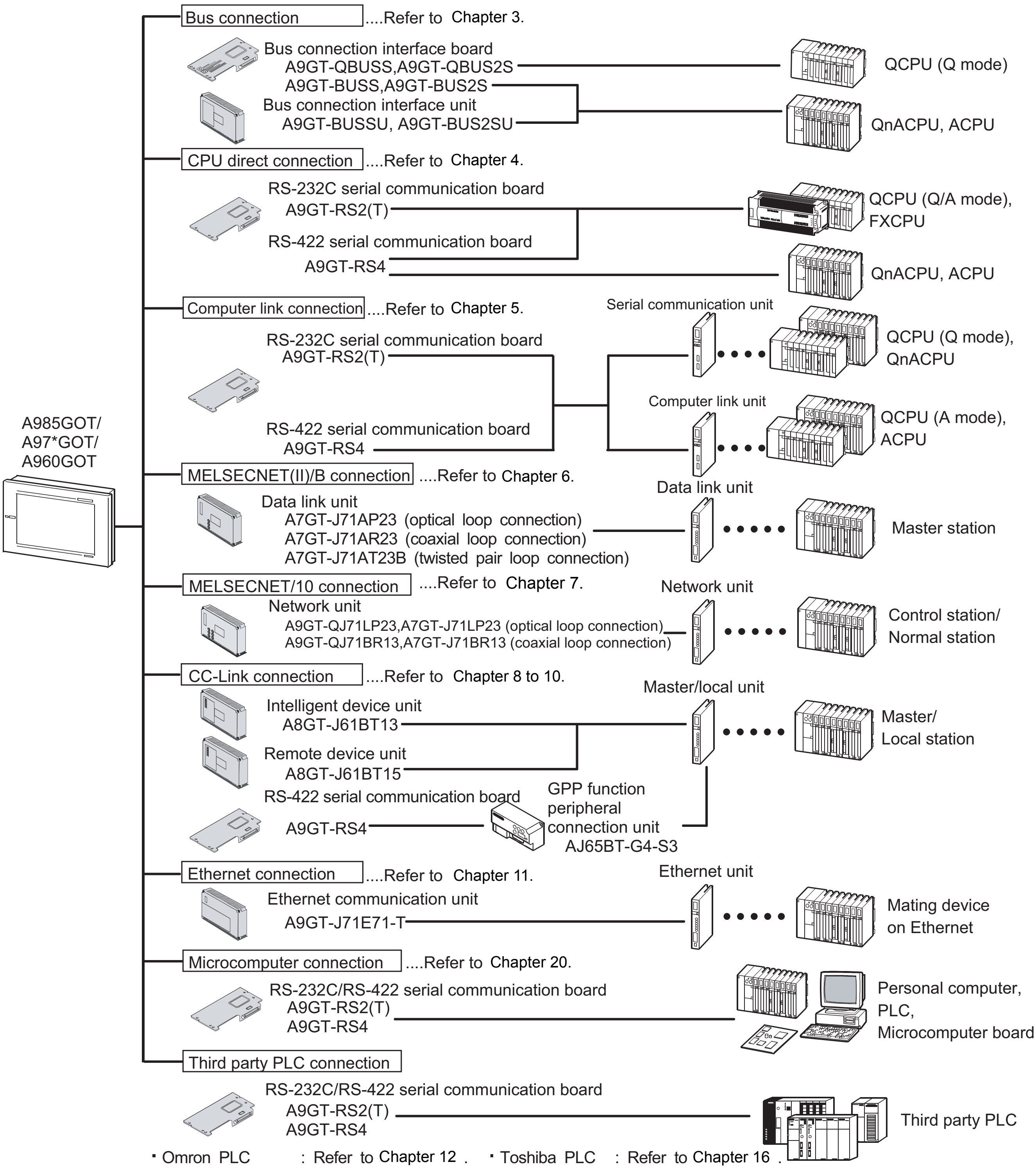
By connecting servo amplifiers to the GOT, you can perform various monitor functions, parameter setting changes, test operation and others for the servo amplifiers.



1.2 Overall system configurations

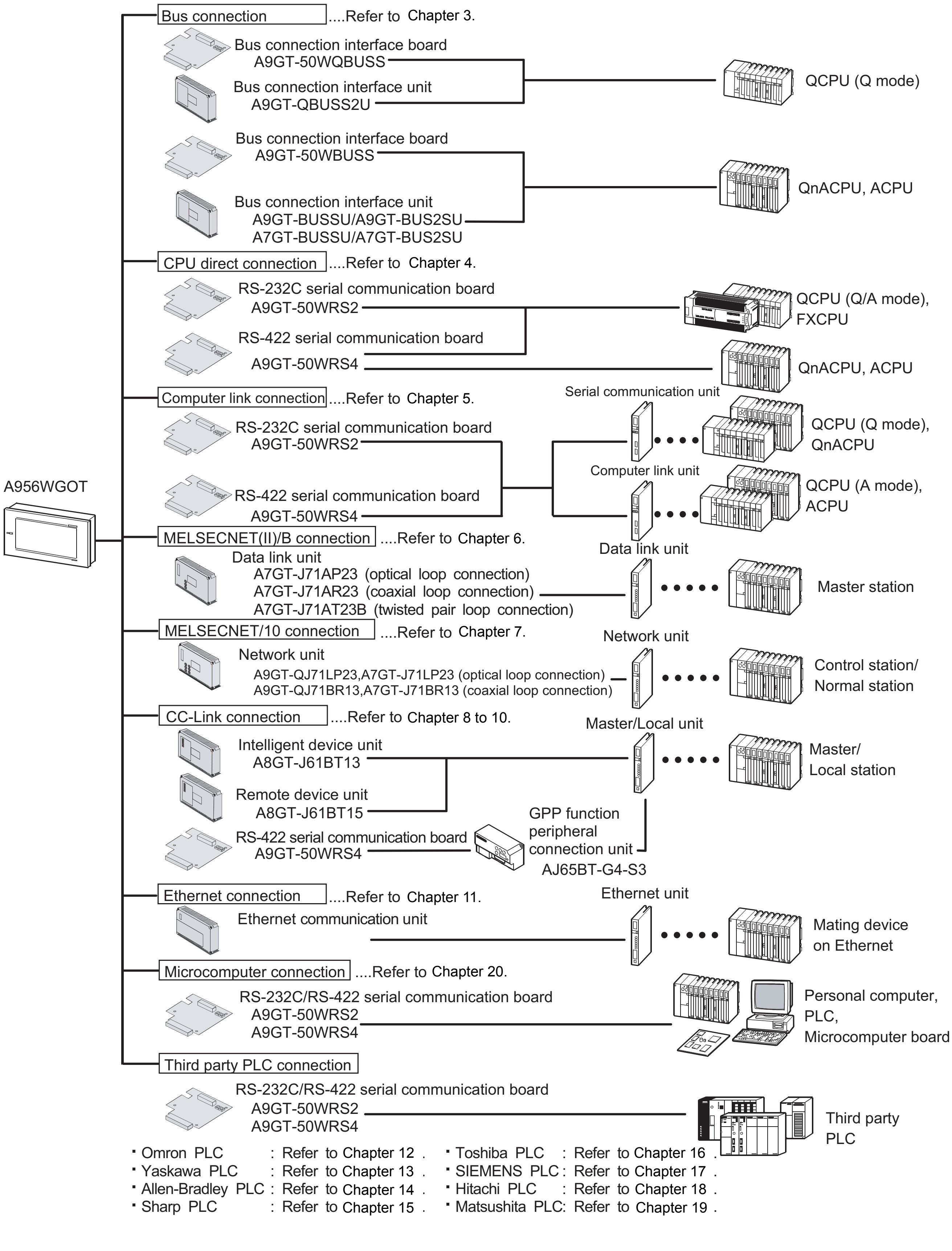
System configurations are given below on a GOT mode basis.

(1) A985GOT/A97*GOT/A960GOT



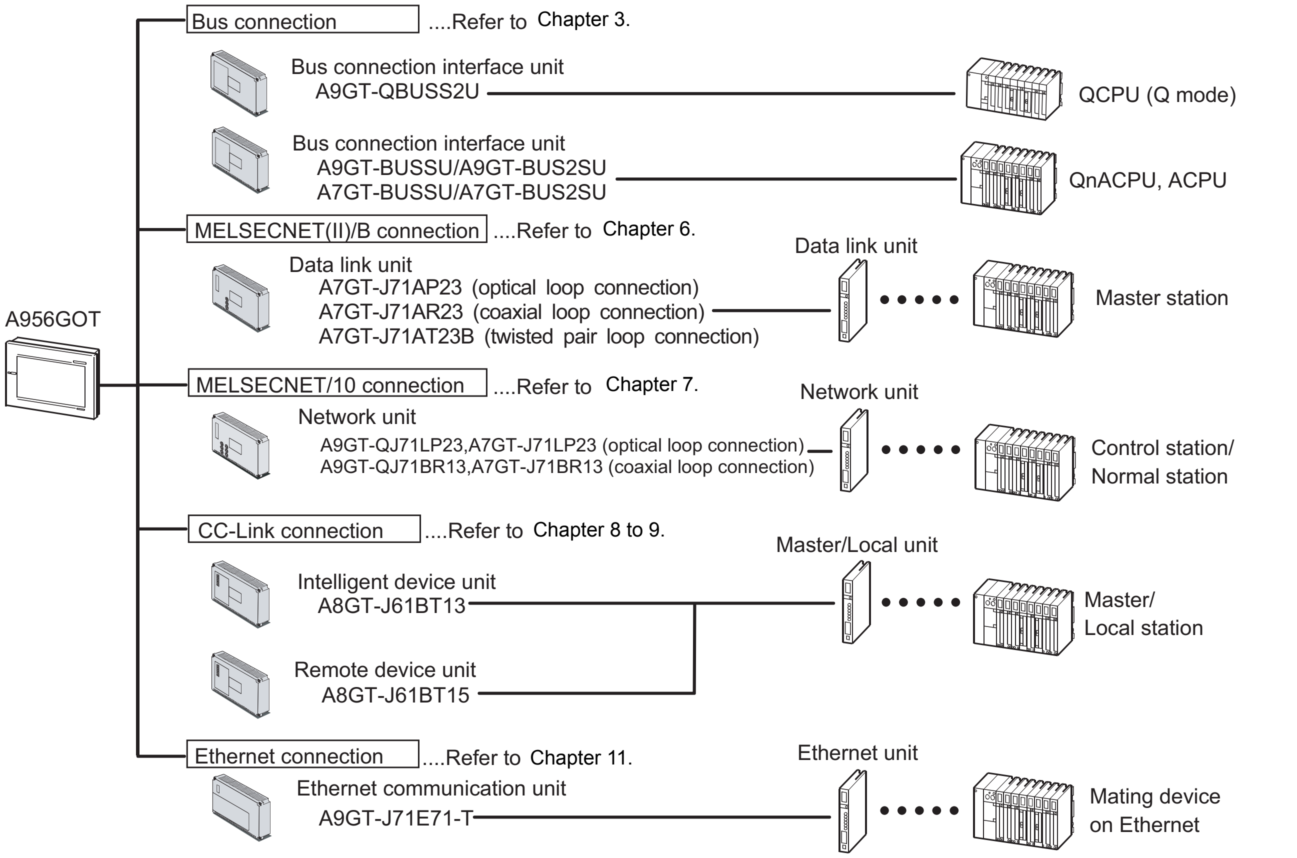
- Omron PLC : Refer to Chapter 12 .
- Yaskawa PLC : Refer to Chapter 13 .
- Allen-Bradley PLC : Refer to Chapter 14 .
- Sharp PLC : Refer to Chapter 15 .
- Toshiba PLC : Refer to Chapter 16 .
- SIEMENS PLC : Refer to Chapter 17 .
- Hitachi PLC : Refer to Chapter 18 .
- Matsushita PLC: Refer to Chapter 19 .

(2) A956WGOT

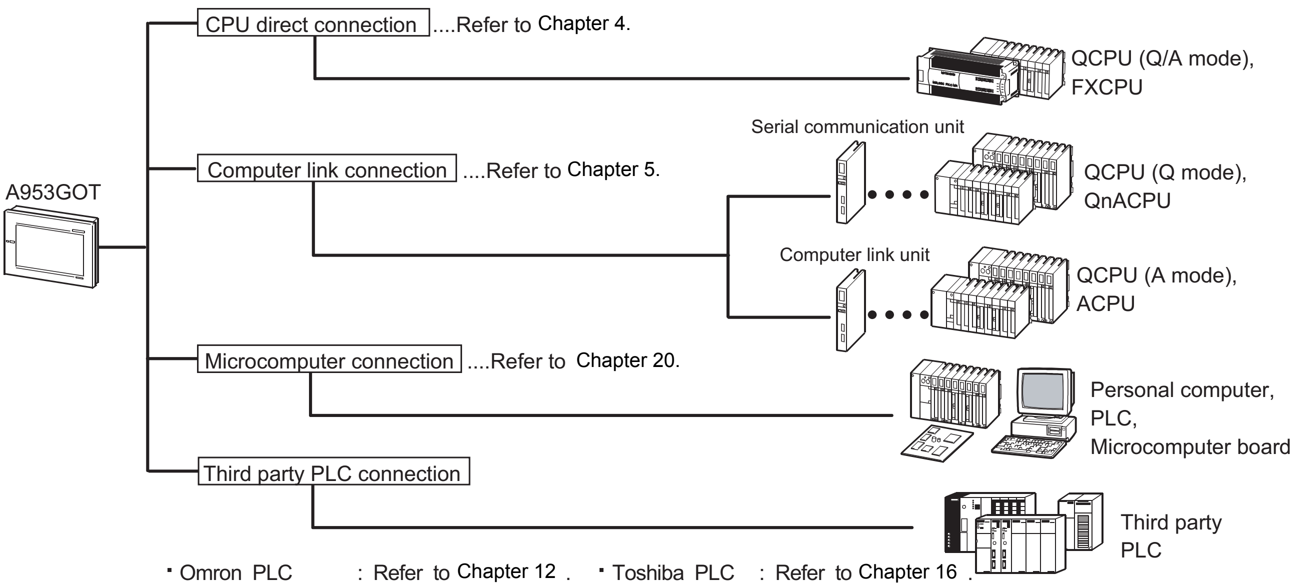


A956WGOT
Bus connection ....Refer to Chapter 3.
Bus connection interface board
A9GT-50WQBUSS
Bus connection interface unit
A9GT-QBUSS2U
QCPU (Q mode)
Bus connection interface board
A9GT-50WBUSS
Bus connection interface unit
A9GT-BUSSU/A9GT-BUS2SU
A7GT-BUSSU/A7GT-BUS2SU
QnACPU, ACPU
CPU direct connection ....Refer to Chapter 4.
RS-232C serial communication board
A9GT-50WRS2
RS-422 serial communication board
A9GT-50WRS4
QCPU (Q/A mode),
FXCPU
QnACPU, ACPU
Computer link connection ....Refer to Chapter 5.
RS-232C serial communication board
A9GT-50WRS2
RS-422 serial communication board
A9GT-50WRS4
Serial communication unit
QCPU (Q mode),
QnACPU
Computer link unit
QCPU (A mode),
ACPU
MELSECNET(II)/B connection ....Refer to Chapter 6.
Data link unit
A7GT-J71AP23 (optical loop connection)
A7GT-J71AR23 (coaxial loop connection)
A7GT-J71AT23B (twisted pair loop connection)
Data link unit
Master station
MELSECNET/10 connection ....Refer to Chapter 7.
Network unit
A9GT-QJ71LP23,A7GT-J71LP23 (optical loop connection)
A9GT-QJ71BR13,A7GT-J71BR13 (coaxial loop connection)
Network unit
Control station/
Normal station
CC-Link connection ....Refer to Chapter 8 to 10.
Intelligent device unit
A8GT-J61BT13
Remote device unit
A8GT-J61BT15
RS-422 serial communication board
A9GT-50WRS4
GPP function
peripheral
connection unit
AJ65BT-G4-S3
Master/Local unit
Master/
Local station
Ethernet connection ....Refer to Chapter 11.
Ethernet communication unit
Ethernet unit
Mating device
on Ethernet
Microcomputer connection ....Refer to Chapter 20.
RS-232C/RS-422 serial communication board
A9GT-50WRS2
A9GT-50WRS4
Personal computer,
PLC,
Microcomputer board
Third party PLC connection
RS-232C/RS-422 serial communication board
A9GT-50WRS2
A9GT-50WRS4
Third party
PLC
・Omron PLC : Refer to Chapter 12 .
・Yaskawa PLC : Refer to Chapter 13 .
・Allen-Bradley PLC : Refer to Chapter 14 .
・Sharp PLC : Refer to Chapter 15 .
・Toshiba PLC : Refer to Chapter 16 .
・SIEMENS PLC : Refer to Chapter 17 .
・Hitachi PLC : Refer to Chapter 18 .
・Matsushita PLC: Refer to Chapter 19 .

(3) A956GOT

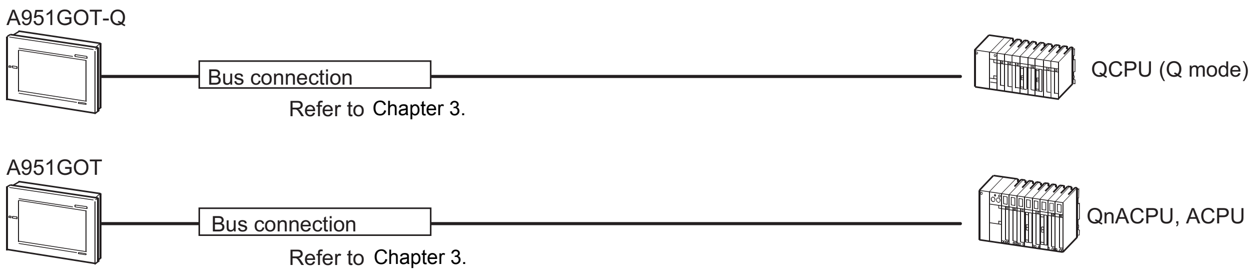


(4) A953GOT

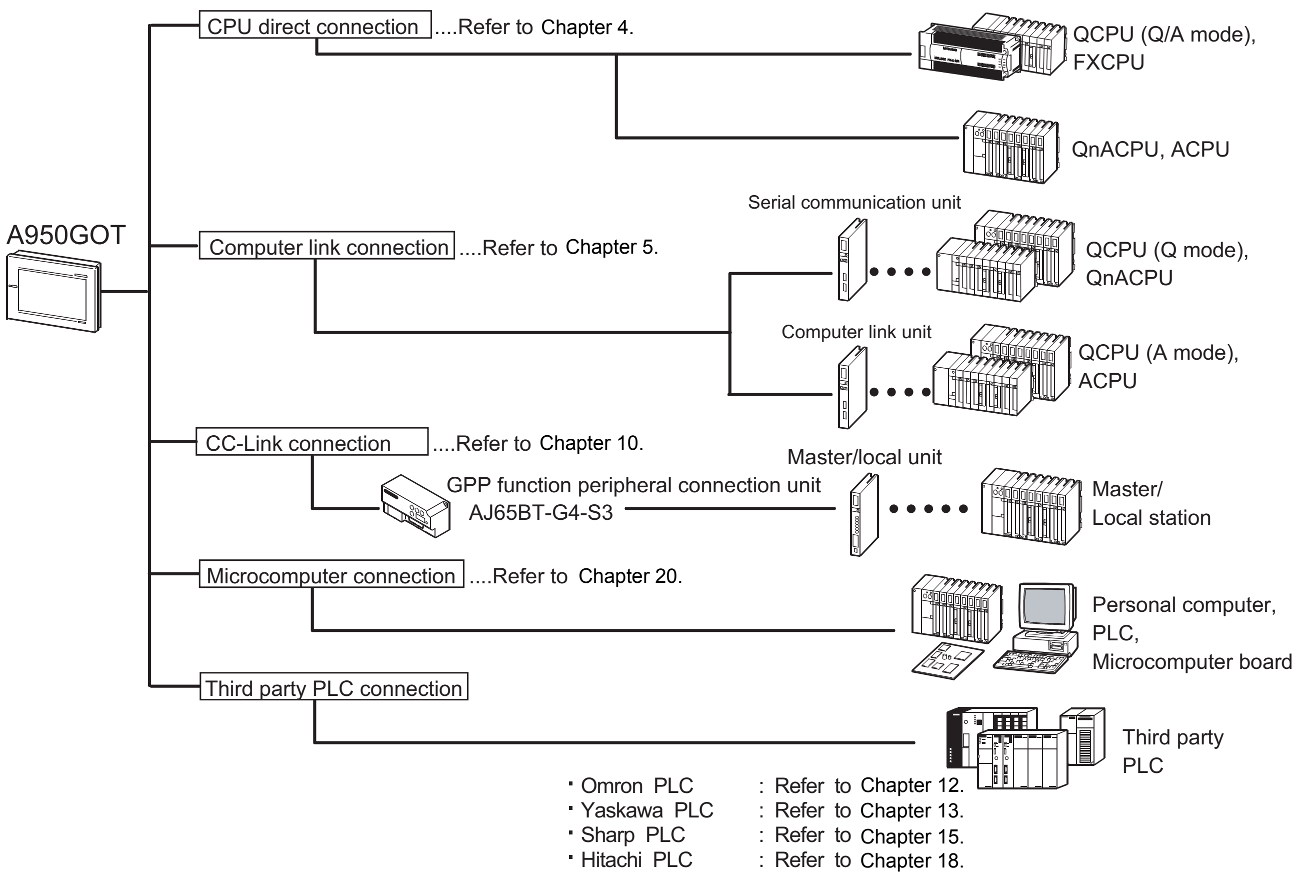


- Omron PLC : Refer to Chapter 12 .
- Yaskawa PLC : Refer to Chapter 13 .
- Allen-Bradley PLC : Refer to Chapter 14 .
- Sharp PLC : Refer to Chapter 15 .
- Toshiba PLC : Refer to Chapter 16 .
- SIEMENS PLC : Refer to Chapter 17 .
- Hitachi PLC : Refer to Chapter 18 .
- Matsushita PLC: Refer to Chapter 19 .

(5) A951GOT



(6) A950GOT



2 SPECIFICATION

2.1 PLC CPU that allows monitoring

2.1.1 Applicable CPU list

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

(1) MITSUBISHI PLC

Item			Type
QCPU	QCPU(Q mode)		Q00JCPU, Q00CPU*1, Q01CPU*1, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU, Q12PRHCPU, Q25PRHCPU
	QCPU(A mode)		Q02CPU-A, Q02HCPU-A, Q06HCPU-A
	Remote I/O station		Network module for MELSECNET/H network system remote I/O station QJ72LP25-25, QJ72LP25G, QJ72BR15
QnACPU	QnACPU Type		Q2ACPU, Q2ACPU-S1, Q2AHCPU, Q2AHCPU-S1, Q3ACPU, Q4ACPU, Q4ARCPU
	QnASCPU Type		Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU, Q2ASHCPU-S1
ACPU	AnCPU Type	AnUCPU	A2UCPU, A2UCPU-S1, A3UCPU, A4UCPU
		AnACPU	A2ACPU, A2ACPU-S1, A3ACPU
		AnNCPU	A1NCPU, A2NCPU, A2NCPU-S1, A3NCPU
	AnSCPU Type	AnUS(H) CPU	A2USCPU, A2USCPU-S1, A2USHCPU-S1
		AnS(H)CPU	A1SCPU, A1SCPUC24-R2, A2SCPU, A2SCPU-S1, A1SHCPU, A2SHCPU, A2SHCPU-S1
		A1SJ(H) CPU	A1SJCPU, A1SJCPU-S3, A1SJHCPU
	A1FXCPU		A1FXCPU
			A0J2HCPU, A2CCPU, A2CCPUC24, A2CJCPU
FXCPU			FX_0 Series, FX_{0S} Series, FX_{0N} Series, FX_1 Series, FX_{1S} Series, FX_{1N} Series, FX_{1NC} Series, FX_2 Series, FX_{2C} Series, FX_{2N} Series, FX_{2NC} Series, FX_{3NC} Series*2
Motion controller CPU	Q Series*3		Q172CPU, Q173CPU, Q172CPUN, Q173CPUN
	A Series		A273UCPU, A273UHCPU, A273UHCPU-S3, A373CPU, A373UCPU, A373UCPU-S3, A171SCPU, A171SCPU-S3, A171SCPU-S3N, A171SHCPU, A171SHCPUN, A172SHCPU, A172SHCPUN, A173UHCPU, A173UHCPU-S1
FA controller			LM610, LM7600, LM8000
MELDAS C6/C64*4			FCA C6, FCA C64

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

*2 Monitor the FX_{3UC} series within the device range of the FX_{2N} series.

*3 Use the following versions of the motion controller CPU (Q Series).

1) Products with the main unit OS of Version 00E

2) Products whose main units have the following serial numbers (indicated on the rating plate on the CPU module side)

Q172CPU : serial numbers K******, Q173CPU : serial numbers J******

*4 Use the MELDAS whose NC system software version is Version D or later.

(2) Other PLC

Item		Type
Omron PLC		C200HS, C200H, C200Hα Series(C200HX,C200HG,C200HE), CQM1, C1000H, C2000H, CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11, CVM1-CPU21, CS1, CS1D, CJ1H, CJ1G, CJ1M, CPM1, CPM1A, CPM2A, CPM2C, CQM1H
Yaskawa PLC		GL60S, GL60H, GL70H, GL120, GL130, CP-9200SH, CP-9300MS, MP-920, MP-930, MP-940, MP-9200(H), PROGIC-8
Allen-Bradley PLC	SLC500 Series	SLC500-20, SLC500-30, SLC500-40, SLC5/01, SLC5/02, SLC5/03, SLC5/04, SLC5/05
	MicroLogix1000 Series	1761-L10BWA, 1761-L10BWB, 1761-L16AWA, 1761-L16BWA, 1761-L16BWB, 1761-L16BBB, 1761-L32AWA, 1761-L32BWA, 1761-L32BWB, 1761-L32BBB, 1761-L32AAA, 1761-L20AWA-5A, 1761-L20BWA-5A, 1761-L20BWB-5A
	MicroLogix1500 Series	1764-LSP
Sharp PLC		JW-21CU, JW-22CU, JW-31CUH, JW-32CUH, JW-33CUH, JW-50CUH, JW-70CUH, JW-100CUH, JW-100CU, Z-512J
Toshiba PLC	PROSEC T Series	T3, T3H, T2E, T2N, T2(PU224 Type)
	PROSEC V Series	Model3000(S3), S2T
SIEMENS PLC		SIMATIC S7-300 Series, SIMATIC S7-400 Series
HITACHI PLC (HIDEC H Series)	Large type H Series	H-302(CPU2-03H), H-702(CPU2-07H), H-1002(CPU2-10H), H-2002(CPU2-20H), H-4010(CPU3-40H), H-300(CPU-03Ha), H-700(CPU-07Ha), H-2000(CPU-20Ha)
	H-200 to 252 Series	H-200(CPU-02H,CPE-02H), H-250(CPU21-02H), H-252(CPU22-02H), H-252B(CPU22-02HB), H-252C(CPU22-02HC,CPE22-02HC)
	H Series board type	H-20DR, H-28DR, H-40DR, H-64DR, H-20DT, H-28DT, H-40DT, H-64DT, HL-40DR, HL-64DR
	EH-150 Series	EH-CPU104, EH-CPU208, EH-CPU308, EH-CPU316
Matsushita Electric Works		FP0-C16CT, FP0-C32CT, FP1-C24C, FP1-C40C, FP2, FP2SH, FP3, FP5, FP10(S), FP10SH, FP-M(C20TC), FP-M(C32TC)

2.1.2 PLC CPUs that can be monitored per connection form

The PLC CPU that can be monitored by the GOT changes with the system up to the PLC CPU monitored (connection form).
The PLC CPUs that can be monitored by the GOT are indicated below per connection form.

○: Applicable △: Partly restricted ×: Inapplicable

PLC CPU Monitored		Bus Connection	CPU Direct Connection	Computer Link Connection	Ethernet Connection	MELSECNET Connection				CC-Link Connection		
						MELSEC NET/H	MELSEC NET/10*2		MELSEC NET/B,(II)	Intelligent device station	Remote device station*3	Via G4
							A	A/QnA/Q				
QCPU (Q mode)	Other than redundant system	○*9	○*9	○*9	○	×	△*4	○	×	○	○	○
	Redundant system	×	△*13	△*11	△*12	×	×	△*12	×	○	○	○
QCPU (A mode)		×	○	○	○	×	○	○	○	○	○	×
QnACPU		○	○	○	○	×	△*4	○	○	○	○	×
ACPU	Other than A1FXCPU	△*5	△*6	△*7*8	○	×	○	○	○	○	○	×
	A1FXCPU	×	○	×	×	×	×	×	×	×	×	×
FXCPU		×	○	×	×	×	×	×	×	×	×	×
Motion controller CPU (Q series)		○	○	○	○	×	×	○	×	○	×	○
Motion controller CPU (A series) *1		○	○	△*8	○	×	○	○	○	○	○	×
Remote I/O station	MELSECNET/H	×	○	○	×	×	×	×	×	×	×	×
	MELSECNET/10	×	×	×	×	×	×	×	×	×	×	×
	MELSECNET/B, II	×	×	×	×	×	×	×	×	×	×	×
FA controller		×	×	×	×	×	○	○	○	×	×	×
MELDAS C6/C64*1		×	○	×	○	×	×	○	×	○*10	○	×
Omron PLC		×	○	○	×	×	×	×	×	×	×	×
Yaskawa PLC		×	○	○	×	×	×	×	×	×	×	×
Allen-Bradley PLC		×	○	×	×	×	×	×	×	×	×	×
Sharp PLC		×	○	○	×	×	×	×	×	×	×	×
Toshiba PLC		×	×	○	×	×	×	×	×	×	×	×
SIEMENS PLC		×	○	×	×	×	×	×	×	×	×	×
I PLC		×	○	○	×	×	×	×	×	×	×	×
Matsushita Electric Works PLC		×	○	○	×	×	×	×	×	×	×	×
Microcomputer		×	○	×	×	×	×	×	×	×	×	×

*1 Connection to a remote I/O station cannot be made independently of the connection form.
*2 Including the case where the MELSECNET/H is used in the MELSECNET/10 mode.
Connection to a remote I/O network cannot be made.
A : Indicates when the communication driver MNET/10(A) is used.
A/QnA/Q: Indicates when the communication driver MNET/10(A/QnA/Q) is used.
*3 For connection as a remote device station, only the link devices (RX, RY, RWw, RWr) assigned to the GOT may be monitored.
*4 When creating a monitor screen (project data) with the GT Designer2, note the following two points.
・When setting the monitor devices, note that the device ranges that can be monitored are the ranges for monitor-

ing the ACPU (A3ACPU equivalent).

- The PLC CPUs monitored are the QCPU (Q mode) and QnACPU, but the PLC type must be set to "MELSEC-A".

*5 The A2CCPU and A2CCPUC24 do not allow bus connection.

*6 When monitoring the AnNCPU(S1), A2SCPU(S1), A0J2HCPU or A2CCPU, data with word specification (Word specification for word/bit device) cannot be written from the GOT to the CPU with software version earlier than the following.

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

*7 The A2CCPU does not allow computer link connection.

*8 For computer link connection of the A2SCPU, A2SHCPU-S1, A2SHCPU, A1SHCPU, A1SJHCPU, A0J2HCPU, A171SHCPU and A172SHCPU, use the computer link module whose software version is version U or later.
In addition, the A0J2-C214-S1 (A0J2HCPU-dedicated computer link module) cannot be used.

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

*10 Supported by the A8GT-J61BT13 whose software version is Version X or later (manufactured in December, 1999).

*11 Computer link connection can be made for only the remote I/O station of the MELSECNET/H network system.

*12 Does not respond to the system switching of the redundant system automatically. Respond to the system switching using the script function. (Refer to Section 2.4 8)

*13 Responds to the system switching automatically when directly connected to the remote I/O station of the MELSECNET/H network system. Does not respond to the system switching automatically when directly connected to the CPU module of the redundant system. For the countermeasures, reconnect the cable to the control system CPU in the case of using one GOT, or connect two GOTs to each CPU module of System A and System B in the case of using two GOTs.

2.2 Monitoring of Special Function Unit

(1) When using bus connection/CPU direct connection/computer link connection
- The special function modules on the bases of the connected station and other stations can be monitored.
- Special module monitoring for computer link connection is enabled for the systems of the following combinations.

PLC CPU used	Computer link/serial communication module used*1
QCPU (Q mode) (Other than redundant system)	QJ71C24
QCPU (A mode)	A1SJ71UC24
QnACPU	AJ71QC24, A1SJ71QC24
ACPU	AJ71UC24, A1SJ71UC24

*1: For details of module name, refer to Chapter 5.

- When CPU direct connection or computer link connection is made to remote I/O stations, special function modules on the remote I/O stations or master station cannot be monitored.

(2) When using MELSECNET(II) connection/MELSECNET/B connection
- The special function module on the base of the master station can be monitored.(Cannot be monitored when the master station is the QnACPU.)
- he special function modules on the bases of local stations/remote I/O stations cannot be monitored.

(3) When using MELSECNET/10 connection
- The special function modules on the bases of the control station and normal stations can be monitored.
  When the QCPU (Q mode)/QnACPU is used for the control/normal station, it cannot be monitored depending on the communication unit and communication driver.

Communication unit	Communication driver	Applicable CPU of the control/normal station
A9GT-QJ71LP23, A9GT-QJ71BR13	MNET/10(A/QnA/Q)	ACPU, QCPU (A mode), QnACPU, QCPU (Q mode)
	MNET/10(A)	ACPU, QCPU (A mode)
A7GT-J71LP23, A7GT-J71BR13	MNET/10(A/QnA/Q)	Unusable
	MNET/10(A)	ACPU, QCPU (A mode)

- Special function modules on the bases of the remote I/O stations cannot be monitored.

(4) When using CC-Link connection (remote device station)
- The special function modules cannot be monitored.

(5) When using CC-Link connection (intelligent device station)/CC-Link connection (via G4)
- The special function modules on the bases of the master and local stations can be monitored.
- Special function modules on the bases of the remote I/O stations cannot be monitored.

(6) When using Ethernet connection
- The special function unit on the base of the PLC CPU assigned the IP address can be monitored.
  The special function modules on the bases of the master and local stations can be monitored.
  (The station assigned in the Ethernet setting of GT Designer2 can be monitored.)

2.3 Access Range for Monitoring

Point

Note that the remote I/O station of the MELSECNET/10 network system or MELSECNET/B, (II) data link system cannot be monitored by connecting the GOT to it.

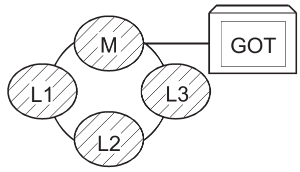
The remote I/O station of the MELSECNET/H network system can be monitored by connecting the GOT to it.

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

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

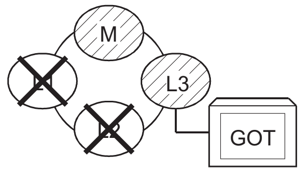
(a) If connected to master station

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



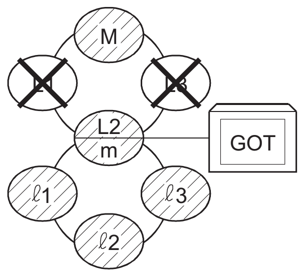
(b) If connected to local station

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

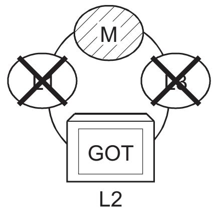


(c) If connected to the master station on the third layer

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



(2) MELSECNET/B connection and MELSECNET(II) connection



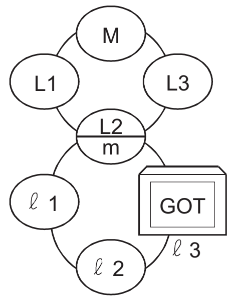
- The GOT is regarded as a local station and can monitor only the master station. If the PLC CPU of the local station is QnACPU, devices other than B and W that are allocated by the link parameter cannot be monitored.
- Local devices cannot be monitored.
  When setting the monitor device, designate the NW number and the station number as follows.
  When monitoring devices B and W that are allocated by the link parameter :
  NW number : 0, Station number : Local
  When monitoring devices other than B and W of the master station :
  NW number : 0, Station number : Others
  (Station number : 0)

Point

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

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

(4) Setting method of monitor device
Describes the NW numbers for setting monitor devices and method of setting station numbers with an example shown below.



(a) When monitoring devices B and W that are allocated by the connected station (local station) and link parameter :
NW number : 0, Station number : Local

(b) When monitoring devices of other stations :
NW number : 0, Station number : Refer to the following table.

Point

For monitoring devices B and W that are allocated by the link parameter, make sure to use the local device number if designating devices allocated to other station.

If not, display speed will be reduced.

Station number setting

Station connected to GOT \ Station to be accessed	M	L1	L2 m	L3	ℓ1	ℓ2	ℓ3
M	Local	Other 1	Other 2	Other 3	---	---	---
L1	Other 0	Local	---	---	---	---	---
L2 m	Other 0	---	Local	---	Other 1	Other 2	---
L3	Other 0	---	_	Local	---	---	---
ℓ1	---	---	Other 0	---	Local	---	---
ℓ2	---	---	Other 0	---	---	Local	---
ℓ3(GOT)	---	---	Other 0	---	---	---	---

2.3.2 Network system (MELSECNET/H, MELSECNET/10) access range for monitoring

(1) Bus connection

(a) If connected to multi-PLC system

1) The control station on the network and all normal stations can be monitored.
2) The control station on the other network and all normal stations can be monitored. (To monitor the other network, be sure to designate the routing parameter.)
3) When the monitor target is the multi-PLC system, CPU No. 1 to No. 4 can be monitored.
4) Devices of other stations (other than devices B and W that are allocated by the network parameter) may not allow monitoring depending on their PLC CPU.
   Refer to Example 1 to 4.in (7).
   The motion controller CPU (Q Series) at other stations cannot be monitored.

(b) If connected to QCPU(Q Mode)/QnACPU/AnUCPU

1) The control station on the network and all normal stations can be monitored.
2) The control station on the other network and all normal stations can be monitored. (To monitor the other network, be sure to designate the routing parameter.)
3) If connected to an intermediate station and the data link system is included, the master station and local stations can be monitored.
4) If connected to an intermediate station, it is not necessary to designate the data link parameter ìEffective unit number for accessing other stationsî for the PLC CPU of the connected station. (If designated, the parameter will be ignored.)
5) Devices of other stations (other than devices B and W that are allocated by the network parameter) may not allow monitoring depending on their PLC CPU.
   Refer to Example 1 to 4.in (7).

(c) If connected to AnACPU/AnNCPU

1) Control stations on the network can be monitored.
   If the PLC CPU of the local station is QCPU (Q Mode)/QnACPU, devices other than B and W that are allocated by the network parameter cannot be monitored.
2) Normal stations on the network cannot be monitored.
3) Stations on the other network cannot be monitored.

(2) CPU direct connection/computer link connection

(a) If connected to multi-PLC system

1) Access range is as described in (1) (a).

(b) If connected to QCPU (Q Mode)/QnACPU

1) Access range is as described in (1) (b).

(c) If connected to QCPU (A Mode)/AnUCPU

1) Control station on the network and all normal stations can be monitored.
   When devices of other stations (other than devices B and W that are allocated by the network parameter) are monitored, monitoring is not available if the PLC CPU to be monitored is QCPU (Q Mode)/QnACPU.
2) If connected to an intermediate station, use data link parameter ìEffective unit number to access other stationsî to designate the unit number that is connected to the network to be monitored.

(d) If connected to AnACPU/AnNCPU
1) Control stations on the network can be monitored.
If the PLC CPU of the control station is QCPU (Q Mode)/QnACPU, devices other than B and W that are allocated by the network parameter cannot be monitored.
2) Normal stations on the network cannot be monitored.
3) The other network cannot be monitored.

(3) CC-Link connection (intelligent device station)/CC-Link connection (via G4)
- Connected stations can be monitored.
- When the connected station is the multi-PLC system, CPU No. 1 to No. 4 can be monitored.
- Other stations on the network system cannot be monitored.
Refer to (Example 6)

(4) When using MELSECNET/10 connection

Point

Precautions for cyclic transmission

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

(a) The GOT is regarded as a normal station and monitors the control station and all normal stations on the network.
However, the device range that can be monitored depends on the communication unit/ communication driver mounted to/ installed in the GOT.

Communication unit mounted to GOT	Communication driver	PLC CPU to be monitored				
		QCPU (Q mode)	QnACPU	QCPU (A mode)	ACPU	MELDAS C6/ C64
A9GT-QJ71LP23, A9GT-QJ71BR13	MNET/10(A/QnA/Q)	○	○	○	○	○
	MNET/10(A)	△	△	○	○	×
A7GT-J71LP23, A7GT-J71BR13	MNET/10(A/QnA/Q)	Unucable				
	MNET/10(A)	△	△	○	○	×

○ : Can be monitored.
△ : Can be monitored within the AnA device range as follows:
For timer (T), counter ©: access range of 0 to 255.
For file register (R, ER, ZR): cannot be monitored.
× : Cannot be monitored.

If the monitoring target is a PLC CPU within a multiple CPU system, the control CPU of the network module can be monitored.

(b) The other network cannot be monitored.

(c) If devices of other stations (other than devices B and W that are allocated by the network parameter) are monitored, monitoring may not be available depending on the PLC CPU of the network system to be monitored. Refer to (Example 5).

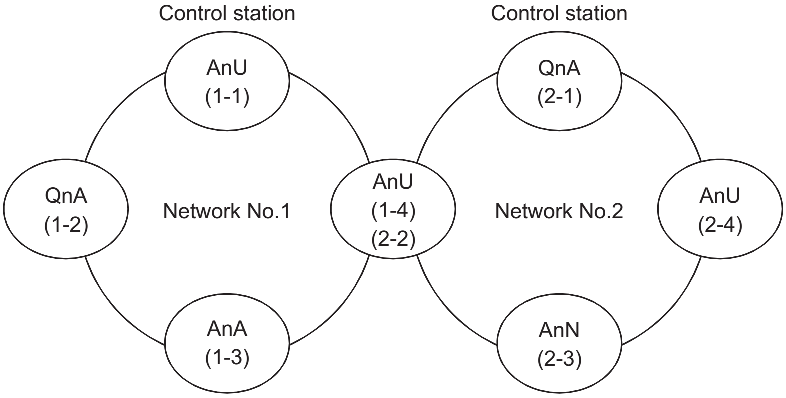
(5) Monitoring devices of other stations on network (Bus connection, direct connection to CPU, computer link connection)
If devices of other stations on the network system are monitored, display speed will be significantly reduced. Therefore monitor link relay (B) and link register (W) that are allocated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

(6) Monitoring devices of the other network

(a) Be sure to designate the routing parameter to the PLC CPU of the connected station.

(b) If the other network is monitored, display speed of object etc. will be significantly reduced.

(7) Monitor access range of other stations and setting method of monitor devices
(Example 1) When using bus connection



• Monitor access range of other station devices (other than B and W)/other network

Station to be accessed / Station connected to GOT	Network No.1				Network No.2			
	AnU (1-1)	QnA (1-2)	AnA (1-3)	AnU (1-4)	QnA (2-1)	AnU (2-2)	AnN (2-3)	AnU (2-4)
AnU (1-1)	○ Local	×	○	○	×	○	×	○
QnA (1-2)	○	○ Local	×	○	○	○	×	○
AnA (1-3)	○	×	○ Local	×	×	×	×	×
AnU (1-4) (2-2)	○	×	×	○ Local	×	○ Local	×	○
QnA (2-1)	○	○	×	○	○ Local	○	○	○
AnN (2-3)	×	×	×	×	×	×	○ Local	×
AnU (2-4)	○	×	×	○	×	○	×	○ Local

○ : Accessible × : Not accessible

• Designating NW number and station number for setting monitor device

1) Monitoring devices B and W that are allocated by the network parameter at the connected station (local station)
   NW number: 0, Station number: Local
2) When monitoring other stations (other than B and W)/other network

Point

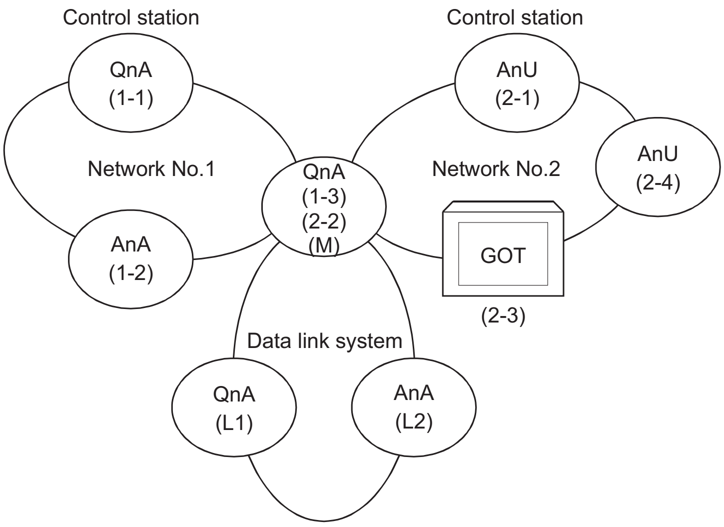
For monitoring devices B and W that are allocated by the network parameter, make sure to use the local device number if designating devices allocated to other station.

If not, display speed will be reduced.

Station to be accessed / Station connected to GOT	Network No.1				Network No.2			
	AnU (1-1)	QnA (1-2)	AnA (1-3)	AnU (1-4)	QnA (2-1)	AnU (2-2)	AnN (2-3)	AnU (2-4)
AnU (1-1)	0, Local	---	1, Other (3)	1, Other (4)	---	2, Other (2)	---	2, Other (4)
QnA (1-2)	1, Other (1)	0, Local	---	1, Other (4)	2, Other (1)	2, Other (2)	---	2, Other (4)
AnA (1-3)	0, Other (0)	---	0, Local	---	---	---	---	---
AnU (1-4) (2-2)	1, Other (1)	---	---	0, Local	---	0, Local	---	2, Other (4)
QnA (2-1)	1, Other (1)	1, Other (2)	---	1, Other (4)	0, Local	2, Other (2)	2, Other (3)	2, Other (4)
AnN (2-3)	---	---	---	---	---	---	0, Local	---
AnU (2-4)	1, Other (1)	---	---	1, Other (4)	---	2, Other (2)	---	0, Local

How to read the table: 2, Other (2)
- 2 → NW number
- Other (2) → Station number

(Example 2) When using bus connection



• Monitor access range of other station devices (other than B and W)/other network

Station connected to GOT \ Station to be accessed	Network No.1			Network No.2				Data link system		
	QnA (1-1)	AnA (1-2)	QnA (1-3)	AnU (2-1)	QnA (2-2)	GOT (2-3)	AnU (2-4)	QnA (M)	QnA (L1)	AnA (L2)
QnA (1-1)	○ Local	○	○	○	○	---	○	○	×	×
AnA (1-2)	×	○ Local	×	×	×	---	×	×	×	×
QnA (1-3) (2-2) (M)	○	×	○ Local	○	○ Local	---	○	○ Local	×	○
AnU (2-1)	×	×	×	○ Local	×	---	○	×	×	×
GOT (2-3)	×	×	×	○	△	---	○	△	×	×
AnU (2-4)	×	×	×	○	×	---	○ Local	×	×	×
QnA (L1)	×	×	×	×	×	---	×	×	○ Local	×
AnA (L2)	×	×	×	×	×	---	×	×	×	○ Local

○ : Accessible △ : Accessible within the range for AnA (T/C: 0 to 255, R/ER/ZR cannot be monitored)

× : Not accessible

- Designating NW number and station number for setting monitor device
  1) When monitoring devices B and W that are allocated by the network parameter at the connected station (local station)
     NW number: 0, Station number: Local station
  2) When monitoring other stations (other than B and W)/other network

Point

For monitoring devices B and W that are allocated by the network parameter, make sure to use the local device number if designating devices allocated to other station.

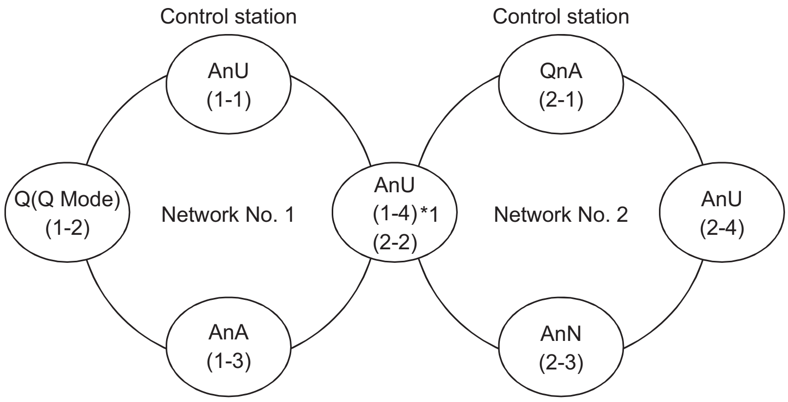
If not, display speed will be reduced.

Station connected to GOT \ Station to be accessed	Network No.1			Network No.2				Data link system		
	QnA (1-1)	AnA (1-2)	QnA (1-3)	AnU (2-1)	QnA (2-2)	GOT (2-3)	AnU (2-4)	QnA (M)	QnA (L1)	AnA (L2)
QnA (1-1)	0, Local	1, Other (2)	1, Other (3)	2, Other (1)	2, Other (2)	---	2, Other (4)	1, Other (3) or 2, Other (2)	---	---
AnA (1-2)	---	0, Local	---	---	0, Local	---	---	---	---	---
QnA (1-3) (2-2) (M)	1, Other (1)	---	0, Local	2, Other (1)	---	---	2, Other (4)	0, Local	---	0, Other (2)*1
AnU (2-1)	---	---	---	0, Local	---	---	2, Other (4)	---	---	---
GOT (2-3)	---	---	---	0, Other (1)	0, Other (2)	---	0, Other (4)	0, Other (2)	---	---
AnU (2-4)	---	---	---	2, Other (1)	---	---	0, Local	---	---	---
QnA (L1)	---	---	---	---	---	---	---	---	0, Local	
AnA (L2)	---	---	---	---	---	---	---	---	---	0, Local

*1 When monitoring the data link system, designate the NW number as 0.

How to read the table: 2, Other (2)
2 ↑ NW number
Other (2) ↑ Station number

(Example 3) When using CPU direct connection or computer link connection



*1 Data link parameter "Effective unit number for accessing other stations" is designated to the unit number that is connected to the network No. 1.

• Monitor access range of other station devices (other than B and W)/other network

Station connected to GOT \ Station to be accessed	Network No.1				Network No.2			
	AnU (1-1)	Q(Q Mode) (1-2)	AnA (1-3)	AnU (1-4)	QnA (2-1)	AnU (2-2)	AnN (2-3)	AnU (2-4)
AnU (1-1)	○ Local	×	○	○	×	○	×	×
Q(Q Mode) (1-2)	○	○ Local	×	○	○	○	×	○
AnA (1-3)	○	×	○ Local	×	×	×	×	×
AnU (1-4) (2-2)	○	×	×	○ Local	×	○ Local	×	×
QnA (2-1)	○	○	×	○	○ Local	○	○	○
AnN (2-3)	×	×	×	×	×	×	○ Local	×
AnU (2-4)	×	×	×	×	×	○	×	○ Local

○ : Accessible × : Not accessible

• Designating NW number and station number for setting monitor device

1) Monitoring devices B and W that are allocated by the network parameter at the connected station (local station)
   NW number: 0, Station number: Local

2) When monitoring other stations (other than B and W)/other network

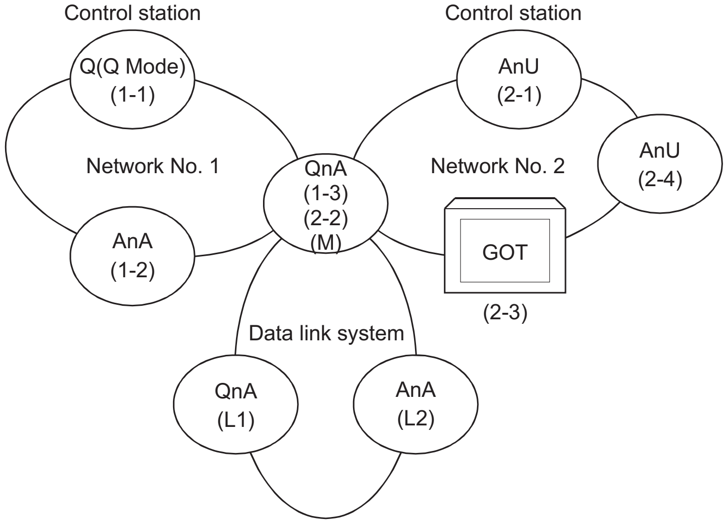
Point

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

Station connected to GOT \ Station to be accessed	Network No.1				Network No.2			
	AnU (1-1)	Q(Q Mode) (1-2)	AnA (1-3)	AnU (1-4)	QnA (2-1)	AnU (2-2)	AnN (2-3)	AnU (2-4)
AnU (1-1)	0, Local	---	0, Other (3)	0, Other (4)	---	0, Other (4)	---	---
Q(Q Mode) (1-2)	1, Other (1)	0, Local	---	1, Other (4)	2, Other (1)	2, Other (2)	---	2, Other (4)
AnA (1-3)	0, Other (0)	---	0, Local	---	---	---	---	---
AnU (1-4) (2-2)	0, Other (1)	---	---	0, Local	---	0, Local	---	---
QnA (2-1)	1, Other (1)	1, Other (2)	---	1, Other (4)	0, Local	2, Other (2)	2, Other (3)	2, Other (4)
AnN (2-3)	---	---	---	---	---	---	0, Local	---
AnU (2-4)	---	---	---	---	---	0, Other (2)	---	0, Local

How to read the table: 2, Other (2)
2, ↑ NW number
Other (2) ↑ Station number

(Example 4) When using CPU direct connection or computer link connection



• Monitor access range of other station devices (other than B and W)/other network

Station connected to GOT \ Station to be accessed	Network No.1			Network No.2				Data link system		
	Q(Q Mode) (1-1)	AnA (1-2)	QnA (1-3)	AnU (2-1)	QnA (2-2)	GOT (2-3)	AnU (2-4)	QnA (M)	QnA (L1)	AnA (L2)
Q(Q Mode) (1-1)	○ Local	○	○	○	○	---	○	○	×	×
AnA (1-2)	×	○ Local	×	×	×	---	×	×	×	×
QnA (1-3) (2-2) (M)	○	×	○ Local	○	○ Local	---	○	○ Local	×	○
AnU (2-1)	×	×	×	○ Local	×	---	○	×	×	×
GOT (2-3)	×	×	×	○	△	---	○	△	×	×
AnU (2-4)	×	×	×	○	×	---	○ Local	×	×	×
QnA (L1)	×	×	×	×	×	---	×	×	○ Local	×
AnA (L2)	×	×	×	×	×	---	×	×	×	○ Local

○ : Accessible △ : Accessible within the range for AnA (T/C: 0 to 255, R/ER/ZR cannot be monitored)

× : Not accessible

- Designating NW number and station number for setting monitor device
  1) When monitoring devices B and W that are allocated by the network parameter at the connected station (local station)
     NW number: 0, Station number: Local station
  2) When monitoring other stations (other than B and W)/other network

Point

For monitoring devices B and W that are allocated by the network parameter, make sure to use the local device number if designating devices allocated to other station.

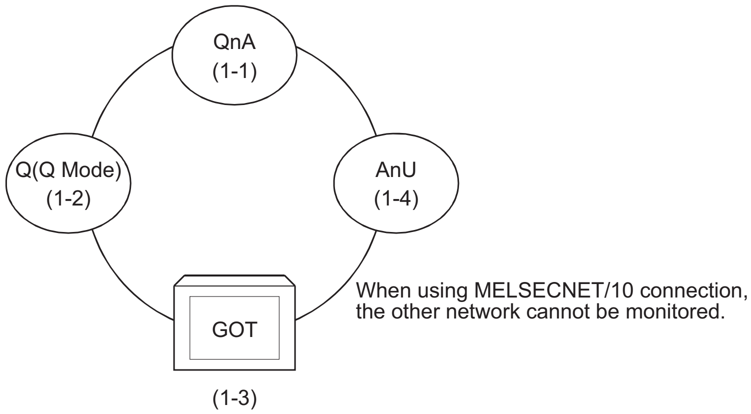
If not, display speed will be reduced.

Station to be accessed / Station connected to GOT	Network No.1			Network No.2				Data link system		
	Q(Q Mode) (1-1)	AnA (1-2)	QnA (1-3)	AnU (2-1)	QnA (2-2)	GOT (2-3)	AnU (2-4)	QnA (M)	QnA (L1)	AnA (L2)
Q(Q Mode) (1-1)	0, Local	1, Other (2)	1, Other (3)	2, Other (1)	2, Other (2)	–	2, Other (4)	1, Other (3) or 2, Other (2)	---	---
AnA (1-2)	---	0, Local	---	---	---	---	---	---	---	---
QnA (1-3) (2-2) (M)	1, Other (1)	---	0, Local	2, Other (1)	0, Local	---	2, Other (4)	0, Local	---	0, Other (2) *1
AnU (2-1)	---	---	---	0, Local	---	---	2, Other (4)	---	---	---
GOT (2-3)	---	---	---	0, Other (1)	0, Other (2)	---	0, Other (4)	0, Other (2)	---	---
AnU (2-4)	---	---	---	2, Other (1)	---	---	0, Local	---	---	---
QnA (L1)	---	---	---	---	---	---	---	---	0, Local	---
AnA (L2)	---	---	---	---	---	---	---	---	---	0, Local

*1 When monitoring the data link system, designate the NW number as 0.

How to read the table: 2, (↑ NW number) Other (2) (↑ Station number)

(Example 5) When using MELSECNET/10 connection



• Monitor access range for other station devices (other than B and W)

Station connected to GOT \ Station to be accessed		QnA (1-1)	Q(Q Mode) (1-2)	GOT (1-3)	AnU (1-4)
GOT (1-3)	When using communication driver MNET/10(A/QnA/Q)	○	○	---	○
	When using communication driver MNET/10(A)	△	△	---	○

○ : Accessible

△ :Accessible within the range of AnA (T/C: 0 to 255, R/ER/ZR cannot be monitored.)

× : Not accessible

• Designating NW number and station number for setting monitor device

1) Monitoring devices B and W that are allocated by network parameter
   NW number: 0, Station number: Local

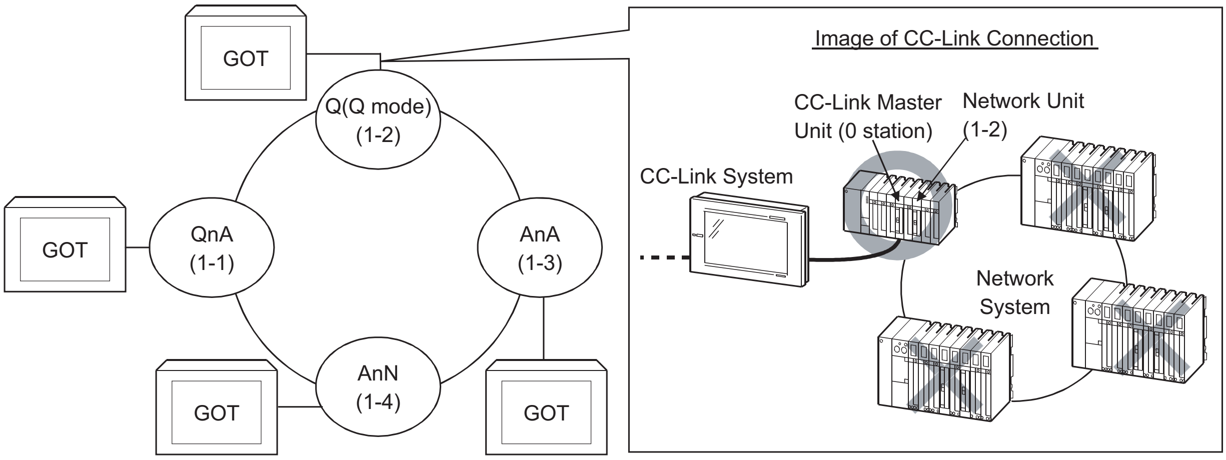
2) Monitoring other stations (other than B and W)

Station connected to GOT \ Station to be accessed	QnA (1-1)	Q(Q Mode) (1-2)	GOT (1-3)	AnU (1-4)
GOT (1-3)	0, Other (1)	0, Other (2)	---	0, Other (4)

How to read the table 0, Other (2)

NW number   Station number

(Example 6) When using CC-Link connection (intelligent device station)
/CC-Link connection (via G4)



Station connected to GOT \ Station to be accessed	QnA (1-1)	Q(Q Mode) (1-2)	AnA (1-3)	AnN (1-4)
QnA (1-1)	×	×	×	×
AnU (1-2)	×	○	×	×
AnA (1-3)	×	×	○	×
AnN (1-4)	×	×	×	○

○: Accessible
× : Not accessible

2.3.3 CC-Link system access range for monitoring

(1) When using Bus connection/CPU direct connection/computer link connection
Only connected stations can be monitored.

(2) When using CC-link connection (remote device station)

(a) Access range
Devices RX, RY, RWw, RWr for which the GOT is allocated to the master station by setting the CC-Link parameter and the internal device of the GOT can be monitored.
Other devices RX, RY, RWw, RWr allocated to the master station cannot be monitored.

(b) Designating NW number and station number
Be sure to designate as follows.
NW number:0, Station number: Local

(c) Designating device name and device number
Use the following device names.
For devices RX, RY, RWw and RWr, designate the addresses allocated by station number setting.

Device to be monitored		Device name to be set by GT Designer2	Device setting range
Remote input	RX	X	X0 to X7FF
Remote output	RY	Y	Y0 to Y7FF
Remote register (writing area)	RWw	Ww	Ww0 to WwFF
Remote register (reading area)	RWr	Wr	Wr0 to WrFF
GOT internal bit device	GB	GB	GB0 to GB1023
GOT internal word device	GD	GD	GD0 to GD1023

(3) When using CC-Link connection (intelligent device station)

(a) Access range

Master station/local station can be monitored.

By setting CC-Link parameter, all devices RX, RY, RWw and RWr that are allocated to the master station can be monitored.

When the monitor target is the multi-PLC system, CPU No. 1 to No. 4 can be monitored.

(b) Setting NW number and station number

1) When monitoring devices RX, RY, RWw and RWr that are allocated to the master station by setting CC-Link parameter

NW number: 0, PLC station number: Local

2) When monitoring PLC CPU devices of other station

NW number: 0, PLC station number: Other (Station number: n)

(n: Station number of other station you want to monitor (0: Master station, 1-64: Local station))

Point

For monitoring devices RX, RY, RWw and RWr that are allocated by setting CC-Link parameter, make sure to use the local device number if designating devices allocated to other station.

If not, display speed will be reduced.

(c) Setting device name and device number

1) Monitoring devices RX, RY, RWw and RWr that are allocated by setting CC-Link parameter

Use the following device names.

For devices RX, RY, RWw and RWr, designate the addresses allocated by station number setting.

Device to be monitored		Device name to be set by GT Designer2	Device setting range
Remote input	RX	X	X0 to X7FF
Remote output	RY	Y	Y0 to Y7FF
Remote register (writing area)	RWw	Ww	Ww0 to WwFF
Remote register (reading area)	RWr	Wr	Wr0 to WrFF

2) Monitoring PLC CPU devices of other stations

For device name and device number, refer to the GT Designer2 Version2 Reference Manual.

(4) When using CC-Link connection (via G4)

(a) Access range

Master station/local station can be monitored.

(b) Setting NW number and station number

1) When monitoring master station

NW number: 0, PLC station number: Host/other (station number: 0)

2) Monitoring local station

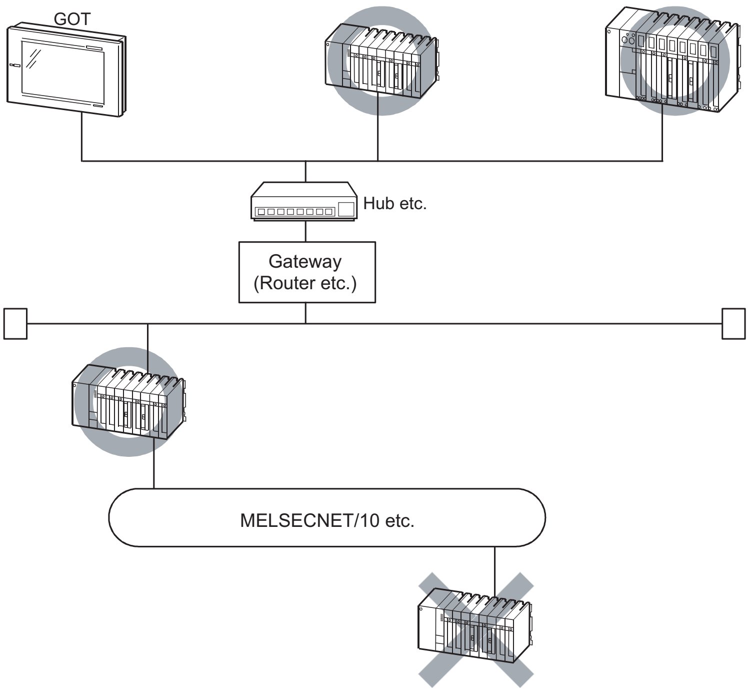
NW number: 0, PLC station number: Other (station number: 1 to 64)

(c) Setting device name and device number

For the device names and device numbers, refer to the GT Designer2 Version2 Reference Manual.

2.3.4 Access range for monitoring when using Ethernet connection

(1) Access range
The Ethernet unit specified in the Ethernet setting of GT Designer2 can be monitored.
Communication via MELSECNET/10, MELSECNET(II) or MELSECNET/B cannot be made.



Point While the GOT is handled as a host in MELSECNET/10, MELSECNET(II) or CC-Link connection, the station (Ethernet module) set as a host in the Ethernet setting of GT Designer2 is handled as a host in Ethernet connection.

(2) Various settings
Refer to Section 11.2 for the Ethernet setting using GT Designer2 and how to set the NW number, station number, device name and device number.

2.3.5 Access range for monitoring when using MELSEC-FXCPU, other PLC and microcomputer connections

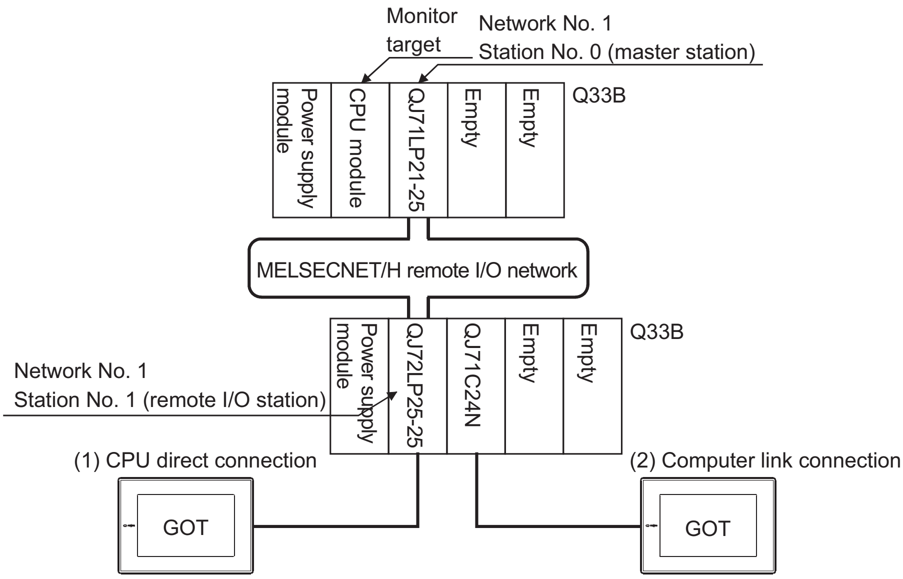
Only the connected CPU can be monitored. Other stations cannot be monitored.

2.3.6 Connection to remote I/O station of MELSECNET/H network system

When connected to the remote I/O station of the MELSECNET/H network system, the GOT can monitor the PLC CPU of the master station. When connecting the GOT to the remote I/O station, use the following connection methods.

Point

The GOT cannot be connected to the remote I/O station of the MELSECNET/B, (II) data link system or MELSECNET/10 network system.



(1) CPU direct connection

(a) Handling the network module (QJ72LP25-25, QJ72LP25G, QJ72BR15) on the remote I/O station as a PLC CPU, connect the RS-232 interface of the network module and the GOT. Refer to Section 4.1.1 “Connection with QCPU” for details of the cable, communication board, etc. connected with the network module.

(b) For the GOT, specify “MELSEC-QnA/Q, MELDAS C6*” as the PLC type, and specify “Network No. 1 (network number of remote I/O network), Station No. 0 (master station)” in the network setting as the monitoring target.
In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.
To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.

(2) Computer link connection

(a) Connect the GOT to the serial communication module (QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, QJ71C24N-R4) or modem interface module (QJ71CM0) mounted on the remote I/O station.
Refer to Section 5.1.1 "Connection with QCPU (Q mode)" and Section 5.4 Connection Cables for details of the cable, communication board, etc. connected with the serial communication module/modem interface module.

(b) For the GOT, specify "MELSEC-QnA/Q, MELDAS C6*" as the PLC type, and specify “Network No. 1 (network number of remote I/O network), Station No. 0 (master station)” in the network setting as the monitoring target.
In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.
To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.
Refer to Section 5.2 ìInitial Settingsî for the settings necessary for the PLC CPU.

(3) Restrictions on connection to remote I/O station

(a) The GOT has monitor-disabled monitor functions and extended functions when connected to remote I/O station.
The following table indicates whether the monitor functions and extended functions are monitor-enabled or -disabled.

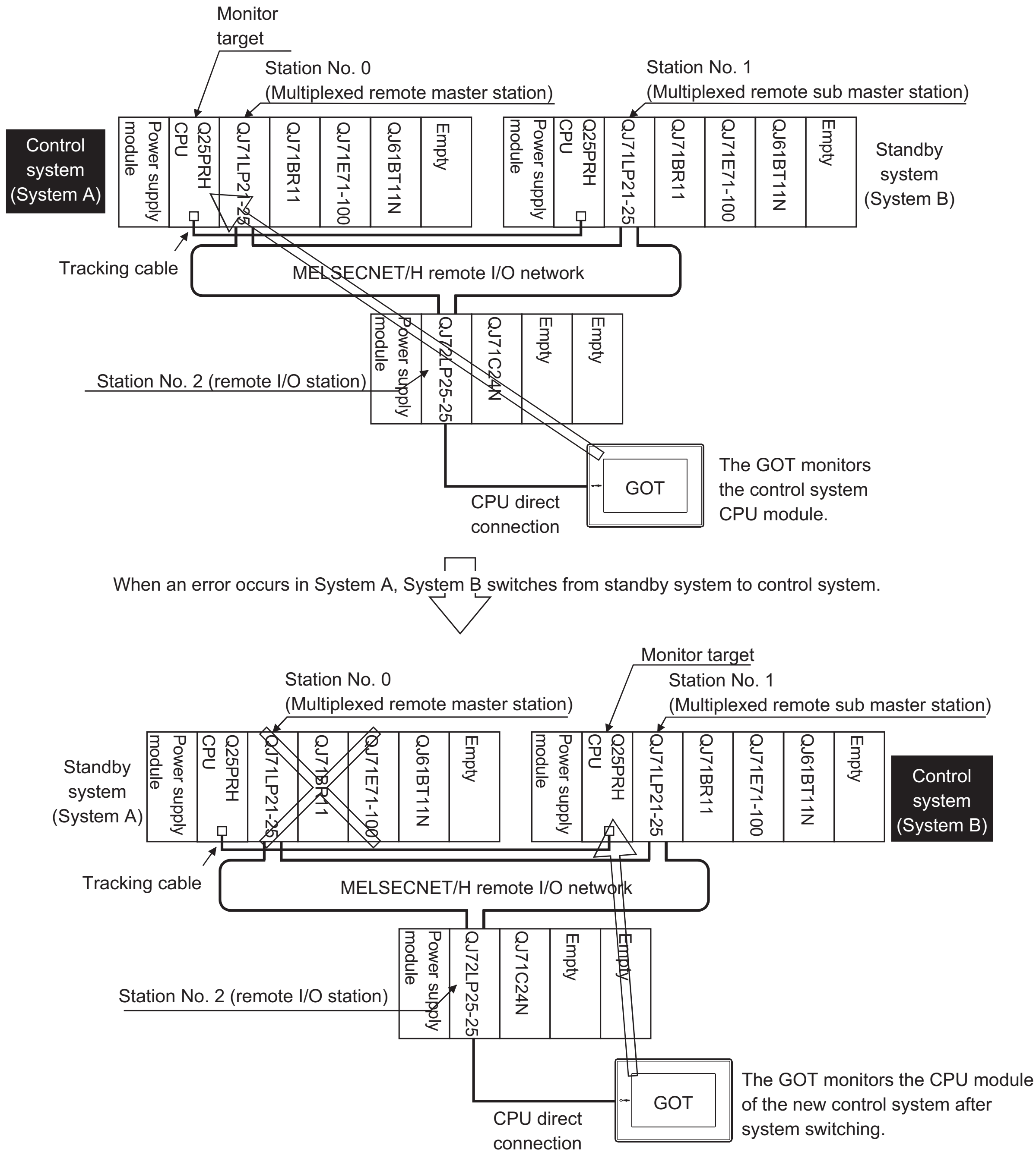
○: Monitor enabled ×: Monitor disabled

○Functions of GOT unit	Monitor enabled/disabled
Monitoring function	○
System monitoring function	○
Ladder monitoring function	×
Special monitoring function	×
Network monitoring	×
List editing	×
Motion monitoring	×
Servo amplifier monitoring	○
CNC monitoring	×
Kana-kanji conversion function	○
Character font changing function	○
System dialog language switching function	○

(b) The GOT does not allow the master station clock to be set in the clock setting of the utility function.
The clock will not change even if clock setting is made.
Use GX Developer or similar software to set the clock of the PLC CPU on the master station.

2.4 How to Monitor QCPU Redundant System

This section explains the connection methods, restrictions on the connection methods, and other information applicable when the QCPU redundant system is monitored by the GOT.



1 OVERVIEW
2 SPECIFICATION
3 BUS CONNECTION
4 CPU DIRECT CONNECTION
5 COMPUTER LINK CONNECTION
6 MELSECNET CONNECTION (DATA LINK SYSTEM)
7 MELSECNET CONNECTION (NETWORK SYSTEM)
8 CC-LINK CONNECTION (INTELLIGENT DEVICE STATION)

There are the following eight different connection methods to the QCPU redundant system.

(1) CPU direct connection (remote I/O station of MELSECNET/H network system) (Refer to Section 2.4 1)

(2) Computer link connection (serial communication module mounted on remote I/O station of MELSECNET/H network system) (Refer to Section 2.4 2)

(3) CC-Link connection (intelligent device station) (Refer to Section 2.4 3)

(4) CC-Link connection (via G4) (Refer to Section 2.4 4)

(5) CC-Link connection (remote device station) (Refer to Section 2.4 5)

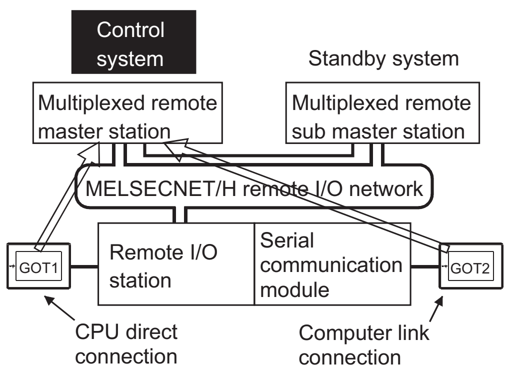
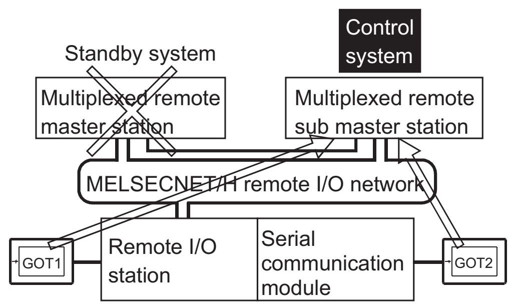
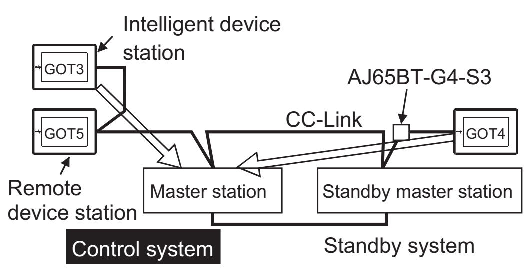
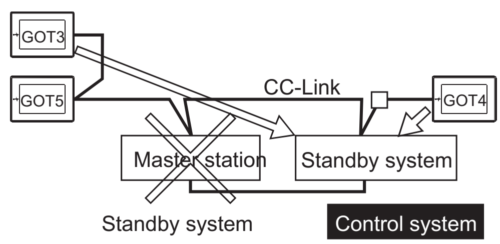
(6) MELSECNET connection (network system) (Refer to Section 2.4 6, Section 2.4 8)

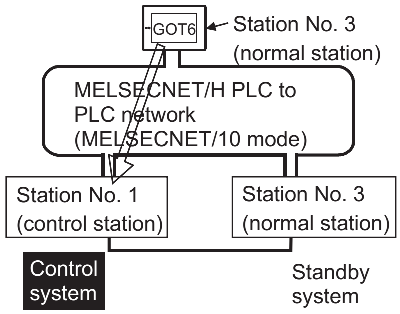
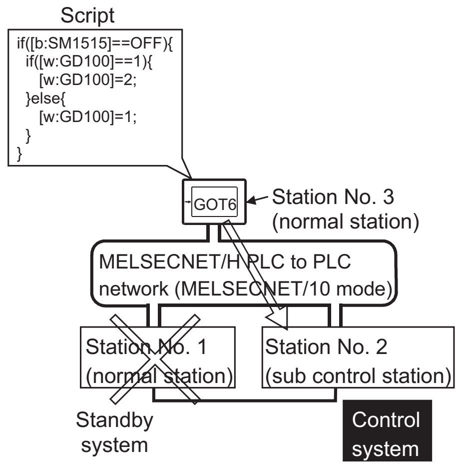
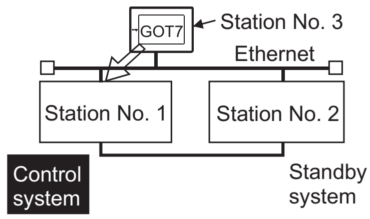
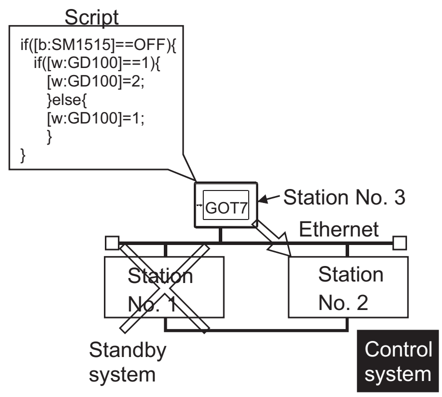
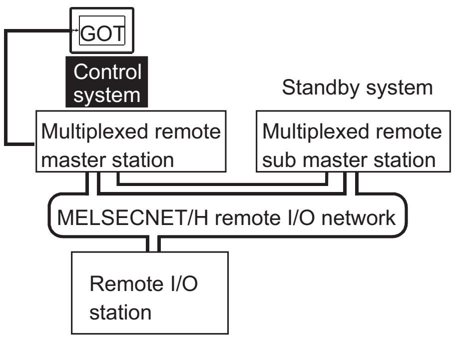
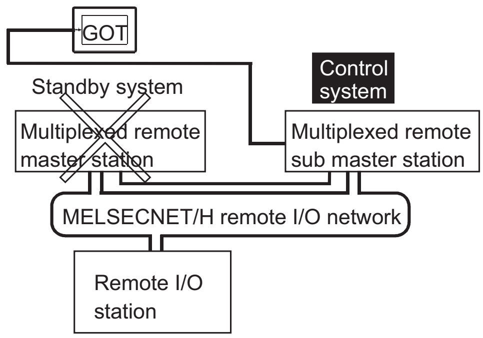
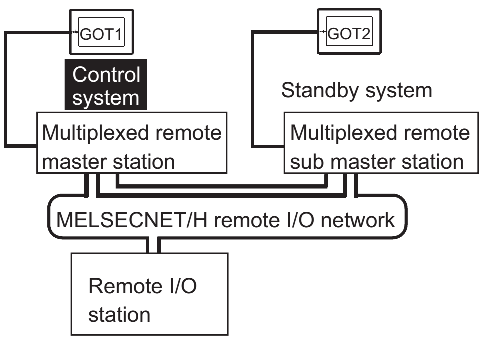
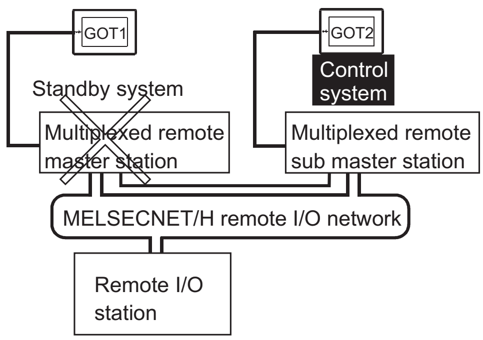
(7) Ethernet connection (Refer to Section 2.4 7, Section 2.4 8)

(8) CPU direct connection (Refer to Section 2.4 9)

Refer to Section 2.1.2 for details of the PLC CPU that can be monitored in each connection method of the GOT.

The following table indicates the features of each connection method.

Connection method	Before system switching	After system switching
(1) CPU direct connection (The remote I/O station connected to the MELSECNET/H network system) (2) Computer link connection (The serial communication module mounted to the remote I/O station of the MELSECNET/H network system)		 The monitoring target is automatically changed to the control system CPU.
(3) CC-Link connection (intelligent device station) (4) CC-Link connection (via G4) (5) CC-Link connection (remote device station)		 The monitoring target is automatically changed to the control system CPU.

Connection method	Before system switching	After system switching
(6) MELSECNET connection (network system)		 Using the script, the monitoring target is changed to the control system CPU.
(7) Ethernet connection		 Using the script, the monitoring target is changed to the control system CPU.
(8) CPU direct connection		 Re-connect the cable to the control system CPU.
	 GOT1 monitors the control system CPU.	 GOT2 monitors the control system CPU.

Precautions for monitoring the QCPU redundant system

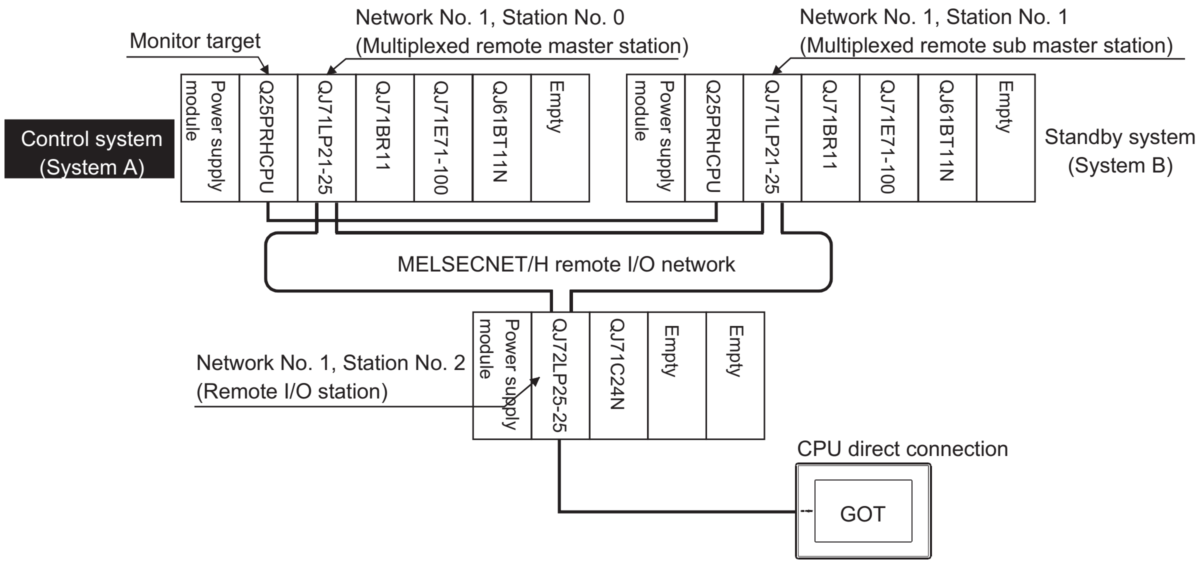
- When system switching occurs in the redundant system, the error "402: Communication timeout" may occur and a system alarm may be detected.
  However, even if the error occurs, the GOT automatically resumes monitoring and there are no problems in monitoring operation.
- The GOT cannot monitor specifying either control system or standby system in the redundant system.
- GOT functions that can be monitored when the GOT is connected to the remote I/O station
  When connected to the remote I/O station, the GOT can monitor only the following GOT functions.

Monitoring function, system monitoring function, servo amplifier monitoring, kana-kanji conversion function, character font changing function, System dialog language switching function

- When connected to the remote I/O station, the GOT does not allow the PLC CPU clock of the master station to be set in the clock setting of the utility function.
  The master station clock will not change even if clock setting is made.
  Use GX Developer or similar software to set the PLC CPU clock on the master station.

1 CPU direct connection (remote I/O station of MELSECNET/H network system)

This section explains the CPU direct connection that connects the GOT to the remote I/O station of the MELSECNET/H network system.
The following provides an example of connecting the GOT to the remote I/O station of the MELSECNET/H network system.



(1) Connection method
Connect the GOT to the RS-232 interface of the network module (QJ72LP25-25, QJ72LP25G, QJ72BR15) on the remote I/O station of the MELSECNET/H network system.
Refer to Chapter 4 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

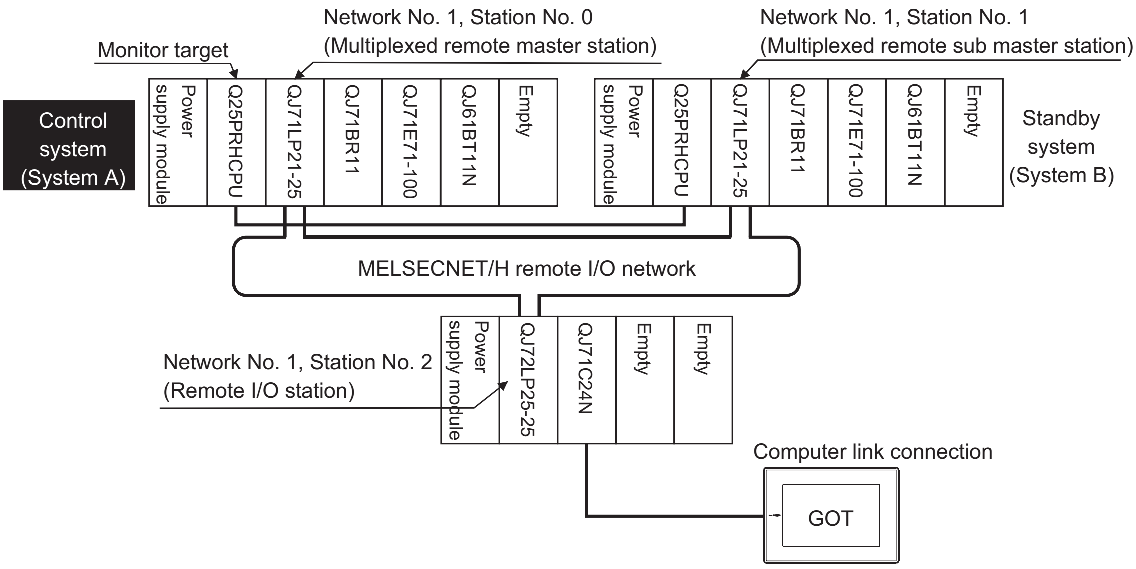
Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Host station	Host station
	Remote master station	Other station (Network No. 1 (network number of remote I/O network), station No. 0 (master station))

In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.
To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the multiplexed remote sub master station switched to the control system takes over the master operation of MELSECNET/H.
Since the GOT monitors the master station, it automatically changes the monitoring target to the PLC CPU that is operating as the master.

2 Computer link connection (serial communication module mounted on remote I/O station of MELSECNET/H network system)

This section explains the computer link connection that connects the GOT to the serial communication module mounted on the remote I/O station of the MELSECNET/H network system.
The following provides an example of connecting the GOT to the serial communication module mounted on the remote I/O station of the MELSECNET/H network system.



(1) Connection method
Connect the GOT to the serial communication module (QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, QJ71C24N-R4) or modem interface module (QJ71CM0) mounted on the remote I/O station of the MELSECNET/H network system.
Refer to Chapter 5 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

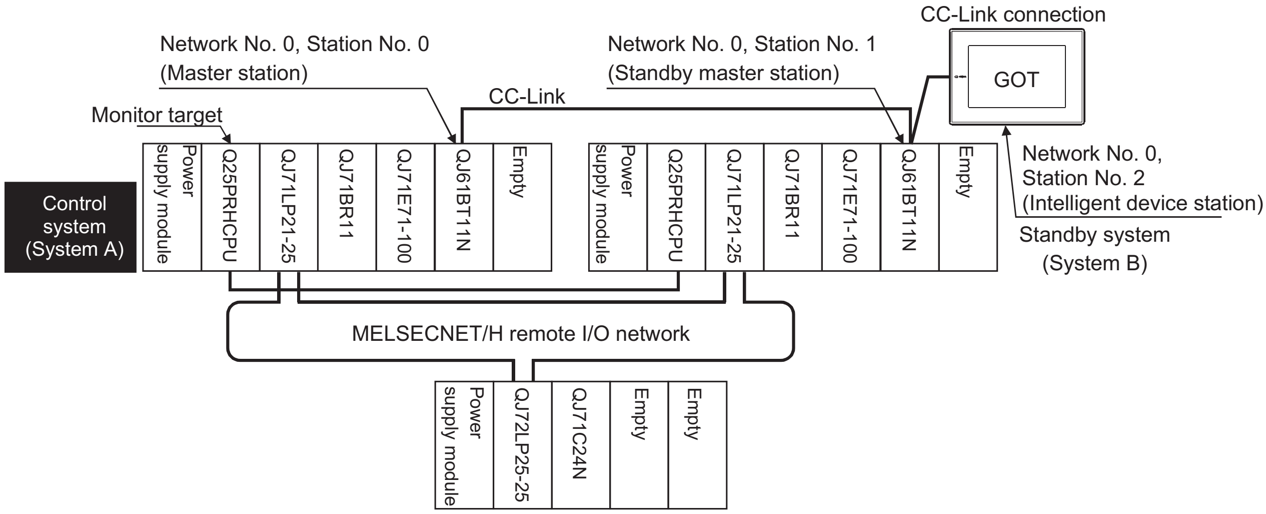
Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Host station	Host station
	Remote master station	Other station (Network No. 1 (network number of remote I/O network), station No. 0 (master station))

In this case, the GOT monitoring is performed by transient transmission of the MELSECNET/H network system. Hence, object display will be provided later than when the PLC CPU is monitored directly.
To provide object display earlier, perform cyclic transmission that will monitor the link devices B, W of the host station set in the MELSECNET/H network.
Refer to Chapter 5 for details.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the multiplexed remote sub master station switched to the control system takes over the master operation of MELSECNET/H.
Since the GOT monitors the master station, it automatically changes the monitoring target to the PLC CPU that is operating as the master.

3 CC-Link connection (intelligent device station)

This section explains the CC-Link connection (intelligent device station) that connects the GOT set as the intelligent device station to the CC-Link network.
The following provides an example of connecting the GOT set as the intelligent device station to the CC-Link network.



(1) Connection method
Connect the CC-Link network and GOT.
Refer to Chapter 8 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Master station	Other station (Network No. 0, station No. 0 (master station))

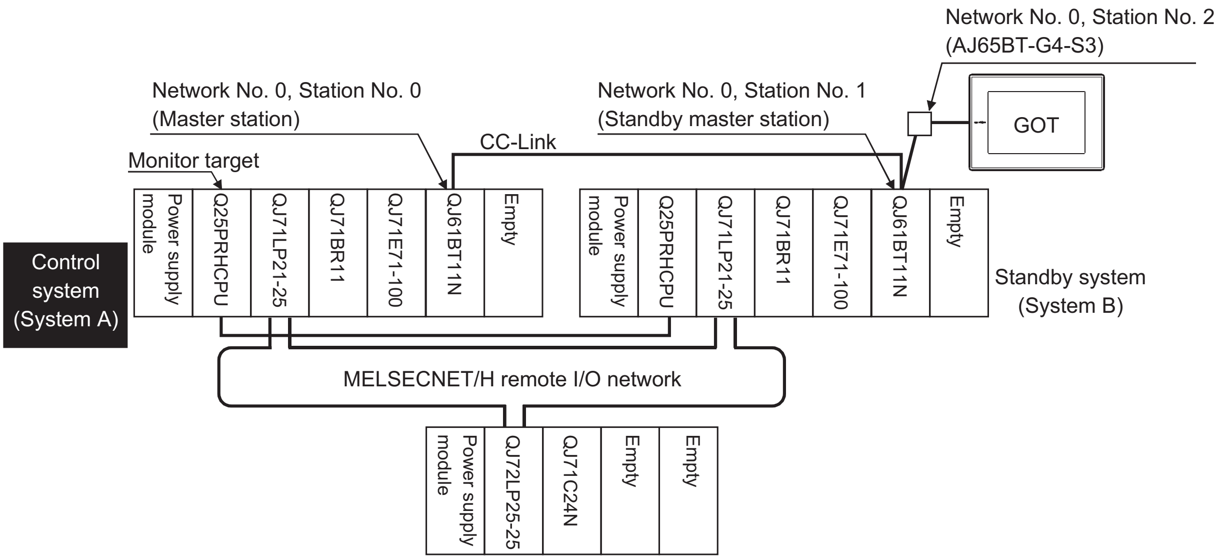
As the monitoring method, "monitoring by transient transmission" and "monitoring by cyclic transmission" are available. Each monitor method has advantages and disadvantages.
Refer to Chapter 8 for details.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, CC-Link changes Station No. between Station No. 0 of the master station and Station No. 1 of the standby master station on the network. The CC-Link module of the new control system after system switching continues control as the master station.
Since the GOT monitors the master station, it monitors the PLC CPU on the master station.

4 CC-Link connection (via G4)

This section explains the CC-Link connection (via G4) that connects the GOT to the AJ65BT-G4-S3 of the CC-Link network.

The following provides an example of connecting the GOT to the AJ65BT-G4-S3 of the CC-Link network.



