

GRAPHIC OPERATION TERMINAL

# GOT2000 Series

## Connection Manual (Non-Mitsubishi Products 1)

For GT Works3 Version1



- |                                             |                                        |
|---------------------------------------------|----------------------------------------|
| ■ IAI ROBOT CONTROLLER                      | ■ SHINKO TECHNOS INDICATING CONTROLLER |
| ■ AZBIL (former YAMATAKE) CONTROL EQUIPMENT | ■ CHINO CONTROLLER                     |
| ■ OMRON PLC                                 | ■ TOSHIBA MACHINE PLC                  |
| ■ OMRON TEMPERATURE CONTROLLER              | ■ TOSHIBA PLC                          |
| ■ KEYENCE PLC                               | ■ PANASONIC SERVO AMPLIFIER            |
| ■ KOYO EI PLC                               | ■ PANASONIC INDUSTRIAL DEVICES         |
| ■ JTEKT PLC                                 | SUNX PLC                               |
| ■ SHARP PLC                                 |                                        |



# ● SAFETY PRECAUTIONS ●

(Always read these precautions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product.

In this manual, the safety precautions are ranked as "WARNING" and "CAUTION".



## WARNING

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



## CAUTION

Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the  caution level may lead to a serious accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

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

## [DESIGN PRECAUTIONS]



## WARNING

- Some failures of the GOT, communication unit or cable may keep the outputs on or off.  
Some failures of a touch panel may cause malfunction of the input objects such as a touch switch.  
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.
  - Do not use the GOT as the warning device that may cause a serious accident.  
An independent and redundant hardware or mechanical interlock is required to configure the device that displays and outputs serious warning.  
Failure to observe this instruction may result in an accident due to incorrect output or malfunction.
  - When the GOT backlight has a failure, the GOT status will be as follows. Failure to observe this instruction may result in an accident due to incorrect output or malfunction.
    - GT27, GT25, GT23  
When the GOT backlight has a failure, the POWER LED blinks (orange/blue) and the display section dims. In such a case, the input by the touch switch(s) is disabled.
    - GT21  
When the GOT backlight has a failure, the display section dims. In such a case, the input by the touch switches is disabled.
- Even if the display section dims on the liquid crystal of the GOT, the input by the touch switch(s) may remain enabled. This may cause a malfunction of the touch switch.
- For example, if an operator assumes that the display section has dimmed because of the screen save function and touches the display section to cancel the screen save, a touch switch may be activated.
- The GOT backlight failure can be checked with a system signal of the GOT.

## [DESIGN PRECAUTIONS]

### **WARNING**

- The display section of the GOT is an analog-resistive type touch panel.  
When multiple points of the display section are touched simultaneously, an accident may occur due to incorrect output or malfunction.
  - GT27  
Do not touch three points or more simultaneously on the display section. Doing so may cause an accident due to an incorrect output or malfunction.
  - GT25, GT23, GT21  
Do not touch two points or more simultaneously on the display section. Doing so may operate the switch located around the center of the touched point, or may cause an accident due to an incorrect output or malfunction.
- When programs or parameters of the controller (such as a PLC) that is monitored by the GOT are changed, be sure to reset the GOT, or turn on the unit again after shutting off the power as soon as possible.  
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 (GT27, GT25 Only) : The CPU becomes faulty and the GOT becomes inoperative.  
For other than bus connection : The GOT becomes inoperative.  
A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur.  
Not doing so can cause an accident due to false output or malfunction.



## [DESIGN PRECAUTIONS]



### CAUTION

- Do not bundle the control and communication cables with main-circuit, power or other wiring. Run the above cables separately from such wiring and keep them a minimum of 100mm apart. Not doing so noise can cause a malfunction.
- Do not press the GOT display section with a pointed material as a pen or driver. Doing so can result in a damage or failure of the display section.
- When the GOT is connected to the Ethernet network, the available IP address is restricted according to the system configuration.
  - When multiple GOTs are connected to the Ethernet network :  
Do not set the IP address (192.168.3.18) for the GOTs and the controllers in the network.
  - When a single GOT is connected to the Ethernet network :  
Do not set the IP address (192.168.3.18) for the controllers except the GOT in the network.Doing so can cause the IP address duplication.  
The duplication can negatively affect the communication of the device with the IP address (192.168.3.18).  
The operation at the IP address duplication depends on the devices and the system.
- Turn on the controllers and the network devices to be ready for communication before they communicate with the GOT.  
Failure to do so can cause a communication error on the GOT.
- When the GOT is subject to shock or vibration, or some colors appear on the screen of the GOT, the screen of the GOT might flicker.

## [MOUNTING PRECAUTIONS]



### WARNING

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the panel.  
Not doing so can cause the unit to fail or malfunction.
- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the option unit onto/from the GOT. (GT27, GT25 Only)

## [MOUNTING PRECAUTIONS]

### CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual. Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range with a Phillips-head screwdriver No.2.
  - GT27, GT25, GT23  
Specified torque range (0.36 N•m to 0.48 N•m)
  - GT21  
Specified torque range (0.20 N•m to 0.25 N•m)Undertightening can cause the GOT to drop, short circuit or malfunction.  
Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT.
- When mounting a unit on the GOT, tighten the mounting screws in the following specified torque range.
  - GT27, GT25  
When loading the communication unit or option unit other than wireless LAN unit to the GOT, fit it to the connection interface of the GOT and tighten the mounting screws in the specified torque range (0.36 N•m to 0.48 N•m) with a Phillips-head screwdriver No.2.  
When loading the wireless LAN unit to the GOT, fit it to the side interface of GOT and tighten the mounting screws in the specified torque range (0.10 N•m to 0.14 N•m) with a Phillips-head screwdriver No.1.  
When the GOT is installed vertically, its side interface is positioned on the bottom.  
To prevent the falling of the wireless LAN communication unit from the side interface, install or remove the unit while holding it with hands.
  - GT21  
When mounting the SD card unit on the GOT, fit it to the side of the GOT and tighten the tapping screws in the specified torque range (0.3 N•m to 0.6 N•m) with a Phillips-head screwdriver No.2.  
Under tightening can cause the GOT to drop, short circuit or malfunction.  
Overtightening can cause a drop, failure or malfunction due to the damage of the screws or unit.
- When closing the USB environmental protection cover, fix the cover to the GOT by pushing the [PUSH] mark on the latch firmly to comply with the protective structure.(GT27, GT25 Only)
- Remove the protective film of the GOT.  
When the user continues using the GOT with the protective film, the film may not be removed.  
In addition, for the models equipped with the human sensor function, using the GOT with the protective film may cause the human sensor not to function properly
- Operate and store the GOT in environments without direct sunlight, high temperature, dust, humidity, and vibrations.
- When using the GOT in the environment of oil or chemicals, use the protective cover for oil.  
Failure to do so may cause failure or malfunction due to the oil or chemical entering into the GOT.

## [WIRING PRECAUTIONS]

### WARNING

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

## [WIRING PRECAUTIONS]



### CAUTION

- Make sure to ground the FG terminal and LG terminal of the GOT power supply section to the protective ground conductors dedicated to the GOT with a ground resistance of 100  $\Omega$  or less. (GT21 does not have the LG terminal.)
- When tightening the terminal screws, use a Phillips-head screwdriver No.2.
- Tighten the terminal screws of the GOT power supply section in the following specified torque range.
  - GT27, GT25, GT23  
Specified torque range (0.5 N•m to 0.8 N•m)
- For a terminal processing of a wire to the GOT power supply section, use the following terminal.
  - GT27, GT25, GT23  
Use applicable solderless terminals for terminal processing of a wire and tighten them with the specified torque.  
Not doing so can cause a fire, failure or malfunction.
  - GT21  
Connect a stranded wire or a single wire directly, or use a rod terminal with an insulation sleeve.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.  
Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the following specified torque range.
  - GT27, GT25, GT23  
Specified torque range (0.5 N•m to 0.8 N•m)
  - GT21  
Specified torque range (0.22 N•m to 0.25 N•m)
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT.  
Not doing so can cause a fire, failure or malfunction.
- The module has an ingress prevention label on its top to prevent foreign matter, such as wire offcuts, from entering the module during wiring.  
Do not peel this label during wiring. Before starting system operation, be sure to peel this label because of heat dissipation. (GT27, GT25 Only)
- Plug the communication cable into the GOT interface or the connector of the connected unit, and tighten the mounting screws and the terminal screws in the specified torque range.  
Undertightening can cause a short circuit or malfunction.  
Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.
- Plug the QnA/ACPU/Motion controller (A series) bus connection cable by inserting it into the connector of the connected unit until it "clicks".  
After plugging, check that it has been inserted snugly.  
Not doing so can cause a malfunction due to a contact fault. (GT27, GT25 Only)

## [TEST OPERATION PRECAUTIONS]

### **WARNING**

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

## [STARTUP/MAINTENANCE PRECAUTIONS]

### **WARNING**

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

## [STARTUP/MAINTENANCE PRECAUTIONS]

### CAUTION

- Do not disassemble or modify the unit.  
Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly.  
Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped.  
Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull from the cable portion.  
Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop the module or subject it to strong shock. A module damage may result.
- Do not drop or give an impact to the battery mounted to the unit.  
Doing so may damage the battery, causing the battery fluid to leak inside the battery.  
If the battery is dropped or given an impact, dispose of it without using.
- Before touching the unit, always touch grounded metals, etc. to discharge static electricity from human body, etc.  
Not doing so can cause the unit to fail or malfunction.
- Use the battery manufactured by Mitsubishi Electric Corporation.  
Use of other batteries may cause a risk of fire or explosion.
- Dispose of used battery promptly.  
Keep away from children. Do not disassemble and do not dispose of in fire.
- Be sure to shut off all phases of the external power supply before replacing the battery or using the dip switch of the terminating resistor.  
Not doing so can cause the unit to fail or malfunction by static electricity.