(1) Connection method
Connect the AJ65BT-G4-S3 of the CC-Link network and GOT.
Refer to Chapter 10 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Master station	Host station
	Local station	Other station (Local station in other than redundant system)

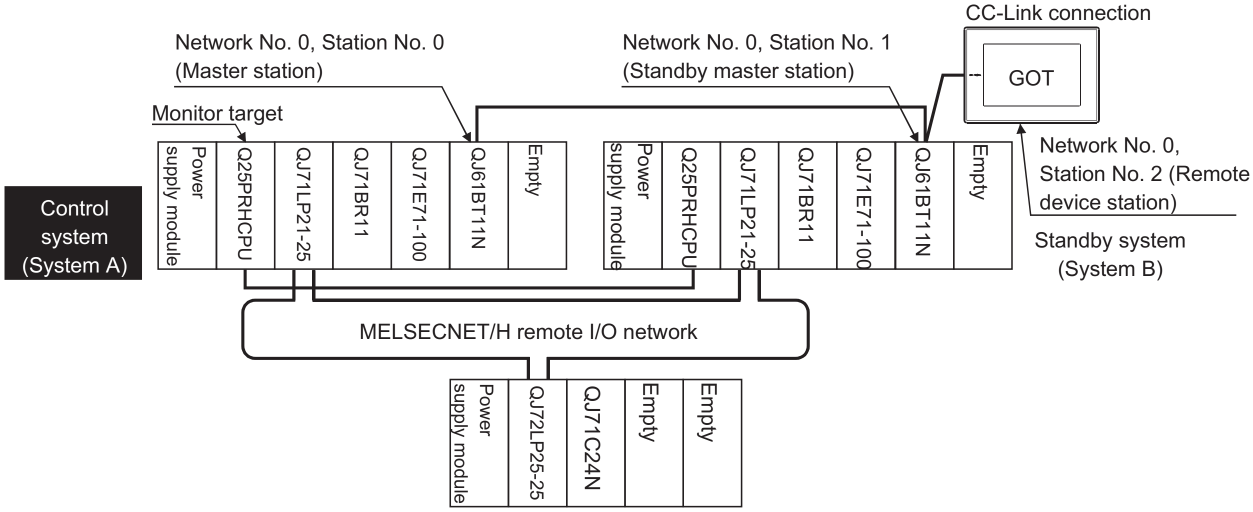
Refer to Chapter 10 for details.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, CC-Link changes Station No. between Station No. 0 of the master station and Station No. 1 of the standby master station on the network. The CC-Link module of the new control system after system switching continues control as the master station (Station No. 0).
Since the GOT monitors the master station, it monitors the PLC CPU on the master station.

5 CC-Link connection (remote device station)

This section explains the CC-Link connection (remote device station) that connects the GOT set as the remote device station to the CC-Link network.

The following provides an example of connecting the GOT set as the remote device station to the CC-Link network.



(1) Connection method
Connect the CC-Link network and GOT.
Refer to Chapter 9 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Host station	Host station

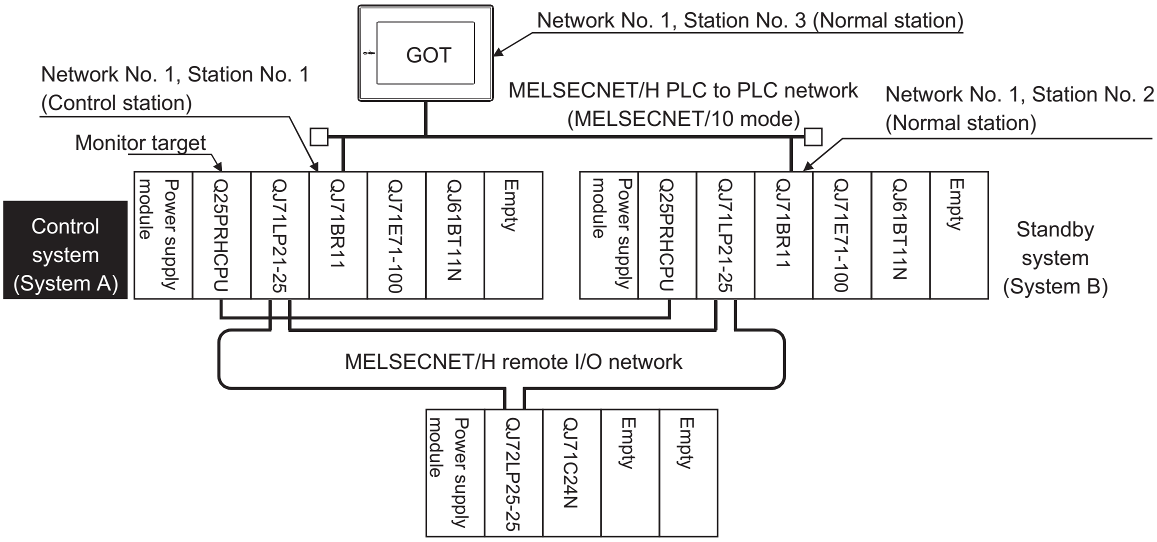
As the monitoring method, "normal monitoring" and "dedicated command monitoring" are available.
Refer to Chapter 9 for details.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, CC-Link changes Station No. between Station No. 0 of the master station and Station No. 1 of the standby master station on the network. The CC-Link module of the new control system after system switching continues control as the master station.
Since the GOT monitors the link devices assigned to the host station, it is not influenced by system switching.

6 MELSECNET connection (network system)

This section explains the MELSECNET connection (network system) that connects the GOT to the MELSECNET/H network system.

The following provides an example of connecting the GOT set as a normal station to the MELSECNET/H network system.



(1) Connection method
Connect the MELSECNET/H network system and GOT.
Refer to Chapter 7 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Other station	Other station (Network No. 1 (network number of PLC to PLC network), station No. ** (** indicates the station number of the control system. Station No. 1 in the above example))

Refer to Chapter 7 for details.

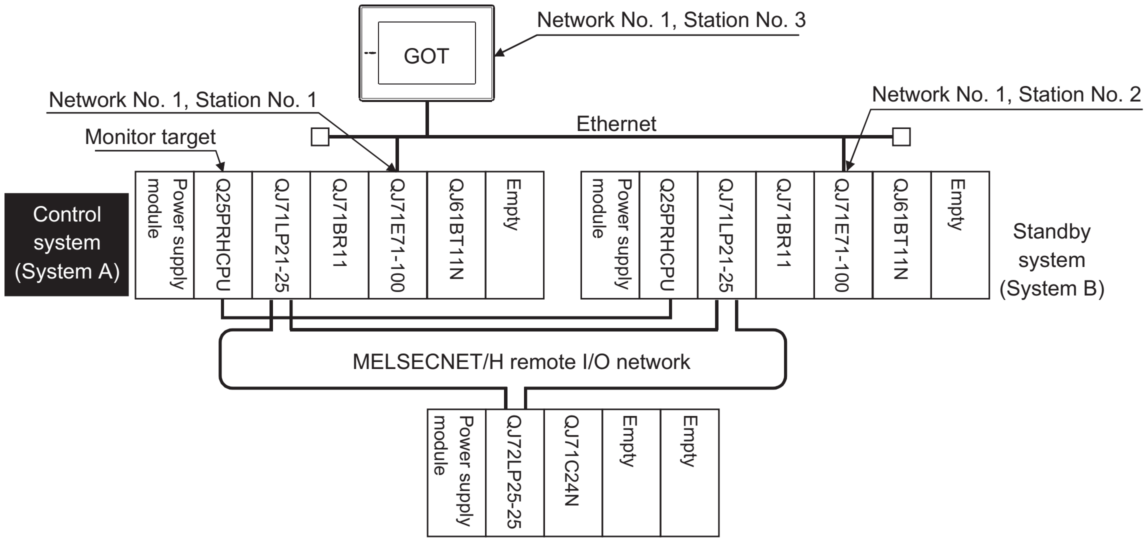
Point

In the MELSECNET/H network parameter of GX Developer, set the network type to the "MELSECNET/10 mode".

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the network module Station No. 2 changes from the normal station to the sub control station and continues the control of MELSECNET/H.
Since the GOT monitors the station with the station number specified, it cannot monitor Station No. 2 in response to the system switching.
As a measure, using the script function, create a screen that changes the station numbers between System A and System B to monitor the PLC CPU of the control system.
Refer to Section 2.4 8 for the monitor screen creation method.

7 Ethernet connection

This section explains the Ethernet connection that connects the GOT to the Ethernet network system.
The following provides an example of connecting the GOT to the Ethernet network.



(1) Connection method
Connect the Ethernet network system and GOT.
Refer to Chapter 11 for details.

(2) GT Designer2 setting
Set GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Other station	Other station (Network No. 1 (network number of Ethernet), station No. ** (** indicates the station number of the control system. Station No. 1 in the above example))

Refer to Chapter 11 for details.

(3) Monitoring target change when system switching occurs in redundant system
When system switching occurs, the system with Station No. 2 Ethernet module acts as a control system.
Since the GOT monitors the station with the station number specified, it cannot monitor Station No. 2 in response to the system switching.
As a measure, using the script function, create a screen that changes the station numbers between System A and System B to monitor the PLC CPU of the control system.

Refer to Section 2.4 8 for the monitor screen creation method.

8 Creation of the monitor screen that will change the monitoring target to the control system using the script function

In the case of MELSECNET/H connection (network system) or Ethernet connection, create a script to automatically change the monitoring target (station number) when system switching occurs.
The script executes the station number changing function or screen changing function.
The following describes the advantages and disadvantages of the station number changing function and screen changing function.

Function	Advantage	Disadvantage
Station number changing function	The monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.	Some objects do not allow the station number to be changed.
Screen changing function	All objects can be used to create a monitor screen for each station number.	Monitor screens must be created separately for Station No. 1 (control system) and Station No. 2 (standby system).

The following explains how to use each function.

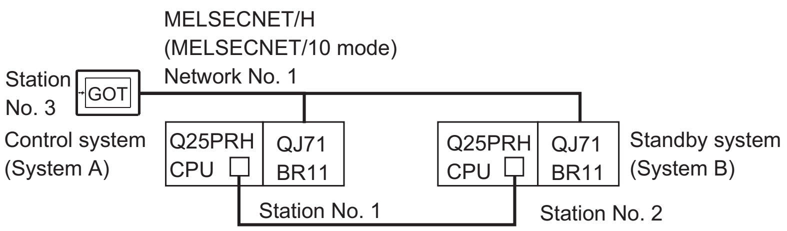
(1) Method using the station number changing function

(a) This function features that a monitor screen for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.
If system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the same monitor screen.

(b) To achieve this, the script of the GOT watches the special relay SM1515 (operating status) of the PLC CPU and stores the station number of the latest control system into the station number changing device.

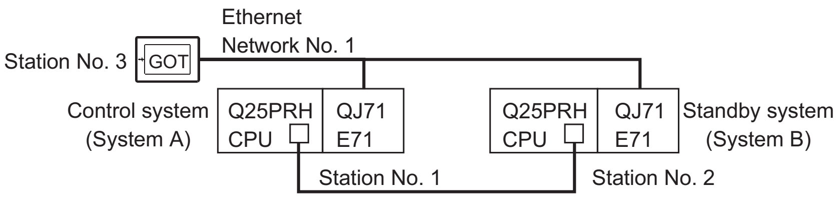
(c) Restrictions
Some objects do not allow the station number to be changed.
Refer to Section 3.3 "Switching Station No. Device Setting" in the GT Designer2 Version2 Reference Manual.

(d) The setting method will be explained based on examples.
<System configuration example 1: MELSECNET connection>



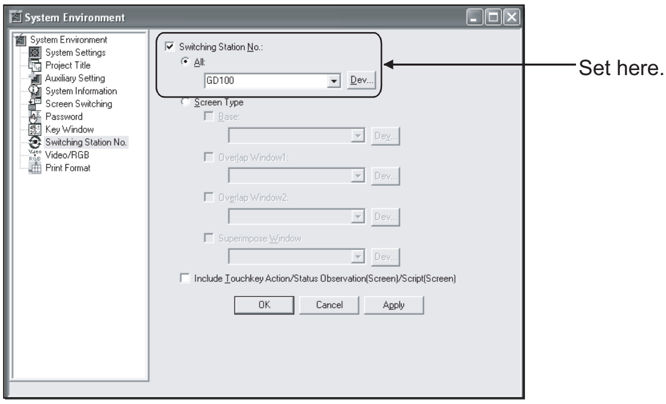
Connected module	Network No.	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to the MELSECNET/H network		3

<System configuration example 2: Ethernet connection>



Connected module	Network No.	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to the Ethernet network		3

1) Set the station number changing device.
Choose [Common] - [System Environment] - [Switching Station No.] - "All", and set the internal device GD100 as the station number changing device.

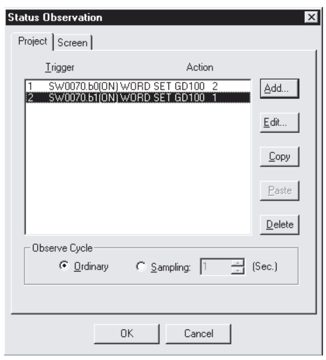


2) Set the status observation.
・For MELSECNET connection:
Make setting so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] - [Status Observation].

Condition 1: SW70.b0 (while ON) ← When b0 is ON, Station No. 1 is abnormal. Operation: GD100=2 ← Screen No. is changed to 2.

Condition 1: SW70.b1 (while ON) ← When b1 is ON, Station No. 2 is abnormal. Operation: GD100=1 ← Screen No. is changed to 1.

Create the status observation in the project on the Project tab.

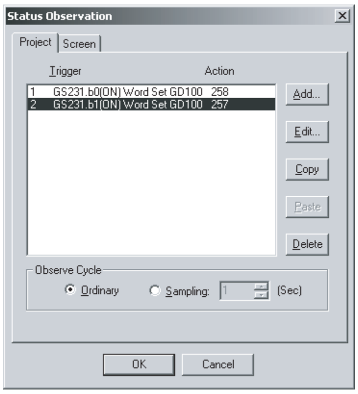


・For Ethernet connection:
Make setting so that the station number will be changed when the abnormal station information (GS231) based on the station watch specified by choosing [Common] - [Status Observation] turns ON.
(For Network No. 1, Station No. 2, set "258"(0102H).)

Condition 1: GS231.b0 (while ON) ← When b0 is ON, Station No. 1 is abnormal.
Operation: GD100=258(0102H) ← Screen No. is changed to 2.

Condition 1: GS231.b1 (while ON) ← When b1 is ON, Station No. 2 is abnormal.
Operation: GD100=257(0101H) ← Screen No. is changed to 1.

Create the status observation in the project on the Project tab.



Point

For the status observation function, hexadecimals cannot be used.

To use the status observation function, set the N/W No. and the station No. of the PLC CPU in [Unsigned BIN].

(For the status observation function, set [Unsigned BIN] for [Storing Device].)

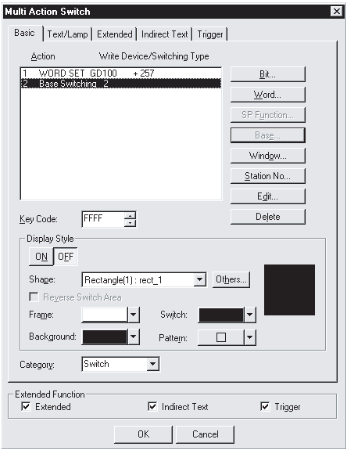
Example:

When N/W No.: 1 and Station No.: 1 (0101H)
Set "257".
When N/W No.: 10 and Station No.: 10 (0A0AH)
Set "2570".

3) Create a monitor screen.
For MELSECNET/H connection, for Ethernet connection: (Common)
In the device setting (network setting) of each object, set Network No. 1 and Station No. 1 of the control system.

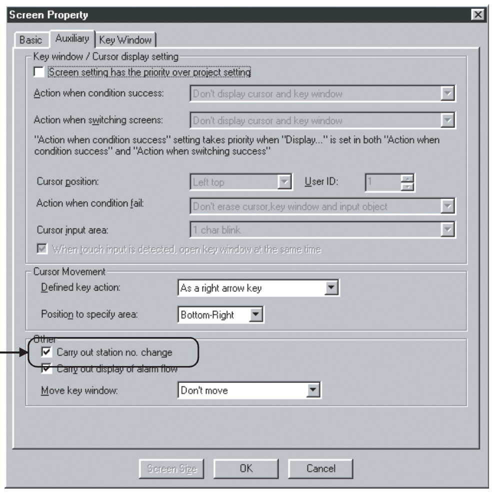
4) On Screen 1, set the switch for writing Station No. 1 to the station number changing device. (For Ethernet connection only)
After the GOT has started up, the station number changing device value of the GOT is "0".
For Ethernet connection, the monitor becomes abnormal when the station number changing device value is "0".
Hence, set the switch for writing the station number to the station number changing device and the switch for shifting to the monitor screen on Screen 1.
To make this setting, choose [Object] - [Switch] - [Multi Action Switch].

The following shows an example of setting GD100=257 (0101H: Network No. 1, Station No. 1) and Base screen=2 to one switch. (Base screen 2 is the actually monitoring screen.)



5) Validate the station number changing function.
On the sub setting screen specified by choosing [Screen] - [Properties], check "Carry out station no. change" to validate the station number changing function.
Make this setting for each monitor screen.
For Ethernet connection, however, do not make this setting on Screen 1 created in above Step 4).

Check here.



6) Change the station number changing device value in the script.

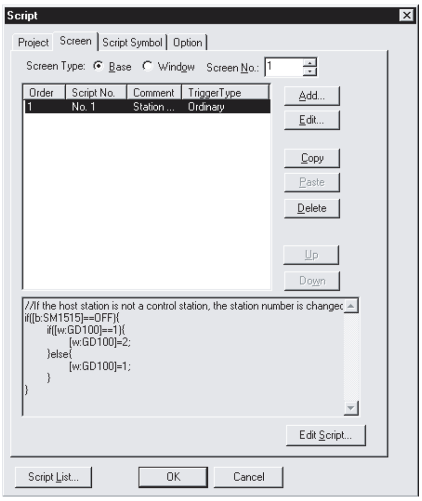
By choosing [Common] - [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the station number changing device value.

Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

・Screen script for MELSECNET/H connection:

```
// If the host station is not a control station, the station number is
   changed to that of the other station.
if([b:SM1515]==OFF){
        if([w:GD100]==1){
                [w:GD100]=2;
        }else{
                [w:GD100]=1;
        }
}
```

Set the created script on the Screen tab for each screen.

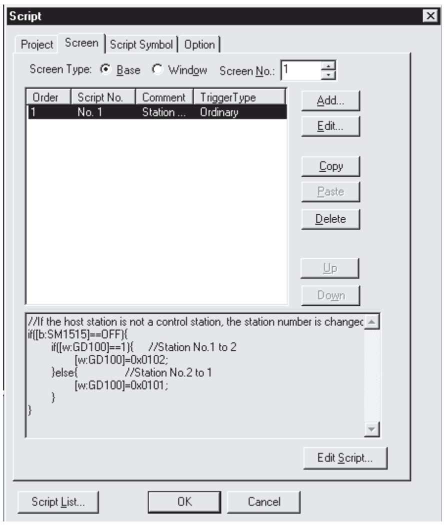


・ Screen script for Ethernet connection:

```
// If the host station is not a control station, the station number is
   changed to that of the other station.
if([b:SM1515]==OFF){
        if([w:GD100]==0x0101){ // Station No. 1 to 2
                [w:GD100]=0x0102;
        }else{                         // Station No. 2 to 1
                [w:GD100]=0x0101;
        }
}
```

For Ethernet connection, create a script so that the network number and station number are set to the station changing device.
For Network No. 1, Station No. 2, create "[w:GD100]=0x0102".

Set the created script on the Screen tab for each screen.



Remark

When the GOT in MELSECNET/H connection executes monitor with only the redundant system connected to the MELSECNET/H network, SW56 (current control station) can be set as the station number changing device. In this case, even if system switching occurs, the GOT always monitors the station number that is currently the control station.

(2) Method using the screen changing function

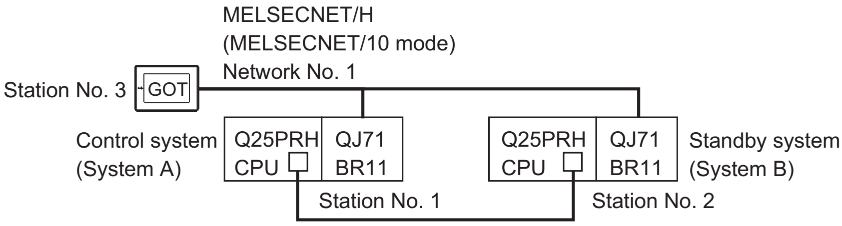
(a) This function features that a monitor screen is created for each station number.
When system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the other monitor screen.

(b) To achieve this, the script of the GOT watches the special relay SM1515 (operating status) of the PLC CPU and stores the screen number corresponding to the station number of the latest control system into the screen changing devices.

(c) Precautions
There are the following four different screen changing devices. Set the screen changing devices for all screens used.

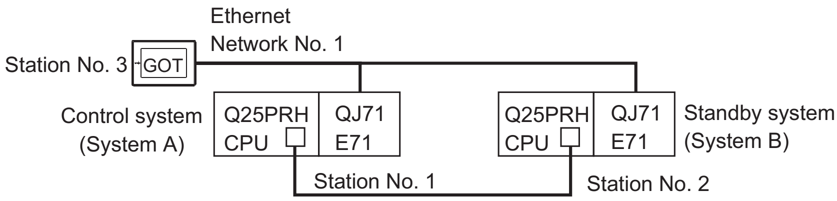
- Base screen changing device
- Overlap window 1 changing device
- Overlap window 2 changing device
- Superimpose window changing device

(d) The setting method will be explained based on examples.
<System configuration example 1: MELSECNET connection>



Connected module	Network No.	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to the MELSECNET/H network		3

<System configuration example 2: Ethernet connection>



Connected module	Network No.	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to the Ethernet network		3

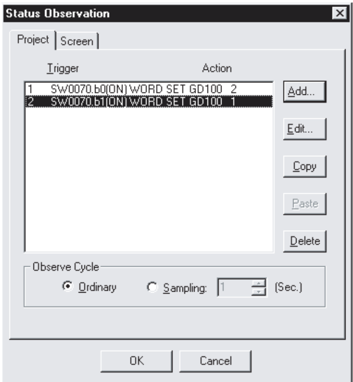
1) Set the screen changing device of the base screen.
Choose [Common] - [System Environment] - [Screen Switching], and set the internal device GD100 as the base screen changing device.

2) Set the status observation.

・For MELSECNET connection:
Set the status observation so that the station number will be changed when the abnormal station information (SW70) of MELSECNET/H turns ON in the project specified by choosing [Common] - [Status Observation].

Condition 1: SW70.b0 (while ON) ← When b0 is ON, Station No. 1 is abnormal.
Operation: GD100=2 ← Screen No. is changed to 2.

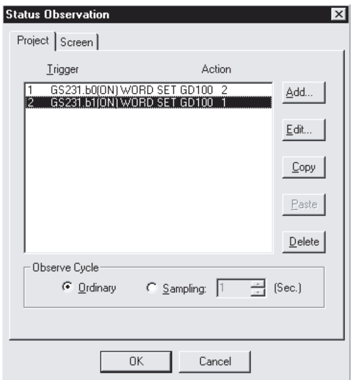
Condition 1: SW70.b1 (while ON) ← When b1 is ON, Station No. 2 is abnormal.
Operation: GD100=1 ← Screen No. is changed to 1.



・For Ethernet connection:
Set the status observation so that the station number will be changed when the abnormal station information (GS231) based on the station watch specified by choosing [Common] - [Status Observation] turns ON.

Condition 1: GS231.b0 (while ON) ← When b0 is ON, Station No. 1 is abnormal.
Operation: GD100=2 ← Screen No. is changed to 2.

Condition 1: GS231.b1 (while ON) ← When b1 is ON, Station No. 2 is abnormal.
Operation: GD100=1 ← Screen No. is changed to 1.



3) Create monitor screens.

For MELSECNET/H connection, for Ethernet connection: (Common)

・Create a monitor screen with each object whose network setting is Station No. 1 on Screen No. 1 (1-1).

・Create a monitor screen with each object whose network setting is Station No. 2 on Screen No. 2 (1-2).

4) Change the station number changing device value in the script.

By choosing [Common] - [Script], create a script for each monitor screen that will check the SM1515 status of the current monitor station, and if it is OFF (standby system), change the station number changing device value.

Set the trigger type of the script as "Ordinary" or "Sampling (about 3s)".

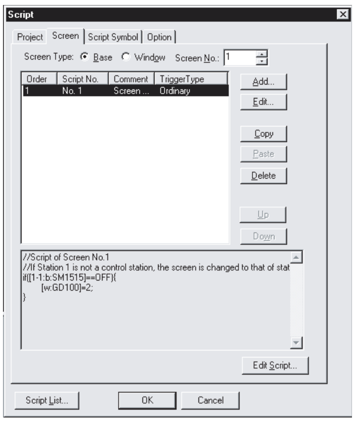
Screen scripts for MELSECNET/H connection and Ethernet connection:

The same script can be used for MELSECNET/H connection and Ethernet connection.

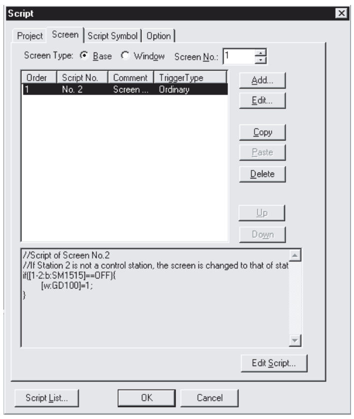
```
// Script of Screen No. 1
// If Station 1 is not a control station, the screen is changed to that
   of Station 2.
if([1-1:b:SM1515]==OFF){
          [w:GD100]==2;
}
```

```
// Script of Screen No. 2
// If Station 2 is not a control station, the screen is changed to that
   of Station 1.
if([1-2:b:SM1515]==OFF){
          [w:GD100]==1;
}
```

Script screen of Screen No. 1



Script screen of Screen No. 2



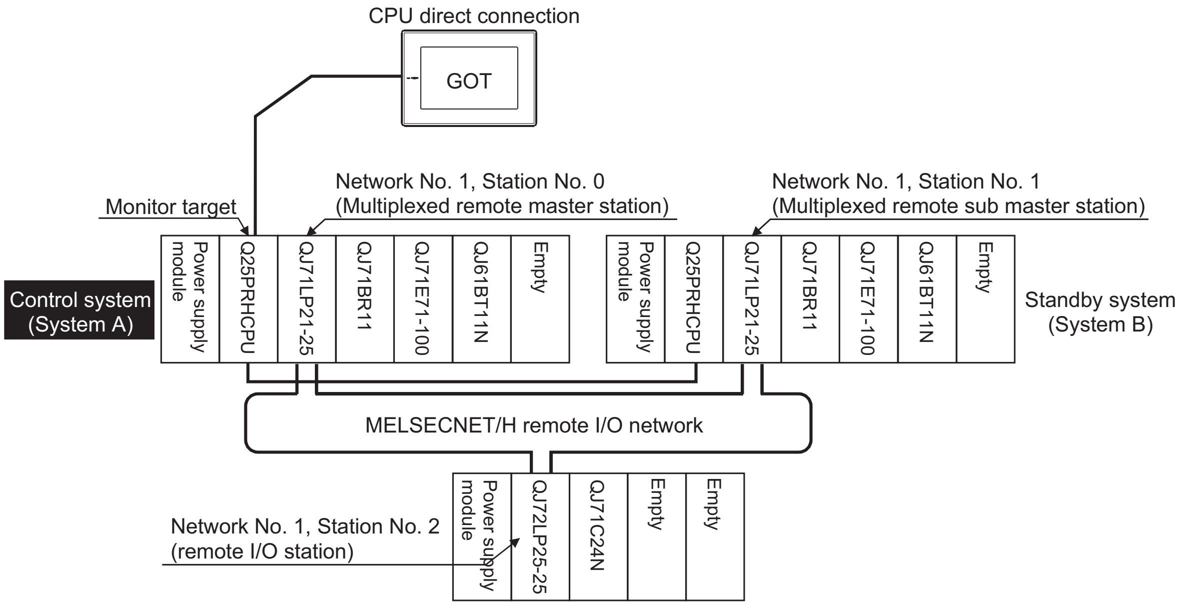
Remark

When the GOT in MELSECNET/H connection executes monitor with only the redundant system connected to the MELSECNET/H network, SW56 (current control station) can be set as the station number changing device. In this case, if system switching occurs, the GOT always monitors the station number that is currently the control station.

9 CPU direct connection

This section describes the CPU direct connection by which a GOT is connected to a CPU module in the redundant system.
There are two methods for the CPU direct connection, using one GOT or two GOTs.
The examples for these two methods are shown below.

(1) When using one GOT (Re-connect the connection cable to respond to system switching.)



(a) Connection method
Connect the GOT to the RS-232 interface of the control system CPU module (Q12PRHCPU, Q25PRHCPU) of the redundant system.
Refer to Chapter 4 for details.

(b) GT Designer2 setting
Set the GT Designer2 as described below.

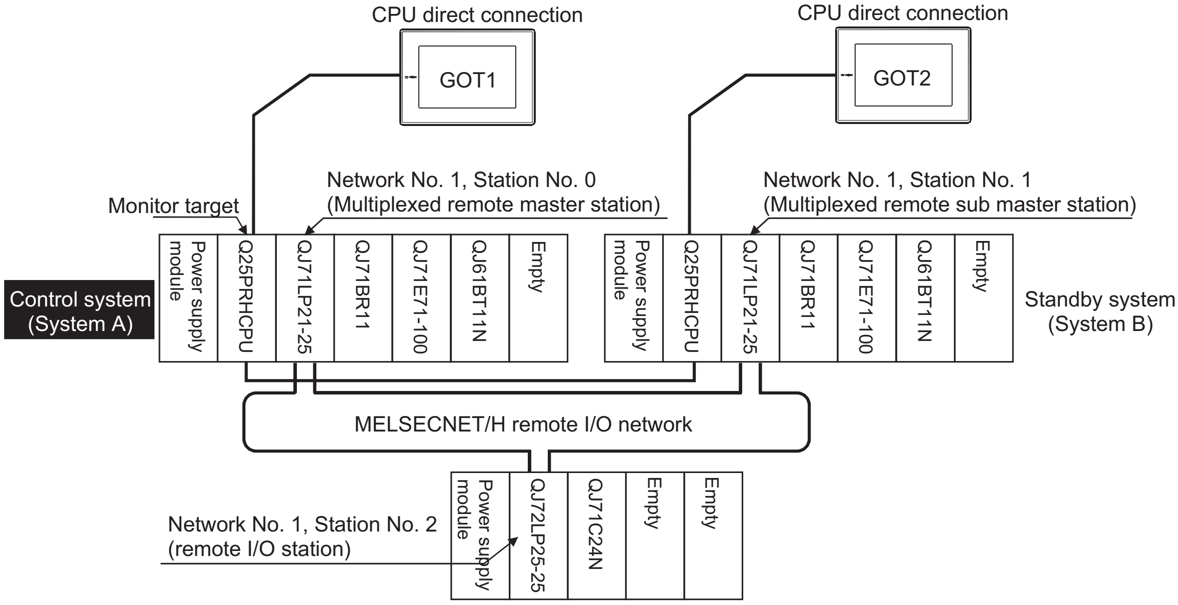
Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Host station	Host station

(c) Monitoring target change when system switching occurs in the redundant system
When system switching occurs, the GOT cannot change the monitor target automatically in response to the system switching since the GOT has monitored the CPU module (host station) that is directly connected to the GOT.
For the countermeasures, re-connect the cable to the switched CPU module after the system switching and perform monitoring.

Point

To change the monitor target on a system switching in the CPU direct connection, connect the GOT to the remote I/O station of the MELSECNET/H network system.
(Refer to Section 2.4 1.)

(2) When using two GOTs (Connect a GOT to each CPU module to respond to system switching.)



(a) Connection method
Connect two GOTs to the RS-232 interfaces of the control system and standby system CPU modules (Q12PRHCPU, Q25PRHCPU) of the redundant system.
Refer to Chapter 4 for details.

(b) GT Designer2 setting
Set the GT Designer2 as described below.

Setting item		Settings
PLC type		MELSEC-QnA/Q, MELDAS C6*
Device setting (Network setting)	Host station	Host station

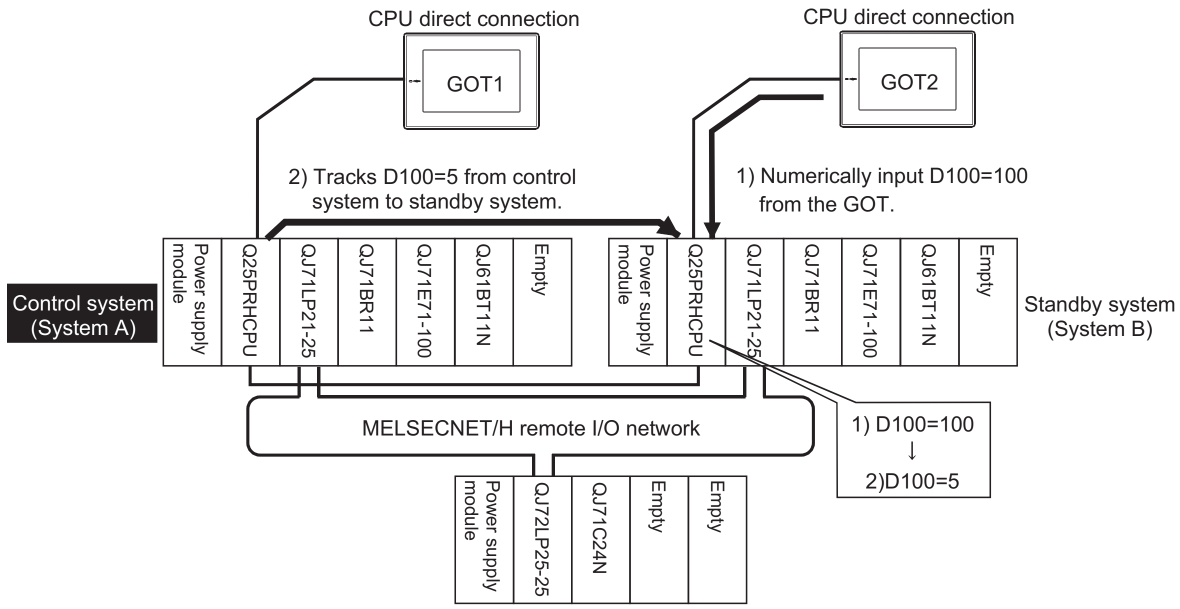
(c) Monitoring target change when system switching occurs in the redundant system
When system switching occurs, the GOT cannot change the monitor target automatically in response to the system switching.
The GOT that is connected to the control system CPU module after system switching continues the monitoring.
Different from the case using one GOT, a cable reconnection is not required.

(3) Precautions when connecting a GOT directly to a CPU module in the redundant system

(a) The GOT cannot change the monitor target in response to the system switching of the redundant system.
As the GOT monitors a CPU module exclusively that is directly connected to the GOT, the GOT cannot change the monitor target in response to the system switching of the redundant system.
To change the target monitor in response to system switching, re-connect the connection cable of the GOT to the other CPU module on a system switching or configure the system using two GOTs connected to each CPU module.

(b) When a GOT is connected to a CPU module in the redundant system, the monitored device is only the CPU module that is directly connected to the GOT.

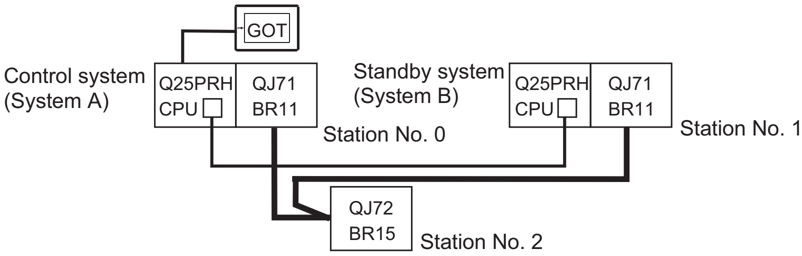
(c) When connected to the standby system CPU module, writing of the GOT to a device in the connected CPU module is not reflected. Design the monitor screen that disables writing to the standby system.
In the redundant system, the tracking function transfers device data from control system to standby system. When the tracking function is enabled, the device value of the standby system CPU module will be overwritten by the device value transferred from control system to standby system even if the GOT writes to the standby system CPU module (Numerical input, Ascii input, Script, Recipe, or others).



For the countermeasures to the above, perform the following.

- Display a monitor screen which indicates that “the connected CPU module is standby system” on a GOT when connecting the GOT to the standby system CPU module.
- To display the monitor screen above when connecting a GOT to the standby system CPU module, use the special relay SM1515 (Control status identification flag) of the CPU module. (When the SM1515 is OFF, the connected CPU module is standby system.)
- Each object should be controlled by the SM1515 which is set for the operation trigger.
- For the screen switching device, use a GOT internal device.
  If a device of the CPU module is used, the Status Observation operation of the GOT may be disabled since the device data of the CPU module will be overwritten by the transferred device value with the redundant system tracking function.
  An example of screen setting using SM1515 is shown on the following.

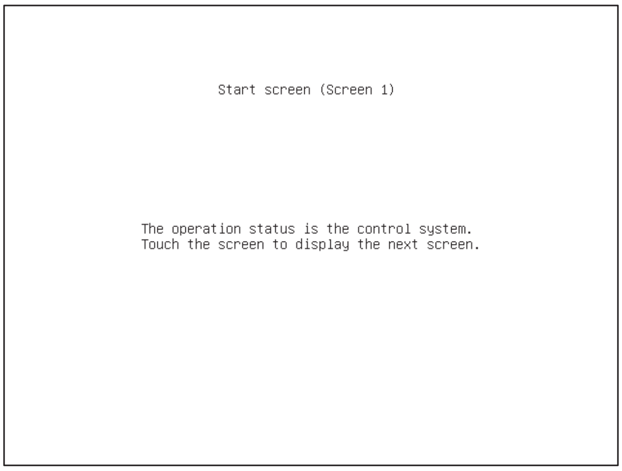
<System configuration example: when using one GOT>



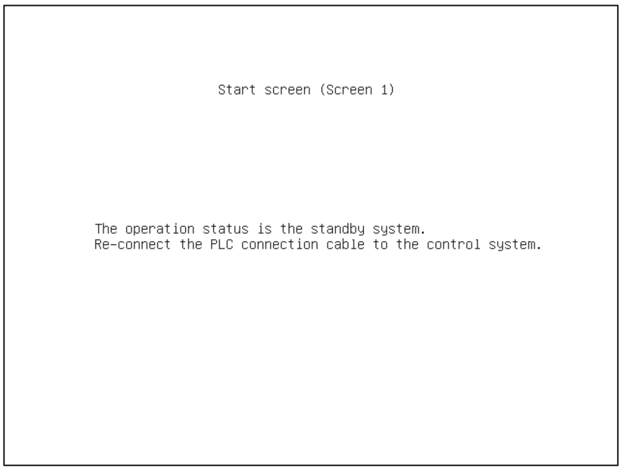
Create a monitor screen on the Base Screen1 that performs the following operation each for when connecting a GOT to control system and standby system.

1) When connected to control system, the monitor screen displays a message calling a touch switch operation, by which the screen switches to the next screen.
2) When connected to standby system, the monitor screen displays a message that calls reconnecting the connection cable.

1) When connected to control system



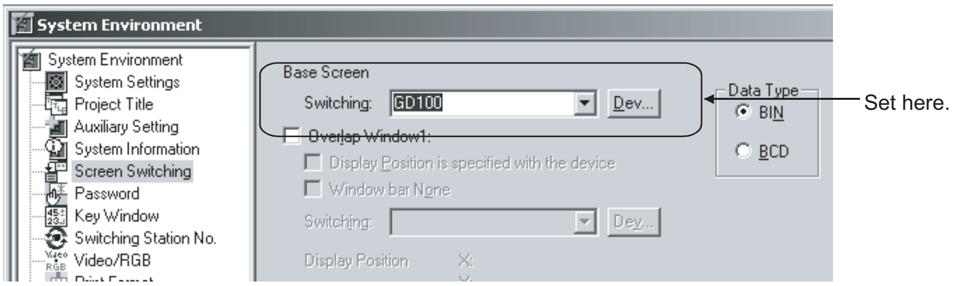
2) When connected to standby system



a) Set the screen switching device of the base screen.

Choose [Common] – [System Environment] – [Screen Switching], and set the internal device GD100 as the base screen switching device.

(If a device of the CPU module is used for the screen switching device, the Status Observation operation of the GOT may be disabled since the device data of the CPU module will be overwritten by the transferred device value with the redundant system tracking function.

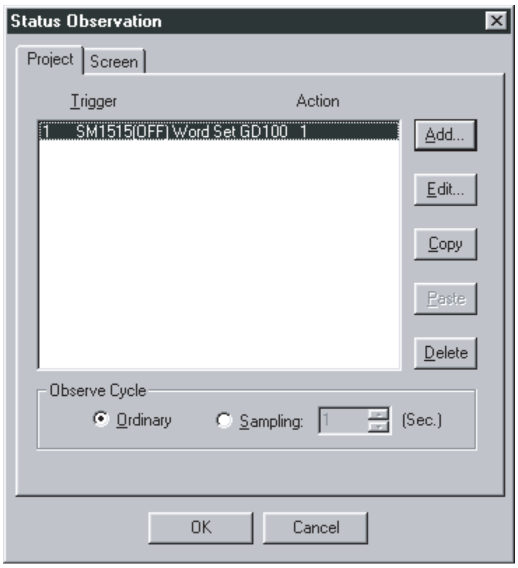


b) Set the Status Observation.

Make setting so that the base screen 1 will be displayed when the connected CPU module is standby system (SM1515 is OFF) in the project specified by choosing [Common] – [Status Observation].

Condition 1: SM1515 (while OFF)	←When the SM1515 is OFF, the connected CPU module is standby system.
Operation: GD100=1	←The screen switches to the base screen 1.

Create the status observation in the project on the Project tab.



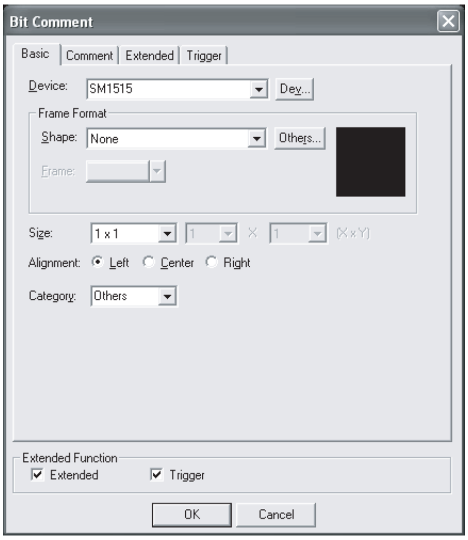
c) Set the Comment Display on the base screen 1.

Set a comment to be displayed on the base screen 1 depending on the system status (ON/OFF of the SM1515) of the connected CPU module.

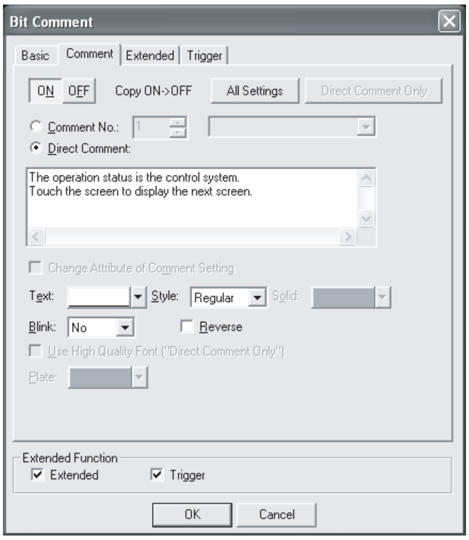
Choose [Object] – [Comment Display] – [Bit Comment] and set Comment Display (Bit).

Basic tab	
Device	: SM1515
Shape	: None
Comment tab	: Basic Comment
Direct Comment (ON)	: The operation status is control system. Touch the screen to display the next screen.
Direct Comment (OFF)	: The operation status is standby system. Re-connect the PLC connection cable to the control system CPU.

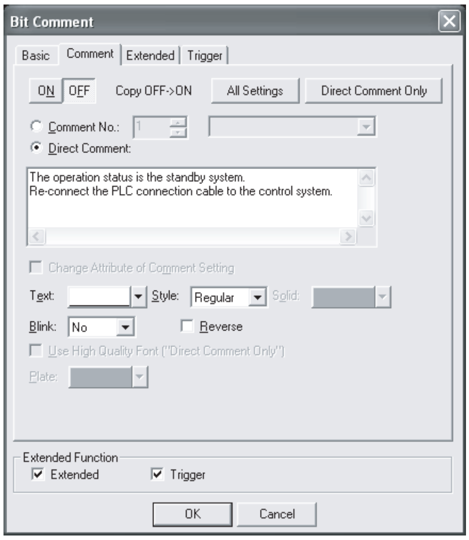
1) Basic tab screen



2) Comment tab screen (ON status)



3) Comment tab screen (OFF status)



d) Set the touch switches on the base screen 1.

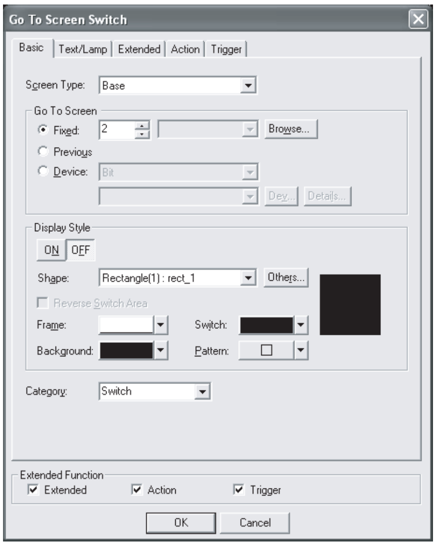
By using the Go To Screen Switch function, set a touch switch for shifting the screen to the next screen with a screen touch when the connected CPU module is control system (SM1515 is ON).

Choose [Object] – [Switch] – [Go To Screen Switch] and set the screen switching function.

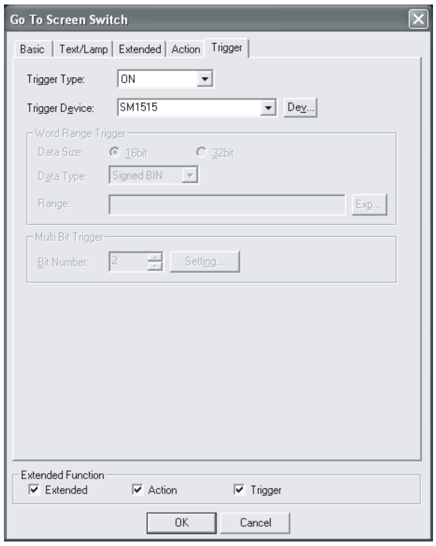
Set the same size for the touch switch as the base screen size so that touching any place of the screen enables the switch operation.

Basic tab	
Screen Type	: Base
Go To Screen	: Fixed 2
Display Style	: None (Shape)
Trigger tab	
Trigger Type	: ON
Trigger Device	: SM1515

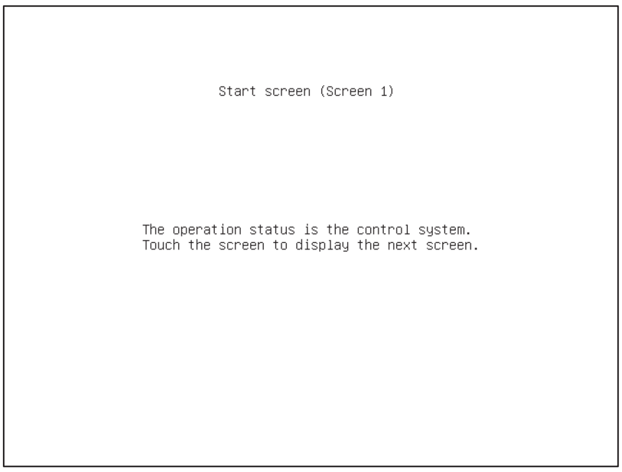
1) Basic tab screen



2) Trigger tab screen



The created base screen 1 is shown below.



3 BUS CONNECTION

3.1 First Step in Bus Connection

Point

- If the GOT, where the basic function OS and the PLC communication driver for QCPU (Q mode) bus connection are not installed, is bus-connected with the QCPU (Q mode), the QCPU will be reset, disabling communications with the QCPU using GX Developer or the like. In this case, disconnecting the bus connection cable of the GOT cancels the resetting of the QCPU.
- When multiple GOTs are connected by bus connection, the GOT-A900 series, GOT800 series and A77GOT cannot exist together.

3.1.1 GOT handling from PLC CPU in bus connection

GOT handling as viewed from PLC CPU is described below.

(1) Connection with QCPU (Q mode)
The PLC CPU recognizes the GOT as a 16 I/O point intelligent function module.
Hence, the GOT must be assigned to the empty points of the PLC CPU.
The GOT occupies one extension stage (16 points * 10 slots) of the PLC CPU and can be assigned to the occupation location. (Cannot be assigned to the main/extension bases.)

(2) Connection with other than QCPU (Q mode)
The PLC CPU recognizes the GOT as a 32 I/O point special function module.
Hence, the GOT must be assigned to the empty points of the PLC CPU.
The GOT can be assigned to the location of empty points within the maximum I/O points of the PLC CPU, excluding those of the main base. (Cannot be assigned to the main base.)

Point

When the GOT is connected to other than the QCPU (Q mode), the I/O signals assigned to the PLC CPU should not be used in sequence programs, etc. as they are used by the GOT system.

If you use them, we cannot guarantee the GOT functions.

3.1.2 Restriction on the number of GOTs by the PLC CPU connected to

In bus connection, note that the number of GOTs connected is restricted by the PLC CPU connected to and the number of special function modules loaded.

CPU Connected To		Number of Connectable GOTs	Total Number of GOTs and Special Function Modules*1 Connectable
QCPU (Q mode), Motion controller CPU (Q Series)		Max. 5	GOTs 5 + Special Function Modules 6 *2
QCPU (A mode)		Not connectable	---
QnACPU		Max. 3	6 in all
ACPU	AnUCPU,AnACPU,A2US(H)CPU	Max. 3	6 in all
	AnNCPU,AnS(H)CPU,A1SJ(H(CPU)	Max. 2	2 in all
	A0J2HCPU	Max. 1	2 in all
	A1FXCPU	Not connectable	---
Motion controller CPU (A Series)	A273U(H)CPU, A273UHCPU-S3, A373UCPU(-S3),A173UHCPU	Max. 3	6 in all
	A171SCPU-S3,A171SHCPU,A172SHCPU	Max. 2	2 in all

*1 Indicates the following types of special function modules.
AD51(S3), AD51H(S3), AD51FD(S3), AD57G(S3), AJ71C21(S1), AJ71C22(S1), AJ71C23, AJ71C24(S3/S6/S8), AJ71E71(-S3), AJ71UC24, AJ71E71N-B2/B5/T/B5T, AJ71E71N3-T, AJ61BT11 (Only when in the intelligent mode), A1SJ71C24(-R2/PRF/R4), A1SJ71UC24(-R2/PRF/R4), A1SJ71E71-B2/B5(-S3), A1SJ71E71N-B2/B5/T/B5T, A1SJ71E71N3-T, A1SD51S, A1SJ61BT11 (Only when in the intelligent mode)

*2 It should be only A1SD51S that the special function modules cannot be connected to the QCPU (Q mode).

3.1.3 Power supply of PLC CPU and GOT

Note the following when supplying power to the PLC CPU and GOT.

⚠CAUTION	● To prevent trouble from occurring, the extension cable which connects the PLC CPU and GOT should be unplugged when the PLC CPU and GOT are off.

(1) Precautions for switching power on
Switch on the PLC CPU and GOT in either of the following methods. (This also applies to the case where several GOTs are connected.)

(a) (Switch on the PLC CPU and GOT at the same time.

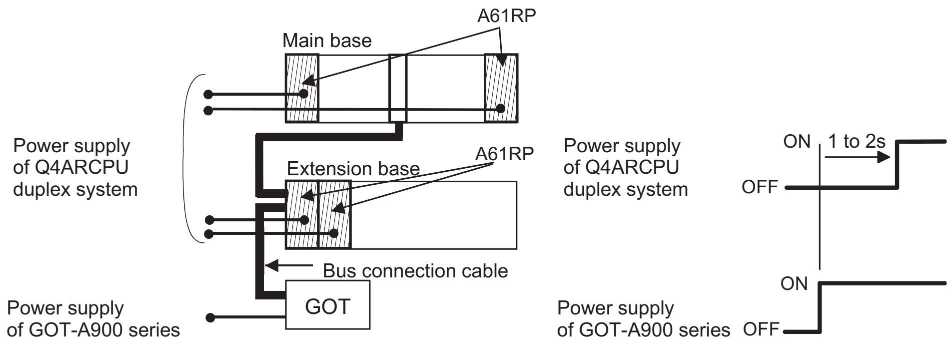
(b) Switch on the PLC CPU and GOT in this order.
Switching on the GOT runs the PLC CPU.
When several GOTs are connected, there is no specific sequence of switching on the GOTs.
Switching on all GOTs runs the PLC CPU.

Point

Power on the GOT-A900 series and Q4ARCPU duplex system in the following order.

(1) Power on the GOT-A900 series.

(2) 1 to 2 seconds after power-on of the GOT-A900 series, power on the Q4ARCPU duplex system.



It is recommended to switch power on with an external circuit configured.

If power is not switched on in the order as specified in the restriction, the Q4ARCPU duplex system will not start up in system A but will start up in system B before it starts control.

(2) Precautions for switching off the PLC CPU

Switching off the PLC CPU during monitoring will cause a communication error in the GOT. When a communication error has occurred, switch off the GOT and switch on the PLC CPU and GOT in the method in above (1).

(3) Precautions for switching off the GOT

If the GOT is switched off during monitoring, the PLC CPU continues running.

(4) Precautions for system design

In the status described in above (3), the GOT does not operate but the PLC CPU (power supply module of the main base unit) supplies the following consumptive current to the GOT.
Hence, design the system so that the sum of the 5VDC consumptive currents of the modules installed on the main base unit and the GOT consumptive currents does not exceed the 5VDC rated output current (8A) of the power supply module.

CPU Connected To	Number of GOTs Connected	Total Consumptive Current [mA]
Connection with QCPU (Q mode)	5	1275
	4	1020
	3	765
	2	510
	1	255
Connection with other than QCPU (Q mode)	3	660
	2	440
	1	220

(5) Precautions for resetting the PLC CPU

If the PLC CPU is reset with the GOT off, communication may be disabled thereafter. In this case, switch on the PLC CPU and GOT again in accordance with (1) Precautions for switching power on.

3.1.4 Restriction when PLC CPU is used in direct method

Note that the inputs X of the empty slots cannot be used when the I/O control system of the PLC CPU to be connected to is the direct method and a 5m extension cable (AC50B(-R), A1SC50NB) is used to connect the first GOT and main/extension base unit.
There are no restrictions when the I/O control system is the refresh method.
When the PLC CPU allows the I/O control system to be changed with the switch, use it in the refresh method.

Point

The following examples indicate how to use the inputs X of the empty slots.

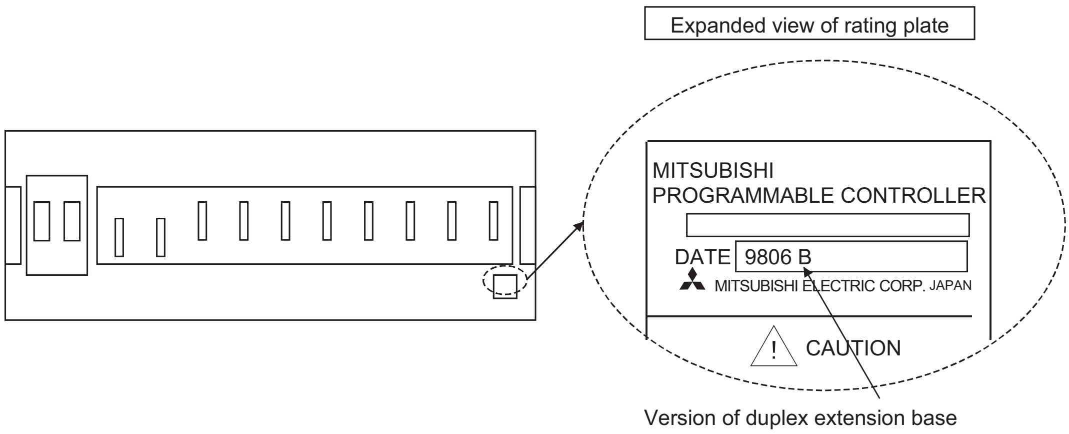
- Inputs X are assigned in a MELSECNET(II/B) data link or MELSECNET/10 network.
- The receive data of a MELSECNET/MINI-S3 data link is read to inputs X under the FROM instruction.
- The inputs X of the empty slots are switched on/off from a computer link unit.
- The inputs X of the empty slots are switched on/off with the touch switch function (bit SET/RST/alternate/momentary) of the GOT.

3.1.5 Precautions for use of A1SJCPU and A1SJHCPU

Note that the GOT cannot be used when an extension base unit is connected to the A1SJCPU or A1SJHCPU.

3.1.6 Precautions for GOT connection in duplex system

Note the following when bus-connecting the GOT to the duplex system of the Q4ARCPU.
When connecting the GOT to a duplex system, connect the GOT to the duplex extension base (A68RB) in the last stage of the duplex system.
Also, use the duplex extension base of version B or later.
For the way of confirming the version of the duplex extension base, refer to the DATE column of the rating plate applied to the portion show below.



Point

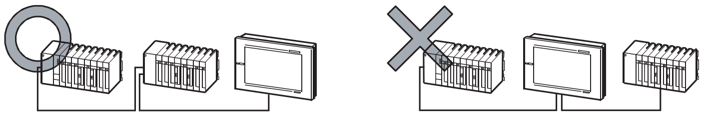
The GOT will not operate properly in the following system configurations.

- The GOT is bus-connected to the duplex main base (A32RB, A33RB)
- The GOT is bus-connected to the duplex extension base (A68RB) of version A

3.2 System Configurations

Point

Always connect the GOT to the last base unit.
The GOT cannot be connected between base units.

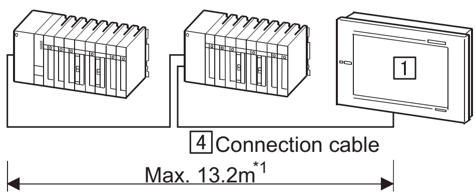
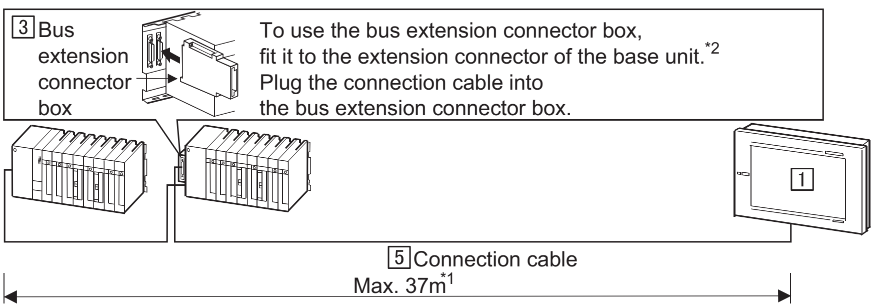


3.2.1 Connection with QCPU (Q mode)

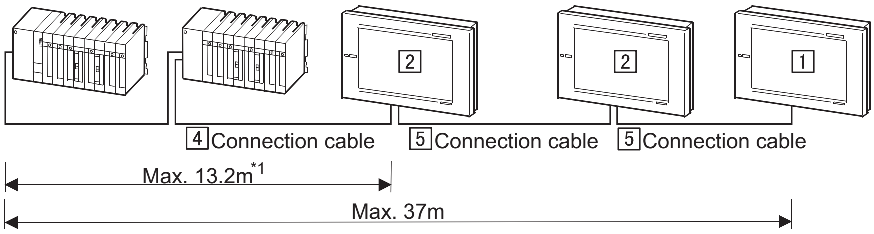
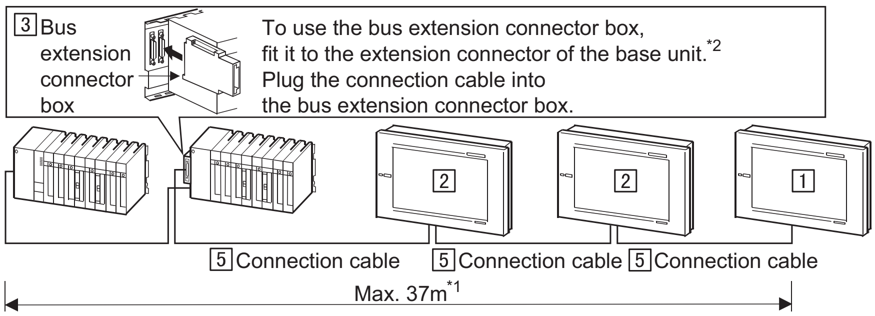
(1) System configurations and connection conditions
The following system configurations and connection conditions assume bus connection with the QCPU (Q mode). The numbers (1 to 5) given in the system configurations denote the numbers (1 to 5) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Point

- Up to five GOTs may be connected.
- Select the connection cables whose lengths satisfy the conditions of the maximum distance depending on the connection conditions.
- Installing the first connected GOT more than 13.2m away requires the bus extension connector box 3. When the Q00JCPU is used, however, the bus extension connector box 3 cannot be used and the GOT should therefore be installed within 13.2m.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 13.2m	
	More than 13.2m	

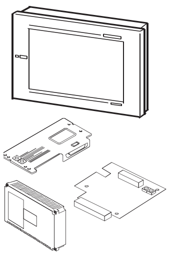
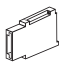
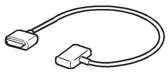
*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.
*2 When not using the extension base unit: Fit it to the main base unit.
When using the extension base unit: Fit it to the extension base unit on the last stage.

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">2 to 5 GOTs</td><td>First GOT within 13.2m</td><td>
</td></tr>
<tr><td>First GOT more than 13.2m</td><td>
</td></tr>
</table>

*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.

*2 When not using the extension base unit: Fit it to the main base unit.
When using the extension base unit: Fit it to the extension base unit on the last stage.

(2) System equipment
The following table indicates the system equipment needed for connection with the QCPU (Q mode).

Image	No.	Application	Type		
			GOT unit	Bus connection board*1*2	Bus connection unit*1*2
	1	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-QBUSS, A9GT-QBUS2S	A9GT-QBUS2SU*4
			A956WGOT	A9GT-50WQBUSS	A9GT-QBUS2SU
			A956GOT	---	A9GT-QBUS2SU
			A951GOT-Q (with built-in communication interface)	---	A9GT-QBUS2SU*4
	2	Bus-connected GOT at midpoint	A985GOT(-V), A97*GOT, A960GOT	A9GT-QBUS2S	---
			A956WGOT	---	A9GT-QBUS2SU
			A956GOT	---	A9GT-QBUS2SU
	3	Unit for extension of distance between [GOT] and [base unit]*3	A9GT-QCNB		
	4	Connection cable between [base unit] and [GOT]	QC06B(0.6m), QC50B(5.0m),	QC12B(1.2m), QC100B(10.0m)	QC30B(3.0m),
	5	Connection cable between [bus extension connector box] and [GOT]	QC06B(0.6m), QC50B(5.0m), A9GT-QC200BS(20.0m), A9GT-QC350BS(35.0m)	QC12B(1.2m), QC100B(10.0m), A9GT-QC250BS(25.0m),	QC30B(3.0m), A9GT-QC150BS(15.0m), A9GT-QC300BS(30.0m),

*1 There are the following differences between the bus connection board and bus connection unit.
A9GT-□BUSS(U) : Has one interface and usable with the GOT at termination. (Unusable with the GOT at midpoint)
A9GT-□BUS2S(U) : Has two interfaces and usable with the GOT at termination and the GOT at midpoint.
*2 A single GOT does not accept multiple bus connection units and bus connection boards.
*3 For the system configuration using the A9GT-QCNB, the same extension number as set to the GOT must be set to the A9GT-QCNB. Refer to Section 3.3 for the extension number setting.
*4 The GOT of the following hardware version is applicable.

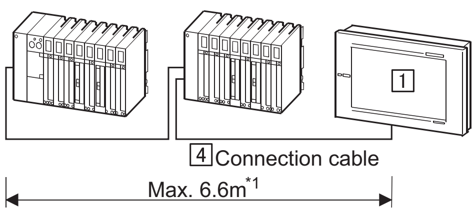
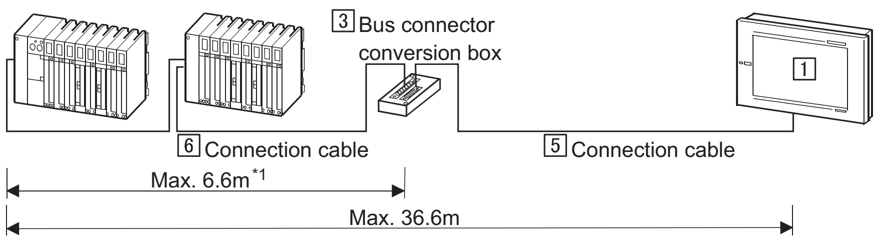
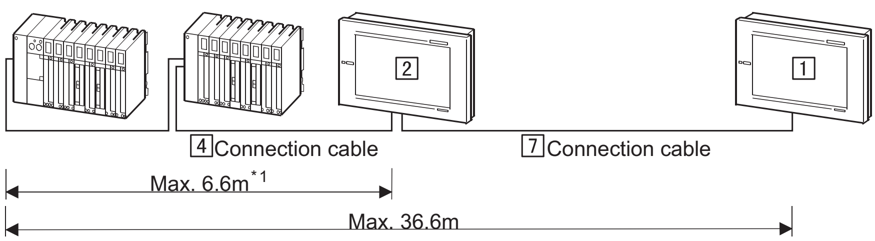
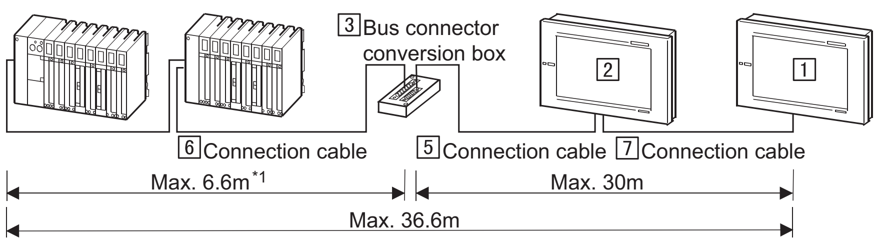
GOT	Hardware version
A985GOT-TBA/TBD-V	Hardware version C (Jan.,2001) or later
A985GOT-TBD	Hardware version N (Jan.,2001) or later
A985GOT-TBA	Hardware version J (Jan.,2001) or later
A975GOT-TBA/TBD(-B)	Hardware version G (Jan.,2001) or later
A970GOT-SBA/SBD/LBA/LBD/TBA(-B)/TBD(-B)	Hardware version G (Jan.,2001) or later
A960GOT-EBA/EBD	Hardware version D (Jan.,2001) or later

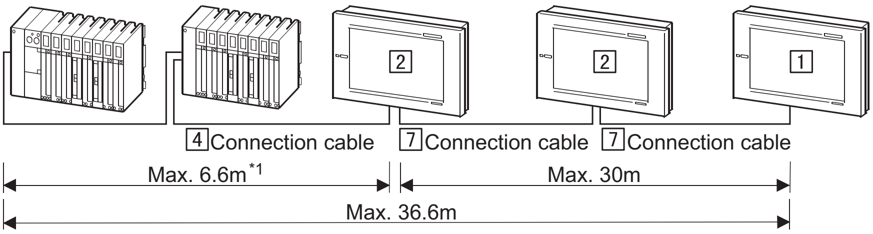
3.2.2 Connection with QnACPU type or AnCPU type

(1) System configurations and connection conditions
The following system configurations and connection conditions assume bus connection with the QnACPU type or AnCPU type.
The numbers (1 to 7) given in the system configurations denote the numbers (1 to 7) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Point

- Up to three GOTs may be connected.
- Select the connection cables whose lengths satisfy the conditions of the maximum distance depending on the connection conditions.
- Installing the first connected GOT more than 6.6m away requires the bus connector conversion box 3.

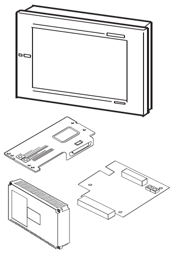
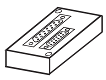
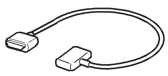
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 6.6m	
	More than 6.6m	
2 GOTs	First GOT within 6.6m	
	First GOT more than 6.6m	

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td>3 GOTs</td><td>First GOT within 6.6m</td><td>
</td></tr>
</table>

*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.

(2) System equipment

The following table indicates the system equipment needed for connection with the QnACPU type or AnCPU type.

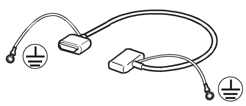
Image	No.	Application	Type		
			GOT unit	Bus connection board*1*2	Bus connection unit*1*2
	1	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUSS, A9GT-BUS2S	A9GT-BUSSU, A9GT-BUS2SU
			A956WGOT	A9GT-50WBUSS	A9GT-BUSSU, A9GT-BUS2SU
			A956GOT	---	A9GT-BUSSU, A9GT-BUS2SU, A7GT-BUSS, A7GT-BUS2S
			A951GOT (with built-in communication interface)	---	---
	2	Bus-connected GOT at midpoint	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUS2S	A9GT-BUS2SU
			A956WGOT	A9GT-BUS2SU	
			A956GOT	A9GT-BUS2SU, A7GT-BUS2S	
	3	Unit for conversion of connection cable connectors and also for extension of distance between [GOT] and [base unit]	A7GT-CNB		
	4	Connection cable between [base unit] and [GOT]	A8GT-C12NB(1.2m), A8GT-C30NB(3m), A8GT-C50NB(5m)		
	5	Connection cable between [bus connector conversion box] and [GOT] *3*4*5	A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
	6	Connection cable between [base unit] and [bus connector conversion box]	AC06B(0.6m), AC12B(1.2m), AC12B-R(1.2m), AC30B(3m), AC30B-R(3m), AC50B(5m), AC50B-R(5m)		
	7	Connection cable between [GOT] and [GOT] *4	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A1SC50B(5m), A8GT-C100BS(10m), A8GT-C200BS(20m), A8GT-C300BS(30m)		

*1 There are the following differences between the bus connection board and bus connection unit.
A9GT-BUSS(U) : Has one interface and usable with the GOT at termination. (Unusable with the GOT at midpoint)
A9GT-BUS2S(U) : Has two interfaces and usable with the GOT at termination and the GOT at midpoint.

*2 A single GOT does not accept multiple bus connection units and bus connection boards.

*3 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS), connect the connection cable connectors as indicated below.
Connector "COM1" → PLC CPU side
Connector "COM2" → GOT side

*4 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS, A8GT-C100BS, A8GT-C200BS, A8GT-C300BS), always connect the ground wires (green wires (1m)) coming out of the connectors at both ends of the cable to the control box or like.



Connect both ground wires to control box or like.

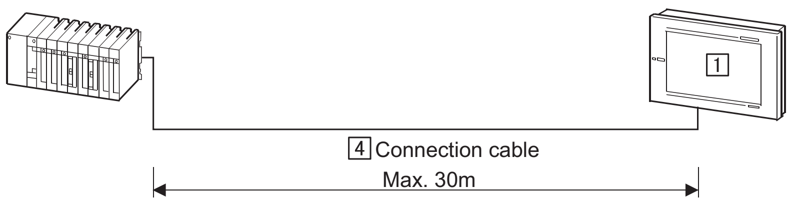
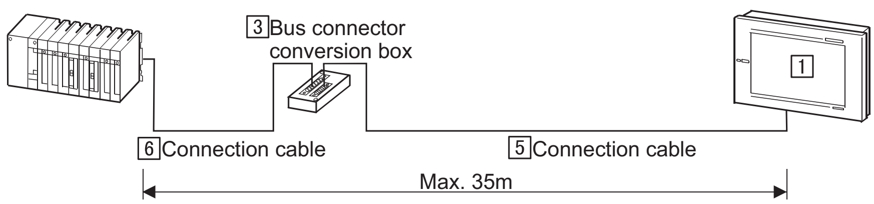
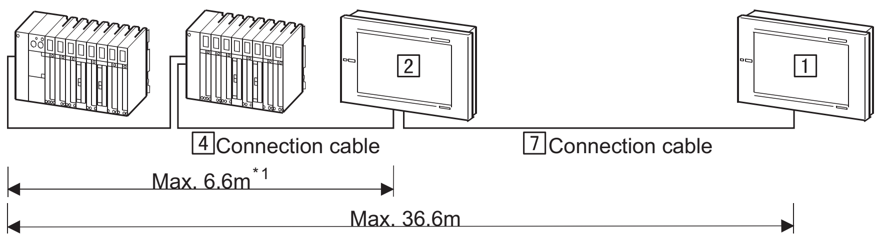
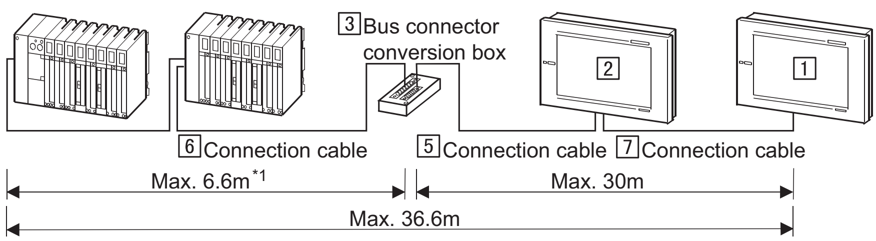
*5 The A8GT-C100EXSS-1/A8GT-C200EXSS-1/A8GT-C300EXSS-1 cable consists of the A8GT-EXCNB (0.5m) and A8GT-C100BS (10m)/C200BS (20m)/C300BS (30m), respectively.
The length of the A8GT-EXCNB (0.5m) need not be considered when calculating the cable length.

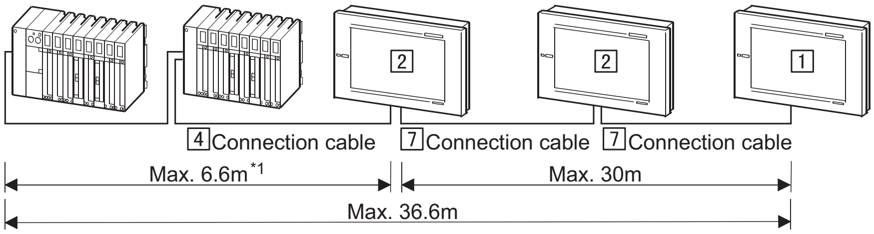
3.2.3 Connection with QnASCPU type or AnSCPU type

(1) System configurations and connection conditions
The following system configurations and connection conditions assume bus connection with the QnASCPU type or AnSCPU type.
The numbers (1 to 8) given in the system configurations denote the numbers (1 to 8) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Point

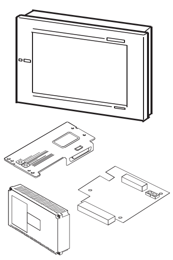
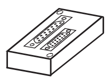
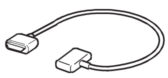
- Up to three GOTs may be connected.
- Select the connection cables whose lengths satisfy the conditions of the maximum distance depending on the connection conditions.
- Installing a single connected GOT more than 30m away requires the bus connector conversion box 3.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 30m	
	More than 30m	
2 GOTs	First GOT within 5m	
	First GOT more than 5m	

Connection Conditions		System Configuration
Number of connected	Installation distance	
3 GOTs	First GOT within 5m	

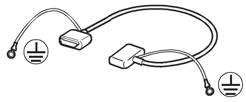
*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.

(2) System equipment
The following table indicates the system equipment needed for connection with the QnASCPU type or AnSCPU type.

Image	No.	Application	Type		
			GOT unit	Bus connection board*1*2	Bus connection unit*1*2
	1	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUSS, A9GT-BUS2S,	A9GT-BUSSU, A9GT-BUS2SU
			A956WGOT	A9GT-50WBUSS	A9GT-BUSSU, A9GT-BUS2SU
			A956GOT	---	A9GT-BUSSU, A9GT-BUS2SU, A7GT-BUSS, A7GT-BUS2S
			A951GOT (with built-in communication interface)	---	---
	2	Bus-connected GOT at midpoint	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUS2S	A9GT-BUS2SU
			A956WGOT	A9GT-BUS2SU	
			A956GOT	A9GT-BUS2SU, A7GT-BUS2S	
	3	Unit for conversion of connection cable connectors and also for extension of distance between [GOT] and [base unit]	A7GT-CNB		
	4	Connection cable between [base unit] and [GOT] when only one GOT is connected *3*5*6	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A1SC50B(5m), A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
	5	Connection cable between [bus connector conversion box] and [GOT] *3*5*6	A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
	6	Connection cable between [base unit] and [bus connector conversion box] *4	A1SC05NB(0.45m), A1SC07NB(0.7m), A1SC30NB(3m), A1SC50NB(5m)		
	7	Connection cable between [base unit] and [GOT] when multiple GOTs are connected	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A1SC50B(5m)		
	8	Connection cable between [GOT] and [GOT] *5	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A1SC50B(5m), A8GT-C100BS(10m), A8GT-C200BS(20m), A8GT-C300BS(30m)		

*1 There are the following differences between the bus connection board and bus connection unit.
A9GT-BUSS(U) : Has one interface and usable with the GOT at termination. (Unusable with the GOT at midpoint)
A9GT-BUS2S(U) : Has two interfaces and usable with the GOT at termination and the GOT at midpoint.
*2 A single GOT does not accept multiple bus connection units and bus connection boards.
*3 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS), connect the connection cable connectors as indicated below.
Connector "COM1" → PLC CPU side
Connector "COM2" → GOT side
*4 When the extension base unit is used, the sum of cable lengths of the extension cable (between [base unit] and [base unit]) and connection cable (this cable) should be within 6m.

*5 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS, A8GT-C100BS, A8GT-C200BS, A8GT-C300BS), always connect the ground wires (green wires (1m)) coming out of the connectors at both ends of the cable to the control box or like.



Connect both ground wires to control box or like.

*6 The A8GT-C100EXSS-1/A8GT-C200EXSS-1/A8GT-C300EXSS-1 cable consists of the A8GT-EXCNB (0.5m) and A8GT-C100BS (10m)/C200BS (20m)/C300BS (30m), respectively.
The length of the A8GT-EXCNB (0.5m) need not be considered when calculating the cable length.

3.2.4 Connection with A0J2HCPU

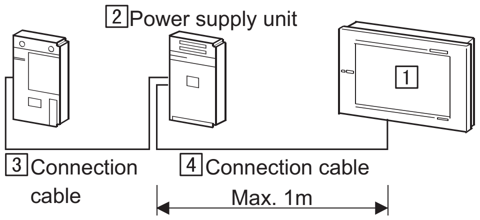
(1) System configurations and connection conditions

The following system configuration and connection conditions assume bus connection with the A0J2HCPU.

The numbers ($\boxed{1}$ to $\boxed{4}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{4}$) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

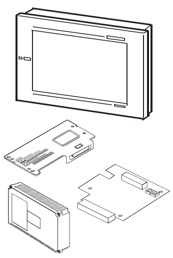
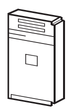
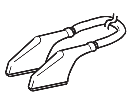
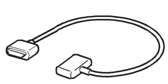
Point

- Up to one GOT may be connected.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 1m	

(2) System equipment

The following table indicates the system equipment needed for connection with the A0J2HCPU.

Image	No.	Application	Type		
			GOT unit	Bus connection board *1	Bus connection unit *1
	$\boxed{1}$	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUSS, A9GT-BUS2S,	A9GT-BUSSU, A9GT-BUS2SU
			A956WGOT	A9GT-50WBUSS	A9GT-BUSSU, A9GT-BUS2SU
			A956GOT	---	A9GT-BUSSU, A9GT-BUS2SU
			A951GOT (with built-in communication interface)	---	---
	$\boxed{2}$	Unit for supplying power to A0J2HCPU	A0J2-PW		
	$\boxed{3}$	Connection cable between [A0J2HCPU] and [power supply unit]	A0J2C□□		
	$\boxed{4}$	Connection cable between [power supply unit] and [GOT]	A9GT-J2C10B(1m)		

*1 A single GOT does not accept multiple bus connection units and bus connection boards.

3.2.5 Connection with motion controller CPU (Q172CPU, Q173CPU)

For more information about the system configuration, connection conditions and hardware components when connecting with the motion controller CPU (Q172CPU, Q173CPU) via a bus, see "When Connecting the QCPU (Q Mode)" in Section 3.2.1.

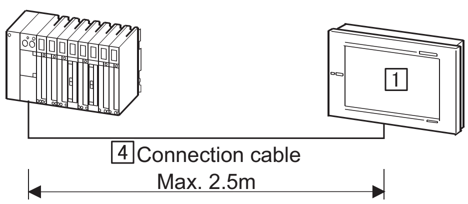
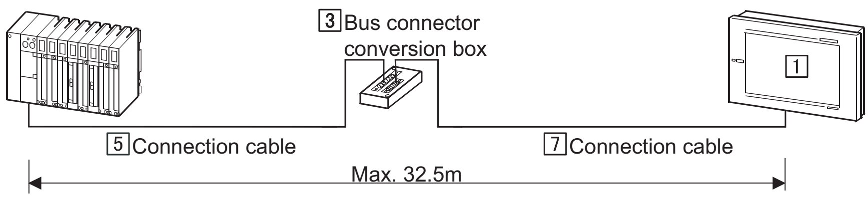
3.2.6 Connection with motion controller CPU (A273UCPU, A273UHCPU, A273UHCPU-S3)

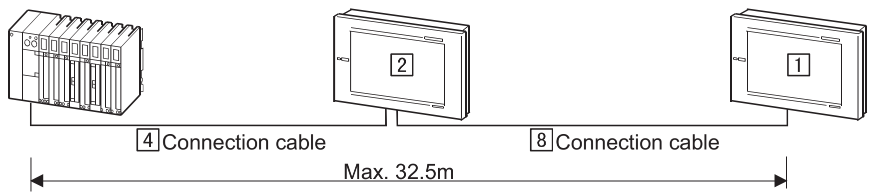
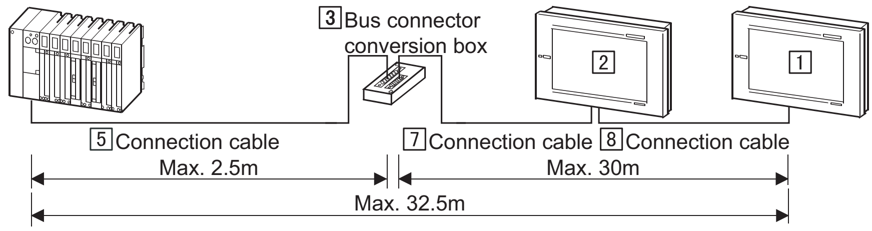
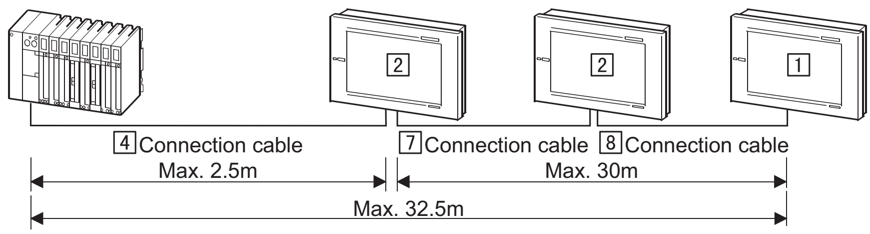
(1) System configurations and connection conditions
The following system configurations and connection conditions assume bus connection with the motion controller CPU (A273UCPU, A273UHCPU, A273UHCPU-S3). The numbers (1 to 9) given in the system configurations denote the numbers (1 to 9) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Point

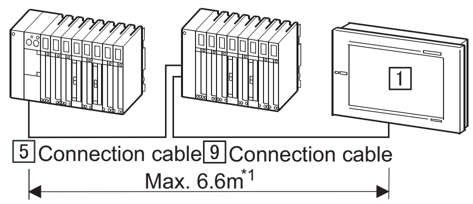
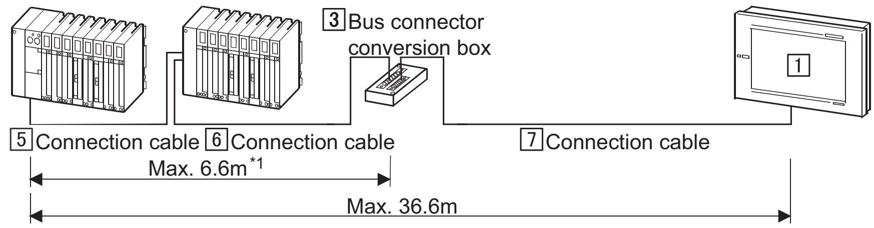
- The system configuration varies with whether or not the PLC extension base unit is used with the motion controller CPU.
- Up to three GOTs may be connected.
- Select the connection cables whose lengths satisfy the conditions of the maximum distance depending on the connection conditions.
- Installing the GOT at a remote location requires the bus connector conversion box 3.

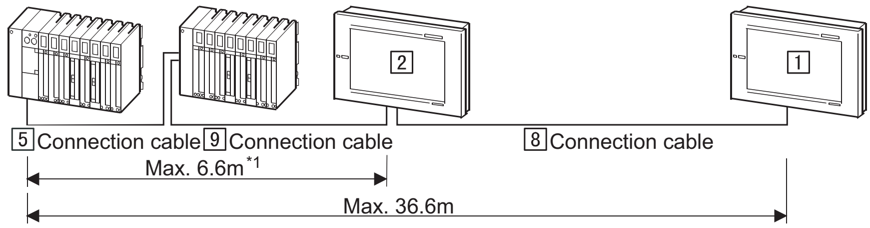
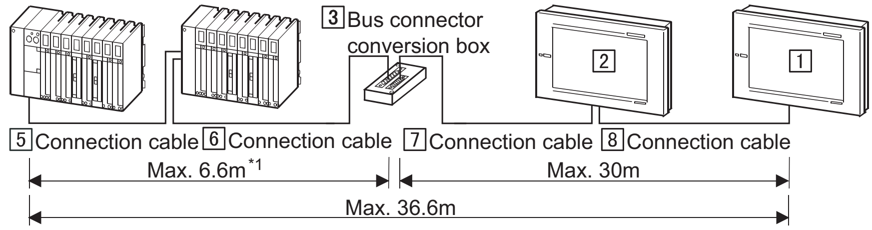
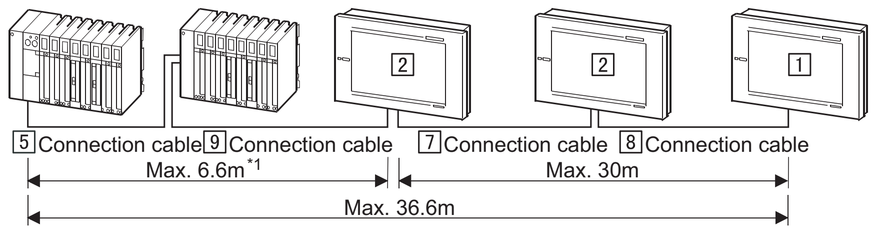
(a) When PLC extension base unit is not used

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 2.5m	
	More than 2.5m	

Connection Conditions		System Configuration
Number of connected	Installation distance	
2 GOTs	First GOT within 2.5m	
	First GOT more than 2.5m	
3 GOTs	First GOT within 2.5m	

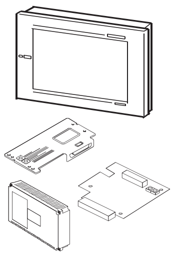
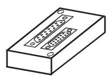
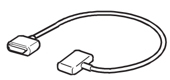
(b) When PLC extension base unit is used

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 6.6m	
	More than 6.6m	

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">2 GOTs</td><td>First GOT within 6.6m</td><td>
</td></tr>
<tr><td>First GOT more than 6.6m</td><td>
</td></tr>
<tr><td>3 GOTs</td><td>First GOT within 6.6m</td><td>
</td></tr>
</table>

*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.

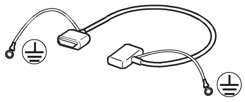
(2) System equipment
The following table indicates the system equipment needed for connection with the motion controller CPU (A273UCPU, A273UHCPU, A273UHCPU-S3).

Image	No.	Application	Type		
			GOT unit	Bus connection board*1*2	Bus connection unit*1*2
	1	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUSS, A9GT-BUS2S	A9GT-BUSSU, A9GT-BUS2SU
			A956WGOT	A9GT-50WBUSS	A9GT-BUSSU, A9GT-BUS2SU
			A956GOT	---	A9GT-BUSSU, A9GT-BUS2SU
			A951GOT (with built-in communication interface)	---	---
	2	Bus-connected GOT at midpoint	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUS2S	A9GT-BUS2SU
			A956WGOT	A9GT-BUS2SU	
			A956GOT	A9GT-BUS2SU, A7GT-BUS2S	
	3	Unit for conversion of connection cable connectors and also for extension of distance between [GOT] and [base unit]	A7GT-CNB		
	4	Connection cable between [base unit] and [GOT]*3	A370C12B-S1(1.2m), A370C25B-S1(2.5m)		
	5	Connection cable between [base unit] and [GOT]*3	A370C12B(1.2m), A370C25B(2.5m)		
		Connection cable between [base unit] and [bus connector conversion box]*3			
		Connection cable between [base unit] and [base unit]*3			
	6	Connection cable between [base unit] and [bus connector conversion box]	AC06B(0.6m), AC12B(1.2m), AC12B-R(1.2m), AC30B(3m), AC30B-R(3m), AC50B(5m), AC50B-R(5m)		
	7	Connection cable between [GOT] and [GOT] *4*5	A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
		Connection cable between [bus connector conversion box] and [GOT] *4*5*6			
	8	Connection cable between [GOT] and [GOT] *5	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A1SC50B(5m), A8GT-C100BS(10m), A8GT-C200BS(20m), A8GT-C300BS(30m)		
	9	Connection cable between [base unit] and [GOT]	A8GT-C12NB(1.2m), A8GT-C30NB(3m), A8GT-C50NB(5m)		

*1 There are the following differences between the bus connection board and bus connection unit.
A9GT-BUSS(U) : Has one interface and usable with the GOT at termination. (Unusable with the GOT at midpoint)
A9GT-BUS2S(U) : Has two interfaces and usable with the GOT at termination and the GOT at midpoint.
*2 A single GOT does not accept multiple bus connection units and bus connection boards.
*3 Plug the connection cable into the PLC extension-only connector.
*4 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS), connect the connection cable connectors as indicated below.

Connector "COM1" → PLC CPU side
Connector "COM2" → GOT side

*5 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS, A8GT-C100BS, A8GT-C200BS, A8GT-C300BS), always connect the ground wires (green wires (1m)) coming out of the connectors at both ends of the cable to the control box or like.



Connect both ground wires to control box or like.

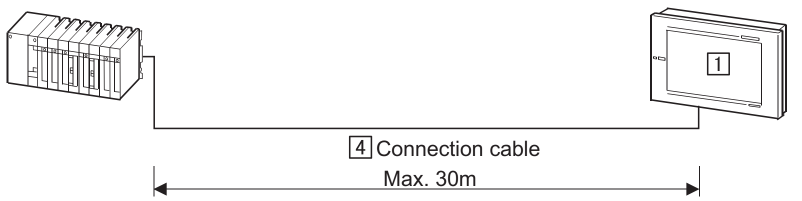
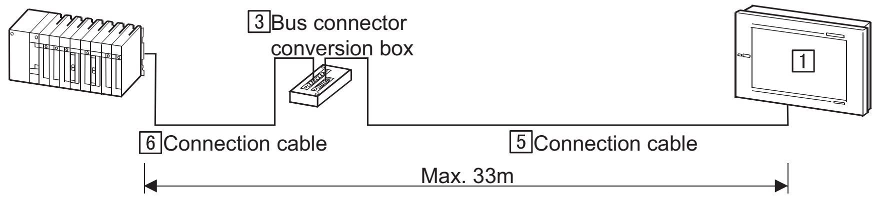
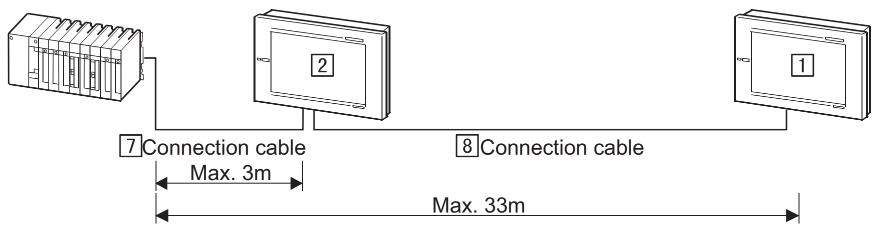
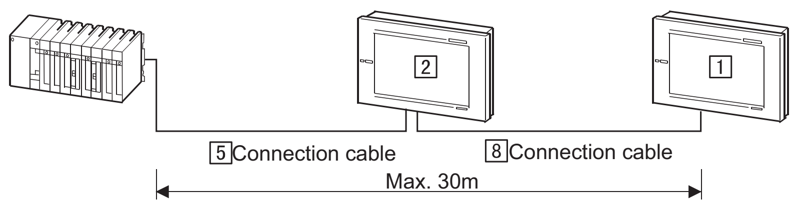
*6 The A8GT-C100EXSS-1/A8GT-C200EXSS-1/A8GT-C300EXSS-1 cable consists of the A8GT-EXCNB (0.5m) and A8GT-C100BS (10m)/C200BS (20m)/C300BS (30m), respectively.
The length of the A8GT-EXCNB (0.5m) need not be considered when calculating the cable length.

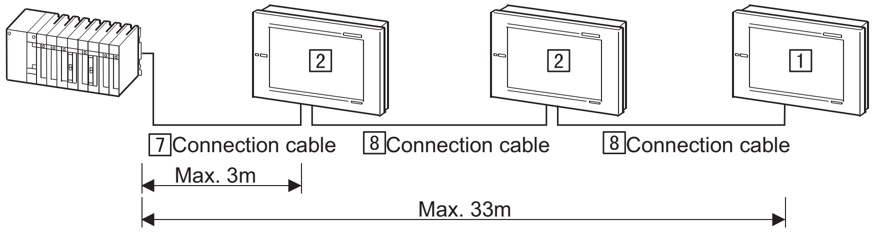
3.2.7 Connection with motion controller CPU (A171SHCPU, A172SHCPU, A173SHCPU(-S1))

(1) System configurations and connection conditions
The following system configurations and connection conditions assume bus connection with motion controller CPU (A171SHCPU, A172SHCPU, A173SHCPU (-S1)).
The numbers ($\boxed{1}$ to $\boxed{8}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{8}$) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Point

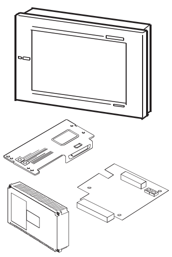
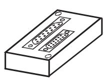
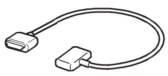
- Up to three GOTs may be connected. (A173SHCPU(-S1) only)
- Use the A168B as the PLC extension base unit to which the GOT is connected.
- Select the connection cables whose lengths satisfy the conditions of the maximum distance depending on the connection conditions.
- Installing a single connected GOT more than 30m away requires the bus connector conversion box $\boxed{3}$.

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">1 GOT</td><td>Within 30m</td><td>
</td></tr>
<tr><td>Within 33m</td><td>
</td></tr>
<tr><td rowspan="2">2 GOTs</td><td>First GOT within 3m</td><td>
</td></tr>
<tr><td>First GOT more than 3m</td><td>
</td></tr>
</table>

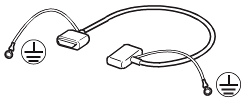
Connection Conditions		System Configuration
Number of connected	Installation distance	
3 GOTs	First GOT within 3m	

*1 Also includes the extension cable length (between [base unit] and [base unit]) when the extension base unit is used.

(2) System equipment
The following table indicates the system equipment needed for motion controller CPU (A273UCPU, A273UHCPU, A273UHCPU-S3).

Image	No.	Application	Type: GOT unit	Type: Bus connection board*1*2	Type: Bus connection unit*1*2
	1	Bus-connected GOT at termination	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUSS, A9GT-BUS2S,	A9GT-BUSSU, A9GT-BUS2SU
			A956WGOT	A9GT-50WBUSS	A9GT-BUSSU, A9GT-BUS2SU
			A956GOT	---	A9GT-BUSSU, A9GT-BUS2SU, A7GT-BUSS, A7GT-BUS2S
			A951GOT (with built-in communication interface)	---	---
	2	Bus-connected GOT at midpoint	A985GOT(-V), A97*GOT, A960GOT	A9GT-BUS2S	A9GT-BUS2SU
			A956WGOT	A9GT-BUS2SU	
			A956GOT	A9GT-BUS2SU, A7GT-BUS2S	
	3	Unit for conversion of connection cable connectors and also for extension of distance between [GOT] and [base unit]	A7GT-CNB		
	4	Connection cable between [base unit] and [GOT] when only one GOT is connected *3*5*6	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
	5	Connection cable between [bus connector conversion box] and [GOT] *3*5*6	A8GT-C100EXSS(10m), A8GT-C200EXSS(20m), A8GT-C300EXSS(30m) A8GT-C100EXSS-1(10m), A8GT-C200EXSS-1(20m), A8GT-C300EXSS-1(30m)		
	6	Connection cable between [base unit] and [bus connector conversion box] *4	A1SC05NB(0.45m), A1SC07NB(0.7m), A1SC30NB(3m)		
	7	Connection cable between [base unit] and [GOT] when multiple GOTs are connected	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m)		
	8	Connection cable between [GOT] and [GOT] *5	A1SC07B(0.7m), A1SC12B(1.2m), A1SC30B(3m), A8GT-C100BS(10m), A8GT-C200BS(20m), A8GT-C300BS(30m)		

*1 There are the following differences between the bus connection board and bus connection unit.
A9GT-BUSS(U) : Has one interface and usable with the GOT at termination. (Unusable with the GOT at midpoint)
A9GT-BUS2S(U) : Has two interfaces and usable with the GOT at termination and the GOT at midpoint.
*2 A single GOT does not accept multiple bus connection units and bus connection boards.
*3 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS), connect the connection cable connectors as indicated below.
Connector "COM1" → PLC CPU side
Connector "COM2" → GOT side
*4 When the extension base unit is used, the sum of cable lengths of the extension cable (between [base unit] and [base unit]) and connection cable (this cable) should be within 6m.
*5 When using the bus connection cable (A8GT-C100EXSS, A8GT-C200EXSS, A8GT-C300EXSS, A8GT-C100BS, A8GT-C200BS, A8GT-C300BS), always connect the ground wires (green wires (1m)) coming out of the connectors at both ends of the cable to the control box or like.



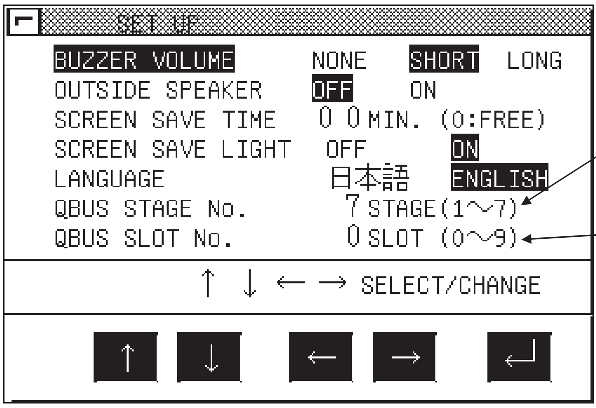
Connect both ground
wires to control box or like.

*6 The A8GT-C100EXSS-1/A8GT-C200EXSS-1/A8GT-C300EXSS-1 cable consists of the A8GT-EXCNB (0.5m) and A8GT-C100BS (10m)/C200BS (20m)/C300BS (30m), respectively.
The length of the A8GT-EXCNB (0.5m) need not be considered when calculating the cable length.

3.3 Initial Settings

3.3.1 Connection with QCPU (Q mode)

The GOT can be connected with the QCPU (Q mode).
For bus connection, one extension stage (16 points ∗ 10 slots) must be provided for connection of the GOTs.
The GOTs are assigned to the I/O slots of that extension stage.
To set the STAGE No. and SLOT No. used, set up the utility function of the GOT.
For full information on the utility function, refer to the GOT-A900 Series Operating Manual (Extended · Option Functions Manual).

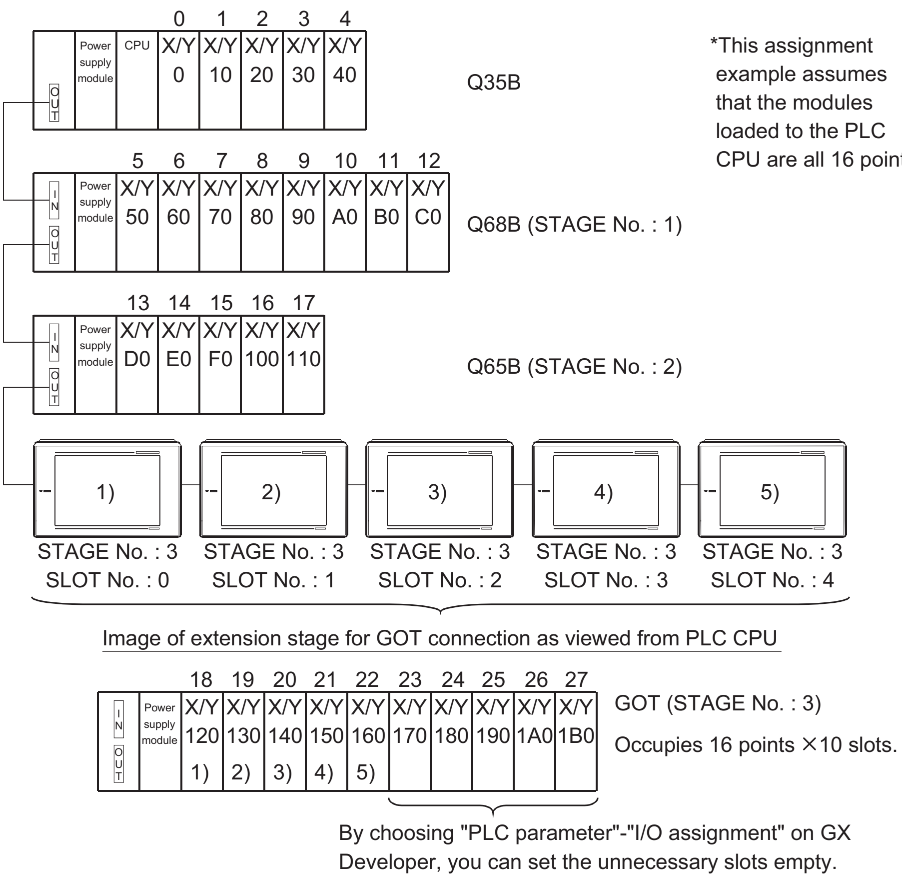


QBUS STAGE No.
Set the STAGE No. for connection of the GOT.
(1 to 7: Set the STAGE No.. Factory-set to 7.)

QBUS SLOT No.
Set the empty I/O SLOT No. where the GOT will be assigned.
(0 to 9: Set the empty I/O SLOT No.. Factory-set to 0)

For the way to set the I/O assignment, refer to the GX Developer Operating Manual.

Setting examples



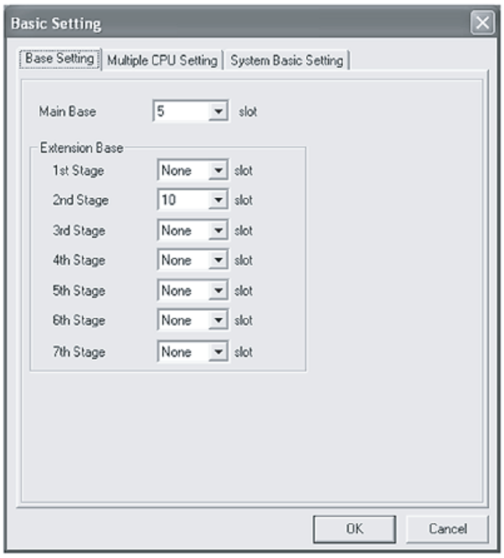
*This assignment example assumes that the modules loaded to the PLC CPU are all 16 points.

Point

- The utility function can be started by switching power on again after installing the system programs (system operating system, communication driver, etc.) into the GOT.
- After starting, touch the [Setup] icon to show the setup screen, and make settings related to bus connection.
- In the system configuration which uses the A9GT-QCNB, the same STAGE No. as that of the GOT must be set to the A9GT-QCNB.
  For details of the setting method, refer to the A9GT-QCNB Bus Extension Connector Box User's Manual.
- When using the QA1S6*B extension base unit, connect the GOT after the extension base unit in terms of hardware, but assign the I/O number after the Q**B base unit.
  <Example>
  When 16-point modules are loaded to all slots in the following configuration

	STAGE No.	I/O number
Q38B main base unit		00 to 7F
Q68B extension base unit	1	80 to FF
QA1S68B extension base unit	3	1A0 to 21F
GOT	2	100 to 19F

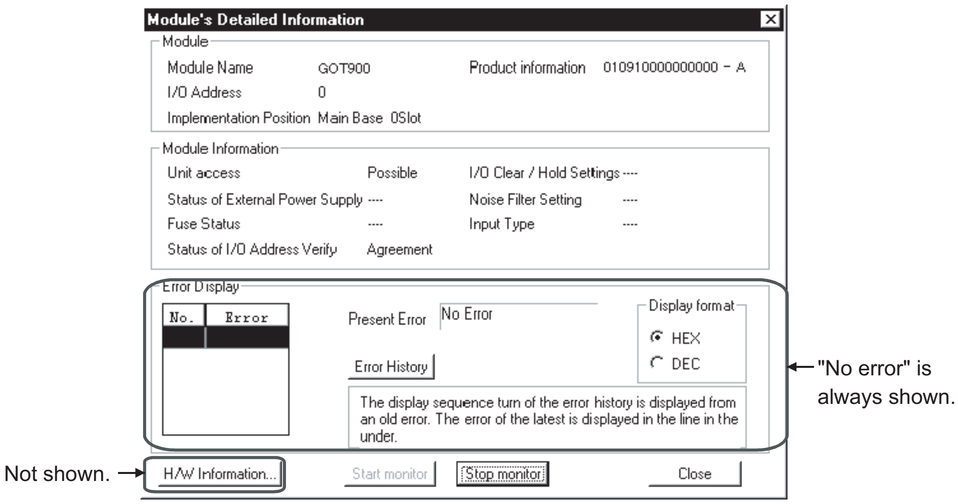
- For bus connection with the Q00JCPU, the number of extension base units including the GOT must be within two.
- For bus connection with the Q00CPU or Q01CPU, the number of extension base units including the GOT must be within four.
- When connecting to motion controller CPU (Q Series), set "10" to the number of slots for the extension base used for GOT connection in the [Base Setting] on MT Developer.
  Example: When setting "2" to Stage No. and "0" to Slot No. in the communication interface settings, set "10" to [2nd Stage].



Remark

GX Developer has the system monitor function which batch-monitors the status of the PLC system. Note that there are the following restrictions on monitoring the module detail information of the GOT.

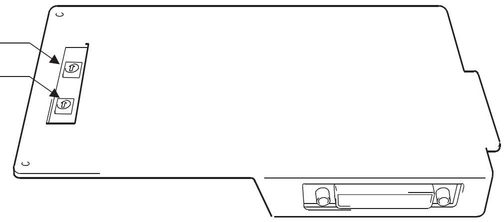
<Screen display example for GX Developer system monitor function>



Hence, confirm the module information of the GOT using the GOT side function (e.g. utility function, system alarm function).

3.3.2 Connection with other than QCPU (Q mode)

For bus connection with any CPU other than the QCPU, the GOT must be assigned to an empty I/O slot on the extension base unit.
To make assignment setting, use the bus connection board/unit installed on the GOT or the STAGE No. switch or I/O slot switch of the A951GOT.



<u>Extension number switch</u>

Set the extension number of the empty I/O slot to which the GOT will be assigned.
1 to 7: Set the extension number.
0, 8, 9: Must not be used.
(Factory-set to 0)

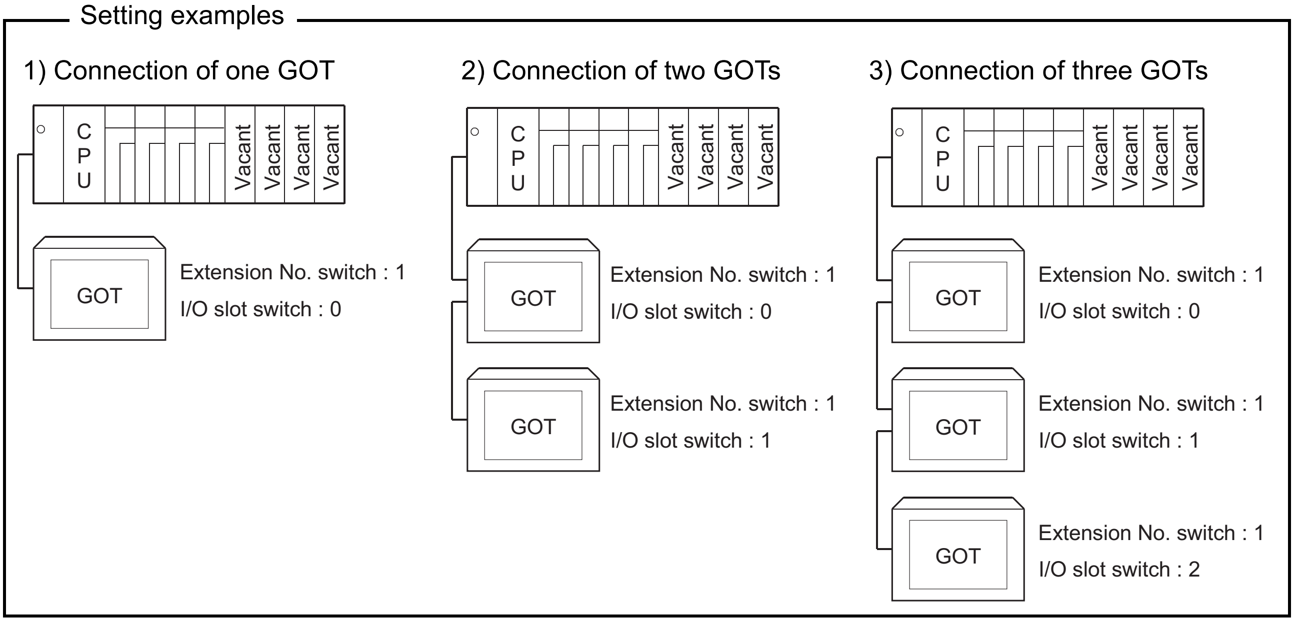
<u>I/O slot switch</u>

Set the empty I/O slot number to which the GOT will be assigned.
0 to 7: Set the empty I/O slot number.
8, 9: Must not be used.
(Factory-set to 0)

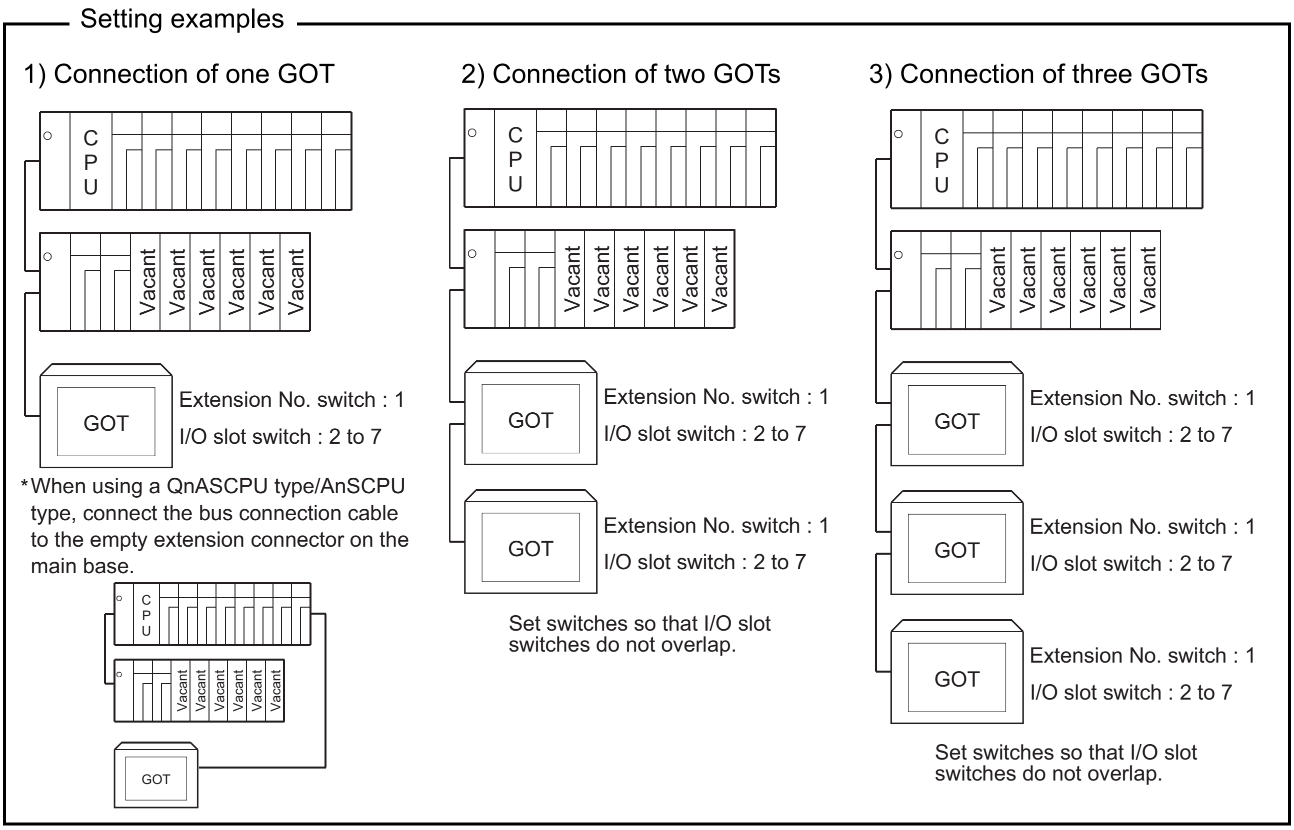
Point

You cannot assign the GOT to the empty I/O slot on the main base.
Therefore, even in a system which does not use the extension base, always allocate the GOT to a vacant I/O slot on the extension base (slot having the vacant points within the maximum I/O points of the PLC CPU, with the exception of those of the standard base).

(1) Setting method used when there is no extension base unit connected
Since the GOT cannot be assigned to an empty slot on the main base, make setting to assign it to the empty slot of the first extension if there is no extension base unit connected.



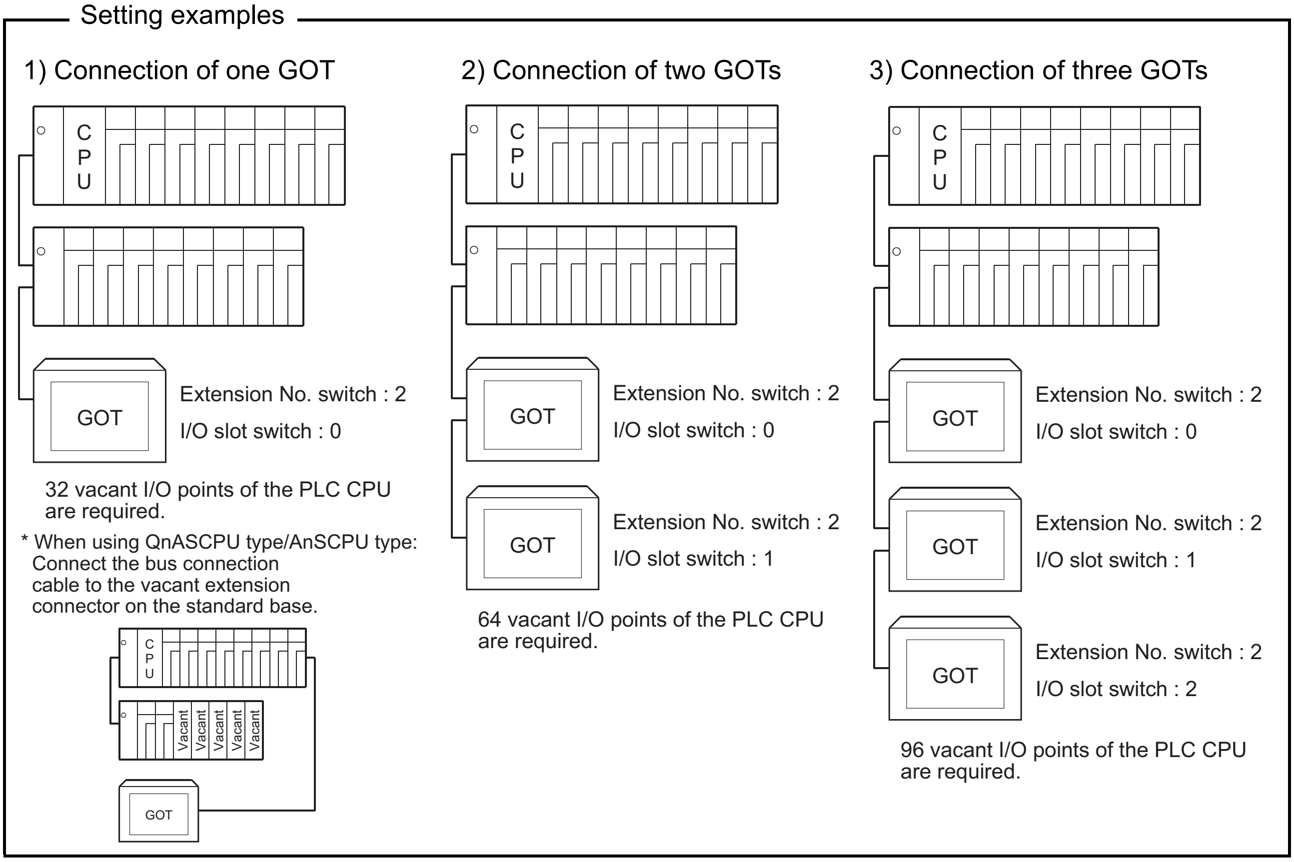
(2) Setting method used for assignment of GOT(s) to empty slot(s) of extension base unit
Set the extension number(s) and slot number(s) of the empty slot(s) to be assigned to.
Note that the following setting examples assume the use of a QnACPU type/AnCPU type but the same method applies to the use of a QnASCPU type/AnSCPU type.



(3) Setting method used when there are no empty slots on the extension base unit connected

When there are no empty I/O slots on the base unit, set the extension number switch(es) and I/O slot switch(es) as indicated below.

Note that the following setting examples assume the use of a QnACPU type/AnCPU type but the same method applies to the use of a QnASCPU type/AnSCPU type.



Point

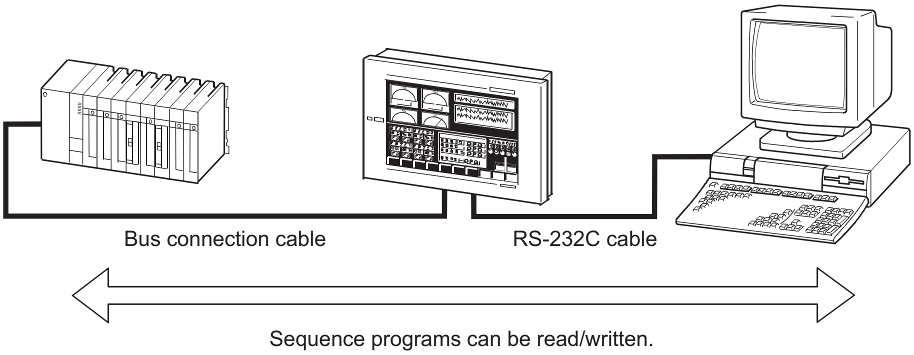
When using the Q3ACPU, Q4A(R)CPU, A3□ CPU, A4UCPU or A0J2HCPU, the above setting cannot be made.

Empty I/O slots are always needed on the extension base unit.

Also, when using the A0J2HCPU, assign the GOT(s) to I/O slot(s) 0 to 3 of the first extension.

3.4 About Transparent Function (2-Port Interface Function)

When the GOT is Bus-connected with the Q/QnA/A/motion controller CPU, connecting a peripheral device such as a personal computer allows you to read, write and monitor the sequence programs of the CPU.



Point

When the transparent function is used for bus connection, "Via GOT (Bus) transparent mode" must be checked in "PLC side I/F" of GX Developer.

For details of GX Developer, refer to the GX Developer Operating Manual.

3.4.1 About software used

The following software is required to use the transparent function for bus connection.

GX Developer Version 8.00A or later
GT Designer2 Version 2.00A or later

3.4.2 Instructions for using the transparent function

(1) Connect a peripheral device such as a personal computer to the RS-232C interface of the GOT.

(2) When connecting a GOT to the GX Developer with a RS-232 cable, set a transmission speed of the range supported by the CPU connected to at [Transmission speed] in [PC side I/F Serial setting] of the [Transfer Setup].

CPU Connected To	Transmission Speed
QCPU, FXCPU	9600bps, 19200bps, 38400bps, 57600bps, 115200bps
QnACPU	9600bps, 19200bps, 38400bps
ACPU	9600bps, 19200bps
Motion controller CPU (A Series)	9600bps

(3) Only one of the bar code function, servo amplifier monitor function and transparent function can be used.
The following table indicates the priorities of the functions.

High ← Priority → Low

Bar code function	Servo amplifier monitor function	Transparent function
There is bar code setting in the monitor screen data.	The extended function OS for servo amplifier monitor function has been installed in the GOT.	No setting items

The transparent function cannot be used when there is bar code setting in the monitor screen data or the extended function OS for servo amplifier monitor function has been installed in the GOT.
When there is bar code setting, delete the setting using GT Designer2.
When the extended function OS for servo amplifier monitor function has been installed, delete the extended function OS.

(4) A communication error will occur if GT Designer of SW4D5C-GOTR-PACKE Version F or earlier is used to communicate with the GOT where the basic function OS and PLC communication driver of SW5D5C-GOTR-PACKE Version A or later have been installed.
If a communication error occurs, perform the same operation again. (A communication error occurs at the first time only.)

(5) The following cautions items should be observed if the monitor conditions are set by GX Developer.

(a) The GOT monitor will stop.

(b) Operation by a touch switch or input by the numerical/ASCII input function cannot be performed.

(c) "315 Device write error" is displayed in the display field of the alarm list display (system alarm) function.

(d) Do not perform any operation that requires GOT restarting (downloading project data, changing utility or others) while setting a monitor condition.
If any operation above is performed, a system alarm of "402 Communication timeout." may be displayed on restarting the GOT.
In the case that a registered monitor condition for a PLC CPU cannot be canceled, reconnect the GX Developer to the PLC CPU to cancel the monitor condition setting. (An error may occur on canceling a monitor condition setting.)

(e) If the time check period of GX Developer is set to 30 seconds or longer in the monitor condition setting, "402 Communication time-out" is displayed in the display field of the alarm list display (system alarm) function.
In this case, change the time check period of GX Developer to shorter than 30 seconds.

(6) When executing PLC Write to a PLC CPU using the transparent function, the writing may be failed due to a cable disconnection or other reasons.
In the case above, retry PLC Write from the personal computer that has failed the PLC Write or reset the PLC CPU.

(7) If the following GOT functions are used when connecting with a QCPU (Q mode), an error may occur in a GOT or GX Developer.
The following lists the errors that may occur and their handling procedures.

GOT function	Error message of GOT	Handling on GOT side	Error message of GX Developer	Handling on GX Developer side
Execute ladder read with the ladder monitor function.	FILE NOT FOUND	Execute ladder read again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when ladder read is not being executed with the ladder monitor function of a GOT.
Execute device value read/ write by specifying the file register name of the recipe function.	358 File of PLC access failure	Turn ON the trigger device of the recipe function again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again. PLC file system error. Unable to communicate with PLC.	Execute "PLC Read" or "PLC Write" again when the recipe in-process signal in the system information of a GOT is OFF.
Execute TC monitor read with the system monitor function.	The message does not appear. "TC Setting" area is empty.	Execute TC monitor read again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when the TC monitor screen is not being read.
Execute to read the PC diagnosis monitor screen/ unit detailed information screen with the special unit monitor function.	Can't Communication	Execute to read the PC diagnosis monitor screen/ unit detailed information screen again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when the PC diagnosis monitor screen/unit detailed information screen is not being read with the special unit monitor function.

(8) The Q172CPU and Q173CPU cannot use the transparent function since GX Developer is incompatible.

(9) When GOT monitoring is faulty, the communication between the PLC CPU and GOT is faulty and the transparent function is disabled.

(10) When multiple GOTs are connected, the transparent function can be used on each GOT.
However, the monitor speed of the GOT decreases in proportion to the number of monitoring GOTs and personal computers.

(11) For 45 seconds after exit from GX Developer, the GOT remains at the same monitor speed as during use of the transparent function.

(12) The access range of GX Developer does not change when the transparent function is used.

(13) If the either of following operations, which will stop the monitoring of the GOT, is performed, the transparent function will stop.

(a) Monitor screen data is downloaded or uploaded using GT Designer2, or OS or ROM_BIOS is installed. *1

(b) Setup or screen & OS copy is executed on the GOT unit. *1

(c) When no communication request (online monitor, etc.) has been issued from GX Developer for 45 seconds.

*1 A time-out error will occur on GX Developer.
When the option function such as the utility or ladder monitor function is executed, the transparent function will not stop.

(14) When the transparent function is used, the following GX Developer functions cannot be executed. The message "The executed function is not supported. Please check the manual and other documentation." Is displayed on the GX Developer.

Unsupported GX Developer functions	Remarks
Remote Reset Remote system reset	-
Remote RUN Remote STOP Remote PAUSE Remote STEP-RUN Remote latch clear Write clock data Brake down history clear	Inexecutable only when specify all stations/groups has been performed.

(15) When using multiple software run on a personal computer, the communication using the transparent function is enabled for one software only.
Do not perform multiple communications using the transparent function at the same time. (The offline operation is enabled for each software.)
In addition, do not perform communication from the GT Designer2 to the GOT (downloading project data, etc.) during communication using the transparent function.

3.4.3 Compatible RS-232C cable

Use any of the following types of RS-232C cables for connection of the personal computer and GOT.

- AC30R2-9SS
- AC30R2-9P *1
- AC30N2A *1
- FX-232CAB-1
- F2-232CAB-1 *1
- FX-232CAB-2 *1

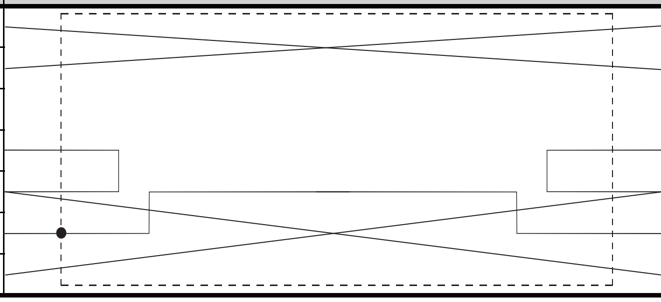
*1 9-25 pin converter (introduced product: D232J31 of Diatrend make) is required.

The RS-232C cable for connection of the personal computer and GOT may also be fabricated by the user.
The connection diagrams and connectors for the RS-232C cables are indicated below.

(1) Connection diagram

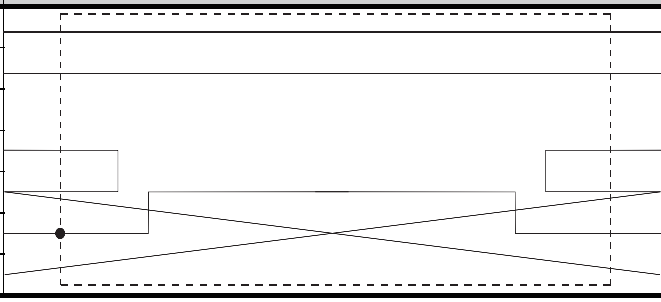
(a) Connection diagram of AC30R2-9SS, FX-232CAB-1

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Pin No.	Signal name
RXD	2		2	RXD
TXD	3		3	TXD
RTS	7		7	RTS
CTS	8		8	CTS
DSR	6		6	DSR
SG	5		5	SG
DTR	4		4	DTR



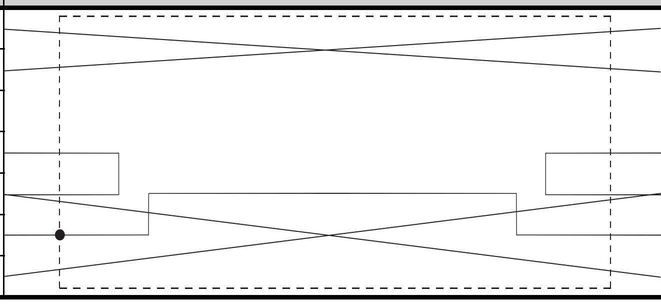
(b) Connection diagram of AC30R2-9P, F2-232CAB-1

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Pin No.	Signal name
TXD	2		2	RXD
RXD	3		3	TXD
RTS	4		7	RTS
CTS	5		8	CTS
DSR	6		6	DSR
SG	7		5	SG
DTR	20		4	DTR



(c) Connection diagram of AC30N2A

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Pin No.	Signal name
TXD	2		2	TXD
RXD	3		3	RXD
RTS	4		4	RTS
CTS	5		5	CTS
DSR	6		6	DSR
SG	7		7	SG
DTR	20		20	DTR

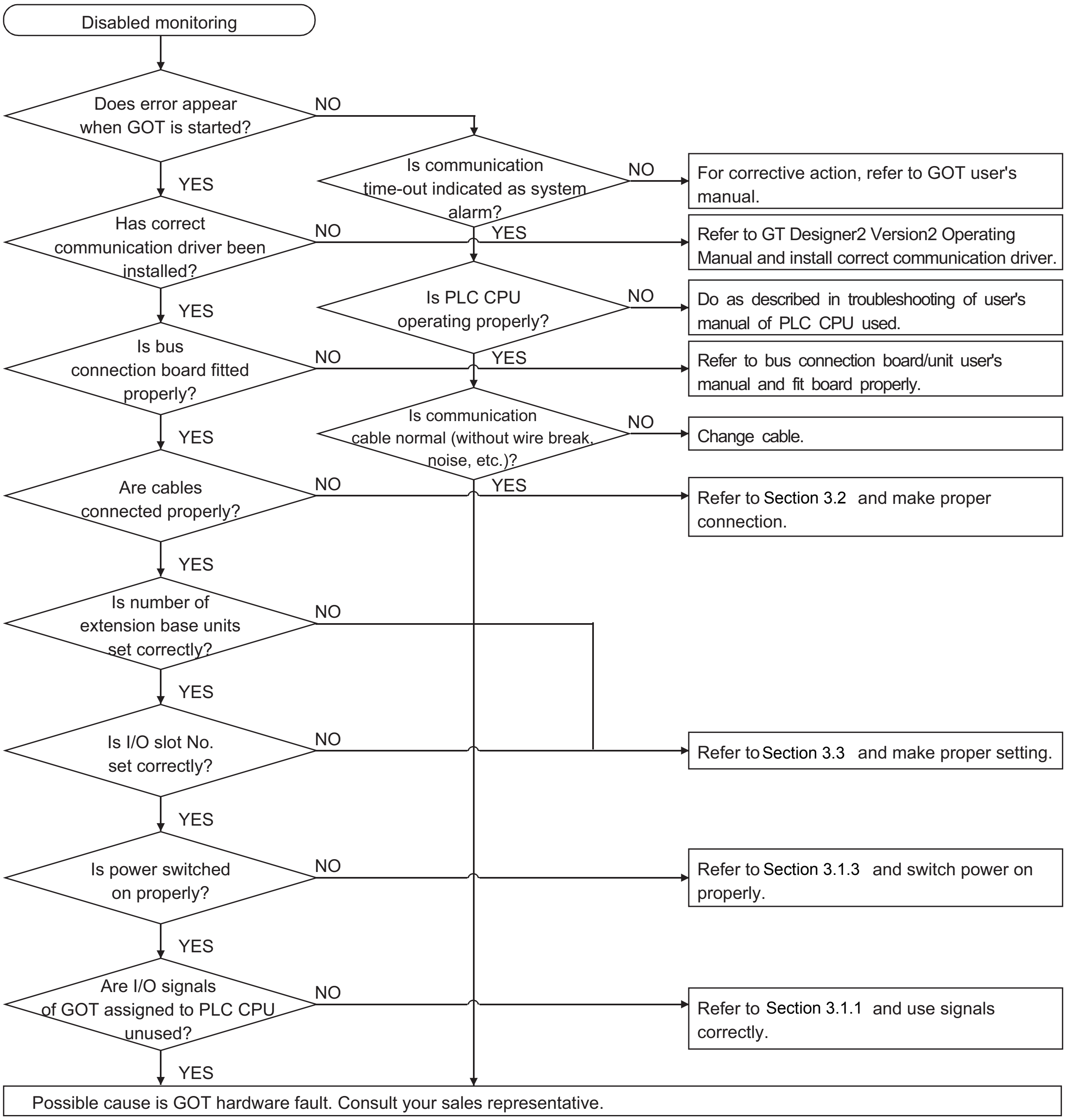


(2) Connector and connector cover
· GOT connector
Use the screw-in type connector (inch) for the GOT side.
· Personal computer connector
Use the connector compatible with the Personal computer.

(3) Precautions for cable preparation
The cable must be 15 m (49.21 feet) or shorter.

3.5 Troubleshooting for Disabled Monitoring

The following is the troubleshooting method when the GOT is disabled for monitoring at the time of bus connection.



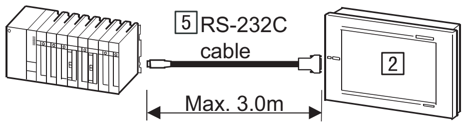
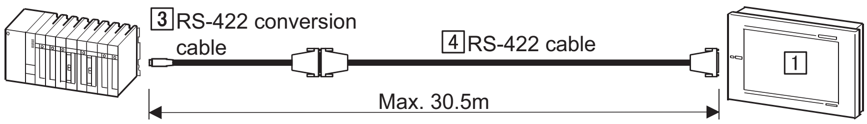
4 CPU DIRECT CONNECTION

4.1 System Configurations

4.1.1 Connection with QCPU

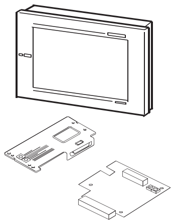
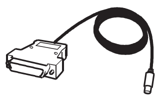
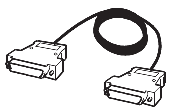
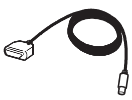
(1) System configurations and connection conditions
The following system configurations and connection conditions assume CPU direct connection with the QCPU.

The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">1 GOT</td><td>Within 3m</td><td>
</td></tr>
<tr><td>Within 30.5m</td><td>
</td></tr>
</table>

(2) System equipment

The following table indicates the system equipment needed for connection with the QCPU.

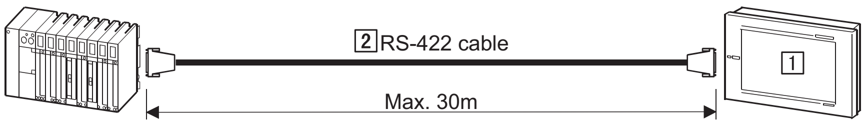
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	CPU direct-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	2	CPU direct-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	3	RS-422 conversion cable between [QCPU] and [RS-422 cable]	FA-CNV2402CBL(0.2m), FA-CNV2405CBL(0.5m)	
	4	RS-422 cable between [RS-422 conversion cable] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	
	5	RS-232C cable between [QCPU] and [GOT]	QC30R2(3.0m)	

4.1.2 Connection with QnACPU or ACPU

(1) System configurations and connection conditions

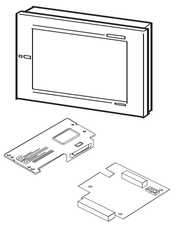
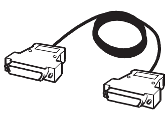
The following system configuration and connection conditions assume CPU direct connection with the QnACPU or ACPU.

The numbers ($\boxed{1}$ to $\boxed{2}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{2}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 30m	

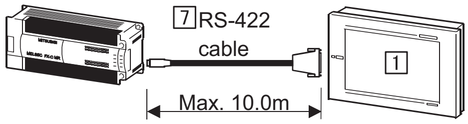
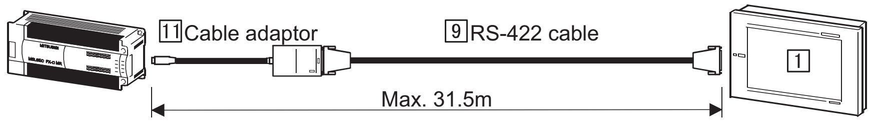
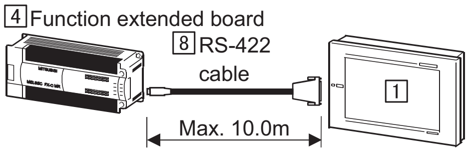
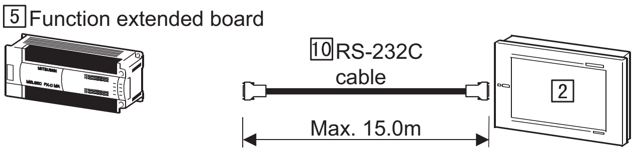
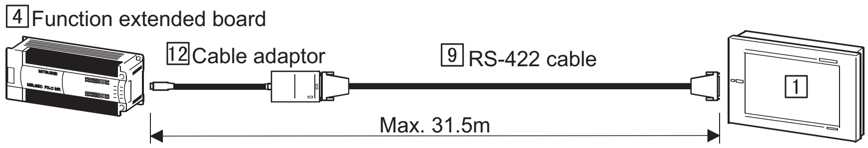
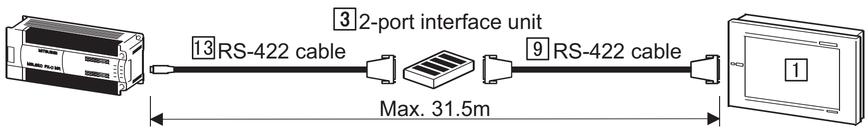
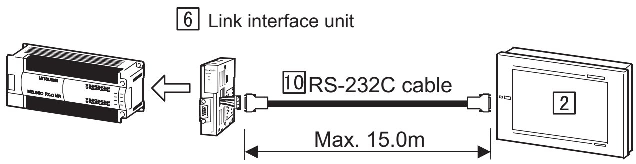
(2) System equipment

The following table indicates the system equipment needed for connection with the QnACPU or ACPU.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	CPU direct-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{2}$	RS-422 cable between [QnACPU, ACPU] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	

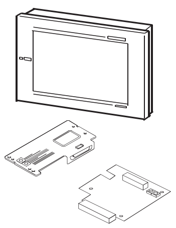
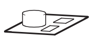
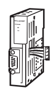
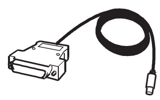
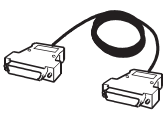
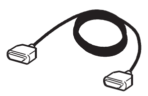
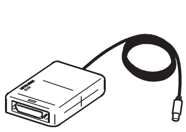
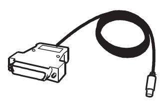
4.1.3 Connection with FXCPU (FX0, FX0N, FX0S, FX1N, FX1NC, FX1S, FX2N, FX2NC series)

(1) System configurations and connection conditions
The following system configurations and connection conditions assume CPU direct connection with the FXCPU (FX0, FX0N, FX0S, FX1N, FX1NC, FX1S, FX2N, FX2NC series).
The numbers (1 to 13) given in the system configurations denote the numbers (1 to 13) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

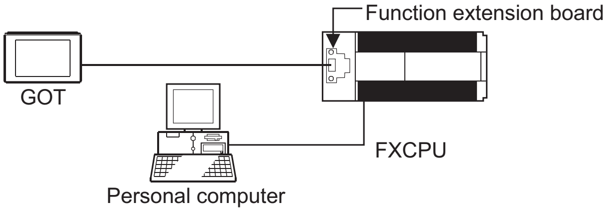
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 10m	
	Within 31.5m	
	Within 10m	
	Within 15m	
	Within 31.5m	
	Within 31.5m	
	Within 15m	

(2) System equipment

The following table indicates the system equipment needed for connection with the FXCPU (FX0, FX0N, FX0S, FX1N, FX1NC, FX1S, FX2N, FX2NC series).

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	CPU direct-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	2	CPU direct-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	3	2-port interface unit (Unit for simultaneous connection of GOT and peripheral (e.g. A6GPP, A6PHP, A7GPP, A7PHP) to FXCPU)	FX-2PIF *1 *2 *3	
	4	Function extended board (Unit for simultaneous connection of GOT and peripheral (e.g. GX Developer) to FXCPU)	FX1N-422-BD,FX2N-422-BD *3 *6 *7	
	5		FX1N-232-BD,FX2N-232-BD *3 *6 *7	
	6	Link interface unit	FX2NC-232ADP *4 *6	
	7	RS-422 cable between [FXCPU] and [GOT]	FX9GT-CAB0-150(1.5m), FX9GT-CAB0(3.0m), FX9GT-CAB0-10M(10.0m)	
	8	RS-422 cable between [FX1N-422-BD, FX2N-422-BD] and [GOT]		
	9	RS-422 cable between [cable adaptor] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	
	10	RS-232C cable between [FX1N-232-BD, FX2N-232-BD] / [FX2NC-232ADP] and [GOT]*8	AC30R2-9SS(3.0m), FX-232CAB-1(3.0m)	
	11	Cable adaptor between [FXCPU] and [RS-422 cable]	FX-422AW0(1.5m) *5	
	12	Cable adaptor between [FX1N-422-BD, FX2N-422-BD] and [RS-422 cable]		
	13	RS-422 cable between [FXCPU] and [2-port interface unit]	FX-422CAB0(1.5m)	

*1 The FX-2PIF is used to connect the GOT and FXCPU peripheral (e.g. A6GPP, A6PHP, A7GPP, A7PHP) simultaneously.
Refer to the FXCPU manual for the usable models and system configurations for connection of the FXCPU series peripherals.
*2 When connecting the GOT to the FX2N series via the FX-2PIF, use the FX-2PIF unit of Ver. 3.0 or later.
*3 Available for the FX1N, FX1S and FX2NC series only.
*4 Available for the FX2NC series only.
*5 Available for FX0, FX0N, FX0S, FX1N, FX1NC and FX1S only. (Not available for FX2N and FX2NC.)
*6 When using the function extended board, you can connect one GOT and one peripheral such as GX Developer to the FXCPU and function extended board, respectively.
Example) In the case of the function extended board



*7 The function extended board used depends on the type of the FXCPU connected. Use the compatible function extended board given in the following table.

Item	Function Extended Board Used	
	When FX1N, FX1S series is connected	When FX2N series is connected
RS-232C communication	FX1N-232-BD	FX2N-232-BD
RS-422 communication	FX1N-422-BD	FX2N-422-BD

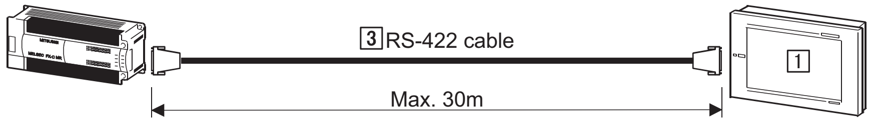
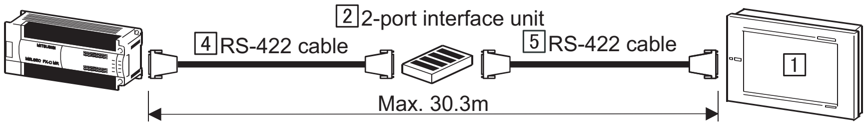
*8 The RS-232C cable can also be fabricated by the user. Refer to Section 4.2 for details of the fabricating method.

4.1.4 Connection with FXCPU (FX1, FX2, FX2C series)

(1) (1) System configurations and connection conditions

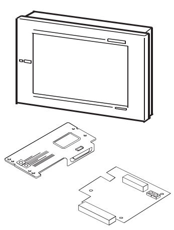
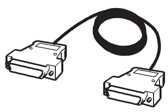
The following system configurations and connection conditions assume CPU direct connection with the FXCPU (FX1, FX2, FX2C series).

The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 30m	
	Within 30.3m	

(2) System equipment

The following table indicates the system equipment needed for connection with the FXCPU (FX1, FX2, FX2C series).

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	CPU direct-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{2}$	Unit for simultaneous connection of GOT and peripheral (e.g. A6GPP, A6PHP, A7GPP, A7PHP) to FXCPU	FX-2PIF *1 *2	
	$\boxed{3}$	RS-422 cable between [FXCPU] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	
	$\boxed{4}$	RS-422 cable between [FXCPU] and [2-port interface unit]	FX-422CAB(0.3m)	
	$\boxed{5}$	RS-422 cable between [2-port interface unit] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	

*1 The FX-2PIF is used to connect the GOT and FXCPU peripheral (e.g. A6GPP, A6PHP, A7GPP, A7PHP) simultaneously.
Refer to the FXCPU manual for the usable models and system configurations for connection of the FXCPU series peripherals.

*2 When connecting the GOT to the FX2N series via the FX-2PIF, use the FX-2PIF unit of Ver. 3.0 or later.

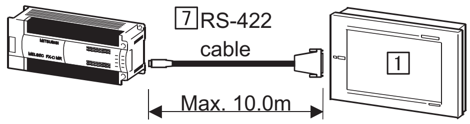
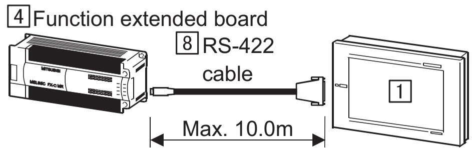
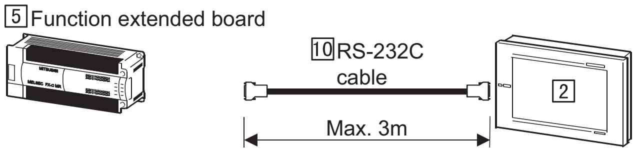
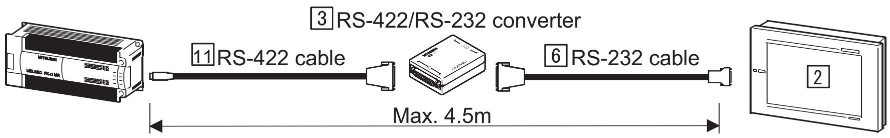
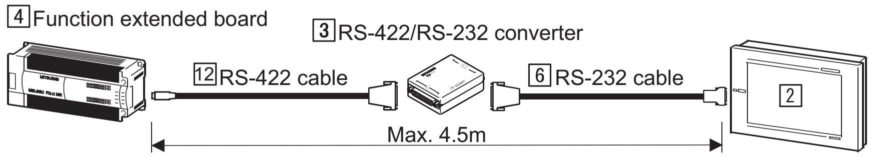
4.1.5 Connection with FXCPU (FX3UC series)

(1) System configurations and connection conditions

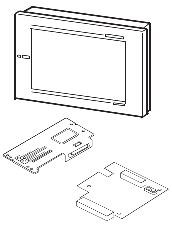
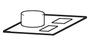
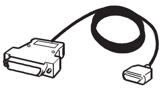
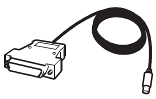
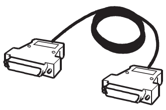
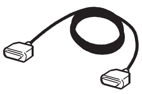
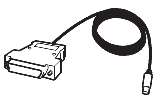
The following system configurations and connection conditions assume CPU direct connection with the FXCPU (FX3UC series).

The numbers (1 to 12) given in the system configurations denote the numbers (1 to 12) in "(2) System equipment".

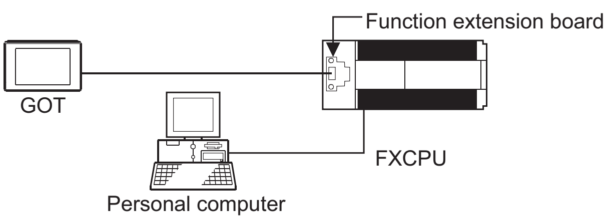
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 10m	
	Within 10m	
	Within 3m	
	Within 4.5m	
	Within 4.5m	

(2) System equipment
The following table indicates the system equipment needed for connection with the FXCPU (FX3UC series).

Image	No.	Application	Type: GOT unit	Type: Serial communication board
	1	CPU direct-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	2	CPU direct-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	3	RS-422/RS-232 converter	FX-232AW, FX-232AWC, FX232AWC-H	
	4	Function extended board [*1] (Unit for simultaneous connection of GOT and peripheral (e.g. GX Developer) to FXCPU)	FX3U-422-BD	
	5		FX3U-232-BD	
	6	RS-232C cable between [RS-422/RS-232 converter] and [GOT]	F2-232CAB-1(3m)	
	7	RS-422 cable between [FXCPU] and [GOT]	FX9GT-CAB0-150(1.5m), FX9GT-CAB0(3.0m), FX9GT-CAB0-10M(10.0m)	
	8	RS-422 cable between [FX3U-422-BD] and [GOT]		
	9	RS-422 cable between [cable adaptor] and [GOT]	AC30R4-25P(3.0m)	
	10	RS-232C cable between [FX3U-232-BD] and [GOT]	FX-232CAB-1(3.0m)	
	11	RS-422 cable between [FXCPU] and [RS-422/RS-232 converter]	FX-422CAB0(1.5m)	
	12	RS-422 cable between [FX3U-422-BD] and [RS-422/RS-232 converter]		

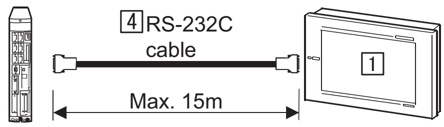
*1 When using the function extended board, you can connect one GOT and one peripheral device such as GX Developer to the FXCPU and function extended board, simultaneously.
Example) In the case of the function extended board

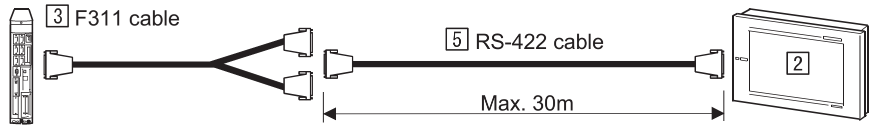


4.1.6 Connection with MELDAS C6/C64

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the MELDAS C6/C64.

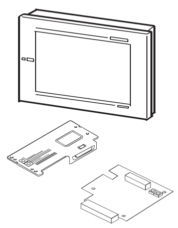
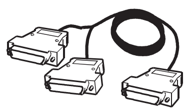
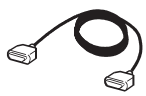
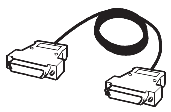
The numbers (1 to 5) given in the system configurations denote the numbers (1 to 5) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">1 GOT</td><td>Within 15m</td><td>


</td></tr>
<tr><td>Within 30m</td><td>


</td></tr>
</table>

(2) System equipment
The following table indicates the system equipment needed for connection with the MELDAS C6/C64.

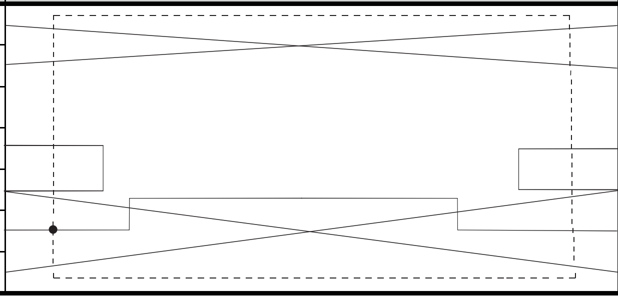
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	MELDAS C6/C64-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT(with built-in communication interface)	---
	2	MELDAS C6/C64-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT(with built-in communication interface)	---
	3	F311 cable*	For the applicable cable, refer to "MELDAS C6/C64/C64T CONNECTION AND MAINTENANCE MANUAL (BNP-B2255)".	
	4	RS-232C cable between [MELDAS C6/C64] and [GOT]		
	5	RS-422 cable between [F311 cable] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	

* When making connection with the GOT, use the F311 cable with "F311A" on it. (Product shipped in July, 2003 or later)

4.2 Connection Cables

(1) Connection with FX CPU
This section gives the connection diagrams and connectors of the RS-232C cables which are used to connect the GOT and FX CPU.

(a) Connection diagram

FXCPU Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Signal name	Pin No.
RXD	2		2	RXD
TXD	3		3	TXD
RTS	7		7	RTS
CTS	8		8	CTS
DSR	6		6	DSR
SG	5		5	SG
DTR	4		4	DTR

(b) Connector and connector cover

- GOT connector

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- FX CPU connector
  Use the connector compatible with the function extension board or link interface module.

(c) Precautions for cable preparation
The cable must be 15 m (49.21 feet) or shorter.

(2) Connection with MELDAS C6/C64

The RS-232C cable connection diagram and the connector for the MELDAS C6/C64 and the GOT are as follows

For details, refer to the manual of the MELDAS C6/C64 used.

(a) Connection diagram

MELDAS C6/C64 side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Pin No.	Signal name
GND	1		1	CD
			2	RD(RXD)
SD	6		3	SD(TXD)
RD	16		4	DTR(ER)
ER(DTR)	18		5	SG(GND)
			6	DSR(DR)
			7	RS(RTS)
			8	CS(CTS)
GND	1		9	---

(b) Connector

MELDAS C6/C64 connector

Item	Description
Connector	10120-3000VE(Manufactured by Sumitomo 3M)
Connector cover	10320-52F0-008(Manufactured by Sumitomo 3M)

GOT connector

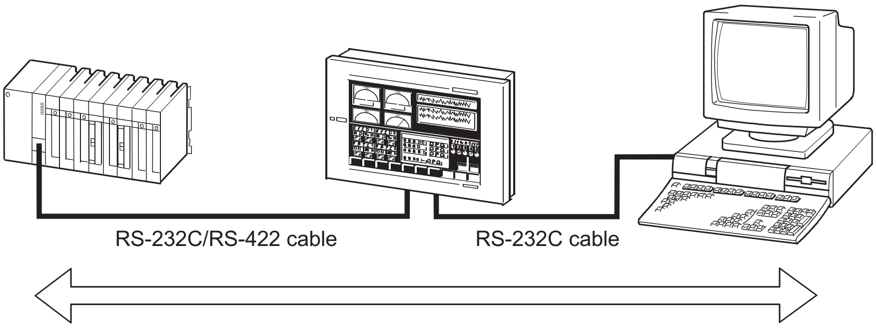
Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

(c) Precautions for cable preparation

The cable must be 15 m (49.21 feet) or shorter.

4.3 About Transparent Function (2-Port Interface Function)

When the GOT is connected directly with the Q/QnA/A/FX/motion controller CPU, MELDAS, connecting a peripheral device such as a personal computer allows you to read, write and monitor the sequence programs of the CPU.



4.3.1 About software used

The software programs usable change with the CPU connected to the GOT.
Refer to the following table and use the software programs compatible with the connected CPU.

Connected PLC CPU	Usable software
QCPU (Q mode)	SW□D5C-GPPW-E, SW□D5F-GPPW-E
QnACPU	SW□D5C-GPPW-E, SW□D5F-GPPW-E, SW□IVD-GPPQ, SW□IWC-MEDOC-E
QCPU (A mode), ACPU	SW□D5C-GPPW-E, SW□D5F-GPPW-E, SW□IVD-GPPA, SW□IWC-MEDOC-E
FXCPU	SW□D5C-GPPW-E, SW□D5F-GPPW-E, SW□PC-FXGP/WIN, SW□IWC-MEDOC-E
Motion controller CPU (A series)	DOS version SW2SRX-GSV13P, SW2SRX-GSV22P, SW2SRX-GSV43P, SW2SRX-GSV51P Windows® version SW3RN-GSV13P, SW3RN-GSV22P, SW3RN-GSV43P, SW3RN-GSV51P
Motion controller CPU (Q series)	SW6RNC-GSVSET-E, SW6RNC-GSVPRO-E
MELDAS C6/C64	SW□D5C-GPPW-E, SW□D5F-GPPW-E, SW□IVD-GPPQ, SW□IWC-MEDOC-E

4.3.2 Instructions for using the transparent function

(1) Connect a peripheral device such as a personal computer to the RS-232C interface of the GOT.

(2) Only one of the bar code function, servo amplifier monitor function and transparent function can be used.
The following table indicates the priorities of the functions.

High → Priority ← Low

Bar code function	Servo amplifier monitor function	Transparent function
There is bar code setting in the monitor screen data.	The extended function OS for servo amplifier monitor function has been installed in the GOT.	No setting items

The transparent function cannot be used when there is bar code setting in the monitor screen data or the extended function OS for servo amplifier monitor function has been installed in the GOT.
When there is bar code setting, delete the setting using GT Designer2.
When the extended function OS for servo amplifier monitor function has been installed, delete the extended function OS.

(3) When connecting the GOT with the QCPU (A mode), refer to the QCPU (A mode) User's Manual for the GPP function software package and the startup-time type setting (PLC type).

(4) A communication error will occur if GT Designer of SW4D5C-GOTR-PACKE Version F or earlier is used to communicate with the GOT where the basic function OS and PLC communication driver of SW5D5C-GOTR-PACKE Version A or later have been installed.
If a communication error occurs, perform the same operation again. (A communication error occurs at the first time only.)

(5) The following cautions should be observed when using transparent function.

(a) Conditions transparent function will not work
The transparent function may not work if the following inoperable conditions are all met and further GX Developer is started with the RS-232C cable connected between the personal computer and GOT.
However, it will work if only one condition has not realized. (For example, it will work when the CPU to be monitored is QCPU.)

Item	Conditions transparent function will not work	Remarks
CPU module to be monitored	ACPU	Not applicable to QnACPU or QCPU.
RS 232C cable	AC30R2-9SS or AC30R2-9P of Version A or later is used.	Not applicable to AC30R2-9SS or AC30R2-9P of Version A or later.

(b) Countermeasures
Either of the following countermeasures allows transparent function to work normally.

1) Use an RS-232C cable of Version A or later.

2) For the cable whose Version is neither A nor later, reconnect it after disconnecting.

(c) How to verify the cable version
The RS-232C cables of Version A or later have the version number inscribed at the upper right of the model name marked on the connector.

(6) The following cautions items should be observed if the monitor conditions are set by GX Developer.

(a) The GOT monitor will stop.

(b) Operation by a touch switch or input by the numerical/ASCII input function cannot be performed.

(c) "315 Device write error" is displayed in the display field of the alarm list display (system alarm) function.

(d) Do not perform any operation that requires GOT restarting (downloading project data, changing utility or others) while setting a monitor condition.
If any operation above is performed, a system alarm of "402 Communication timeout." may be displayed on restarting the GOT.
In the case that a registered monitor condition for a PLC CPU cannot be canceled, reconnect the GX Developer to the PLC CPU to cancel the monitor condition setting. (An error may occur on canceling a monitor condition setting.)

(e) If the time check period of GX Developer is set to 30 seconds or longer in the monitor condition setting, "402 Communication time-out" is displayed in the display field of the alarm list display (system alarm) function.
In this case, change the time check period of GX Developer to shorter than 30 seconds.

(7) When executing PLC Write to a PLC CPU using the transparent function, the writing may be failed due to a cable disconnection or other reasons.
In the case above, retry PLC Write from the personal computer that has failed the PLC Write or reset the PLC CPU.

(8) If the following GOT functions are used when connecting with a QCPU (Q mode), an error may occur in a GOT or GX Developer.
The following lists the errors that may occur and their handling procedures.

GOT function	Error message of GOT	Handling on GOT side	Error message of GX Developer	Handling on GX Developer side
Execute ladder read with the ladder monitor function.	FILE NOT FOUND	Execute ladder read again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when ladder read is not being executed with the ladder monitor function of a GOT.
Execute device value read/ write by specifying the file register name of the recipe function.	358 File of PLC access failure	Turn ON the trigger device of the recipe function again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again. PLC file system error. Unable to communicate with PLC.	Execute "PLC Read" or "PLC Write" again when the recipe in-process signal in the system information of a GOT is OFF.
Execute TC monitor read with the system monitor function.	The message does not appear. "TC Setting" area is empty.	Execute TC monitor read again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when the TC monitor screen is not being read.
Execute to read the PC diagnosis monitor screen/ unit detailed information screen with the special unit monitor function.	Can’t Communication	Execute to read the PC diagnosis monitor screen/ unit detailed information screen again when "PLC Read" or "PLC Write" is not being executed by GX Developer.	File access failure. Please try again.	Execute "PLC Read" or "PLC Write" again when the PC diagnosis monitor screen/unit detailed information screen is not being read with the special unit monitor function.

(9) When the PLC CPU is monitored by a peripheral device such as a personal computer, the display speed of the GOT decreases.

(10) For 45 seconds after exit from GX Developer, the GOT remains at the same monitor speed as during use of the transparent function.

(11) The access range of GX Developer does not change when the transparent function is used.

(12) If the either of following operations, which will stop the monitoring of the GOT, is performed, the transparent function will stop.

(a) Monitor screen data is downloaded or uploaded using GT Designer2, or OS or ROM_BIOS is installed. *1

(b) Setup or screen & OS copy is executed on the GOT unit. *1

(c) When no communication request (online monitor, etc.) has been issued from GX Developer for 45 seconds.

*1 A time-out error will occur on GX Developer.
When the option function such as the utility or ladder monitor function is executed, the transparent function will not stop.

(13) When using multiple software run on a personal computer, the communication using the transparent function is enabled for one software only.
Do not perform multiple communications using the transparent function at the same time. (The offline operation is enabled for each software.)
In addition, do not perform communication from the GT Designer2 to the GOT (downloading project data, etc.) during communication using the transparent function.

(14) When connecting to the FXCPU, set the transmission speed of the GX Developer to 9600bps.
Otherwise, the transparent function will not operate.

4.3.3 Compatible RS-232C cable

Use any of the following types of RS-232C cables for connection of the personal computer and GOT.

- AC30R2-9SS
- AC30R2-9P *1
- AC30N2A *1
- FX-232CAB-1
- F2-232CAB-1 *1
- FX-232CAB-2 *1

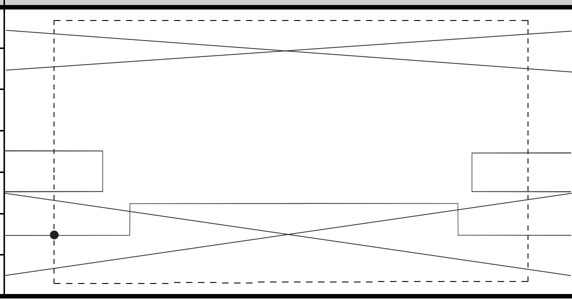
*1 9-25 pin converter (introduced product: D232J31 of Diatrend make) is required.
*2 When connecting to a motion controller CPU, the usable RS-232C cable varies depending on the software.
The following shows RS-232C cables usable for respective software.

Type	Software used	Usable cable
Motion controller CPU (A series)	DOS version SW2SRX-GSV13P, SW2SRX-GSV22P, SW2SRX-GSV43P, SW2SRX-GSV51P	User-fabricated cable (Refer to Section 4.3.3 (1) (d).)
	Windows® version SW3RN-GSV13P, SW3RN-GSV22P, SW3RN-GSV43P, SW3RN-GSV51P	AC30R2-9SS, AC30R2-9P, AC30N2A, FX-232CAB-1, F2-232CAB-1
Motion controller CPU (Q series)	SW6RNC-GSVSET-E, SW6RNC-GSVPRO-E	

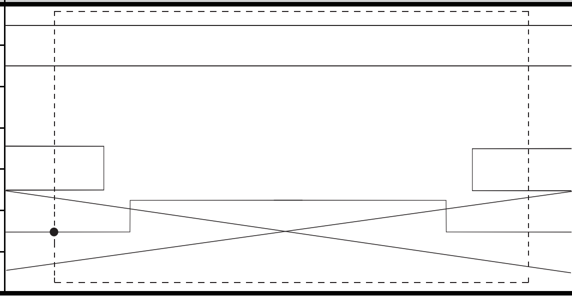
The RS-232C cable for connection of the personal computer and GOT may also be fabricated by the user.
The connection diagrams and connectors for the RS-232C cables are indicated below.

(1) Connection diagram

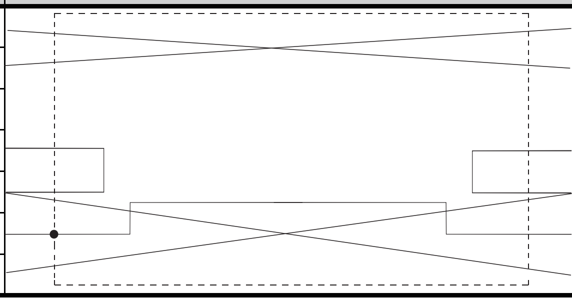
(a) Connection diagram of AC30R2-9SS, FX-232CAB-1

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Signal name	Pin No.
RXD	2		2	RXD
TXD	3		3	TXD
RTS	7		7	RTS
CTS	8		8	CTS
DSR	6		6	DSR
SG	5		5	SG
DTR	4		4	DTR

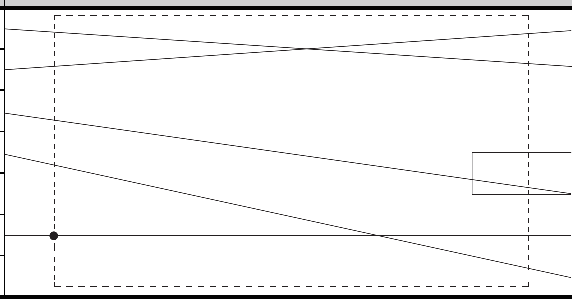
(b) Connection diagram of AC30R2-9P, F2-232CAB-1

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Signal name	Pin No.
TXD	2		2	RXD
RXD	3		3	TXD
RTS	4		7	RTS
CTS	5		8	CTS
DSR	6		6	DSR
SG	7		5	SG
DTR	20		4	DTR

(c) Connection diagram of AC30N2A

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Signal name	Pin No.
TXD	2		2	TXD
RXD	3		3	RXD
RTS	4		4	RTS
CTS	5		5	CTS
DSR	6		6	DSR
SG	7		7	SG
DTR	20		20	DTR

(d) When using the software (DOS version) for motion controller CPU (A series)

Personal computer Side		Cable connection and direction of signal	GOT Side	
Signal name	Pin No.		Signal name	Pin No.
RXD	2		2	RXD
TXD	3		3	TXD
RTS	7		7	RTS
CTS	8		8	CTS
DSR	6		6	DSR
SG	5		5	SG
DTR	4		4	DTR

*1 This RS-232C cable should not be used to transfer the monitor screen data of GT Designer2.

(2) Connector and connector cover

- GOT connector
  Use the screw-in type connector (inch) for the GOT side.

- Personal computer connector
  Use the connector compatible with the Personal computer.

(3) Precautions for cable preparation
The cable must be 15 m (49.21 feet) or shorter.

5 COMPUTER LINK CONNECTION

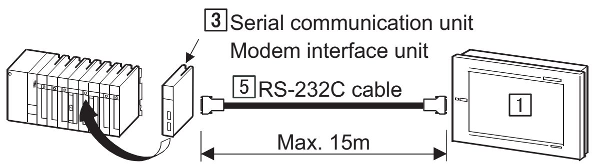
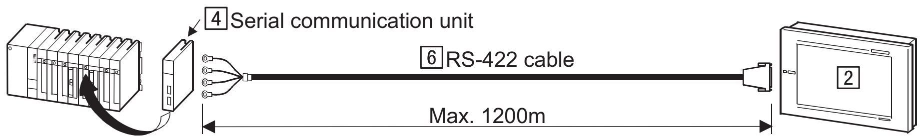
5.1 System Configurations

Point

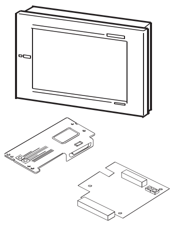
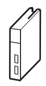
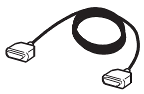
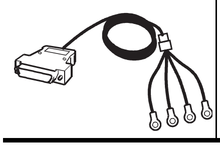
Connect a termination resistor (330Ω 1/4W (orange, orange, brown, ☐) on the computer link unit, serial communication unit or modem interface unit side. On the GOT side, you need not connect the termination resistor since the GOT contains it.

5.1.1 Connection with QCPU (Q mode)

(1) System configurations and connection conditions
The following system configurations and connection conditions assume computer link connection with the QCPU (Q mode). The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 1200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the QCPU (Q mode).

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Serial communication unit*1	QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24-R2	
		Modem interface unit	QJ71CMO	
	$\boxed{4}$	Serial communication unit*1	QJ71C24,QJ71C24N,QJ71C24N-R4	
	$\boxed{5}$	RS-232C cable between [serial communication unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [serial communication unit] and [GOT]		

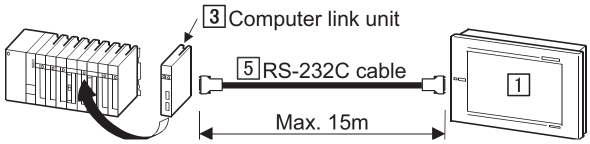
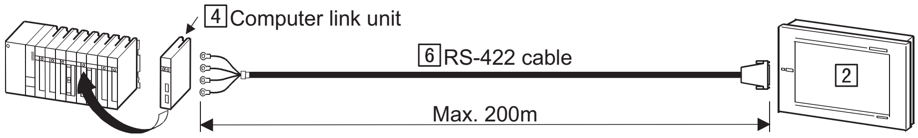
*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.

Point

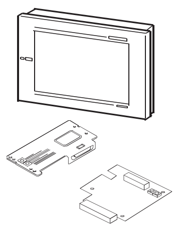
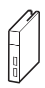
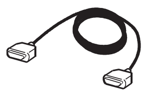
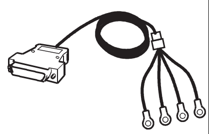
If the GOT is powered OFF and then ON or reset during monitor, communication may not be resumed. If a communication error message appears on the GOT screen, reset the GOT again.

5.1.2 Connection with QCPU (A mode)

(1) System configurations and connection conditions
The following system configurations and connection conditions assume computer link connection with the QCPU (A mode).
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions: Number of connected	Connection Conditions: Installation distance	System Configuration
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the QCPU (A mode).

Image	No.	Application	Type: GOT unit	Type: Serial communication board
	1	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Computer link unit*1*2	A1SJ71UC24-R2, A1SJ71UC24-PRF, A1SJ71C24-R2,A1SJC24-PRF	
	4	Computer link unit*1*2	A1SJ71UC24-R4, A1SJ71C24-R4	
	5	RS-232C cable between [computer link unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	6	RS-422 cable between [computer link unit] and [GOT]		

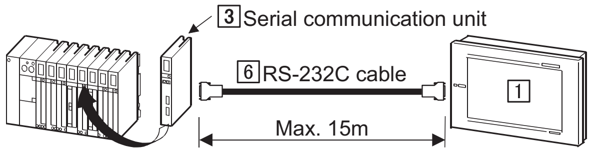
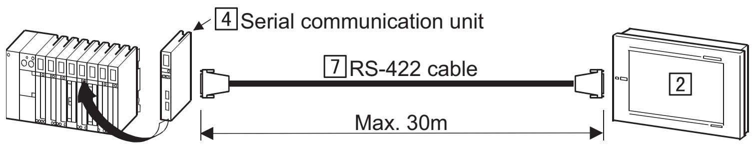
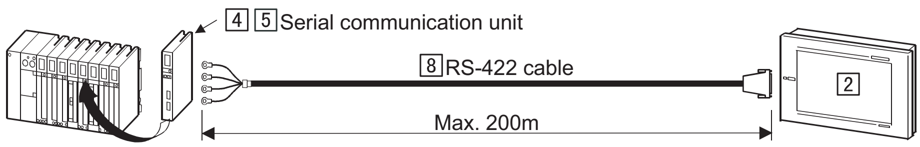
*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.
*2 When the A1SJ71C24-R2 or A1SJ71C24-PRF, A1SJ71C24-R4 is used and the connection target PLC CPU is the QCPU (A mode), the monitor able access range is the range of the AnACPU.

5.1.3 Connection with QnACPU type

(1) System configurations and connection conditions

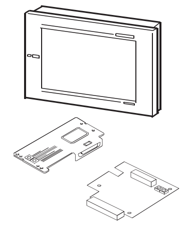
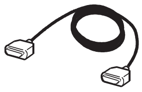
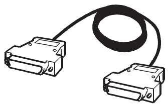
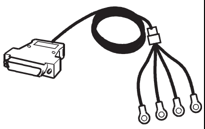
The following system configurations and connection conditions assume computer link connection with the QnACPU type. The numbers ($\boxed{1}$ to $\boxed{8}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{8}$) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 30m	
	Within 200m	

(2) System equipment

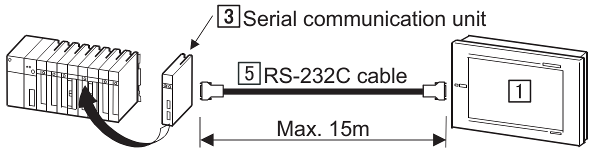
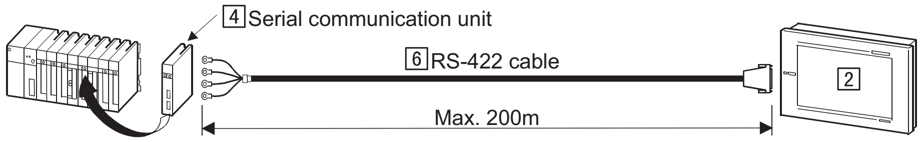
The following table indicates the system equipment needed for connection with the QnACPU type.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Serial communication unit*1	AJ71QC24,AJ71QC24N, AJ71QC24-R2, AJ71QC24N-R2	
	4	Serial communication unit*1	AJ71QC24-R4, AJ71QC24N-R4	
	5	Serial communication unit*1	AJ71QC24, AJ71QC24N	
	6	RS-232C cable between [serial communication unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	7	RS-422 cable between [serial communication unit] and [GOT]	AC30R4-25P(3.0m),AC100R4-25P(10.0m),AC300R4-25P(30.0m)	
	8	RS-422 cable between [serial communication unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	

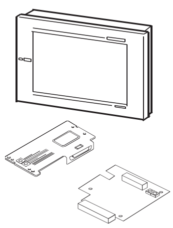
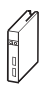
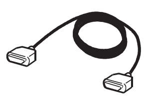
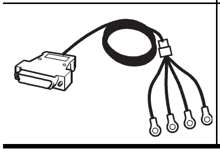
*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.

5.1.4 Connection with QnASCPU type

(1) System configurations and connection conditions
The following system configurations and connection conditions assume computer link connection with the QnASCPU type.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions: Number of connected	Connection Conditions: Installation distance	System Configuration
1 GOT	Within 15m	
	Within 200m	

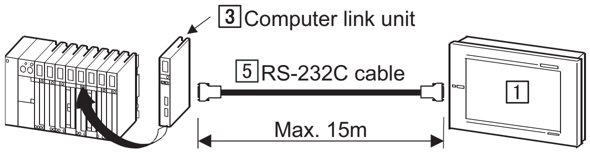
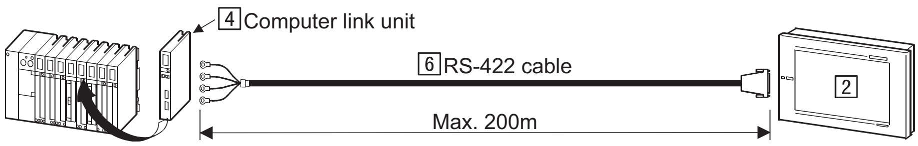
(2) System equipment
The following table indicates the system equipment needed for connection with the QnASCPU type.

Image	No.	Application	Type: GOT unit	Type: Serial communication board
	$\boxed{1}$	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Serial communication unit[*1]	A1SJ71QC24, A1SJ71QC24N,A1SJ71QC24-R2, A1S71QC24N-R2	
	$\boxed{4}$	Serial communication unit[*1]	A1SJ71QC24,A1SJ71QC24N	
	$\boxed{5}$	RS-232C cable between [serial communication unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [serial communication unit] and [GOT]		

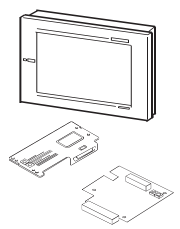
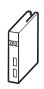
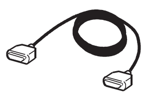
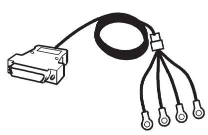
*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.

5.1.5 Connection with AnCPU type

(1) System configurations and connection conditions
The following system configurations and connection conditions assume computer link connection with the AnCPU type.
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

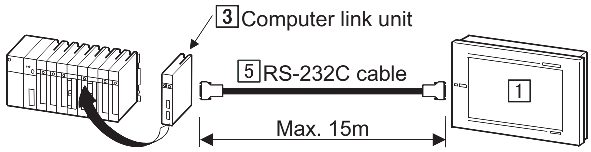
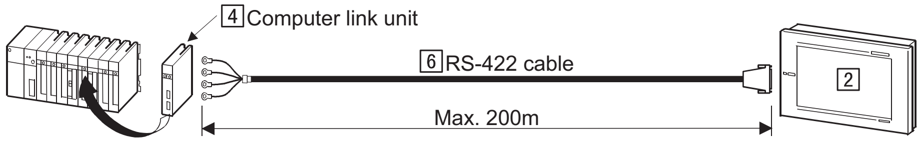
(2) System equipment
The following table indicates the system equipment needed for connection with the AnCPU type.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Computer link unit*1	AJ71UC24	
	4	Computer link unit*1*2	AJ71UC24, AJ71C24-S8	
	5	RS-232C cable between [computer link unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	6	RS-422 cable between [computer link unit] and [GOT]		

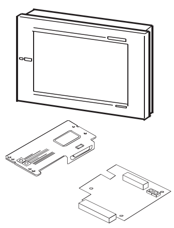
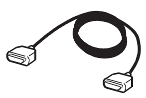
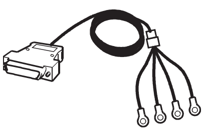
*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.
*2 When the AJ71C24-S8 is used and the connection target PLC CPU is the AnUCPU, the monitorable access range is the range of the AnACPU.

5.1.6 Connection with AnSCPU type

(1) System configurations and connection conditions
The following system configurations and connection conditions assume computer link connection with the AnSCPU type.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the AnSCPU type.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Computer link-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Computer link-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Computer link unit*1*2	A1SJ71UC24-R2, A1SJ71UC24-PRF,A1SJ71C24-R2 A1SJ71C24-PRF,A1SCPUC24-R2, A2CCPUC24 A2CCPU24-PRF	
	$\boxed{4}$	Computer link unit*1*2	A1SJ71UC24-R4, A1SJ71C24-R4	
	$\boxed{5}$	RS-232C cable between [computer link unit] and [GOT]	(Refer to Section 5.4 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [computer link unit] and [GOT]		

*1 For the system configuration on the serial communication unit side, refer to the user's manual of the serial communication unit used.
*2 When the A1SJ71C24-R2 or A1SJ71C24-PRF, A1SJ71C24-R4 is used and the connection target PLC CPU is the AnUS(H)CPU, the monitorable access range is the range of the AnACPU.

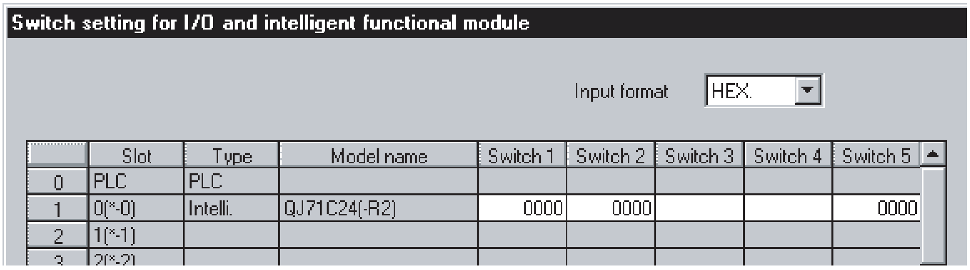
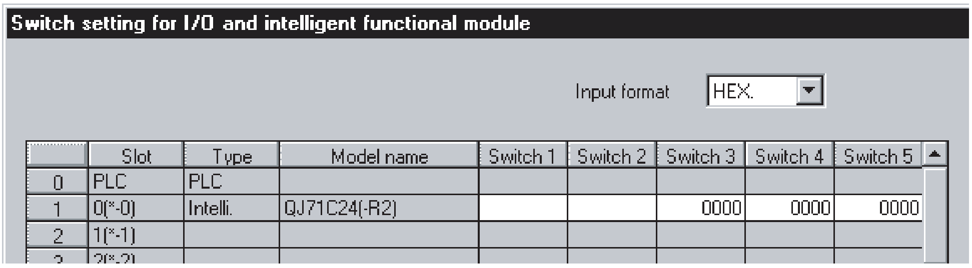
5.2 Initial Settings

5.2.1 PLC CPU side settings

When connecting the GOT and the computer link unit and serial communication unit and modem interface unit for monitoring, set the switches of the computer link unit and serial communication unit as follows.
The settings vary with the communication status (RS-232C communication/RS-422 communication) of the GOT used.
Refer to the manuals of the used units for details of the computer link unit, serial communication unit and modem interface unit side settings.

(1) When RS-232C communication is made on GOT

(a) When connecting to QJ71C24(N)(-R2), QJ71CMO
Switch setting for the module is not required. (Monitoring is available without making switch setting in the I/O assignment setting of GX Developer.)
The following settings are also available for monitoring, according to the CH (interface) of the module to be connected with GOT.
However, when the GOT is connected with the QJ71CMO, only CH2 is usable.
For the GX Developer operating method, refer to the GX Developer Operating Manual.

<table>
<tr><th>Channel Where GOT Is Connected</th><th>Settings</th></tr>
<tr><td>CH1</td><td>
</td></tr>
<tr><td>CH2</td><td>
</td></tr>
</table>

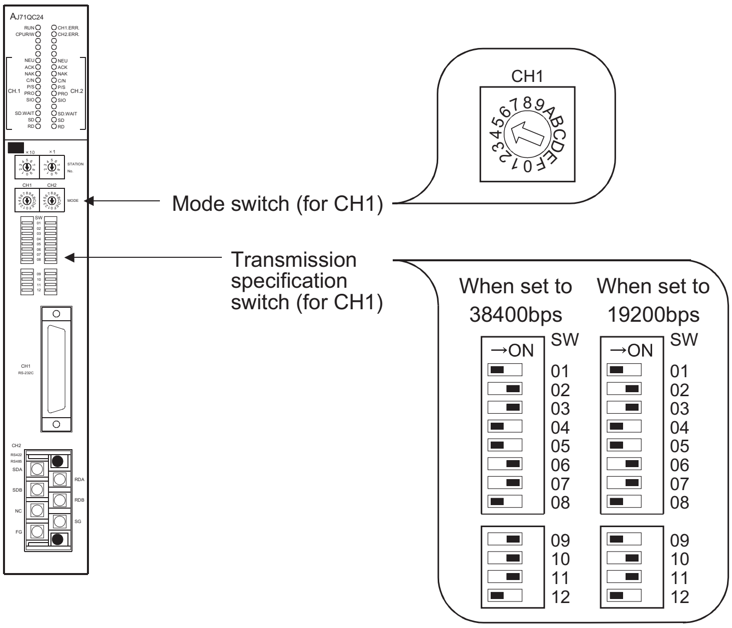
Point

Depending on the model of serial communication module, you can use CH1 and CH2 together to connect two GOTs to a serial communication module.

○: Two GOTs connectable, △: One GOT connectable, --- :No relevant products

Model	Two GOTs connectability	
	Function version A	Function version B
QJ71C24(-R2)	△	○
QJ71C24N(-R2)	---	○

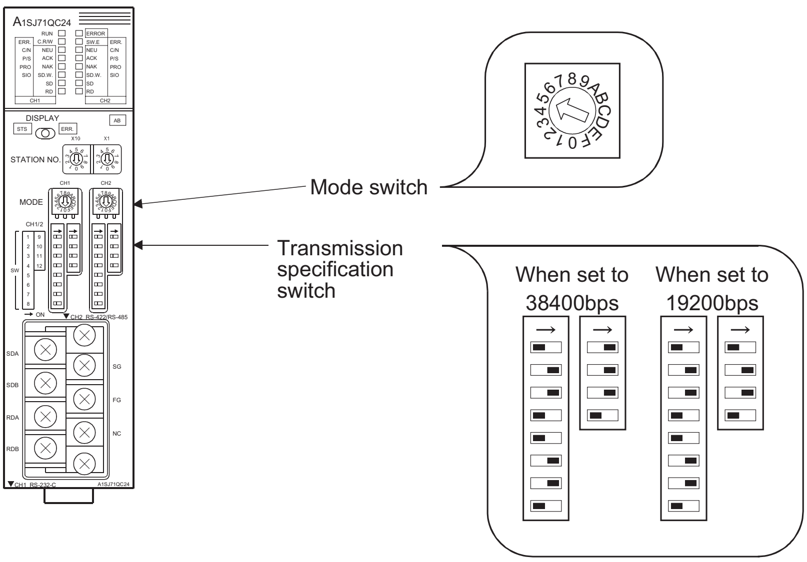
(b) When connecting to AJ71QC24(N)(-R2)



Point

When the AJ71QC24N(-R2) is used and the transmission speed is set to 38400bps, the GOT side transmission speed must be re-set.
For details of the setting method, refer to Section 5.2.2.

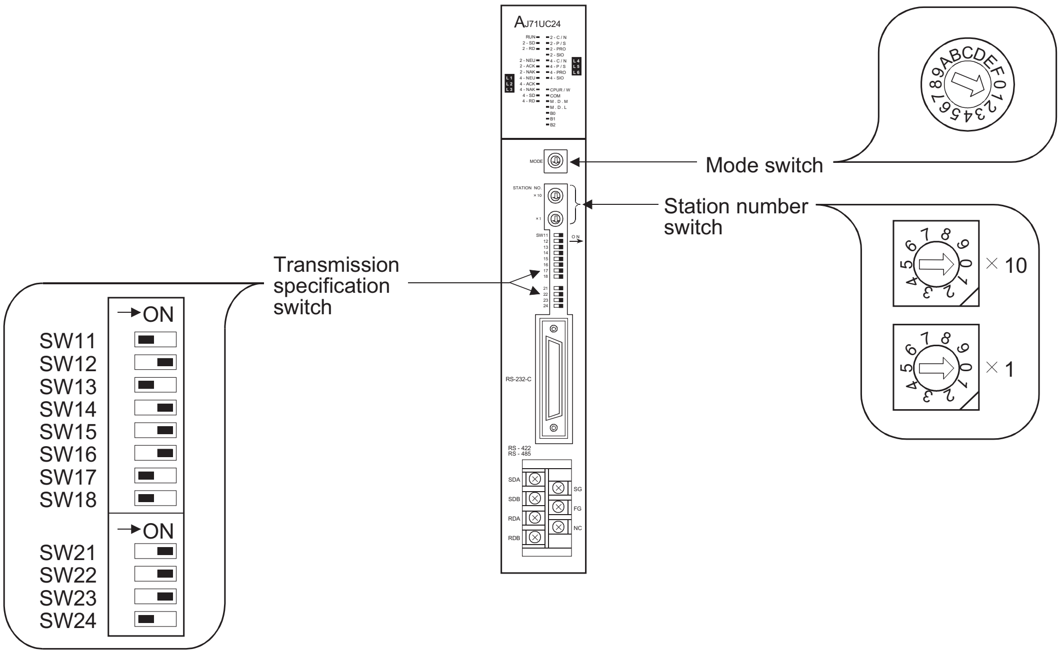
(c) When connecting to A1SJ71QC24(-R2)



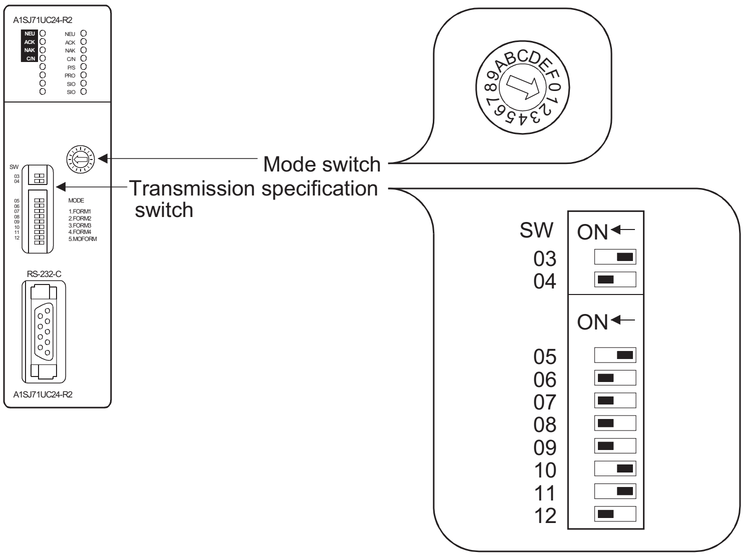
Point

When the A1SJ71QC24N(-R2) is used and the transmission speed is set to 38400bps, the GOT side transmission speed must be re-set.
For details of the setting method, refer to Section 5.2.2.