## [TOUCH PANEL PRECAUTIONS]

### CAUTION

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

## [PRECAUTIONS WHEN THE DATA STORAGE IS IN USE]

### **WARNING**

- If the SD card is removed from drive A of the GOT while being accessed by the GOT, the GOT may stop processing data for about 20 seconds.

The GOT cannot be operated during this period.

The functions that run in the background including a screen updating, alarm, logging, scripts, and others are also interrupted.

Remove the SD card after checking the following items.

- GT27, GT25, GT23  
After checking the light off of SD card access LED, remove the SD card.
- GT21  
After disabling SD card access on the utility screen of the GOT and checking that the SD card access LED is off, remove the SD card.

### **CAUTION**

- If the data storage is removed from the GOT while being accessed by the GOT, the data storage and files may be damaged.

Before removing the data storage from the GOT, check the SD card access LED, system signal, or others to make sure that the data storage is not accessed.

- Turning off the GOT while it accesses the SD card results in damage to the SD card and files.
- When using the GOT with an SD card inserted, check the following items.
  - GT27, GT25, GT23  
When inserting a SD card into the GOT, make sure to close the SD card cover.  
Failure to do so causes the data not to be read or written.
  - GT21  
When using an SD card connected to the SD card unit or the GOT, enable the SD card access in the GOT utility in advance.  
Failure to do so causes the data not to be read or written.
- When removing the SD card from the GOT, make sure to support the SD card by hand as it may pop out.  
Failure to do so may cause the SD card to drop from the GOT, resulting in a failure or break.
- When inserting a USB device into a USB interface of the GOT, make sure to insert the device into the interface firmly.  
Failure to do so may cause the USB device to drop from the GOT, resulting in a failure or break.
- Before removing the USB device from the GOT, follow the procedure for removal on the utility screen of the GOT.  
After the successful completion dialog is displayed, remove the USB device by hand carefully.  
Failure to do so may cause the USB device to drop from the GOT, resulting in a failure or break.

## [DISPOSAL PRECAUTIONS]



### CAUTION

- When disposing of this product, treat it as industrial waste.  
When disposing of batteries, separate them from other wastes according to the local regulations.  
(Refer to the GOT2000 Series User's Manual (Hardware) for details of the battery directive in the EU member states.)

## [TRANSPORTATION PRECAUTIONS]



### CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.  
(Refer to the GOT2000 Series User's Manual (Hardware) for details of the regulated models.)
- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of this manual, as they are precision devices.  
Failure to do so may cause the unit to fail.  
Check if the unit operates correctly after transportation.
- When fumigants that contain halogen materials such as fluorine, chlorine, bromine, and iodine are used for disinfecting and protecting wooden packaging from insects, they cause malfunction when entering our products.  
Please take necessary precautions to ensure that remaining materials from fumigant do not enter our products, or treat packaging with methods other than fumigation (heat method).  
Additionally, disinfect and protect wood from insects before packing products.

# INTRODUCTION

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Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).

Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

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REVISIONS

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WARRANTY

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## List of Manuals for GT Works3

For the manuals related to this product, install the manuals with the drawing software.  
If you need a printed manual, consult your local Mitsubishi representative or branch office.

### ■ 1. List of Manuals for GT Designer3(GOT2000)

#### (1) Screen drawing software manuals

| Manual name                                                         | Manual number<br>(Model code) |
|---------------------------------------------------------------------|-------------------------------|
| GT Works3 Version1 Installation Procedure Manual                    | -                             |
| GT Designer3 (GOT2000) Help                                         | -                             |
| GT Converter2 Version3 Operating Manual for GT Works3               | SH-080862ENG<br>(1D7MB2)      |
| GOT2000 Series MES Interface Function Manual for GT Works3 Version1 | SH-081228ENG                  |

#### (2) Connection manuals

| Manual name                                                                                                     | Manual number<br>(Model code) |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------|
| GOT2000 Series Connection Manual (Mitsubishi Products) For GT Works3 Version1                                   | SH-081197ENG<br>(1D7MJ8)      |
| GOT2000 Series Connection Manual (Non-Mitsubishi Products 1) For GT Works3 Version1                             | SH-081198ENG                  |
| GOT2000 Series Connection Manual (Non-Mitsubishi Products 2) For GT Works3 Version1                             | SH-081199ENG                  |
| GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals) For GT Works3 Version1 | SH-081200ENG                  |

#### (3) GT SoftGOT2000 manuals

| Manual name                              | Manual number<br>(Model code) |
|------------------------------------------|-------------------------------|
| GT SoftGOT2000 Version1 Operating Manual | SH-081201ENG                  |

#### (4) GOT2000 manuals

| Manual name                             | Manual number<br>(Model code) |
|-----------------------------------------|-------------------------------|
| GOT2000 Series User's Manual (Hardware) | SH-081194ENG<br>(1D7MJ5)      |
| GOT2000 Series User's Manual (Utility)  | SH-081195ENG<br>(1D7MJ6)      |
| GOT2000 Series User's Manual (Monitor)  | SH-081196ENG<br>(1D7MJ7)      |

## Abbreviations, Generic Terms, the meaning of the icon

The following shows the abbreviations and generic terms used in Help.

### 1. GOT

| Abbreviations and generic terms |               |                |             | Description                                        | Meaning of icon                                                                       |                                                                                       |   |
|---------------------------------|---------------|----------------|-------------|----------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---|
|                                 |               |                |             |                                                    | Support                                                                               | Not support                                                                           |   |
| GOT2000 Series                  | GT27          | GT27-X         | GT2715-X    | GT2715-XTBA, GT2715-XTBD                           |    | -                                                                                     |   |
|                                 |               | GT27-S         | GT2712-S    | GT2712-STBA, GT2712-STWA, GT2712-STBD, GT2712-STWD |                                                                                       |                                                                                       |   |
|                                 |               |                | GT2710-S    | GT2710-STBA, GT2710-STBD                           |                                                                                       |                                                                                       |   |
|                                 |               | GT27-V         | GT2710-V    | GT2710-VTBA, GT2710-VTWA, GT2710-VTBD, GT2710-VTWD |                                                                                       |                                                                                       |   |
|                                 |               | GT27-S         | GT2708-S    | GT2708-STBA, GT2708-STBD                           |                                                                                       |                                                                                       |   |
|                                 |               |                | GT2708-V    | GT2708-VTBA, GT2708-VTBD                           |                                                                                       |                                                                                       |   |
|                                 |               | GT2705-V       | GT2705-VTBD |                                                    |                                                                                       |                                                                                       |   |
|                                 | GT25          | GT25-S         | GT2512-S    | GT2512-STBA, GT2512-STBD                           |    | -                                                                                     |   |
|                                 |               | GT25-V         | GT2510-V    | GT2510-VTBA, GT2510-VTWA, GT2510-VTBD, GT2510-VTWD |                                                                                       |                                                                                       |   |
|                                 |               |                | GT2508-V    | GT2508-VTBA, GT2508-VTWA, GT2508-VTBD, GT2508-VTWD |                                                                                       |                                                                                       |   |
|                                 | GT23          | GT23-V         | GT2310-V    | GT2310-VTBA, GT2310-VTBD                           |    | -                                                                                     |   |
|                                 |               |                | GT2308-V    | GT2308-VTBA, GT2308-VTBD                           |                                                                                       |                                                                                       |   |
|                                 | GT21          |                |             | GT21                                               |    | -                                                                                     |   |
|                                 |               | GT21-R         | GT2104-R    | GT2104-RTBD                                        |    | -                                                                                     |   |
|                                 |               |                | GT2104-P    | GT2104-PMBD                                        |   | -                                                                                     |   |
|                                 |               |                |             | GT2104-PMBDS                                       |  | -                                                                                     |   |
|                                 |               |                | GT2103-P    | GT2103-PMBD                                        |  | -                                                                                     |   |
|                                 |               |                |             | GT2103-PMBDS                                       |  | -                                                                                     |   |
|                                 |               |                |             | GT2103-PMBDS2                                      |  | -                                                                                     |   |
|                                 |               |                |             | GT2103-PMBLS                                       |  | -                                                                                     |   |
|                                 |               | GT SoftGOT2000 |             |                                                    | GT SoftGOT2000 Version1                                                               |  | - |
|                                 |               | GOT1000 Series |             |                                                    | GOT1000 Series                                                                        | -                                                                                     |   |
|                                 |               | GOT900 Series  |             |                                                    | GOT-A900 Series, GOT-F900 Series                                                      | -                                                                                     |   |
|                                 | GOT800 Series |                |             | GOT-800 Series                                     | -                                                                                     |                                                                                       |   |

### 2. Communication unit

| Abbreviations and generic terms                  | Description                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Bus connection unit                              | GT15-QBUS, GT15-QBUS2, GT15-ABUS, GT15-ABUS2, GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L |
| Serial communication unit                        | GT15-RS2-9P, GT15-RS4-9S, GT15-RS4-TE                                                                  |
| MELSECNET/H communication unit                   | GT15-J71LP23-25, GT15-J71BR13                                                                          |
| CC-Link IE Controller Network communication unit | GT15-J71GP23-SX                                                                                        |
| CC-Link IE Field Network communication unit      | GT15-J71GF13-T2                                                                                        |
| CC-Link communication unit                       | GT15-J61BT13                                                                                           |
| Wireless LAN communication unit                  | GT25-WLAN                                                                                              |
| Serial multi-drop connection unit                | GT01-RS4-M                                                                                             |
| Connection conversion adapter                    | GT10-9PT5S                                                                                             |
| Field network adapter unit                       | GT25-FNADP                                                                                             |