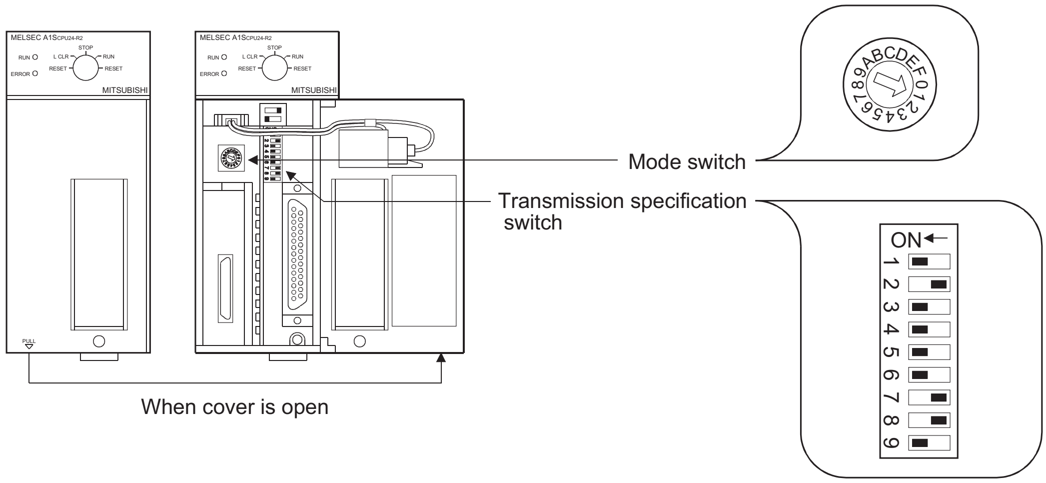
(d) When connecting to AJ71UC24



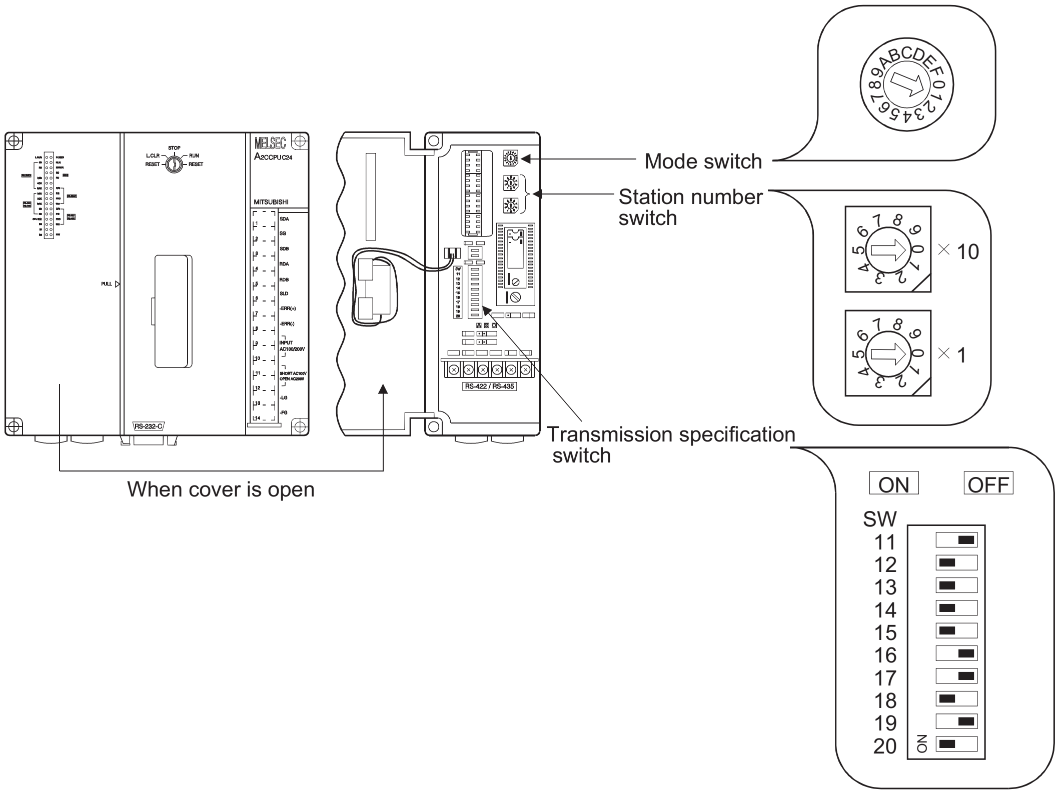
(e) When connecting to A1SJ71UC24-R2/-PRF, A1SJ71C24-R2/-PRF



(f) When connecting to A1SCPUC24-R2

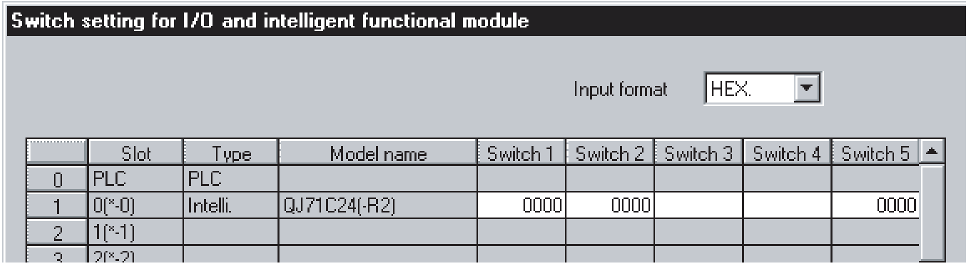


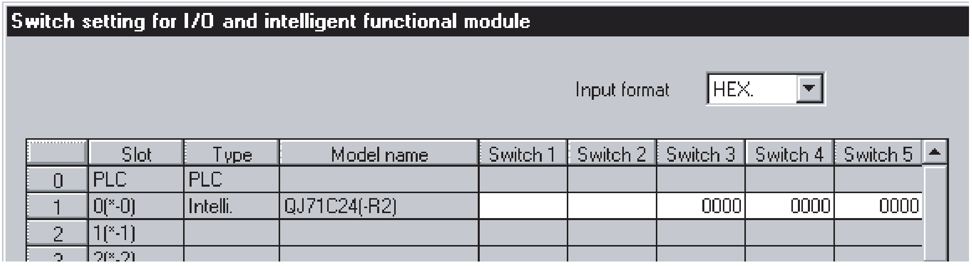
(g) When connecting to A2CCPUC24(-PRF)



(2) When RS-422 communication is made on GOT

(a) When connecting to QJ71C24
Switch setting for the module is not required. (Monitoring is available without making switch setting in the I/O assignment setting of GX Developer.)
The following settings are also available for monitoring, according to the CH (interface) of the module to be connected with GOT.
For the GX Developer operating method, refer to the GX Developer Operating Manual.

<table>
<tr><th>Channel Where GOT Is Connected</th><th>Settings</th></tr>
<tr><td>CH1</td><td>


</td></tr>
<tr><td>CH2</td><td>


</td></tr>
</table>

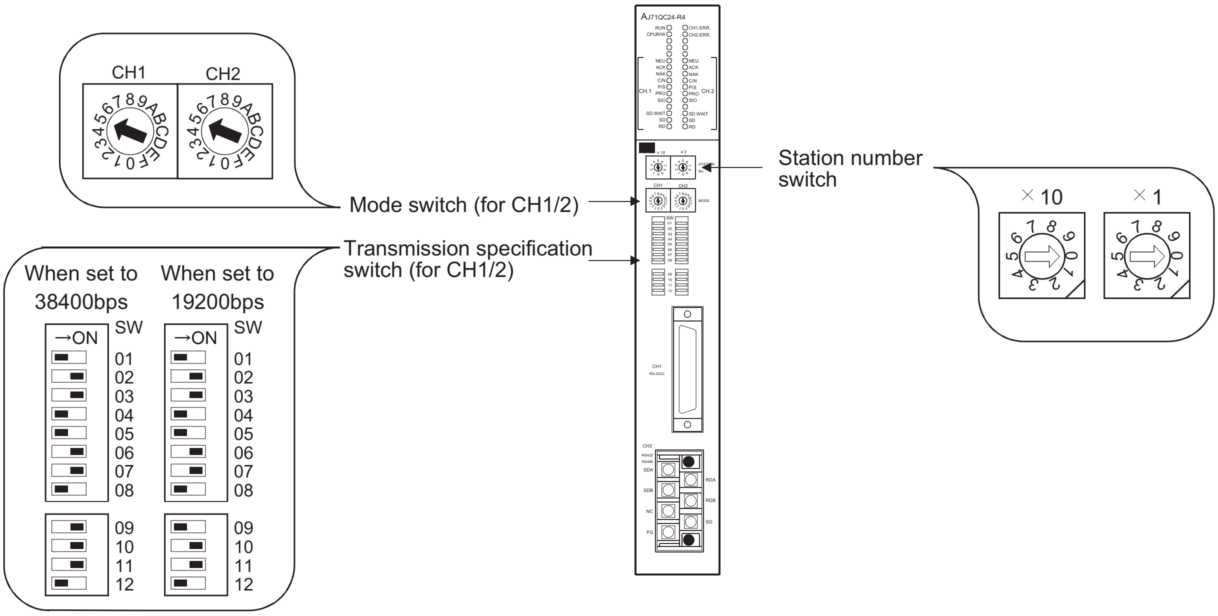
Point

Depending on the model of serial communication module, you can use CH1 and CH2 together to connect two GOTs to a serial communication module.

○: Two GOTs connectable, △: One GOT connectable, --- :No relevant products

Model	Two GOTs connectability	
	Function version A	Function version B
QJ71C24	△	○
QJ71C24N(-R4)	---	○

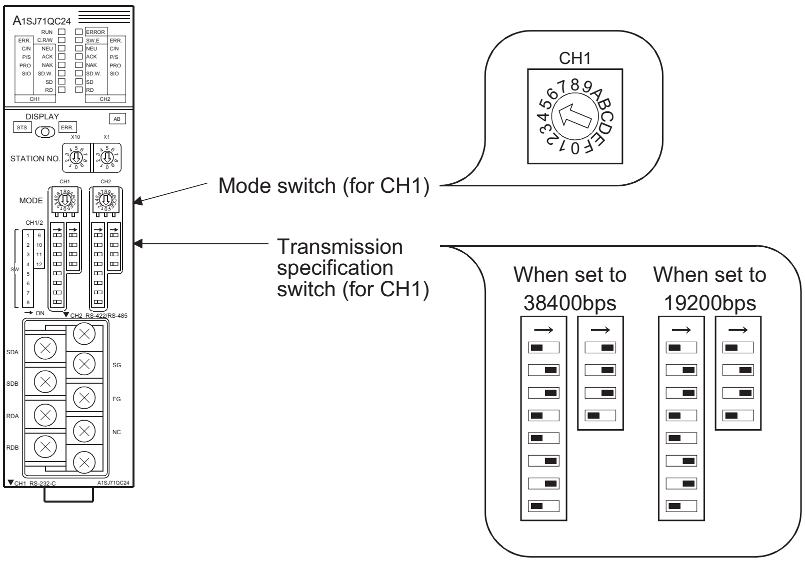
(b) When connecting to AJ71QC24(N)(-R4)



Point

- The value of the mode switch of an unused channel must be set to the value except 0(Interlocking operation).
- When the AJ71QC24N(-R4) is used and the transmission speed is set to 38400bps, the GOT side transmission speed must be re-set.
  For details of the setting method, refer to Section 5.2.2.

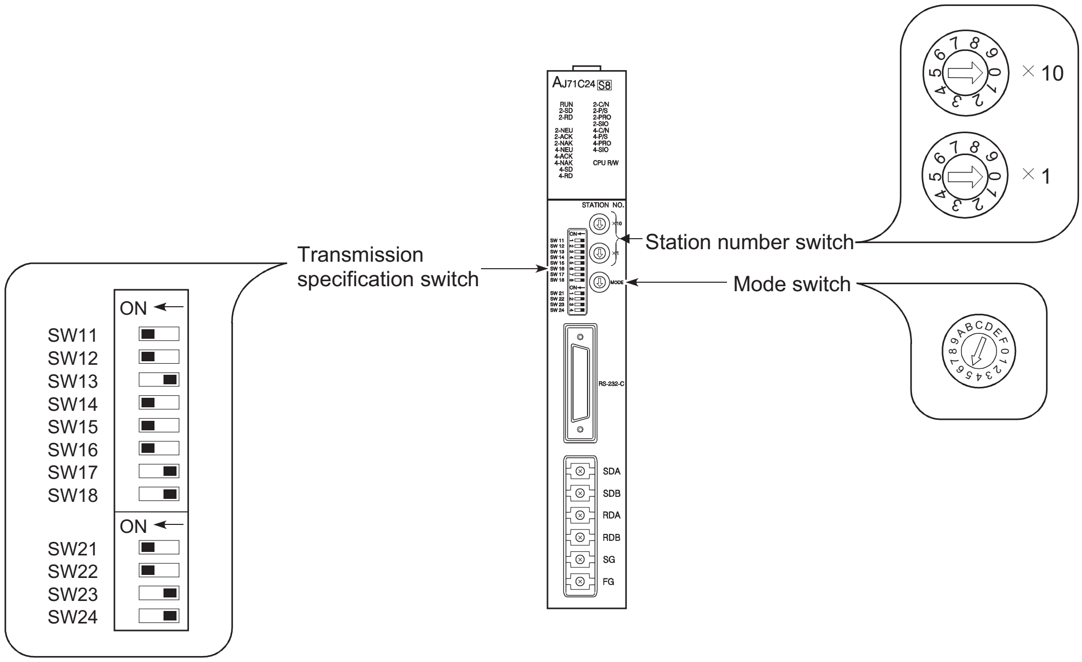
(c) When connecting to A1SJQC24(N)



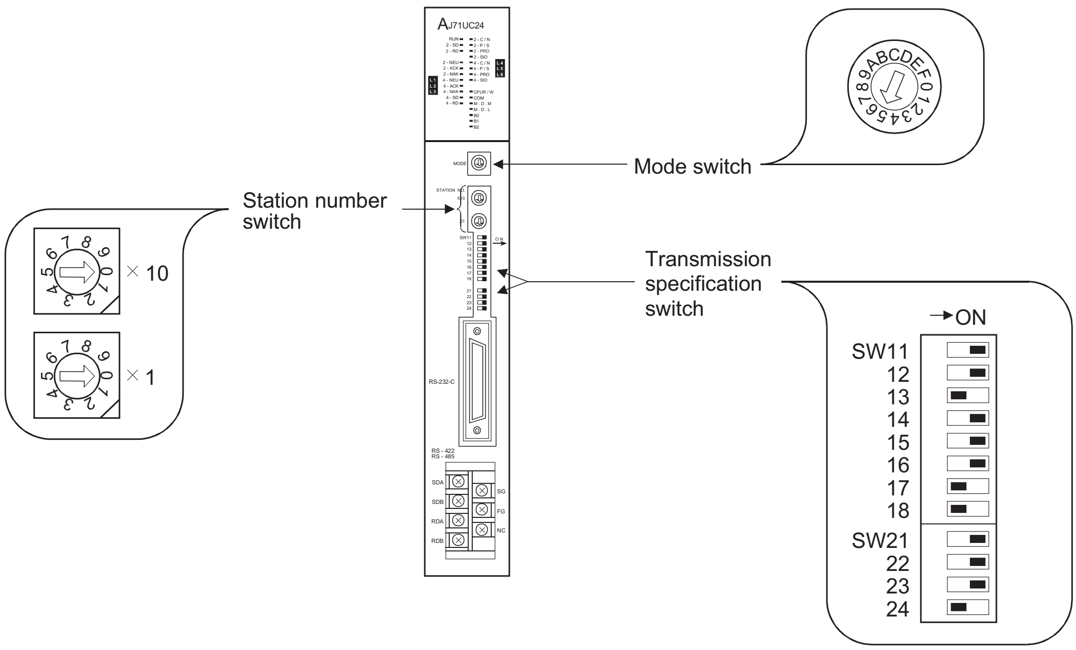
Point

When the A1SJ71QC24N is used and the transmission speed is set to 38400bps, the GOT side transmission speed must be re-set.
For details of the setting method, refer to Section 5.2.2.

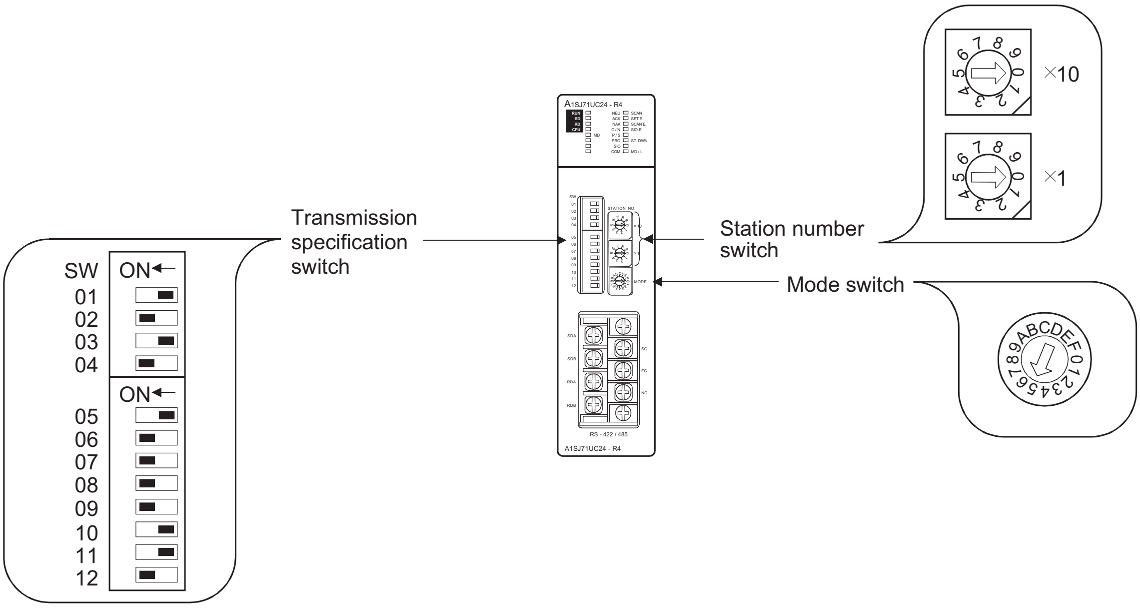
(d) When connecting to AJ71C24-S8



(e) When connecting to AJ71UC24



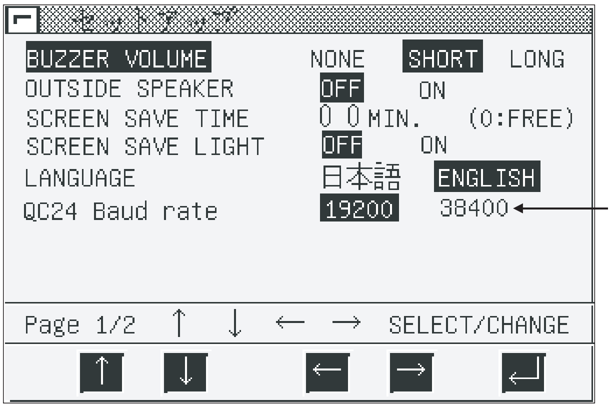
(f) When connecting to A1SJ71UC24-R4, A1SJ71C24-R4



5.2.2 GOT side settings

When the GOT is connected with the computer link module or serial communication module for monitoring, the GOT side settings need not be made basically.
However, when you use the AJ71QC24N(-R4/-R2) or A1SJ71QC24N(-R2) and want to make data transmission of 38400bps, the GOT side settings must be changed.

Set the transmission speed on Setup of the GOT's utility function.
For details of the utility function, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



AJ71QC24N(-R4) and A1SJ71QC24N Baud rate
Choose the transmission speed for connection with AJ71QC24N(-R4) and A1SJ71QC24N.
(Factory-set to 19200bps)

Point

The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to computer link connection.

5.3 Transmission Specifications

The following transmission specifications apply to the case where communication is made between the GOT and computer link or serial communication module.

Item	Settings		
	Using QJ71C24(-R2) or QJ71C24N(-R4/R2)	Using AJ71QC24N(-R4/-R2) or A1SJ71QC24N(-R2)	Using any module other than those indicated on left
Transmission speed	38400bps	19200bps/38400bps	19200bps
Data length	8 bits		
Stop bit	1 bit		
Parity bit	Yes (odd)		
Sum check	Yes		

5.4 Connection Cable

The user needs to fabricate the RS-232C cable / the RS-422 cable which is used to connect the GOT and PLC CPU side (serial communication, computer link module or PLC CPU with computer link function).
The RS-232C cable / the RS-422 cable connection diagram, connector and others are indicated below.

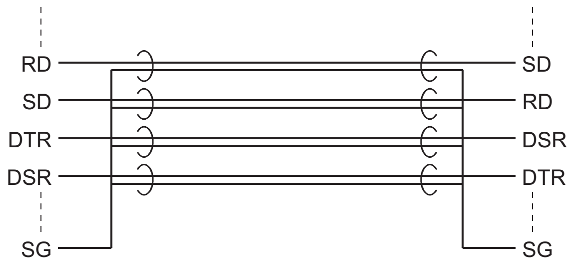
(1) RS-232C Cable

(a) Connection diagram

1) PLC CPU side connector of D-sub 9 pins
(QJ71C24(N)(-R2), A1SJ71QC24(-R2), A1SJ71UC24-R2/PRF, A1SJ71C24-R2/PRF, A1SCPUC24-R2, A2CCPUC24(-PRF))

PLC CPU side		Cable connection and direction of signal	GOT(D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
CD	1		1	CD
RD(RXD)	2		2	RD(RXD)
SD(TXD)	3		3	SD(TXD)
DTR(ER)	4		4	DTR(ER)
SG *1	5		5	SG
DSR(DR)	6		6	DSR(DR)
RS(RTS)	7		7	RS(RTS)
CS(CTS)	8		8	CS(CTS)
---	9		9	---

*1 If monitoring is hindered by external noise in A1SJ71QC24 (-R2) connection, connect each cable for signals other than SG and FG together with the cable for SG.



2) PLC CPU side connector of D-sub 25 pins
(AJ71QC24 (-R2), AJ71UC24)

PLC CPU side		Cable connection and direction of signal	GOT(D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
DSR(DR)	6		6	DSR(DR)
SG	7		7	RS(RTS)
CD	8		8	CS(CTS)
DTR(ER)	9		9	---

(b) Connector and connector cover

• GOT connector

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

• PLC CPU side connector

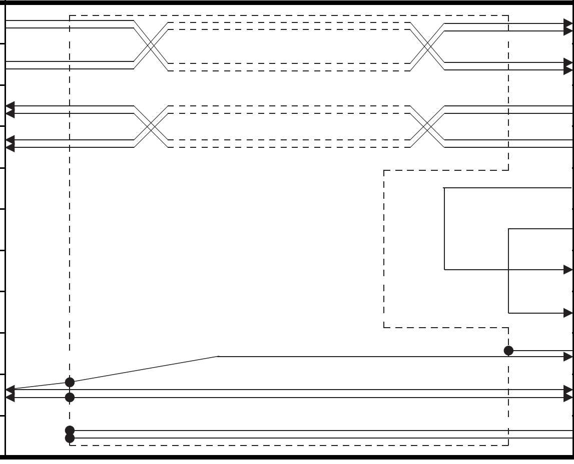
Refer to the user's manual of the PLC CPU side module you use.

(c) Precautions for cable preparation

The cable must be 15 m (49.21 feet) or shorter.

(2) RS-422 cable

(a) Connection diagram

Computer link unit	Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name		Pin No.	Signal name
SDA		2	RDA
SDB		15	RDB
RDA		3	SDA
RDB		16	SDB
		5	RSA
		18	RSB
		4	CSA
		17	CSB
		20	
SG		8	SG
		21	SG (shield)

(b) Connector, crimp terminal and cable

No.	Description	Model	Manufacturer
1)	Connector with cover	17JE-23250-02(D8A6)	DDK
2)	Round-type crimp terminal (recommended part)	V1.25-M4	Nippon Crimping Terminal
3)	20-core shield cable (rec-ommended part)	RFP VV-SB 24 × 20P	Toyokuni Power Cables

(c) Precautions for cable preparation

• The maximum cable length depends on the PLC CPU connected.
Fabricate the cable within the following maximum cable length.

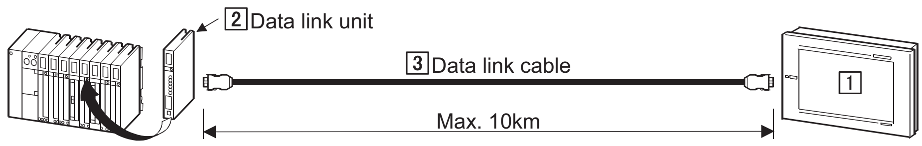
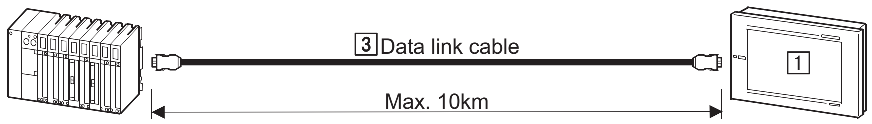
PLC CPU Connected to	Maximum Cable Length (m)
QCPU (Q mode)	1200
QCPU (A mode), QnACPU, ACPU	200

• When using 2) and 3) in the above table for preparing the cable :
If one electric wire is used, the wire may come off the crimp terminal. Therefore, connect 2 wires as described in connection diagram (1).

6 MELSECNET CONNECTION (DATA LINK SYSTEM)

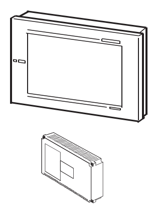
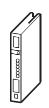
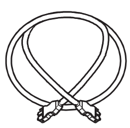
6.1 System Configuration

(1) System configurations and connection conditions
The following system configurations and connection conditions assume MELSECNET connection (data link system) with the PLC CPU.
The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected *1	Installation distance	
64 GOTs (max.)	Within 10km	
		

*1 The number of GOTs connectable is up to the number of connectable stations in the corresponding data link system.

(2) System equipment
The following table indicates the system equipment needed for connection with the PLC CPU.

Image	No.	Application	Type	
			GOT unit	Data link unit
	$\boxed{1}$	MELSECNET-connected (data link system) GOT*1	A985GOT(-V), A97*GOT, A960GOT, A956WGOT, A956GOT	A7GT-J71AP23,A7GT-J71AR23, A7GT-J71AT23B
	$\boxed{2}$	Data link unit	AJ71AP21, AJ71AR21, AJ71AT21B, A1SJ71AP21, A1SJ71AR21, A1SJ71AT21B	
	$\boxed{3}$	Data link cable*2	(Fiber-optic cable, coaxial cable, twisted pair cable)	

6.2 Switch Setting of Data Link Unit

Describes about switch setting for using the data link unit.

(1) Station number switch
Since the data link unit is for local stations only, set the switch as follows :

MNET(II) : Stations 1 to 64 (0 : master station is not available)
MNET/B : Stations 1 to 31 (0 : master station is not available)

(2) Mode switch
When using the data link, set this switch to ONLINE.

(3) Baud rate switch (only for MNET/B)
Set the baud rate to the same level as designated for the master station.

6.3 Self-Diagnosis Test

Self-diagnosis test checks the hardware of the data link unit and for breakage of the link cable.
By using the mode switch of the data link unit, the following three modes can be selected.
For test procedures and analysis of the results, refer to the reference manuals of MELSECNET or MELSECNET/B data link system.

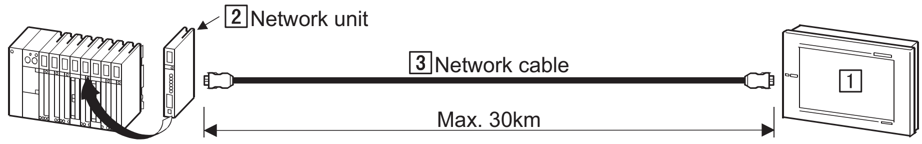
Switch setting	Description	Contents
5	Station-to-station test mode (Main station)	This mode checks the line between 2 stations. The station with more recent number is set as the main station and the one with older number as sub-station.
6	Station-to-station test mode (Sub station)	
7	Self-turning test	This mode checks the hardware including transmission/reception circuit by using a single data link unit.

7 MELSECNET CONNECTION (NETWORK SYSTEM)

7.1 System Configuration

(1) System configurations and connection conditions
The following system configuration and connection conditions assume MELSECNET connection (network system) with the PLC CPU.

The numbers ([1] to [3]) given in the system configurations denote the numbers ([1] to [3]) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
63 GOTs (max.)	Within 30km	

*1 The number of GOTs connectable is up to the number of connectable stations in the corresponding network system.
*2 When making connection with the MELDAS C6/C64, refer to "MELDAS C6/C64/C64T CONNECTION AND MAINTENANCE MANUAL (BNP-B2255)" or "MELDAS C6/C64 NETWORK INSTRUCTION MANUAL (BNP-B2372)" for the MELDAS C6/C64 side connection.

(2) System equipment
The following table indicates the system equipment needed for connection with the PLC CPU.

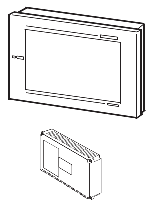
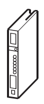
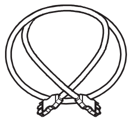
Image	No.	Application	Type	
			GOT unit	Network unit
	[1]	MELSECNET-connected (network system) GOT*1*3*4	A985GOT(-V), A97*GOT, A960GOT, A956WGOT, A956GOT	A9GT-QJ71LP23, A9GT-QJ71BR13, A7GT-J71LP23, A7GT-J71BR13
	[2]	Network module (Q Series)	QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71BR11	
		Network module (QnA Series)	AJ71QLP21, AJ71QLP21S, AJ71QBR11, A1SJ71QLP21, A1SJ71QLP21S, A1SJ71QBR11	
		Network module (A Series)	AJ71LP21, AJ71BR11, A1SJ71LP21, A1SJ71BR11	
		Network module (MELDAS C6/C64)	FCU6-EX878, FCU6-EX879	

Image	No.	Application	Type	
			GOT unit	Network unit
	3	Network cable*2	(Fiber-optic cable, coaxial cable)	

*1 The number of GOTs connectable is up to the number of connectable stations in the corresponding network system.
*2 For details of the network cables (fiber-optic cable, coaxial cable), refer to the MELSECNET/10 Network System Reference Manual.
*3 When connecting with the MELDAS C6/C64, use the following communication unit, A9GT-QJ71LP23 or A9GT-QJ71BR13.
*4 The device range that can be monitored depends on the network unit/ communication driver mounted to/ installed in the GOT.

Network unit mounted to GOT	Communication driver	PLC CPU to be monitored				
		QCPU (Q mode)	QnACPU	QCPU (A mode)	ACPU	MELDAS C6/C64
A9GT-QJ71LP23, A9GT-QJ71BR13	MNET10(A/QnA/Q)	○ *5	○	○	○	○
	MNET10(A)	△	△	○	○	×
A7GT-J71LP23, A7GT-J71BR13	MNET10(A/QnA/Q)	Unusable				
	MNET10(A)	△	△	○	○	×

○: Can be monitored.
△: Can be monitored within the AnA device range as follows:
For timer (T), counter (C): access range of 0 to 255.
For file register (R, ER, ZR): cannot be monitored.
× : Cannot be monitored.
*5 Use the QCPU and network module (QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71BR11) of version B or later. When using function version A, select "MNET10(A)" as the communication driver and monitor the device range of the AnA.

7.2 Switch Setting of Network Unit

Describes about switch setting for using the data link unit.

(1) Network No. switch
Designates the network number connected to the network unit.

(2) Group No. switch
Designates the desired group number to incorporate the network unit.
If no group is designated, set this switch to 0.

(3) Station number switch
Designates the network unit as follows. Setting differs between optical loop system and coaxial bus system.

Optical loop system (When using A7GT-J71LP23 and A9GT-QJ71LP23) : Stations 1 to 64
Coaxial bus system (When using A7GT-J71BR13 and A9GT-QJ71BR13) : Stations 1 to 32

(4) Mode switch
When using network, set this switch to ONLINE.

7.3 Self-Diagnosis Test

Self-diagnosis test checks the hardware of the data link unit and for breakage of the link cable.
By using the mode switch of the data link unit, the following 10 modes can be selected.
For test procedures and analysis of the results, refer to the reference manual of MELSECNET/10 network system.

Switch setting	Description	Contents
3	Loop test (Main loop)	Checks lines after all stations are connected. Stations other than test object is set to ONLINE before the check. (Only for optical loop system)
4	Loop test (Sub loop)	
5	Station-to-station test mode (Main station)	Checks the line between 2 stations. The station with more recent number is set as the main station and the one with older number as sub-station.
6	Station-to-station test mode (Sub-station)	
7	Self-turning test	Checks the hardware including transmission/reception circuit by using a single network unit.
8	Internal self-turning test	Checks the hardware including transmission/reception circuit by using a single network unit.
9	Hardware test	This mode checks the hardware in the network unit.
D	Network No. confirmation	Confirms the network number, group number, and station number designated for the network.
E	Group No. confirmation	
F	Station No. confirmation	

7.4 Precautions when Replacing the A7GT-J71LP23/BR13 with the A9GT-QJ71LP23/BR13

(1) When monitoring the device range applicable for QCPU(Q mode) and QnACPU
To replace the A7GT-J71LP23/BR13 communication unit with the A9GT-QJ71LP23/BR13, change the screen data.
In addition, change the communication driver in GOT from MNET10(A) to MNET10(A/QnA/Q)

The following shows how to change the screen data.
Operate GT Designer2 by referring to GT Designer2 Version2 Operating Manual.

1) Delete the objects for which devices V0 to V6 that monitor QCPU(Q mode)/ QnACPU are set.
(The Q/QnACPU does not include the corresponding devices.)

2) Delete the objects for which devices A0 to A1 that monitor QCPU(Q mode)/ QnACPU are set.
(The Q/QnACPU does not include the corresponding devices.)

3) Change the "PLC type" from "MELSEC-A" to "MELSEC-Q/QnA, MELDAS C6*" or "MELSEC-Q(multi)/Q motion".
With this change, following devices set for each object will change.
Before change After change
M9000 to M9255 → SM1000 to SM1255
D9000 to D9255 → SD1000 to SD1255

4) Change the L devices set for the objects into M devices, or check the devices according to the system.

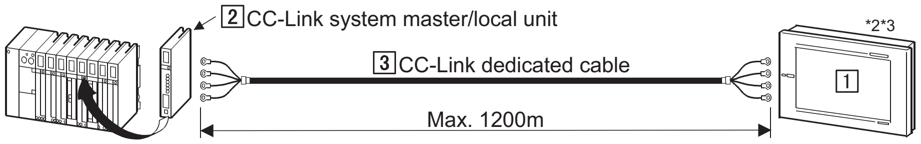
(2) When monitoring the AnACPU device range included in QCPU(Q mode) and QnACPU
When monitoring QCPU(A mode) or ACPU
(Equivalent to the former models, A7GT-J71LP23, A7GT-J71BR13)
To replace the A7GT-J71LP23/BR13 communication unit with the A9GT-QJ71LP23/BR13, the screen data need not be changed.
Make sure to use the MNET/10(A) for the communication driver in GOT.

8 CC-LINK CONNECTION (INTELLIGENT DEVICE STATION)

8.1 System Configuration

(1) System configuration and connection conditions
The following system configuration and connection conditions assume CC-Link connection (intelligent device station) with the PLC CPU.

The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

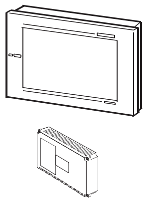
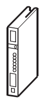
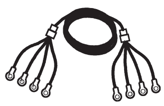
Connection Conditions		System Configuration
Number of connected	Installation distance	
26 GOTs (Max.)	Within 1200m (Longest)	

*1 The number of connected GOTs varies with the configuration of the CC-Link system, and the installation distance (maximum transmission distance) varies with the transmission speed of the CC-Link system.
For details, refer to the CC-Link System Master/Local Unit User's Manual (Details).
*2 On the CC-Link system, the GOT is handled as a slave station as described below.

Item	Description
CC-Link station type	Intelligent device station
Number of occupied stations	1 station/4 stations (selectable)

*3 A termination resistor is needed to install the GOT at the end of the CC-Link system.
*4 When making connection with the MELDAS C6/C64, refer to "MELDAS C6/C64/C64T CONNECTION AND MAINTENANCE MANUAL (BNP-B2255)" or "MELDAS C6/C64 NETWORK INSTRUCTION MANUAL (BNP-B2372)" for the MELDAS C6/C64 side connection.

(2) System equipment
The following table indicates the system equipment needed for connection with the PLC CPU.

Image	No.	Application	Type	
			GOT unit	CC-Link communication unit
	1	CC-Link connected (intelligent device station) GOT	A985GOT(-V), A97*GOT, A960GOT, A956WGOT, A956GOT	A8GT-J61BT13 *1
	2	CC-Link system master/local module (Q Series)	QJ61BT11, QJ61BT11N *2	
		CC-Link system master/local module (QnA Series)	AJ61QBT11, A1SJ61QBT11	
		CC-Link system master/local module (A Series)	AJ61BT11, A1SJ61BT11	
		CC-Link system master/local module (MELDAS C6/C64)	FCU6-HR865	
	3	CC-Link dedicated cable	Refer to the user's manual of the CC-Link master/local unit used.	

*1 When making connection with the MELDAS, use the A8GT-J61BT13 whose software version is Version X or later (manufactured in December, 1999).
*2 In the CC-Link parameter setting of GX Developer, set the station corresponding to the GOT as the "Ver. 1 intelligent device station".

8.2 Monitoring Specification

8.2.1 Monitoring overview

When the A8GT-J61BT13 is used, the GOT has the following two monitoring methods.

Monitoring Method	Monitoring by Transient Transmission*3	Monitoring by Cyclic Transmission*3
Contents	Devices of the PLC CPU on the CC-Link system Master/ local station are specified and monitored.	Remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting are specified and monitored.
Advantage	CC-Link parameter setting sequence program*2 is required but GOT communication sequence program*2 is not needed. (For more information, refer to Chapter 5.)	Data communication processing speed*1 is high.
Disadvantage	Data communication processing speed*1 is lower than that of cyclic transmission.	• Write from the GOT (read command from the master station) can be performed to only the remote outputs and remote registers of the master station assigned to the GOT and to the GOT's internal registers. • GOT communication sequence program*2 is necessary.

*1 For details of the data communication processing speed (object display speed), refer to the GT Designer2 Version2 Reference Manual.

*2 This program is not needed if the CC-Link parameter setting sequence program and GOT communication sequence program satisfy the following conditions.

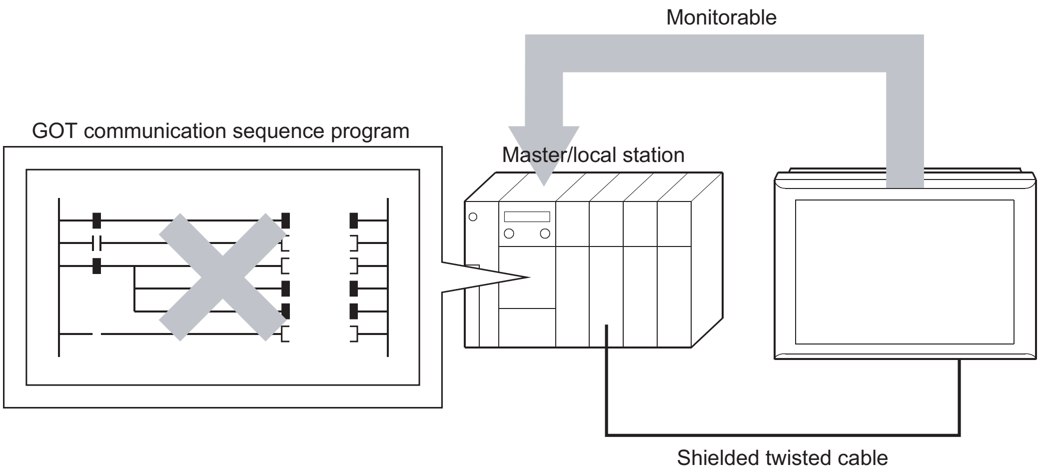
- As the PLC CPU of the master station, use the QCPU (Q mode) or QnACPU whose number given in the DATE field of the rating plate is "9707B" or later.
- Use GX Developer or SW2 -GPPW and make CC-Link parameter setting and batch refresh device setting in the CC-Link setting on the package.
  For details of the setting methods, refer to the CC-Link System Master/Local Module User's Manual (Details).

*3 Refer to Section 8.4 for whether data can be sent/received to/from the CC-Link Ver. 2 compatible station by transient transmission and cyclic transmission.

Point

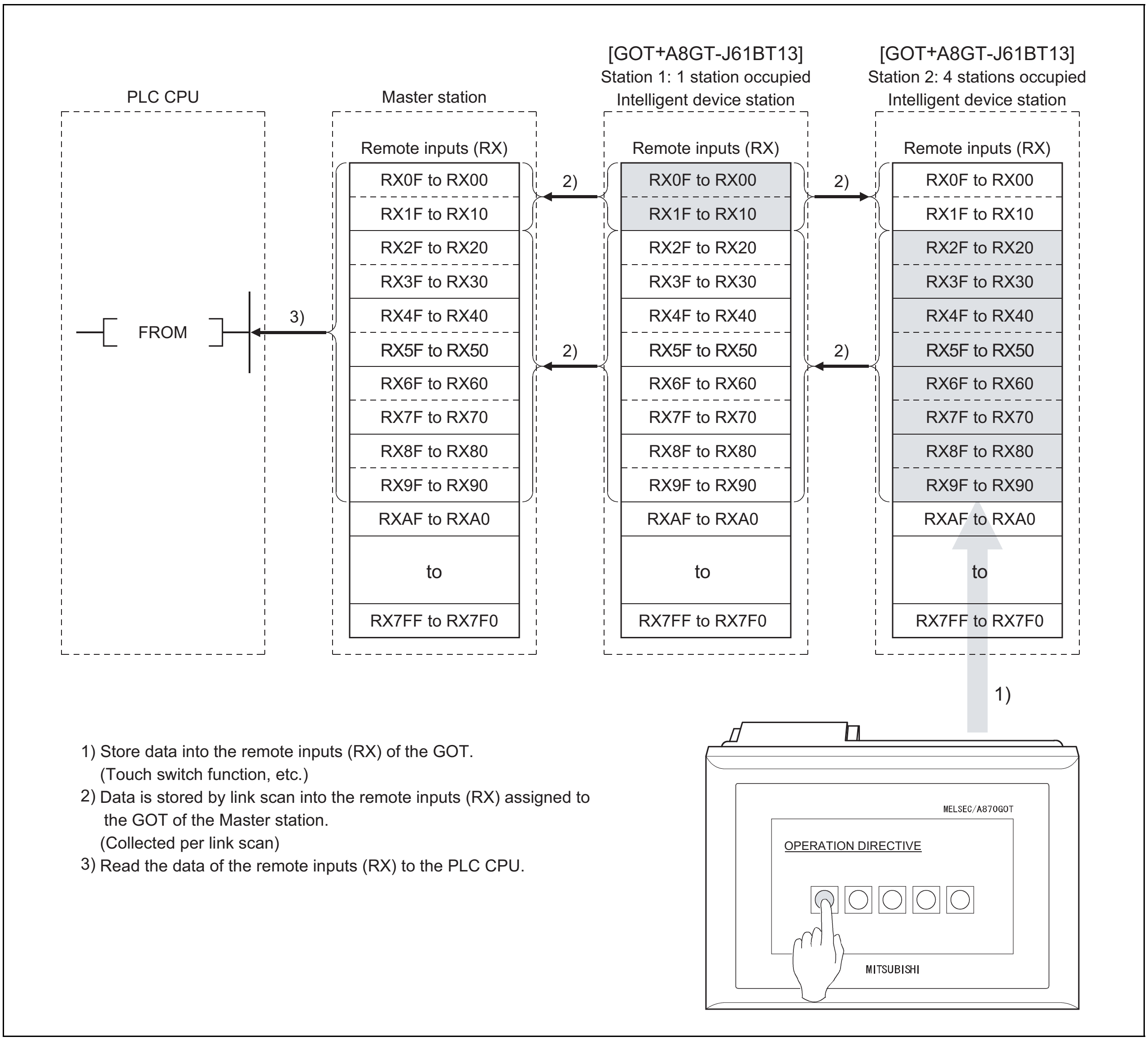
In transient transmission, connection of several (five or more as a guideline) intelligent device stations (GOTs and intelligent device units) reduces data communication speed.
To raise data communication speed, increase the CC-Link system, for example, and do not connect five or more intelligent device stations to a single CC-Link system.

(1) Monitoring by transient transmission
The devices of the PLC CPU on the CC-Link system Master/local station are specified and monitored.
By merely specifying the devices to be monitored on the GOT, those devices can be monitored without creating the GOT communication sequence program.



(2) Monitoring by Cyclic transmission
All remote inputs/outputs and remote registers assigned to the Master station by CC-Link parameter setting can be specified and monitored.
(Not only the area assigned to the GOT in the Master station but also the regions of the other stations can be monitored.)
This section describes the remote inputs, remote outputs, remote registers (write area) and remote registers (read area) separately, but all data can be monitored on the same screen.

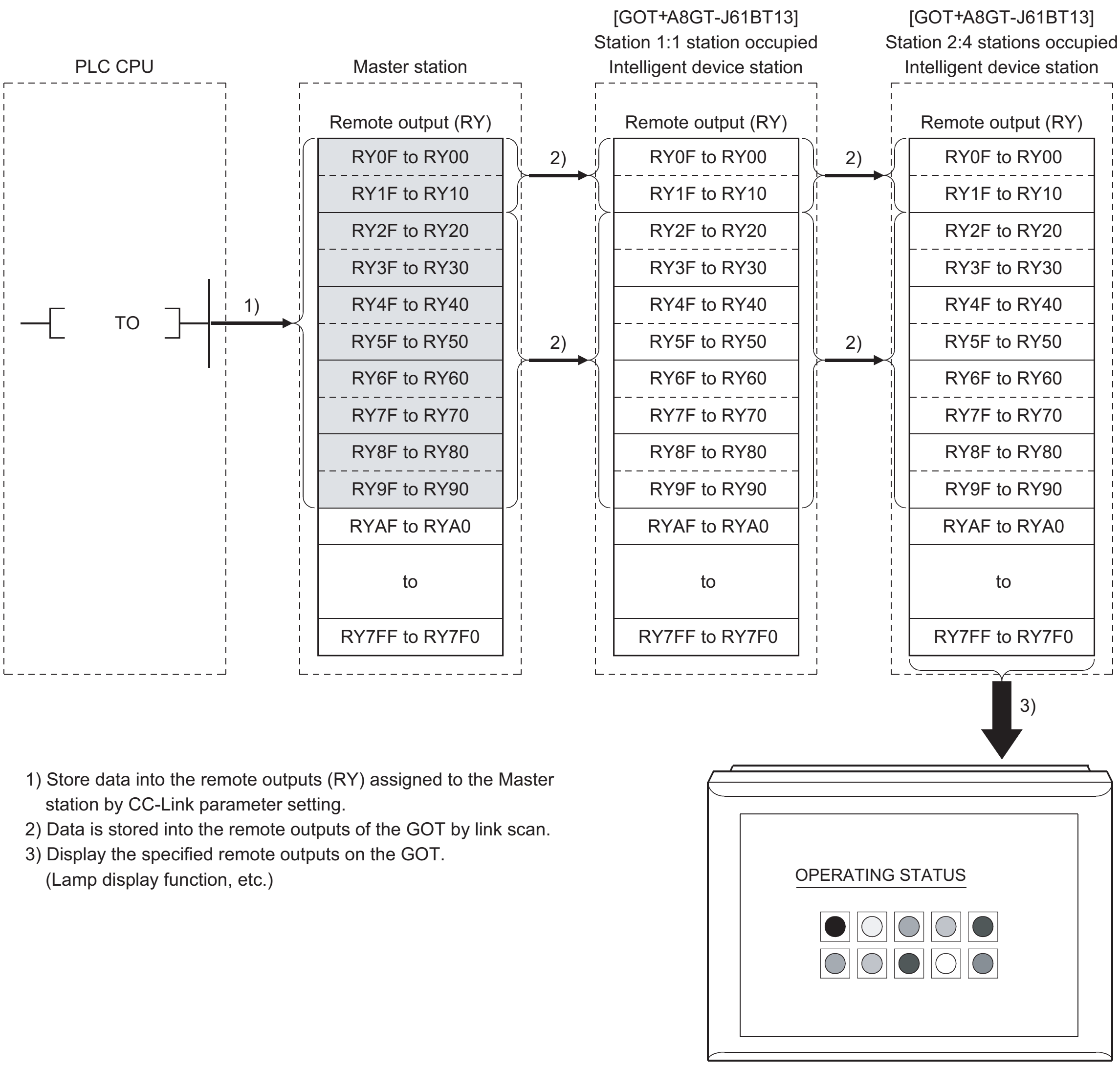
[Remote inputs] ... Input function area of the GOT



Point

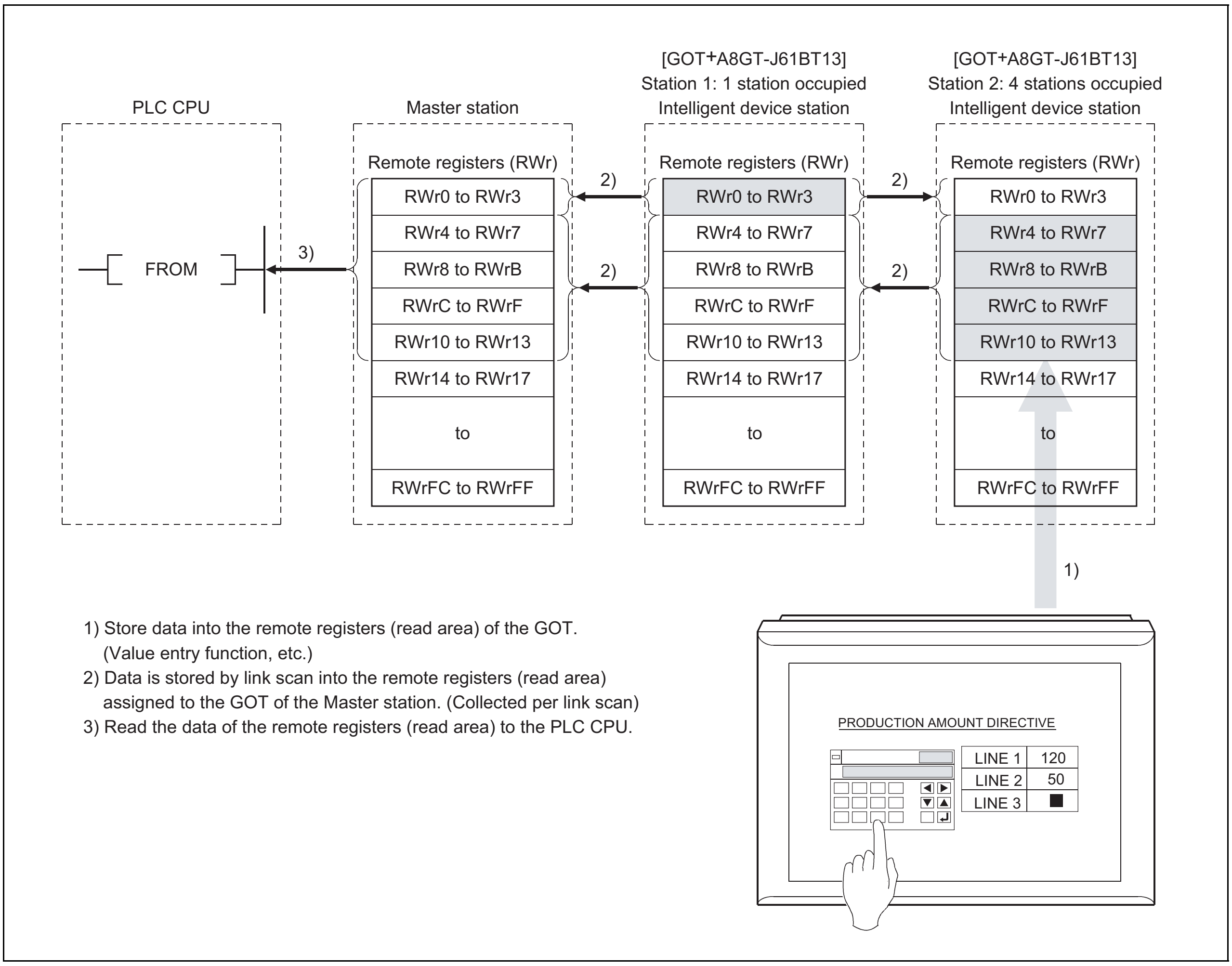
The GOT can enter data (touch switch function, etc.) into the remote inputs (RX) assigned to the GOT of the Master station.
Though the GOT cannot enter data (touch switch function, etc.) into the other remote inputs (RX), it can display data (lamp display function, etc.).

[Remote outputs] ... Display function area of the GOT



1) Store data into the remote outputs (RY) assigned to the Master station by CC-Link parameter setting.
2) Data is stored into the remote outputs of the GOT by link scan.
3) Display the specified remote outputs on the GOT. (Lamp display function, etc.)

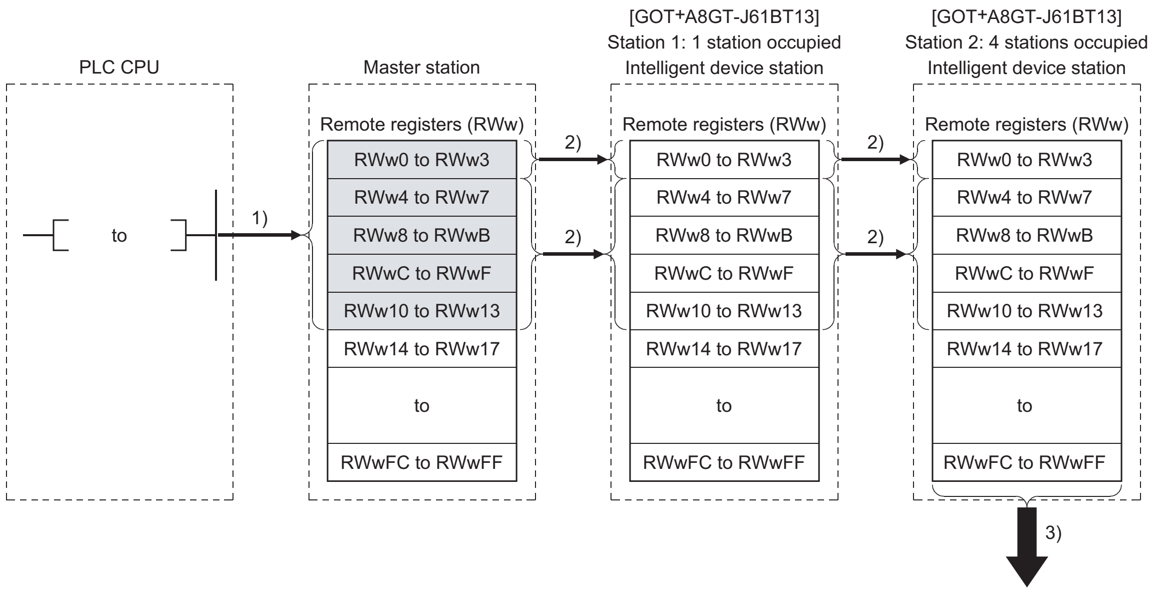
[Remote registers (read area)] ... Input function area of the GOT



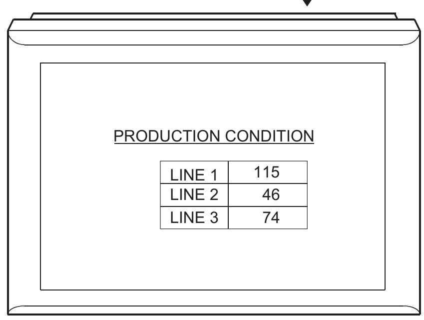
Point

The GOT can enter data (value entry function, etc.) into the remote registers (read area) assigned to the GOT of the Master station.
Though the GOT cannot enter data (value entry function, etc.) into the other remote registers (read area), it can display data (value display function, etc.).

[Remote registers (write area)] ... Display function area of the GOT



1) Store data into the remote registers (write area) assigned to the Master station by CC-Link parameter setting.
2) Data is stored into the remote registers (write area) of the GOT by link scan.
3) Display the specified remote registers (write area) on the GOT. (Value display function, etc.)



8.2.2 I/O signals transferred to/from the master module

The following table lists the I/O signals assigned to the GOT.
The I/O signals differ according to the set number of occupied stations (1 or 4 stations).
n in the table indicates the address assigned to the Master module by station number setting.

Signal Direction : GOT → Master module			Signal Direction : Master module → GOT		
Device number		Signal name	Device number		Signal name
Number of occupied stations			Number of occupied stations		
1 station	4 stations		1 station	4 stations	
RXn0 to RXnF	RXn0 to RX(n+6)F	User area	RYn0 to RYnF	RYn0 to RY(n+6)F	User area
RX(n+1)0 to RX(n+1)A	RX(n+7)0 to RX(n+7)A	Reserved	RY(n+1)0 to RY(n+1)A	RY(n+7)0 to RY(n+7)A	
RX(n+1)B	RX(n+7)B	Remote ready flag*1	RY(n+1)B	RY(n+7)B	Reserved
RX(n+1)C to RX(n+1)F	RX(n+7)C to RX(n+7)F	Reserved	RY(n+1)C to RY(n+1)F	RY(n+7)C to RY(n+7)F	

*1 The remote ready flag is on during startup of the GOT.
It switches on when GOT power is switched on, hardware reset is made, or the GOT is ready to operate.
If GOT power is on, the remote ready flag is off when offline operation is performed (during OS installation or screen data downloading) or while initial processing is executed.
Use it for the interlock ladder when writing or reading data to or from the CC-Link Master station.

DANGER	• Among the output signals from the Master module to the GOT, do not output the reserved signals. Doing so can cause the PLC system to misoperate.

8.2.3 Remote register assignment

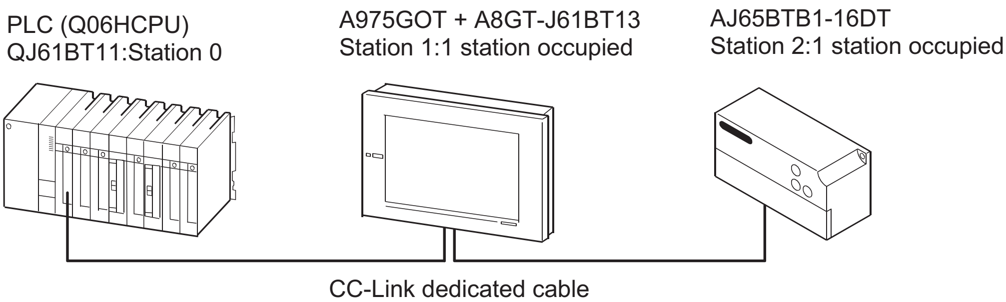
The following is the assignment of the remote registers of the GOT.
The remote registers differ according to the set number of occupied stations (1 or 4 stations).
All areas are use areas.
m and n in the table indicate the addresses assigned to the Master module by station number setting.

Transfer Direction	Addresses		Description	Default Value
	Number of occupied stations			
	1 station	4 stations		
Master station → GOT	RWwm to RWwm+3	RWwm to RWwm+F	User write area	0
GOT → Master station	RWrn to RWrn+3	RWrn to RWrn+F	User read area	0

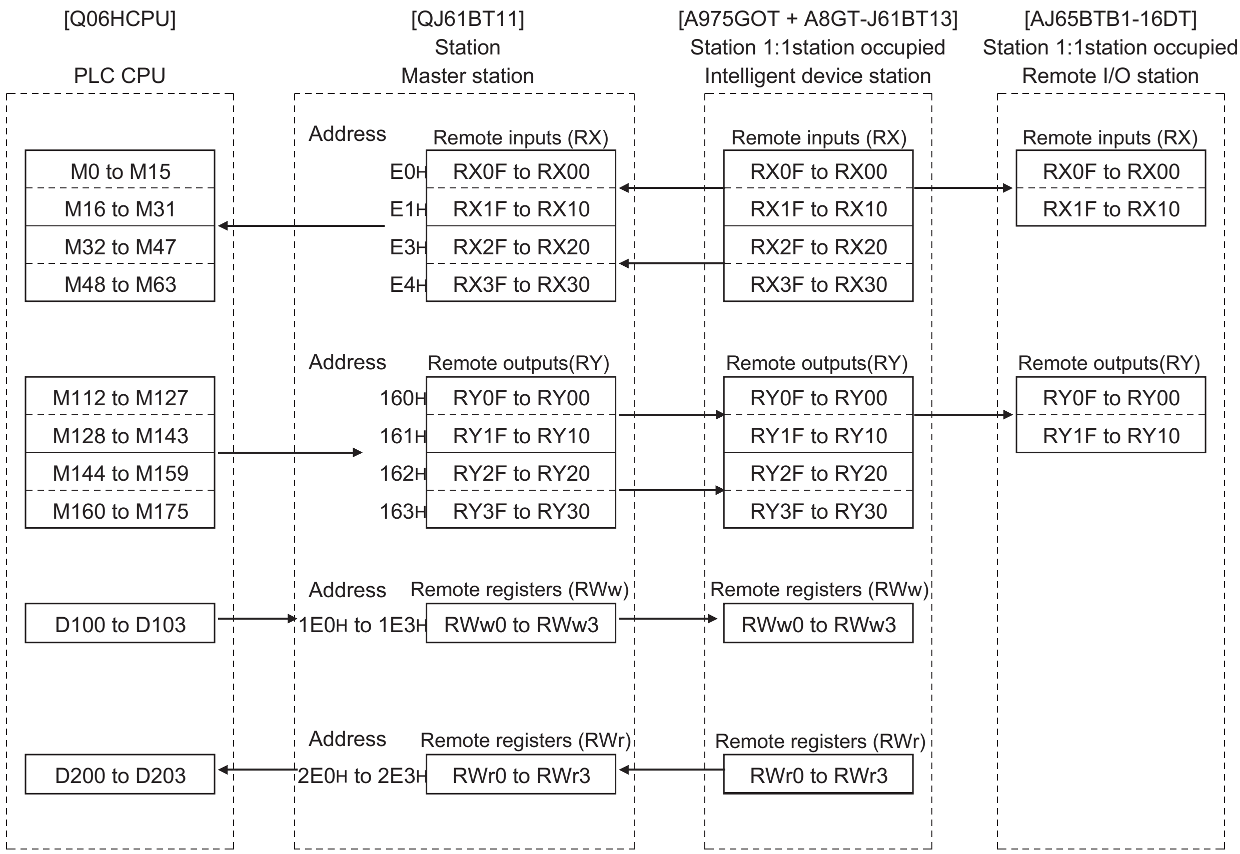
8.3 Programming

The programming example described in this section is designed to make parameter setting to the master module and communication between the GOT and remote I/O station in the following system.
Refer to the CC-Link System Remote I/O Module User's Manual (Details) for the remote I/O station, and to the CC-Link System Master/Local Module User's Manual (Details) for details of the parameter setting made to the master module.

8.3.1 System configuration



8.3.2 Relationships between corresponding devices



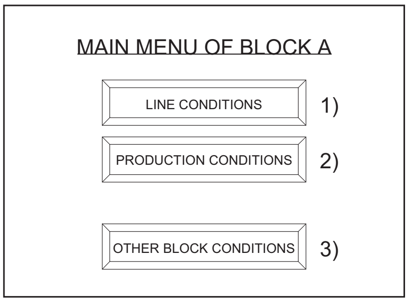
8.3.3 Monitor screen examples

The following are the monitor screen examples of the GOT.
Refer to the GT Designer2 Version2 Reference Manual for the way to set each object.

(1) Common setting

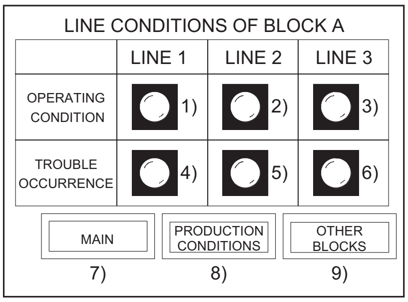
Setting Item	PLC Type	GOT Type	Base Screen Switching Device
Settings	MELSEC-QnA,Q	A97*GOT/GT SoftGOT	D300

(2) Base screen No. 1 settings



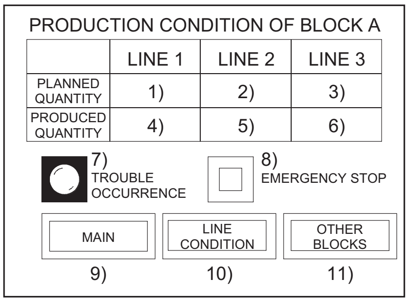
No.	Object Function to Be Set	Setting	Operation
1)	Touch key function	Base screen switching fixed value: 2	Setting made to switch to base screen No. 2.
2)	Touch key function	Base screen switching fixed value: 3	Setting made to switch to base screen No. 3.
3)	Touch key function	Base screen switching fixed value: 4	Setting made to switch to base screen No. 4.

(3) Base screen No. 2 settings
The devices of the master station assigned to the AJ65BTB1-16DT (remote I/O station) are monitored. (Monitor using cyclic transmission)



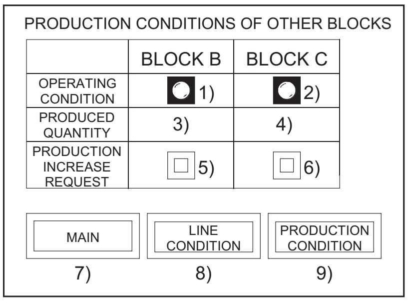
No.	Object Function to Be Set	Setting	Operation
1)	Lamp display function	Monitor device: X0 (RX0) to M0	Settings made for the remote I/O station to display on the GOT the line operating statuses (ON/OFF) stored in M0 to M3.
2)	Lamp display function	Monitor device: X1 (RX1) to M1	
3)	Lamp display function	Monitor device: X2 (RX2) to M2	
4)	Lamp display function	Monitor device: Y0 (RY0) from M112	Settings made to display on the GOT the fault occurrence information output to the remote I/O station.
5)	Lamp display function	Monitor device: Y1 (RY1) from M113	
6)	Lamp display function	Monitor device: Y2 (RY2) from M114	
7)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
8)	Touch key function	Screen switching device: Fixed at 3	Setting made to switch to base screen No. 3.
9)	Touch key function	Screen switching device: Fixed at 4	Setting made to switch to base screen No. 4.

(4) Base screen No. 3 settings
The devices of the master station assigned to the GOT (intelligent device station) are monitored. (Monitor using cyclic transmission)



No.	Object Function to Be Set	Setting	Operation
1)	Numerical input function	Write device Wr4 to D204	Settings made to store the values entered with the numerical input function into D204-D206.
2)	Numerical input function	Write device Wr5 to D205	
3)	Numerical input function	Write device Wr6 to D206	
4)	Numerical display function	Write device Ww4 from 104	Settings made to display the values stored in D104-D106.
5)	Numerical display function	Write device Ww5 from 105	
6)	Numerical display function	Write device Ww6 from 106	
7)	Lamp display function	Monitor device: Y20 (RY20) from M144	Settings made to display on the GOT the fault occurrence information stored in M144.
8)	Touch key function	Bit ALT: X20 (RX20) to M32	Setting made to store the ON/OFF information entered with the touch key function into M32.
9)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
10)	Touch key function	Screen switching device: Fixed at 2	Setting made to switch to base screen No. 2.
11)	Touch key function	Screen switching device: Fixed at 4	Setting made to switch to base screen No. 4.

(5) Base screen No. 4 settings
The PLC CPU devices of the master station are directly specified and monitored. (Monitor using Transient transmission)



No.	Object Function to Be Set	Setting	Operation
1)	Lamp display function	Monitor device: M200	Settings made to display on the GOT the values stored in M200-M201.
2)	Lamp display function	Monitor device: M201	
3)	Numerical input function	Write device D300	Settings made to store the values entered with the numerical input function into D300-D301.
4)	Numerical input function	Write device D301	
5)	Touch key function	Bit ALT: M202	Settings made to store the ON/OFF information entered with the touch key function into M200-M201.
6)	Touch key function	Bit ALT: M204	
7)	Touch key function	Screen switching device: Fixed at 1	Setting made to switch to base screen No. 1.
8)	Touch key function	Screen switching device: Fixed at 2	Setting made to switch to base screen No. 2.
9)	Touch key function	Screen switching device: Fixed at 3	Setting made to switch to base screen No. 3.

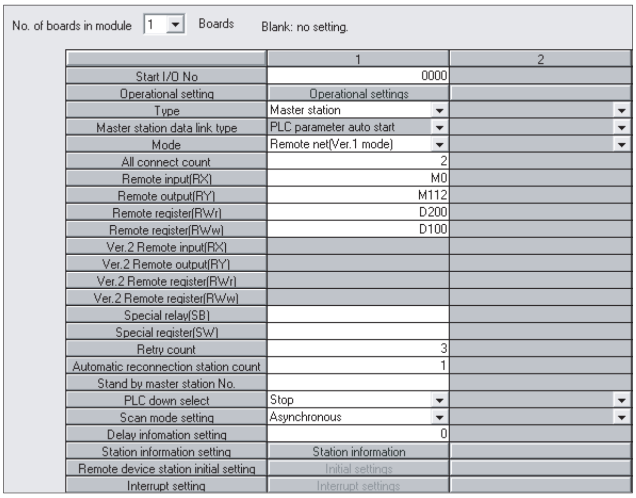
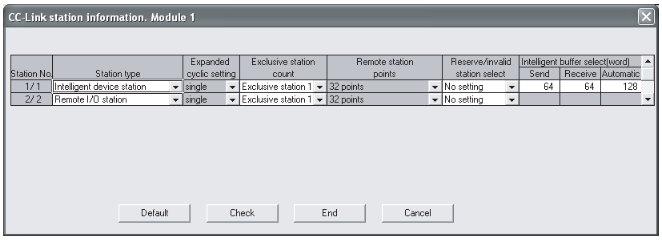
8.3.4 A8GT-J61BT13 switch setting example

The following is an example of setting the A8GT-J61BT13 switches.

Switch Name		Setting	Description
Mode setting switch		0	Online (data link enabled and with automatic return)
Station number setting switches	× 10	0	Station No. 1
	× 1	1	
Transmission baudrate setting switch		0	156kBPS
Condition setting switches	SW1	OFF	Input data state of data link error station: Clear
	SW2	OFF	Number of occupied stations: 1 station

8.3.5 Parameter setting example (setting using GX Developer)

In the network parameter CC-Link list setting, set the first I/O No., total number of stations connected, remote I/O refresh devices, remote register refresh devices, and station information setting.
By setting the items of the following CC-Link list setting and CC-Link station information, sequence programs for setting CC-Link parameters and GOT communication become unnecessary.
Only for the QnACPU function version B or QCPU, the CC-Link list setting and CC-Link station information can be set on the GX Developer.

Item	Setting Screen Example
CC-Link list setting	
CC-Link station information	

8.4 Precautions for Incorporating the GOT into the Remote Network Ver. 2 Mode/Remote Network Addition Mode System

When incorporating a GOT into a remote network Ver. 2 mode/remote network addition mode system, be careful to the device range that can be monitored by the cyclic transmission or transient transmission.

(1) Access range that can be monitored by GOT

(a) Access range that can be monitored by cyclic transmission

The GOT can monitor the cyclic devices of the CC-Link Ver. 2 master station and CC-Link Ver. 1 local station, but cannot monitor the cyclic devices assigned to the CC-Link Ver. 2 local station.

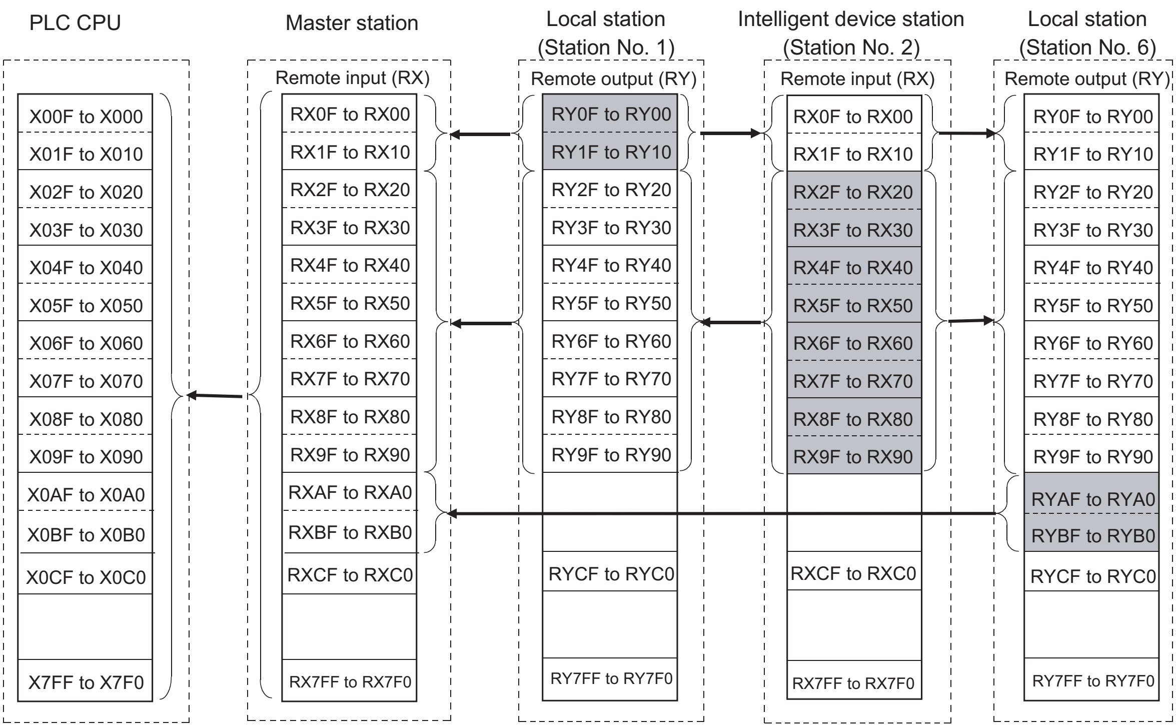
When the GOT is monitoring the CC-Link Ver. 2 local station, it displays that RX/RY is always OFF and RWw/RWr is always 0.

○ : Can be monitored, × : Cannot be monitored

Monitor target	Monitor operation of GOT-A900
Master station (Remote network Ver. 2 mode)	○
Local station, Station No. 1 (Ver. 1 compatible)	○
Local station, Station No. 6 (Ver. 2 compatible)	×

The GOT can write data to only the device ranges of RX and RWr assigned from the master station to the GOT.

The following shows the RX data flow of cyclic transmission based on the system configuration example.



In the case of RY/RWw/RWr, the GOT cannot monitor the data of Station No. 6, either.

(b) Access range that can be monitored by transient transmission
Use an A8GT-J61BT13 of the version AR or later when monitoring a device of the CC-Link Ver. 2 local station PLC CPU.
The GOT can monitor devices of the CC-Link Ver. 2 master station PLC CPU, CC-Link Ver. 1 local station PLC CPU and CC-Link Ver. 2 local station PLC CPU.

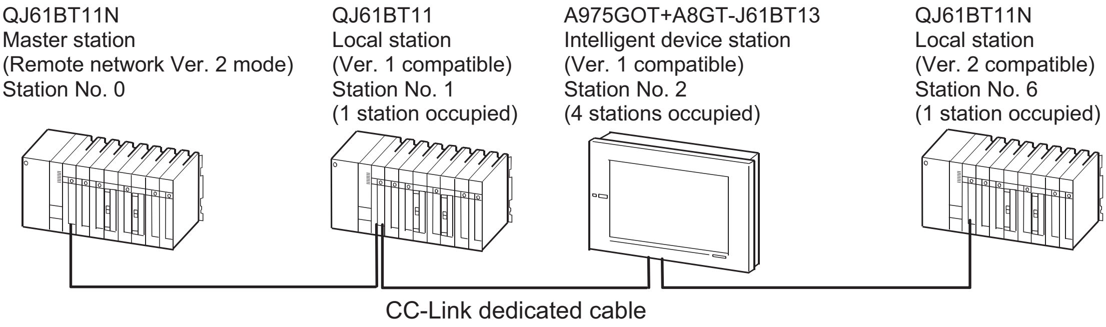
○ : Can be monitored, × : Cannot be monitored

Monitor target	Monitor operation of GOT-A900
Master station (Remote network Ver. 2 mode)	○
Local station, Station No. 1 (Ver. 1 compatible)	○
Local station, Station No. 6 (Ver. 2 compatible)	○ *1

*1 The A8GT-J61BT13 of software version AR or later cannot be accessed.

The following shows an example of the system configuration and CC-Link parameter setting of (1).

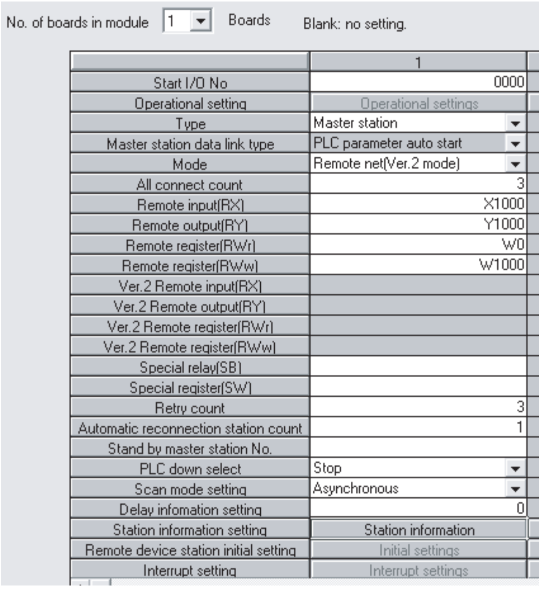
(2) Remote network Ver. 2 mode system configuration example



(3) CC-Link parameter setting example of master station, local station (Station No. 1) and local station (Station No. 6)
Example:

(a) CC-Link parameter setting of master station

1) CC-Link list setting



2) CC-Link station information

CC-Link station information. Module 1

Station No.	Station type	Expanded cyclic setting	Exclusive station count	Remote station points	Reserve/invalid station select	Intelligent buffer select(word) Send	Receive	Automatic
1/1	Ver.1Intelligent device station	single	Exclusive station 1	32 points	No setting	64	64	128
2/2	Ver.1Intelligent device station	single	Exclusive station 4	128 points	No setting	64	64	128
3/6	Ver.2Intelligent device station	single	Exclusive station 1	32 points	No setting	64	64	128

The station type of the A975GOT+A8GT-J61BT13 is the "Ver. 1 intelligent device station".

(b) CC-Link parameter setting of local station (Station No. 1)

No. of boards in module 1 Boards Blank: no setting.

	1
Start I/O No	0000
Operational setting	Operational settings
Type	Local station
Master station data link type	
Mode	Remote net(Ver.1 mode)
All connect count	
Remote input(RX)	X1000
Remote output(RY)	Y1000
Remote register(RWr)	W0
Remote register(RWw)	W1000
Ver.2 Remote input(RX)	
Ver.2 Remote output(RY)	
Ver.2 Remote register(RWr)	
Ver.2 Remote register(RWw)	
Special relay(SB)	SB0
Special register(SW)	SW0
Retry count	
Automatic reconnection station count	
Stand by master station No.	
PLC down select	
Scan mode setting	
Delay infomation setting	
Station information setting	
Remote device station initial setting	
Interrupt setting	Interrupt settings

(c) CC-Link parameter setting of local station (Station No. 6)

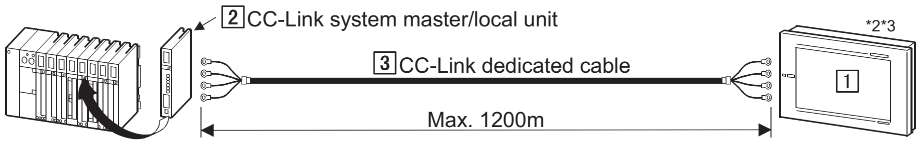
No. of boards in module 1 Boards Blank: no setting.

	1
Start I/O No	0000
Operational setting	Operational settings
Type	Local station
Master station data link type	
Mode	Remote net(Ver.2 mode)
All connect count	
Remote input(RX)	X1000
Remote output(RY)	Y1000
Remote register(RWr)	W0
Remote register(RWw)	W1000
Ver.2 Remote input(RX)	
Ver.2 Remote output(RY)	
Ver.2 Remote register(RWr)	
Ver.2 Remote register(RWw)	
Special relay(SB)	SB0
Special register(SW)	SW0
Retry count	
Automatic reconnection station count	
Stand by master station No.	
PLC down select	
Scan mode setting	
Delay infomation setting	
Station information setting	
Remote device station initial setting	
Interrupt setting	Interrupt settings

9 CC-LINK CONNECTION (REMOTE DEVICE STATION)

9.1 System Configuration

(1) System configuration and connection conditions
The following system configuration and connection conditions assume CC-Link connection (remote device station) with the PLC CPU.
The numbers (1 to 3) given in the system configuration denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
32 GOTs (Max.)	Within 1200m (Longest)	

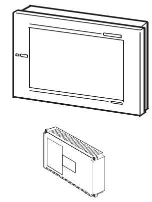
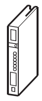
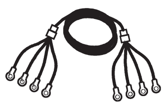
*1 The number of connected GOTs varies with the configuration of the CC-Link system, and the installation distance (maximum transmission distance) varies with the transmission speed of the CC-Link system.
For details, refer to the CC-Link System Master/Local Unit User's Manual (Details).
*2 On the CC-Link system, the GOT is handled as a slave station as described below.

Item	Description
CC-Link station type	Remote device station
Number of occupied stations	2 stations/4 stations (selectable)

*3 A termination resistor is needed to install the GOT at the end of the CC-Link system.
*4 When making connection with the MELDAS C6/C64, refer to "MELDAS C6/C64/C64T CONNECTION AND MAINTENANCE MANUAL (BNP-B2255)" or "MELDAS C6/C64 NETWORK INSTRUCTION MANUAL (BNP-B2372)" for the MELDAS C6/C64 side connection.

(2) System equipment

The following table indicates the system equipment needed for connection with the PLC CPU.

Image	No.	Application	Type	
			GOT unit	CC-Link communication unit
	1	CC-Link connected (remote device station) GOT	A985GOT(-V), A97*GOT, A960GOT, A956WGOT, A956GOT	A8GT-J61BT15
	2	CC-Link system master/local module (Q Series)	QJ61BT11, QJ61BT11N *1	
		CC-Link system master/local module (QnA Series)	AJ61QBT11, A1SJ61QBT11	
		CC-Link system master/local module (A Series)	AJ61BT11, A1SJ61BT11	
		CC-Link system master/local module (MELDAS C6/C64)	FCU6-HR865	
	3	CC-Link dedicated cable	Refer to the user's manual of the CC-Link master/local unit used.	

*1 In the CC-Link parameter setting of GX Developer, set the station corresponding to the GOT as the "Ver. 1 remote device station".

9.2 Monitoring Specification

9.2.1 Monitoring overview

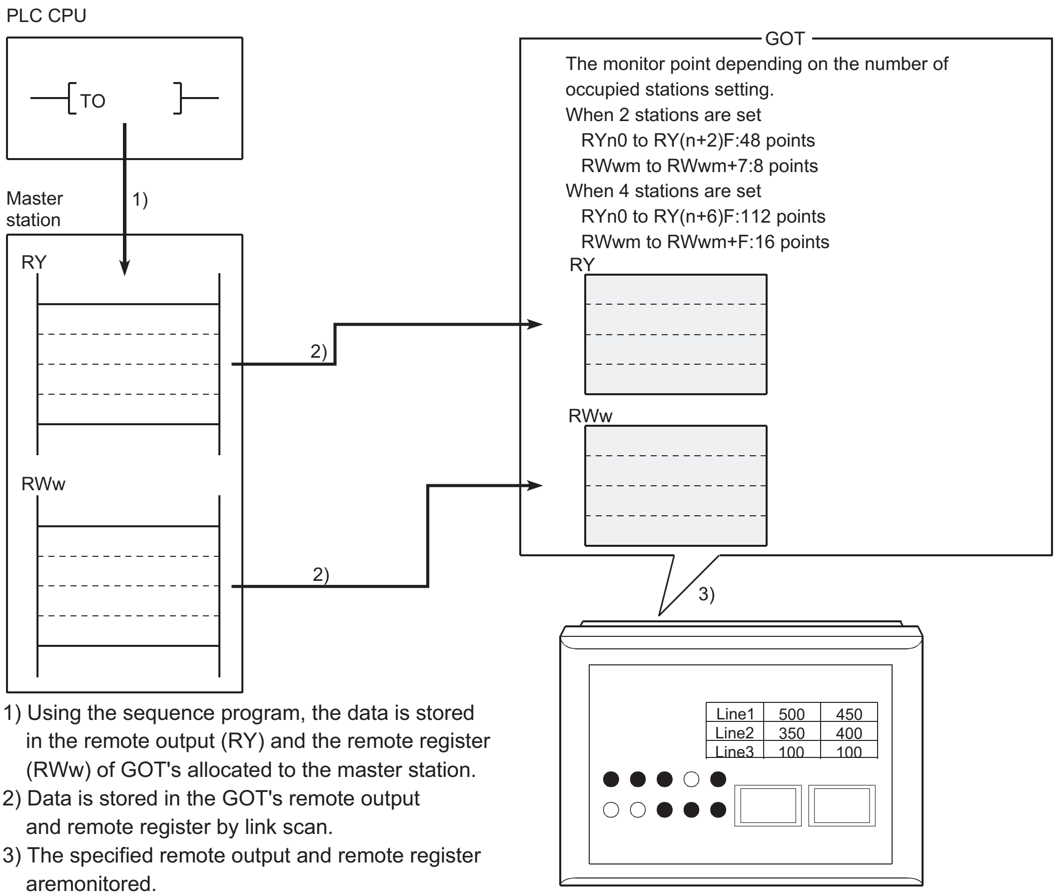
When the A8GT-J61BT15 is used, the GOT has the following two monitoring methods.

Monitor Method	Normal Monitor	Dedicated Command Monitor
Description	The remote inputs/outputs and remote registers of the GOT assigned to the remote device station in the CC-Link parameter setting are specified and monitored.	The remote register area is used as the GOT internal device transfer command area to specify and monitor the GOT internal devices.
Advantage	Data update processing speed is high.	Data update processing speed is high. Since a dedicated command is executed to develop data in the GOT internal word devices (GD0 to GD1023), multiple pieces of information, such as the operating status, production and operation directives, can be monitored within one screen. (The number of devices that can be displayed on one screen is larger than that of normal monitor.)
Disadvantage	As the remote register assignment area of the GOT is small, the number of devices that can be displayed on one screen is small.	A sequence program is needed to execute the dedicated command.

(1) Normal monitor method

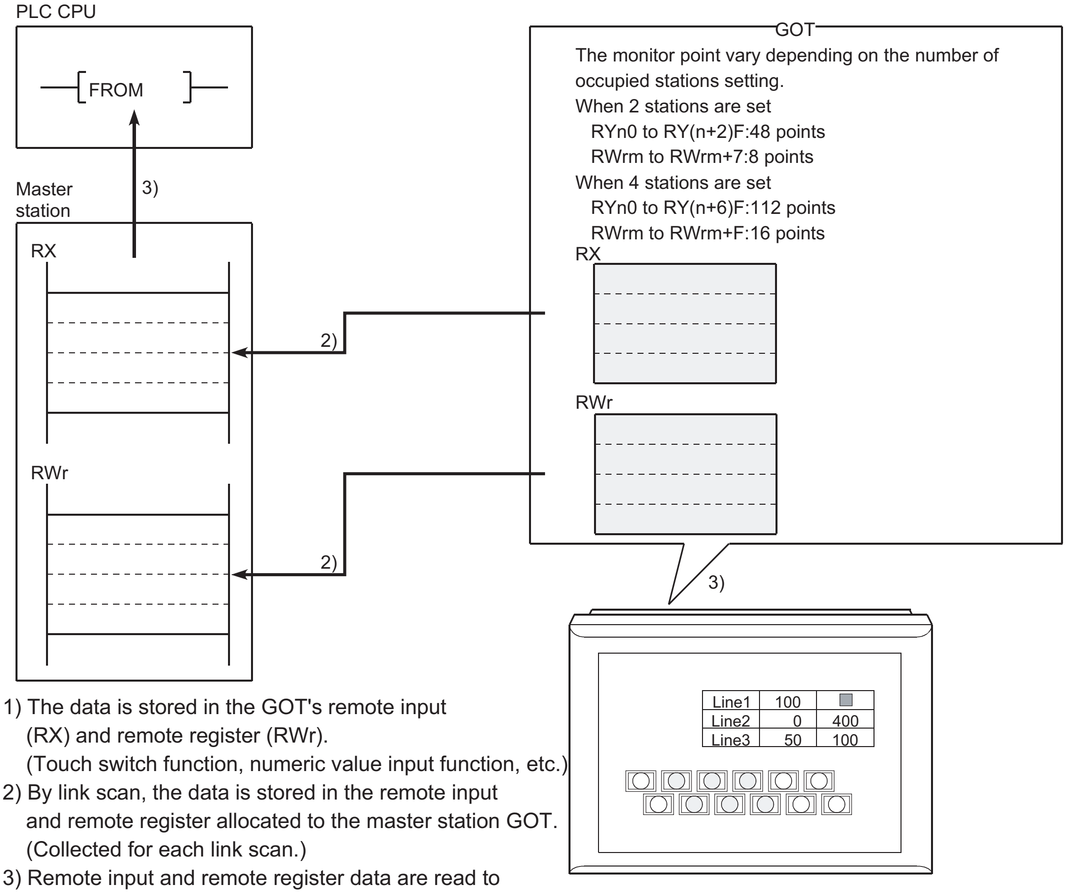
In the monitor overview, the remote output and remote register (write area) are described separately from the remote input and remote register (read area), but all of the information can be displayed on one screen for monitoring.

Monitor for remote output and remote register (write area)



1) Using the sequence program, the data is stored in the remote output (RY) and the remote register (RWw) of GOT's allocated to the master station.
2) Data is stored in the GOT's remote output and remote register by link scan.
3) The specified remote output and remote register aremonitored.

Monitor (write from GOT) for remote input and remote register (read area)



1) The data is stored in the GOT's remote input (RX) and remote register (RWr). (Touch switch function, numeric value input function, etc.)
2) By link scan, the data is stored in the remote input and remote register allocated to the master station GOT. (Collected for each link scan.)
3) Remote input and remote register data are read to the PLC CPU.

Point

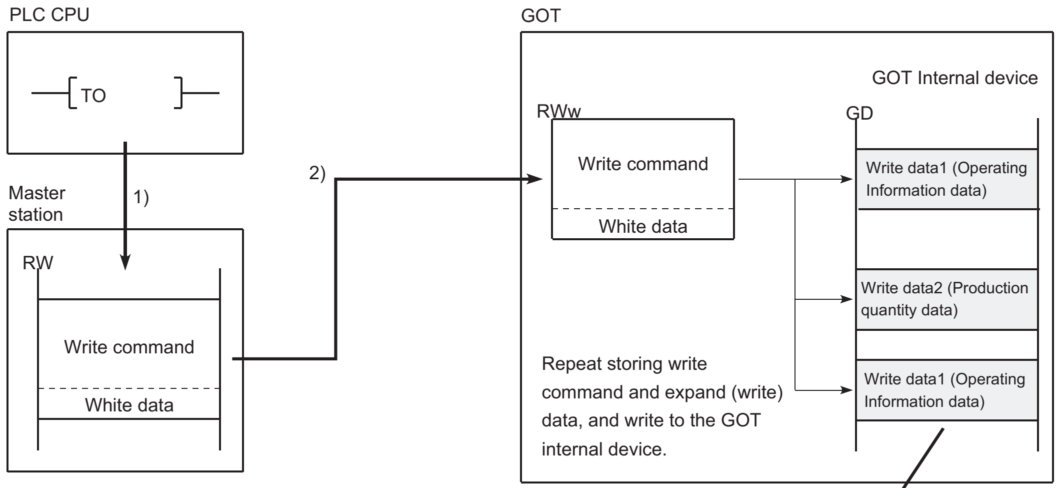
The GOT can input (e.g. touch key function) data to only the remote inputs (RX) and remote registers (RWr) assigned the master station.
It cannot input (e.g. touch key function) or display (e.g. lamp display function) data to

(2) Dedicated command monitor method

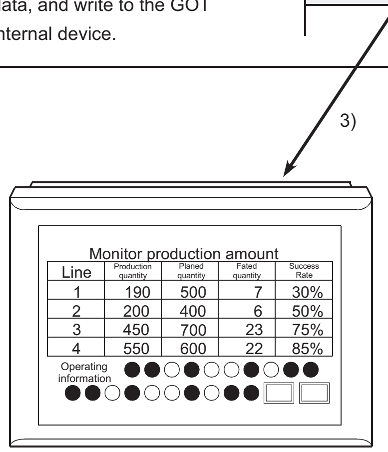
The remote register (write area) data is stored in the GOT internal device using dedicated commands and monitoring is performed.

Refer to Section 9.2.5 for the dedicated commands.

When the GOT internal device write command is executed

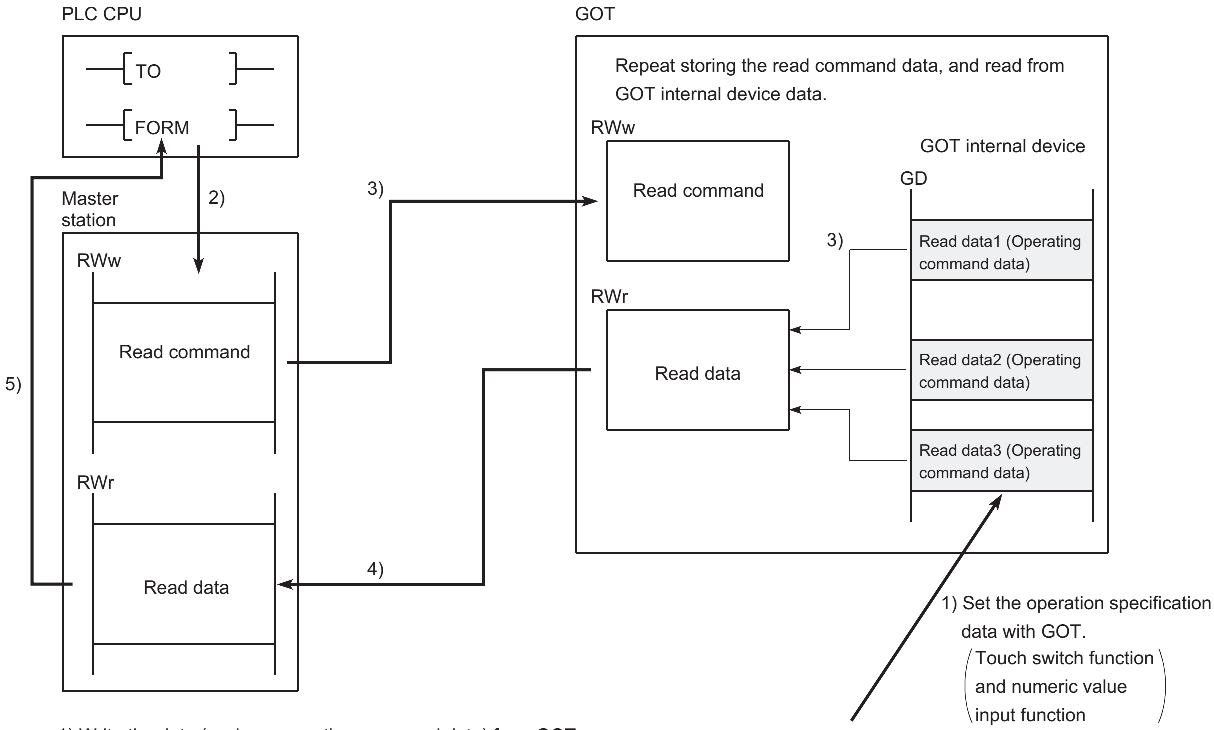


1) Using the sequence program, store the write command and the write data to be stored in the GOT internal device to the remote register (RWw) of the GOT allocated to the master station.
2) When the GOT request flag is turned on, the write command data and write data are stored in the GOT remote registers, and the write data is stored in the GOT internal device.
3) The data in the GOT internal device where the write data is stored is monitored.
   Repeat steps 1) and 2) to execute the write command, and write several information to the GOT internal device and monitor the data.

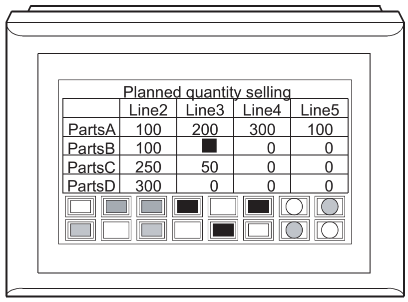


The operating information and production amount are monitored with GOT. (Monitor GD.)

When the GOT internal device read command is executed



1) Write the data (such as operation command data) from GOT to the GOT internal device.
2) Using the sequence program, store the read command data to the remote register (RWw).
3) When the GOT request flag is turned on, the read command data is stored in the GOT remote register (RWw), and the data in the specified GOT internal device is read to the remote device (RWr).
4) By link scan, the data is stored in the remote device (RWr) of the GOT allocated to the master station.
5) Using the sequence program, read the remote device (RWr) data to the PLC CPU.
Repeat the above steps and execute the read commands, then read several information to the PLC CPU.



9.2.2 I/O signals to the master module

(1) List of I/O signals
The I/O signal allocation is shown below.
The I/O signals varies depending on the set number of occupied stations (2 stations or 4 stations).
The "n" in the table indicates the address allocated to the master module by the station number setting.

(a) When monitoring using the normal monitor method

<table>
<tr><th colspan="3">Signal Direction : GOT → Master module</th><th colspan="3">Signal Direction : Master module → GOT</th></tr>
<tr><th colspan="2">Device number</th><th rowspan="3">Signal name</th><th colspan="2">Device number</th><th rowspan="3">Signal name</th></tr>
<tr><th colspan="2">Number of occupied stations</th><th colspan="2">Number of occupied stations</th></tr>
<tr><th>2 station</th><th>4 stations</th><th>2 station</th><th>4 stations</th></tr>
<tr><td>RXn0 to
RX(n+2)F</td><td>RXn0 to
RX(n+6)F</td><td>User area</td><td>RYn0 to
RY(n+2)F</td><td>RYn0 to
RY(n+6)F</td><td>User area</td></tr>
<tr><td>RX(n+3)0 to
RX(n+3)A</td><td>RX(n+7)0 to
RX(n+7)A</td><td>Unusable</td><td rowspan="3">RY(n+3)0 to
RY(n+3)F</td><td rowspan="3">RY(n+7)0 to
RY(n+7)F</td><td rowspan="3">Unusable</td></tr>
<tr><td>RX(n+3)B</td><td>RX(n+7)B</td><td>Remote ready *1</td></tr>
<tr><td>RX(n+3)B to
RX(n+3)F</td><td>RX(n+7)B to
RX(n+7)F</td><td>Unusable</td></tr>
</table>

*1 The remote ready flag turns ON at GOT power-on, at hardware reset, or when the GOT is in an operable state.
If the GOT has been powered on, the flag is OFF during offline operation (OS installation, screen data downloading) or during initial processing execution.
Use this flag in an interlock ladder for write/read performed from the CC-Link master station.

(b) When monitoring using the dedicated monitor method

Signal Direction : GOT → Master module			Signal Direction : Master module → GOT		
Device number		Signal name	Device number		Signal name
Number of occupied stations			Number of occupied stations		
2 station	4 stations		2 station	4 stations	
RXn0 to RX(n+2)F	RXn0 to RX(n+6)F	User area	RYn0 to RY(n+2)F	RYn0 to RY(n+6)F	User area
RX(n+3)0	RX(n+7)0	GOT complete flag	RY(n+3)0	RY(n+7)0	GOT request flag
RX(n+3)1 to RX(n+3)8	RX(n+7)1 to RX(n+7)8	Unusable	RY(n+3)1	RY(n+7)1	GOT monitor request flag
			RY(n+3)2	RY(n+7)2	GOT always write request flag
			RY(n+3)3 to RY(n+3)8	RY(n+7)3 to RY(n+7)8	Unusable
RX(n+3)9	RX(n+7)9	Initial data setting complete flag	RY(n+3)9	RY(n+7)9	Initial data setting request flag
RX(n+3)A	RX(n+7)A	Error status flag	RY(n+3)A	RY(n+7)A	Error reset request flag
RX(n+3)B	RX(n+7)B	Remote ready *1	RY(n+3)B	RY(n+7)B	Unusable
RX(n+3)C to RX(n+3)F	RX(n+7)C to RX(n+7)F	Unusable	RY(n+3)C to RY(n+3)F	RY(n+7)C to RY(n+7)F	

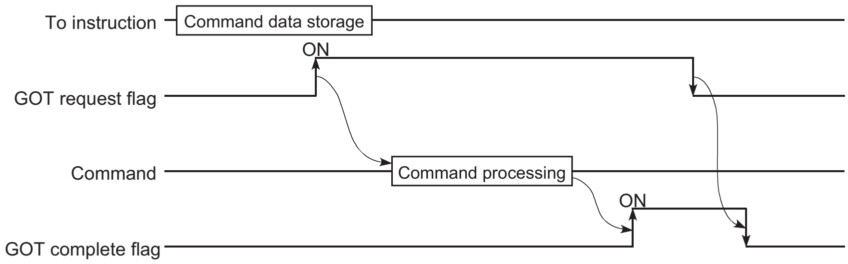
*1 The remote ready flag turns ON at GOT power-on, at hardware reset, or when the GOT is in an operable state.
If the GOT has been powered on, the flag is OFF during offline operation (OS installation, screen data downloading) or during initial processing execution.
Use this flag in an interlock ladder for write/read performed from the CC-Link master station.

DANGER

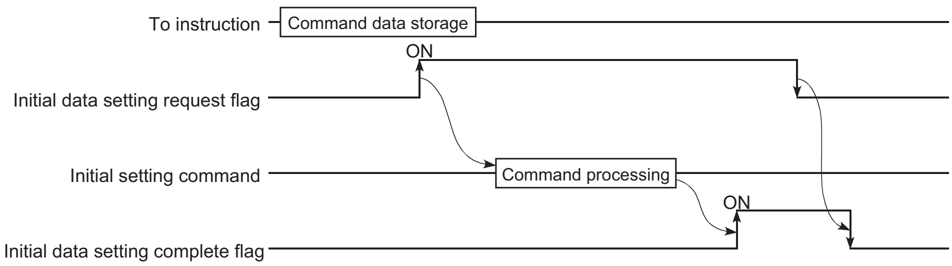
- Do not output the reserved signals among the output signals provided from the master module to the GOT.
  If any of the reserved signals is output, the PLC system may malfunction.

(2) Details of the I/O signals
The function of each I/O signal is described below

(a) GOT complete flag (RX(n+3)0, RX(n+7)0), and GOT request flag (RY(n+3)0, RY(n+7)0)
By turning on the GOT request flag, each command which uses the GOT internal device to monitor (excluding the initial setting command, monitor request command, and always write request command) is executed.
After each command processing is complete, the GOT complete flag turns on.
When the GOT request flag is turned off, the GOT complete flag turns off as well.



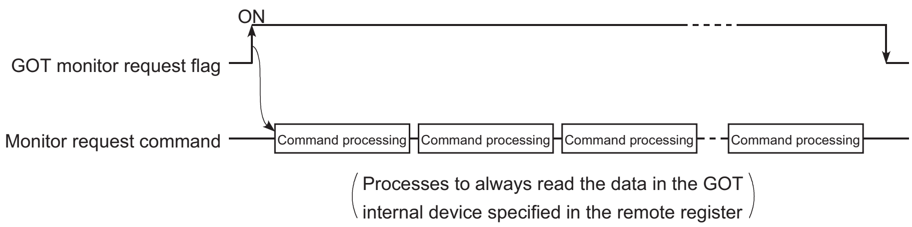
(b) Initial data setting complete flag (RX(n+3)9,RX(n+7)9), and initial data setting request flag (RY(n+3),RY(n+7)9)
By turning on the initial data setting request flag, the initial setting command to monitor using the GOT internal device, is executed.
When the initial setting command processing is complete, the initial data setting complete flag turns on.
When the initial data setting request flag is turned off, the initial data setting complete flag turns off as well.



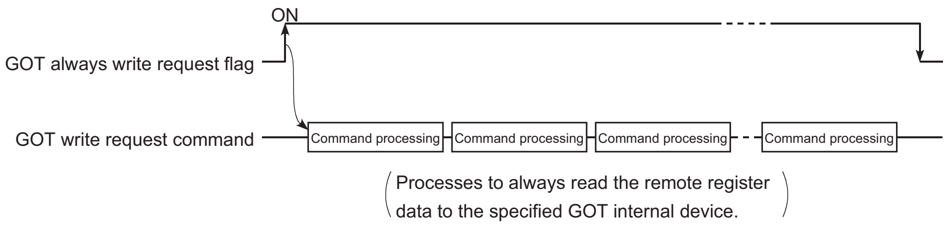
Point

When performing dedicated command monitor, the initial data setting request flag must be turned ON to execute the initial setting command.
Refer to Section 9.2.5 (1) for the initial setting command.

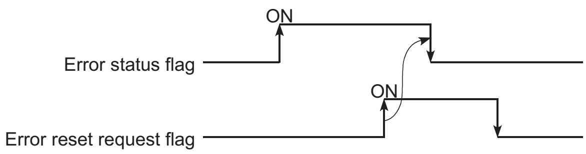
(c) GOT monitor request flag (RY(n+3)1,RY(n+7)1)
When the GOT monitor request flag is on, the data in the GOT internal device registered for monitoring is always read to the remote register.
Refer to (a) when executing the monitor registration command.



(d) GOT always write request flag (RY(n+3)2,RY(n+7)2)
When the GOT always write request flag is on, the remote device data is always written to the GOT internal device which has been registered for write.
Refer to (a) when executing the always write register command.



(e) Error status flag (RX(n+3)A,RX(n+7)A) and error reset request flag (RY(n+3)A,RY(n+7)A)
If an error occurs during execution of a command when communicating with the GOT internal device, the error status flag turns on.
The error status flag is turned off by turning on the error reset request flag.



Point

The error status flag turns ON if the executed dedicated command is wrong or the preset device cannot be monitored (the device is outside the monitor-enabled range).

(f) Remote ready flag (RX(n+3)B,RX(n+7)B)
Turns on during the GOT startup.
Turns off during off-line operations (OS installation and screen data download) and initial processing execution.

9.2.3 Remote register allocation

The remote register allocation for GOT is described below.
The usage of the remote registers is different between the normal monitor method and dedicated command monitor method.
The "m" and "n" in the table indicates the address allocated to the master module by the station number setting.

(1) When the normal monitor method
The entire area is used for user region.

Transfer Direction	Addresses		Description	Default Value
	Number of occupied stations			
	2 station	4 stations		
Master station → GOT	RWwm to RWwm+7	RWwm to RWwm+F	User write area	0
GOT → Master station	RWrn to RWrn+7	RWrn to RWrn+F	User read area	0

(2) When the dedicated command monitor method
The entire area is used for the GOT internal device communication commands.
Refer to Section 9.2.4 regarding each command for the GOT internal device communication.

Transfer Direction	Addresses		Description	Default Value
	Number of occupied stations			
	2 station	4 stations		
Master station → GOT	RWwm to RWwm+7	RWwm to RWwm+F	Command execution area to be monitored by using GOT internal device	0
GOT → Master station	RWrn to RWrn+7	RWrn to RWrn+F	Command response area to be monitored by using GOT internal device	0

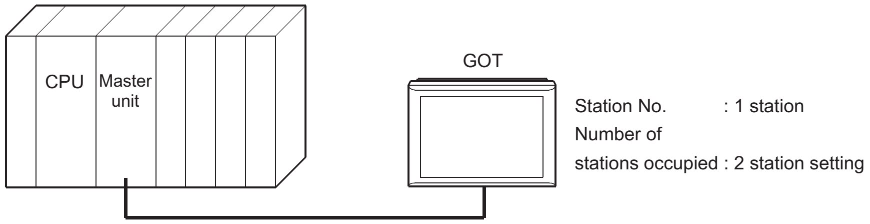
9.2.4 Command list for the dedicated command monitor method

The command list for the dedicated command monitor is shown below.

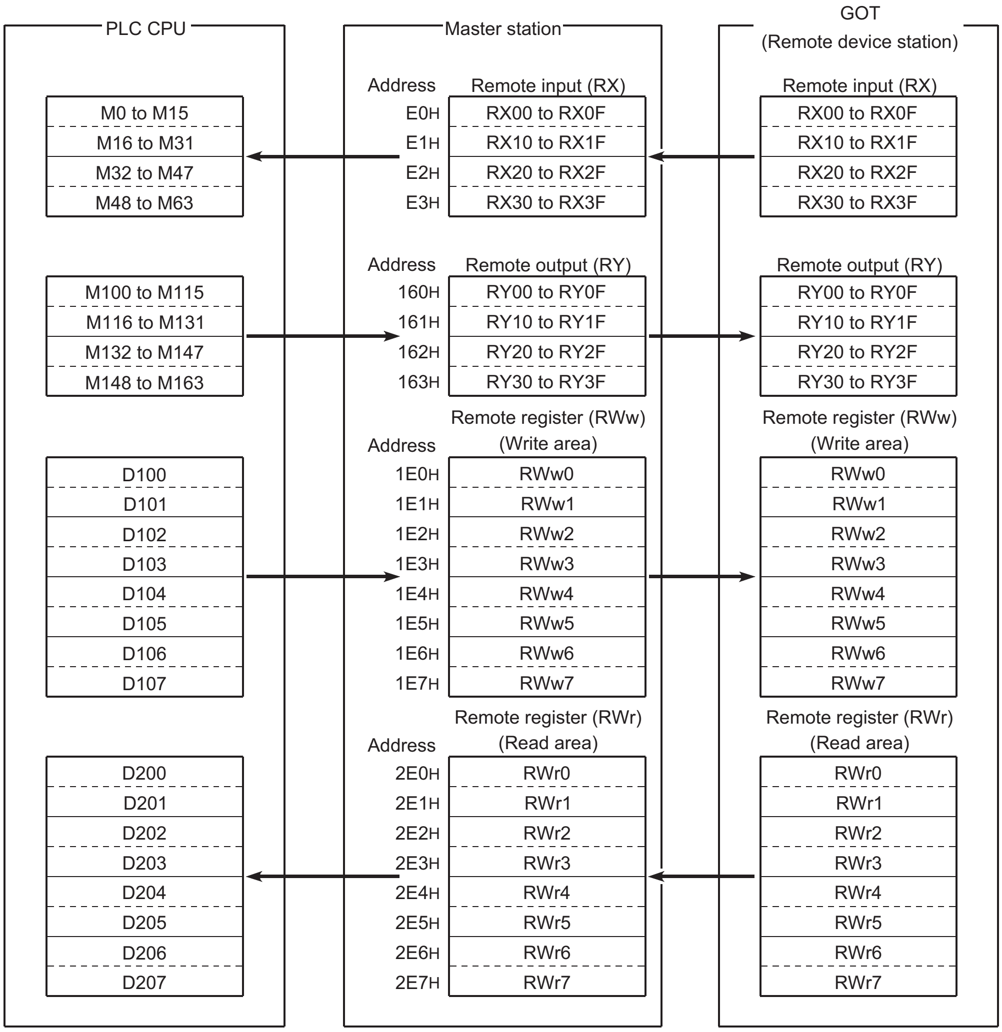
Command name	Contents	Reference Section
Initial setting	Initial setting command when monitoring with dedicated command monitor method (monitoring is performed using the GOT internal device).	Section9.2.5(1)
Continuous read	Command to read the specified number of points of data from the specified head GOT internal device to the remote register. Maximum read points When the number of stations is set to 4 stations: 14 points When the number of stations is set to 2 stations: 6 points	Section9.2.5(2)
Random read	Command to read data from several different GOT internal devices to the remote register. Maximum read points When the number of stations is set to 4 stations: 14 points When the number of stations is set to 2 stations: 6 points	Section9.2.5(3)
Continuous write	Command to write specified number of points of data from the remote register to the specified head GOT internal de-vice. Maximum write points When the number of stations is set to 4 stations: 14 points When the number of stations is set to 2 stations: 6 points	Section9.2.5(4)
Random write	Command to write remote register data to several different GOT internal devices. Maximum write points When the number of stations is set to 4 stations: 7 points When the number of stations is set to 2 stations: 3 points	Section9.2.5(5)
Monitor register	Command to register the GOT internal device number that performs the always remote register read command. Maximum registration points When the number of stations is set to 4 stations: 14 points When the number of stations is set to 2 stations: 6 points	Section9.2.5(6)
Monitor request	Command to always read the GOT internal device data stored by executing the monitor register command to the remote register.	Section9.2.5(7)
Always write register	Command to always register the GOT internal device number of the GOT internal device that performs the always remote register data write command. Maximum registration points When the number of stations is set to 4 stations: 14 points When the number of stations is set to 2 stations: 6 points	Section9.2.5(8)
Always write request	Command to always write remote register data to the GOT internal device registered by executing the always write register command.	Section9.2.5(9)

9.2.5 Details of each command

The execution method for each command is described.
The following system example is used to describe the sequence program in this section.
Refer to the CC-Link Master Module User's Manual regarding the sequence program for the entire CC-Link system.



Relationship among the PLC CPU, master station buffer memory, and remote device stations



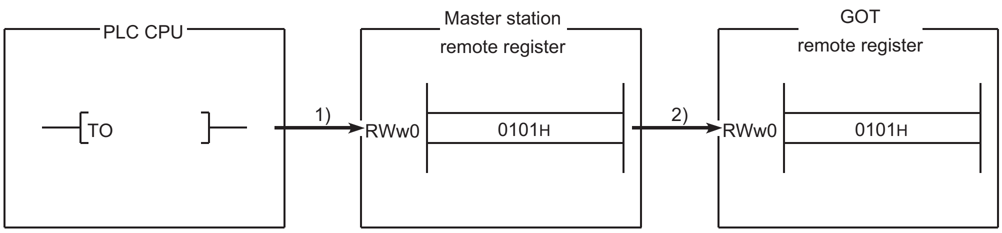
(1) Initial setting command

(a) Initial setting command
This is the initial setting command for monitoring with the GOT internal device.
Create a sequence program for initial setting command to be processed before the commands described in (2) and after are executed.

(b) Command format

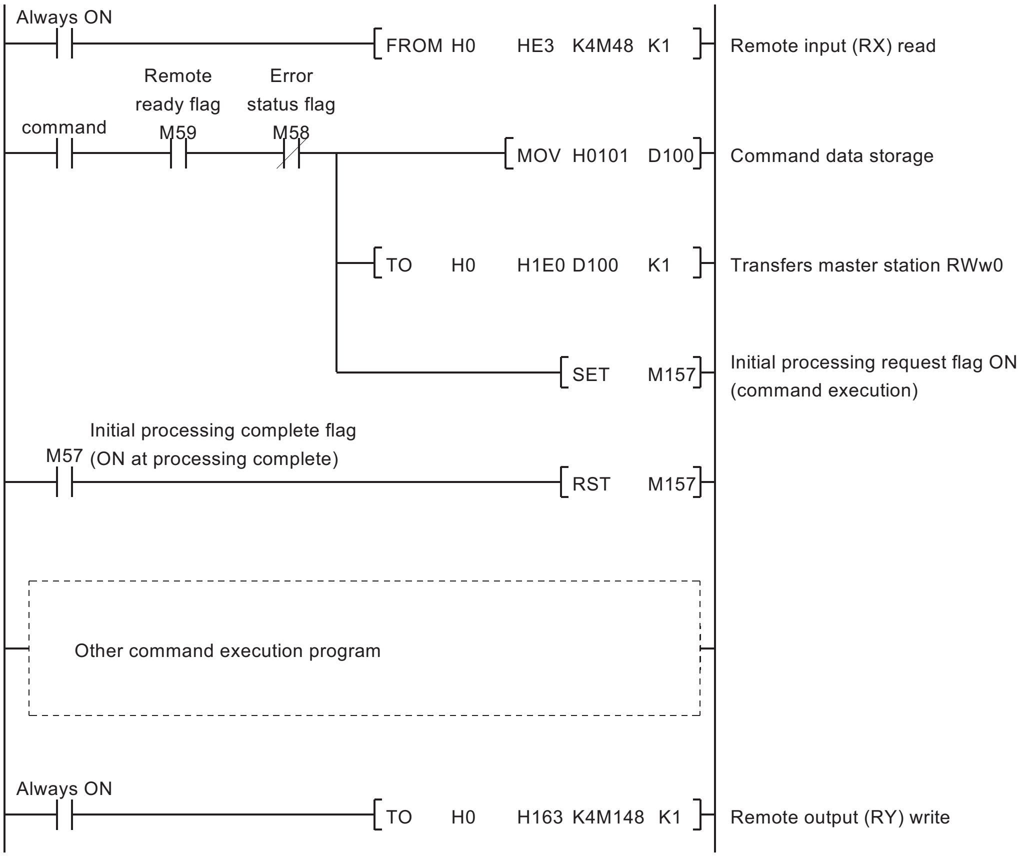
Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	1: Initial setting
	RWwm (Lower byte)	1: Monitoring by the dedicated command monitor method 2: Switch to the normal monitor method
	RWwm + 1 to RWwm + F	---
GOT → Master station	RWrn to RWrn + F	---

(c) Communication overview



1) Store the initial setting command data in the master station's remote register (RWw).
2) Turn on the initial data setting request flag and store the command data in the GOT remote register (RWw).
(Command execution)
The initial data setting complete flag turns on when the command processing is complete.
By executing this command, the GOT will be in the monitor status with the dedicated command monitor method.

(d) Sequence program example



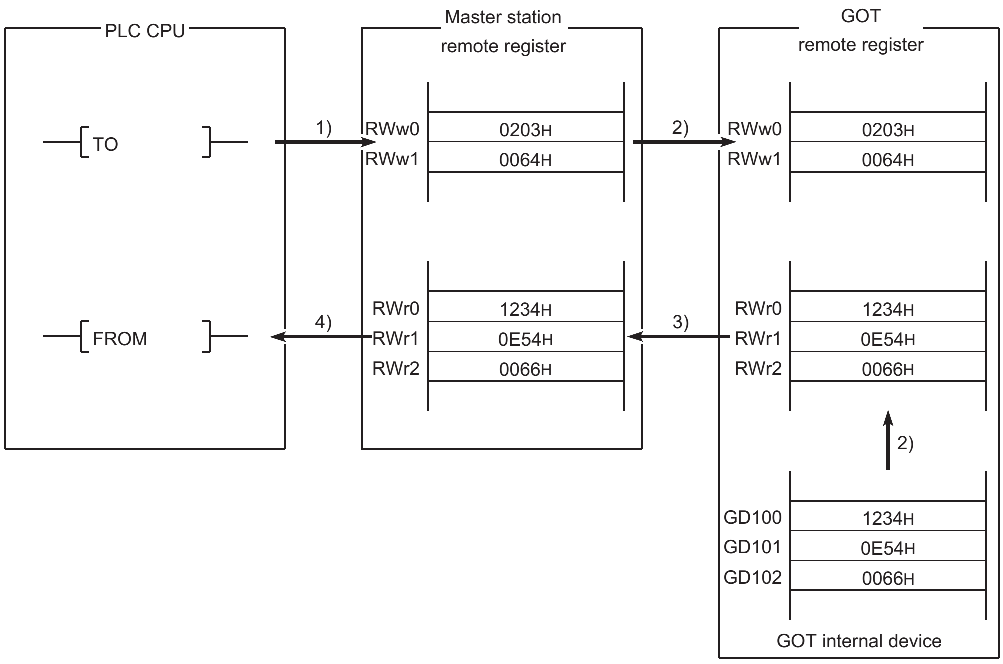
(2) Continuous read command

(a) Continuous read command
This is a command to read data for a specified number of points from the specified head GOT internal device to the remote register.

(b) Command format

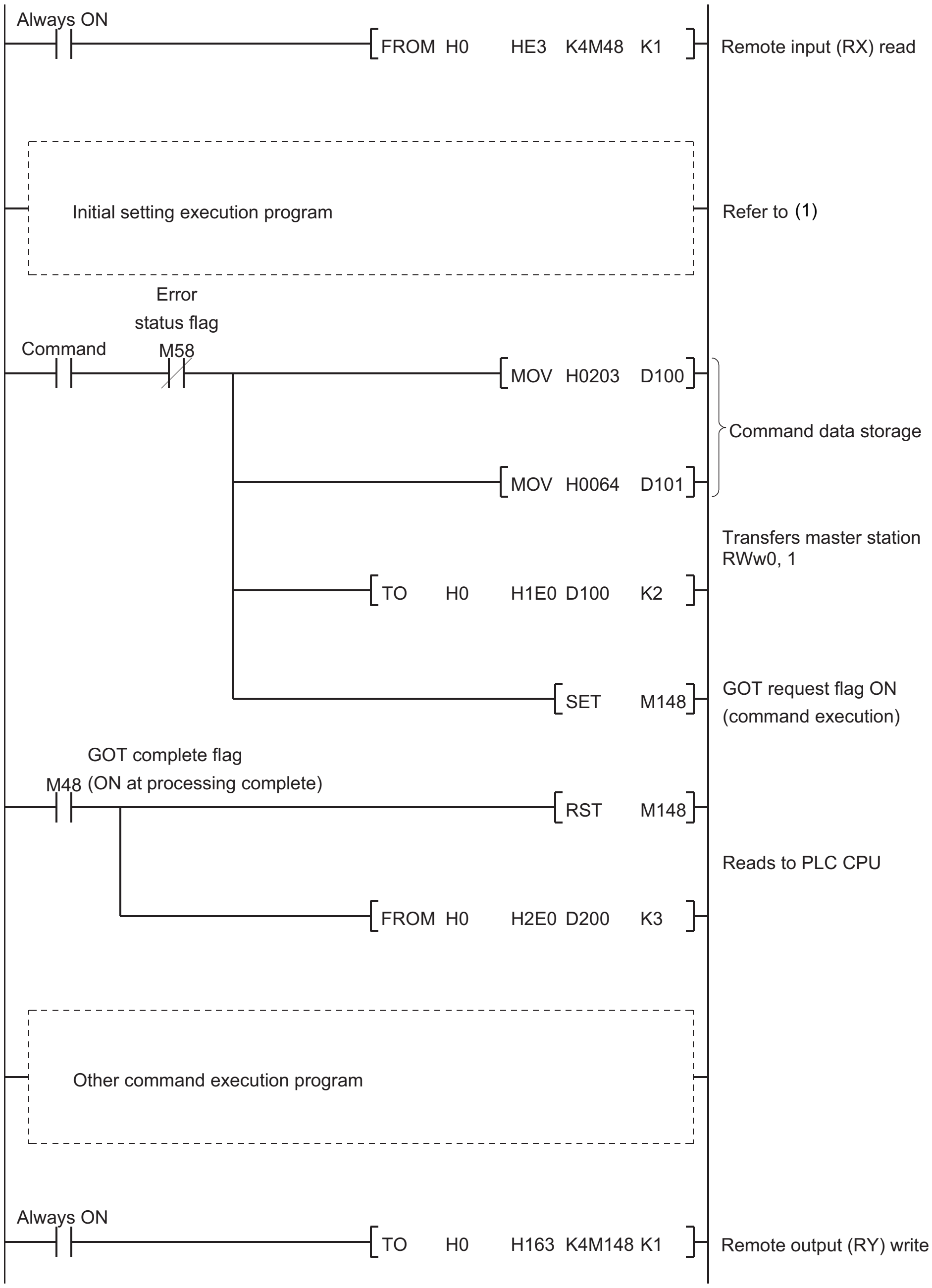
Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	2: Continuous read setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 6 : GOT internal device point to be read When the occupied points are 4 stations 1 to 14 : GOT internal device point to be read
	RWwm + 1	0 to 1023 : Head GOT internal device numbers to be read
	RWwm + 2 to RWwm + F	---
GOT → Master station	RWrn to RWrn + D	Stores the data to be read from the GOT internal device
	RWrn + E, RWrn + F	---

(c) Communication overview
When reading three points from the GOT internal device GD100 to the remote register (RWr)



1) Store the continuous read command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and read the data in GD100 to 102 are read to the remote register (RWr) by storing the command data in the GOT remote register (RWw). (Command execution)
The GOT complete flag turns on when the command processing is complete.
3) By link scan, the read data is stored in the master station's remote register (RWr).
4) Read the data to the PLC CPU using the FROM instruction, etc.

(d) Sequence program example



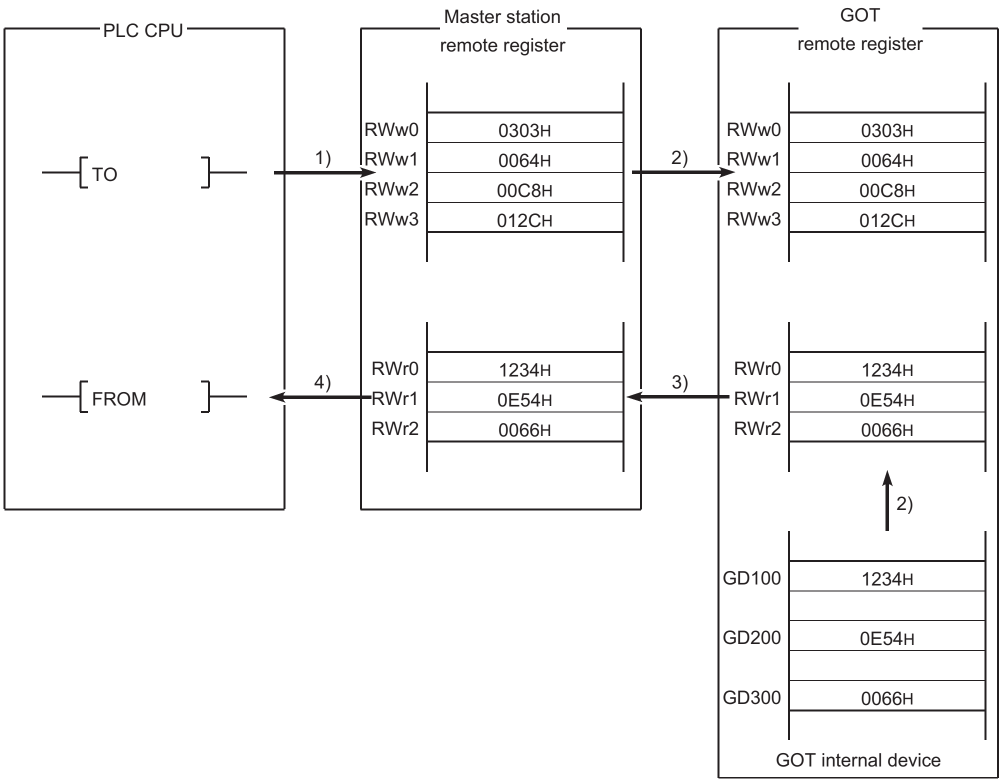
(3) Random read command

(a) Random read command
This is a command to read data from several different GOT internal devices to the remote register.

(b) Command format

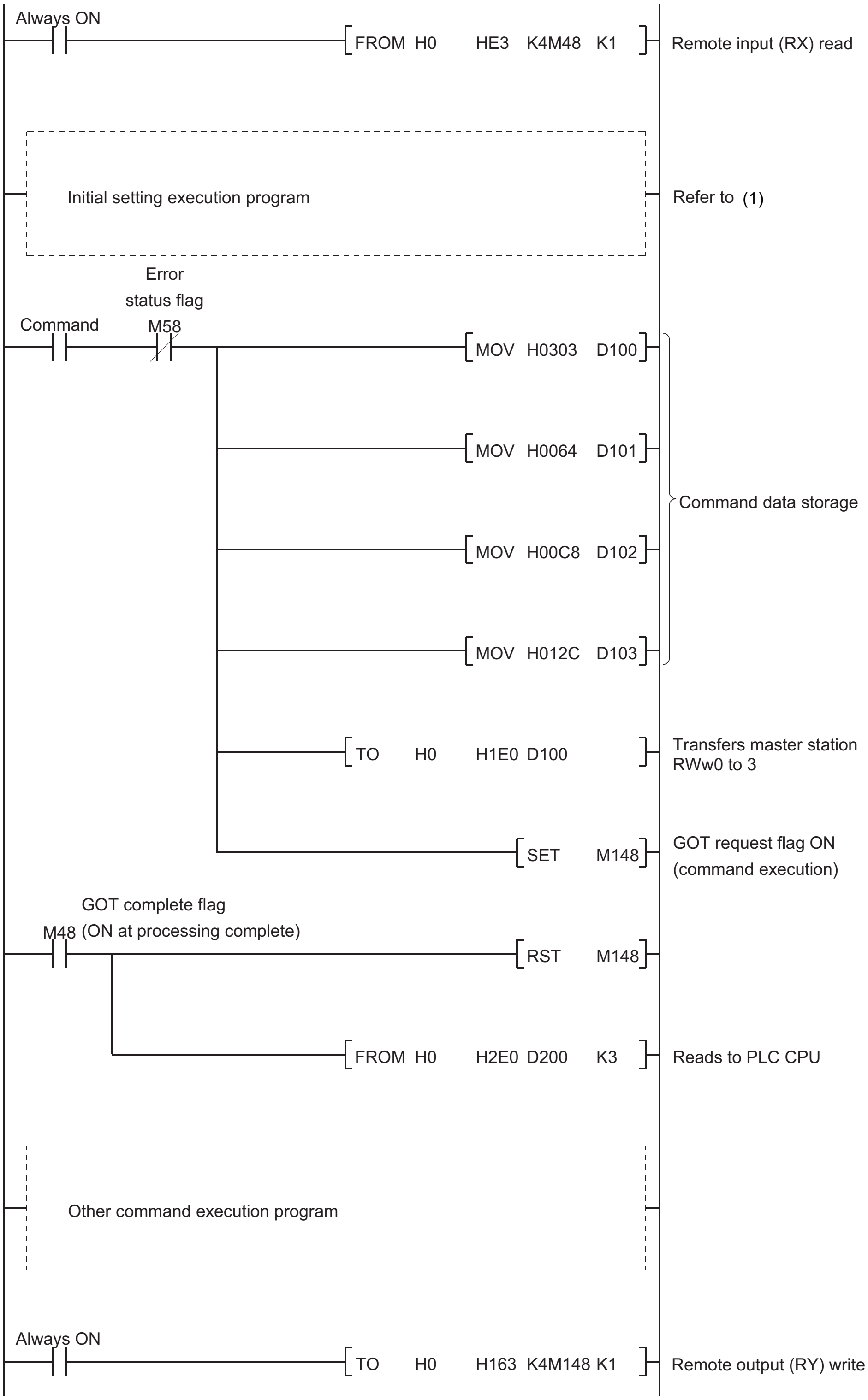
Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	3: Random read setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 6 : GOT internal device point to be read When the occupied points are 4 stations 1 to 14 : GOT internal device point to be read
	RWwm + 1 to RWwn + F	0 to 1023 : GOT internal device numbers to be read (Storage for the setting mentioned above)
GOT → Master station	RWrn to RWrn + D	Stores the data to be read from the GOT internal device (Storage for the setting mentioned above)
	RWrn + E, RWrn + F	---

(c) Communication overview
When reading data from the GOT internal device GD100, 200 and 300 to the remote register.



1) Store the continuous read command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and read the data in GD100, 200,and 300 are read to the remote register (RWr) by storing the command data in the GOT remote register (RWw). (Command execution)
The GOT complete flag turns on when the command processing is complete.
3) By link scan, the read data is stored in the master station's remote register (RWr).
4) Read the data to the PLC CPU using the FROM instruction, etc.

(d) Sequence program example



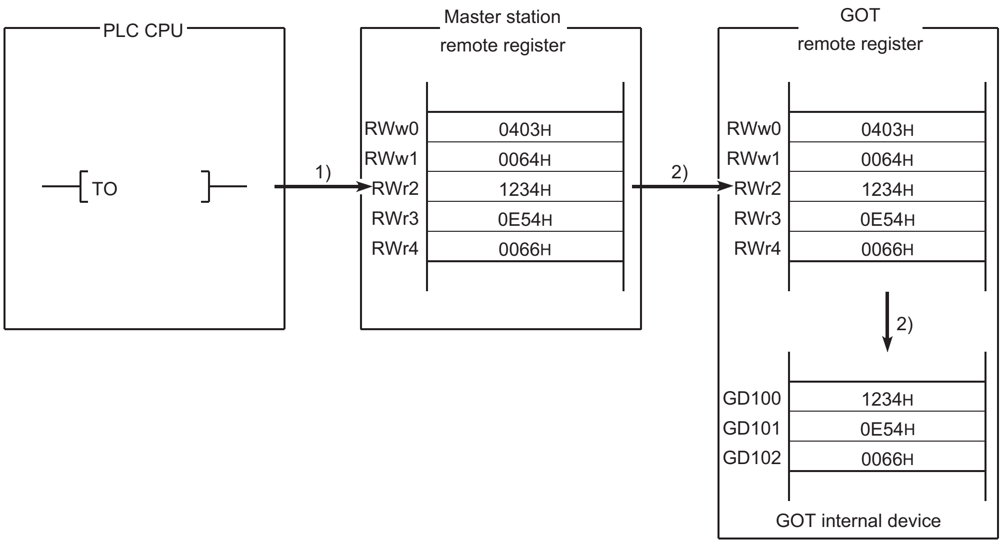
(4) Continuous write command

(a) Continuous write command
This is a command to write data from a specified number of points of remote registers to the specified head GOT internal device.

(b) Command format

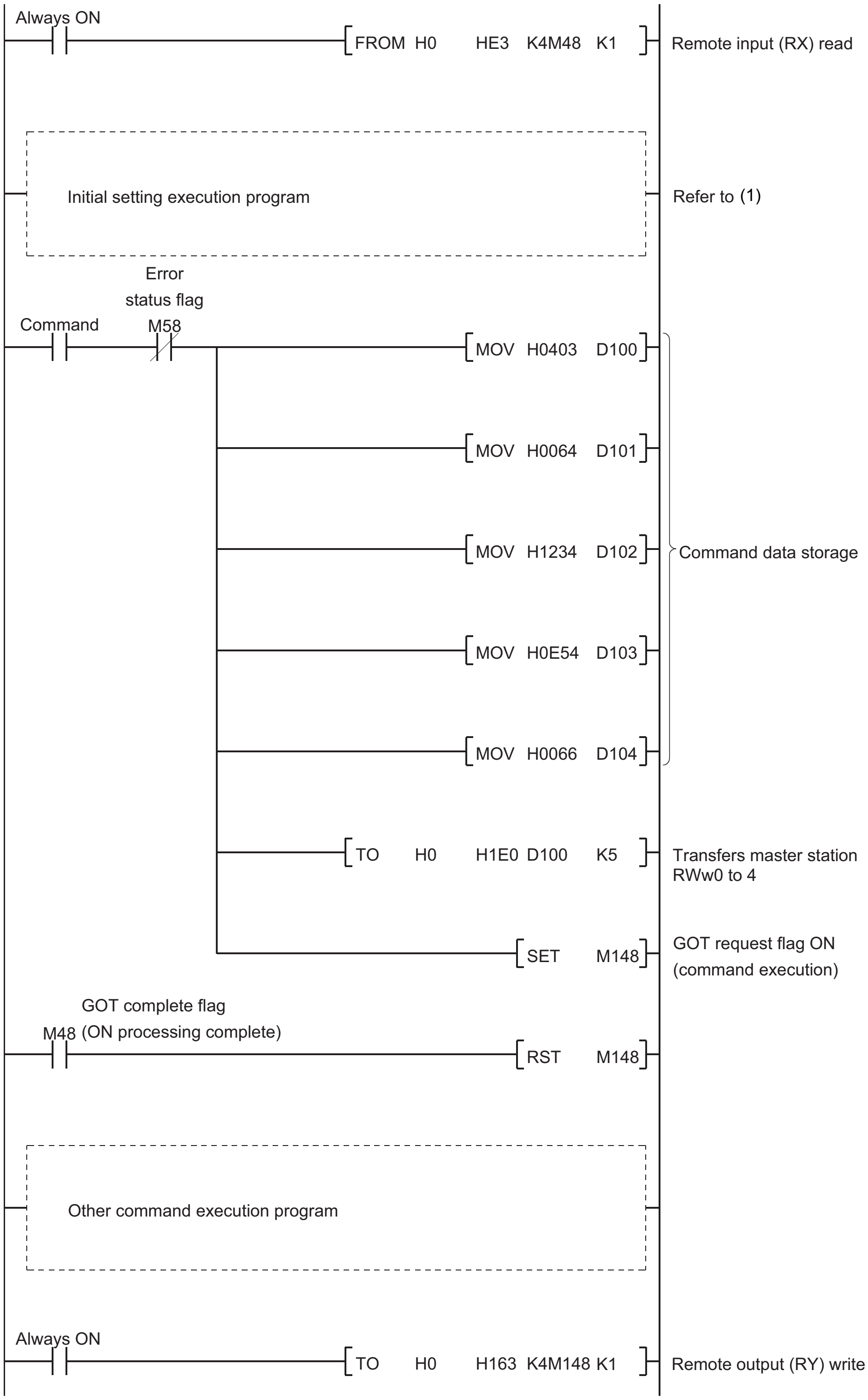
Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	4: Continuous write setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 6 :Points to be written to the GOT internal device When the occupied points are 4 stations 1 to 14 :Points to be written to the GOT internal device
	RWwm + 1	0 to 1023 :Head GOT internal device numbers to be written
	RWwm + 2 to RWwn + F	Stores the data to be written to the GOT internal device
GOT → Master station	RWrn to RWrn + F	---

(c) Communication overview
When writing remote register data to the GOT internal device GD100, 101, and 102 (3points)



1) Store the continuous write command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and store the command data in the GOT remote register (RWw). Store the data in GD100, 101, and 102.
(Command execution)
The GOT complete flag turns on when the command processing is complete.

(d) Sequence program example



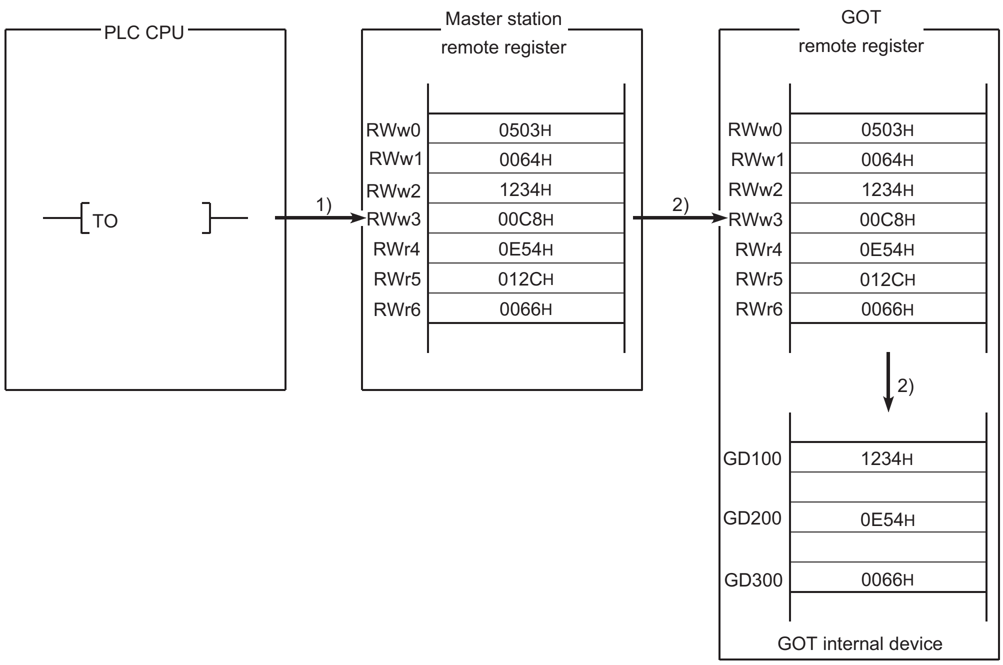
(5) Random write command

(a) Random write command
This is a command to write remote register data to several different GOT internal devices.

(b) Command format

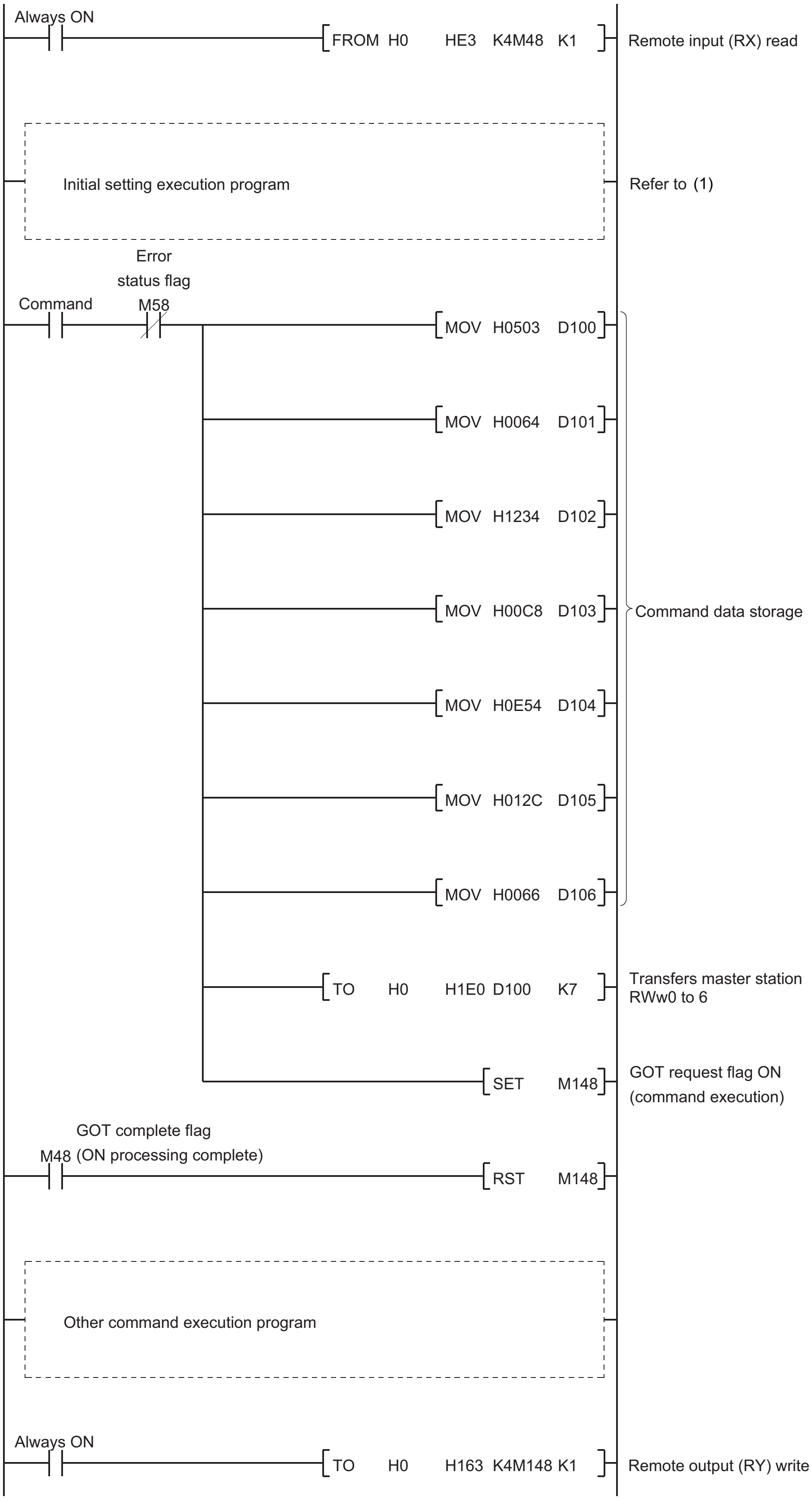
Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	5: Random write setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 3 :Points to be written to the GOT internal device When the occupied points are 4 stations 1 to 7 :Points to be written to the GOT internal device
	RWwm + 1	0 to 1023 : GOT internal device numbers to be written
	RWwm + 2	Stores the data to be written to the GOT internal device described above
	RWwm + 3 to RWwn + E	Stores the data to be written and GOT internal device numbers for the setting points like mentioned above.
	RWwn + F	---
GOT → Master station	RWrn to RWrn + F	---

(c) Communication overview
When writing remote register data to the GOT internal device GD100, 200, and 300 (3points)



1) Store the random write command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and store the command data in the GOT remote register (RWw). Store the write data in GD100, 200, and 300.
(Command execution)
The GOT complete flag turns on when the command processing is complete.

(d) Sequence program example



(6) Monitor register command

(a) Monitor register command
This is a command to always register the device number of the GOT internal device which reads the remote register.
After executing the monitor register command, always execute the monitor request command.

(b) Command format

Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	6: Monitor register setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 6 :Points to be written to the GOT internal device When the occupied points are 4 stations 1 to 14 :Points to be written to the GOT internal device
	RWwm + 1 to RWwn + E	0 to 1023 : GOT internal device numbers to be registered (Storage for the setting mentioned above)
	RWwn + F	---
GOT → Master station	RWrn to RWrn + F	---

(c) Communication overview
Refer to (7).

(7) Monitor request command

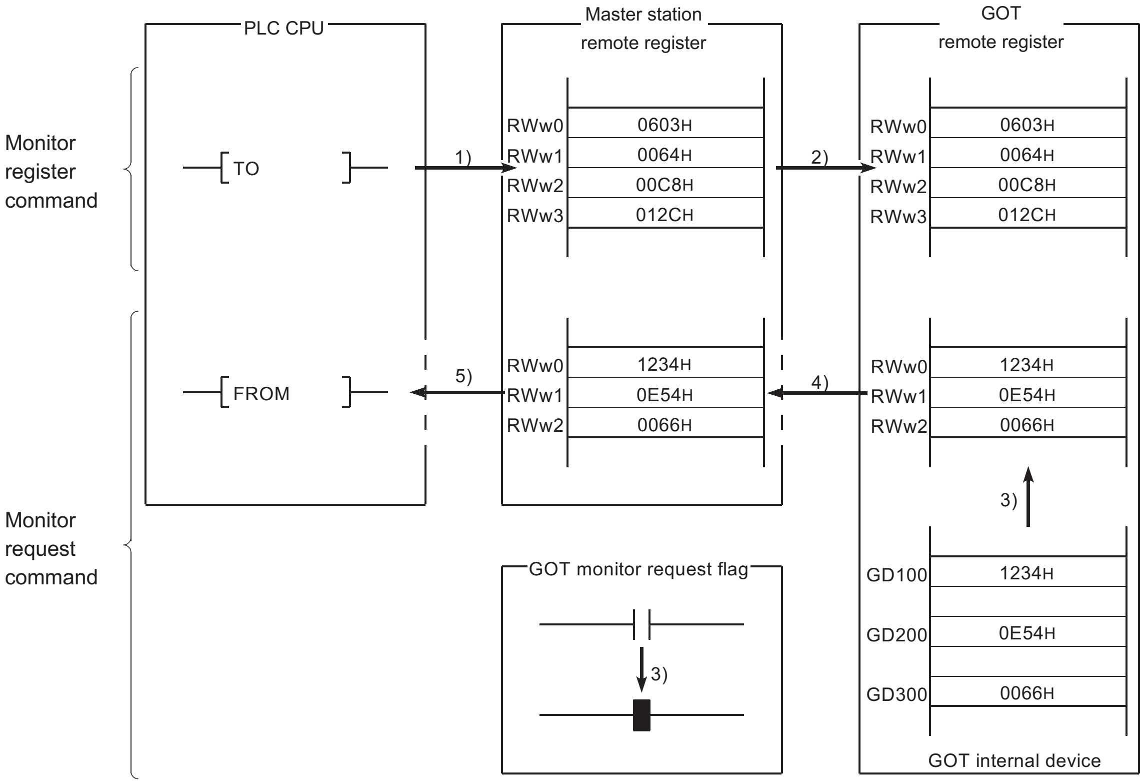
(a) Monitor request command
This is a command to always read the data in the GOT internal device registered by the monitor register command execution to the remote register.
Execute the monitor request command after the monitor register command is executed.

(b) Command format

Transfer Direction	Addresses	Write data
Master station → GOT	RWwm + 1 to RWwn + F	---
GOT → Master station	RWrn to RWrn + F	---

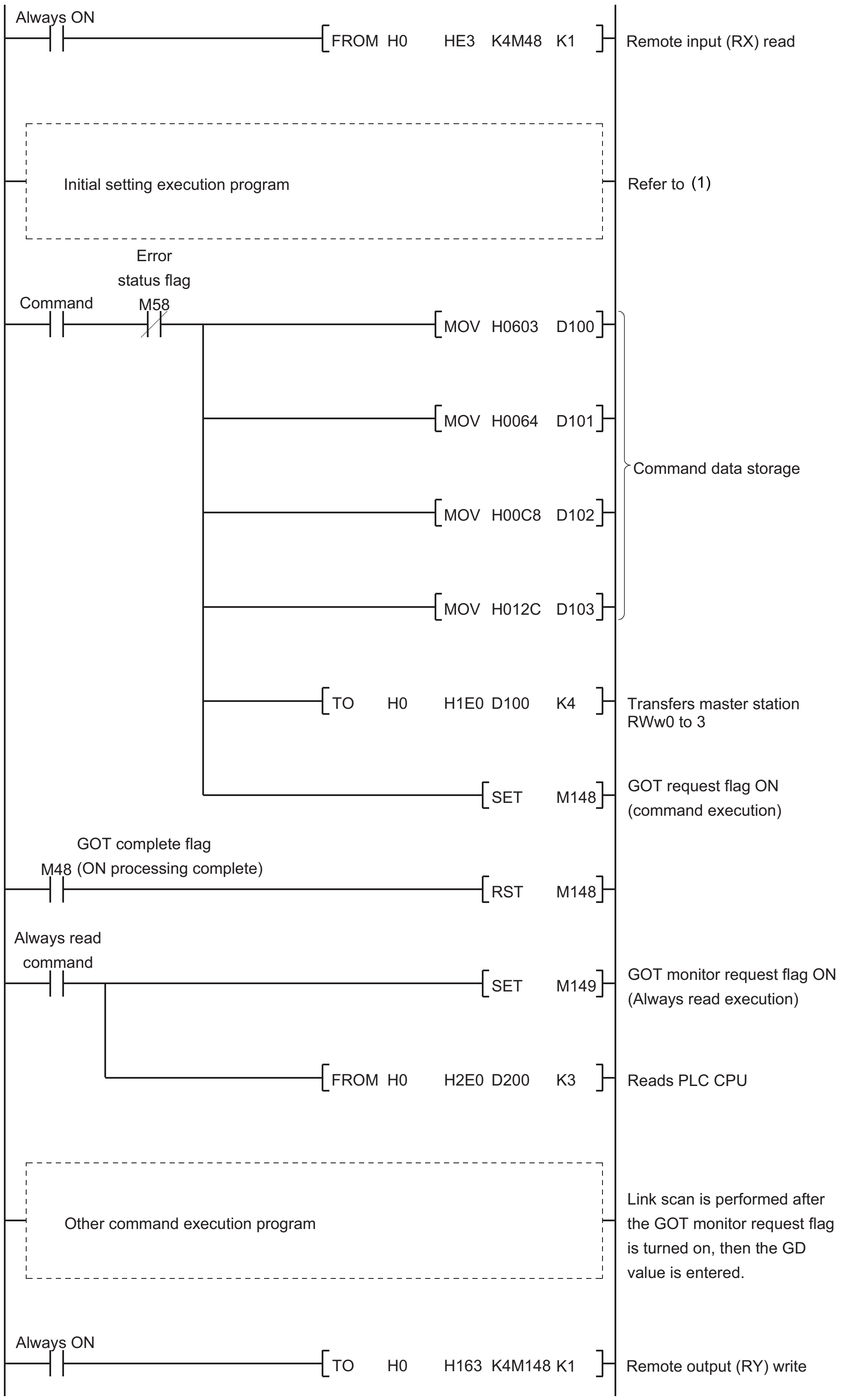
(c) Communication overview

When always reading the data in the GOT internal device GD100, 200, and 300 to the remote register.



1) Store the monitor register command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and store the command data in the GOT remote register (RWw).
   (Command execution)
   The GOT complete flag turns on when the command processing is complete.
3) By turning on the GOT monitor request flag, always read the data in the GD100, 200 and 300 to the remote register (RWr).
4) By link scan, the read data is stored in the master station's remote register (RWr).
5) Read the data to the PLC CPU using the FROM instruction, etc.

(d) Sequence program example



(8) Always write register command

(a) Always write register command
This is a command to always register the device number of the GOT internal device that performs the remote register data write.
After executing the always write register command, always execute the always write request command.

(b) Command format

Transfer Direction	Addresses	Write data
Master station → GOT	RWwm (Higher byte)	8: Always write register setting
	RWwm (Lower byte)	When the occupied points are 2 stations 1 to 6 :Points to be written to the GOT internal device When the occupied points are 4 stations 1 to 14 :Points to be written to the GOT internal device
	RWwm + 1 to RWwn + E	0 to 1023 : GOT internal device numbers to be registered (Storage for the setting mentioned above)
	RWwn + F	---
GOT → Master station	RWrn to RWrn + F	---

(c) Communication overview
Refer to (9).

(9) Always write request command

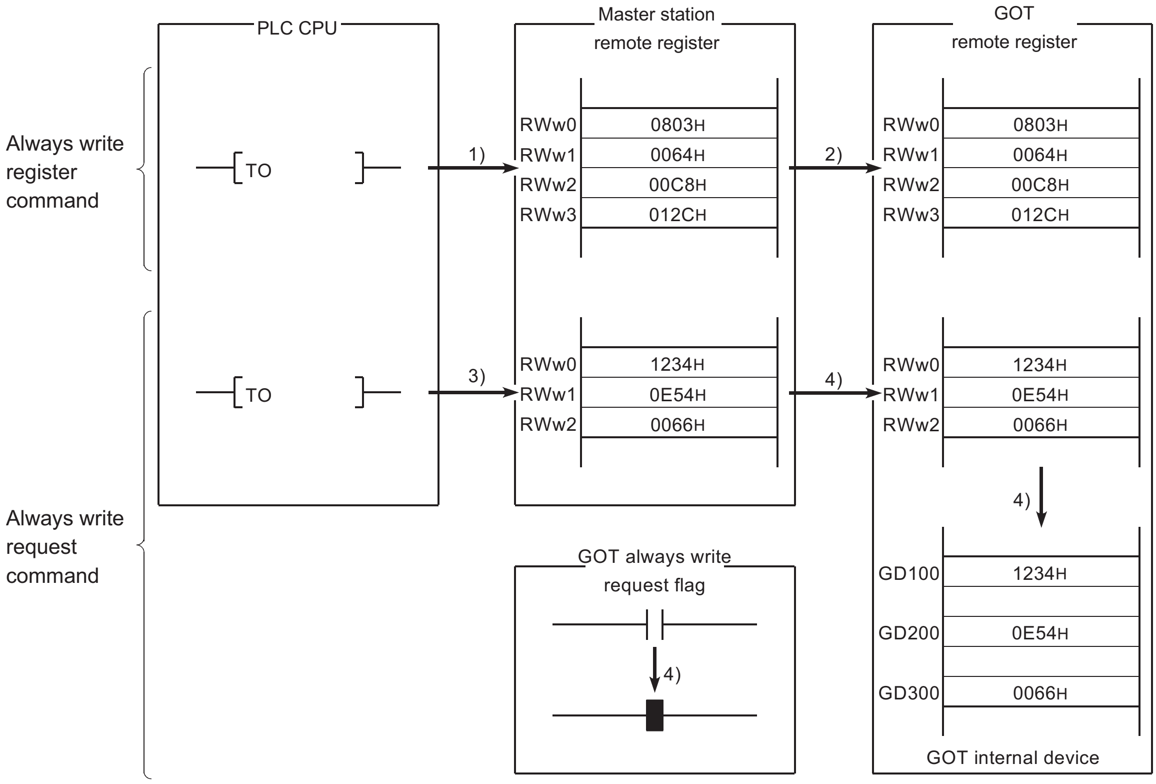
(a) Always write request command
This is a command to always write data in the remote register to the GOT internal device registered by executing the always write register command.
Execute the always write request command after executing the always write register command.

(b) Command format

Transfer Direction	Addresses	Write data
Master station → GOT	RWwm to RWwn + D	Store write data for the number of points registered with the always write register command
	RWwn + E, RWwn + F	---
GOT → Master station	RWrn to RWrn + F	---

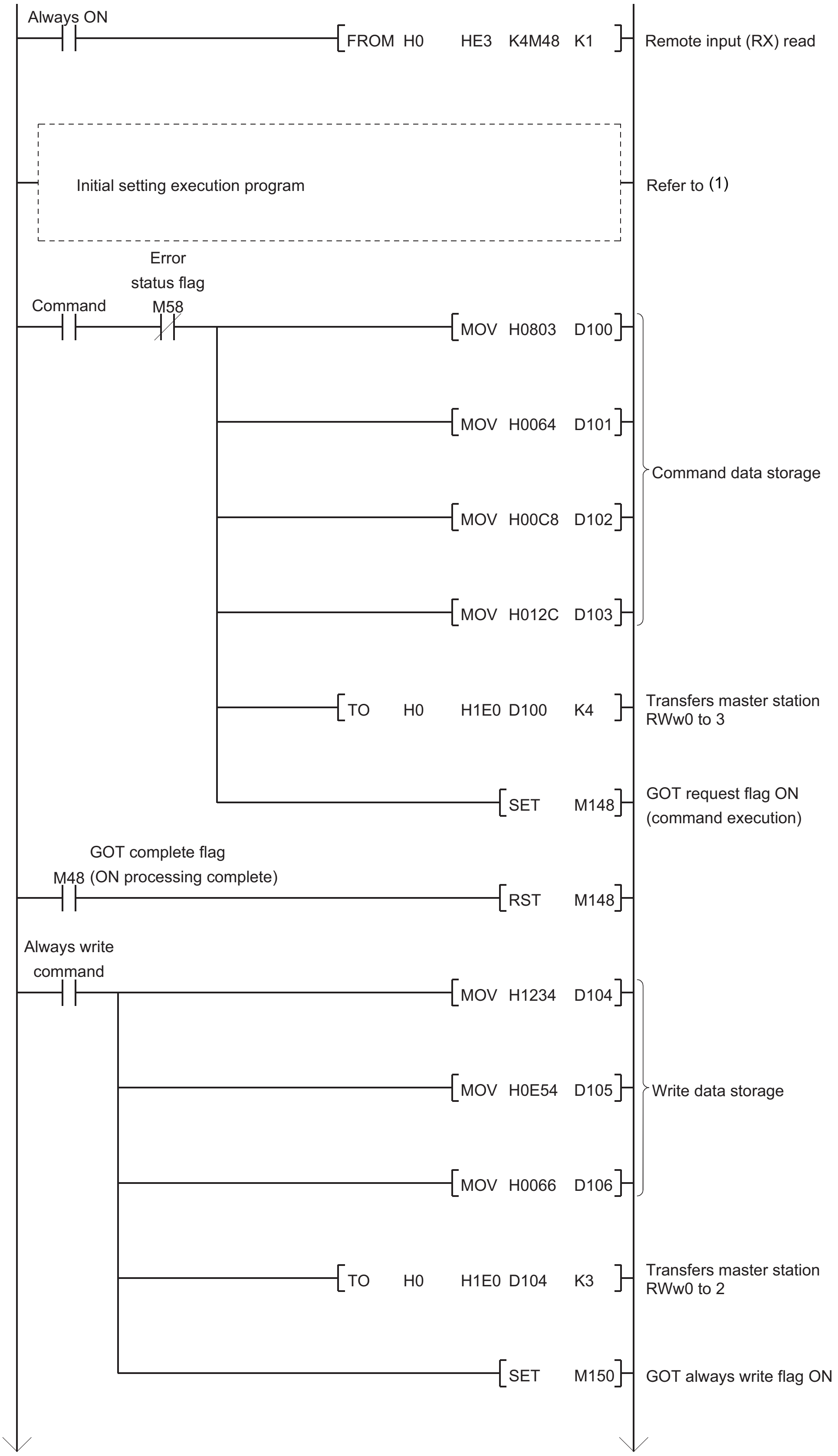
(c) Communication overview

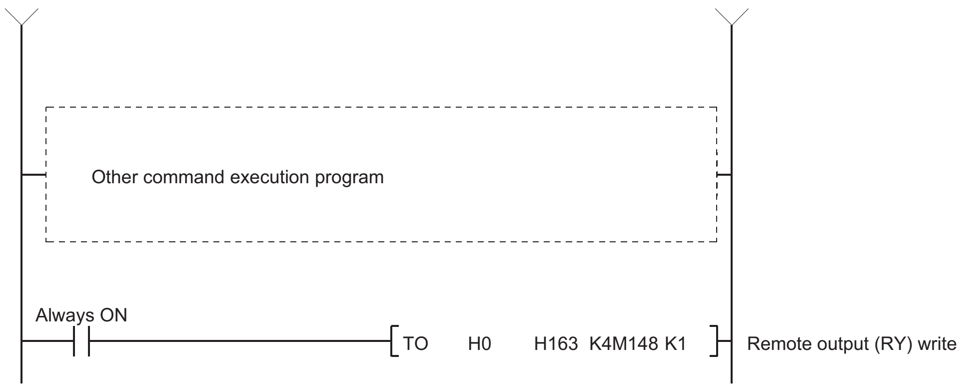
When always writing data in the remote register to the GOT internal device GD100, 110 and 120.



1) Store the always write register command data in the master station's remote register (RWw).
2) Turn on the GOT request flag, and store the command data in the GOT remote register (RWw).
   (Command execution)
   The GOT complete flag turns on when the command processing is complete.
3) Store the always write data in the master station's remote register (RWw).
4) Always write the write data to the GOT internal device GD100, 200, and 300 by turning on the GOT always write request flag.

(d) Sequence program example



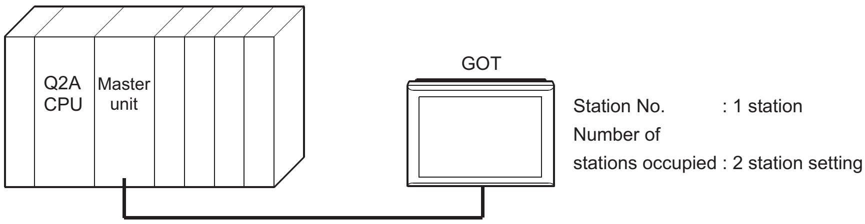

Other command execution program
Always ON
TO H0 H163 K4M148 K1
Remote output (RY) write

9.3 Sequence Program Example

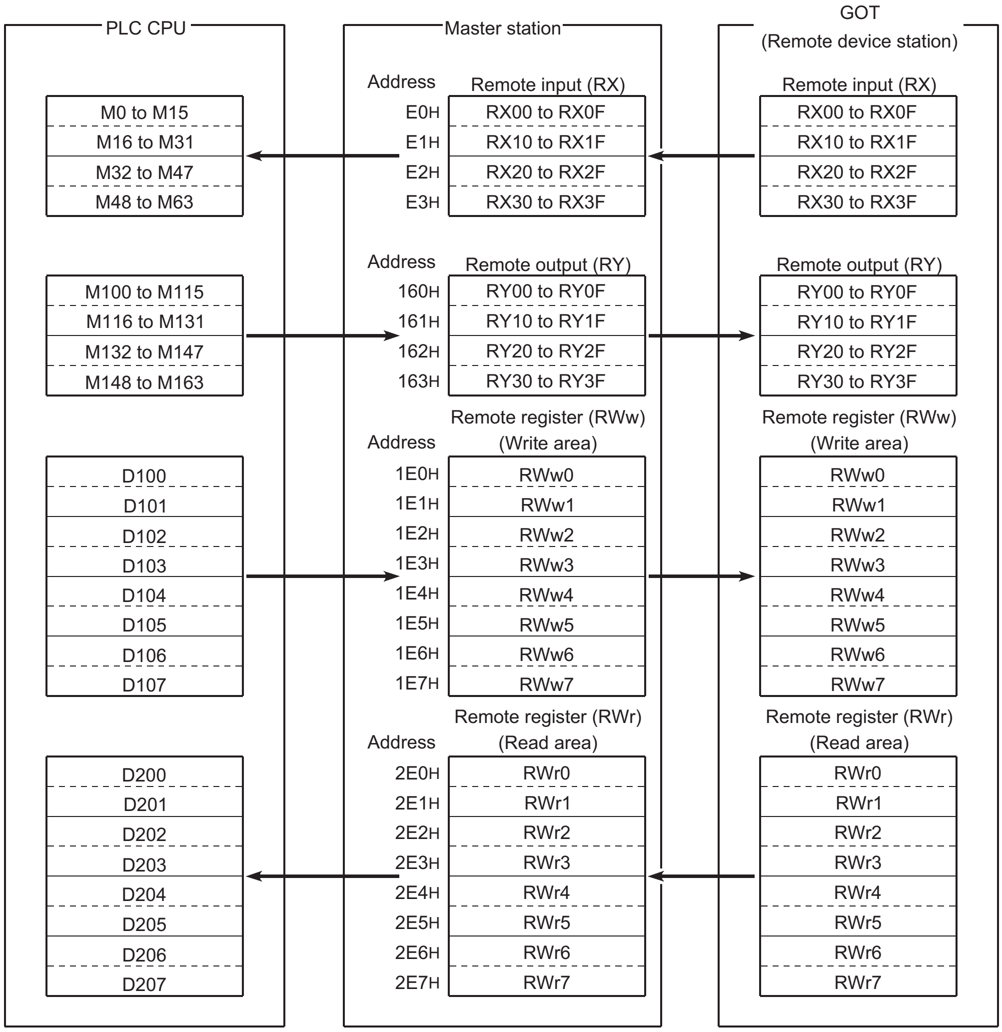
9.3.1 Sequence program example when monitoring using the normal monitor method

The following system example is used to describe the sequence program in this section. Refer to the CC-Link Master Module User's Manual regarding the sequence program for the entire CC-Link system.

(1) System configuration of the program example



(2) Relationship among the PLC CPU, master station buffer memory, and remote device stations.

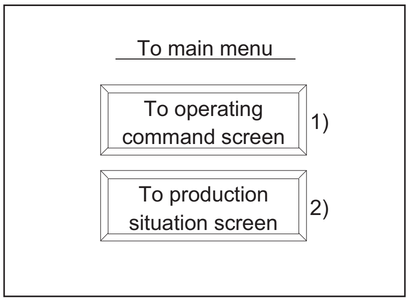


(3) Examples of created monitor screen data
The following are the monitor screen data examples of the A970GOT + A8GT-J61BT15 (remote device station).
Refer to the GT Designer2 Version2 Reference Manual for the way to set each object function.

(a) Common setting

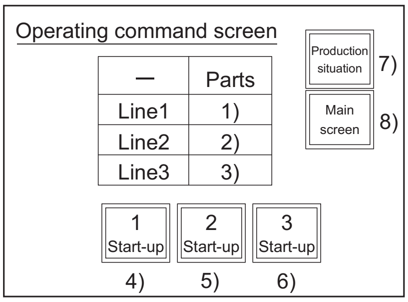
Setting Item	PLC Type	GOT Type	Base Screen Switching Device
Settings	MELSEC-QnA,Q	A97*GOT/GT SoftGOT	Ww0

(b) Base screen No. 1 settings



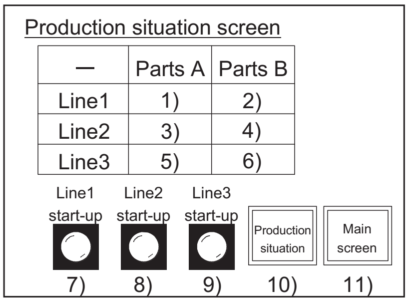
No.	Object Function to Be Set	Setting	Operation
1)	Touch key function	Bit SET: X1 (RX1) to M1 Bit RST: X0 (RX0) to M0 Bit RST: X2 (RX2) to M2	Settings made to switch to base screen No. 2.
2)	Touch key function	Bit SET: X2 (RX2) to M2 Bit RST: X0 (RX0) to M0 Bit RST: X1 (RX1) to M1	Settings made to switch to base screen No. 3.

(c) Base screen No. 2 settings



No.	Object Function to Be Set	Setting	Operation
1)	Numerical input function	Write device Wr0 to D200	Settings made to store the values entered with the numerical input function into D200-D202.
2)	Numerical input function	Write device Wr1 to D201	
3)	Numerical input function	Write device Wr2 to D202	
4)	Touch key function	Bit alternate: X3 (RX3) to M3	Settings made to store the ON/OFF information entered with the touch key function into M200-M201.
5)	Touch key function	Bit alternate: X4 (RX4) to M4	
6)	Touch key function	Bit alternate: X5 (RX5) to M5	
7)	Touch key function	Bit SET: X2 (RX2) to M2 Bit RST: X0 (RX0) to M0 Bit RST: X1 (RX1) to M1	Settings made to switch to base screen No. 3.
8)	Touch key function	Bit SET: X0 (RX0) to M0 Bit RST: X1 (RX1) to M1 Bit RST: X2 (RX2) to M2	Settings made to switch to base screen No. 1.

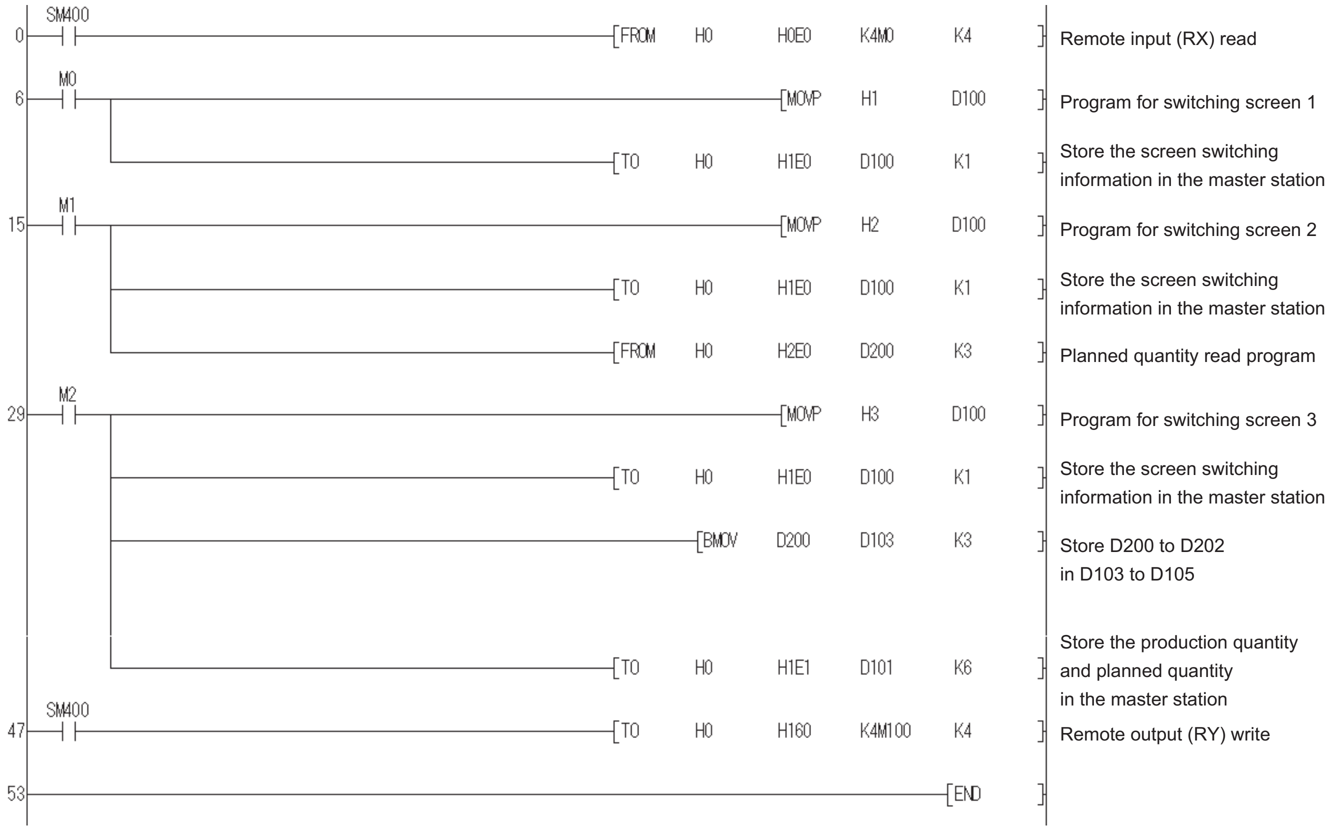
(d) Base screen No. 3 settings



No.	Object Function to Be Set	Setting	Operation
1)	Numerical display function	Monitor device: Ww1 (RWw1) from D101	Settings made to display the values stored in D101-D106.
2)	Numerical display function	Monitor device: Ww2 (RWw2) from D102	
3)	Numerical display function	Monitor device: Ww3 (RWw3) from D103	
4)	Touch key function	Monitor device: Ww4 (RWw4) from D104	
5)	Touch key function	Monitor device: Ww5 (RWw5) from D105	
6)	Touch key function	Monitor device: Ww6 (RWw6) from D106	
7)	Lamp display function	Monitor device: Y0 (RY0) from M100	Settings made to display on the GOT the line operating statuses (ON/OFF) output to the remote I/O station.
8)	Lamp display function	Monitor device: Y1 (RY1) from M101	
9)	Lamp display function	Monitor device: Y2 (RY2) from M102	
10)	Touch key function	Bit SET: X1 (RX1) to M1 Bit RST: X0 (RX0) to M0 Bit RST: X2 (RX2) to M2	Settings made to switch to base screen No. 2.
11)	Touch key function	Bit SET: X0 (RX0) to M0 Bit RST: X1 (RX1) to M1 Bit RST: X2 (RX2) to M2	Settings made to switch to base screen No. 1.

(e) Sequence program example

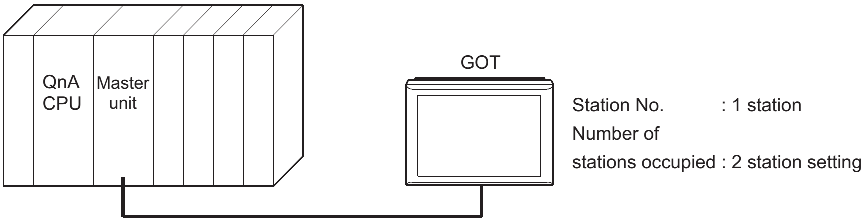
Refer to the Master Module User's Manual about the program for setting CC-Link parameter.



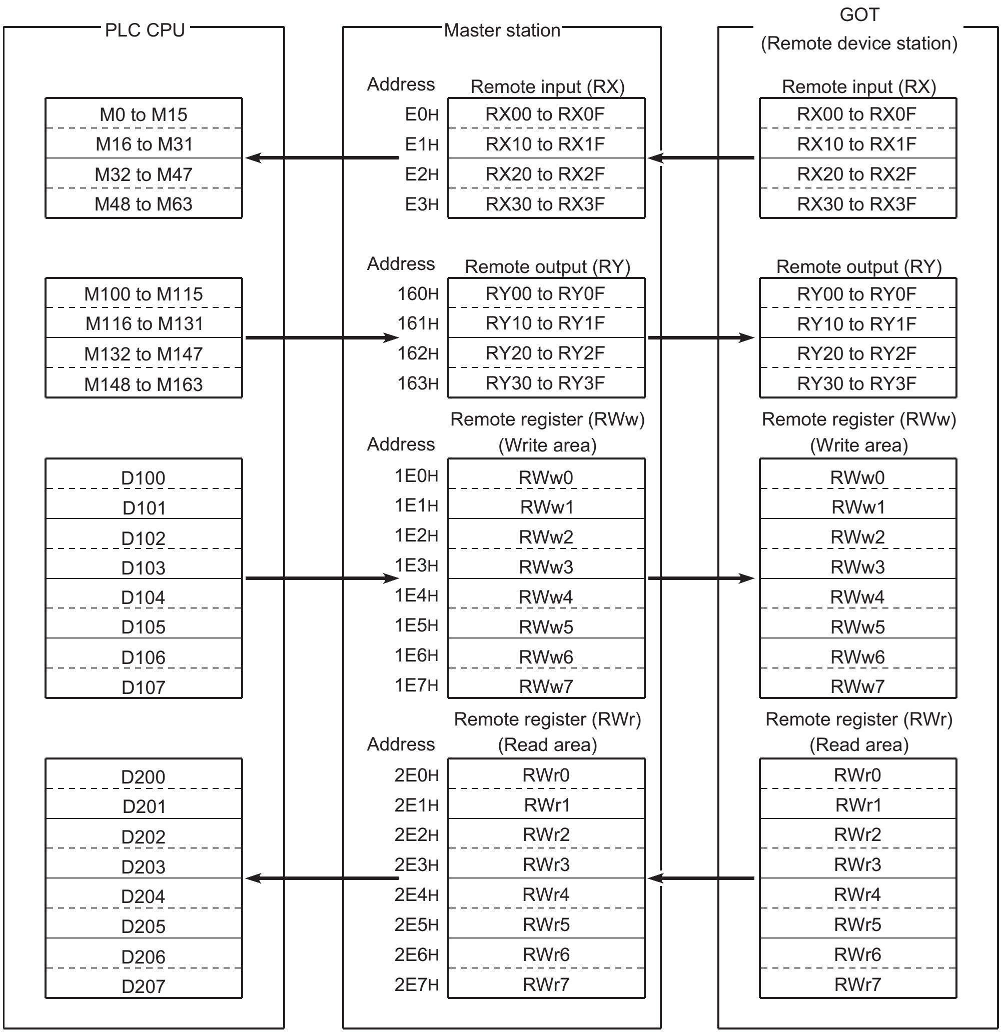
9.3.2 Sequence program example when monitoring using dedicated command monitor method

The following system example is used to describe the sequence program in this section. Refer to the CC-Link Master Module User's Manual regarding the sequence program for the entire CC-Link system.

(1) System configuration of the program example



(2) Relationship among the PLC CPU, master station buffer memory, and remote device stations

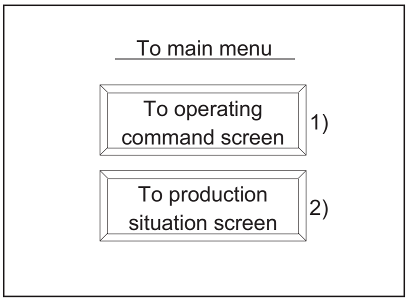


(3) Examples of created monitor screen data
The following are the monitor screen data examples of the A970GOT+A8GT-J61BT15 (remote device station).
Refer to the GT Designer2 Version2 Reference Manual for the way to set each object function.

(a) Common setting

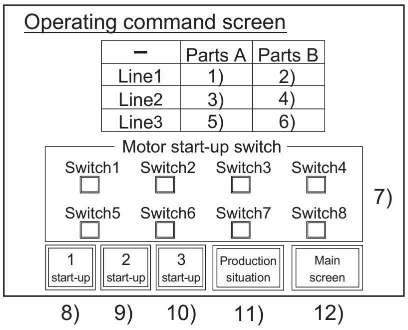
Setting Item	PLC Type	GOT Type	Base Screen Switching Device
Settings	MELSEC-QnA,Q	A97*GOT/GT SoftGOT	GD100

(b) Base screen No. 1 settings



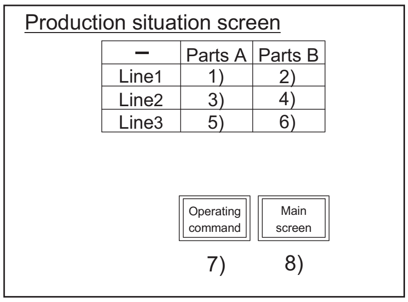
No.	Object Function to Be Set	Setting	Operation
1)	Touch key function	Base screen switching fixed value: 2	Setting made to switch to base screen No. 2.
2)	Touch key function	Base screen switching fixed value: 3	Setting made to switch to base screen No. 3.

(c) Base screen No. 3 settings



No.	Object Function to Be Set	Setting	Operation
1)	Numerical input function	Monitor device: GD200	Settings made to store the values entered with the numerical input function into GD200-GD205.
2)	Numerical input function	Monitor device: GD201	
3)	Numerical input function	Monitor device: GD202	
4)	Numerical input function	Monitor device: GD203	
5)	Numerical input function	Monitor device: GD204	
6)	Numerical input function	Monitor device: GD205	
7)	Touch key function (Switches 1 to 8)	Switch 1: GD250 b0 Switch 2: GD250 b1 Switch 3: GD250 b2 Switch 4: GD250 b3 Switch 5: GD250 b4 Switch 6: GD250 b5 Switch 7: GD250 b6 Switch 8: GD250 b7	Settings made to store the ON/OFF information entered with the touch key function into the specified bits (b0 to b7) of GD250.
8)	Touch key function	Bit alternate: GD255 b0	Settings made to store the ON/OFF information entered with the touch key function into the specified bits (b0 to b2) of GD255.
9)	Touch key function	Bit alternate: GD255 b1	
10)	Touch key function	Bit alternate: GD255 b2	
11)	Touch key function	Base screen switching fixed value: 3	Setting made to switch to base screen No. 3.
12)	Touch key function	Base screen switching fixed value: 1	Setting made to switch to base screen No. 1.

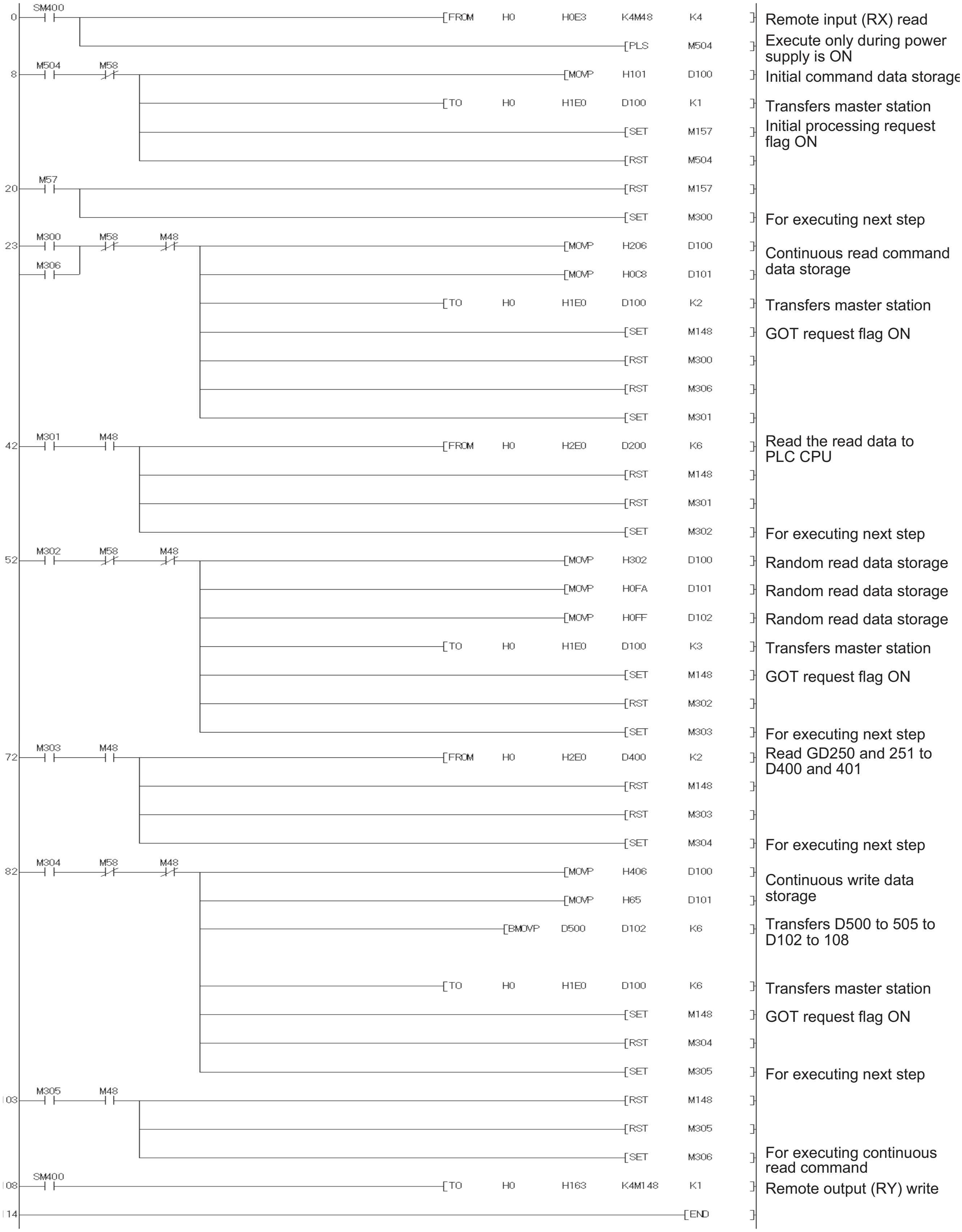
(d) Base screen No. 3 settings



No.	Object Function to Be Set	Setting	Operation
1)	Numerical display function	Monitor device: GD101	Settings made to display the values stored in GD101-GD106.
2)	Numerical display function	Monitor device: GD102	
3)	Numerical display function	Monitor device: GD103	
4)	Numerical display function	Monitor device: GD104	
5)	Numerical display function	Monitor device: GD105	
6)	Numerical display function	Monitor device: GD106	
7)	Touch key function	Base screen switching fixed value: 2	Setting made to switch to base screen No. 2.
8)	Touch key function	Base screen switching fixed value: 1	Setting made to switch to base screen No. 1.

(e) Sequence program example

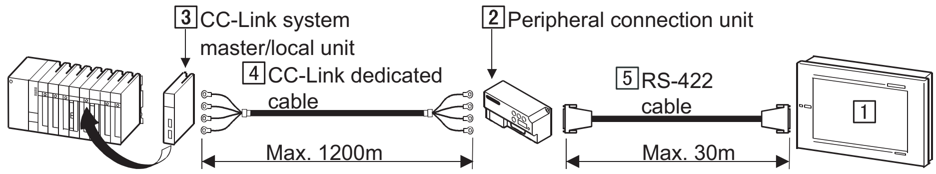
Refer to the Master Module User's Manual about the program for setting CC-Link parameter.



10 CC-LINK CONNECTION (VIA G4)

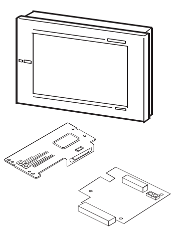
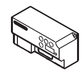
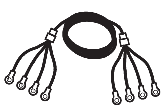
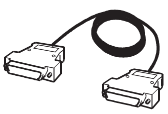
10.1 System Configuration

(1) System configuration and connection conditions
The following system configuration and connection conditions assume CC-Link connection (via G4) with the QCPU (Q mode).
The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance *1	
1 GOT	Within 1230m	

*1 The installation distance (maximum transmission distance) varies with the transmission speed of the CC-Link system. For details, refer to the CC-Link System Master/Local Unit User's Manual (Details).

(2) System equipment
The following table indicates the system equipment needed for connection with the QCPU (Q mode).

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	CC-Link connected (via G4) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (With built-in communication interface)	---
	$\boxed{2}$	Peripheral connection unit	AJ65BT-G4-S3	
	$\boxed{3}$	CC-Link system master/local unit (Q series)	QJ61BT11, QJ61BT11N *1	
	$\boxed{4}$	CC-Link dedicated cable	Refer to the user's manual of the CC-Link master/local unit used.	
	$\boxed{5}$	RS-422 cable between [Peripheral connection unit] and [GOT]	AC30R4-25P(3.0m), AC100R4-25P(10.0m), AC300R4-25P(30.0m)	

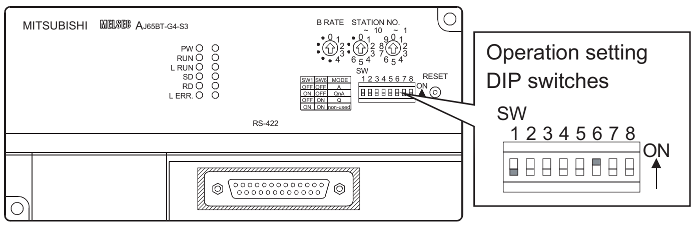
*1 In the CC-Link parameter setting of GX Developer, set the station corresponding to the peripheral device connection module as the "Ver. 1 intelligent device station".

10.2 Initial Settings

The following settings must be made for monitoring by connection of the GOT and G4.

(1) Settings to be made as CC-Link system
When the GOT is used for monitoring, the CC-Link system integrated with the G4 must have been established.
For the way to make settings as the CC-Link system, refer to the user's manual of the master unit used and the G4 User's Manual.

(2) G4 settings
When the GOT is used for monitoring, the operation mode must be set to the "Q mode" with the operation setting switches of the G4.
Refer to the G4 User's Manual for details of the setting method.



Remark

The G4 is a unit designed to integrate a GPP function peripheral device onto the CC-Link system.

Hence, the user's manual gives detailed explanation of how to make settings to connect the GPP function peripheral device.

Since the setting method for other than the operation mode is similar to that for use by connection of the GOT, read the description as appropriate.

11 ETHERNET CONNECTION

Point

(1) Depending on the hardware version of the Ethernet communication unit (A9GT-J71E71-T), the compatible drawing software is restricted for use.
Use drawing software that is compatible with the hardware version of the Ethernet communication unit you use.

(a) Restrictions on drawing software

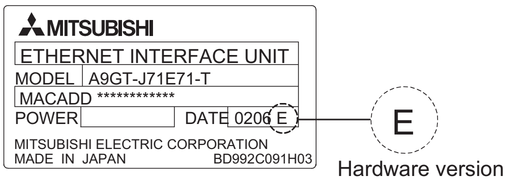
The following table shows the drawing software version compatible with the Ethernet communication unit hardware version.

Software Version	Hardware Version of Ethernet Communication Module	
	Version D (May, 2002) or earlier	Version E (June, 2002) or later
GT Works Version5 GT Designer Version5	Version P to Y	Version 26C or later
GT Works2 Version1 GT Designer2 Version1	Version 00A or later	

When using an Ethernet communication unit of the Version E or later on a GOT that has been created with the GT Works Version5/GT Designer Version5 P to Y, install all OS stored in the GT Works2 Version2/GT Designer2 Version2 again.

(b) How to confirm hardware version

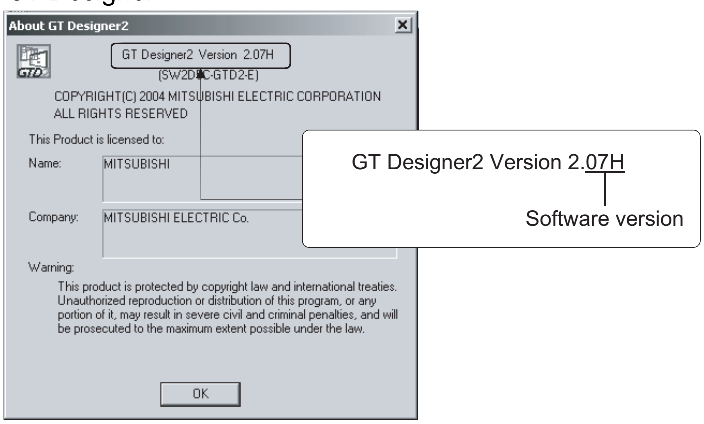
Confirm the hardware version of the Ethernet communication module on the rating plate of the product.



Rating plate

(c) How to confirm software version

Confirm the software version in the [Help] - [About] menu of GT Designer2 or GT Designer.

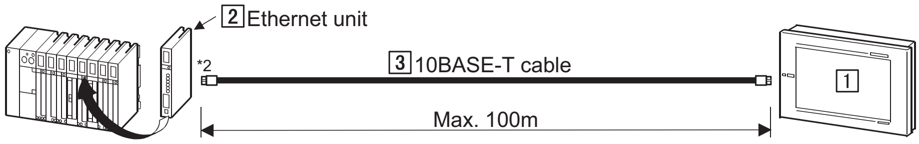


*Shown above is the screen of GT Designer2.