### ■3. Option unit

| Abbreviations and generic terms |                      | Description                                                    |
|---------------------------------|----------------------|----------------------------------------------------------------|
| Printer unit                    |                      | GT15-PRN                                                       |
| Video/RGB unit                  | Video input unit     | GT27-V4-Z (A set of GT16M-V4-Z and GT27-IF1000)                |
|                                 | RGB input unit       | GT27-R2, GT27-R2-Z (A set of GT16M-R2-Z and GT27-IF1000)       |
|                                 | Video/RGB input unit | GT27-V4R1-Z (A set of GT16M-V4R1-Z and GT27-IF1000)            |
|                                 | RGB output unit      | GT27-ROUT, GT27-ROUT-Z (A set of GT16M-ROUT-Z and GT27-IF1000) |
| Multimedia unit                 |                      | GT27-MMR-Z (A set of GT16M-MMR-Z and GT27-IF1000)              |
| Video signal conversion unit    |                      | GT27-IF1000                                                    |
| External I/O unit               |                      | GT15-DIO, GT15-DIOR                                            |
| Sound output unit               |                      | GT15-SOUT                                                      |

### ■4. Option

| Abbreviations and generic terms    |  | Description                                                                                                                                                                                                                                                                        |
|------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SD card                            |  | NZ1MEM-2GBSD, NZ1MEM-4GBSD, NZ1MEM-8GBSD, NZ1MEM-16GBSD, L1MEM-2GBSD, L1MEM-4GBSD                                                                                                                                                                                                  |
| Battery                            |  | GT11-50BAT                                                                                                                                                                                                                                                                         |
| Protective sheet                   |  | GT27-15PSGC, GT25-12PSGC, GT25-10PSGC, GT25-08PSGC, GT25-05PSGC, GT21-04RPSGC-UC, GT21-03PSGC-UC, GT21-04PSGC-UC, GT27-15PSCC, GT25-12PSCC, GT25-10PSCC, GT25-08PSCC, GT25-12PSCC-UC, GT25-10PSCC-UC, GT25-08PSCC-UC, GT25-05PSCC, GT21-04RPSCC-UC, GT21-04PSCC-UC, GT21-03PSCC-UC |
| Protective cover for oil           |  | GT20-15PCO, GT20-12PCO, GT20-10PCO, GT20-08PCO, GT25-05PCO, GT21-04RPCO, GT10-30PCO, GT10-20PCO                                                                                                                                                                                    |
| USB environmental protection cover |  | GT25-UCOV, GT25-05UCOV                                                                                                                                                                                                                                                             |
| Stand                              |  | GT15-90STAND, GT15-80STAND, GT15-70STAND, GT15-60STAND                                                                                                                                                                                                                             |
| Attachment                         |  | GT15-70ATT-98, GT15-70ATT-87, GT15-60ATT-97, GT15-60ATT-96, GT15-60ATT-87, GT15-60ATT-77                                                                                                                                                                                           |

### ■5. Software

#### (1) Software related to GOT

| Abbreviations and generic terms | Description                                                      |
|---------------------------------|------------------------------------------------------------------|
| GT Works3                       | SW1DND-GTWK3-J, SW1DND-GTWK3-E, SW1DND-GTWK3-C                   |
| GT Designer3 Version1           | Screen drawing software GT Designer3 for GOT2000/GOT1000 series  |
| GT Designer3                    | Screen drawing software for GOT2000 series included in GT Works3 |
| GT Designer3 (GOT2000)          |                                                                  |
| GT Designer3 (GOT1000)          |                                                                  |
| GT Simulator3                   | Screen simulator GT Simulator3 for GOT2000/GOT1000/GOT900 series |
| GT SoftGOT2000                  | Monitoring software GT SoftGOT2000 series                        |
| GT Converter2                   | Data conversion software GT Converter2 for GOT1000/GOT900 series |
| GT Designer2 Classic            | Screen drawing software GT Designer2 Classic for GOT900 series   |
| GT Designer2                    | Screen drawing software GT Designer2 for GOT1000/GOT900 series   |
| DU/WIN                          | Screen drawing software FX-PCS-DU/WIN for GOT-F900 series        |

## (2) Software related to iQ Works

| Abbreviations and generic terms | Description                                                                                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iQ Works                        | Abbreviation of iQ Platform compatible engineering environment MELSOFT iQ Works                                                                                                        |
| MELSOFT Navigator               | Generic term for integrated development environment software included in the SW DNC-IQWK (iQ Platform compatible engineering environment MELSOFT iQ Works)<br>(□ indicates a version.) |

## (3) Other software

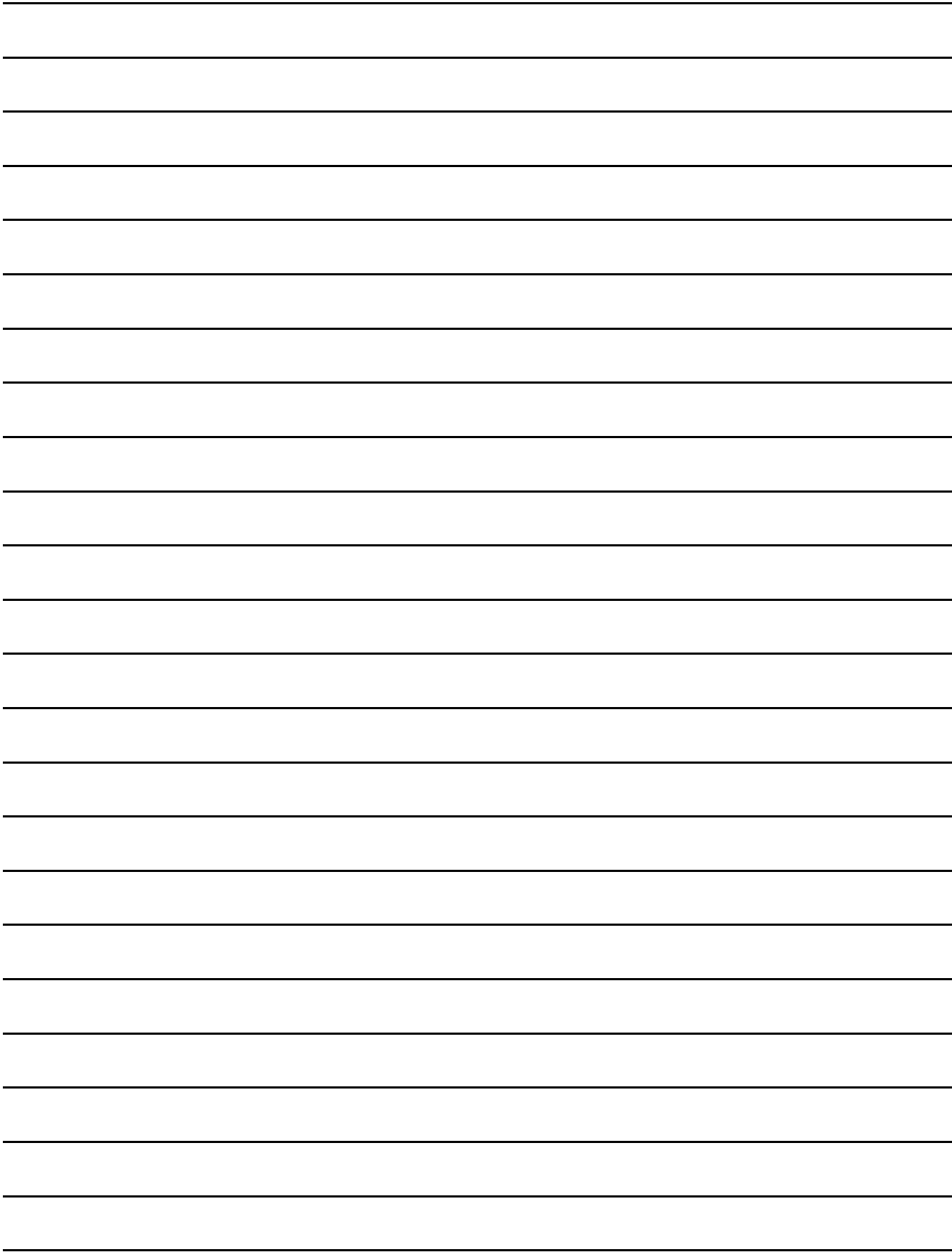
| Abbreviations and generic terms       |               | Description                                                                                                                                 |
|---------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| GX Works3                             |               | SW□DND-GXW3-E (-EA) type programmable controller engineering software<br>(□ indicates a version.)                                           |
| GX Works2                             |               | SW□DNC-GXW2-□ type programmable controller engineering software<br>(□ indicates a version.)                                                 |
| Controller simulator                  | GX Simulator3 | Simulation function of GX Works3                                                                                                            |
|                                       | GX Simulator2 | Simulation function of GX Works2                                                                                                            |
|                                       | GX Simulator  | SW□D5C-LLT-E (-EV) type ladder logic test tool function software package<br>(SW5D5C-LLT (-V) or later versions)<br>(□ indicates a version.) |
| GX Developer                          |               | SW□D5C-GPPW-E (-EV)/SW□D5F-GPPW (-V) type software package<br>(□ indicates a version.)                                                      |
| GX LogViewer                          |               | SW□DNN-VIEWER-E type software package<br>(□ indicates a version.)                                                                           |
| PX Developer                          |               | SW□D5C-FBDQ-E type FBD software package for process control<br>(□ indicates a version.)                                                     |
| MT Works2                             |               | Motion controller engineering environment MELSOFT MT Works2<br>(SW□DND-MTW2-E)<br>(□ indicates a version.)                                  |
| MT Developer                          |               | SW□RNC-GSV type integrated start-up support software for motion controller<br>Q series<br>(□ indicates a version.)                          |
| CW Configurator                       |               | C Controller module configuration and monitor tool (SW1DND-RCCPU-E)<br>(□ indicates a version.)                                             |
| MR Configurator2                      |               | SW□DNC-MRC2-E type servo configuration software<br>(□ indicates a version.)                                                                 |
| MR Configurator                       |               | MRZJW□-SETUP type servo configuration software<br>(□ indicates a version.)                                                                  |
| FR Configurator                       |               | Inverter setup software (FR-SW□-SETUP-WE)<br>(□ indicates a version.)                                                                       |
| NC Configurator2                      |               | CNC parameter setting support tool (FCSB1221)                                                                                               |
| NC Configurator                       |               | CNC parameter setting support tool                                                                                                          |
| FX Configurator-FP                    |               | Parameter setting, monitoring, and testing software packages for FX3U-<br>20SSC-H (SW□D5CFXSSCE)<br>(□ indicates a version.)                |
| FX3U-ENET-L Configuration tool        |               | FX3U-ENET-L type Ethernet module setting software (SW1D5-FXENETL-E)                                                                         |
| RT ToolBox2                           |               | Robot program creation software (3D-11C-WINE)                                                                                               |
| MX Component                          |               | MX Component Version□ (SW□D5C-ACT-E, SW□D5C-ACT-EA)<br>(□ indicates a version.)                                                             |
| MX Sheet                              |               | MX Sheet Version□ (SW□D5C-SHEET-E, SW□D5C-SHEET-EA)<br>(□ indicates a version.)                                                             |
| CPU Module Logging Configuration Tool |               | CPU module logging configuration tool (SW1DNN-LLUTL-E)                                                                                      |

## ■ 6. License key (for GT SoftGOT2000)

| Abbreviations and generic terms | Description   |
|---------------------------------|---------------|
| License key                     | GT27-SGTKEY-U |

## ■7. Others

| Abbreviations and generic terms | Description                                                      |
|---------------------------------|------------------------------------------------------------------|
| IAI                             | IAI Corporation                                                  |
| AZBIL                           | Azbil Corporation                                                |
| OMRON                           | OMRON Corporation                                                |
| KEYENCE                         | KEYENCE CORPORATION                                              |
| KOYO EI                         | KOYO ELECTRONICS INDUSTRIES CO., LTD.                            |
| JTEKT                           | JTEKT Corporation                                                |
| SHARP                           | Sharp Manufacturing Systems Corporation                          |
| SHINKO                          | Shinko Technos Co., Ltd.                                         |
| CHINO                           | CHINO CORPORATION                                                |
| TOSHIBA                         | TOSHIBA CORPORATION                                              |
| TOSHIBA MACHINE                 | TOSHIBA MACHINE CO., LTD.                                        |
| PANASONIC                       | Panasonic Corporation                                            |
| PANASONIC IDS                   | Panasonic Industrial Devices SUNX Co., Ltd.                      |
| HITACHI IES                     | Hitachi Industrial Equipment Systems Co., Ltd.                   |
| HITACHI                         | Hitachi, Ltd.                                                    |
| FUJI                            | FUJI ELECTRIC CO., LTD.                                          |
| YASKAWA                         | YASKAWA Electric Corporation                                     |
| YOKOGAWA                        | Yokogawa Electric Corporation                                    |
| RKC                             | RKC INSTRUMENT INC.                                              |
| ALLEN-BRADLEY                   | Allen-Bradley products manufactured by Rockwell Automation, Inc. |
| CLPA                            | CC-Link Partner Association                                      |
| GE                              | GE Intelligent Platforms, Inc.                                   |
| HMS                             | HMS Industrial Networks                                          |
| LS IS                           | LS Industrial Systems Co., Ltd.                                  |
| mitsubishi india                | Mitsubishi Electric India Pvt. Ltd.                              |
| ODVA                            | Open DeviceNet Vendor Association, Inc.                          |
| SCHNEIDER                       | Schneider Electric SA                                            |
| SICK                            | SICK AG                                                          |
| SIEMENS                         | Siemens AG                                                       |
| PLC                             | Programmable controller manufactured by each corporation         |
| Control equipment               | Control equipment manufactured by each corporation               |
| Temperature controller          | Temperature controller manufactured by each corporation          |
| Indicating controller           | Indicating controller manufactured by each corporation           |
| Controller                      | Controller manufactured by each corporation                      |



# PREPARATORY PROCEDURES FOR MONITORING

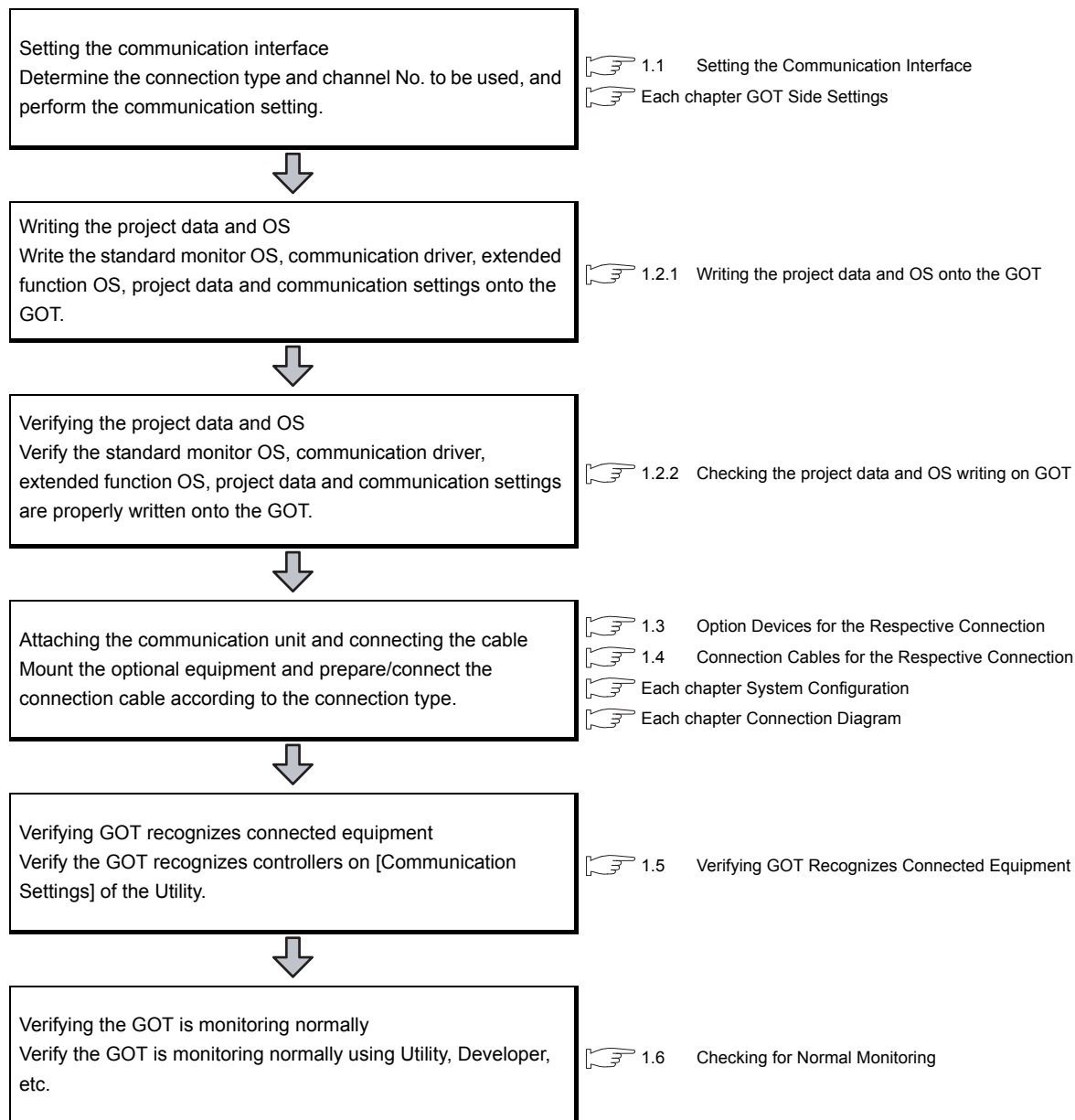
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|     |                                                           |        |
|-----|-----------------------------------------------------------|--------|
| 1.1 | Setting the Communication Interface . . . . .             | 1 - 3  |
| 1.2 | Writing the Project Data and OS onto the GOT . . . . .    | 1 - 11 |
| 1.3 | Option Devices for the Respective Connection . . . . .    | 1 - 13 |
| 1.4 | Connection Cables for the Respective Connection . . . . . | 1 - 19 |
| 1.5 | Verifying GOT Recognizes Connected Equipment . . . . .    | 1 - 24 |
| 1.6 | Checking for Normal Monitoring. . . . .                   | 1 - 26 |

# 1. PREPARATORY PROCEDURES FOR MONITORING

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The following shows the procedures to be taken before monitoring and corresponding reference sections.





## 1.1 Setting the Communication Interface

Set the communication interface of GOT and the connected equipment.