(2) When using the CNC monitor function, use the Ethernet module (A9GT-J71E71-T) whose hardware version is Version E or later.
Version D or earlier supports only the normal monitor of the MELDAS C6/C64.

11.1 System Configuration

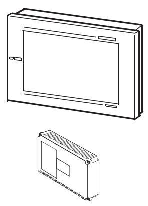
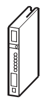
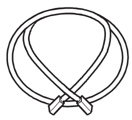
(1) System configuration and connection conditions
The following system configuration and connection conditions assume Ethernet connection with the PLC CPU.
The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected *1 *4	Installation distance *1	
128 GOTs (16 GOTs or less recommended)	Within 100m *5 (Longest)	

*1 Depends on the specifications of the Ethernet network system where the GOT is connected.
For details, refer to the manual of the Ethernet unit used.
*2 Where the 10BASE-T cable is connected depends on the configuration of the Ethernet network system used. Connect the cable to the system equipment, e.g. the Ethernet unit, hub or transceiver, according to the Ethernet network system used. Use a cable, connector, and hub that are compliant with IEEE802.3 10BASE-T standard.
*3 When making connection with the MELDAS C6/C64, refer to "MELDAS C6/C64/C64T CONNECTION AND MAINTENANCE MANUAL (BNP-B2255)" or "MELDAS C6/C64 NETWORK INSTRUCTION MANUAL (BNP-B2372)" for the MELDAS C6/C64 side connection.
*4 When multiple network devices (including the GOT) are connected to the same segment, the performance of communication between the GOT and PLC may decrease since the network load increases.
The communication performance may be improved by taking the following measures.
- Use the switching hub.
- Use high-speed 100BASE-TX (100Mbps) for the PLC and other devices (except the GOT).
- Reduce the number of GOT monitor points.

*5 This is the cable length between the hub and a node.

(2) System equipment
The following table indicates the system equipment needed for connection with the PLC CPU.

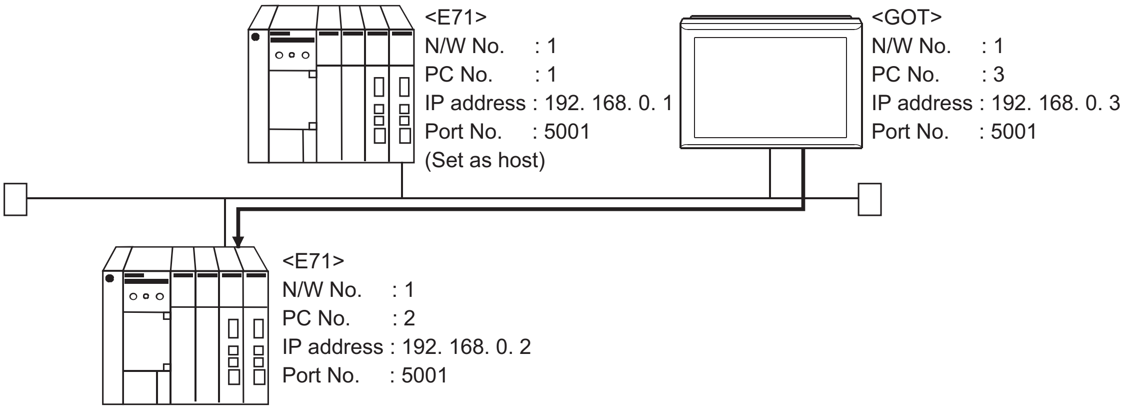
Image	No.	Application	Type	
			GOT unit	Ethernet communication unit
	1	Ethernet-connected GOT	A985GOT(-V), A97*GOT, A960GOT, A956WGOT, A956GOT	A9GT-J71E71-T
	2	Ethernet unit (Q series compatible E71)	QJ71E71, QJ71E71-B2, QJ71E71-B5, QJ71E71-100,	
		Ethernet unit (QE71)	AJ71QE71, AJ71QE71-B5, AJ71QE71N-B2, AJ71QE71N-B5, AJ71QE71N-T, AJ71QE71N-B5T, AJ71QE71N3-T, A1SJ71QE71-B2, A1SJ71QE71-B5, A1SJ71QE71N-B2, A1SJ71QE71N-B5, A1SJ71QE71N-T, A1SJ71QE71N-B5,A1SJ71QE71N3-T	
		Ethernet unit (E71)	AJ71E71-S3,AJ71E71N-B2, AJ71E71N-B5, AJ71E71N-T, AJ71E71N-B5T, AJ71E71N3-T, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, A1SJ71E71N-B2, A1SJ71E71N-B5, A1SJ71E71N-T, A1SJ71E71N-B5T, A1SJ71E71N3-T	
		Ethernet unit (MELDAS C6/C64)	FCU-EX875	
	3	10BASE-T cable*1	Twisted pair cable (UTP)	

*1 The 10BASE-T cable that may be connected to the GOT is a twisted pair cable (UTP).
For details of the cable, refer to the manual of the Ethernet unit used.

11.2 How to Set Up the Ethernet Connection

11.2.1 When using E71

For communication from GOT via the E71, there are the following setting items and precautions. The explanations in this section will be made for the following system configuration.



Point

- Refer to item (5) in this section for how to set up the Ethernet unit, network number of GOT, personal computer number, IP address, and port number.
- When connecting multiple GOTs in the Ethernet network, set different PLC No. for each GOT. (Refer to Section 11.2.6)

Procedure for communications via E71

Restrictions

(a) Communications cannot be made via the MELSECNET/10, MELSECNET(II), MELSECNET/B

(1) Compatible models
For compatible models, refer to Section 11.1.

(2) E71 switch settings

	AJ71E71-S3 AJ71E71N-B2/-B5/-T-B5T A1SJ71E71N-B2/-B5/-T/B5T AJ71E71N3-T A1SJ71E71N3-T	A1SJ71E71-B2-S3, A1SJ71E71-B5-S3
Operation mode setting switch	0 (online mode)	0 (online mode)
Communications condition setting switch	SW2 OFF (BIN code)	SW2 OFF (BIN code)
CPU communications timing setting switch	SW7 ON (online program correction enabled)	SW3 ON (online program correction enabled)

(3) Sequence programs

Initial processing and communication line open processing sequence programs are needed.
Necessary communication parameters and sequence program examples will be given below.

(a) Communication parameters

The following are the communication parameter setting examples.

Setting item	Set value
Application setting*1	100H
IP address of E71	192.168.0.2
E71 port number	5001
IP address of other node	FFFFFFFF
Other node port number	FFFF*2

*1 Value specified for application setting
The user can change the settings of 1), 2) and 3).
4), 5) and 6) are fixed settings.

The following shows details of the application setting.

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
6)						5)	4)	3)						2)	1)

1): Fixed buffer application
0: For send/no communication
1: For receive

2): Existence check
0: No
1: Yes

3): Paring open
0: No
1: Yes

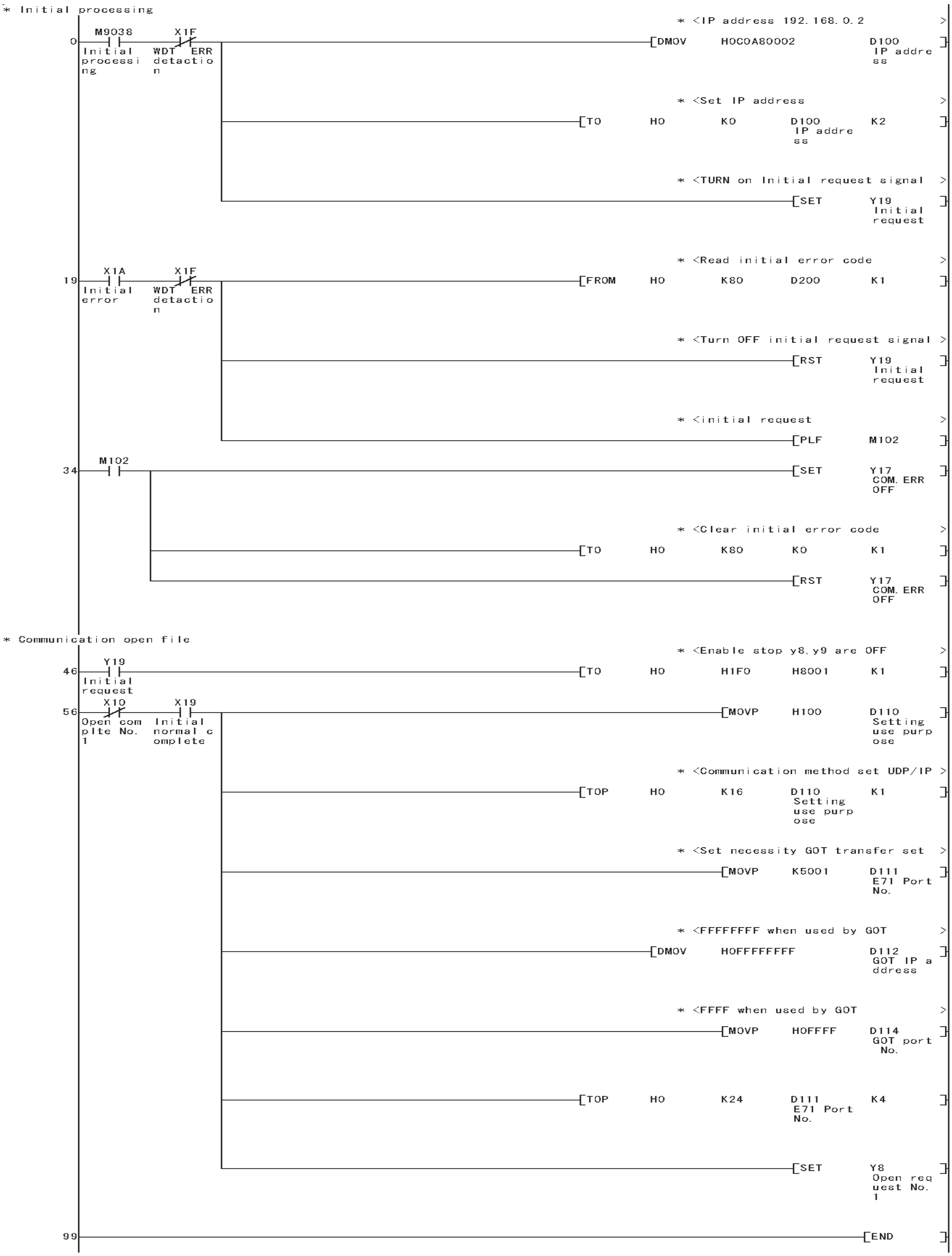
4): Communication system (Set to 1: UDP/IP)

5): Fixed buffer communication (Set to 0: With procedure)
0: With procedure
1: Without procedure

6): Open system (Set to 00: Active, UDP/IP)

*2 The other node port number is a fixed setting.
The user can change the other settings.

(b) Sequence program



In a communications-ready status, the E71's RUN LED comes on and RDY LED flickers.

(4) Communications check
When the preparations for communications via the E71 are complete, execute the Ping command in the MS prompt of Windows®.

When connections are OK
C:\>ping 192. 168. 0. 2
Reply from 192. 168. 0. 2:bytes=32 time<10ms TTL=32

When connections are not good
C:\>ping 192. 168. 0. 2
Request timed out.

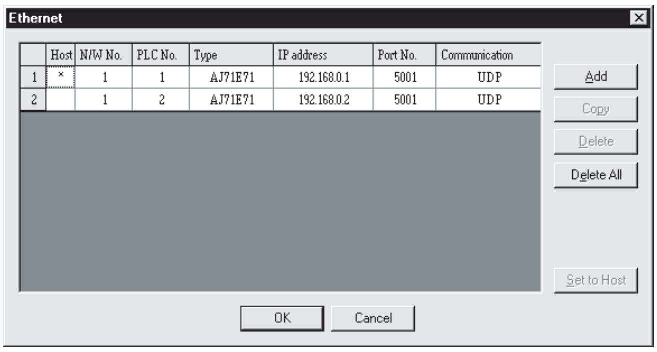
If ping does not pass through, check the cable and unit connections and Windows® side IP address and other settings.

Point

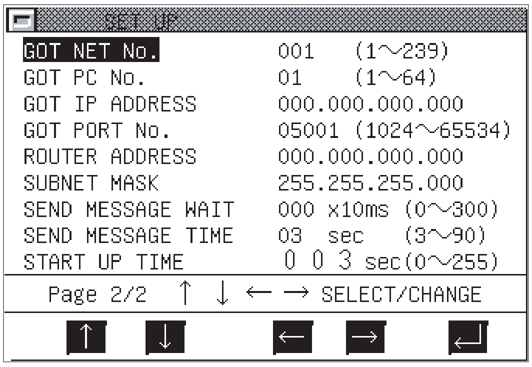
It is also possible to perform the Ping test using GX Developer Version6 (SW6D5C-GPPW 6.01B or later).
Refer to the Operating Manual of GX Developer for more details on the Ping test.

(5) Settings with GT Designer2 and GOT

(a) Perform the settings of the E71 to be monitored in "Ethernet Setting" of GT Designer2.
Set the IP address assigned to the E71 to be connected to.
Set the port number of the E71 to be connected to. It has been defined in a sequence program.
Refer to Section 11.2.5 for Ethernet setting.

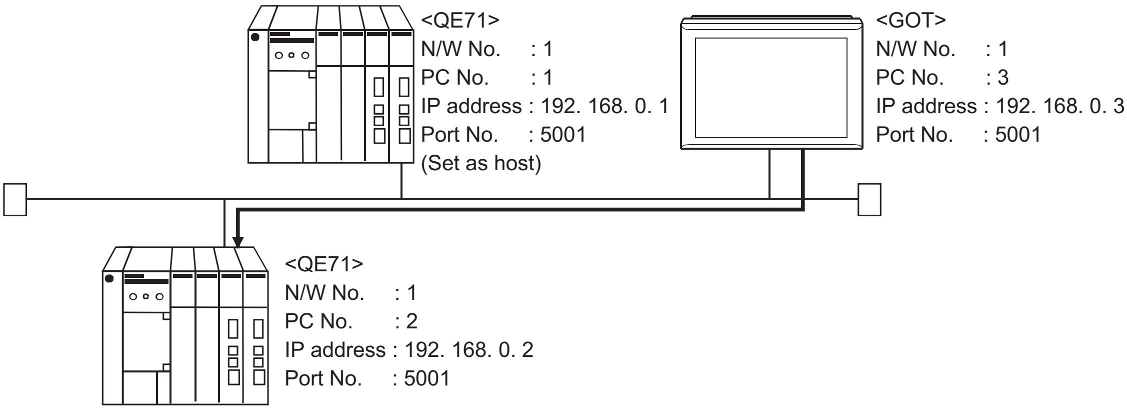


(b) Set the GOT using "Setup" of the GOT.
Refer to Section 11.2.6 for details of the setting.



11.2.2 When using QE71

For communication from GX Developer via the QE71, there are the following setting items and precautions.
The explanations in this section will be made for the following system configuration.



Point

- Refer to item (5) in this section for how to set up the Ethernet unit, network number of GOT, personal computer number, IP address, and port number.
- When connecting multiple GOTs in the Ethernet network, set different PLC No. for each GOT. (Refer to Section 11.2.6)

Procedure for communications via QE71

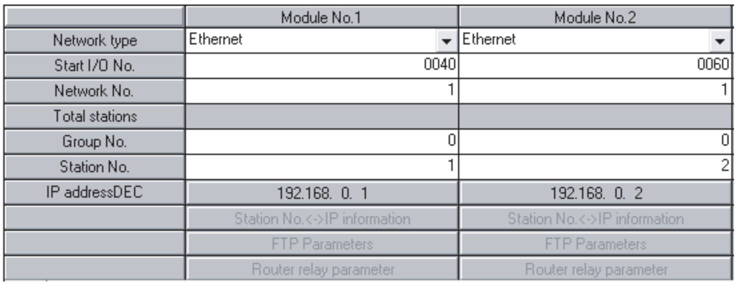
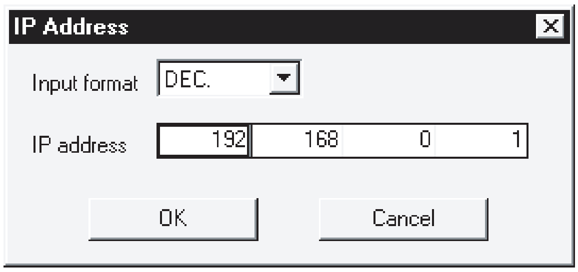
Restrictions

(a) Communications cannot be made via the MELSECNET/10, MELSECNET(II), MELSECNET/B.

(1) Compatible models
Use the QE71 and PLC whose function version is B or later.
For compatible models, refer to Section 11.1.

(2) QE71 switch settings
Operation mode setting switch........................... 0 (online)
Automatic start mode ....SW3 ON
When SW3 is ON, initial processing is performed independently of Y19 (initial processing request).
Communications are also enabled if the CPU module is stopped.
For the way to perform initial processing using Y19 (initial processing request), refer to the AJ71QE71 User's Manual and create an initial processing program.

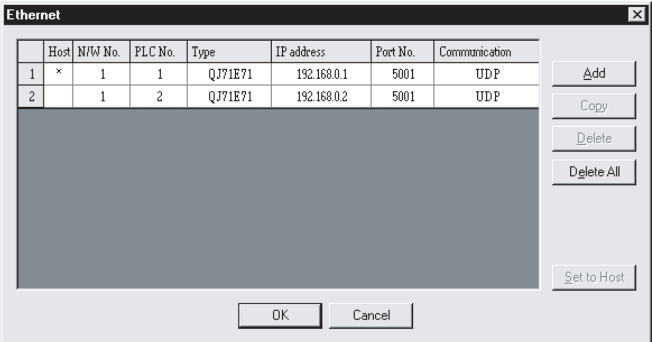
(3) Parameter setting (Setting with GX Developer)
On the MELSECNET/Ethernet network parameter setting screen, set the network type, starting I/O No., network No., group No., station number and IP address.

Item	Setting Screen Examples
Ethernet Parameters	
IP Address Setting	

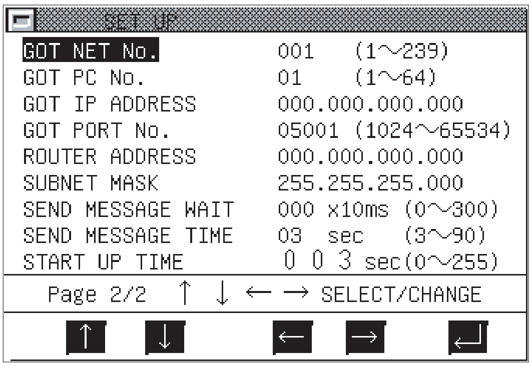
(4) Communications check
Refer to Section 11.2 (4) for communications check.

(5) Settings with GT Designer2 and GOT

(a) Perform the settings of the QE71 to be monitored in "Ethernet Setting" of GT Designer2.
Set the IP address assigned to the QE71 to be connected to.
Refer to Section 11.2.5 for Ethernet setting.

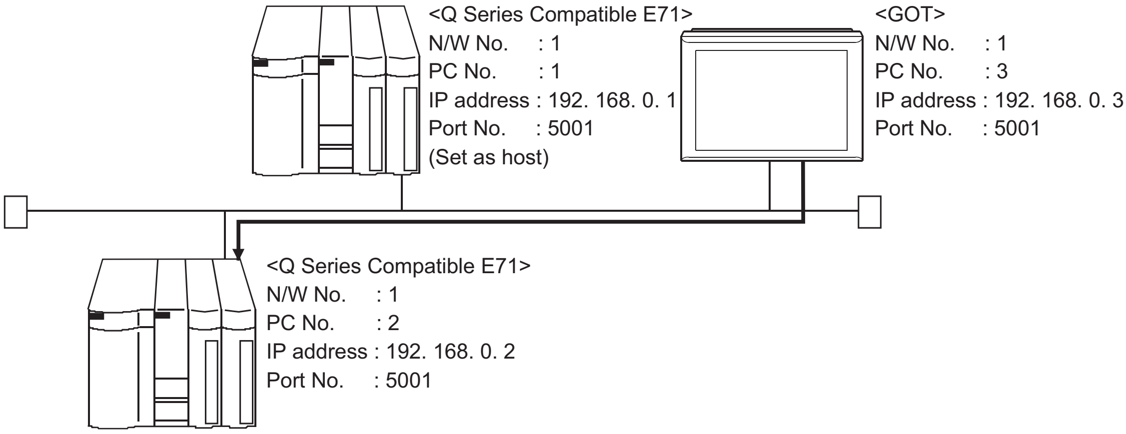


(b) Set the GOT using "Setup" of the GOT.
Refer to Section 11.2.6 for details of the setting.



11.2.3 When using Q series compatible E71

For communication from GX Developer via the Q-compatible E71, there are the following setting items and precautions. The explanations in this section will be made for the following system configuration.



Point

- Refer to item (4) in this section for how to set up the Ethernet unit, network number of GOT, personal computer number, IP address, and port number.
- When connecting multiple GOTs in the Ethernet network, set different PLC No. for each GOT. (Refer to Section 11.2.6)

Procedure for and restrictions on communications via Q-compatible E71

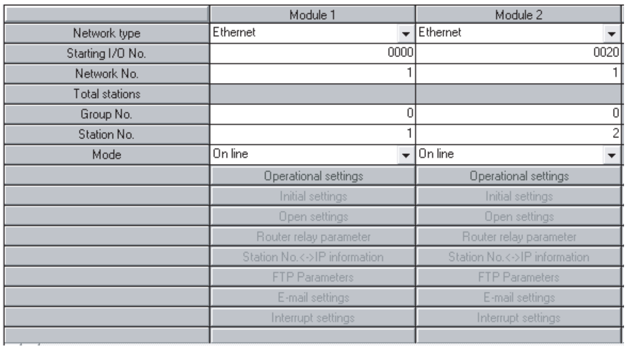
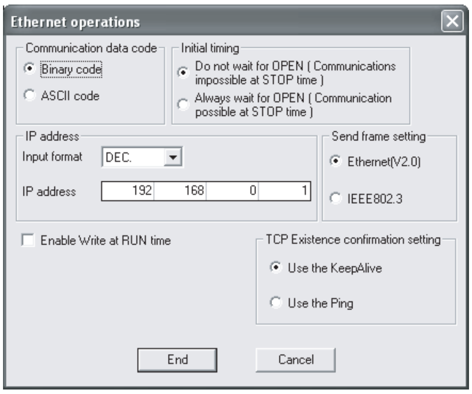
Restrictions

(a) Communications cannot be made via the MELSECNET/10, MELSECNET(II), MELSECNET/B.

(b) The communication is disabled when remote password is set for the Q series E71.
(The system alarm "402 Communication timeout." is displayed.)

(1) Compatible models
For compatible models, refer to Section 11.1.

(2) Network parameter setting (Setting with GX Developer)
Parameter setting can be made from the MELSECNET/ETHERNET network parameter setting screen.
Set the network type, first I/O No., network No., group No., station number, mode and operation setting.

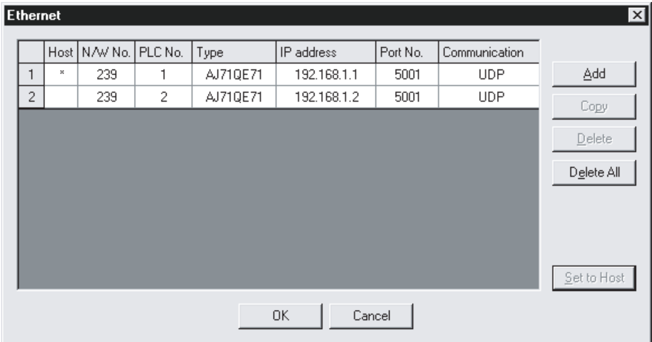
<table>
<tr><th>Item</th><th>Setting Screen Examples</th></tr>
<tr><td>Ethernet Parameters</td><td>
</td></tr>
<tr><td>Operation Setting</td><td>
</td></tr>
</table>

*: Operation settings
To make communications with GX Developer, ask the person in charge of the network about the IP address setting to confirm, and set the IP address.
Since "any" values may be set to the other items, set them according to the specifications of the other node and application connected to the Q series-compatible E71.
The following are the operation setting items that may be set to "any" values on GX Developer.
(1) Communication data code
Either "Binary code" or "ASCII code" may be specified.
(2) Initial Timing
Independently of this setting, communications can be made from GX Developer if the PLC CPU is at a STOP.
(3) Enable Write at RUN time
Independently of this setting, online program correction or device test can be performed from GX Developer.

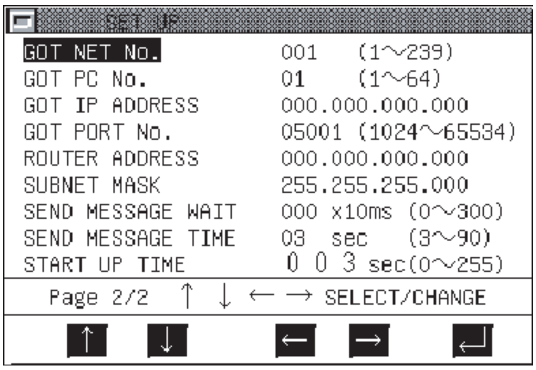
(3) Communications check
Refer to Section 11.2 (5) for communications check.

(4) Settings with GT Designer2 and GOT

(a) Perform the settings of the Q Series compatible E71 to be monitored in "Ethernet Setting" of GT Designer2.
Set the IP address assigned to the Q Series compatible E71 to be connected to.
Refer to Section 11.2.5 for Ethernet setting.

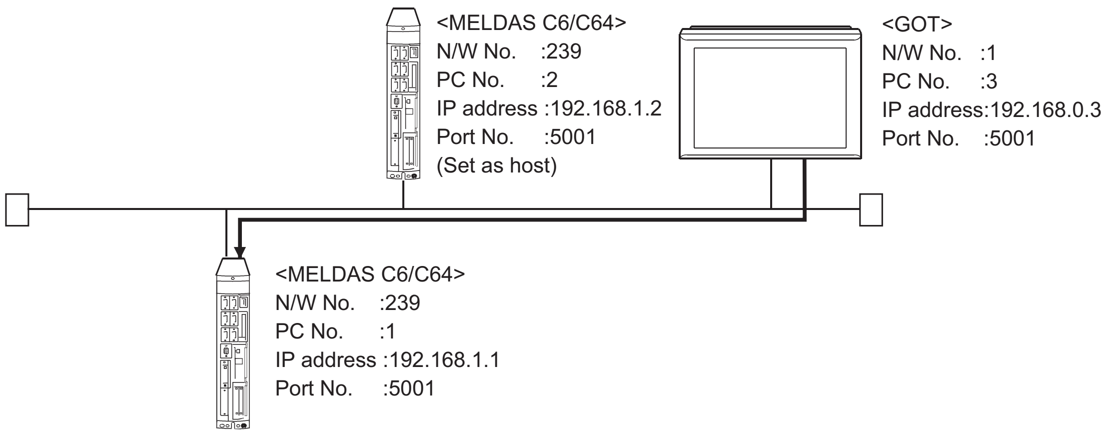


(b) Set the GOT using "Setup" of the GOT.
Refer to Section 11.2.6 for details of the setting.



11.2.4 When using MELDAS C6/C64

The following gives the setting items and precautions for communication between the GOT and MELDAS C6/C64.
The explanations in this section will be made for the following system configuration.



Point

Refer to item (2) in this section for how to set up the MELDAS C6/C64, network number of GOT, personal computer number, IP address, and port number.

Procedure for and restrictions on communication with MELDAS C6/C64

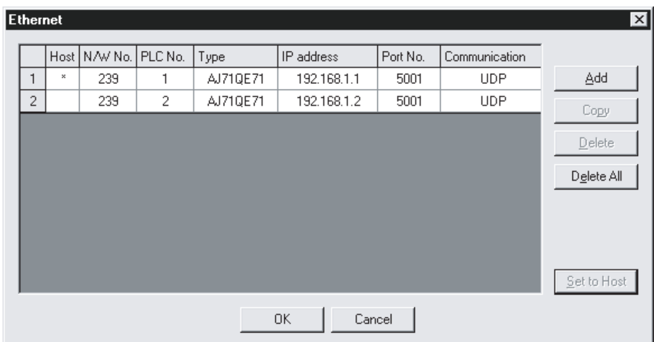
Restrictions

(a) Communications cannot be made via the MELSECNET/10, MELSECNET(II), MELSECNET/B.

(1) Compatible models
For compatible models, refer to Section 11.1.

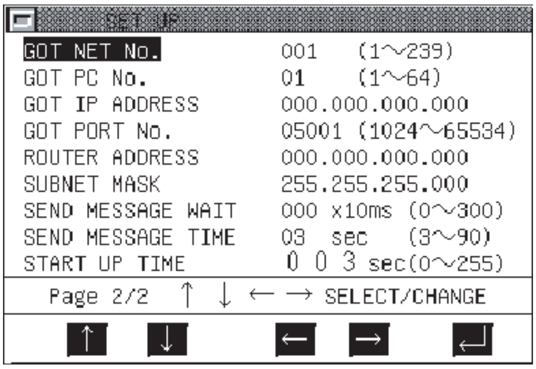
(2) Settings with GT Designer2 and GOT

(a) Perform the settings of the MELDAS C6/C64 to be monitored in "Ethernet Setting" of GT Designer2.
Set the IP address assigned to the MELDAS C6/C64 to be connected to.
Refer to Section 11.2.5 for Ethernet setting.



	Host	N/W No.	PLC No.	Type	IP address	Port No.	Communication
1	*	239	1	AJ71QE71	192.168.1.1	5001	UDP
2		239	2	AJ71QE71	192.168.1.2	5001	UDP

(b) Set the GOT using "Setup" of the GOT.
Refer to Section 11.2.6 for details of the setting.



11.2.5 Setting on GT Designer2

Make Ethernet setting on GT Designer2 as described below.

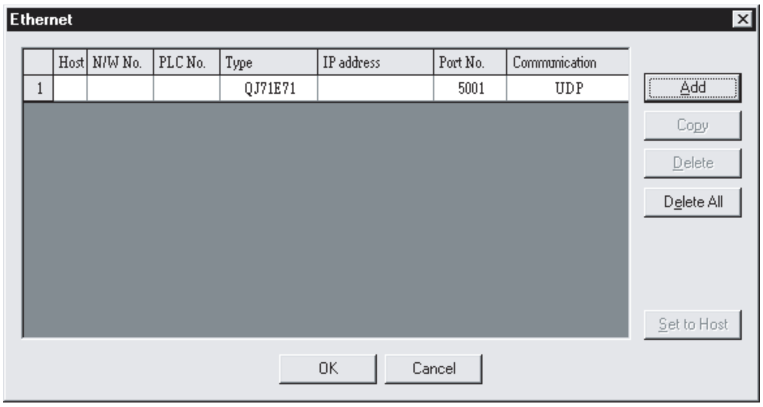
(1) Ethernet setting method

(a) Operation procedure

When either of the following operations is performed, the Ethernet dialog box is displayed.

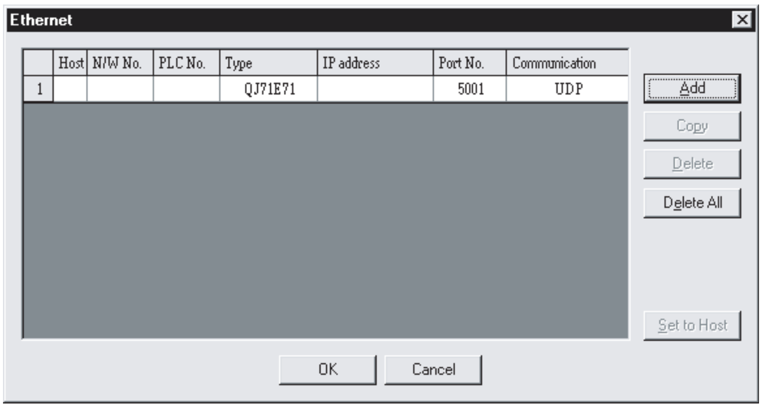
- Choose the [Common] → [Ethernet] menu.
- Double-click (Ethernet) in the workspace.

(b) Ethernet dialog box

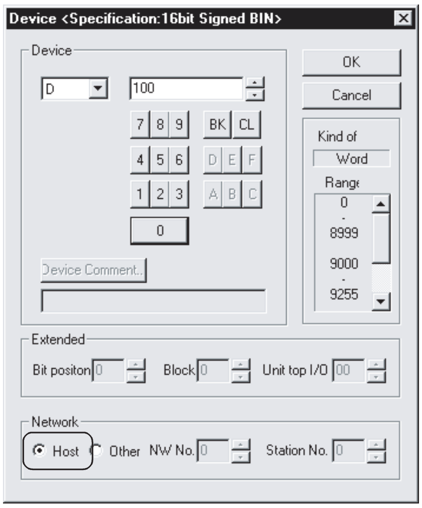


Item		Ethernet unit	MELDAS C6/C64
Ethernet setting list		Set the N/W numbers, PLC numbers, etc. of the Ethernet modules to be monitored by the GOT. Up to 128 settings can be made.	Set the N/W numbers, PLC numbers, etc. of the MELDAS C6/C64 to be monitored by the GOT. Up to 64 settings can be made.
	N/W No.	Set the network number of the Ethernet module.	For normal monitor of the MELDAS, set the network number of the MELDAS C6/C64. However, when using the CNC monitor function, set it to "239".
	PLC No.	Set the PLC number (station number) of the Ethernet module.	Set the PLC number (station number) of the MELDAS C6/C64.
	Type	Select the type (QJ71E71, AJ71QE71, AJ71E71) of the Ethernet module.	Select "AJ71QE71".
	IP address	Input the IP address of the Ethernet module. Set the IP address assigned to the connected Ethernet module.	Input the IP address of the MELDAS C6/C64. Set the IP address assigned to the connected MELDAS C6/C64.
	Port No.	Set the port number of the Ethernet module. For the E71, set the port number of the connection target E71 set in the sequence program. Fixed to "5001" when the "Type" is the "QJ71E71" or "AJ71QE71".	Fixed to 5001. However, when the CNC monitor function is used, the GOT makes communication using the default port No. 64759 of the MELDAS C6/C64. Hence, set the default port No. 64759 as the MELDAS C6/C64 side port No.
	Communication	Fixed to UDP.	Fixed to UDP. However, communication is made using UDP for normal monitor, or using TCP for CNC monitor.
Add		Used to add the Ethernet setting to the list.	
Copy		Used to copy the selected Ethernet setting to the end of the list.	
Delete		Used to delete the selected Ethernet setting.	
Set to Host		Used to set the selected Ethernet setting to the host. (When the setting is set to the host, the "＊" mark is displayed.)	

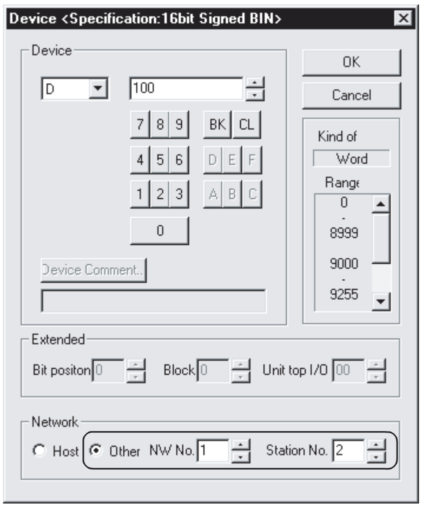
(2) How to Set Devices
The following explains how to set devices defined with GT Designer2 when connected via Ethernet.



(a) If Ethernet unit/MELDAS C6/C64 1) (an Ethernet unit/MELDAS C6/C64 set as local station) is monitored by GOT, set the network setting to the local station when the device is set with GT Designer2.
<Setting example with GT Designer2>

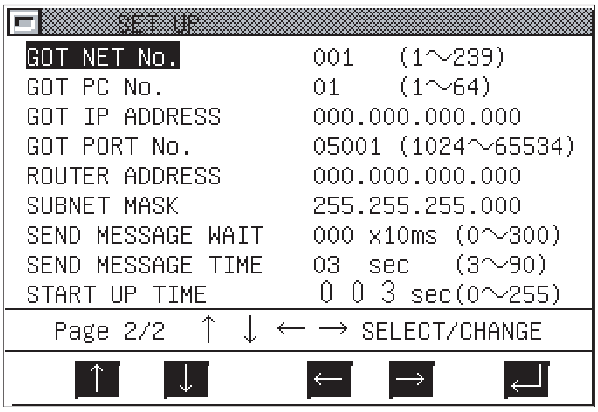


(b) If Ethernet unit MELDAS C6/C64 2) (an Ethernet unit MELDAS C6/C64 that is not set as local station) is monitored by GOT, set the network setting to other station (network No. "1", personal computer station No. "2") when the device is set with GT Designer2.
<Setting example with GT Designer2>



11.2.6 GOT side settings

When the GOT is connected to the Ethernet network system for monitoring, Ethernet settings must be made to the GOT unit.
Use Setup of the GOT unit's utility functions to make Ethernet settings.
For details of the utility functions, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



Setting item	Description	Factory setting
GOT NET No.	Set the network number of the GOT.	1
GOT PC No.	Set the station number of the GOT. Do not set the same number as the PLC No. of the Ethernet unit/MELDAS C6/C64 to be monitored.	1
GOT IP ADDRESS *1	Set the IP address of the GOT.	000.000.000.000
GOT PORT No.	Set the port number of the GOT.	5001
ROUTER ADDRESS	If the system is connected with the other network by a router, set the router address of the network where the GOT is connected.	000.000.000.000
SUBNET MASK	When the GOT is connected to the Ethernet network controlled by the sub-net, set the sub-net mask commonly set to the networks.	255.255.255.000
SEND MESSAGE WAIT	Set the send wait time to reduce loads on the network and corresponding PLC.	0
SEND MESSAGE TIME *2	Set the time-out period.	3
START UP TIME	Set how many seconds after GOT power-on the communication with the PLC CPU will be started.	3

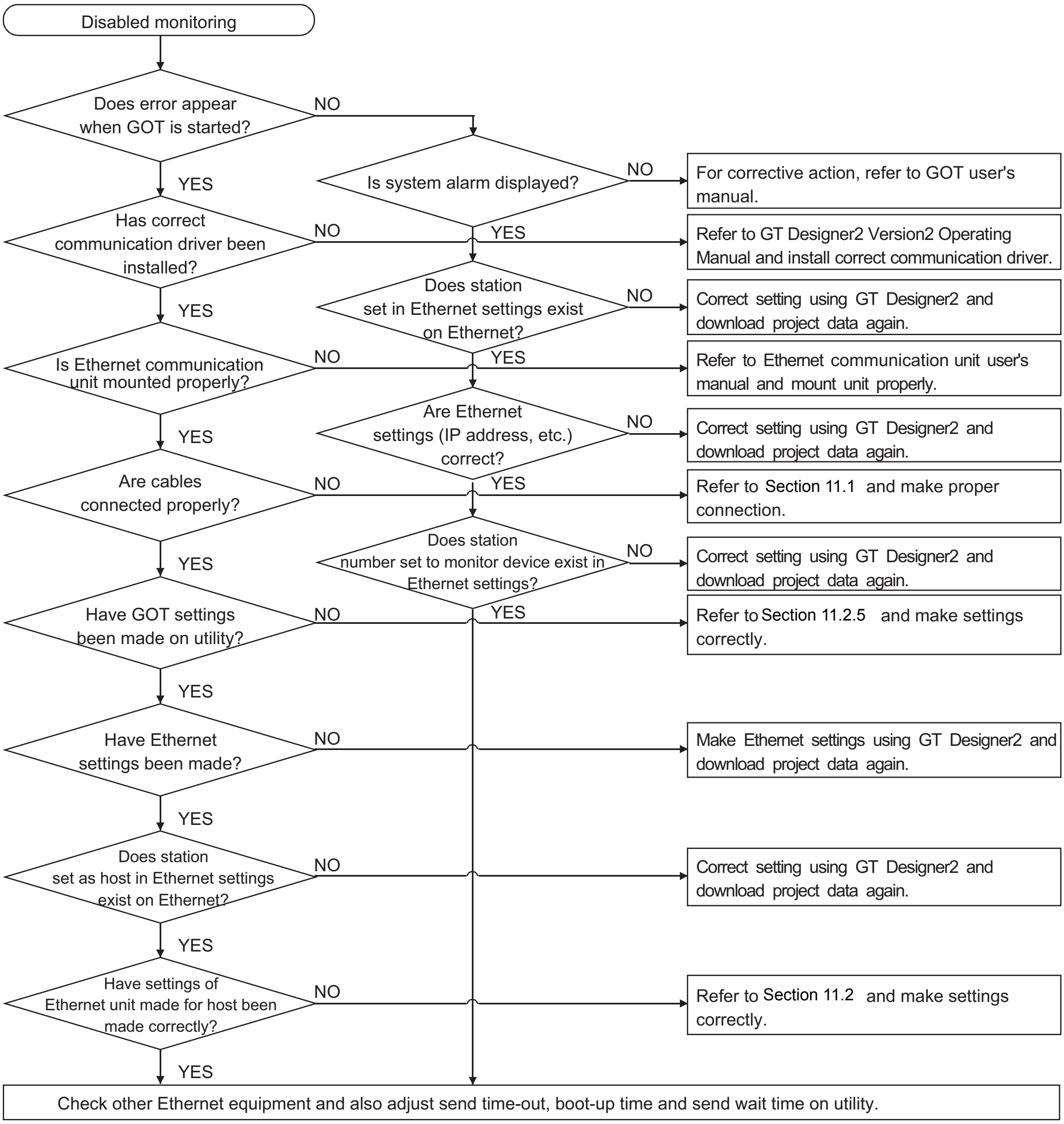
*1 Set the IP address after consulting with the network manager (person who does network planning, IP address management, etc.).
*2 When using the Q series-compatible E71 to make 1:1 communication with the GOT through a 10BASE-T cross cable, set 6 seconds or more as the send time-out period.

Point

- The utility functions can be started by switching power on again after installation of the system programs (Operating System, communication driver, etc.) into the GOT.
  After the functions have started, touch the [Setup] icon to display the Setup screen, and make settings related to Ethernet connection.
- When making connection with the MELDAS C6/C64, set the default value (5001) as the port No.

11.3 Troubleshooting for Disabled Monitoring

(1) Trouble shooting for disabled monitoring
The following is the troubleshooting method when the GOT is disabled for monitoring at the time of Ethernet connection.



Point

If any of the above actions does not enable monitoring, the possible cause is a GOT hardware fault. Consult your sales representative.

(2) Checking the communication status with each station (station observation function)
Use the GOT internal devices to check if an error/communication timeout has occurred in the station being monitored.
The following OSs must be installed into the GOT to use this function.

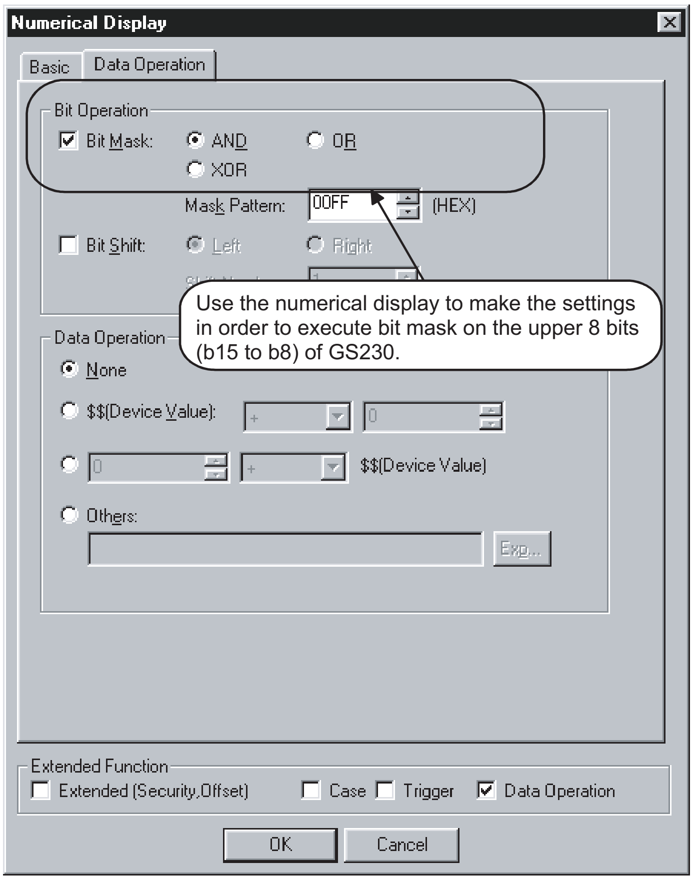
OS	Description
Standard monitor OS	Version 9.3.7 or later
Communication driver	QJ71E71/AJ71(Q)E71 Ver. 9.3.7 or later

(a) Number of error stations (GS230)

b15 to b8	b7 to b0

b15 to b8: Use prohibited
b7 to b0: Used to detect the stations in which an error has occurred.
(For how to check the error station, refer to (b) in this section.)
To monitor this device using the numerical display, make the following settings in the “Data operation” tab in order to execute bit mask operation.

<Example of numerical display (data operation) setting>

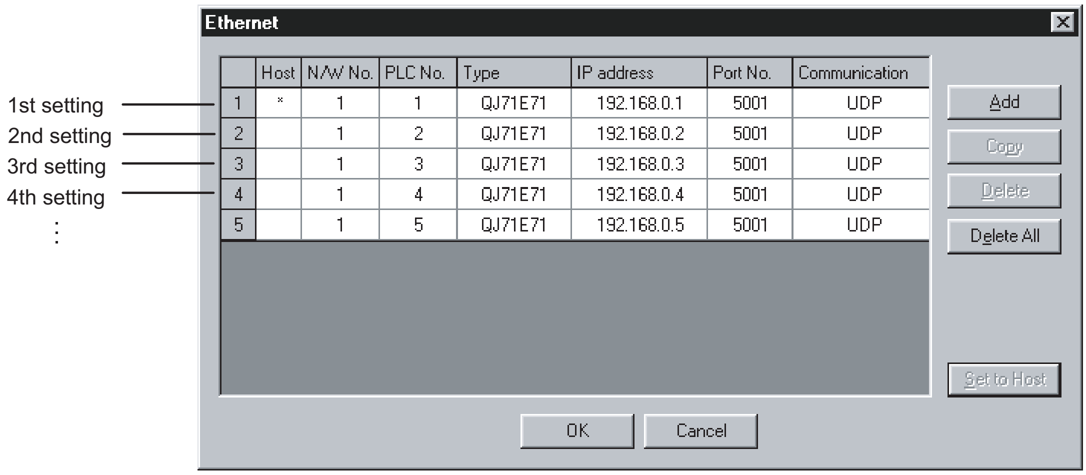


(b) Error station (GS231 to GS238)

b15 to b0

b15 to b0: Turns ON when an error/communication timeout has occurred in the corresponding station.
Turns OFF when the error is cleared.
Assigned to the GOT internal devices in the order set in the Ethernet setting of GT Designer2.

<Ethernet setting of GT Desginer2>



<GOT internal device assignment>

Device	Assigned station in the Ethernet setting
GS231.b0 to GS231.b15	1st to 16th settings are assigned.
GS232.b0 to GS232.b15	15th to 32nd settings are assigned.
GS233.b0 to GS233.b15	33rd to 48th settings are assigned.
GS234.b0 to GS234.b15	49th to 64th settings are assigned.
GS235.b0 to GS235.b15	65th to 80th settings are assigned.
GS236.b0 to GS236.b15	81st to 96th settings are assigned.
GS237.b0 to GS237.b15	97th to 112th settings are assigned.
GS238.b0 to GS238.b15	113th to 128th settings are assigned

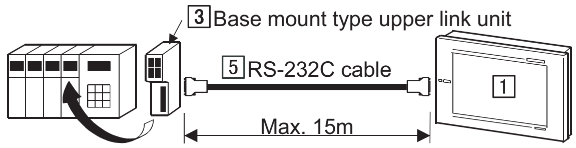
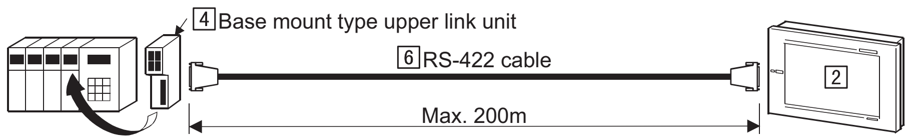
(c) Precaution
This function is inapplicable to the multiple CPU system for which CPU No. setting is made in the device setting of GT Designer2.

12 OMRON PLC CONNECTION

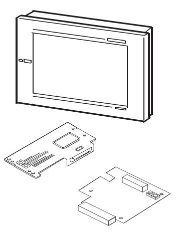
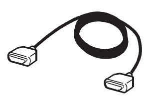
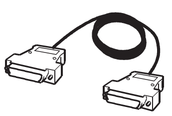
12.1 System Configurations

12.1.1 Connection with C200H series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the C200H series.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

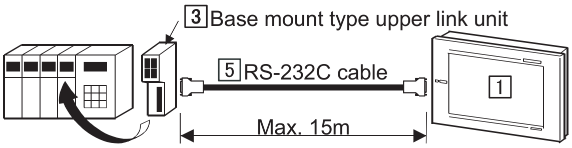
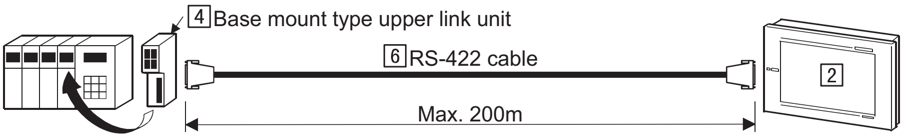
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the C200H series.

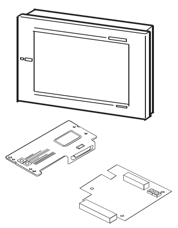
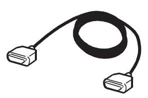
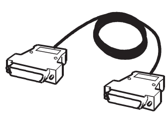
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Base mount type upper link unit	C200H-LK201-V1	
	$\boxed{4}$	Base mount type upper link unit	C200H-LK202-V1	
	$\boxed{5}$	RS-232C cable between [upper link unit] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [upper link unit] and [GOT]		

12.1.2 Connection with C200HS series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the C200HS series. The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

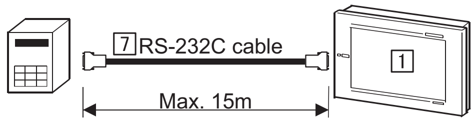
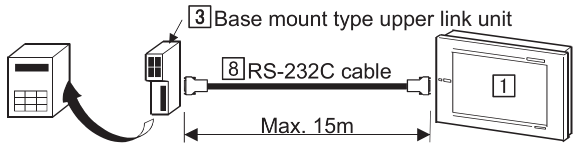
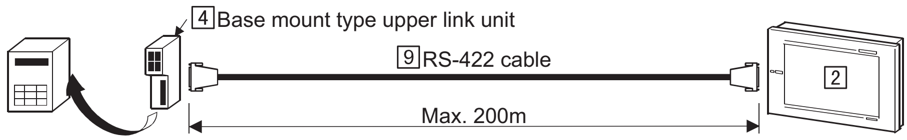
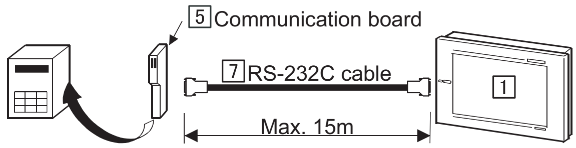
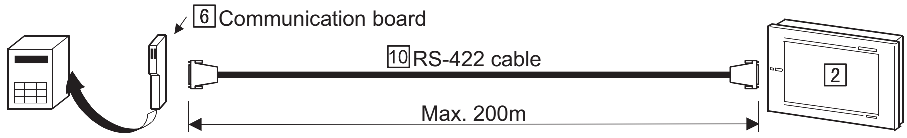
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the C200HS series.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Base mount type upper link unit	C200H-LK201-V1	
	$\boxed{4}$	Base mount type upper link unit	C200H-LK202-V1	
	$\boxed{5}$	RS-232C cable between [upper link unit] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [upper link unit] and [GOT]		

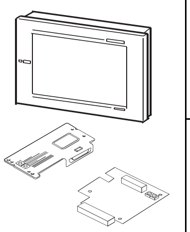
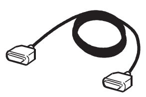
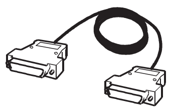
12.1.3 Connection with C200Hα series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the C200Hα series.
The numbers ($\boxed{1}$ to $\boxed{8}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{8}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
		
	Within 200m	
		

(2) System equipment

The following table indicates the system equipment needed for connection with the C200Hα series.

Image	No.	Application	Type: GOT unit	Type: Serial communication board
	1	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Base mount type upper link unit	C200H-LK201-V1	
	4	Base mount type upper link unit	C200H-LK202-V1	
	5	Communication board*1	C200HW-COM02, C200HW-COM05, C200HW-COM06	
	6	Communication board*1	C200HW-COM03, C200HW-COM06	
	7	RS-422 cable between [CPU]/[communication board] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	8	RS-232C cable between [upper link unit] and [GOT]		
	9	RS-422 cable between [upper link unit] and [GOT]		
	10	RS-422 cable between [communication board] and [GOT]		

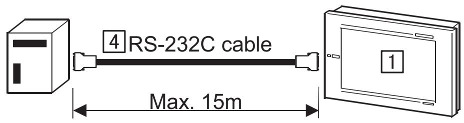
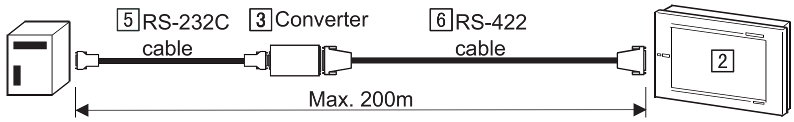
*1 The C200HE-CPU11 does not accept the communication board. Fit the board via the upper link unit.

12.1.4 Connection with CQM1

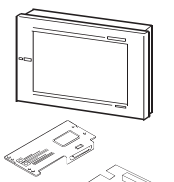
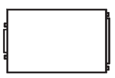
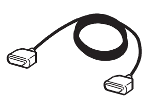
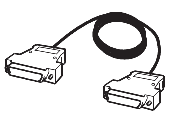
(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CQM1.
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Point

- Note that the GOT cannot be connected to the CQM1-CPU11, which has no RS-232C interface.

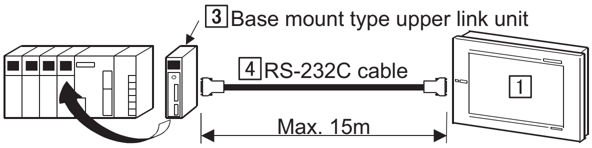
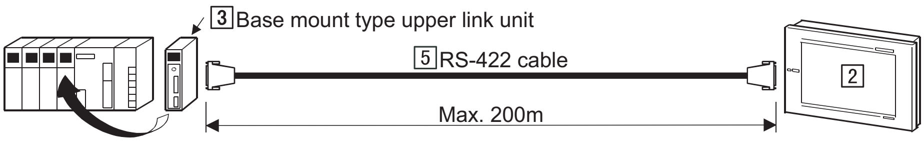
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the CQM1.

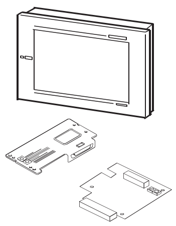
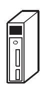
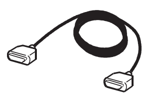
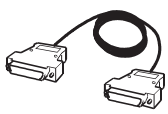
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Converter (recommended product)	EL-LINE-II, KS-10P	
	4	RS-232C cable between [CPU] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	5	RS-232C cable between [CPU] and [converter]		
	6	RS-422 cable between [converter] and [GOT]		

12.1.5 Connection with C1000H or C2000H

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the C1000H or C2000H.
The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

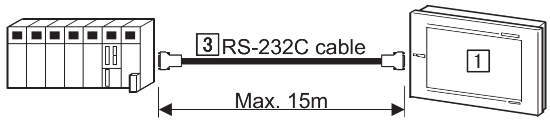
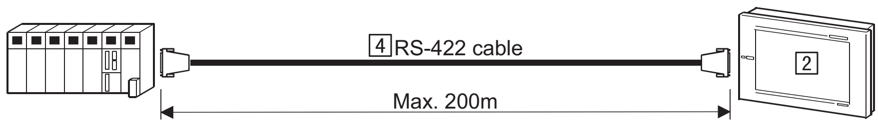
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the C1000H or C2000H.

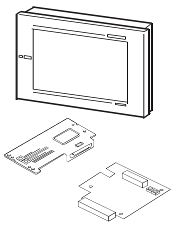
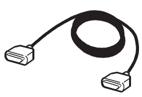
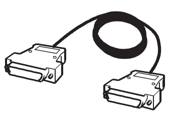
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Base mount type upper link unit	C500H-LK201-V1	
	$\boxed{4}$	RS-232C cable between [upper link unit] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{5}$	RS-422 cable between [upper link unit] and [GOT]		

12.1.6 Connection with CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11 or CVM1-CPU21

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11 or CVM1-CPU21.
The numbers ($\boxed{1}$ to $\boxed{4}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{4}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

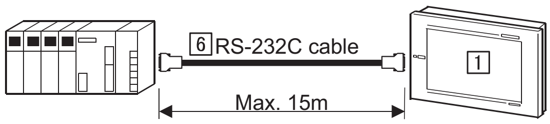
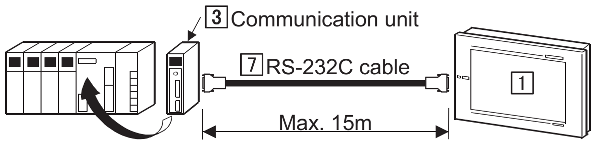
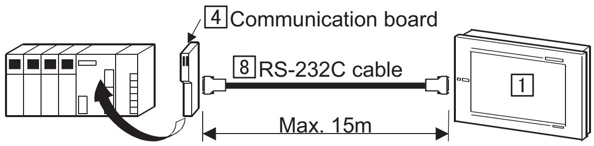
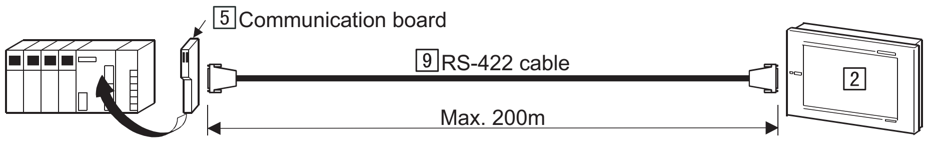
Connection Conditions: Number of connected	Connection Conditions: Installation distance	System Configuration
1 GOT	Within 15m	
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11 or CVM1-CPU21.

Image	No.	Application	Type: GOT unit	Type: Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	RS-232C cable between [CPU] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{4}$	RS-422 cable between [CPU] and [GOT]		

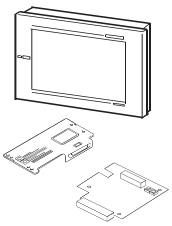
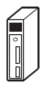
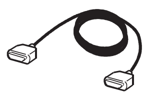
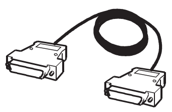
12.1.7 Connection with CS1

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CS1.
The numbers ($\boxed{1}$ to $\boxed{9}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{9}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
		
	Within 200m	

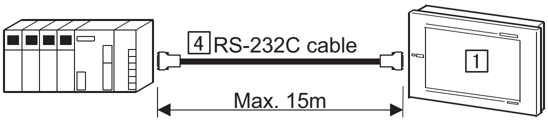
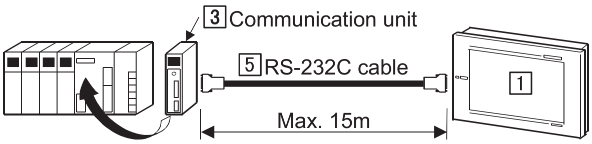
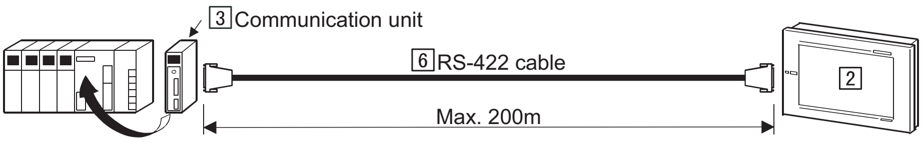
(2) System equipment

The following table indicates the system equipment needed for connection with the CS1.

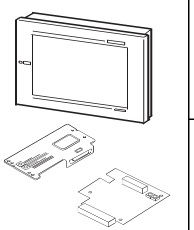
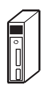
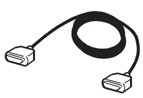
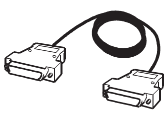
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Communication unit	CS1W-SCU21	
	$\boxed{4}$	Communication board	CS1-SCB21, CS1-SCB41	
	$\boxed{5}$	Communication board	CS1W-SCB41	
	$\boxed{6}$	RS-232C cable between [CPU] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{7}$	RS-232C cable between [communication unit] and [GOT]		
	$\boxed{8}$	RS-232C cable between [communication board] and [GOT]		
	$\boxed{9}$	RS-422 cable between [communication board] and [GOT]		

12.1.8 Connection with CJ1H, CJ1G or CJ1M

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CJ1H, CJ1G or CJ1M. The numbers ([1] to [6]) given in the system configurations denote the numbers ([1] to [6]) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
	Within 200m	

(2) System equipment
The following table indicates the system equipment needed for connection with the CJ1H, CJ1G or CJ1M.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	[1]	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	[2]	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	[3]	Communication unit	CS1W-SCU41	
	[4]	RS-232C cable between [CPU] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	[5]	RS-232C cable between [communication unit] and [GOT]		
	[6]	RS-422 cable between [communication board] and [GOT]		

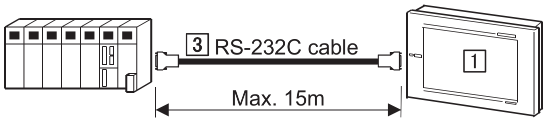
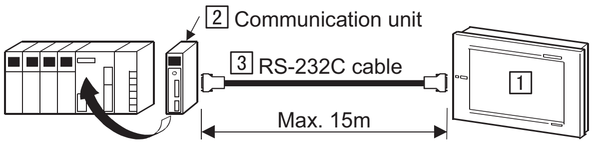
12.1.9 Connection with CS1D

(1) System configurations and connection conditions

The following system configurations and connection conditions assume connection with the CS1D.

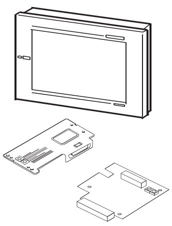
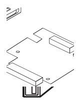
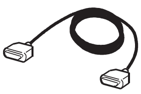
The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		

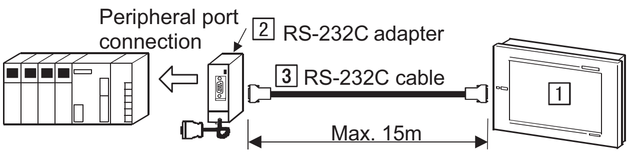
(2) System equipment

The following table indicates the system equipment needed for connection with the CS1D.

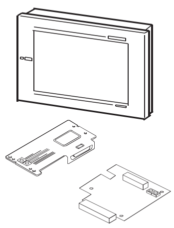
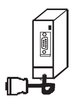
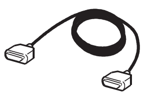
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Communication unit	CS1W-SCU21	
	$\boxed{3}$	RS-232C cable between [CPU] / [Communication unit] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	

12.1.10 Connection with CPM1 or CPM1A

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CPM1 or CPM1A.
The numbers (1 to 3) given in the system configurations denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

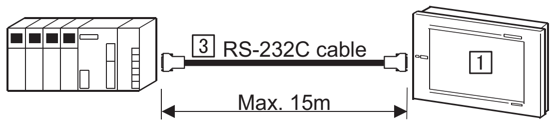
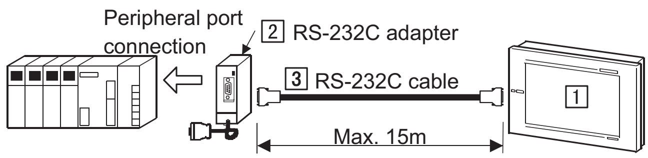
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	

(2) System equipment
The following table indicates the system equipment needed for connection with the CPM1 or CPM1A.

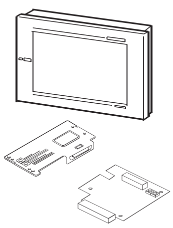
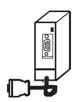
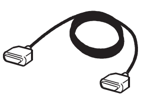
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	RS-232C adapter	CPM1-CIF01	
	3	RS-232C cable between [RS-232C adapter] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	

12.1.11 Connection with CPM2A

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CPM2A.
The numbers (1 to 3) given in the system configurations denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

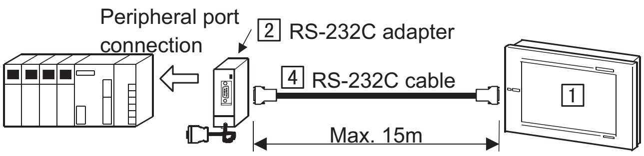
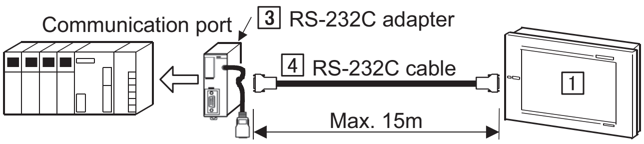
<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="2">1 GOT</td><td rowspan="2">Within 15m</td><td>
</td></tr>
<tr><td>
</td></tr>
</table>

(2) System equipment
The following table indicates the system equipment needed for connection with the CPM2A

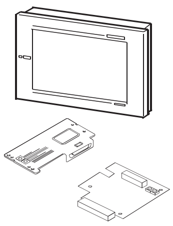
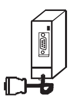
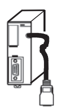
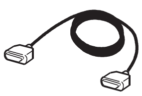
<table>
<tr><th rowspan="2">Image</th><th rowspan="2">No.</th><th rowspan="2">Application</th><th colspan="2">Type</th></tr>
<tr><th>GOT unit</th><th>Serial communication board</th></tr>
<tr><td rowspan="3"></td><td rowspan="3">1</td><td rowspan="3">Omron PLC-connected (RS-232C communication) GOT</td><td>A985GOT(-V), A97*GOT, A960GOT</td><td>A9GT-RS2, A9GT-RS2T</td></tr>
<tr><td>A956WGOT</td><td>A9GT-50WRS2</td></tr>
<tr><td>A953GOT (with built-in communication interface)</td><td>---</td></tr>
<tr><td></td><td>2</td><td>RS-232C adapter</td><td colspan="2">CPM1-CIF01</td></tr>
<tr><td></td><td>3</td><td>RS-232C cable between [CPU]/[RS-232C adapter] and [GOT]</td><td colspan="2">(Refer to Section 12.3 and fabricate on user side.)</td></tr>
</table>

12.1.12 Connection with CPM2C

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CPM2C.
The numbers ($\boxed{1}$ to $\boxed{4}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{4}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

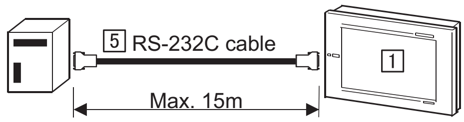
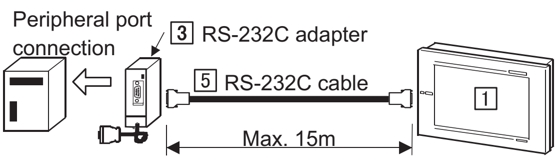
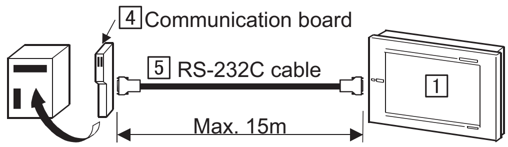
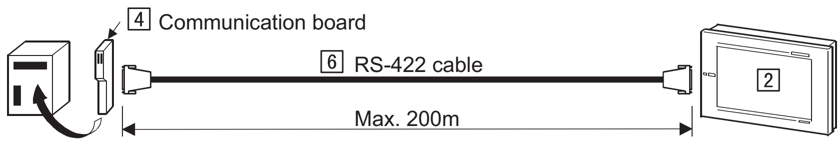
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the CPM2C.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	RS-232C adapter	CPM1-CIF01	
	$\boxed{3}$	RS-232C adapter	CPM2C-CIF01-V1	
	$\boxed{4}$	RS-232C cable between [RS-232C adapter] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	

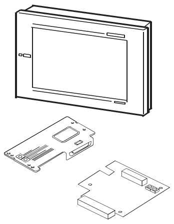
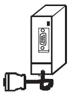
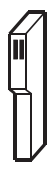
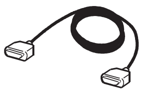
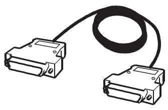
12.1.13 Connection with CQM1H

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the CQM1H.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
		
	Within 200m	

(2) System equipment

The following table indicates the system equipment needed for connection with the CQM1H.

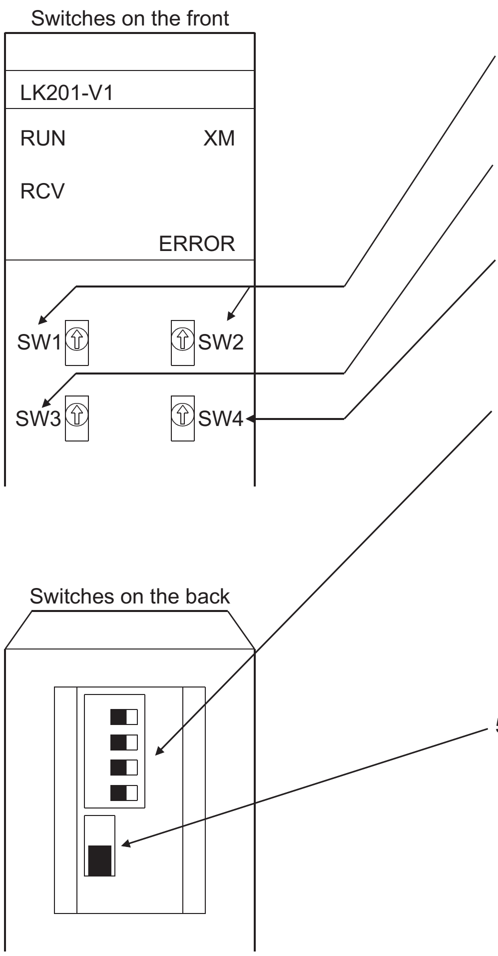
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Omron PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Omron PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	RS-232C adapter	CQM1-CIF02	
	$\boxed{4}$	Communication board	CQM1H-SCB41	
	$\boxed{5}$	RS-232C cable between [CPU]/[RS-232C adapter]/[Communication board] and [GOT]	(Refer to Section 12.3 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [Communication board] and [GOT]		

12.2 Initial Setting

12.2.1 Switch setting of upper link unit

When using the upper link unit (C200H-LK201-V1, C200H-LK202-V1, C500H-LK201-V1), set the switches as follows.

(1) When using C200H-LK201-V1



1) SW1 and SW2 (Machine No.)
Set SW1:0, SW2:0. (Machine No. 00)

2) SW3 (Transmission speed)
Set SW3:6. (19.2 kbps)

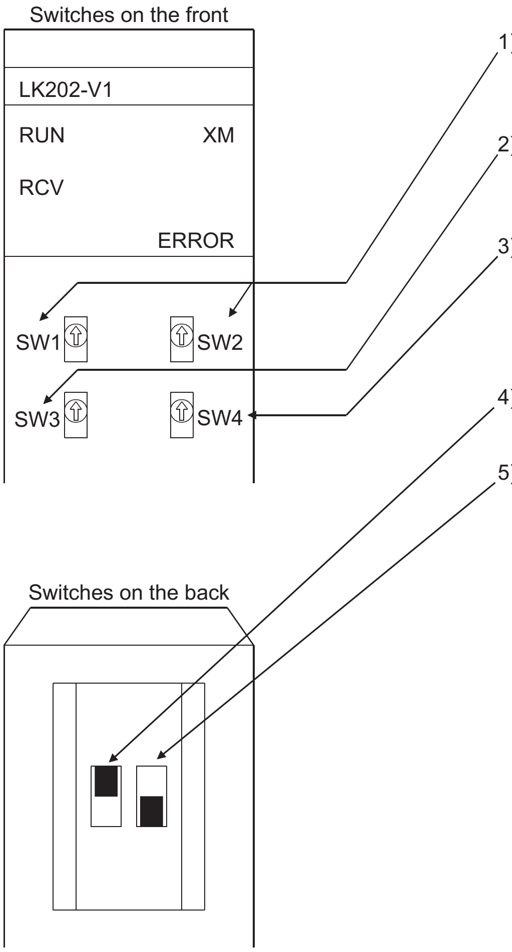
3) SW4 (Command level/parity/transmission code)
Set SW4:2.
(Parity: Even, Transmission code: ASCII 7 bit, Stop bit: 2)

4) 5V supply switch
If optical interface Z3RN-A-5 is used, set the switch to ON (with 5V supply).
If not, be sure to set the switch to OFF.

SW No.	ON	OFF
1	Not used (Set the switch to OFF.)	
2		
3	1: N procedure	1:1 procedure
4	With 5V supply	Without 5V supply

5) CTS switch
To keep the CTS ON, set the switch to 0V.
To receive the CTS from outside, set the switch to External.
For normal use, set the switch to 0V.

(2) When using C200H-LK202-V1



1) SW1 and SW2 (Machine No.)
   Set SW1:0, SW2:0. (Machine No. 00)

2) SW3 (Transmission speed)
   Set SW3:6. (19.2 kbps)

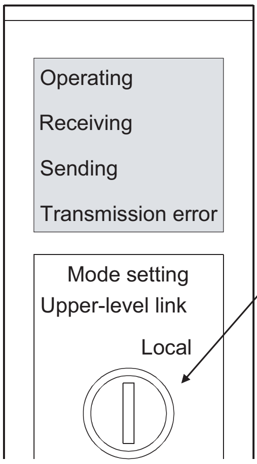
3) SW4 (Command level/parity/transmission code)
   Set SW4:2.
   (Parity:Even, Transmission code:ASCII 7 bit, Stop bit:2)

4) Terminator connection switch
   Set this switch to ON (Present).

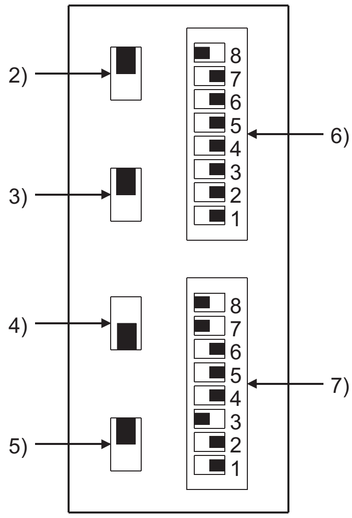
5) 1/N procedure switch
   Set this switch to OFF (N procedure).

(3) When using C500H-LK201-V1

Switches on the front



Switches on the back



1) Upper link/local switch
Set this switch to Upper link.

2) Switch for RS-232C/RS-422
For RS-422 communication,
set this switch to RS-422 (up).
For RS-232C communication,
set this switch to RS-232C (down).

3) Switch for internal/external clock
Set this switch to Internal (up).

4) Terminator connection switch
Set this switch to Present (down).

5) CTS switch
Set this switch to 0V (up).

6) SW1 (Machine No., ON/OFF of operation)
Set the switches as follows.

1	2	3	4	5	6	7	8
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

Machine No.00 (1 to 7) — Operation (8)

7) SW2 (Transmission speed, 1/N procedure, Level)

1	2	3	4	5	6	7	8
OFF	OFF	ON	OFF	OFF	OFF	ON	ON

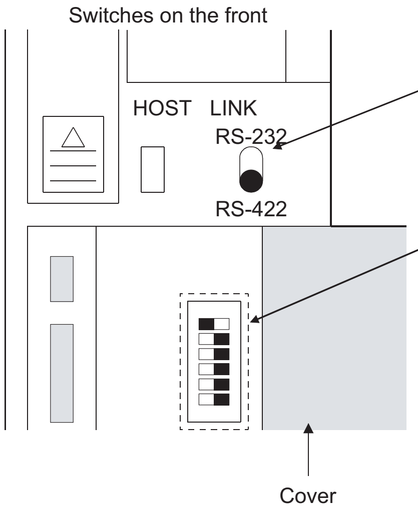
19.2KBPS (1 to 5) — 1: N procedure (6) — Levels 1, 2, and 3 are effective. (7, 8)

12.2.2 PLC side settings

(1) Switches

For CPU, set the switches as follows.

(a) When CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11 or CVM1-CPU21 is used



1) Switch for RS-232C/RS-422
For RS-422 communication, set this switch to RS-422 (down).
For RS-232C communication, set this switch to RS-232C (up).

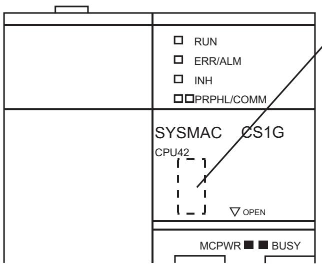
2) Dip switches
Set the switches as follows.

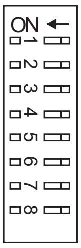
1	2	3	4	5	6
OFF	OFF	OFF	OFF	OFF	ON

Be sure to set the switches shaded with [shaded box].

(b) When CS1 is used

DIP switch setting (inside battery storage part)
Set all DIP switches to OFF.

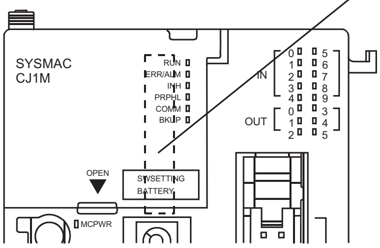


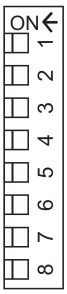


SW1 Write to user memory (set to write enable)
SW2 Automatic transfer from memory card at power-on (set to automatic transfer non-execution)
SW3 PLC message display (set to Japanese)
SW4 Peripheral port communication condition (set to CX-Programmer setting)
SW5 RS-232C communication port communication condition (set to PLC system setting)
SW6 User customized DIP switch (OFF reflected on special auxiliary relay (A39512))
SW7 Simple backup type designation (set to OFF)
SW8 OFF fixed

(c) When CJ1H, CJ1G, CJ1M is used

DIP switch setting (inside battery storage part)
Set all DIP switches to OFF.



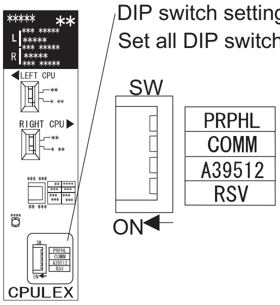


SW1 Write to user memory (set to write enable)
SW2 Automatic transfer from memory card at power-on (set to automatic transfer non-execution)
SW3 OFF fixed
SW4 Peripheral port communication condition (set to CX-Programmer setting)
SW5 RS-232C communication port communication condition (set to PLC system setting)
SW6 User customized DIP switch (OFF reflected on special auxiliary relay (A39512))
SW7 Simple backup type designation (set to OFF)
SW8 OFF fixed

(d) When CS1D is used

1) Duplex unit

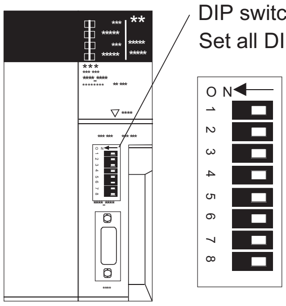
DIP switch setting (inside battery storage part)
Set all DIP switches to OFF.



PRPHL Peripheral port communication condition (set to CX-Programmer setting)
COMM RS-232C communication port communication condition (set to PLC system setting)
A39512 User customized DIP switch (OFF reflected on special auxiliary relay (A39512))
RSV OFF fixed

2) CPU

DIP switch setting (inside battery storage part)
Set all DIP switches to OFF.



SW1 Write to user memory (UM) (set to write enable)
SW2 Automatic transfer from memory card at power-on (set to automatic transfer non-execution)
SW3 OFF fixed
SW4 OFF fixed
SW5 OFF fixed
SW6 OFF fixed
SW7 Simple backup type designation (normally OFF)
SW8 OFF fixed

(2) Setting by peripheral tool

Use a peripheral tool to set the CPU as follows.

Item	Set value
Transmission speed	4800bps/9600bps/19200bps/38400bps
Stop bit	2 stop bit
Parity	Even parity
Data length	7 bit
Machine No.	Machine No. 00

12.2.3 Initial setting

1 Initializing C200Hα series, CQM1, CPM2A (When CPM1-CIF01 is used), CPM2C (When CPM1-CIF01 is used) and CQM1H

Before using the RS232C port of C200Hα series, CQM1, CPM2A (When CPM1-CIF01 is used), CPM2C (When CPM1-CIF01 is used) and CQM1H, write values to the devices as follows and initialize the port by using a peripheral tool or the DM monitor.

For further details, refer to the instruction manual of C200Hα series, CQM1, CPM2A (When CPM1-CIF01 is used), CPM2C (When CPM1-CIF01 is used) and CQM1H.

Device name	Value	Device name	Value
DM6645	0001H	DM6648	0000H
DM6646	0304H	DM6649	0000H
DM6647	0000H	---	---

2 Initializing CPM1, CPM1A, CPM2A, CPM2C (When CPM2C-CIF01-V1 is used) and CQM1H

When using the CPM1, CPM1A, CPM2A, CPM2C or CQM1H, write the corresponding values to the following devices with the peripheral tool.

For details, refer to the manual of the CPM1, CPM1A, CPM2A, CPM2C or CQM1H.

<table>
<tr><th>Device name</th><th>Written Value</th><th>Value in *</th></tr>
<tr><td>DM6650</td><td>000*H</td><td>Select the setting type.
0 :Standard setting (higher-level link station No.: 0, Stop bit: 2, Parity: Even, Data length: 7 bit, Baud rate: 9600bps)
1 :Makes the DM6651 setting valid.
Other : Standard setting.</td></tr>
<tr><td>DM6651</td><td>**0*H</td><td>• Higher-order bits
Set the data length, stop bit and parity.
<table>
<tr><th>Value</th><th>Data length</th><th>Stop bit</th><th>Parity</th></tr>
<tr><td>00</td><td>7</td><td>1</td><td>Even</td></tr>
<tr><td>01</td><td>7</td><td>1</td><td>Odd</td></tr>
<tr><td>02</td><td>7</td><td>1</td><td>None</td></tr>
<tr><td>03</td><td>7</td><td>2</td><td>Even</td></tr>
<tr><td>04</td><td>7</td><td>2</td><td>Odd</td></tr>
<tr><td>05</td><td>7</td><td>2</td><td>None</td></tr>
<tr><td>06</td><td>8</td><td>1</td><td>Even</td></tr>
<tr><td>07</td><td>8</td><td>1</td><td>Odd</td></tr>
<tr><td>08</td><td>8</td><td>1</td><td>None</td></tr>
<tr><td>09</td><td>8</td><td>2</td><td>Even</td></tr>
<tr><td>10</td><td>8</td><td>2</td><td>Odd</td></tr>
<tr><td>11</td><td>8</td><td>2</td><td>None</td></tr>
<tr><td>Other than above</td><td>7</td><td>2</td><td>Even</td></tr>
</table>
• Lower-order bit
Set the used transmission speed.
0:1200bps 1:2400bps 3:4800bps 4:9600bps 5:19200bps</td></tr>
<tr><td>DM6652</td><td>0000H</td><td>Set the transmission delay time.</td></tr>
<tr><td>DM6653</td><td>00**H</td><td>Set the higher-level link station No. (00 to 31)</td></tr>
</table>

12.2.4 Initializing communication board

Before using the communication board, write values to the devices as follows and initialize each port of the communication board.
For application of devices and initialization programs, refer to the instruction manual of the communication board.

(1) For C200HW-COM02, C200HW-COM03, C200HW-COM05, C200HW-COM06

Port	Device name	Value	Port	Device name	Value
A	DM6550 to DM6554	Not required	A	DM6557	0000H
	DM6555	0001H		DM6558	0000H
	DM6556	0304H		DM6559	0000H

(2) For CS1W-SCB21, CS1W-SCB41

Port	Device name	Value	Port	Device name	Value
1	DM32000	8500H	2	DM32010	8500H
	DM32001	0005H to 0008H *1		DM32011	0005H to 0008H *1
	DM32002	0000H		DM32012	0000H
	DM32003	0000H		DM32013	0000H
	DM32008	0000H		DM32018	0000H
	DM32009	0096H		DM32019	0096H

*1 Choose the written value according to the set transmission speed.

Transmission speed	Value	Transmission speed	Value
4800bps	0005H	19200bps	0007H
9600bps	0006H	38400bps	0008H

12.2.5 Initializing communication unit

Before using the communication unit, write values to the devices as follows and initialize each port of the communication unit.
For application of devices and initialization programs, refer to the instruction manual of the communication board.

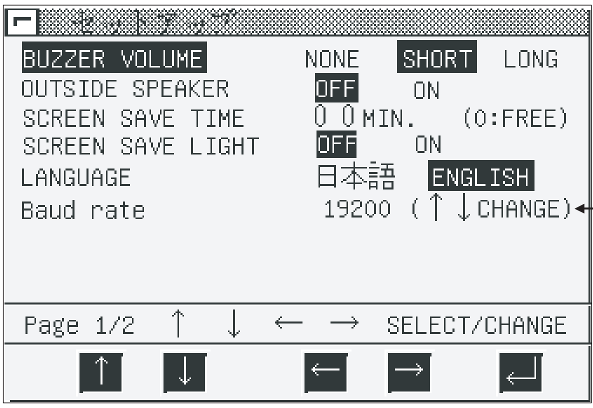
Port	Device name	Value	Port	device name	Value
1	DM30000	8500H	2	DM30010	8500H
	DM30001	0005H to 0008H *2		DM30011	0005H to 0008H *2
	DM30002	0000H		DM30012	0000H
	DM30003	0000H		DM30013	0000H
	DM30008	0000H		DM30018	0000H
	DM30009	0096H		DM30019	0096H

*1 Set the unit number to 00.
*2 Choose the written value according to the set transmission speed.

Transmission speed	Value	Transmission speed	Value
4800bps	0005H	19200bps	0007H
9600bps	0006H	38400bps	0008H

12.2.6 GOT side settings

When connecting the GOT and Omron PLC, you need to set the transmission speed to the GOT according to the setting of the Omron PLC used.
Set the transmission speed on Setup of the GOT's utility function.
For details of the utility function, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual)



Baud rate
Choose the GOT side transmission speed.
(Factory-set to 19200bps)

Point

The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to Omron PLC connection.

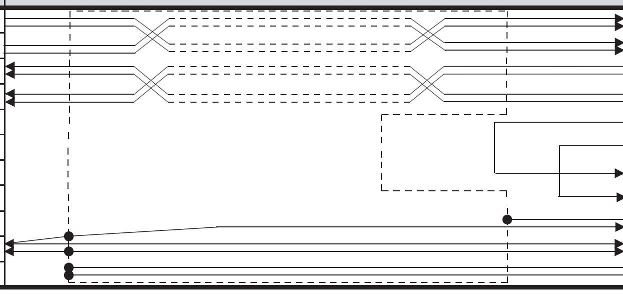
12.3 Connection Cable

12.3.1 RS-422 cable

The connection diagram and connectors for the RS-422 cables between the upper link unit, the communication board/unit, the CPU and the GOT are as follows.

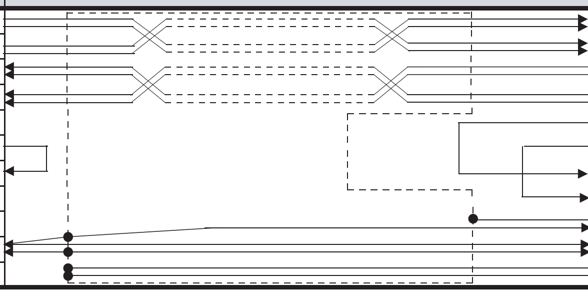
(1) Connection diagram
1) Upper link unit (C200H-LK202-V1)
2) Communication board (C200HW-COM03, C200HW-COM06, CS1W-SCB41)
Communication unit (CS1W-SCU41)
Communication board (CQM1H-SCB41)

Omron (D-sub 9-pin male metric screw type)				Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Pin No.		Signal name			Pin No.	Signal name
1)	2)	1)	2)			
SDB(SDA)		5	2		2	RDA
SDA(SDB)		9	1		15	RDB
RDB(RDA)		1	8		3	SDA
RDA(RDB)		6	6		16	SDB
					5	RSA
					18	RSB
					4	CSA
					17	CSB
					20	
SG	SHELL				8	SG
					21	SG(shield)



3) CPU (CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11, CVM1-CPU21)

Omron (D-sub 9-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name	Pin No.		Pin No.	Signal name
SDB(SDA)	2		2	RDA
SDA(SDB)	1		15	RDB
RDB(RDA)	8		3	SDA
RDA(RDB)	6		16	SDB
			5	RSA
RS	4		18	RSB
CS	6		4	CSA
			17	CSB
			20	
SHELL			8	SG
			21	SG(shield)



Point

Note that the signal names of poles A and B are opposite between the GOT and Omron PLC.

(2) Connector and connector cover

• Connector for GOT

Description	Model	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

• Connector for Omron

Use connectors attached to the upper link unit, the communication board/unit and the CPU.

(3) Precautions for cable preparation

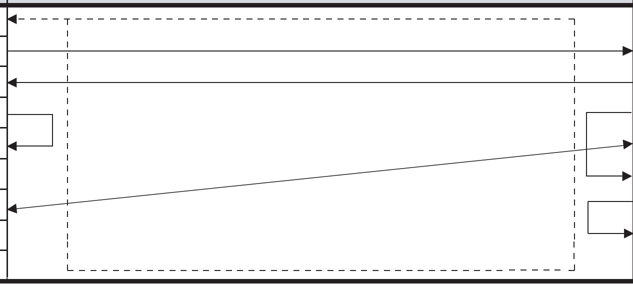
The cable must be 200m(655.74feet) or shorter.

12.3.2 RS-232C cable

The connection diagram and connectors for the RS-232C cables between the upper link unit, the communication board/unit, the CPU and the GOT are as follows.

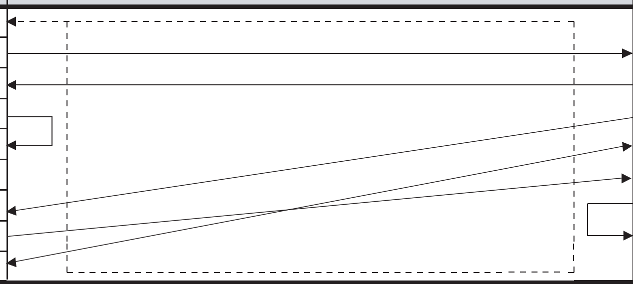
(1) Connection diagram

1) Upper link unit (C200H-LK201-V1, C500-LK201-V1)

Omron (D-sub 25-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Pin No.	Signal name		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
---	6		6	DSR(DR)
SG	7		7	RS(RTS)
---	8		8	CS(CTS)
ER	20		9	---

2) CPU (C200Hα series)

3) Communication board (C200HW-COM02, C200HW-COM05, C200HW-COM06)

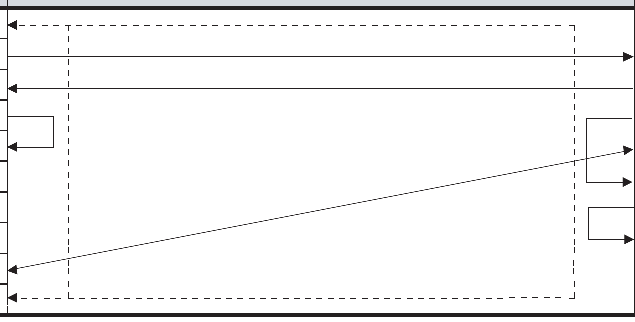
Omron (D-sub 25-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Pin No.	Signal name		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
5V	6		6	DSR(DR)
DR(DSR)	7		7	RS(RTS)
ER(DTR)	8		8	CS(CTS)
SG	9		9	---

4) CPU(CV500, CV1000, CV2000, CVM1-CPU01, CVM1-CPU11, CVM1-CPU21, CS1, CS1D, CJ1H, CJ1G, CJ1M, CPM2A, CQM1H)

5) Communication board (CS1W-SCB21, CS1W-SCB41)

6) Communication unit (CS1W-SCU21, CS1W-SCU41)

7) RS-232C adapter (CPM-CIF01, CPM2C-CIF01-V1)

Omron (D-sub 25-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Pin No.	Signal name		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RSD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
---	6		6	DSR(DR)
CD	7		7	RS(RTS)
---	8		8	CS(CTS)
SG	9		9	---
FG	SHELL		---	---

(2) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for Omron side
  Use connectors attached to the upper link unit, the communication board, Communication unit and the CPU.

(3) Precautions for cable preparation
The cable must be 15m(49.18feet) or shorter.

12.3.3 Converter and connection cable used in CQM1

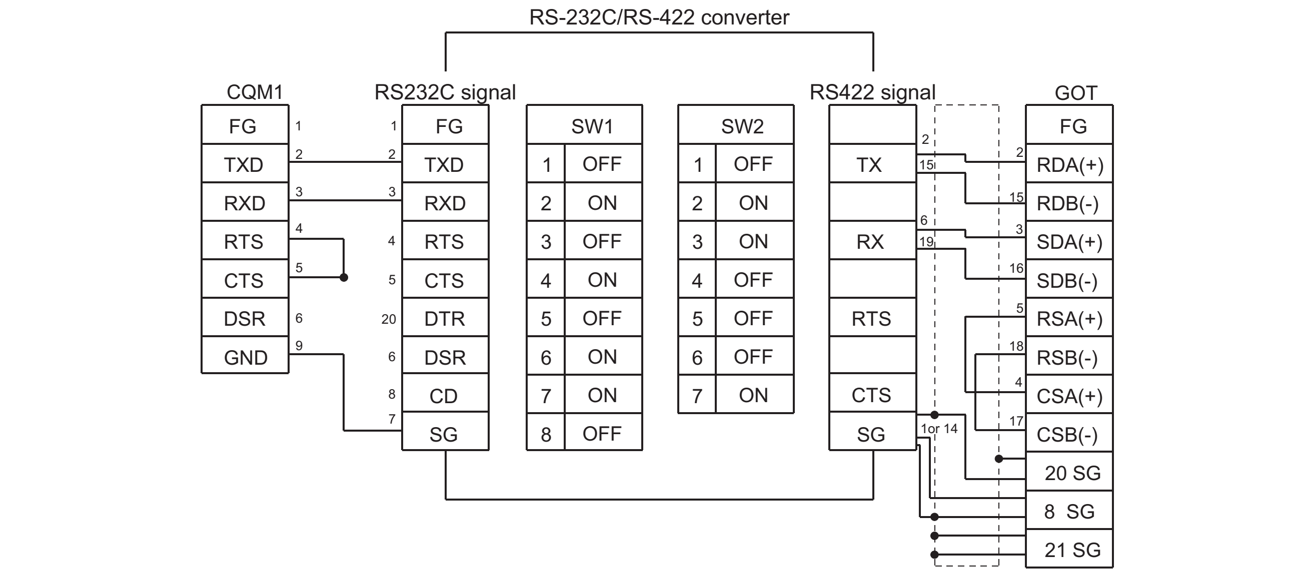
The converters (recommended parts) for connecting the CQM1 and the GOT, and the connection diagram and connectors are as follows.