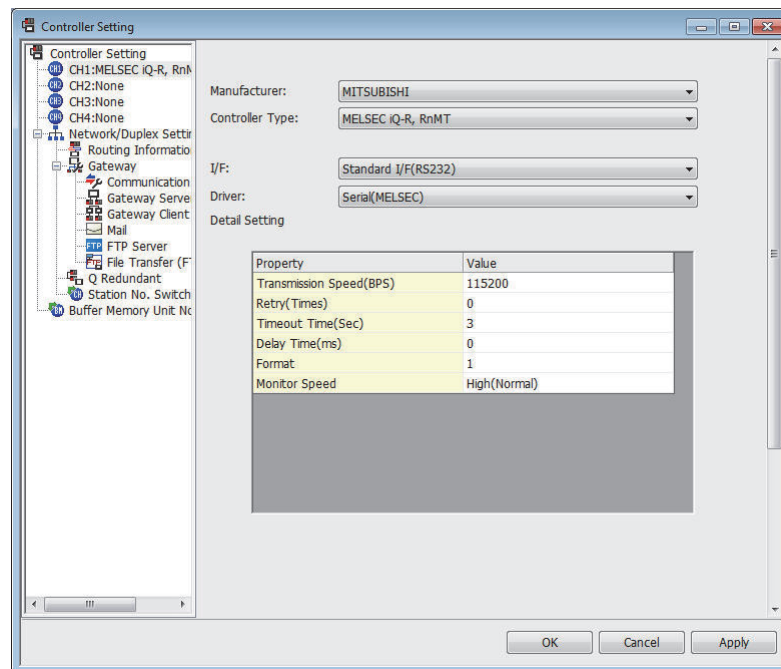
When using the GOT at the first time, make sure to set the channel of communication interface and the communication driver before writing to GOT.

Set the communication interface of the GOT at [Controller Setting] and [I/F Communication Setting] in GT Designer3.

### 1.1.1 Setting connected equipment (Channel setting)

Set the channel of the equipment connected to the GOT.

#### ■ Setting



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting dialog box appears. Select the channel No. to be used from the list menu.
3. Refer to the following explanations for the setting.

#### POINT

Channel No.2 to No.4

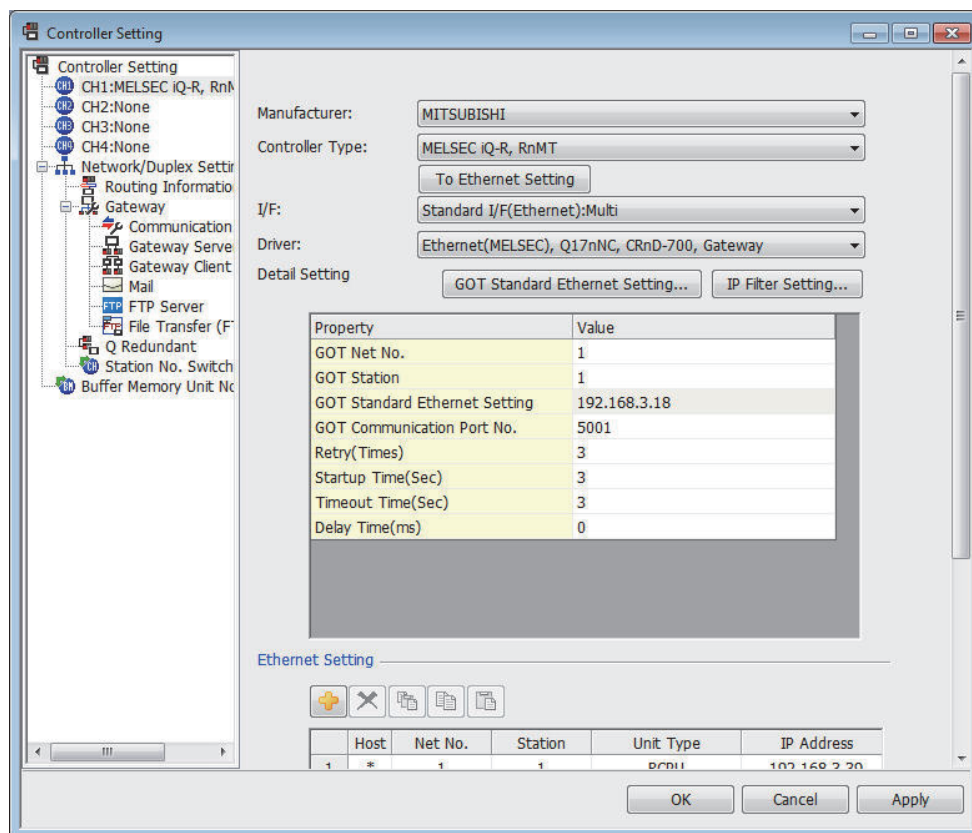
Use the channel No.2 to No.4 when using the Multi-channel function.

For details of the Multi-channel function, refer to the following.

☞ Mitsubishi Products 19. MULTI-CHANNEL FUNCTION

## ■ Setting item

This section describes the setting items of the Manufacturer, Controller Type, Driver and I/F. When using the channel No.2 to No.4, put a check mark at [Use CH\*].



| Item           | Description                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use CH*        | Select this item when setting the channel No.2 to No.4.                                                                                                       |
| Manufacturer   | Select the manufacturer of the equipment to be connected to the GOT.                                                                                          |
| Type           | Select the type of the equipment to be connected to the GOT. For the settings, refer to the following.<br>☞ (2)Setting [Controller Type]                      |
| I/F            | Select the interface of the GOT to which the equipment is connected. For the settings, refer to the following.<br>☞ (3)Setting [I/F]                          |
| Driver         | Select the communication driver to be written to the GOT. For the settings, refer to the following.<br>☞ (1)Setting [Driver]                                  |
| Detail Setting | Make settings for the transmission speed and data length of the communication driver.<br>☞ Refer to each chapter of the equipment to be connected to the GOT. |

### (1) Setting [Driver]

The displayed items for a driver differ according to the settings [Manufacturer], [Controller Type] and [I/F]. When the driver to be set is not displayed, confirm if [Manufacturer], [Controller Type] and [I/F] are correct. For the settings, refer to the following.

☞ [Setting the communication interface] section in each chapter

(2) Setting [Controller Type]

The types for the selection differs depending on the PLC to be used.  
For the settings, refer to the following.

| Type                 | Model name |
|----------------------|------------|
| IAI X-SEL CONTROLLER | XSEL-J     |
|                      | XSEL-K     |
|                      | XSEL-KE    |
|                      | XSEL-KT    |
|                      | XSEL-KET   |
|                      | XSEL-P     |
|                      | XSEL-Q     |
|                      | XSEL-JX    |
|                      | XSEL-KX    |
|                      | XSEL-KTX   |
|                      | XSEL-PX    |
|                      | XSEL-QX    |
|                      | SSEL       |
|                      | ASEL       |
|                      | PSEL       |
| IAI ROBO CYLINDER    | PCON-C     |
|                      | PCON-CG    |
|                      | PCON-CF    |
|                      | PCON-CY    |
|                      | PCON-SE    |
|                      | PCON-PL    |
|                      | PCON-CA    |
|                      | PCON-PO    |
|                      | ACON-C     |
|                      | ACON-CG    |
|                      | ACON-CY    |
|                      | ACON-SE    |
|                      | ACON-PL    |
|                      | ACON-PO    |
|                      | SCON-C     |
|                      | SCON-CA    |
|                      | ERC2       |
| AZBIL SDC/DMC Series | DMC10      |
|                      | DMC50      |
|                      | SDC15      |
|                      | SDC25      |
|                      | SDC26      |
|                      | SDC35      |
|                      | SDC36      |
|                      | SDC20      |
|                      | SDC21      |
|                      | SDC30      |
|                      | SDC31      |
|                      | SDC40A     |
|                      | SDC40B     |
|                      | SDC40G     |
|                      | SDC45      |
|                      | SDC46      |
|                      | CMS        |
|                      | CMF015     |
|                      | CMF050     |
|                      | CML        |
|                      | MQV        |
|                      | MPC        |
|                      | MVF        |
|                      | PBC201-VN2 |
|                      | AUR350C    |
|                      | AUR450C    |
|                      | RX         |
|                      | CMC10B     |

| Type                          | Model name |
|-------------------------------|------------|
| AZBIL SDC/DMC Series          | AHC2001    |
|                               | CPM1       |
|                               | CPM1A      |
|                               | CPM2A      |
|                               | CPM2C      |
|                               | CQM1       |
|                               | CQM1H      |
|                               | CJ1H       |
|                               | CJ1G       |
|                               | CJ1M       |
|                               | CP1H       |
|                               | CP1L       |
|                               | CP1E       |
|                               | C200HS     |
| OMRON SYSMAC                  | C200H      |
|                               | C200HX     |
|                               | C200HG     |
|                               | C200HE     |
|                               | CS1H       |
|                               | CS1G       |
|                               | CS1D       |
|                               | C1000H     |
|                               | C2000H     |
|                               | CV500      |
|                               | CV1000     |
|                               | CV2000     |
|                               | CVM1       |
|                               | CS1H       |
|                               | CS1G       |
| OMRON SYSMAC CS/CJ            | CS1D       |
|                               | CJ1H       |
|                               | CJ1G       |
|                               | CJ1M       |
|                               | CJ2H       |
|                               | CJ2M       |
| OMRON THERMAC/INPANEL NEO     | E5AN       |
|                               | E5EN       |
|                               | E5CN       |
|                               | E5GN       |
| KEYENCE KV-700/1000/3000/5000 | E5ZN       |
|                               | KV-700     |
|                               | KV-1000    |
|                               | KV-3000    |
| SHARP JW                      | KV-5000    |
|                               | KV-5500    |
|                               | JW-21CU    |
|                               | JW-31CUH   |
|                               | JW-50CUH   |
|                               | JW-22CU    |
|                               | JW-32CUH   |
|                               | JW-33CUH   |
|                               | JW-70CUH   |
|                               | JW-100CUH  |
|                               | JW-100CU   |
|                               | Z-512J     |

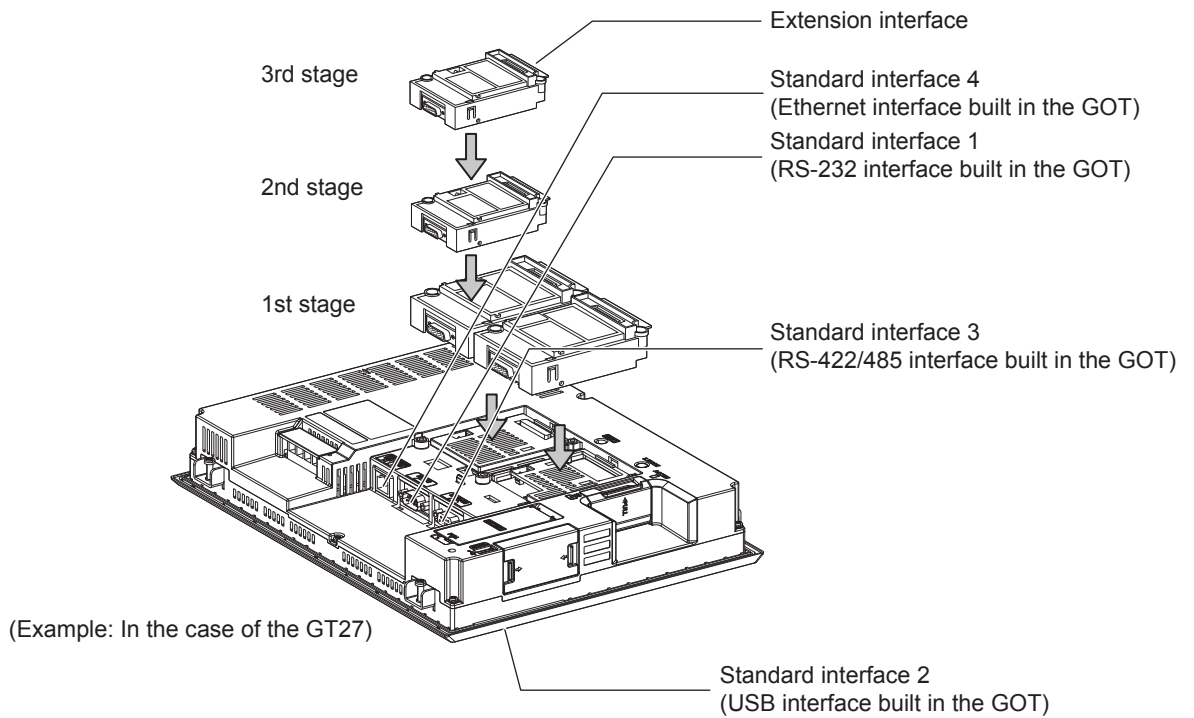
| Type                    | Model name   |
|-------------------------|--------------|
| TOSHIBA MACHINE Tcmini  | TC3-01       |
|                         | TC3-02       |
|                         | TC6-00       |
|                         | TC8-00       |
|                         | TS2000       |
|                         | TS2100       |
| KOYO KOSTAC/DL          | SU-5E        |
|                         | SU-6B        |
|                         | SU-5M        |
|                         | SU-6M        |
|                         | PZ3          |
|                         | D2-240       |
|                         | D2-250-1     |
|                         | D2-260       |
|                         | D0-05AA      |
|                         | D0-05AD      |
|                         | D0-05AR      |
|                         | D0-05DA      |
|                         | D0-05DD      |
|                         | D0-05DD-D    |
|                         | D0-05DR      |
|                         | D0-05DR-D    |
|                         | D0-06DD1     |
|                         | D0-06DD2     |
|                         | D0-06DR      |
|                         | D0-06DA      |
|                         | D0-06AR      |
|                         | D0-06AA      |
|                         | D0-06DD1-D   |
|                         | D0-06DD2-D   |
|                         | D0-06DR-D    |
| JTEKT TOYOPUC-PC Series | PC3JG-P-CPU  |
|                         | PC3JG-CPU    |
|                         | PC3J-CPU     |
|                         | PC3JL-CPU    |
|                         | PC2JC-CPU    |
|                         | PC2J16P-CPU  |
|                         | PC2J16PR-CPU |
|                         | PC2J-CPU     |
|                         | PC2JS-CPU    |
|                         | PC2JR-CPU    |
| CHINO Controllers       | LT350        |
|                         | LT370        |
|                         | LT450        |
|                         | LT470        |
|                         | DZ1000       |
|                         | DZ2000       |
|                         | LT230        |
|                         | LT830        |
|                         | DB1000       |
|                         | DB2000       |
|                         | GT120        |

| Type                                                  | Model name               |
|-------------------------------------------------------|--------------------------|
| TOSHIBA PROSEC T/V Series                             | T2 (PU224)               |
|                                                       | T3                       |
|                                                       | T3H                      |
|                                                       | T2E                      |
|                                                       | T2N                      |
|                                                       | model 2000(S2)           |
|                                                       | model 2000(S2T)          |
| TOSHIBA Unified Controller nv Series                  | model 2000(S2E)          |
|                                                       | model 3000 (S3)          |
|                                                       | Controller type1         |
|                                                       | PU811                    |
| PANASONIC MINAS-A4 Series                             | MINAS A4                 |
|                                                       | MINAS A4F                |
|                                                       | MINAS A4L                |
| PANASONIC INDUSTRIAL DEVICES<br>SUNX MEWNET-FP Series | FP0-C16CT                |
|                                                       | FP0-C32CT                |
|                                                       | FP0R                     |
|                                                       | FP1-C24C                 |
|                                                       | FP1-C40C                 |
|                                                       | FP2                      |
|                                                       | FP2SH                    |
|                                                       | FP3                      |
|                                                       | FP5                      |
|                                                       | FP10(S)                  |
|                                                       | FP10SH                   |
|                                                       | FP-M(C20TC)              |
|                                                       | FP-M(C32TC)              |
|                                                       | FP-Σ                     |
|                                                       | FP-X                     |
| Shinko Technos Controller Series                      | ACS-13A-□/□,□,□,□, C5    |
|                                                       | JCS-33A-□/□□□, C5        |
|                                                       | JCR-33A-□/□□□, C5        |
|                                                       | JCD-33A-□/□□□, C5        |
|                                                       | JCM-33A-□/□,□□□, C5      |
|                                                       | JIR-301-M□, C5           |
|                                                       | PCD-33A-□/□, M, C5       |
|                                                       | PC935-□/□, M, C5         |
|                                                       | PC955-□/□, M, C5         |
|                                                       | PC935-□/□, M, C          |
|                                                       | PC955-□/□, M, C          |
|                                                       | FCD-13A-□/□, M, C        |
|                                                       | FCD-15A-□/□, M, C        |
|                                                       | FCR-13A-□/□, M, C        |
|                                                       | FCR-15A-□/□, M, C        |
|                                                       | FCR-23A-□/□, M, C        |
|                                                       | FIR-201-M, C             |
|                                                       | DCL-33A-□/□, M, □, □, C5 |

(3) Setting [I/F]

The interface differs depending on the GOT to be used.

Set the I/F according to the connection and the position of communication unit to be mounted onto the GOT.



## 1.1.2 I/F communication setting

This function displays the list of the GOT communication interfaces.  
Set the channel and the communication driver to the interface to be used.

### ■ Setting

| Standard I/F Setting |        |                |
|----------------------|--------|----------------|
|                      | CH No. | Driver         |
| I/F-1: RS422/485     | 1      | Serial(MELSEC) |
| I/F-2: RS232         | 0      | None           |
| I/F-3: USB           | 9      | Host (PC)      |
| I/F-4: Ethernet      | 0      | None           |

RS232 Setting

☐ Enable the 5V power supply

| Extend I/F Setting |        |        |
|--------------------|--------|--------|
|                    | CH No. | Driver |
| 1st                | 0      | None   |
| 2nd                | 0      | None   |
| 3rd                | 0      | None   |
| Wireless LAN       | 0      | None   |

1. Select [Common] → [I/F Communication Setting] from the menu.
2. The I/F Communication Setting dialog box appears. Make the settings with reference to the following explanation.

## Setting item

The following describes the setting items for the standard I/F setting and extension I/F setting.

When the GT21 series is selected in the GOT type setting

I/F-1: RS422/485/232(Side)  
I/F-2: RS232(Back)

| Item                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard I/F setting  | Set channel No. and drivers to the GOT standard interfaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CH No.                | Set the CH No. according to the intended purpose.<br>0: Not used<br>1 to 4: Used for connecting a controller of channel No. 1 to 4 set in Setting connected equipment (Channel setting)<br>5 to 8: Used for barcode function, RFID function, remote personal computer operation function (serial)<br>9: Used for connecting Host (PC), Ethernet download<br>A: Used for the report function (with a serial printer), hard copy function (with a serial printer), remote personal computer operation function (Ethernet), VNC server function, gateway function, and MES interface function.<br>Multi: Used for multi-channel Ethernet connection          |
| I/F                   | The communication type of the GOT standard interface is displayed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Driver                | Set the driver for the device to be connected.<br>• None • Host (Personal computer) • Each communication driver for connected devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Detail Setting        | Make settings for the transmission speed and data length of the communication driver.<br>Refer to each chapter of the equipment to be connected to the GOT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RS232 Setting         | To validate the 5V power supply function in RS232, mark the [Enable the 5V power supply] checkbox.<br>The RS232 setting is invalid when the CH No. of [I/F-1: RS232] is [9].<br>GT21 is not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Extension I/F setting | Set the communication unit attached to the extension interface of the GOT.<br>GT21 is not supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CH No.                | Set the CH No. according to the intended purpose.<br>The number of channels differs depending on the GOT to be used.<br>0: Not used<br>1 to 4: Used for connecting a controller of channel No. 1 to 4 set in Setting connected equipment (Channel setting)<br>5 to 8: Used for barcode function, RFID function, remote personal computer operation (serial)<br>A: Used for the video/RGB display function, multimedia function, external I/O function, operation panel function, RGB output function, report function, hard copy function (with a printer), sound output function, gateway function, MES interface function, and wireless LAN connection. |

## POINT

Channel No., drivers, [RS232 Setting]

(1) Channel No.2 to No.4

Use the channel No.2 to No.4 when using the Multi-channel function.