(1) Available converter

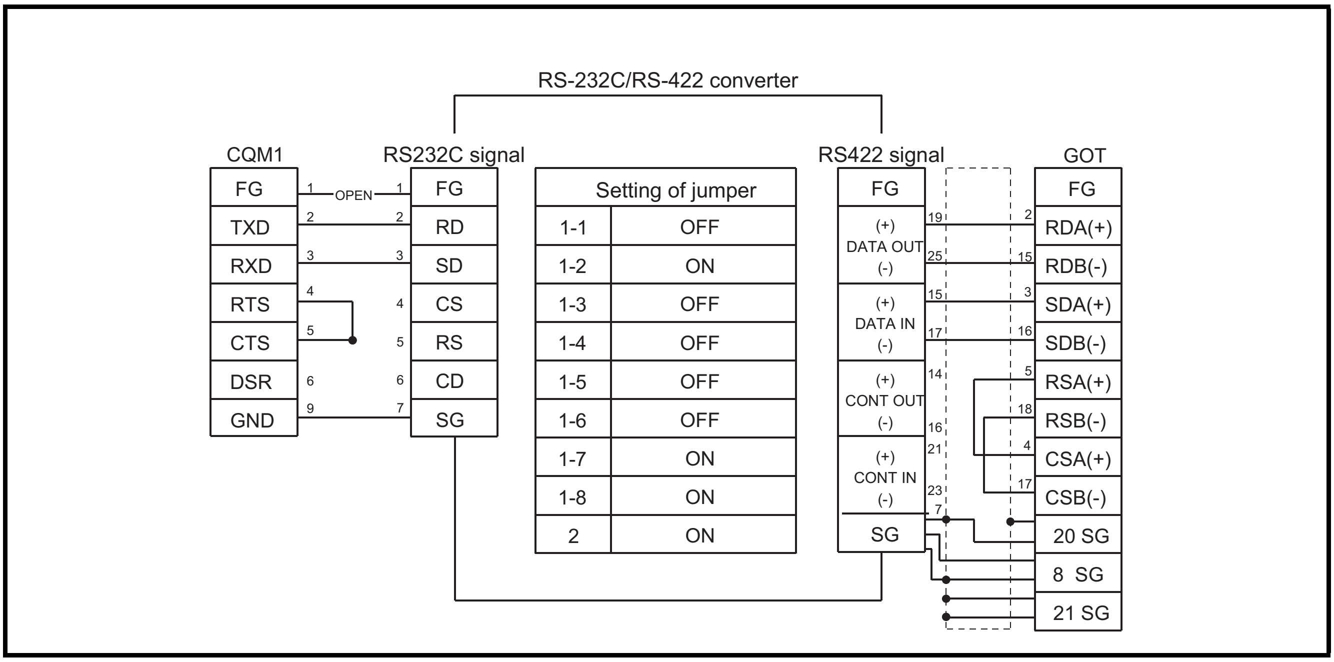
Model name	Manufacturer
EL-LINE-II	EL Engineering
KS-10P	System Sacom

(2) Connection diagram

1) When using EL-LINE-II



2) When using KS-10P



(3) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

- Connector for CQM1
  Use connector attached to the CQM1.

- When using EL-LINE-II
  RS-232C: D-Sub 25-pin male screw type
  RS-422: D-Sub 25-pin female screw type

- When using KS-10P
  RS-232C: D-Sub 9-pin male screw type
  RS-422: D-Sub 25-pin female screw type

(4) Precautions for cable preparation

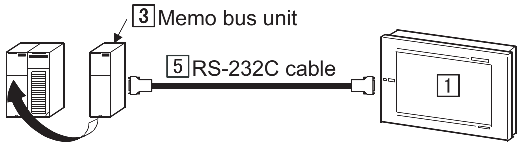
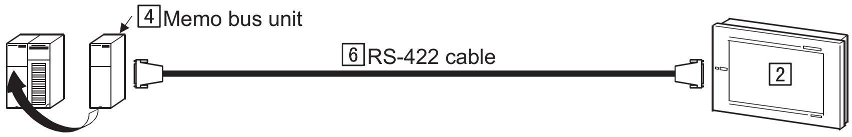
- The cable length (including the converter) must be 200m(655.74feet) or shorter.

13 YASKAWA PLC CONNECTION

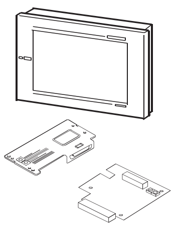
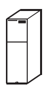
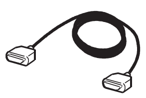
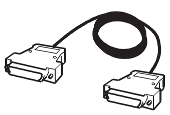
13.1 System Configurations

13.1.1 Connection with GL60S, GL60H or GL70H

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the GL60S, GL60H or GL70H.
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

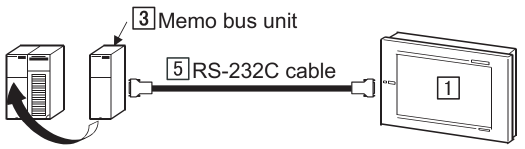
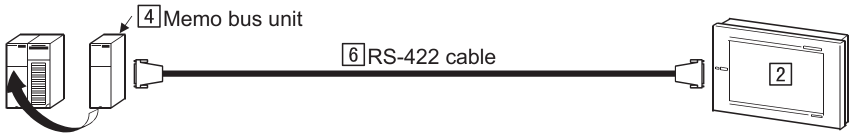
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the GL60S, GL60H or GL70H.

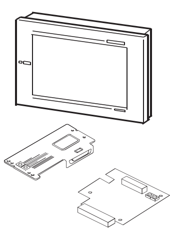
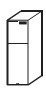
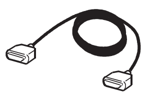
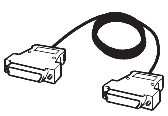
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Yaskawa PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Yaskawa PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Memo bus unit	JAMSC-IF60/61	
	4	Memo bus unit	JAMSC-IF612	
	5	RS-232C cable between [memo bus unit] and [GOT]	(Refer to Section 13.3 and fabricate on user side.)	
	6	RS-422 cable between [memo bus unit] and [GOT]		

13.1.2 Connection with GL120 or GL130

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the GL120 or GL130.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

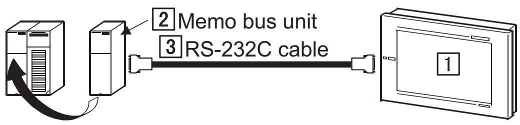
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the GL120 or GL130.

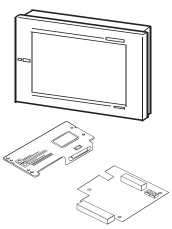
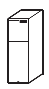
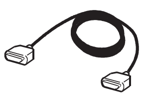
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Yaskawa PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Yaskawa PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	Memo bus unit	120 CPU 341 00	
	$\boxed{4}$	Memo bus unit	120 NOM 271 00	
	$\boxed{5}$	RS-232C cable between [memo bus unit] and [GOT]	(Refer to Section 13.3 and fabricate on user side.)	
	$\boxed{6}$	RS-422 cable between [memo bus unit] and [GOT]		

13.1.3 Connection with CP-9200SH

(1) System configurations and connection conditions
The following system configuration and connection conditions assume connection with the CP-9200SH.
The numbers (1 to 3) given in the system configurations denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

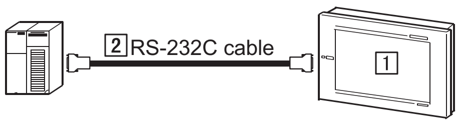
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	

(2) System equipment
The following table indicates the system equipment needed for connection with the CP-9200SH.

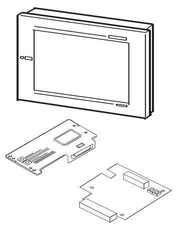
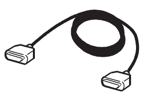
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Yaskawa PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
		Yaskawa PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	2	Memo bus unit	CP-217IF	
	3	RS-232C cable between [memo bus unit] and [GOT]	(Refer to Section 13.3 and fabricate on user side.)	

13.1.4 Connection with MP-920, MP-930, CP-9300MS, CP-9200(H) or PROGIC-8

(1) System configurations and connection conditions
The following system configuration and connection conditions assume connection with the MP-920, MP-930, CP-9300MS, CP-9200(H) or PROGIC-8.
The numbers ($\boxed{1}$ to $\boxed{2}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{2}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

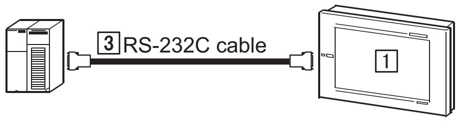
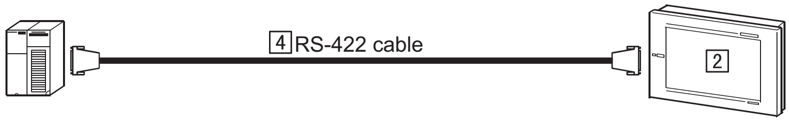
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	

(2) System equipment
The following table indicates the system equipment needed for connection with the MP-920, MP-930, CP-9300MS, CP-9200(H) or PROGIC-8.

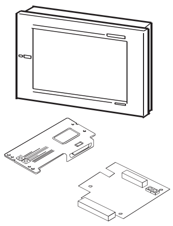
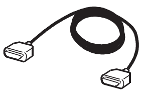
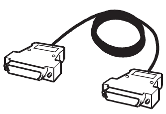
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Yaskawa PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	RS-232C cable between [CPU] and [GOT]	(Refer to Section 13.3 and fabricate on user side.)	

13.1.5 Connection with GL120 or GL130

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the MP-940.
The numbers (1 to 4) given in the system configurations denote the numbers (1 to 4) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the MP-940.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Yaskawa PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Yaskawa PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	RS-232C cable between [memo bus unit] and [GOT]	(Refer to Section 13.3 and fabricate on user side.)	
	4	RS-422 cable between [memo bus unit] and [GOT]		

13.2 Initial Settings

13.2.1 PLC side settings

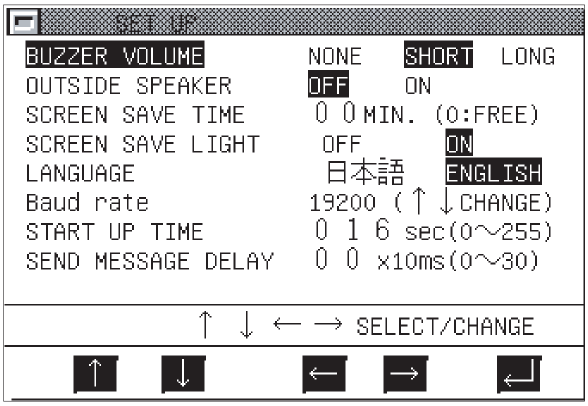
When connecting the GOT and Yaskawa Electric PLC, make the following communication and port settings with the peripheral tool.
For details of the setting method, refer to the instruction manual of the Yaskawa Electric PLC.

Item	Set value
Address	1
Protocol	MEMOBUS
Mode	RTU
Data length	8
Parity	EVEN
Stop	1
Communication speed (transmission speed)*	4800bps/9600bps/19200bps/38400bps

* The upper limit that may be set changes with the Yaskawa Electric PLC used.

13.2.2 GOT side settings

When connecting the GOT and Yaskawa Electric PLC, you need to set the transmission speed to the GOT according to the setting of the Yaskawa Electric PLC used.
Set the transmission speed on Setup of the GOT's utility function.
For details of the utility function, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



Setting item	Description	Factory setting
Baud rate	Choose the transmission speed (4800, 9600, 19200, 38400).	19200
START UP TIME	Set how many seconds after GOT power-on the communication with the PLC CPU will be started.	GL series : 16 Other than GL series : 1
SEND MESSAGE DELAY	Set the waiting time from when the GOT has received data from the PLC CPU until it sends next data to the PLC CPU.	0

Point

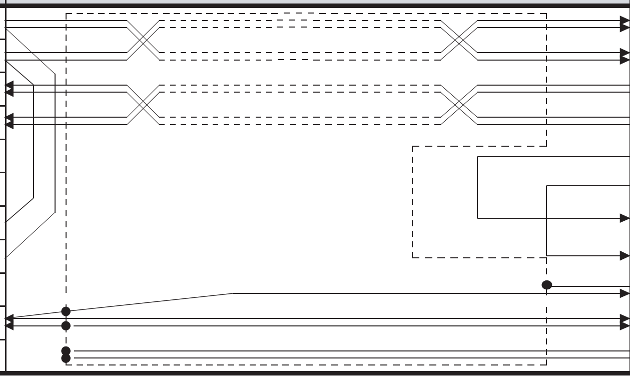
The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to Yaskawa PLC connection.

13.3 Connection Cable

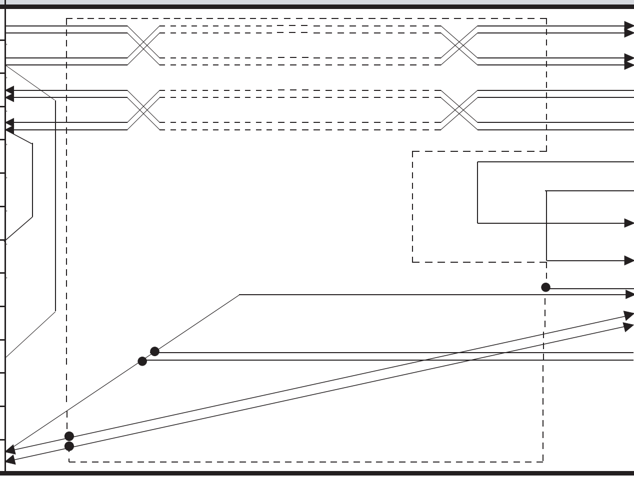
13.3.1 RS-422 cable

(1) Connection diagram

(a) When using GL60S, GL60H, GL70H, GL120 or GL130

Yaskawa PLC (D-sub 9-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Pin No.	Signal name		Pin No.	Signal name
SDA	2		2	RDA
SDB	9		15	RDB
RDA	3		3	SDA
RDB	6		16	SDB
			5	RSA
PGND	1		18	RSB
Reception end	4		4	CSA
Reception end	8		17	CSB
			20	
SG	7		8	SG
			21	SG (shield)

(b) When using MP-940

Yaskawa PLC (D-sub 9-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Pin No.	Signal name		Pin No.	Signal name
TX+	1		2	RDA
TX-	2		15	RDB
RX+	3		3	SDA
RX-	4		16	SDB
	5		5	RSA
RX-	6		18	RSB
Reception end	7		4	CSA
TX+	8		17	CSB
TX-	9		20	SG
RX+	10		8	SG
	11		21	SG (shield)
Sending end	12			
VCC	13			
GND	14			

(2) Connector and connector cover
- Connector for GOT

Description	Model	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

- Connector for Yaskawa PLC
  Use a connector matching the memo bus unit.

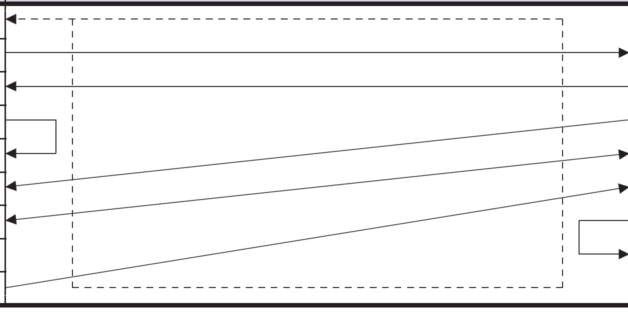
(3) Precautions for cable preparation
Maximum cable length depends on the specifications of the memo bus unit.
For further details, refer to the instruction manual of the memo bus unit.

13.3.2 RS-232C cable

(1) Connection diagram

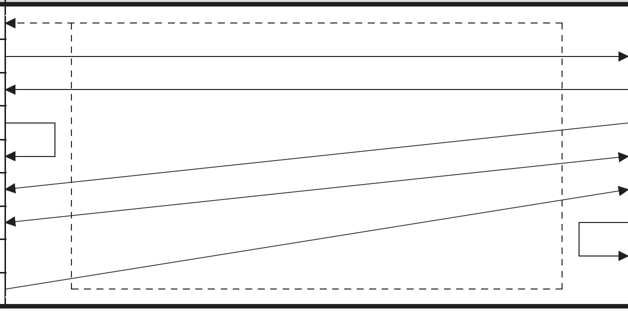
(a) When using GL60S, GL60H, GL70H, GL120, GL130, MP-920, MP-930, CP-9200(H) or PROGIC-8 (when using D-sub 9-pin port)

Yaskawa PLC (D-sub 9-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
TXD	2		2	RD(RXD)
RXD	3		3	SD(TXD)
RTS	4		4	DTR(ER)
CTS	5		5	SG
DSR	6		6	DSR(DR)
GND	7		7	RS(RTS)
EST	8		8	CS(CTS)
DTR	9		9	---



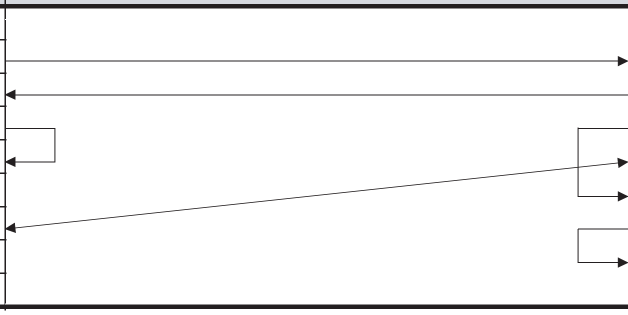
(b) When using CP-9200SH

Yaskawa PLC (D-sub 25-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
TXD	2		2	RD(RXD)
RXD	3		3	SD(TXD)
RS	4		4	DTR(ER)
CS	5		5	SG
DSR	6		6	DSR(DR)
SG	7		7	RS(RTS)
CD	8		8	CS(CTS)
DTR	20		9	---



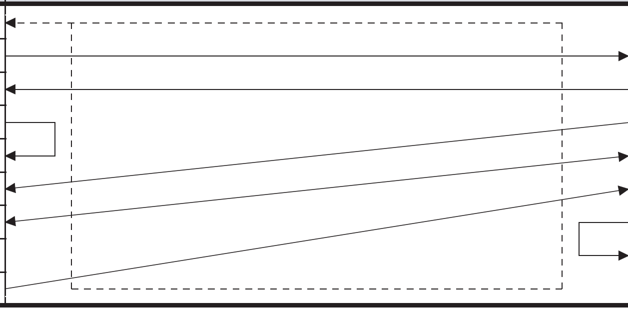
(c) When using CP-9300MS

Yaskawa PLC (D-sub 9-pin male metric screw type)			Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name		Pin No.		Pin No.	Signal name
CN2	CN3				
FG	---	1		1	CD
TXD		2		2	RD(RXD)
RXD		3		3	SD(TXD)
RTS		4		4	DTR(ER)
OP	CTS	5		5	SG
DSR	---	6		6	DSR(DR)
GND		7		7	RS(RTS)
PWR	---	8		8	CS(CTS)
DTR	---	9		9	---



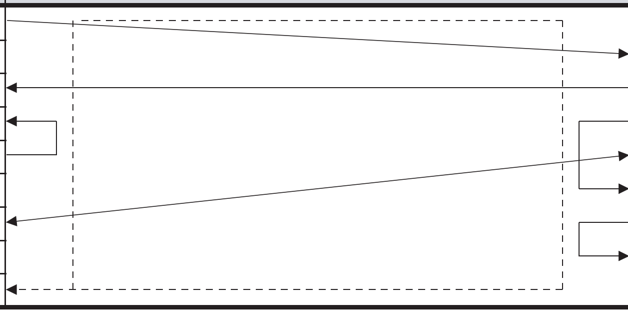
(d) When using PROGIC-8 (when using D-sub 15-pin port)

Yaskawa PLC side (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
TXD	2		2	RD(RXD)
RXD	3		3	SD(TXD)
RTS	4		4	DTR(ER)
CTS	5		5	SG
DSR	6		6	DSR(DR)
GND	7		7	RS(RTS)
EST	8		8	CS(CTS)
DTR	9		9	---



(e) When using MP-940

Yaskawa PLC (14 pins)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
TXD	1		1	CD
	2		2	RD(RXD)
RXD	3		3	SD(TXD)
RTS	6		4	DTR(ER)
CTS	12		5	SG
			6	DSR(DR)
GND	14		7	RS(RTS)
			8	CS(CTS)
*			9	



* Clamped to the hood

(2) Connector and connector cover

• Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

• Connector for Yaskawa PLC
Use connectors matching the Yaskawa PLC.

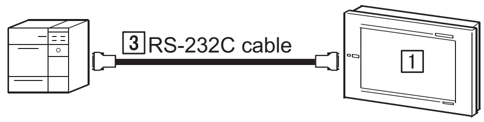
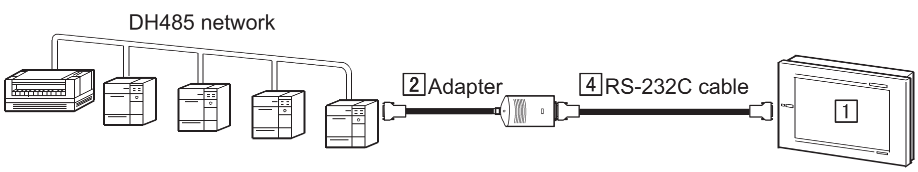
(3) Precautions for cable preparation
The maximum cable length depends on the specifications of the Yaskawa PLC.
For further details, refer to the instruction manuals of the Yaskawa PLC.

14 ALLEN-BRADLEY PLC CONNECTION

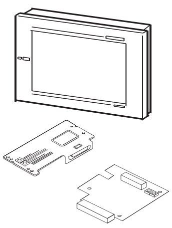
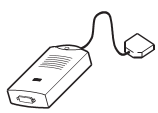
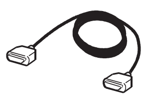
14.1 System Configurations

14.1.1 Connection with SLC500 series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the SLC500 series.
The numbers ([1] to [4]) given in the system configurations denote the numbers ([1] to [4]) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

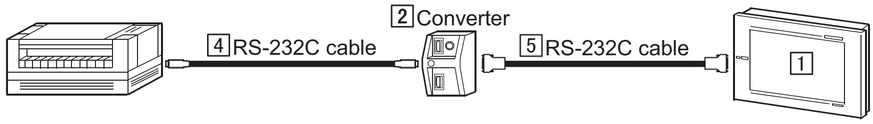
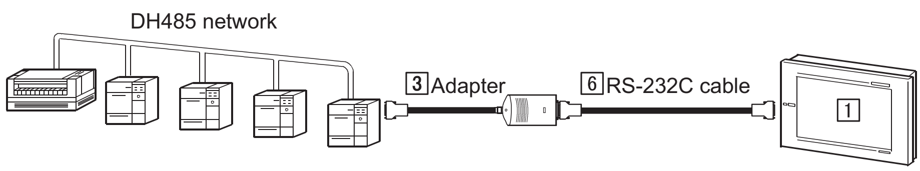
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the SLC500 series.

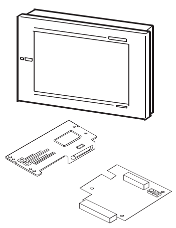
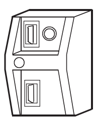
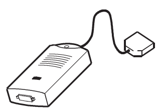
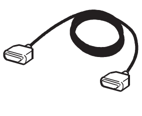
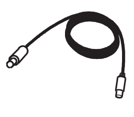
Image	No.	Application	Type	
			GOT unit	Serial communication board
	[1]	Allen-Bradley PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	[2]	Adaptor (Allen-Bradley make)	1770-KF3	
	[3]	RS-232C cable between [CPU] and [GOT]	(Refer to Section 14.4 and fabricate on user side.)	
	[4]	RS-232C cable between [adaptor] and [GOT]		

14.1.2 Connection with MicroLogix 1000 series or MicroLogix 1500 series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the MicroLogix 1000 series or MicroLogix 1500 series.
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) system equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) system equipment
The following table indicates the system equipment needed for connection with the MicroLogix 1000 series or MicroLogix 1500 series.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Allen-Bradley PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Converter (Allen-Bradley make)	1761-NET-AIC	
	$\boxed{3}$	Adaptor (Allen-Bradley make)	1770-KF3	
	$\boxed{4}$	RS-232C cable between [CPU] and [converter]	1761-CBL-AM00	
	$\boxed{5}$	RS-232C cable between [converter] and [GOT]*1	1761-CBL-AC00(C)	
	$\boxed{6}$	RS-232C cable between [adaptor] and [GOT]	(Refer to Section 14.4 and fabricate on user side.)	

*1 The connection cable may also be fabricated on user side. Refer to Section 14.4 for details of the fabrication method.

14.2 Initial Settings

14.2.1 PLC side settings

For monitoring with connection to the GOT, make the communication settings and the port settings with the peripheral tool as follows.
For details, refer to the operation manual of the Allen-Bradley PLC.

(1) When connecting one CPU

Setting of Allen-Bradley PLC	
Band Rate	4800bps/9600bps/19200bps/38400bps*1
Parity	SLC500 series: EVEN MicroLogix1000 series: NONE MicroLogix1500 series: NONE
Communication Driver	DF1 HALF-DUPLEX SLAVE
Duplicate Packet Detection	DISABLE
Error Detection	BCC
control Line	NO HANDSHAKING
Station Address	0

*1 The SLC500 series does not support 38400bps.

(2) When connecting multiple CPUs

Setting of Adapter	
Band Rate	4800bps/9600bps/19200bps
Parity	EVEN
Flow Control	Disable (No Handshaking)
DF1 Device Category	DF1 half-duplex slave, local mode
Error Detection	BCC
DH-485 Baud Rate	19200bps
Maximum Node Address	1 to 31*1
DH-485 Node Address	0 to 31*2

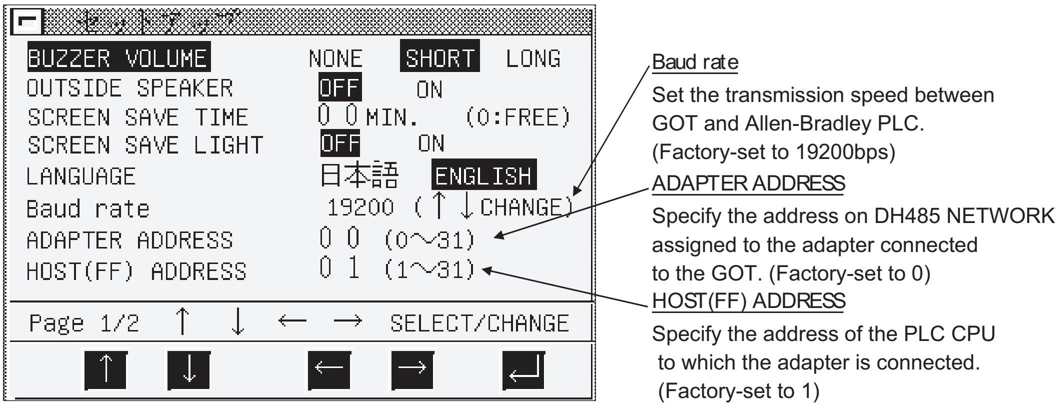
*1 For the maximum node address, set the same address as the maximum node address on the DH-485 network.
*2 Set the same address as the adaptor address which is set in the setup of the GOT's utility function.
Set the DH-485 node address carefully so that it does not overlap the node address of the PLC on the DH-485 network.

14.2.2 GOT side settings

When connecting the GOT and Allen-Bradley PLC, you need to make the following settings on Setup of the GOT's utility function.

- Baud rate
  Set the transmission speed between GOT and Allen-Bradley PLC.
  (Factory-set to 19200bps)
- ADAPTER ADDRESS
  Specify the address on DH485 NETWORK assigned to the Adapter connected to the GOT. Set the same address as the DH-485 node address specified for the adaptor.
  Set the DH-485 node address carefully so that it does not overlap the node address of the PLC on the DH-485 network.
  (Setting is needed only when multiple CPUs are connected Factory-set to 0)
- HOST (FF) ADDRESS
  Specify the address on DH485 NETWORK assigned to the PLC CPU to which the Adapter is connected.
  The specified PLC CPU is the "host" when monitor device setting is made on the GT Designer2.
  For details of monitor device setting, refer to the GT Designer2 Version2 Reference Manual. (Factory-set to 1)

For details of the utility function, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



Point

The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to Allen-Bradley PLC connection.

14.3 Transmission Specification

Transmission specification for communication between the GOT and the Allen-Bradley PLC is as follows:

(1) When connecting one CPU

Item	Setting details
Transmission speed	4800bps/9600bps/19200bps/38400bps*1
Data length	8 bit
Stop bit	1 bit
Parity bit	SLC500 series: EVEN MicroLogix1000 series: NONE MicroLogix1500 series: NONE
Control method	None

*1 The SLC500 series does not support 38400bps.

(2) When connecting multiple CPUs

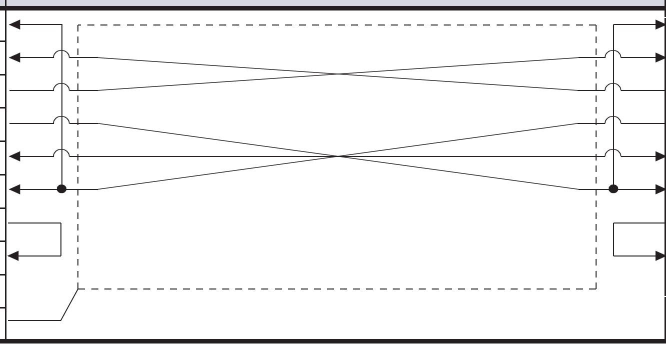
Item	Setting details
Transmission speed	4800bps/9600bps/19200bps
Data length	8 bit
Stop bit	1 bit
Parity bit	EVEN
Control method	None

14.4 Connection Cable

The connection diagram and connectors for the RS-232C cables between the CPU (SLC500 Series), the Converter (1761-NET-AIC), the Adapter (1770-KF3) and the GOT are as follows.

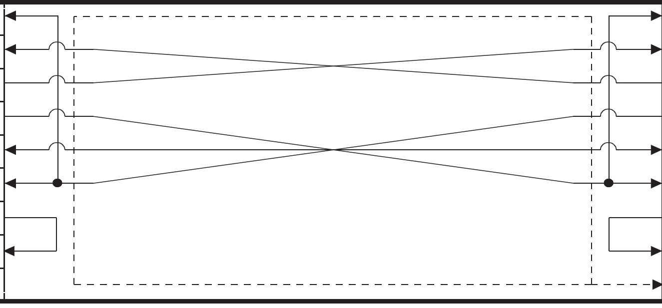
(1) Connection diagram

1) CPU (SLC500 Series)

Allen-Bradley (D-sub 9-pin female metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
CD	1		1	CD
RD	2		2	RD(RXD)
SD	3		3	SD(TXD)
DTR	4		4	DTR(ER)
SG	5		5	SG
DSR(DR)	6		6	DSR(DR)
RS(RTS)	7		7	RS(RTS)
CS(CTS)	8		8	CS(CTS)
NC	9		9	---
shell	---			

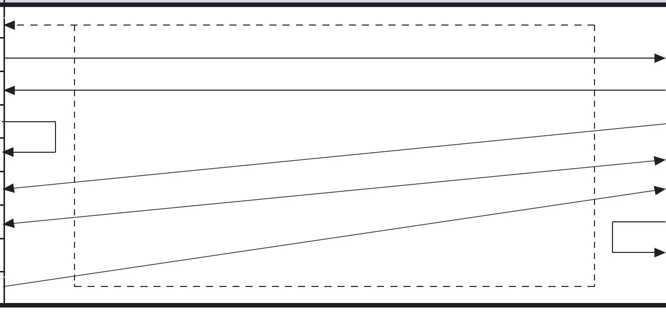
2) Converter (1761-NET-AIC)

Allen-Bradley (D-sub 9-pin female metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
CD	1		1	CD
RD	2		2	RD(RXD)
SD	3		3	SD(TXD)
DTR	4		4	DTR(ER)
SG	5		5	SG
DSR(DR)	6		6	DSR(DR)
RS(RTS)	7		7	RS(RTS)
CS(CTS)	8		8	CS(CTS)
NC	9		9	---



3) Adapter (1770-KF3)

Allen-Bradley (D-sub 9-pin female metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD	2		2	RD(RXD)
RD	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
DSR(DR)	6		6	DSR(DR)
SG	7		7	RS(RTS)
CD	8		8	CS(CTS)
DTR	20		9	---



(2) Connector and connector cover to be used

- GOT connector

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for Allen-Bradley PLC, Converter, Adapter
  Use the connector that matches the Allen-Bradley PLC, Converter, Adapter.

(3) Precautions for preparation of connector

The maximum cable length may vary depending on the specification of the Allen-Bradley PLC specification

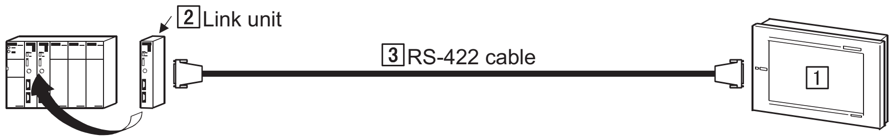
For details, refer to the Allen-Bradley PLC operation manual.

15 SHARP PLC CONNECTION

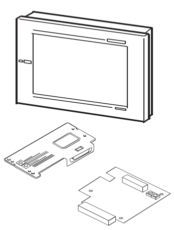
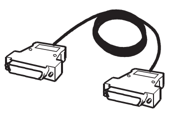
15.1 System Configurations

15.1.1 Connection with JW-21CU or JW-31CUH

(1) System configurations and connection conditions
The following system configuration and connection conditions assume connection with the JW-21CU or JW-31CUH.
The numbers ([1] to [3]) given in the system configurations denote the numbers ([1] to [3]) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	

(2) System equipment
The following table indicates the system equipment needed for connection with the JW-21CU or JW-31CUH.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	[1]	Sharp PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	[2]	Link unit	JW-21CM	
	[3]	RS-422 cable between [link unit] and [GOT]	(Refer to Section 15.3 and fabricate on user side.)	

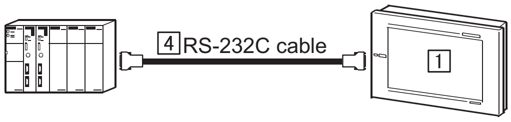
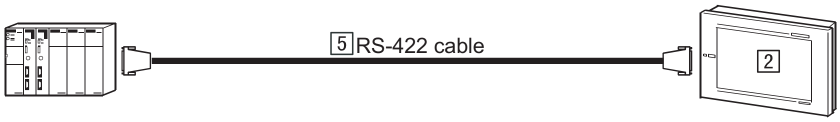
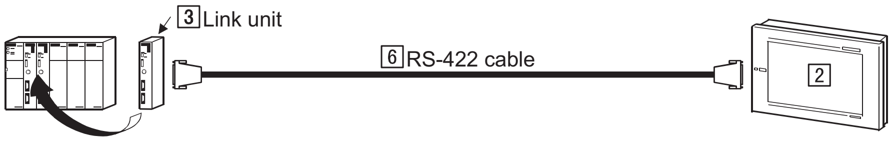
15.1.2 Connection with JW-22CU, JW-32CUH or JW-33CUH

(1) System configurations and connection conditions

The following system configurations and connection conditions assume connection with the JW-22CU, JW-32CUH or JW-33CUH.

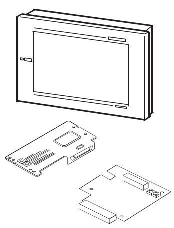
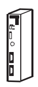
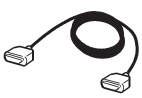
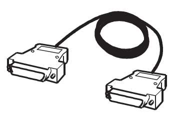
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		
		

(2) System equipment

The following table indicates the system equipment needed for connection with the JW-22CU, JW-32CUH or JW-33CUH.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Sharp PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Sharp PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Link unit	JW-21CM	
	4	RS-232C cable between [CPU] and [GOT]	(Refer to Section 15.3 and fabricate on user side.)	
	5	RS-422 cable between [CPU] and [GOT]		
	6	RS-422 cable between [link unit] and [GOT]		

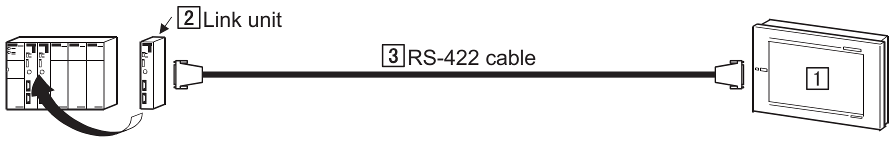
15.1.3 Connection with JW-50CUH

(1) System configurations and connection conditions

The following system configuration and connection conditions assume connection with the JW-50CUH.

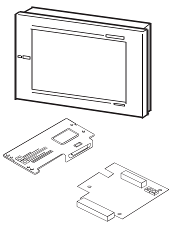
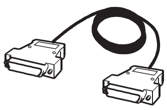
The numbers (1 to 3) given in the system configurations denote the numbers (1 to 3) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	

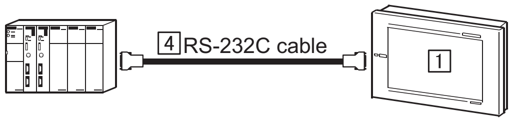
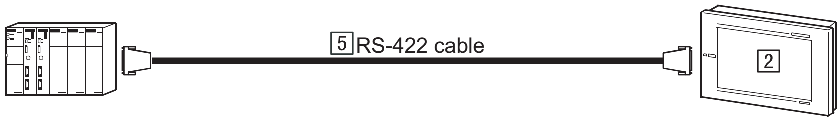
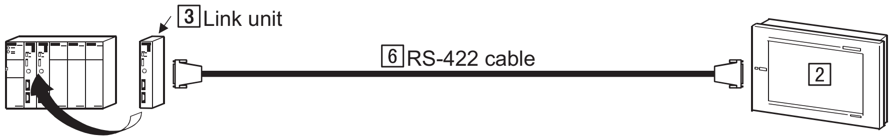
(2) System equipment

The following table indicates the system equipment needed for connection with the JW-50CUH.

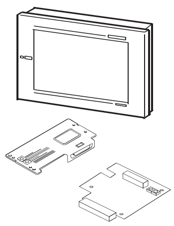
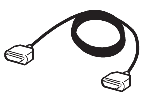
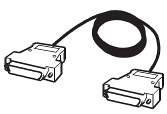
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Sharp PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	2	Link unit	JW-10CM, ZW-10CM	
	3	RS-422 cable between [link unit] and [GOT]	(Refer to Section 15.3 and fabricate on user side.)	

15.1.4 Connection with JW-70CUH, JW-100CUH or JW-100CU

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the JW-70CUH, JW-100CUH or JW-100CU.
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

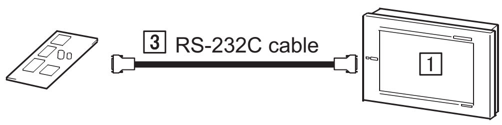
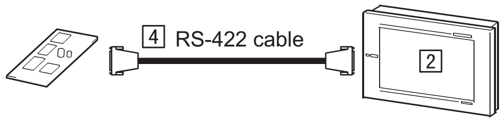
Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		
		

(2) System equipment
The following table indicates the system equipment needed for connection with the JW-70CUH, JW-100CUH or JW-100CU.

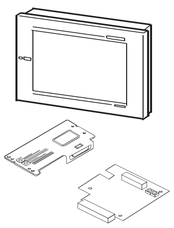
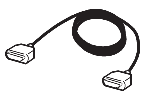
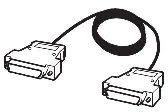
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Sharp PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Sharp PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Link unit	JW-10CM,ZW-10CM	
	4	RS-232C cable between [CPU] and [GOT]	(Refer to Section 15.3 and fabricate on user side.)	
	5	RS-422 cable between [CPU] and [GOT]		
	6	RS-422 cable between [link unit] and [GOT]		

15.1.5 Connection with Z-512J

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the Z-512J.
The numbers (1 to 4) given in the system configurations denote the numbers (1 to 4) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the Z-512J.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Sharp PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Sharp PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	RS-232C cable between [CPU] and [GOT]	(Refer to Section 15.3 and fabricate on user side.)	
	4	RS-422 cable between [CPU] and [GOT]		

9 CC-LINK CONNECTION (REMOTE DEVICE STATION)
10 CC-LINK CONNECTION (VIA G4)
11 ETHERNET CONNECTION
12 OMRON PLC CONNECTION
13 YASKAWA PLC CONNECTION
14 ALLEN-BRADLEY PLC CONNECTION
15 SHARP PLC CONNECTION
16 TOSHIBA PLC CONNECTION

15.2 Initial Setting

15.2.1 Connecting directly to the PLC CPU

To connect the GOT to the PLC CPU directly, it is necessary to make initial settings of the communication port.
Set the system memory of the PLC CPU with the peripheral tool as follows.
For details of the setting method, refer to the operation manual of the Sharp PLC.

(1) When using JW-22CUH, JW-70CUH, JW-100CUH and JW-100CU

Setting item	System memory address	Setting details
Setting of communication port	#236	Set the transmission speed, the parity and the stop bit to the bit of D0 to D5 as follows : D7 D6 D5 D4 D3 D2 D1 D0 #236 - - 1 1 0 0 0 1 Transmission specification (9600bps) Parity (even number) Stop bit (2 bit)
	#237	Set the station number as follows : #237 1 Station No. (1)

(2) When using JW-32CUH, JW-33CUH and Z-512J

Setting item	System memory address	Setting details
Setting of communication port 1	#234	Set the transmission speed, the parity and the stop bit to the bit of D0 to D5 as follows : D7 D6 D5 D4 D3 D2 D1 D0 #234 - - 1 1 0 0 0 0 Transmission specification (19200bps) Parity (even number) Stop bit (2 bit)
	#235	Set the station number as follows : #235 1 Station No. (1)
Setting of communication port 2	#236	Set the transmission speed, the parity and the stop bit to the bit of D0 to D5 as follows : D7 D6 D5 D4 D3 D2 D1 D0 #236 - - 1 1 0 0 0 0 Transmission specification (19200bps) Parity (even number) Stop bit (2 bit)
	#237	Set the station number as follows : #237 1 Station No. (1)

15.2.2 Connecting to the link unit

To connect the GOT to the link unit, it is necessary to make settings for initial communication.
Set the switches on the link unit as follows.
For details of the setting method, refer to the operation manual of the link unit.

Switch No.		Setting item	Set value
SW3	2	2 wire /4 wire	ON (4 wire)
	4	Parity	ON (even number)
SW4		Setting of transmission speed	0 (19200 bit/s)

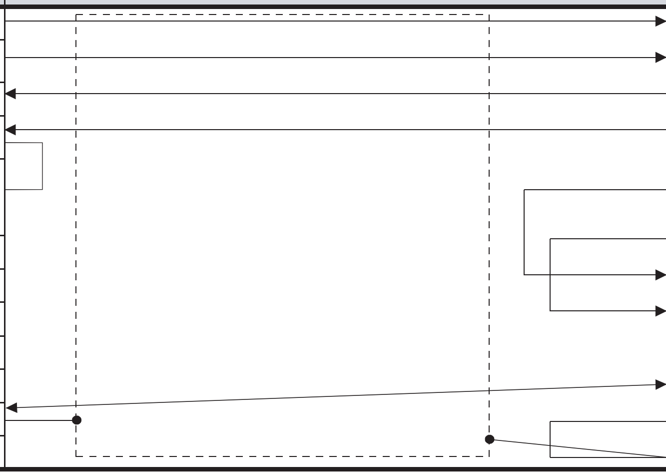
15.3 Connection Cable

15.3.1 RS-422 cable

The RS-422 cable connection diagram and the connector for the PLC CPU and the link unit are as follows :

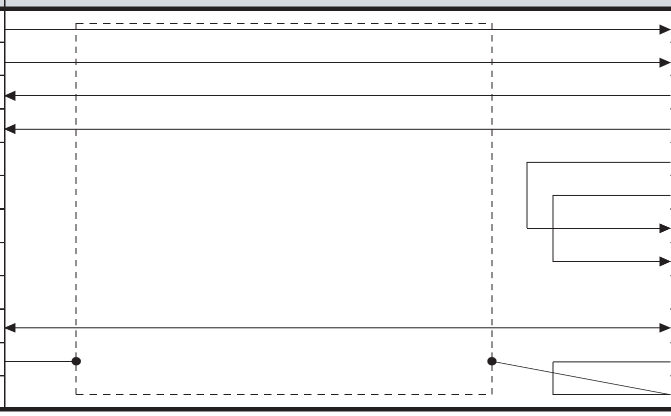
(1) Connection diagram

(a) PLC CPU (JW-22CU, JW-70CUH, JW-100CUH, JW-100CU)

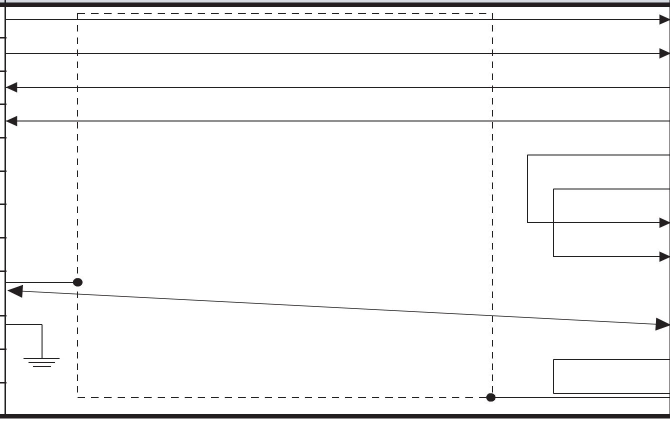
Sharp (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name	Pin No.		Pin No.	Signal name
TXD(SD(+))	10		2	RDA
$\overline{\text{TXD}}$(SD(-))	11		15	RDB
RXD(RD(+))	12		3	SDA
$\overline{\text{RXD}}$(RD(-))	13		16	BD
Terminator resistor *1	6		5	RSA
			18	RSB
			4	CSA
			17	CSB
FG	1		7	
			8	SG
SG	7		20	
			21	SG (shield)

*1 Connect the terminating resistor of No. 6 pin to No. 13 pin ($\overline{\text{RXD}}$) in the case for terminal stations.
(The above process is required for the JW-70CUH and JW-100CUH. The JW-22CU and JW-100CU do not have any terminating resistor.)

(b) PLC CPU (JW-32CUH, JW-33CUH, Z-512J)

Sharp (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name	Pin No.		Pin No.	Signal name
SD(+)	3		2	RDA
SD(-)	11		15	RDB
RD(+)	9		3	SDA
RD(-)	10		16	SDB
			5	RSA
			18	RSB
			4	CSA
			17	CSB
FG	1		7	
SG	6		8	SG
SG	7		20	
			21	SG (shield)

(c) Link unit (JW-21CM, JW-10CM, ZW-10CM)

Sharp (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name	Pin No.		Pin No.	Signal name
SD(+)	L1		2	RDA
SD(-)	L2		15	RDB
RD(+)	L3		3	SDA
RD(-)	L4		16	SDB
			5	RSA
			18	RSB
			4	CSA
			17	CSB
SHIELD*2	SHIELD		7	
FG	FG (GND)		8	SG
			20	
			21	SG (shield)

*2 The JW-10CM and ZW-10CM have two SHIELD pins. Connect to either one.

(2) Connector and connector cover to be used

• GOT connector

Name	Type	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

• Connector at Sharp PLC
Use the connector matching the Sharp PLC.

(3) Precautions for preparation of connector
The maximum cable length may vary depending on the specification of the Sharp PLC specification.
For details, refer to the Sharp PLC operation manual.

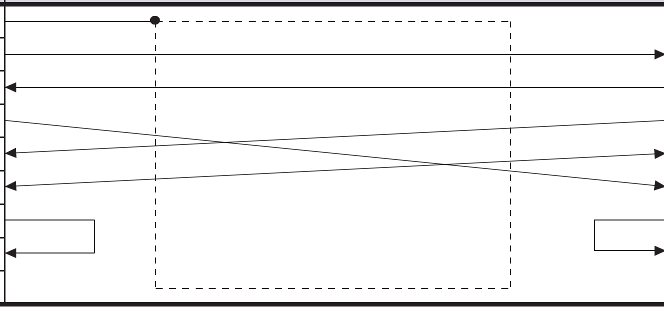
15.3.2 RS-232C cable

The RS-232C cable connection diagram and the connector for the PLC CPU and the GOT are as follows :

(1) Connection diagram

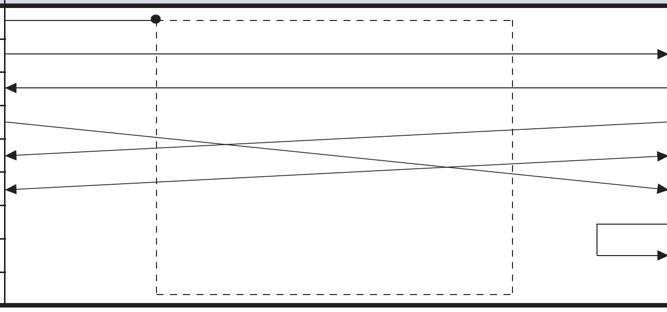
(a) PLC CPU (JW-22CU, JW-70CUH, JW-100CUH, JW-100CU)

Sharp (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
SG	7		6	DSR(DR)
---	12		7	RS(RTS)
---	14		8	CS(CTS)
			9	---



(b) PLC CPU (JW-32CUH, JW-33CUH, Z-512J)

Sharp (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	4		3	SD(TXD)
RS(RTS)	8		4	DTR(ER)
CS(CTS)	12		5	SG
SG	7		6	DSR(DR)
			7	RS(RTS)
			8	CS(CTS)
			9	---



(2) Connector and connector cover to be used

- GOT connector

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for Sharp PLC
  Use the connector that matches the Sharp PLC.

(3) Precautions for preparation of connector

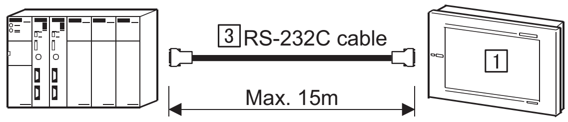
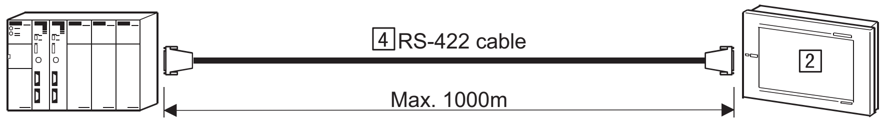
The maximum cable length may vary depending on the specification of the Sharp PLC specification.

For details, refer to the Sharp PLC operation manual.

16 TOSHIBA PLC CONNECTION

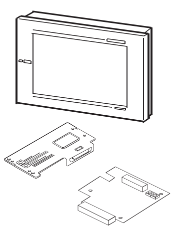
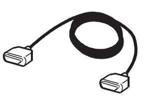
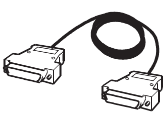
16.1 System Configuration

(1) System configurations and connection conditions
The following system configuration and connection conditions assume connection with the PROSEC T series or PROSEC V series.
The numbers ($\boxed{1}$ to $\boxed{4}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{4}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
	Within 1000m	

*1 RS232C communication can be made with the T2E and T2N only.

(2) System equipment
The following table indicates the system equipment needed for connection with the PROSEC T series or PROSEC V series.

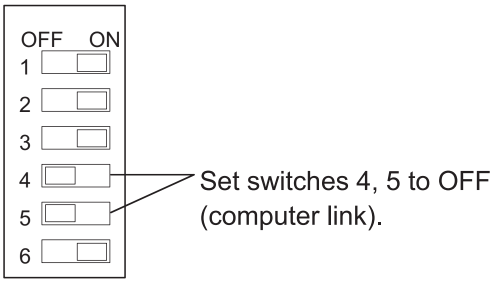
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Toshiba PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Toshiba PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	RS-232 cable between [CPU] and [GOT]	(Refer to Section 16.3 and fabricate on user side.)	
	$\boxed{4}$	RS-422 cable between [CPU] and [GOT]		

16.2 Initial Settings

16.2.1 Switch settings of the T2 series (T2 (PU224), T2E, T2N)

When using the T2 series, make the following switch settings.

(1) Operation mode setting switches (T2 (PU224), T2E, T2N)
Set the switches as follows.



(2) DIP switch on module board (T2N only)
When using the T2N, move the DIP switch No. 1 on the T2NCPU module board to select the communication system.

DIP Switch: No. 1	Communication system
OFF	RS-485 (RS-422)
ON	RS-232C

16.2.2 PLC side settings

For monitoring by connection to the GOT, the following transmission parameters must be set to the Toshiba PLC using the peripheral software.
For details of how to make this setting, refer to the instruction manual of the Toshiba PLC.

Setting item	Setting
Station No.	1
Baudrate	19200bps
Parity	Even
Data length	7bit
Stop bit	2bit

16.3 Connection Cable

16.3.1 RS-422 cable

(1) Connection diagram

(a) T3(H), T2(PU224 type), model3000(S3), S2T

Toshiba PLC side (D-sub 15-pin male millimeter screw type)		Cable connection and direction of signal	GOT side (D-sub 25-pin male millimeter screw type)	
Signal name	Pin No.		Pin No.	Signal name
TXA	3		2	RDA
TXB	11		15	RDB
RXA	2		3	SDA
RXB	10		16	SDB
SG	7		5	RSA
FG	1	R*1	18	RSB
RTSA	5		4	CSA
CTSA	4		17	CSB
RTSB	13		7	
CTSB	12		8	SG
			20	
		shield	21	SG(shield)

*1 A 1/2W-120Ω resistor must be connected between RXA and RXB on the Toshiba PLC side.

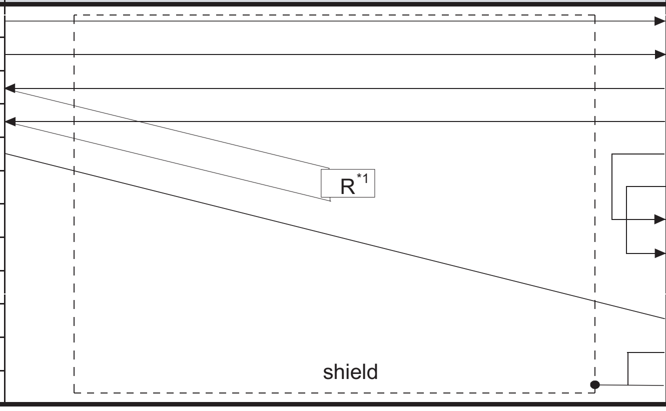
(b) T2E(CM231E)

Toshiba PLC side	Cable connection and direction of signal	GOT side (D-sub 25-pin male millimeter screw type)	
Signal name		Pin No.	Signal name
TXA		2	RDA
TXB		15	RDB
RXA		3	SDA
RXB		16	SDB
SG		5	RSA
TERM		18	RSB
		4	CSA
		17	CSB
		7	---
		8	SG
		20	SG
	shield	21	SG(shield)

*1.RXA and TERM on the Toshiba PLC side must be shorted. (Connect to the terminator resistor.)

(c) T2N

Toshiba PLC side (D-sub 15-pin male millimeter screw type)		Cable connection and direction of signal	GOT side (D-sub 25-pin male millimeter screw type)	
Signal name	Pin No.		Pin No.	Signal name
TXA	3		2	RDA
TXB	11		15	RDB
RXA	2		3	SDA
RXB	10		16	SDB
FG	8		5	RSA
			18	RSB
			4	CSA
			17	CSB
			7	---
			8	SG
			20	SG
			21	SG(shield)



*1 A 1/2W-120Ω resistor must be connected between RXA and RXB on the Toshiba PLC side.

(2) Connector and connector cover to be used

• Connector for GOT

Description	Model	Manufacturer
Connector	HDEB-9S(05)	HIROSE ELECTRIC CO.,LTD
Connector cover	HDE-CTH1(4-40)	HIROSE ELECTRIC CO.,LTD

• Connector for TOSHIBA PLC

(a) T3(H), T2(PU224 type), model3000(S3), (c) T2

Description	Model	Manufacturer
Connector	DAC-15P-F0	Japan Aviation Electronics Industry, Ltd.
	DA-15-P-N	
Cover	DA-110963-2	
	GM-15LK	HONDA TSUSHIN KOGYO CO., LTD.

(b) T2E

Bar type bare crimping terminal (refer to the manual of the Toshiba PLC for details.)

(3) Precautions for preparation of connector

The cable to be fabricated should be within 1000m long.

16.3.2 RS-232C cable

The connection diagram and connectors for the RS-232C cables between the Toshiba PLC and the GOT are as follows.

(1) Connection diagram

(a) T2E(CM232E)

Toshiba PLC side (D-sub 9-pin male millimeter screw type)		Cable connection and direction of signal	GOT side (D-sub 25-pin male millimeter screw type)	
Signal name	Pin No.		Pin No.	Signal name
SG	1		1	CD
RXD	2		2	RD(RXD)
TXD	3		3	SD(TXD)
---	4		4	DTR(ER)
SG	5		5	SG
5V	6		6	DSR(DR)
RTS	7		7	RS(RTS)
---	8	shield	8	CS(CTS)
5V	9		9	---

(b) T2N

Toshiba PLC side (D-sub 15-pin male millimeter screw type)		Cable connection and direction of signal	GOT side (D-sub 25-pin male millimeter screw type)	
Signal name	Pin No.		Pin No.	Signal name
---	1		1	CD
RXD	12		2	RD(RXD)
TXD	5		3	SD(TXD)
SG	7		4	DTR(ER)
SG	8		5	SG
G	15		6	DSR(DR)
RTS	6		7	RS(RTS)
CTS	14		8	CS(CTS)
---	13		9	---

(2) Connector and connector cover

• GOT connector

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

• Toshiba PLC connector

(a) T2E(CM232E)

Name	Type	Manufacturer
Connector with cover	17JE-23090-02(D8C)	DDK

(b) T2N

Name	Type	Manufacturer
Connector	DAC-15P-F0	Japan Aviation Electronics Industry, Ltd.
	DA-15-P-N	
Cover	DA-110963-2	
	GM-15LK	HONDA TSUSHIN KOGYO CO., LTD.

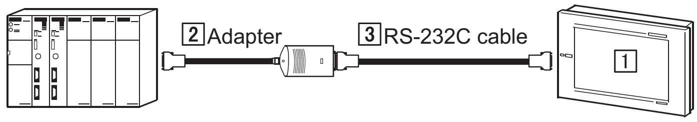
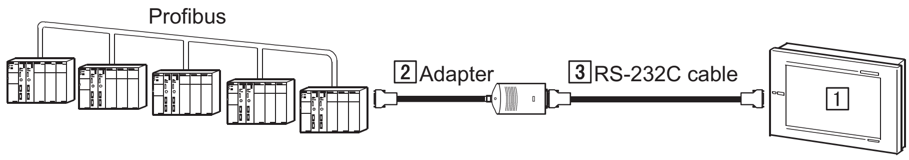
(3) Precautions for preparation of connector

The cable to be fabricated should be within 15m long.

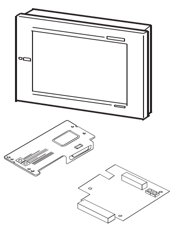
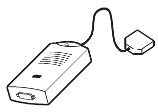
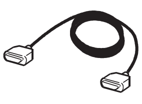
17 SIEMENS PLC CONNECTION

17.1 System Configuration

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the SIMATIC S7-300 series or SIMATIC S7-400 series.
The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the connection target CPU specifications.	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the SIMATIC S7-300 series or SIMATIC S7-400 series.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	SIEMENS PLC-connected (RS-232C communication) GOT*1*2*3*4	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	HMI adaptor (SIEMENS make)	MLFB:6ES7 972-0CA11-0XA0	
	$\boxed{3}$	RS-232C cable between [HMI adaptor] and [GOT]	(Refer to Section 17.3 and fabricate on user side.)	

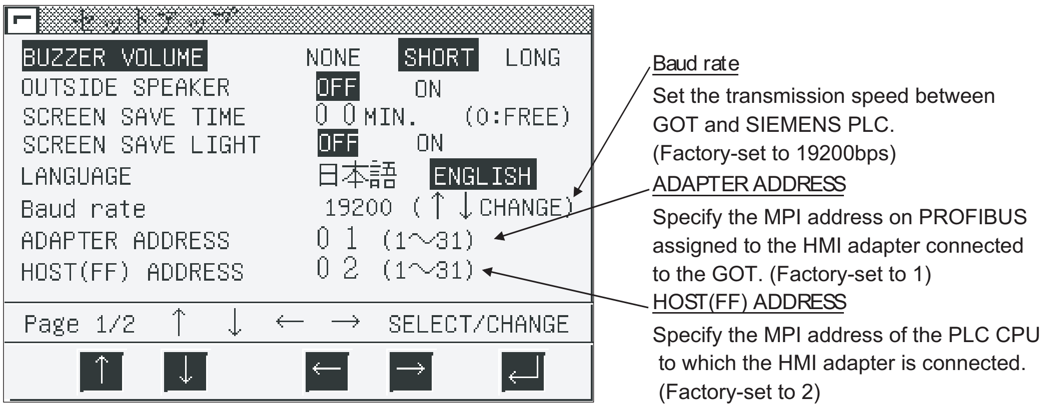
*1 The GOT can monitor the PLC CPU side error information using the alarm list (system alarm) function. Note that when connected with the SIEMENS PLC, however, it cannot monitor error information.
Refer to the GT Designer2 Version2 Reference Manual for details of the alarm list (system alarm) function.
*2 The GOT requires the PLC CPU where the HMI adaptor is connected to be set to "Host".
Refer to Section 17.2 for details of the setting method.
*3 When starting the system (switching power on), first power on all PLC CPUs, then power on the GOT. If you power on the PLC CPUs later, you need to restart the GOT.
*4 If you power off the other station PLC CPU (PLC CPU where the HMI adaptor is not connected) during system operation, the GOT will stop monitoring.
The GOT will not resume monitoring if you power on the PLC CPU again.
To resume the monitoring of the GOT, you must restart the GOT.

17.2 Initial Settings

When connecting the GOT and SIEMENS PLC, you need to make the following settings on Setup of the GOT's utility function.

- Baud rate
  Set the transmission speed between GOT and SIEMENS PLC.
  (Factory-set to 19200bps)
- ADAPTER ADDRESS
  Specify the MPI address on PROFIBUS assigned to the HMI adapter connected to the GOT. (Factory-set to 1)
- HOST (FF) ADDRESS
  Specify the MPI address on PROFIBUS assigned to the PLC CPU to which the HMI adapter is connected.
  The specified PLC CPU is the "host" when monitor device setting is made on the drawing software.
  For details of monitor device setting, refer to the GT Designer2 Version2 Reference Manual. (Factory-set to 2)

  For details of the utility function, refer to the GOT-A900 Series Operating Manual
  (Extended • Option Functions Manual).



Point

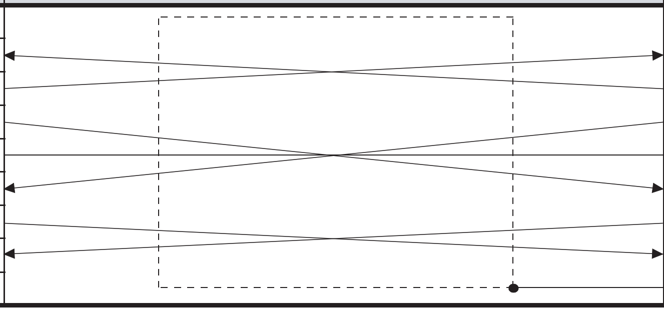
The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to SIEMENS PLC connection.

17.3 Connection Cable

The following connection diagram and connectors are used to connect the HMI adapter and GOT.

(1) Connection diagram

HMI adapter side (D-sub 9-pin male inch screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
CD	1		1	CD
RD(RXD)	2		2	RD(RXD)
SD(TXD)	3		3	SD(TXD)
DTR(ER)	4		4	DTR(ER)
SG	5		5	SG
DSR(DR)	6		6	DSR(DR)
RS(RTS)	7		7	RS(RTS)
CS(CTS)	8		8	CS(CTS)
FG	9		9	FG



(2) Connector and connector cover
- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for HMI adapter side
  Use the connector compatible with the HMI adapter.

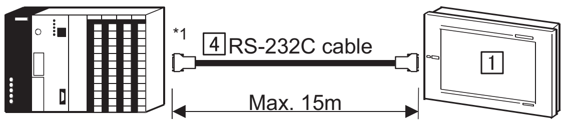
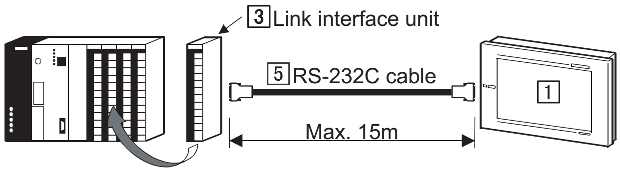
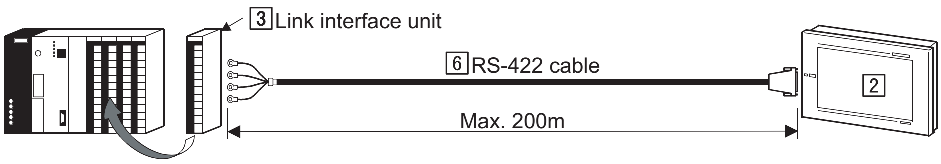
(3) Precaution for cable fabrication
The maximum cable length changes with the specifications of the SIEMENS PLC used.
For details, refer to the instruction manual of the SIEMENS PLC.

18 HITACHI PLC CONNECTION

18.1 System Configurations

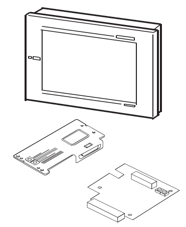
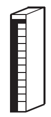
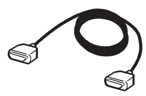
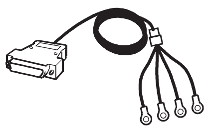
18.1.1 Connection with large H series

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the large H series. The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
	Within 200m	

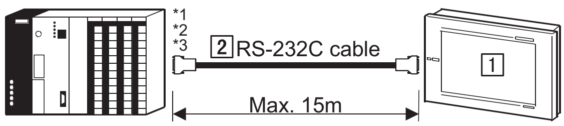
*1 When plugging the connection cable into the large H series, connect it to the peripheral port of the CPU module.

(2) System equipment
The following table indicates the system equipment needed for connection with the large H series.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Hitachi PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Hitachi PLC-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	3	Link interface unit	COMM-H, COMM-2H	
	4	RS-232C cable between [CPU] and [GOT]	(Refer to Section 18.3 and fabricate on user side.)	
	5	RS-232C cable between [link interface unit] and [GOT]		
	6	RS-422 cable between [link interface unit] and [GOT]		

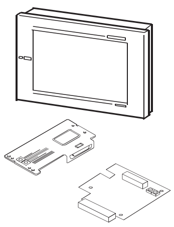
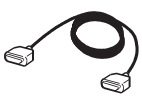
18.1.2 Connection with H-200 to 252 series, H series board type or EH-150 series

(1) System configurations and connection conditions
The following system configuration and connection conditions assume connection with the H-200 to 252 series, H series board type or EH-150 series.
The numbers (1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	

*1 When plugging the connection cable into the H-200 to 252 series, connect it to the peripheral port of the CPU module.
*2 When plugging the connection cable into the EH-150 series, connect it to the serial port of the CPU module.
*3 Plugging the connection cable into the serial port 2 of the H252C (CPU22-02HC, CPE22-02HC) requires the round connector (8 pins)/D-sub connector (15 pins) conversion cable (Hitachi, Ltd. make: CNCOM-05).

(2) System equipment
The following table indicates the system equipment needed for connection with the H-200 to 252 series, H series board type or EH-150 series.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Hitachi PLC-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	RS-232C cable between [CPU] and [GOT]	(Refer to Section 18.3 and fabricate on user side.)	

18.2 Initial Settings

18.2.1 PLC side settings

For monitoring with connection to the GOT, make the communication settings and the port settings with the peripheral tool as follows.
For details, refer to the operation manual of the HITACHI PLC.

(1) CPU direct connection

Item	Set value
Transmission speed	4800bps/9600bps/19200bps/38400bps*
Station No.	0
Data length	7
Stop bit	1
Parity bit	Even
Control method	DTR control
Communication method	RS-232C
Sum check	Yes
Protocol	Transmission control protocol 1

* The upper limit of the transmission speed that may be set changes with the Hitachi PLC used.

(2) Link interface unit connection

(a) For transmission control protocol 1

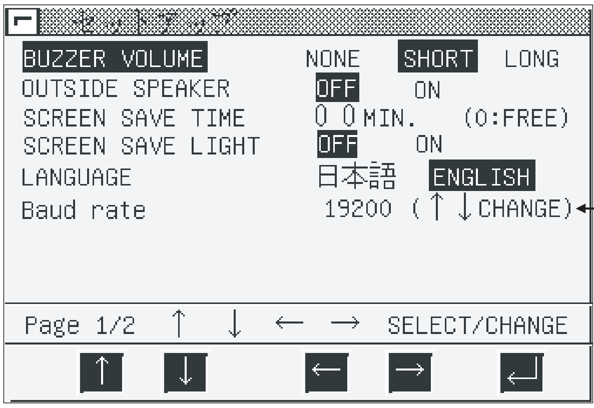
Item	Set value
Transmission speed	19200bps
Station No.	0
Data length	7
Stop bit	1
Parity bit	Even
Control method	No
Communication method	RS-232C communication: RS-232C MODE switch 2 RS-422 communication: RS-422 MODE switch 2
Sum check	Yes

(b) For transmission control protocol 2

Item	Set value
Transmission speed	19200bps
Station No.	0
Data length	7
Stop bit	1
Parity bit	Even
Control method	No
Communication method	RS-232C communication: RS-232C MODE switch 9 RS-422 communication: RS-422 MODE switch 9
Sum check	Yes

18.2.2 GOT side settings

When connecting the GOT and HITACHI PLC, you need to set the transmission speed to the GOT according to the setting of the HITACHI PLC used.
Set the transmission speed on Setup of the GOT's utility function.
For details of the utility function, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



Baud rate
Choose the GOT side transmission speed.
(Factory-set to 19200bps)

Point

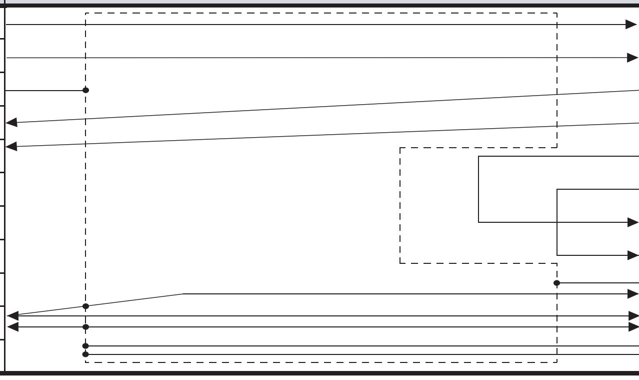
The utility function can be started by switching power on again after installing the system programs (system OS, communication driver, etc.) into the GOT.
After the utility function has started, touch the [Setup] icon to display the setup screen, and make settings related to HITACHI PLC connection

18.3 Connection Cable

18.3.1 RS-422 cable

The connection diagram and connectors for the RS-422 cables between the Link interface unit and the GOT are as follows.

(1) Connection diagram

HITACHI		Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
	Signal name		Pin No.	Signal name
	TXDP		2	RDA
	TXDN		15	RDB
Termination resistor 330V	TXDG		3	SDA
	RXDP		16	SDB
	RXDN		5	RSA
			18	RSB
			4	CSA
			17	CSB
			20	SG
	RXDG		8	SG
			21	SG (Shield)

(2) Connector, crimp terminal and cable

No.	Description	Model	Manufacturer
1)	Connector with cover	17JE-23250-02(D8A6)	DDK
2)	Round-type crimp terminal (recommended part)	V1.25-M4	Nippon Crimping Terminal
3)	20-core shield cable (recommended part)	RF VV-SB 24 × 20	Toyokuni Power Cables

(3) Precautions for cable preparation
The cable must be 200m (655.74 feet) or shorter

18.3.2 RS-232C cable

The connection diagram and connectors for the RS-422 cables between the HITACHI PLC, the Link interface unit and the GOT are as follows.

In the following cases, note that the connection diagram of the cable used changes with the set transmission speed.

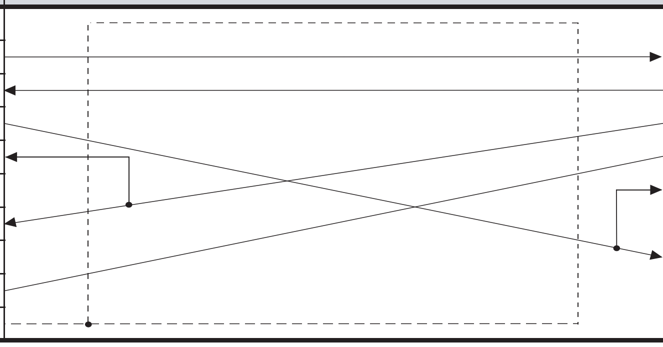
Point

- When using the H-4010 (CPU3-40H) or H-252C (CPU22-02HC, CPE22-02HC)
  - 4800bps: Use the connection diagram in (a).
  - 19200bps: Use the connection diagram in (b).
  - Other than above: Either of the connection diagrams in (a) and (b) may be used.
- When connecting the cable to the serial port 2 of the EH-CPU104, EH-CPU208, EH-CPU308 or EH-CPU316
  - 19200bps, 38400bps: Use the connection diagram in (b).
  - Other than above: Either of the connection diagrams in (a) and (b) may be used.
- When setting No. 3 and No. 4 of the DIP switch 1 to OFF using the CPU software revision version J or later of the H-4010
  - 38400bps: Use the connection diagram in (b).
  - Other than above: Either of the connection diagrams in (a) and (b) may be used.

(1) Connection diagram

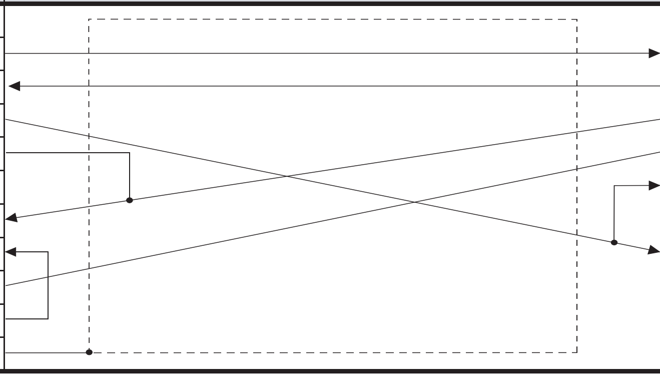
(a) PLC, Link interface unit

HITACHI (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
NC	1		1	CD
SD	2		2	RD(RXD)
RD	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
RV1	6		6	DSR(DR)
RV2	7		7	RS(RTS)
PHL	8		8	CS(CTS)
SG	9		9	---
FG	---		---	---



(b) PLC

HITACHI (D-sub 15-pin male metric screw type)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Signal name	Pin No.
NC	1		1	CD
SD	2		2	RD(RXD)
RD	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
RV1	6		6	DSR(DR)
RV2	7		7	RS(RTS)
PHL	8		8	CS(CT)S
SG	9		9	---
ER	14		---	---
FG	---		---	---



(2) Connector and connector cover
- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for HITACHI PLC, Link interface unit
  Use connectors attached to the HITACHI PLC and the Link interface unit.

(3) Precautions for cable preparation
The cable must be 15m(49.18feet) or shorter.

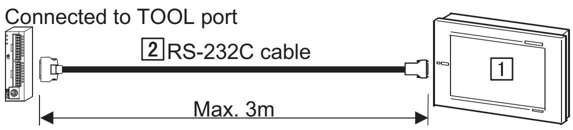
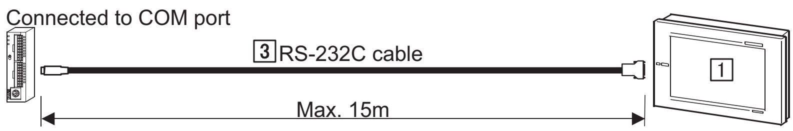
19 MATSUSHITA ELECTRIC WORKS PLC

19.1 System Configurations

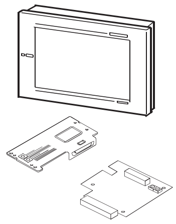
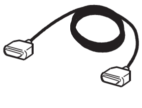
19.1.1 Connection with FP0-C16CT or FP0-C32CT

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP0-C16CT or FP0-C32CT.

The numbers (1 to 3) given in the system configuration denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 3m	
	Within 15m	

(2) System equipment
The following table indicates the system equipment needed for connection with the FP0-C16CT or FP0-C32CT.

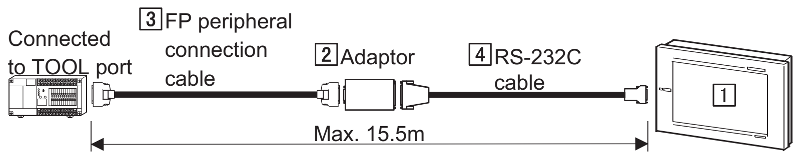
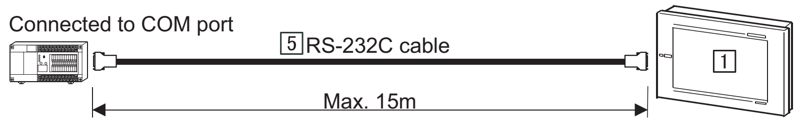
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	3	RS-232C cable between [TOOL port of PLC CPU] and [GOT]	AFB8503 (3m)	
	4	RS-232C cable between [COM port of PLC CPU] and [GOT]	(Refer to Section 19.3 and fabricate on user side. (User-fabricated cable 4))	

19.1.2 Connection with FP1-C24C or FP1-C40C

(1) System configurations and connection conditions

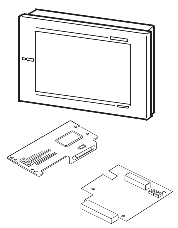
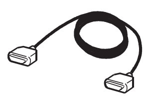
The following system configurations and connection conditions assume connection with the FP1-C24C or FP1-C40C.

The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15.5m	
	Within 15m	

(2) System equipment

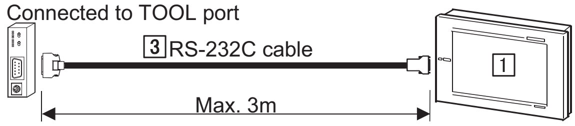
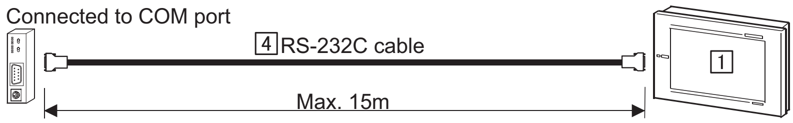
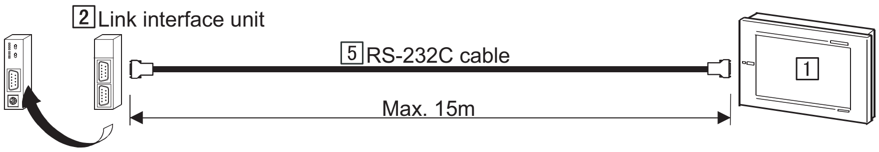
The following table indicates the system equipment needed for connection with the FP1-C24C or FP1-C40C.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Adaptor	AFP8550	
	$\boxed{3}$	FP peripheral connection cable between [TOOL port of PLC CPU] and [adaptor]	AFP15205 (0.5m)	
	$\boxed{4}$	RS-232C cable between [adaptor] and [GOT]	(Refer to Section 19.3 and fabricate on the user side. (User-fabricated cable 1))	
	$\boxed{5}$	RS-232C cable between [COM port of PLC CPU] and [GOT]	(Refer to Section 19.3 and fabricate on the user side. (User-fabricated cable 3))	

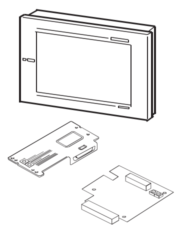
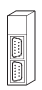
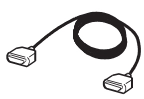
19.1.3 Connection with FP2 or FP2SH

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP2 or FP2SH.

The numbers (1 to 5) given in the system configuration denote the numbers (1 to 5) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 3m	
	Within 15m	
		

(2) System equipment
The following table indicates the system equipment needed for connection with the FP2 or FP2SH.

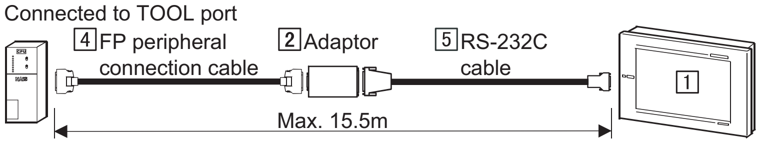
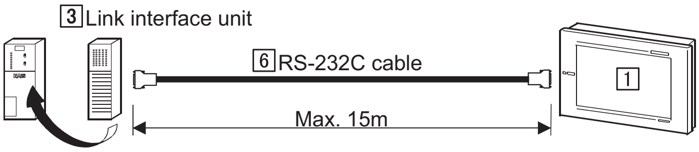
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Link interface unit	AFP2462	
	3	RS-232C cable between [TOOL port of PLC CPU] and [GOT]	AFC8503 (3m)	
	4	RS-232C cable between [COM port of PLC CPU] and [GOT]*1	AFB85853 (3m)	
	5	RS-232C cable between [link interface unit] and [GOT]*1		

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

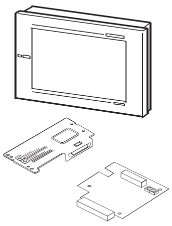
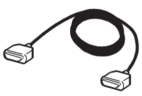
19.1.4 Connection with FP3

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP3.

The numbers (1 to 6) given in the system configuration denote the numbers (1 to 6) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15.5m	
	Within 15m	

(2) System equipment
The following table indicates the system equipment needed for connection with the FP3.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Adaptor	AFP8550	
	3	Link interface unit	AFP3462	
	4	FP peripheral connection cable between [TOOL port of PLC CPU] and [adaptor]	AFP5520 (0.5m)	
	5	RS-232C cable between [adaptor] and [GOT]	(Refer to Section 19.3 and fabricate on the user side. (User-fabricated cable 1))	
	6	RS-232C cable between [link interface unit] and [GOT]*1	AFB85853 (3m)	

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

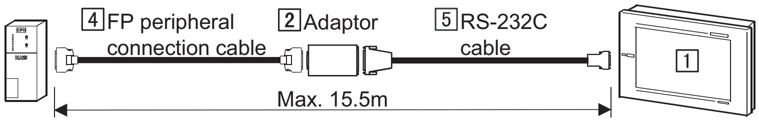
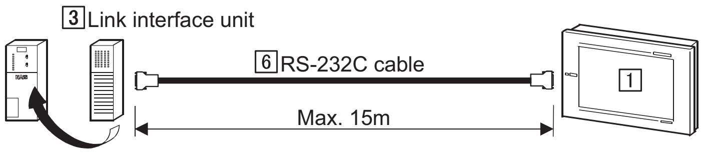
19.1.5 Connection with FP5

(1) System configurations and connection conditions

The following system configurations and connection conditions assume connection with the FP5.

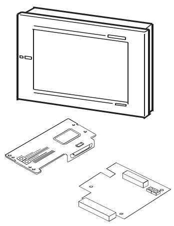
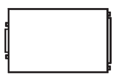
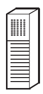
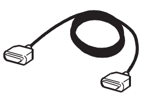
The numbers ($\boxed{1}$ to $\boxed{6}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{6}$) in "(2) System equipment".

Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15.5m	Connected to TOOL port 
	Within 15m	

(2) System equipment

The following table indicates the system equipment needed for connection with the FP5.

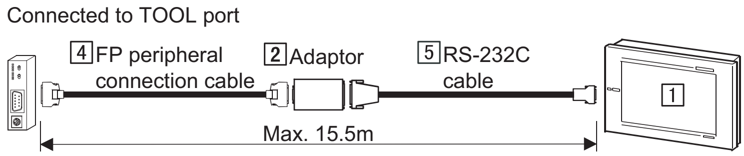
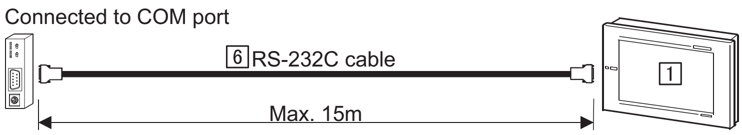
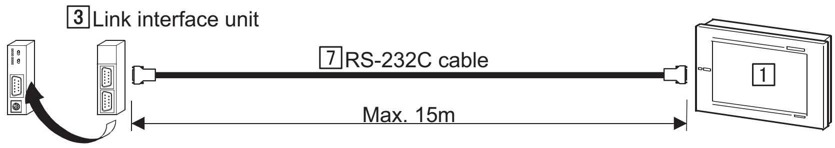
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Adaptor	AFP8550	
	$\boxed{3}$	Link interface unit	AFP5462	
	$\boxed{4}$	FP peripheral connection cable between [TOOL port of PLC CPU] and [adaptor]	AFP5520 (0.5m)	
	$\boxed{5}$	RS-232C cable between [adaptor] and [GOT]	(Refer to Section 19.3 and fabricate on the user side. (User-fabricated cable 1))	
	$\boxed{6}$	RS-232C cable between [link interface unit] and [GOT]*1	AFB85853 (3m)	

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

19.1.6 Connection with FP10(S)

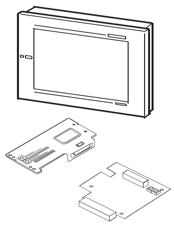
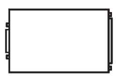
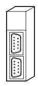
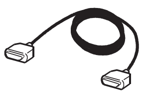
(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP10(S).

The numbers (1 to 7) given in the system configuration denote the numbers (1 to 7) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

<table>
<tr><th colspan="2">Connection Conditions</th><th rowspan="2">System Configuration</th></tr>
<tr><th>Number of connected</th><th>Installation distance</th></tr>
<tr><td rowspan="3">1 GOT</td><td>Within 15.5m</td><td>
</td></tr>
<tr><td rowspan="2">Within 15m</td><td>
</td></tr>
<tr><td>
</td></tr>
</table>

(2) System equipment

The following table indicates the system equipment needed for connection with the FP10(S).

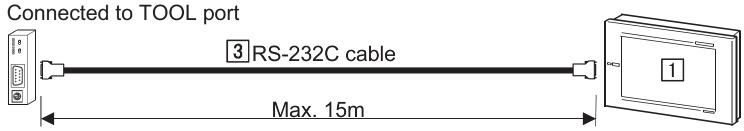
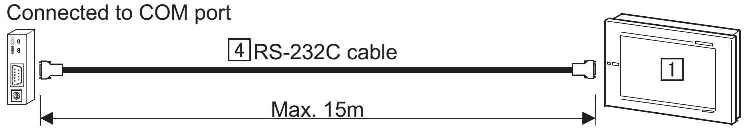
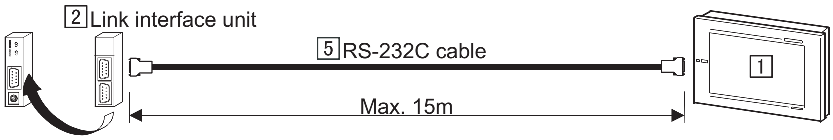
Image	No.	Application	Type	
			GOT unit	Serial communication board
	1	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	2	Adaptor	AFP8550	
	3	Link interface unit	AFP3462	
	4	FP peripheral connection cable between [TOOL port of PLC CPU] and [adaptor]	AFP5520 (0.5m)	
	5	RS-232C cable between [adaptor] and [GOT]	(Refer to Section 19.3 and fabricate on the user side. (User-fabricated cable 1))	
	6	RS-232C cable between [COM port of PLC CPU] and [GOT]*1	AFB85853 (3m)	
	7	RS-232C cable between [link interface unit] and [GOT]*1		

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

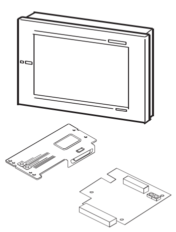
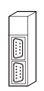
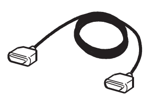
19.1.7 Connection with FP10SH

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP10SH.

The numbers ($\boxed{1}$ to $\boxed{5}$) given in the system configuration denote the numbers ($\boxed{1}$ to $\boxed{5}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 15m	
		
		

(2) System equipment
The following table indicates the system equipment needed for connection with the FP10SH.

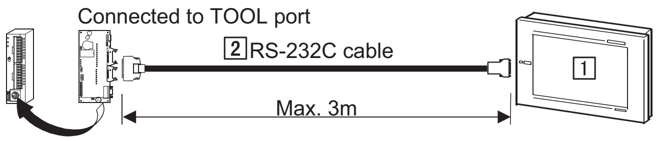
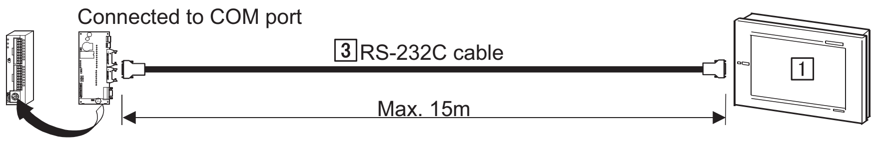
Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Link interface unit	AFP3462	
	$\boxed{3}$	RS-232C cable between [TOOL port of PLC CPU] and [GOT]*1	AFB85853 (3m)	
	$\boxed{4}$	RS-232C cable between [COM port of PLC CPU] and [GOT]*1		
	$\boxed{5}$	RS-232C cable between [link interface unit] and [GOT]*1		

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

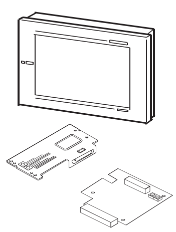
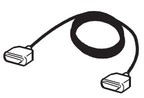
19.1.8 Connection with FP-M(C20TC) or FP-M(C32TC)

(1) System configurations and connection conditions
The following system configurations and connection conditions assume connection with the FP-M(C20TC) or FP-M(C32TC).

The numbers ([1] to [3]) given in the system configuration denote the numbers ([1] to [3]) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Within 3m	
	Within 15m	

(2) System equipment
The following table indicates the system equipment needed for connection with the FP-M(C20TC) or FP-M(C32TC).

Image	No.	Application	Type	
			GOT unit	Serial communication board
	[1]	Matsushita Electric Works PLC-connected GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	[2]	RS-232C cable between [TOOL port of PLC CPU] and [GOT]	AFC8503(3m)	
	[3]	RS-232C cable between [COM port of PLC CPU] and [GOT]*1	AFB85853(3m)	

*1 The RS-232C cable can be user-fabricated. Refer to Section 19.3 for details of the fabricating method. (User-fabricated cable 2)

19.2 Initial Settings

19.2.1 PLC CPU side settings

When connecting the GOT and Matsushita Electric Works PLC, make the following settings on the PLC CPU side. For details of the setting method, refer to the manual of the Matsushita Electric Works PLC.

(1) When connecting to TOOL port of PLC CPU
Make the following settings to the connected PLC CPU.

(a) When using FP0-C16CT, FP0-C32CT, FP1-C24C, FP1-C40C, FP3, FP10(S), FP-M(C20TC) or FP-M(C32TC)

Item	Set value
Transmission speed	9600bps/19200bps
Data length	8bit
Stop bit	---
Parity bit	---
Modem connection	No
Unit No.	1

(b) When using FP2, FP2SH or FP10SH

Item	Set value
Transmission speed	4800bps *1/9600bps/19200bps/38400bps *1 *2
Data length	8bit
Stop bit	---
Parity bit	---
Operation mode setting switch	SW1 : OFF *1 *2
Modem connection	No
Unit No.	1

*1 Setting SW1 to ON fixes the transmission speed at 9600bps.
*2 For the FP10SH, set SW1 on the lower side of the operation mode switches.

(2) When connecting to COM port of PLC CPU

Item	Set value
Transmission speed	4800bps *1/9600bps/19200bps/38400bps *1 *2
Data length	8bit
Stop bit	1bit
Parity bit	Odd
Modem connection	No
Serial port operation selection	1 (Computer link)
Unit No.	1

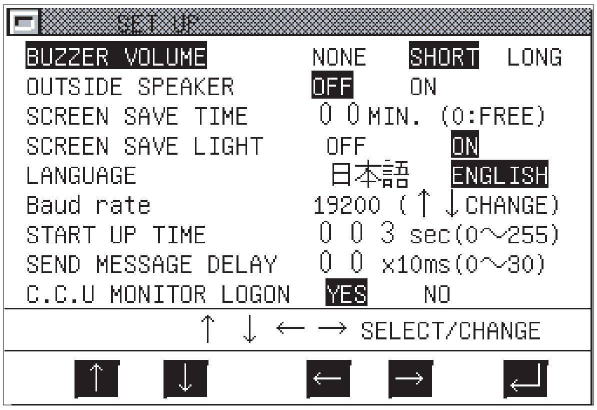
*1 This setting cannot be made when the FP10(S) is used.
*2 This setting cannot be made when the FP0-C16CT, FP0-C32CT, FP1-C24C, FP1-C40C, FP-M(C20TC) or FP-M(C32TC) is used.

(3) When connecting to link interface unit

Item	Set value
Transmission speed	4800bps *1/9600bps/19200bps/38400bps *1 *2
Data length	8bit
Stop bit	1bit
Parity bit	Odd
Parity check	Yes
Control signal	Make CS and CD invalid

19.2.2 GOT side settings

When the GOT is connected to the Matsushita Electric Works PLC for monitoring, GOT side settings must be changed to meet the connected PLC settings.
Use Setup of the GOT unit's utility functions to set the transmission speed.
For details of the utility functions, refer to the GOT-A900 Series Operating Manual (Extended • Option Functions Manual).



Setting item	Description	Factory setting
Baudrate	Choose the transmission speed (4800, 9600, 19200, 38400). Make the same setting as for the PLC CPU used.	19200
START UP TIME	Set how many seconds after GOT power-on the communication with the PLC CPU will be started.	3
SEND MESSAGE DELAY	Set the waiting time from when the GOT has received data from the PLC CPU until it sends data to the PLC CPU.	0
C.C.U MONITOR LOGON	Select whether C.C.U. monitor registration is made or not. Choosing "Yes" for C.C.U. monitor registration registers the device set on the GOT screen to the PLC CPU, increasing the GOT monitor speed.	Yes

Point

- The utility functions can be started by switching power on again after installation of the system programs (Operating System, communication driver, etc.) into the GOT.
  After the functions have started, touch the [Setup] icon to display the Setup screen, and make settings related to Matsushita Electric Works PLC.
- When multiple GOTs/peripheral devices are connected to a single PLC CPU via the C.C.U. (Computer Communication Unit), there are the following restrictions on the number of units that allow "Yes" to be selected for C.C.U. monitor registration.
  When other than FP10SH is used : 1 unit
  When FP10SH is used : 5 units
  Choose "No" when the number of GOTs/peripheral devices used is greater than the above.