For details of the Multi-channel function, refer to the following.



Mitsubishi Products 19. MULTI-CHANNEL FUNCTION

(2) Drivers

The displayed items for a driver differ according to the settings [Manufacturer], [Controller Type] and [I/F].

When the driver to be set is not displayed, confirm if [Manufacturer], [Controller Type] and [I/F] are correct.



[Setting the communication interface] section in each chapter

### 1.1.3 Precautions

#### ■ Precautions for changing model

(1) When devices that cannot be converted are included.

When setting of [Manufacturer] or [Controller Type] is changed, GT Designer3 displays the device that cannot be converted (no corresponding device type, or excessive setting ranges) as [??]. In this case, set the device again.

(2) When the changed Manufacturer or Controller Type does not correspond to the network.

The network will be set to the host station.

(3) When the Manufacturer or Controller Type is changed to [None]

The GT Designer3 displays the device of the changed channel No. as [??]. In this case, set the device again.

Since the channel No. is retained, the objects can be reused in other channel No. in a batch by using the [Device Batch Edit], [CH No. Batch Edit] or [Device List].



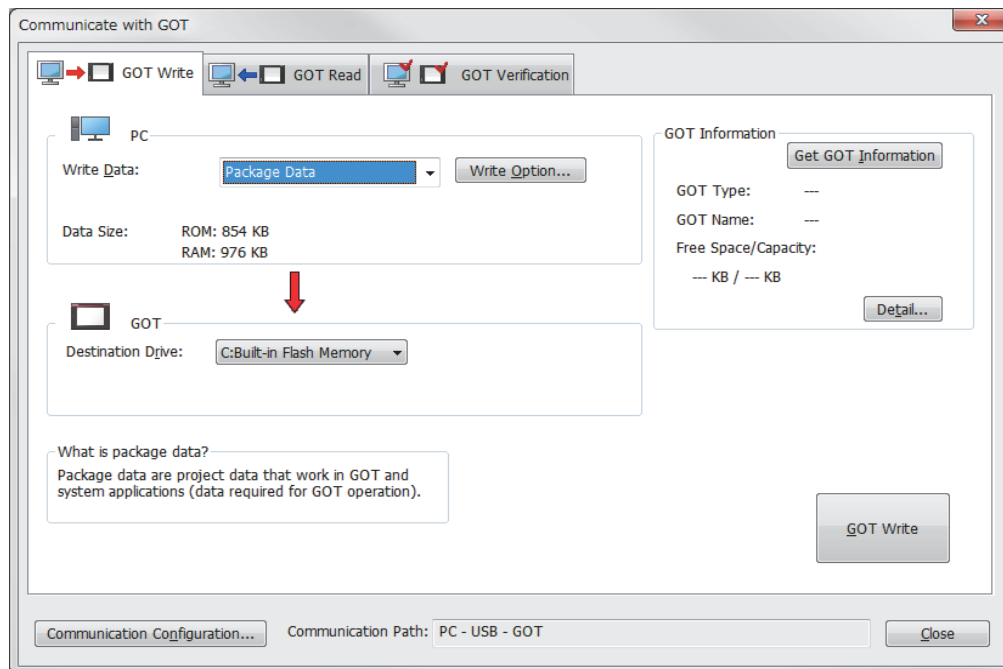
## 1.2 Writing the Project Data and OS onto the GOT

Write the standard monitor OS, communication driver, extended function OS, project data and communication settings onto the GOT.

For details on writing to GOT, refer to the following manual.

 GT Designer3 (GOT2000) Help

### 1.2.1 Writing the project data and OS onto the GOT



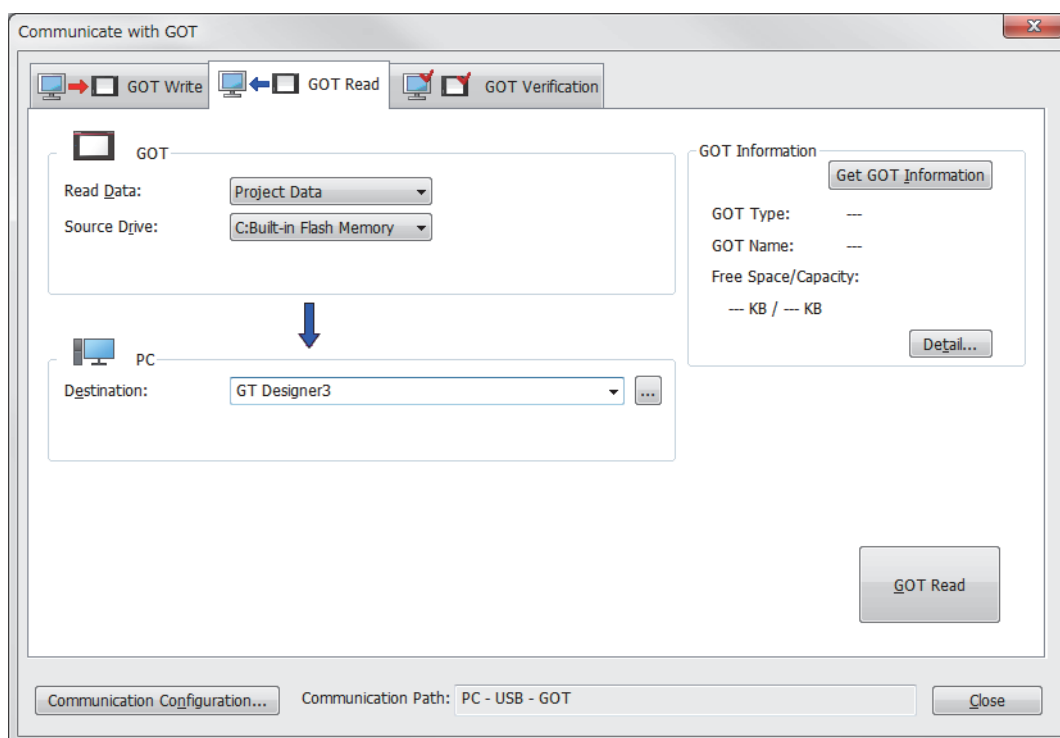
1. Select [Communication] → [Write to GOT...] from the menu.
2. The [Communication configuration] dialog box appears.  
Set the communication setting between the GOT and the personal computer.  
Click the  button when settings are completed.
3. The [GOT Write] tab appears on the [Communicate with GOT] dialog box.  
Select the [Project data, OS] radio button of the Write Data.
4. Check-mark a desired standard monitor OS, communication driver, extended function OS, and Communication Settings and click the [GOT Write] button.  
(Operating of transmission mode)

## 1.2.2 Checking the project data and OS writing on GOT

Confirm if the standard monitor OS, communication driver, extended function OS, project data and communication settings are properly written onto the GOT by reading from GOT using GT Designer3.

For reading from the GOT, refer to the following manual.

 GT Designer3 (GOT2000) Help



1. Select [Communication] → [Read from GOT...] from the menu.
2. The [Communication configuration] dialog box appears.  
Set the communication setting between the GOT and the personal computer.  
Click the  button when settings are completed.
3. The [GOT Read] tab appears on the [Communicate with GOT] dialog box.  
Select the [Drive information] radio button of the Read Data.
4. Click the [Info Reception] button.
5. Confirm that the project data and OS are written correctly onto the GOT.

## 1.3 Option Devices for the Respective Connection

The following shows the option devices to connect in the respective connection type.

For the specifications, usage and connecting procedure on option devices, refer to the respective device manual.