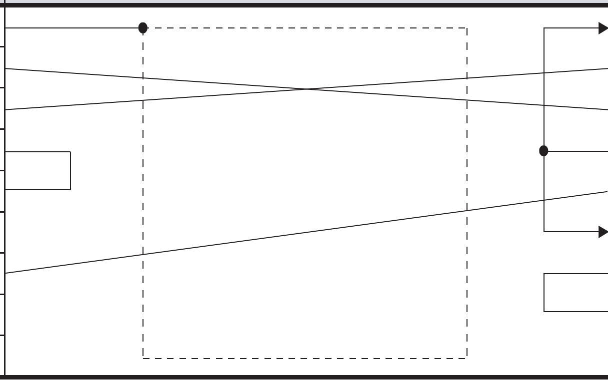
19.3 Connection Cables

The methods of fabricating the RS-232C cables for connection of the GOT and PLC CPU (cable connection diagrams and connectors) are given below.

(1) User-fabricated cable 1)

(a) Connection diagram

AFP8550 converter adaptor (D-sub 25-pin male)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
RD	2		2	RD(RXD)
SD	3		3	SD(TXD)
DTR	4		4	DTR(ER)
SG	5		5	SG
DSR	6		6	DSR(DR)
RTS	7		7	RS(RTS)
CTS	8		8	CS(CTS)
---	20		9	---



(b) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

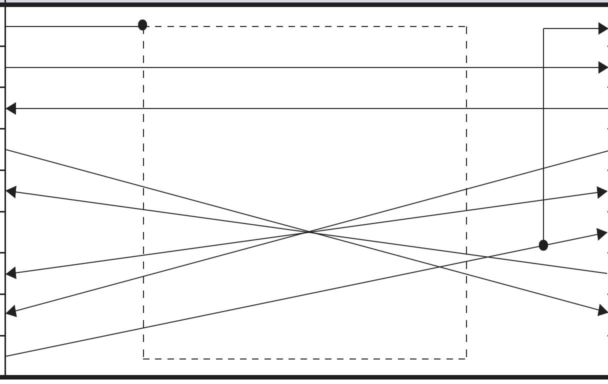
- AFP8550 converter adaptor side connector
  D-sub 25-pin female connector

(c) Precautions for cable preparation
Fabricate the cable within the length of 15m(49.18feet).

(2) User-fabricated cable 2)

(a) Connection diagram

PLC CPU (D-sub 9-pin male)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD	2		2	RD(RXD)
RD	3		3	SD(TXD)
RS	4		4	DTR(ER)
CS	5		5	SG
RI	6		6	DSR(DR)
SG	7		7	RS(RTS)
CD	8		8	CS(CTS)
ER	9		9	---



(b) Connector and connector cover
- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

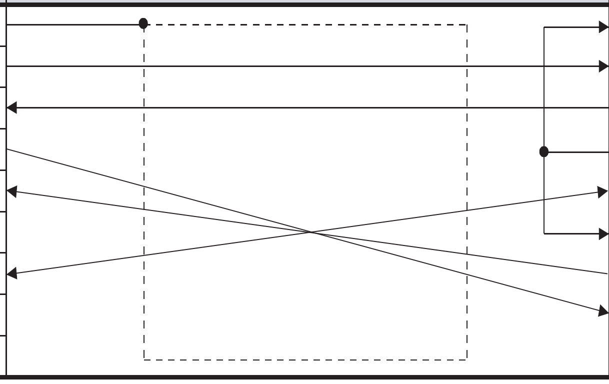
- PLC CPU side connector
  D-sub 9-pin male connector

(c) Precautions for cable preparation
Fabricate the cable within the length of 15m (49.18feet).
However, fabricate it within 3m when the GOT-PLC CPU transmission speed used is 38400bps.

(3) User-fabricated cable 3)

(a) Connection diagram

PLC CPU (D-sub 9-pin male)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD	2		2	RD(RXD)
RD	3		3	SD(TXD)
RS	4		4	DTR(ER)
CS	5		5	SG
---	6		6	DSR(DR)
SG	7		7	RS(RTS)
---	8		8	CS(CTS)
---	9		9	---



(b) Connector and connector cover
- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

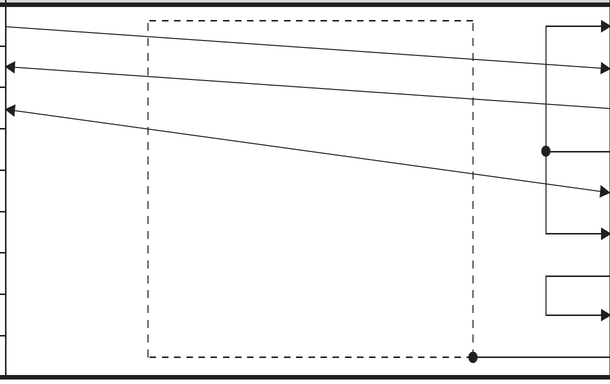
- PLC CPU side connector
  D-sub 9-pin female connector (secured by M2.6 screw)

(c) Precautions for cable preparation
Fabricate the cable within the length of 15m(49.18feet).

(4) User-fabricated cable 4)

(a) Connection diagram

AFP8550 converter adaptor (D-sub 25-pin male)		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
SD	S		1	CD
RD	R		2	RD(RXD)
SG	G		3	SD(TXD)
			4	DTR(ER)
			5	SG
			6	DSR(DR)
			7	RS(RTS)
			8	CS(CTS)
			9	---



(b) Connector and connector cover
- Connector for GOT

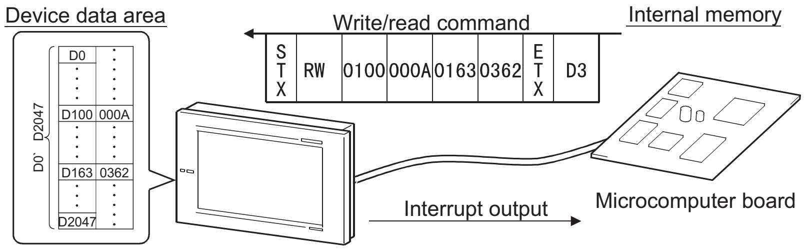
Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- PLC CPU side connector
  3-pin terminal block
  Manufactured by Phoenix Contact
  MKDS1/3-3.5

(c) Precautions for cable preparation
Fabricate the cable within the length of 15m(49.18feet).

20 MICROCOMPUTER CONNECTION

Microcomputer connection allows the virtual devices (D) of the GOT to be monitored from a personal computer, microcomputer board, PLC or like (hereafter referred to as the host) by data transfer.

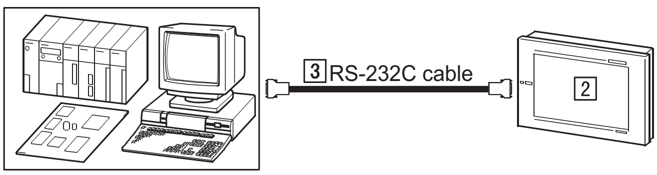


Remark

Refer to the system configuration example (which uses the sample program contained in GT Works2 Version1/GT Designer2 Version1) given in Appendices.

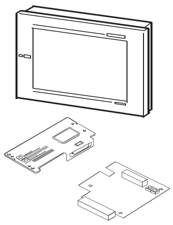
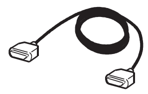
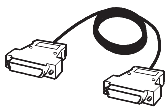
20.1 System Configuration

(1) System configurations and connection conditions
The following system configurations and connection conditions assume microcomputer connection.
The numbers (1 to 4) given in the system configurations denote the numbers (1 to 4) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions		System Configuration
Number of connected	Installation distance	
1 GOT	Changes with the host side specifications.	
		

(2) System equipment

The following table indicates the system equipment needed for microcomputer connection.

Image	No.	Application	Type	
			GOT unit	Serial communication board
	$\boxed{1}$	Microcomputer-connected (RS-232C communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS2, A9GT-RS2T
			A956WGOT	A9GT-50WRS2
			A953GOT (with built-in communication interface)	---
	$\boxed{2}$	Microcomputer-connected (RS-422 communication) GOT	A985GOT(-V), A97*GOT, A960GOT	A9GT-RS4
			A956WGOT	A9GT-50WRS4
			A950GOT (with built-in communication interface)	---
	$\boxed{3}$	RS-232C cable between [host] and [GOT]	(Refer to Section 20.2 and fabricate on user side.)	
	$\boxed{4}$	RS-422 cable between [host] and [GOT]		

*1 Using the A9GT-RS2T which contains a clock component allows use of the function which can display the GOT time-of-day.

20.2 Connecting Cable

20.2.1 With connection to DTR

The cable connection diagram and the connector with connection to DTR signals are described below.

(1) When using RS-422 communication

(a) Connection diagram

Host	Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name		Pin No.	Signal name
SDA		2	RDA
SDB		15	RDB
RDA		3	SDA
RDB		16	SDB
DSR+		5	RSA
DSR-		18	RSB
DTR+		4	CSA
DTR-		17	CSB
		20	
SG		8	SG
		21	SG(shield)

DSR signal....If this signal is OFF, data is not transmitted from the GOT to the host.
Normally, send signals from the host so that the DSR is always ON.

DTR signal....This signal is turned ON when the GOT is ready to receive data.

(b) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

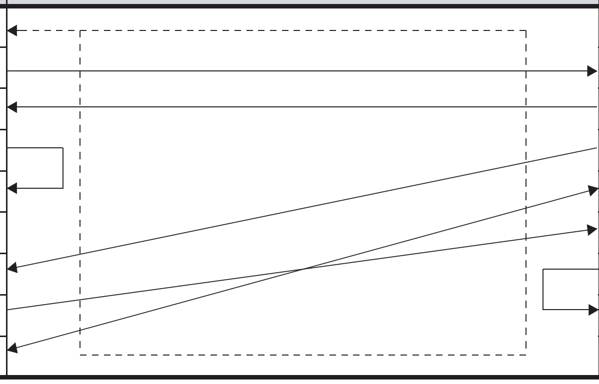
- Connector for host

  Use a connector matching the host.

(2) When using RS-232C communication

(a) Connection diagram

Host		Cable connection and direction of signal	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
5V	6		6	DSR(DR)
DR(DSR)	7		7	RS(RTS)
ER(DTR)	8		8	CS(CTS)
SG	9		9	---



Note) The pin numbers for the host in the above diagram are for reference.
Use pin numbers according to the specification of the host.

(b) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for host

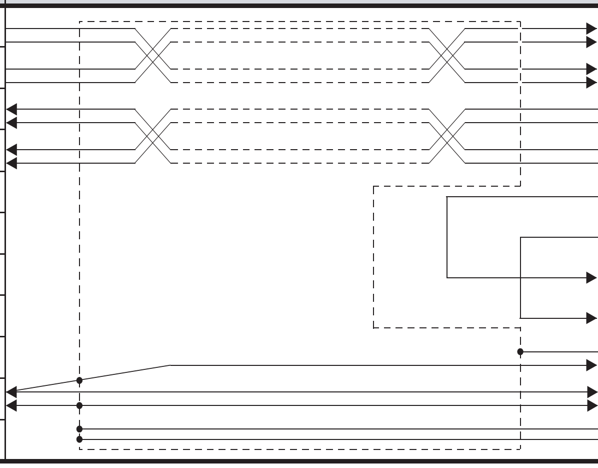
  Use connectors matching the host.

20.2.2 Without connection to DTR

The cable connection diagram and the connector without connection to DTR signals are described below.

(1) When using RS-422 communication

(a) Connection diagram

Host	Cable connection and direction of signal	GOT (D-sub 25-pin male metric screw type)	
Signal name		Pin No.	Signal name
SDA		2	RDA
SDB		15	RDB
RDA		3	SDA
RDB		16	SDB
		5	RSA
		18	RSB
		4	CSA
		17	CSB
		20	
SHELL		8	SG
		21	SG(shield)

(b) Connector and connector cover

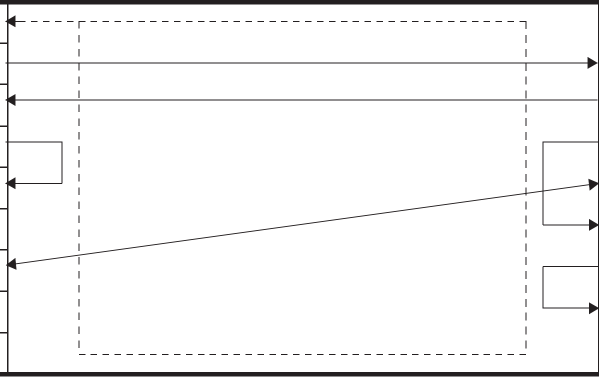
- Connector for GOT

Description	Model	Manufacturer
Connector with cover	17JE-23250-02(D8A6)	DDK

- Connector for host
  Use a connector matching the host.

(2) For RS-232C communication

(a) Connection diagram

Host *1		Cable connection and signal direction	GOT (D-sub 9-pin female inch screw type)	
Signal name	Pin No.		Pin No.	Signal name
FG	1		1	CD
SD(TXD)	2		2	RD(RXD)
RD(RXD)	3		3	SD(TXD)
RS(RTS)	4		4	DTR(ER)
CS(CTS)	5		5	SG
---	6		6	DSR(DR)
SG	7		7	RS(RTS)
---	8		8	CS(CTS)
ER	20		9	---

*1 Pin numbers at the host side are only for reference.
They are not defined.
Use the appropriate number according to the host specification.

(b) Connector and connector cover

- Connector for GOT

Description	Model	Manufacturer
Connector	17JE-13090-02(D1)	DDK, Ltd.
Connector cover	17JE-09H-1C4	DDK, Ltd.

- Connector for host
  Use a connector matching the host.

20.3 Transmission Specification

Transmission specification for communication between the GOT and the host is as follows.

Item	Setting details
Data bit	7 bit
Parity bit	Yes (even number)
Stop bit	1 bit
Sum check	Yes
Transmission speed	4800/9600/19200bps (default 19200bps)

20.4 Device Data Area

The data area, virtual device of the GOT, is shown below.

<table>
<tr><th>Address (decimal) *1</th><th>Details</th></tr>
<tr><td>D0 to D2</td><td>Not used</td></tr>
<tr><td>D3 *2</td><td>Communication error status
Error varies depending on the error status of the GOT communication driver.
<table>
<tr><th>Bit</th><th>Not used</th></tr>
<tr><td>0 to 3</td><td>Not used</td></tr>
<tr><td>4</td><td>SIO framing error</td></tr>
<tr><td>5</td><td>SIO parity error</td></tr>
<tr><td>6</td><td>SIO overrun error</td></tr>
<tr><td>7</td><td>Communication time error</td></tr>
<tr><td>8</td><td>Cable removal error</td></tr>
<tr><td>9 to 15</td><td>Not used</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Address (decimal) *1</th><th colspan="2">Details</th></tr>
<tr><td>D4 *2</td><td>Clock data (year)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store last 2 digit data of the year in BCD 2 digits.</td></tr></table></td><td rowspan="7">Clock data (year, month, day, hour, minute) is stored in BCD 2 digits to each address (0 to 7 bit).

(Example)
18:02:30, Thursday, June 10, 1999
<table><tr><th rowspan="2">Address</th><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>D4</td><td>00</td><td>99</td></tr><tr><td>D5</td><td>00</td><td>06</td></tr><tr><td>D6</td><td>00</td><td>10</td></tr><tr><td>D7</td><td>00</td><td>18</td></tr><tr><td>D8</td><td>00</td><td>02</td></tr><tr><td>D9</td><td>00</td><td>30</td></tr><tr><td>D10</td><td>00</td><td>04</td></tr></table></td></tr>
<tr><td>D5 *2</td><td>Clock data (month)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store month data from 01 to 12 in BCD 2 digits.</td></tr></table></td></tr>
<tr><td>D6 *2</td><td>Clock data (day)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store day data from 01 to 31 in BCD 2 digits.</td></tr></table></td></tr>
<tr><td>D7 *2</td><td>Clock data (hour)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store hour data from 00 to 23 in BCD 2 digits.</td></tr></table></td></tr>
<tr><td>D8 *2</td><td>Clock data (minute)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store minute data from 00 to 59 in BCD 2 digits.</td></tr></table></td></tr>
<tr><td>D9 *2*3</td><td>Clock data (second)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store second data from 00 to 59 in BCD 2 digits.</td></tr></table></td></tr>
<tr><td>D10 *2*3</td><td>Clock data (day of week)
<table><tr><th colspan="2">Bit</th></tr><tr><th>15 to 8</th><th>7 to 0</th></tr><tr><td>Not used</td><td>Store day-of-week data from 00 to 06 in BCD 2 digits</td></tr></table>Day-of-week data
00: Sunday 03: Wednesday 06: Saturday
01: Monday 04: Thursday
02: Tuesday 05: Friday</td></tr>
</table>

Address (decimal) *1	Details
D11 to D12	Not used
D13	Interrupt output Write data and lower level 7 bit details are output as interrupt code.
D14 to D19	Not used
D20 to D2031	User area
D2032 to D2034	Not used
D2035	1 second binary counter Counting increases every second after the power is turned on. The data is binary.
D2036 to D2047	Not used

*1 ìD****î indicated in this chapter indicates a virtual device of the GOT and is not the data register of the PLC.
*2 It can be used only when the A9GT-RS2T with built-in clock element is connected.
*3 SW4D5C-GOTR-PACKE version C or later is compatible with (second) and (day of week) of the clock data.

20.5 Communication Commands

This section describes commands for communication.

20.5.1 Command list

Commands used for data transmission between the GOT and the host are shown below.

Command	Command name	Details
RD	Batch read command	Designated amount of data is continuously read from the designated device.
WD	Batch write command	Designated amount of data is continuously written into the designated device.
RR	Random read	Data is read from multiple different device addresses.
RW	Random write	Data is written into multiple different device addresses.

20.5.2 Data communication type

2 types of data communication are available in using commands.
Each data communication type is explained below.
Data communication type is switched with the utility function of the GOT.
Refer to GOT-A900 Series Operating Manual (Extended ･ Option Functions Manual) for details of the utility function.

<table>
<tr><th colspan="2">Protocol for selection</th><th>Type 1</th><th>Type 2</th></tr>
<tr><td colspan="2">Data communication type (host ⟶ GOT)</td><td colspan="2">STX (02H) | Command | Data (64 points max.) | ETX (03H) | Sum check
Sum check range (Command to ETX)</td></tr>
<tr><td rowspan="2">Response data type in normal operation (GOT ⟶ host)</td><td>Read command in (RD, RR) transmission</td><td colspan="2">STX (02H) | Data (64 points max.) | ETX (03H) | Sum check
Sum check range (Data to ETX)</td></tr>
<tr><td>Write command in (WD, RW) transmission</td><td colspan="2">ACK (06H)</td></tr>
<tr><td colspan="2">Response data type in error (GOT ⟶ host)</td><td>NAK (15H)</td><td>NAK (15H) | *1 Error code</td></tr>
<tr><td colspan="2">Interrupt output type (GOT ⟶ host)</td><td>Interrupt output data</td><td>STX (02H) | Interrupt output data | ETX (03H) | Sum check
Sum check range (Interrupt output data to ETX)</td></tr>
</table>

*1 When type 2 is used, the error code is stored for interrupt output.
Each error code is shown below in detail.

Error code	Error details	Action
06H	Sum check error An error has occurred at the sum check after receipt of communication packet.	Check the communication line and the transmission packet.
10H	Command error Request command which is not supported was used.	Check the request command data which was transmitted.
11H	Data length error The data volume exceeded the upper limit of the reception buffer.	Check if the total number of bytes in the transmission data packet is within 518 bytes.

Error code	Error details	Action
7BH	Point excess error The allowance of read/write device was exceeded.	Check the range of the designated device
7AH	Address error Top address of read/write device is not within the range.	Check the top address of the designated device.
12H	Communication data error When the communication data is received, this error occurs if EXT is not found before the upper limit of the reception buffer is exceeded.	Check the communication data.

17 SIEMENS PLC CONNECTION
18 HITACHI PLC CONNECTION
19 MATSUSHITA ELECTRIC WORKS PLC
20 MICROCOMPUTER CONNECTION
21 OPTIONAL EQUIPMENT CONNECTION
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20.5.3 Precautions for use

The sum check code is the last 1 byte (8bit) value of the result (sum) from addition of binary data in the range of the sum check.

(Example) Reading RD command with D100 to D101

STX	R	D	Address				Point		ETX	Sum check	
			0	1	0	0	0	2		B	C
02H	52H	44H	30H	31H	30H	30H	30H	32H	03H	42H	43H

Sum check range

Formula: 52H+44H+30H+31H+30H+30H+30H+32H+03H=1BCH

20.5.4 Batch read command (RD)

Batch read command details are shown below.

12 bytes

1 byte	2 bytes	4 bytes	2 bytes	1 byte	2 bytes
STX	RD	Address	Point	ETX	Sum check
(02H)			(1 to 64)	(03H)	

Sum check range

Error →

NAK
(15H)

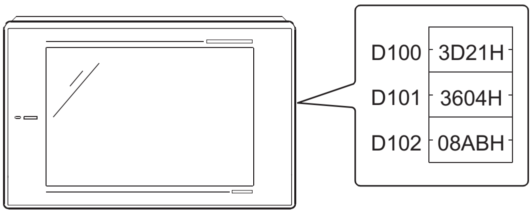
Normal end

Max. 260 bytes

1 byte	4 × (1 to 64) bytes					1 byte	2 bytes
STX	Data 1	Data 2	Data 3	......	Data n	ETX	Sum check
(02H)						(03H)	

Sum check range

Example of use
When D100 to D102 are read from the GOT virtual device



STX	R	D	Address				Point		ETX	Sum check	
			0	1	0	0	0	3		B	D
(02H)			H	MH	ML	L	H	L	(03H)	H	L

Transmission from host to GOT

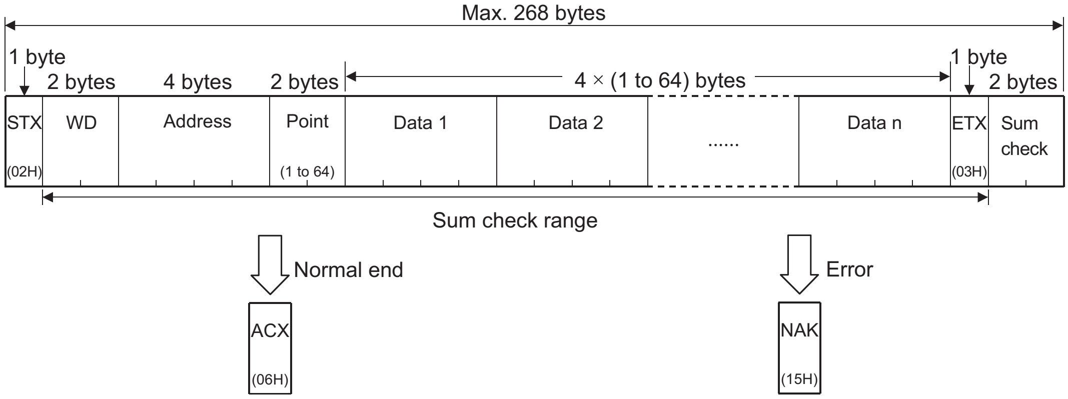
Normal end

STX	D100				D101				D102				ETX	Sum check	
	3	D	2	1	3	6	0	4	0	8	A	B		9	5
(02H)	H	MH	ML	L	H	MH	ML	L	H	MH	ML	L	(03H)	H	L

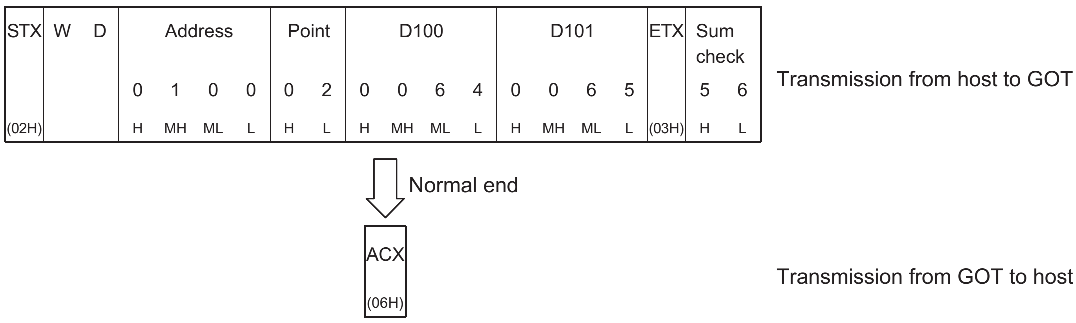
Transmission from GOT to host

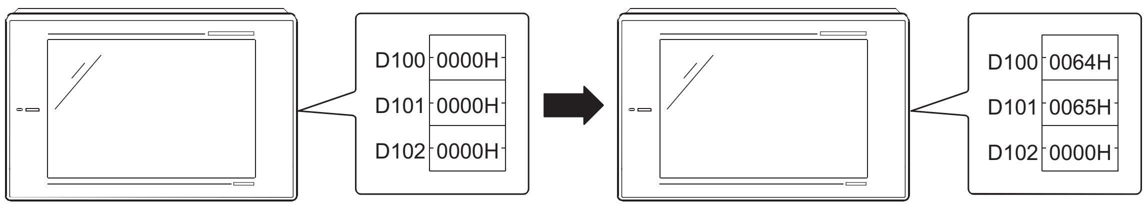
20.5.5 Batch write command (WD)

Batch write command details are shown below.



Example of use
When 64H and 65H are written in D100 to D101 of the GOT virtual device

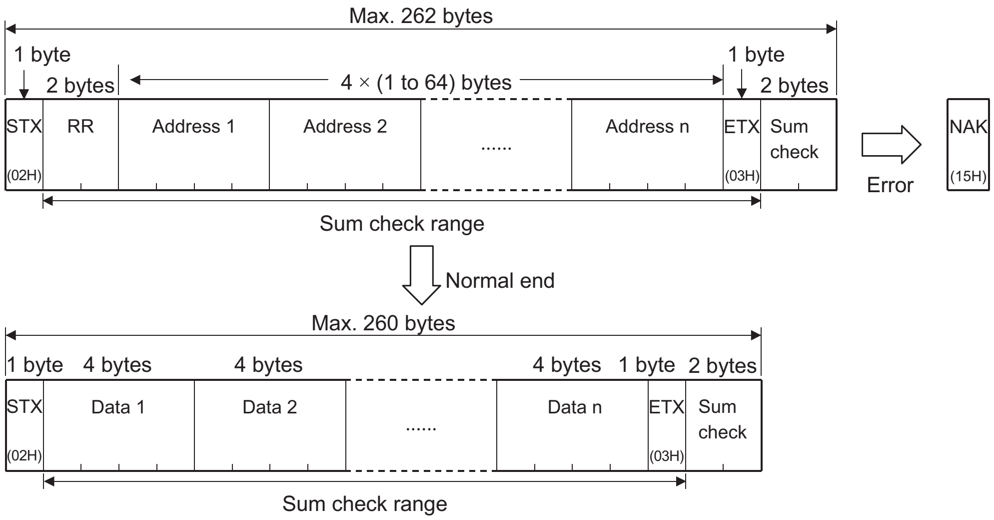




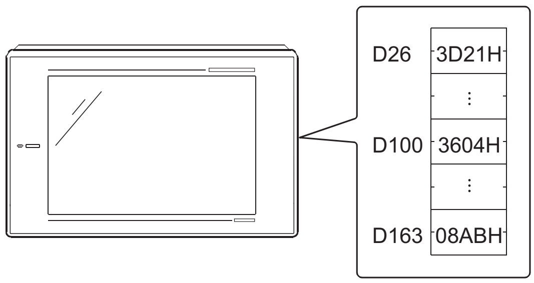
Before execution After execution

20.5.6 Random read command (RR)

Random read command details are shown below.



Example of use
When D100, D26 and D163 are read from the GOT virtual device



Transmission from host to GOT

STX	R	R	D100				D26				D163				ETX	Sum check	
			0	1	0	0	0	0	2	6	0	1	6	3		F	A
(02H)			H	MH	ML	L	H	MH	ML	L	H	MH	ML	L	(03H)	H	L

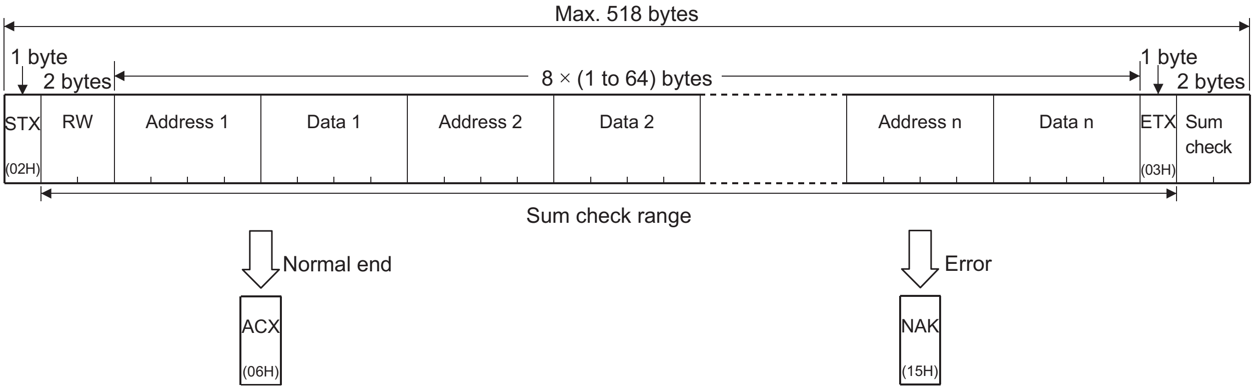
Normal end

Transmission from GOT to host

STX	Details of D100				Details of D26				Details of D163				ETX	Sum check	
	3	6	0	4	3	D	2	1	0	8	A	B		9	9
(02H)	H	L	H	L	H	L	H	L	H	L	H	L	(03H)	H	L

20.5.7 Random write command (RW)

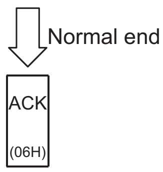
Random write command details are shown below.



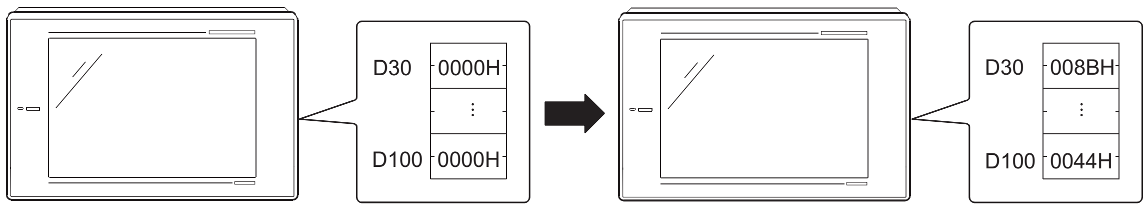
Example of use
When 8BH is written into D30 and 44H is written into D100 of the GOT virtual device

STX	R	W	D30				Data of D30				D100				Data of D100				ETX	Sum check	
			0	0	3	0	0	0	8	B	0	1	0	0	0	0	4	4		D	2
(02H)			H	MH	ML	L	H	MH	ML	L	H	MH	ML	L	H	MH	ML	L	(03H)	H	L

Transmission from host to GOT



Transmission from GOT to host



Before execution After execution

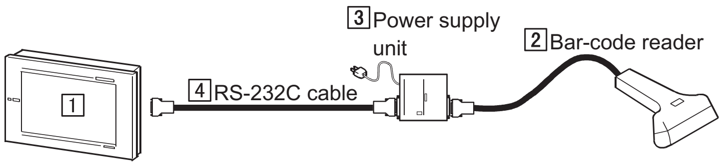
21 OPTIONAL EQUIPMENT CONNECTION

21.1 Bar-Code Reader

21.1.1 System configuration

(1) System configuration
The following system configuration assumes connection of a bar-code reader.

The numbers (1 to 4) given in the system configurations denote the numbers (1 to 4) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

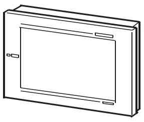
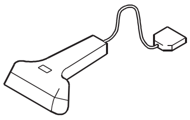
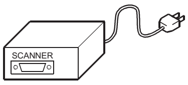
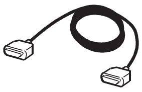


Point

- When using the transparent function, you cannot connect a bar-code reader.
  Refer to Section 4.3 for details of the transparent function.
- Refer to the technical bulletin "List of valid devices applicable for GOT900 Series" (T10-0028) for details of the bar-code readers and communication settings usable with the GOT.
  The above technical bulletin can also be browsed on the Mitsubishi Electric FA Equipment Technical Information Service MELFANSweb home page.
  (MELFANSweb home page: http://www.MitsubishiElectric.co.jp/melfansweb)

(2) System equipment

The following table indicates the system equipment needed for connection of a bar-code reader.

Image	No.	Application	Type
	1	Bar-code reader-connected GOT	GOT
	2	Bar-code reader which reads bar codes and write them to PLC*1	(Refer to List of valid devices applicable for GOT900 Series for the connectable bar-code readers, power supply units and cables)
	3	Power supply unit for supplying power to bar-code reader*1*2	
	4	RS-232C cable between [power supply unit] and [GOT] *2	

*1 The bar-code reader must be supplied with power (5VDC) from the AC-DC adaptor and compatible power supply unit.

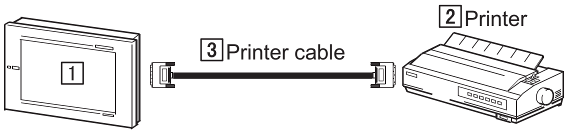
*2 Not needed depending on the bar-code reader used.

21.2 Printer

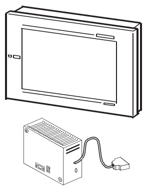
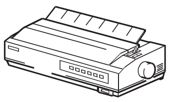
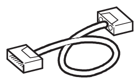
21.2.1 System configuration

(1) System configuration
The following system configuration assumes connection of a printer.

The numbers ($\boxed{1}$ to $\boxed{3}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{3}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.



(2) System equipment
The following table indicates the system equipment needed for connection of a printer.

Image	No.	Application	Type	
			GOT unit	Printer interface unit
	$\boxed{1}$	Printer-connected GOT	A985GOT(-V), A97*GOT, A960GOT (with built-in printer interface)	---
			A956WGOT, A95*GOT	A9GT-50PRF
	$\boxed{2}$	Printer for outputting reports, hard copies, etc.	ESP/P24-J84 grade printer (ESC/P command ready), Hewlett Packard make printer (PCL command ready), Chinese (GB, BIG5) printer (ESC/P command ready)	
	$\boxed{3}$	Printer cable between [GOT] and [printer]*1	AC30PIO-20P(3m)	

*1 The printer cable may also be fabricated on user side. Refer to Section 21.2.2 for details of the fabricating method.

21.2.2 Connection cable

Connection diagram and connectors of the printer cable between the GOT and the printer are shown below.

(1) Connection diagram

Printer side		Cable connection and signal direction	GOT side	
Signal name	Pin No.		Pin No.	Signal name
CHASIS	17		1	CHASIS
ACKNLG	10		2	ACKNLG
DATA6	7		3	DATA6
DATA5	6		4	DATA5
DATA4	5		5	DATA4
NC	36		6	NC
INIT	31		7	INIT
DATA1	2		8	DATA1
STROBE	1		9	STROBE
BUSY	11		10	BUSY
DATA8	9		11	DATA8
DATA7	8		12	DATA7
PE	12		13	PE
SLCT	13		14	SLCT
GND	22		15	GND
DATA3	4		16	DATA3
DATA2	3		17	DATA2
GND	24		18	GND
ERROR	32		19	ERROR
GND	19 *1		20 *1	GND

*1 The cable shield provides equal performance if it is connected in the above connection method or it is grounded to the frame of the corresponding connector.

(2) Connector to be used

- GOT connector

Name	Model	Manufacturer
Connector cover	10320-3210-000	Sumitomo 3M Ltd.
Connector	10120-6000EL	

- Printer connector
  Use the connector applicable to the printer to be used.

(3) Precautions for cable preparation
Prepare the cable of a length within 3 m (9.84 feet) or the within the specification range of the printer to be used.

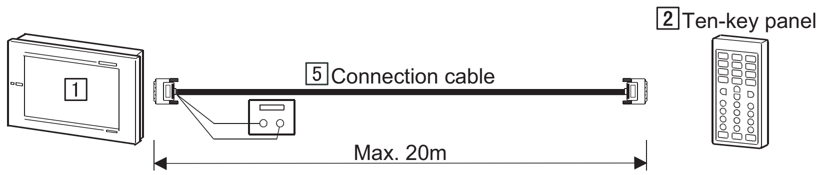
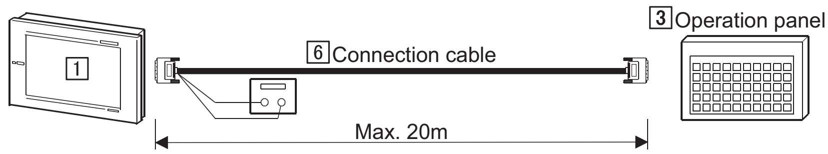
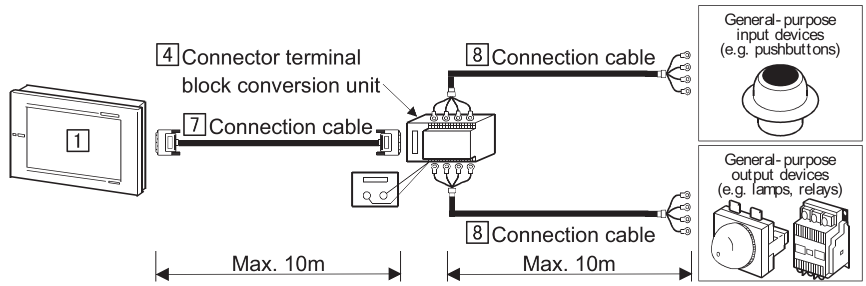
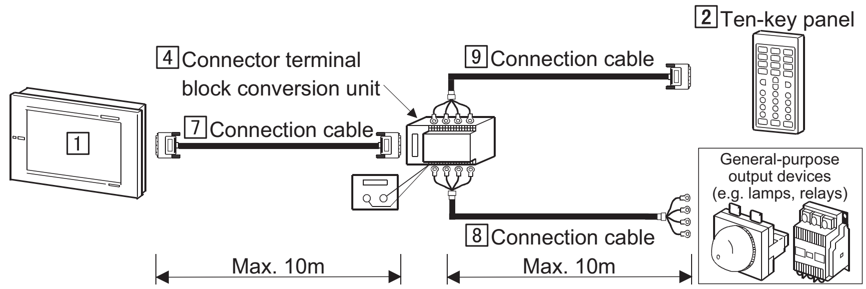
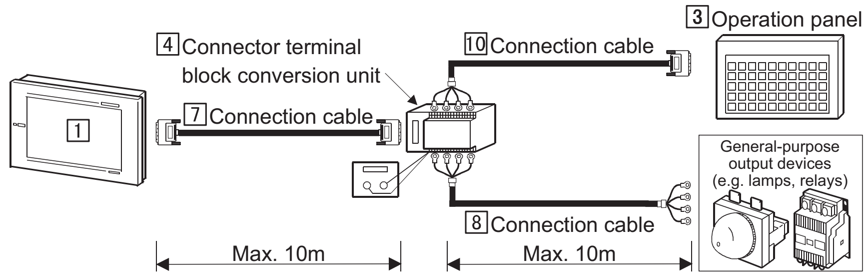
21.3 External I/O Equipment

21.3.1 System configurations

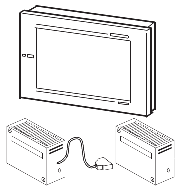
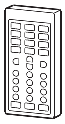
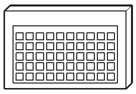
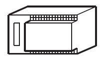
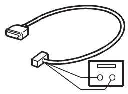
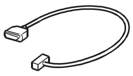
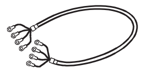
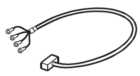
The system configuration differs between when an external I/O unit is used for input only and when external I/O units are used for I/O.

(1) System configurations and connection conditions
The following system configuration assumes connection of a printer.

The numbers (1 to 10) given in the system configurations denote the numbers (1 to 10) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions	System Configuration
For input only	
	
For I/O	
	
	

(2) System equipment
The following table indicates the system equipment needed for connection of external I/O equipment.

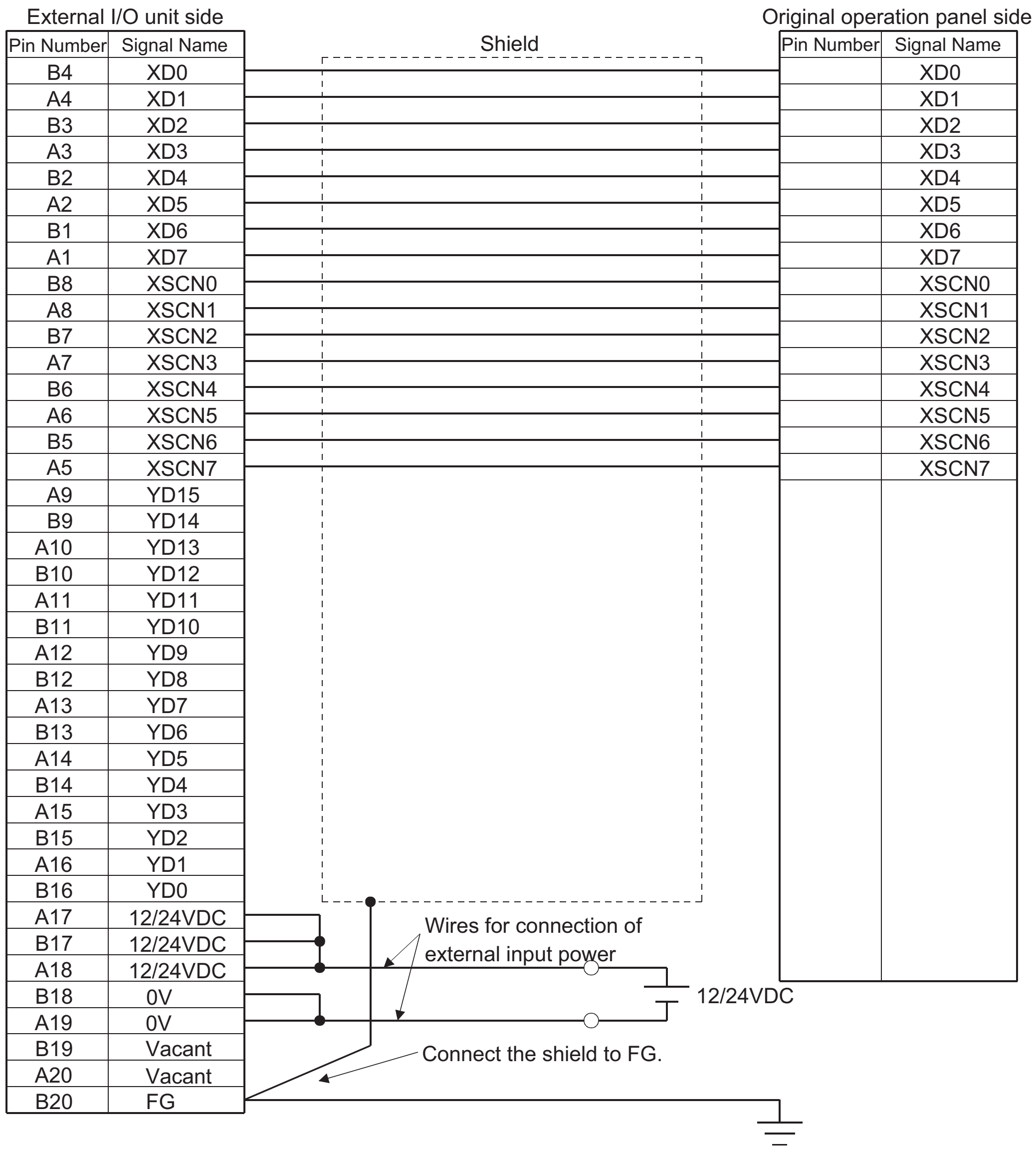
Image	No.	Application	Type	
			GOT unit	External I/O interface unit
	1	External I/O equipment-connected GOT	A985GOT, A97*GOT, A960GOT	A9GT-70KBF
			A956WGOT, A95*GOT	A8GT-50KBF
	2	Ten-key panel	A8GT-TK	
	3	Operation panel*1*2	FP5-MD41-A (Kanaden Corp. make), FP5-MD41-B (Kanaden Corp. make)	
	4	Connector terminal block conversion unit*3	A6TBY36-E, A6TBY54-E	
	5	Connection cable between [GOT] and [ten-key panel]*3*4	A8GT-C05TK(0.5m)	
	6	Connection cable between [GOT] and [operation panel]*1*2*3*6	Connection cable (Kanaden Corp. make)	
	7	Connection cable between [GOT] and [connector terminal block conversion unit]*3*5	A8GT-C30TB(3m)	
	8	Connection cable between [connector terminal block conversion unit] and [general-purpose I/O equipment]	(Refer to Section 21.3.3 and fabricate on user side.)	
	9	Connection cable between [connector terminal block conversion unit] and [ten-key panel]	(Refer to A8GT-TK Ten-Key Panel User's Manual and fabricate on user side.)	
	10	Connection cable between [connector terminal block conversion unit] and [operation panel]*1*6	Connection cable (Kanaden Corp. make)	

*1 The operation panels and connection cables made by Kanaden Corp. are available from Kanaden Corp.
Refer to Section 21.3.4 for contact details.
*2 The operation panel and cable for input only may also be fabricated on user side.
Refer to Section 21.3.2 for details of the fabricating method.
*3 12/24VDC power must be supplied for external I/O units.
If power supplied to the external I/O unit is lost midway, the operation panel will not operate.
When using the operation panel again, supply power to the external I/O unit and then reset the GOT.
*4 The connection cable may also be fabricated on user side.
Refer to the A8GT-TK Ten-Key Panel User's Manual for details of the fabricating method.
*5 The connection cable may also be fabricated on user side. Refer to Section 21.3.2 for details of the fabricating method.
*6 The operation panel and cables for I/O may also be fabricated on user side.
Refer to Section 21.3.3 for details of the fabricating method.

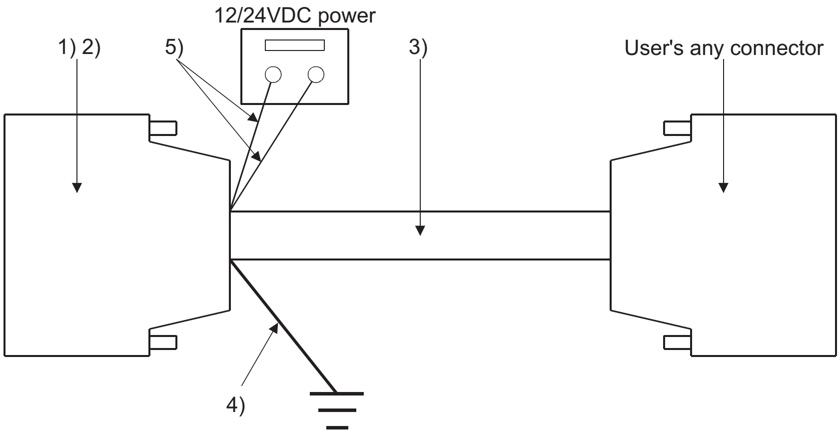
21.3.2 Connection cables

(1) Connection cable for use between external I/O unit and user-made original operation panel
Fabricate the connection cable for use between the external I/O unit and user-made original operation panel on the user side by referring to the following.

(a) Connection diagram



(b) Connector and connector cover used



Number	Name	Type	Maker
1) 2)	Connector (with cover)	A6CON1	Mitsubishi Electric
1)	Connector	FCN-361JO40-AU	Fujitsu
2)	Connector cover	FCN-360CO40-B	
3)	Pair shielded cable	UL 2464 AWG26 or equivalent	---
4)	FG wire	UL 1015 AWG14 or equivalent	
5)	Wires for connection of external input power	UL 1007 AWG24 or equivalent	

(c) Precaution for cable fabrication
The cable fabricated should be within 20m long.

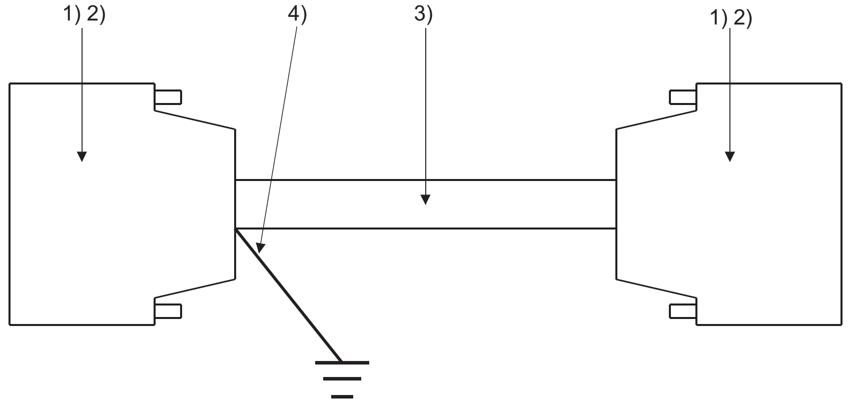
(2) Connection cable for use between external I/O unit and connector terminal block conversion unit
Instead of using the dedicated cable (A8GT-C30TB), the user can fabricate the connection cable for use between the external I/O unit and connector terminal block conversion unit. When fabricating the connection cable, refer to the following.

(a) Connection diagram

External I/O unit side Pin Number	External I/O unit side Signal Name	Connector terminal block conversion unit side Pin Number	Connector terminal block conversion unit side Signal Name
B4	XD0	B20	XD0
A4	XD1	A20	XD1
B3	XD2	B19	XD2
A3	XD3	A19	XD3
B2	XD4	B18	XD4
A2	XD5	A18	XD5
B1	XD6	B17	XD6
A1	XD7	A17	XD7
B8	XSCN0	B16	XSCN0
A8	XSCN1	A16	XSCN1
B7	XSCN2	B15	XSCN2
A7	XSCN3	A15	XSCN3
B6	XSCN4	B14	XSCN4
A6	XSCN5	A14	XSCN5
B5	XSCN6	B13	XSCN6
A5	XSCN7	A13	XSCN7
B16	YD0	B12	YD0
A16	YD1	A12	YD1
B15	YD2	B11	YD2
A15	YD3	A11	YD3
B14	YD4	B10	YD4
A14	YD5	A10	YD5
B13	YD6	B9	YD6
A13	YD7	A9	YD7
B12	YD8	B8	YD8
A12	YD9	A8	YD9
B11	YD10	B7	YD10
A11	YD11	A7	YD11
B10	YD12	B6	YD12
A10	YD13	A6	YD13
B9	YD14	B5	YD14
A9	YD15	A5	YD15
A17	12/24VDC	B4	12/24VDC
B17	12/24VDC	A4	12/24VDC
A18	12/24VDC	B3	12/24VDC
B18	0V	A3	0V
A19	0V	B2	0V
B19	Vacant	A2	Vacant
A20	Vacant	B1	Vacant
B20	FG	A1	Vacant

Shield

(b) Connectors and connector covers used



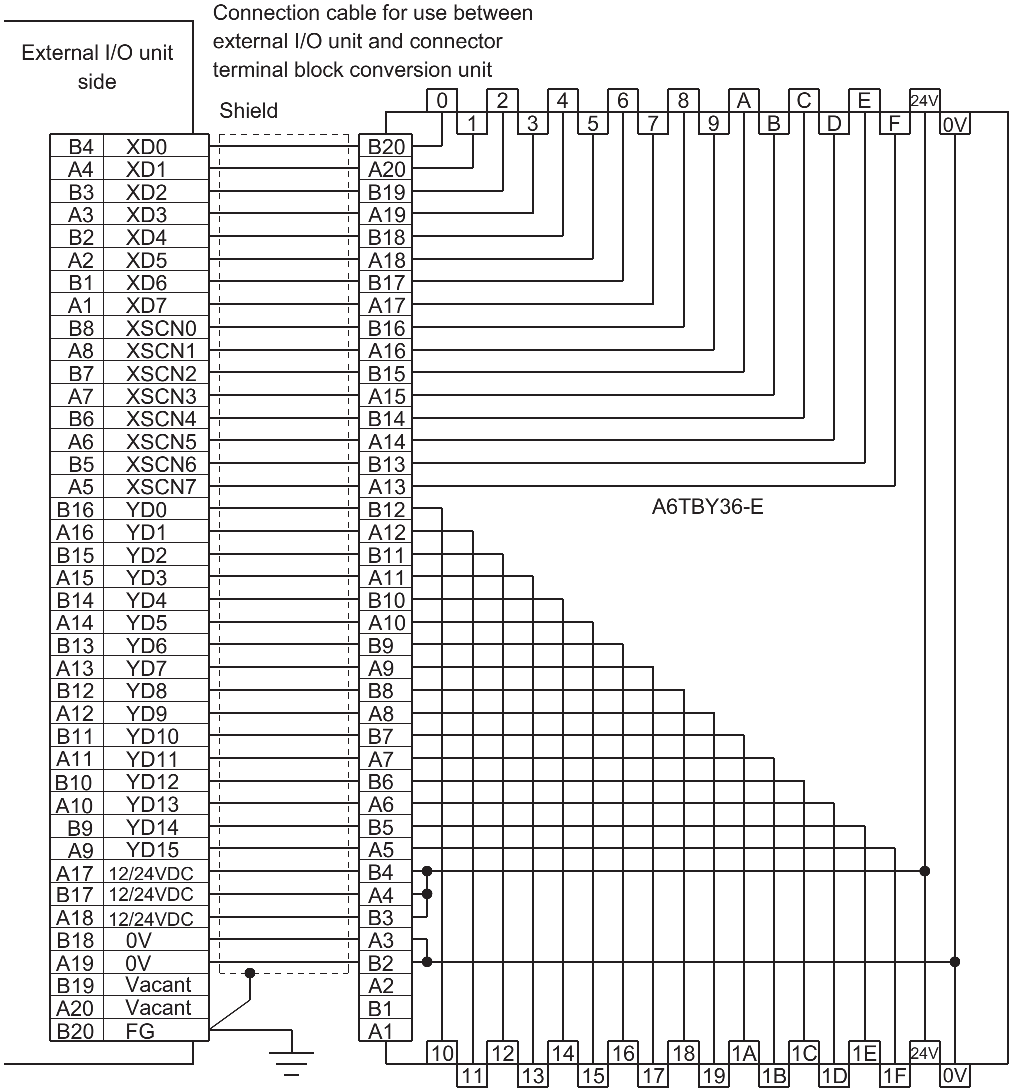
Number	Name	Type	Maker
1) 2)	Connector (with cover)	A6CON1	Mitsubishi Electric
1)	Connector	FCN-361JO40-AU	Fujitsu
2)	Connector cover	FCN-360CO40-B	
3)	Pair shielded cable	UL 2464 AWG26 or equivalent	---
4)	FG wire	UL 1015 AWG14 or equivalent	

(c) Precaution for cable fabrication
The cable fabricated should be within 10m long.

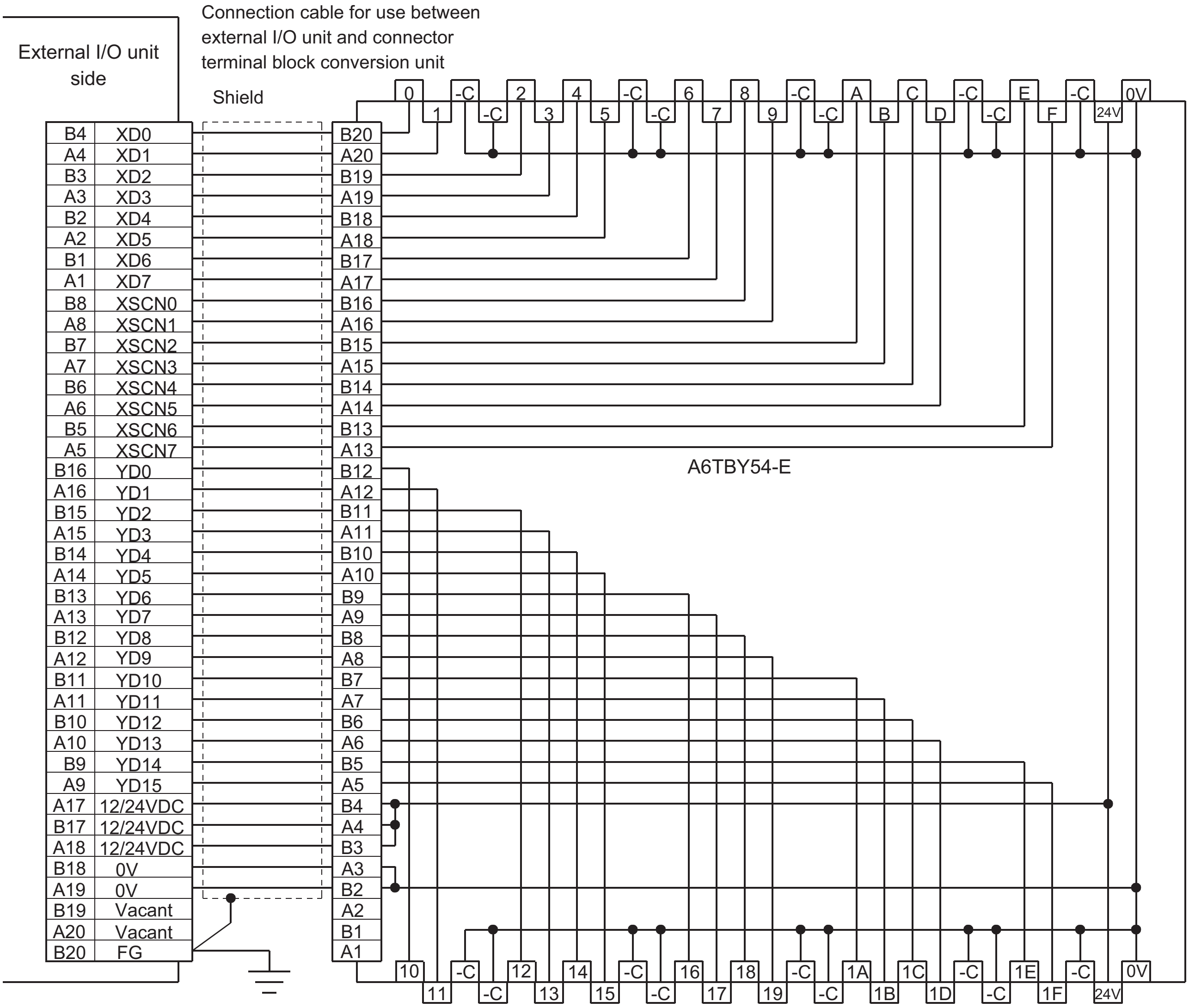
21.3.3 Wiring diagrams

(1) Wiring diagram for use between external I/O unit and connector terminal block conversion unit

(a) For use of A6TBY36-E type connector terminal block conversion unit

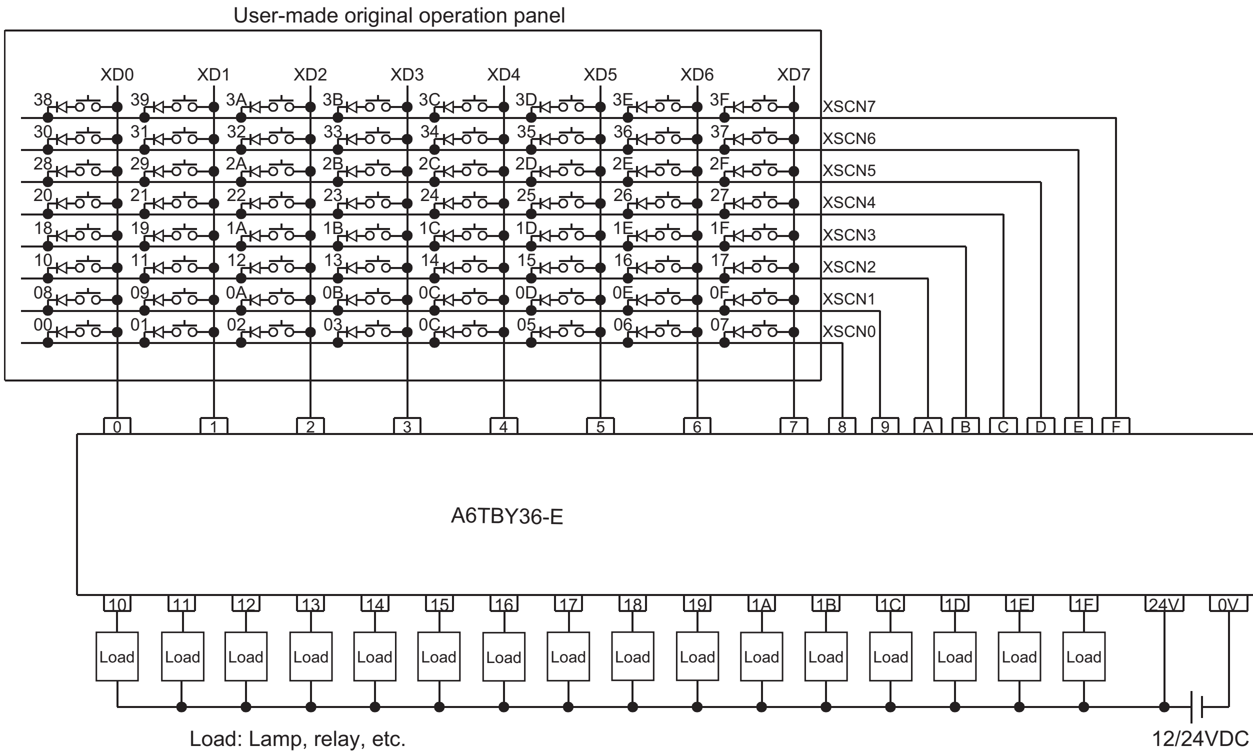


(b) For use of A6TBY54-E type connector terminal block conversion unit

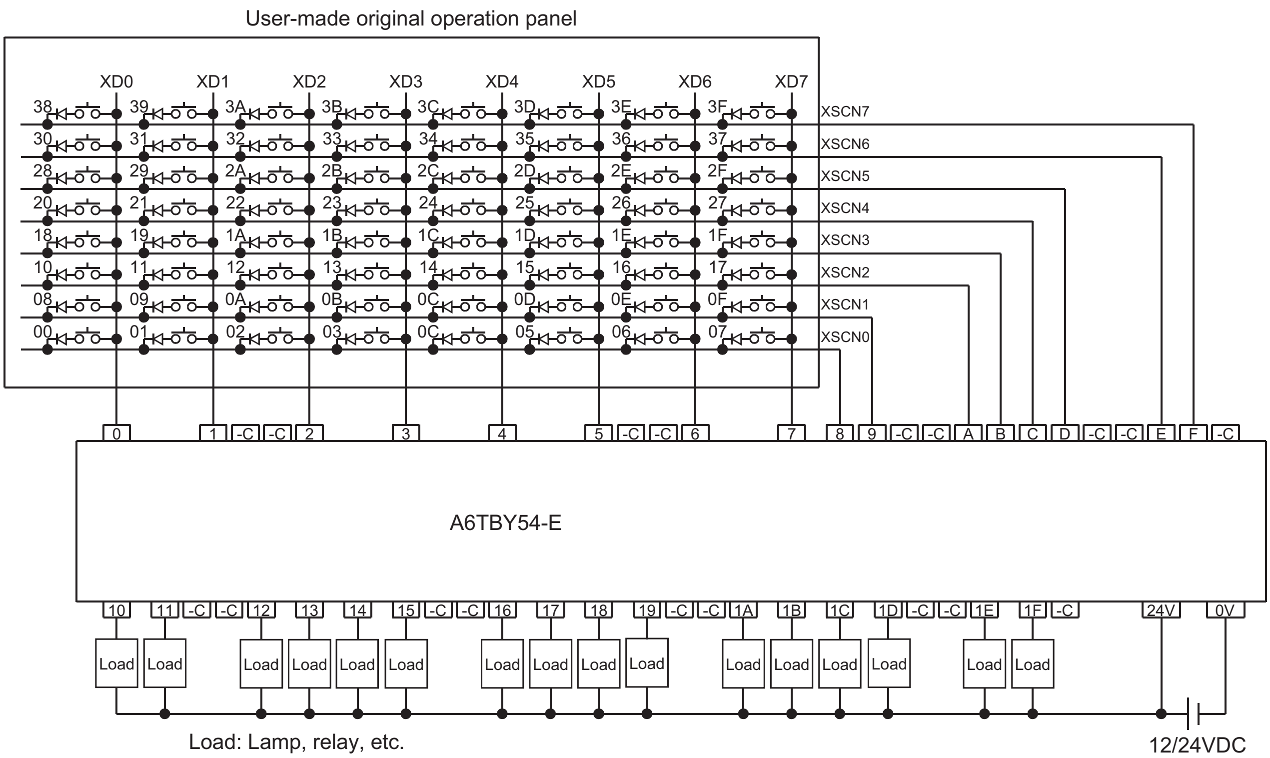


(2) Wiring diagram for use between connector terminal block conversion unit and user-made original operation panel

(a) For use of A6TBY36-E type connector terminal block conversion unit



(b) For use of A6TBY54-E type connector terminal block conversion unit



21.3.4 Recommended user-prepared articles and how to prepare them

(1) Type

Maker	Type	Remarks
Kanaden Corp.	FP5-MD41-A	Operation panel (desktop type)
	FP5-MD41-B	Operation panel (enclosure-mounted type)

(2) Order and inquiry

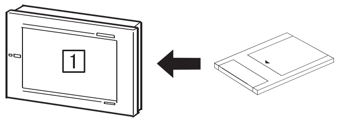
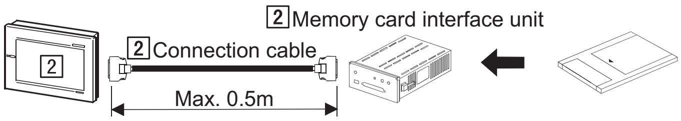
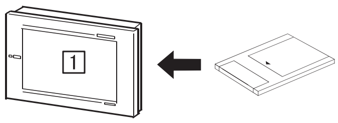
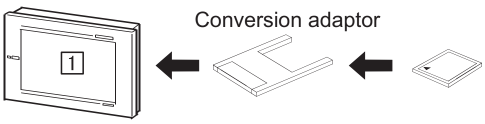
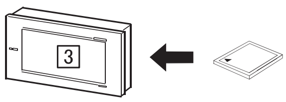
Orders and inquiries for the operation panel should be made to your shop.

21.4 Memory Card

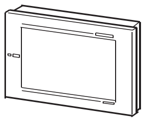
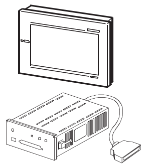
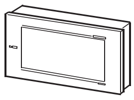
21.4.1 System configurations

(1) System configurations and connection conditions
The following system configurations assume loading of a memory card.

The numbers (1 to 3) given in the system configurations denote the numbers (1 to 3) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions	System Configuration
When SRAM type PC card is used	
	
When flash PC card is used	
When compact flash PC card is used	
	

(2) System equipment
The following table indicates the system equipment needed for loading of a memory card.

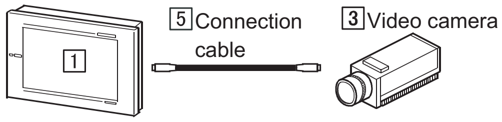
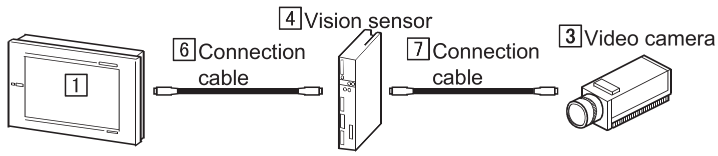
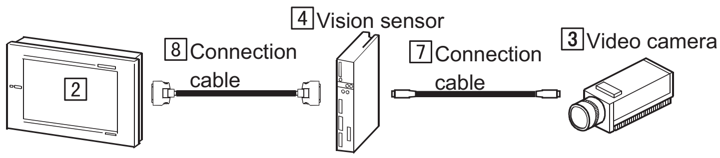
Image	No.	Application	Type	
			GOT unit	Memory card interface unit
	1	Memory card-loaded GOT	A985GOT(-V), A97*GOT, A960GOT (with built-in memory card interface)	---
	2	Memory card-loaded GOT	A956WGOT, A95*GOT	A1SD59J-MIF (The cable (A85GT-C05H (0.5m)) is separately required to connect A1SD59J-MIF and GOT)
	3	Memory card-loaded GOT	A956WGOT (with built-in memory card interface)	---

21.5 Video Camera

21.5.1 System configurations

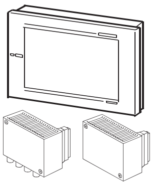
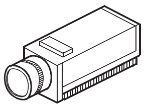
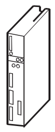
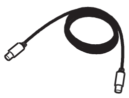
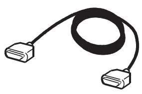
(1) System configurations and connection conditions
The following system configurations assume loading of a PC card.

The numbers (1 to 8) given in the system configurations denote the numbers (1 to 8) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.

Connection Conditions	System Configuration
For video input	
	
For RGB input	

(2) System equipment

The following table indicates the system equipment needed for connection of a video camera.

Image	No.	Application	Type	
			GOT unit	Input interface unit
	1	Video-input GOT	A985GOT-V	A9GT-80V4 (video), A9GT-80V4R1 (video/RGB)
	2	RGB-input GOT	A985GOT-V	A9GT-80R1 (RGB), A9GT-80V4R1 (video/RGB)
	3	Video camera	Products on the market	
	4	Vision sensor		
	5	Coaxial cable between [GOT] and [video camera]	(Refer to Section 21.5.2 and fabricate on user side.)	
	6	Coaxial cable between [GOT] and [vision sensor]		
	7	Coaxial cable between [vision sensor] and [video camera]	(Refer to manuals of video camera and vision sensor and prepare on user side.)	
	8	Connection cable between [vision sensor] and [video camera]	(Refer to Section 21.5.3 and fabricate on user side.)	

Point

- When using the A9GT-80V4R1 with the A985GOT-TBA-V, use the A985GOT-TBA-V of hardware version L (January, 2002) or later.
  When the A9GT-80V4R1 is used, depending on the video camera type, noise entering from the power supply cable of the camera may cause the PLC and/or GOT to malfunction.
  Supply power to the camera from the power supply that differs from the one for the PLC or GOT. (Do not supply power from the same receptacle.)
  If power cannot be supplied from a different power supply, install the following line filter to the power supply line of the camera.
  Recommended line filter: TDK make ZHC2203-11 (or equivalent)

- Using the video camera via some vision sensor type requires a power supply unit.

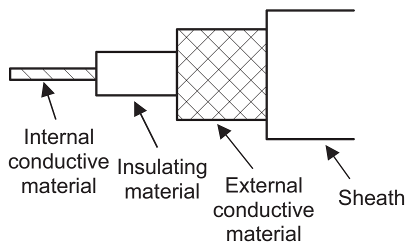
- Some video camera or system allows video signals to be output from both the power supply unit and video camera.
  If video signals are output from both the video camera and power supply unit, the voltage levels of the signals may become low and pictures may not be displayed properly. In such a case, signals should be output from the video camera only.

- In any environment where noise may cause a malfunction, we recommend you to ground the camera system and GOT separately.

21.5.2 Coaxial cable

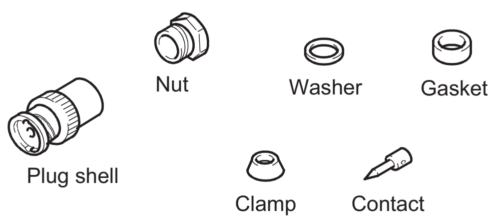
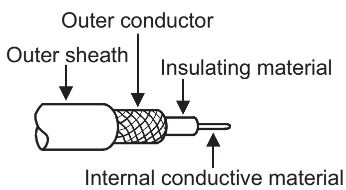
The following are the specifications, connectors and fabricating method of the coaxial cable used to connect the GOT, video camera and vision sensor.

(1) Coaxial cable used
As the coaxial cable, use "3C-2V" or "5C-2V" (JIS C 3501 conformance) of a high-frequency coaxial cable.
The following are coaxial cable specifications.

Item	3C-2V	5C-2V
Construction		
Cable diameter	5.4mm (0.21in)	7.4mm (0.29in)
Allowable bending radius	22mm (0.87in) or more	30mm (1.18in) or more
Internal conductive material diameter	0.5mm (0.02 in) (Annealed copper wire)	0.8mm (0.08in) (Annealed copper wire)
Insulating material diameter	3.1mm (0.12in) (Polyethylene)	4.9mm (0.19in) (Polyethylene)
External conductive material diameter	3.8mm (0.15in) (Single annealed copper wire mesh)	5.6mm (0.22in) (Single annealed copper wire mesh)
Applicable connector plug	connector plug for 3C-2V (BNC-P-3-Ni-CAU is recommended.)	connector plug for 5C-2V (BNC-P-5-Ni-CAU is recommended.)

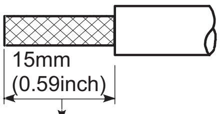
(2) Connector and connector cover
• GOT connector
Use the BNC connector as the GOT connector.
The following is how to connect the BNC connector and coaxial cable.

(a) Structures of BNC connector and coaxial cable

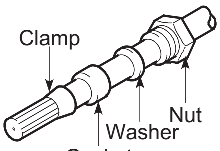
Parts of the BNC connector	Structure of the coaxial cable
	

(b) Connecting the BNC connector with the coaxial cable

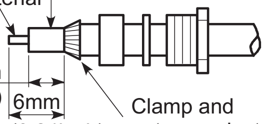
1) Remove the outer sheath of the end of the coaxial cable as shown below.



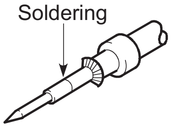
2) Slip a nut, a washer, a gasket, and a clamp on the coaxial cable as shown below, and loosen the outer conductor.



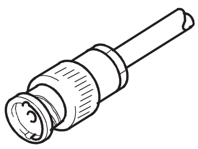
3) Cut the outer conductor, insulating material, and internal conductive material to specified dimensions shown below.
Cut the outer conductor and extend it over the end of the clamp.



4) Solder the contact to the tip of the internal conductive material.



5) Insert the contact assembly in plug shell, and engage the plug shell with the nut.



*1 Soldered part must not have excess solder mound.
*2 The tail end of the contact must come into close contact with the cut end of the insulating material. The contact must not be cutting in the insulating material.
*3 Apply solder quickly so that the insulating material may not be deformed by heat.

• Connector at the video camera and the vision sensor
Use the connector applicable to the video camera and the vision sensor

(3) Precautions for cable preparation
The cable length depends on the specifications of the video camera used. Fabricate the cable within the range of the video camera specifications.

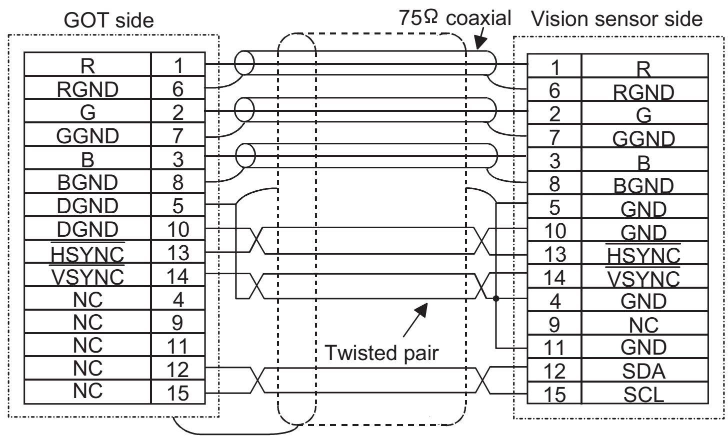
21.5.3 Connection cable

The following are the specifications, connection diagram and connectors of the cable used to connect the GOT and RGB output type vision sensor.

(1) Cable specifications

Item	Specifications
Applicable cable	SP23-23352A UL20276-SB or equivalent
Applicable cable size	9-core composite cable (recommended)

(2) Connection diagram



(3) Connector and connector cover
- GOT connector
  Use the connector matching the following model for the GOT.
  15-pin D-sub (male) inch screw type
  Manufactured by DDK
  17HE-R13150-73MC2
- Connector at the vision sensor
  Use the connector applicable to the vision sensor.

(4) Precautions for cable preparation
Maximum cable length depends on the specifications of the vision sensor
Fabricate the cable within the range of the vision sensor specifications.

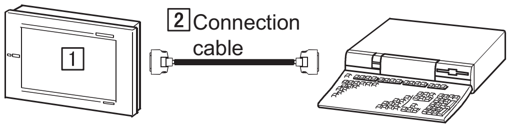
21.6 Personal Computer (when RGB Screen is Displayed)

21.6.1 System configuration

(1) System configuration

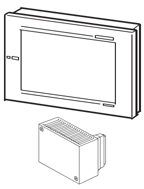
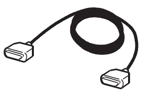
The following system configuration assumes connection of a personal computer (when RGB screen is displayed).

The numbers ($\boxed{1}$ to $\boxed{2}$) given in the system configurations denote the numbers ($\boxed{1}$ to $\boxed{2}$) in "(2) System equipment".
Refer to these numbers when you want to confirm the types and applications.



(2) System equipment

The following table indicates the system equipment needed for connection of a personal computer (when RGB screen is displayed).

Image	No.	Application	Type	
			GOT unit	RGB input interface unit
	$\boxed{1}$	RGB-input GOT	A985GOT-V	A9GT-80R1(RGB), A9GT-80V4R1(video/RGB)
	$\boxed{2}$	Connection cable between [GOT] and [personal computer]	(Refer to Section 21.6.2 and fabricate on user side.)	

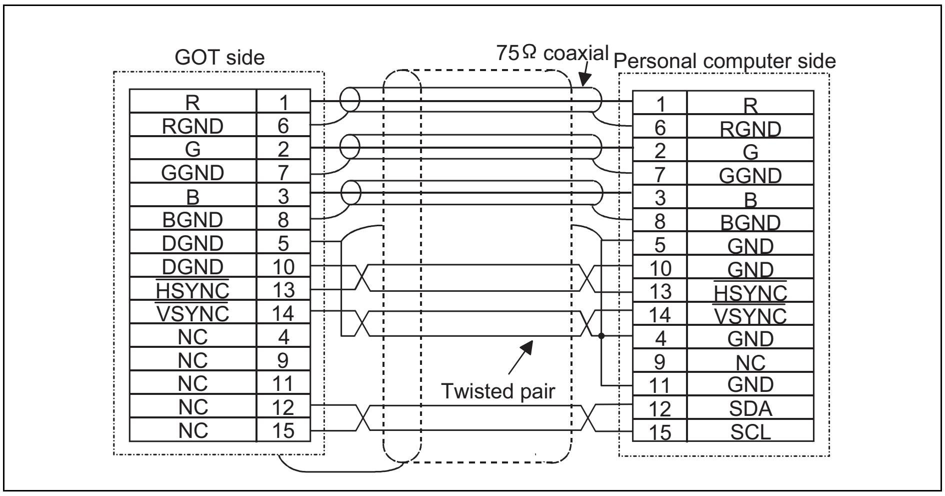
21.6.2 Connect cable

The following are the specifications, connection diagram and connectors of the cable used to connect the GOT and personal computer.

(1) Cable specifications

Item	Specifications
Applicable cable	SP23-23352A UL20276-SB or equivalent
Applicable cable size	9-core composite cable (recommended)

(2) Connection diagram



(3) Connector and connector cover

- GOT connector
  Use the connector matching the following model for the GOT.
  15-pin D-sub (male) inch screw type
  Manufactured by DDK
  17HE-R13150-73MC2
- Personal computer connector
  Use the connector applicable to the personal computer used.

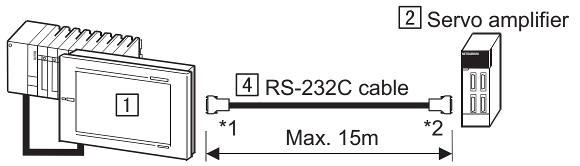
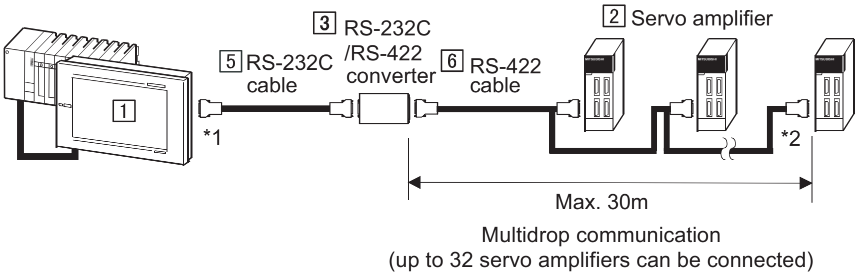
(4) Precautions for cable preparation
The cable length depends on the specifications of the personal computer used.
Fabricate the cable within the range of the personal computer specifications.

21.7 Servo Amplifier

21.7.1 System configuration

(1) System configuration
The following system configurations assume connection of servo amplifiers.

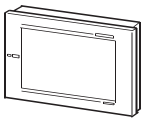
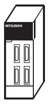
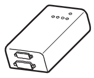
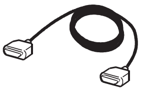
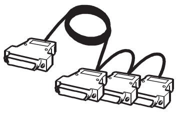
The numbers 1 to 6) given in the system configurations denote the numbers (1 to 6) in "(2) System equipment". Refer to these numbers when you want to confirm the types and applications.

Connection Conditions	System Configuration
When only one servo amplifier is connected	
When multiple servo amplifiers *3 (2 to 32) are connected	

*1 Connect the GOT side connector of the cable to the RS-232C interface at the bottom of the GOT used for downloading the monitor screen data.
*2 Connect the servo amplifier side connector of the cable to CN3.
*3 As the servo amplifier to be monitored, select one from the 32 servo amplifiers.

(2) System equipment

The following table indicates the system equipment needed for connection of servo amplifiers.

Image	No.	Application	Type
	1	GOT connected with servo amplifier	GOT
	2	Servo amplifier	MR-J2S-□A, MR-J2S-□CP, MR-J2M A series
	3	RS-232C/RS-422 converter	Commercially available product
	4	RS-232C cable *1 between [servo amplifier] and [GOT]	MR-CPCATCBL3M (3.0m)
	5	RS-232C cable between [GOT] and [converter]	(Use the cable that matches the used RS-232C/RS-422 converter.)
	6	RS-422 cable between [converter] and [servo amplifier]	(Refer to Section 21.7.3 and fabricate on user side.)

*1 The RS-232C cable can also be fabricated on the user side. Refer to Section 21.7.3 for details of the fabricating method.

21.7.2 Initial setting (only when RS-422 communication function is used)

When using the RS-422 communication function (multidrop communication), change the parameter setting of the servo amplifier for that of the RS-422 communication function.
For details of how to change the parameter setting, refer to the manual of the connected servo amplifier.

21.7.3 Connection cables

(1) RS-232C cable
Use the following cable for connection of the GOT and servo amplifier by the RS-232C communication function.

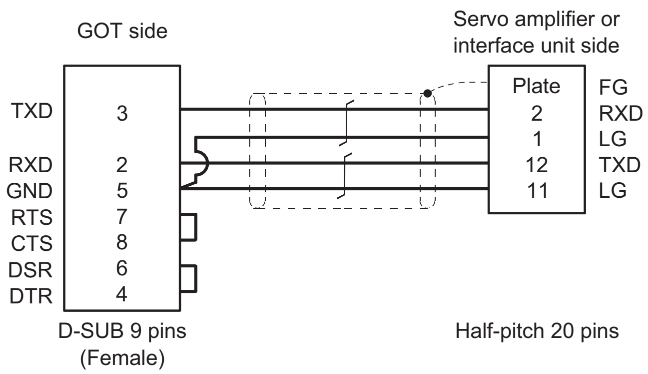
• MR-CPCATCBL3M (3.0m)

Connector: DE-9SF-N
Case: DE-C1-J6-S6
(Japan Aviation Electronics Industry)

Connector: 10120-6000EL
Shell kit: 10320-3210-000
(3M or equivalent)

The above cable can also be fabricated on the user side.
The connection diagram and connectors of the RS-232C cable are shown below.

(a) Connection diagram



(b) Used connectors and connector covers

• GOT side connector

Name	Model	Manufacturer
Connector	10120-6000EL	Sumitomo 3M Ltd.
Shell kit	10320-3210-000	

• Servo amplifier/interface unit side connector

Name	Model	Manufacturer
Connector	DE-9SF-N	Japan Aviation Electronics Industry
Case	DE-C1-J6-S6	

(c) Fabricating instruction

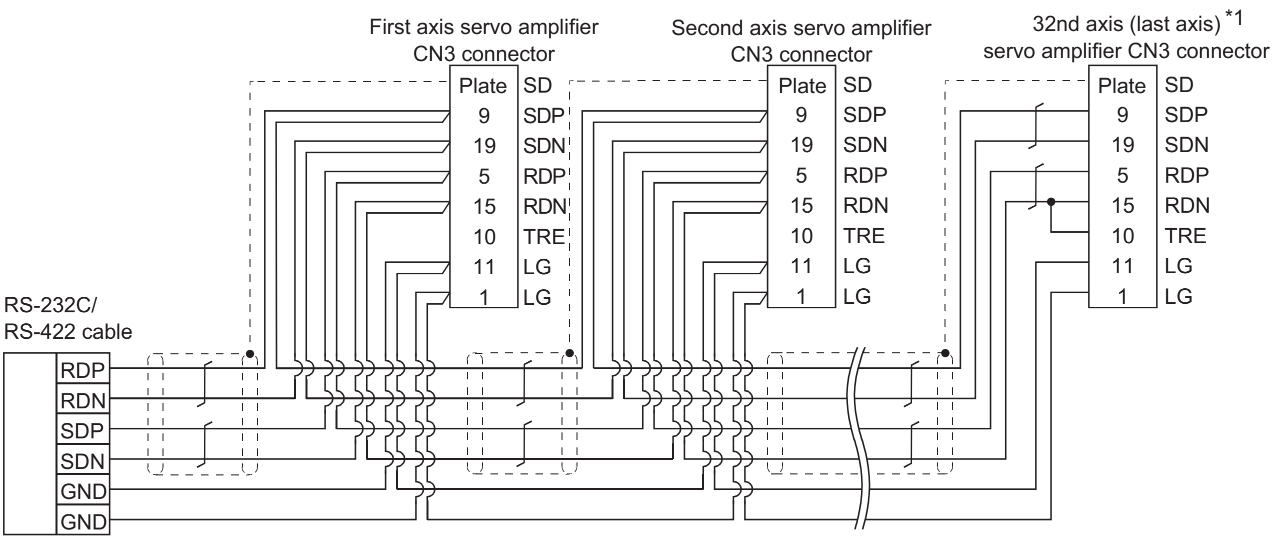
• Always use a shielded multi-core cable and connect the shield with FG securely.

• Fabricate the cable within a 15m length.

(2) RS-422 cable

How to fabricate the cables for connection of the RS-232C/RS-422 converter and servo amplifiers is shown below.

(a) Connection diagram



*1 At the last axis, connect TRE and RDN.

(b) Used connectors and connector covers

- RS-232C/RS-422 converter side connector

Name	Model	Manufacturer
Covered connector	17JE-23250-02 (D8A6)	DDK

- Servo amplifier/interface unit side connector

Name	Model	Manufacturer
Connector set	MR-J2CN1	Sumitomo 3M Ltd.
Connector	10120-3000VE	
Shell kit	10320-52F0-008	

(c) Fabricating instruction

- Fabricate the cable within a 30m length.

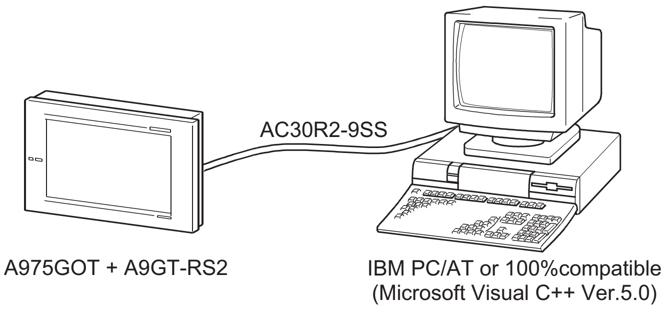
APPENDICES

Appendix.1 System Configuration Example for Microcomputer Connection

The following system configuration example is given for microcomputer connection.
Refer to this section when configuring a microcomputer connection system.

Appendix.1.1 System configuration

The system shown below was used in this system configuration example.



Appendix.1.2 GOT side communication setting and monitor screen setting details

(1) Communication setting
The communication setting of the GOT unit is indicated below.
Use the utility function (setup) to make communication setting for microcomputer connection.

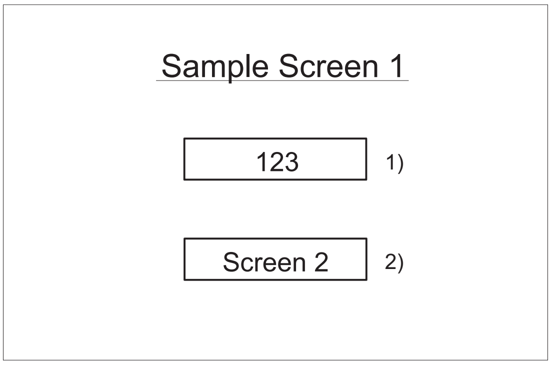
Setting item	Setting
Microcomputer connection transmission speed	19200bps
Microcomputer connection protocol	Format 1

(2) Monitor screen setting details
The monitor screen setting details are indicated below.

(3) Common setting
Screen switching device (base screen): D20

(a) Monitor screen images

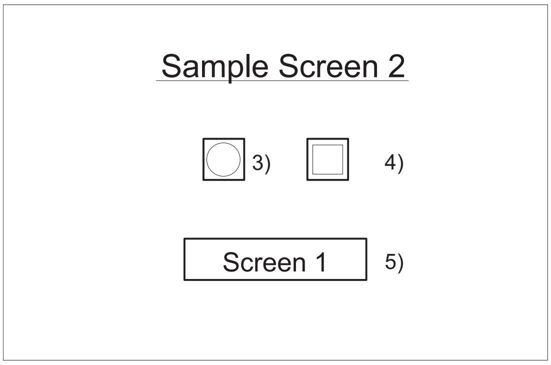
Base screen 1



1) Numerical display function
Numerical display setting for monitoring the device value of D21.
The device value is incremented only while "Sample Screen 1" is being displayed.

2) Touch key 1
Key used to switch the screen to "Sample Screen 2".
Touching this key switches the base screen to "Sample Screen 2".

Base screen 2



3) Lamp indication function
Indicates the device status of D22.b0 with the lamp.

4) Touch key 2
Alternate key which changes the status of D22.b0.

5) Touch key 3
Key used to switch the screen to "Sample Screen 1".
Touching this key switches the base screen to "Sample Screen 1".

(b) Numerical display function

Number	Basic	Form		
	Device	Format	Size	Digits
1)	D21, unsigned BIN, 16 bit	Unsigned 16 bit	Any	4

(c) Touch key function

Number	Basic	Case	Action				
			Action	Switched to	Device	Data format	Operation type
2)	Any	Any	Base	Fixed value 2	---	–	---
			Word	---	D13	Signed BIN	Fixed value 01
4)	Any	Any	Bit	---	D22.b0	---	Bit ALT
5)	Any	Any	Base	Fixed value 1	---	---	---
			Word	---	D13	Signed BIN	Fixed value 255

(d) Lamp indication function

Number	Basic		Case (bit)	
	Device	Shape	At ON	At OFF
3)	D22.B0, bit	Basic figure	Any	Any

Appendix.1.3 Host side sample program

The host side sample program (C language) is contained in GT Works2 Version1/GT Designer2 Version1.
The sample program is installed when GT Designer2 is installed.

Appendix.1.4 System operation overview

System operations will be explained in relation to the host side processing, GOT side display/processing and data communication packets.

Processing item	Host side processing details		Packet used for data communication	GOT side display/processing details
Initial processing	Port open processing is performed.		---	---
	"1" is written to screen switching device (D20).		Screen 1 switching batch write packet *1	Base screen 1 is displayed.
	Reply from GOT is received.		---	---
	Judgment is made as to whether reply from GOT is in error or not.		---	---
	Initial value is written to device (D21).		Numerical display batch write packet *2	"0" is shown in numerical display of base screen 1.
Reply/interrupt receipt from GOT	When reply to write to device (D21) is received from GOT.	Device (D21) current value acquisition request is given.	Numerical display batch read packet *3	Numerical display of base screen 1i s incremented. (As long as base screen 1 is displayed, host side repeats processing given on left.)
	When reply to read of device (D21) is received from GOT.	Next device value (D21) is created.	---	
		Sumcheck calculation of send packet is made.	---	
		Device (D21) update request is given.	Numerical display batch write packet *2	
	When interrupt of switch-ing request from base screen 1 to base screen 2 is received.	Base screen status is set to base screen 2.	Interrupt receipt packet *6	Touch touch key 1 to switch to base screen 2. Host is notified by interrupt.
	When interrupt of switching request from base screen 2 to base screen 1 is received.	Base screen status is set to base screen 1.	Interrupt receipt packet *6	Touch touch key 3 to switch to base screen 1. Host is notified by interrupt.
Termination processing (Only when error reply is received)	Port close processing is performed.		---	---

*1 Send packet structure of screen 1switching batch write packet is indicated.

Item	STX	WD		Address				points		Data				ETX	Sumcheck	
Stored value	0x02	0x57	0x44	0x30	0x30	0x32	0x30	0x30	0x31	0x30	0x30	0x30	0x31	0x03	0x38	0x32
Contents	---	"w" "D"		D20				1 point		1				---	"8" "2"	

*2 Send packet structure of numerical display batch write packet is indicated.

Item	STX	WD		Address				points		Data				ETX	Sumcheck	
Stored value	0x02	0x57	0x44	0x30	0x30	0x32	0x31	0x30	0x31	---	---	---	---	0x03	---	---
Contents	---	"w" "D"		D21				1 point		---				---	---	

*3 Send packet structure of numerical display batch read packet is indicated.

Item	STX	WD		Address				points		ETX	Sumcheck	
Stored value	0x02	0x52	0x44	0x30	0x30	0x32	0x31	0x30	0x31	0x03	0x38	0x32
Contents	---	"R" "D"		D21				1 point		---	"B" "D"	

*4 Receive packet structure of batch write reply packet is indicated.

When normal

Item	STX
Stored value	0x02
Contents	---

When error occurs

Item	STX	STX
Stored value	0x02	0x02
Contents	---	---

*5 Receive packet structure of batch read reply packet is indicated.

When normal

Item	STX	Data				STX	Sumcheck	
Stored value	0x02	---	---	---	---	0x03	---	---
Contents	---	---				---	---	

When error occurs

Item	STX
Stored value	0x15
Contents	---

*6 Receive packet structure of interrupt receive packet is indicated.

Item	Data
Stored value	---
Contents	Interrupt data

Memo

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[W]

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 one year 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 eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

(1) 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.

(2) 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 (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
5. 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.
6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
7. 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 of 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 MELSEC programmable logic controller, 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 programmable logic controller device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.

(2) The Mitsubishi programmable logic controller 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 programmable logic controller 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 programmable logic controller range of applications.
However, in certain cases, some applications may be possible, providing the user consults their local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at the users discretion.

GOT-A900 Series User's Manual

(GT Works2 Version2/GT Designer2 Version2 Compatible Connection System Manual)

MODEL	SW2-GT900-U(CON)-E
MODEL CODE	1DM219
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