### 1.3.1 Communication module

| Product name                                     | Model           | Specifications                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bus connection unit                              | GT15-QBUS       | For QCPU (Q mode), motion controller CPU (Q series)<br>Bus connection (1ch) unit standard model                                                                                                                                                                                                                                            |
|                                                  | GT15-QBUS2      | For QCPU (Q mode), motion controller CPU (Q series)<br>Bus connection (2ch) unit standard model                                                                                                                                                                                                                                            |
|                                                  | GT15-ABUS       | For A/QnACPU, motion controller CPU (A series)<br>Bus connection (1ch) unit standard model                                                                                                                                                                                                                                                 |
|                                                  | GT15-ABUS2      | For A/QnACPU, motion controller CPU (A series)<br>Bus connection (2ch) unit standard model                                                                                                                                                                                                                                                 |
|                                                  | GT15-75QBUSL    | For QCPU (Q mode), motion controller CPU (Q series)<br>Bus connection (1ch) unit slim model                                                                                                                                                                                                                                                |
|                                                  | GT15-75QBUS2L   | For QCPU (Q mode), motion controller CPU (Q series)<br>Bus connection (2ch) unit slim model                                                                                                                                                                                                                                                |
|                                                  | GT15-75ABUSL    | For A/QnACPU, motion controller CPU (A series)<br>Bus connection (1ch) unit slim model                                                                                                                                                                                                                                                     |
|                                                  | GT15-75ABUS2L   | For A/QnACPU, motion controller CPU (A series)<br>Bus connection (1ch) unit slim model                                                                                                                                                                                                                                                     |
| Serial communication unit                        | GT15-RS2-9P     | RS-232 serial communication unit (D-sub 9-pin (male))                                                                                                                                                                                                                                                                                      |
|                                                  | GT15-RS4-9S     | RS-422/485 serial communication unit (D-sub 9-pin (female))                                                                                                                                                                                                                                                                                |
|                                                  | GT15-RS4-TE     | RS-422/485 serial communication unit (terminal block)                                                                                                                                                                                                                                                                                      |
| MELSECNET/H communication unit                   | GT15-J71LP23-25 | Optical loop unit                                                                                                                                                                                                                                                                                                                          |
|                                                  | GT15-J71BR13    | Coaxial bus unit                                                                                                                                                                                                                                                                                                                           |
| MELSECNET/10 communication unit                  | GT15-J71LP23-25 | Optical loop unit<br>(MELSECNET/H communication unit used in the MNET/10 mode)                                                                                                                                                                                                                                                             |
|                                                  | GT15-J71BR13    | Coaxial bus unit<br>(MELSECNET/H communication unit used in the MNET/10 mode)                                                                                                                                                                                                                                                              |
| CC-Link IE Controller Network communication unit | GT15-J71GP23-SX | Optical loop unit                                                                                                                                                                                                                                                                                                                          |
| CC-Link IE Field Network communication unit      | GT15-J71GF13-T2 | CC-Link IE Field Network (1000BASE-T) unit                                                                                                                                                                                                                                                                                                 |
| CC-Link communication unit                       | GT15-J61BT13    | Intelligent device station unit CC-LINK Ver. 2 compatible                                                                                                                                                                                                                                                                                  |
| Ethernet communication unit                      | Built into GOT  | Ethernet (100Base-TX)                                                                                                                                                                                                                                                                                                                      |
| Wireless LAN communication unit <sup>*1</sup>    | GT25-WLAN       | <ul style="list-style-type: none"> <li>Used for the connection to the IEEE802.11b/g/n compliant, built-in antenna, access point (master unit)<sup>*2</sup>, station (slave unit), personal computers, tablets, and smartphones.</li> <li>Compliance with Japan Radio Law<sup>*3</sup>, FCC<sup>*4</sup>, R&amp;TTE<sup>*4</sup></li> </ul> |

<sup>\*1</sup> Compared with wired data transmission, data transmission using the wireless LAN may be not stable because packet loss occurs depending on the surrounding environment or setting place. Make sure to check the operation to use it.

<sup>\*2</sup> When the wireless type is set to the access point, the recommended number of the devices to be connected is up to 5.

<sup>\*3</sup> The product with hardware version A (manufactured in December 2013) complies with the regulation. The product with hardware version A can be used only in Japan.

<sup>\*4</sup> The product with hardware version B (manufactured in October 2014) complies with the regulation. The product with hardware version B or later can be used in Japan, the United States, the EU member states, Switzerland, Norway, Iceland, and Liechtenstein.

### 1.3.2 Option unit

| Product name         | Model                    | Specifications                                                                                          |
|----------------------|--------------------------|---------------------------------------------------------------------------------------------------------|
| Multimedia unit      | GT27-MMR-Z               | For video input signal (NTSC/PAL) 1 ch, playing movie                                                   |
| Video input unit     | GT27-V4-Z                | For video input signal (NTSC/PAL) 4 ch                                                                  |
| RGB input unit       | GT27-R2<br>GT27-R2-Z     | For analog RGB input signal 2 ch                                                                        |
| Video/RGB input unit | GT27-V4R1-Z              | For video input signal (NTSC/PAL) 4 ch, for analog RGB mixed input signal 1 ch                          |
| RGB output unit      | GT27-ROUT<br>GT27-ROUT-Z | For analog RGB output signal 1 ch                                                                       |
| Sound output unit    | GT15-SOUT                | For sound output                                                                                        |
| External I/O unit    | GT15-DIOR                | For the connection to external I/O device or operation panel (Negative Common Input/Source Type Output) |
|                      | GT15-DIO                 | For the connection to external I/O device or operation panel (Positive Common Input/Sink Type Output)   |

### 1.3.3 Conversion cables

| Product name                             | Model            | Specifications                                                                                                  |
|------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|
| RS-485 terminal block conversion modules | FA-LTBGT2R4CBL05 | RS-422/485 (Connector) ↔ RS-485 (Terminal block)<br>Supplied connection cable dedicated for the conversion unit |
|                                          | FA-LTBGT2R4CBL10 |                                                                                                                 |
|                                          | FA-LTBGT2R4CBL20 |                                                                                                                 |

### 1.3.4 Serial Multi-Drop Connection Unit

| Product name                      | Model      | Specifications                                                                                                                                                            |
|-----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Serial multi-drop connection unit | GT01-RS4-M | GOT multi-drop connection module<br> Mitsubishi Products 18. GOT MULTI-DROP CONNECTION |

### 1.3.5 Field Network Adapter Unit

| Product name               | Model      | Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field network adapter unit | GT25-FNADP | <p>The field network adapter unit can be used with the following field networks by using the Anybus CompactCom M40 network communication module manufactured by HMS (hereinafter referred to as the communication module).</p> <p>Field networks:</p> <ul style="list-style-type: none"><li>• PROFIBUS DP-V1</li><li>• DeviceNet</li></ul> <p>How to incorporate the communication module to the field network adapter unit, and the details of the product name of the communication module, refer to the following manual.</p> <p> GOT2000 Series Field Network Adapter Unit User's Manual</p> |

### 1.3.6 Installing a unit on another unit (Checking the unit installation position)

This section describes the precautions for installing units on another unit.

For the installation method of each unit, refer to the User's Manual for the communication unit and option unit you are using.

For the method for installing a unit on another unit, refer to the following.

#### ■ When using a bus connection unit

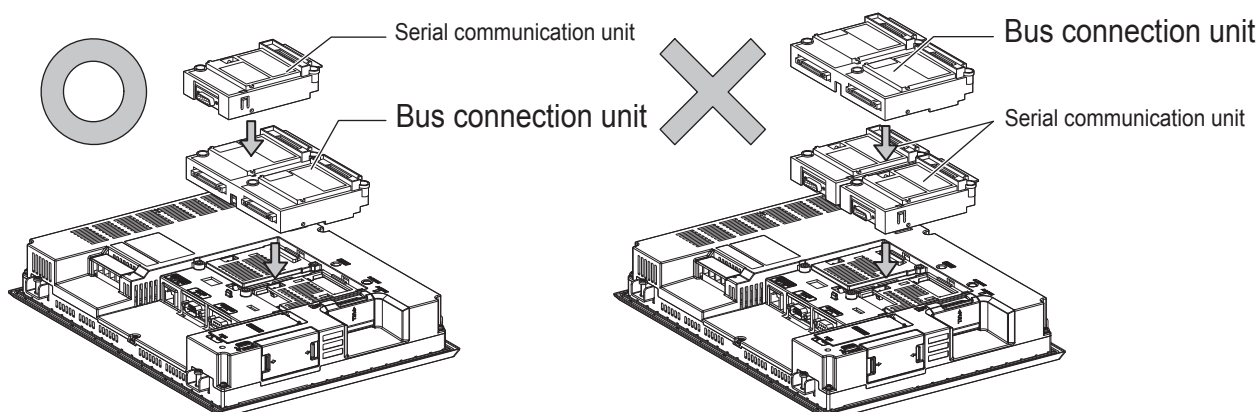
The installation position varies depending on the bus connection unit to be used.

##### (1) Wide bus units (GT15-75QBUS(2)L, GT15-75ABUS(2)L, GT15-QBUS2, GT15-ABUS2)

Install a bus connection unit in the 1st stage of the extension interface.

If a bus connection unit is installed in the 2nd stage or above, the unit cannot be used.

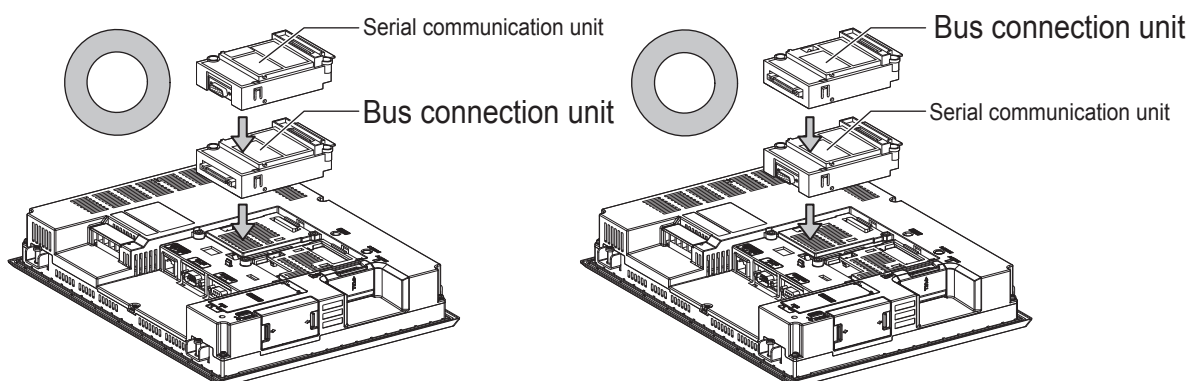
Example: Installing a bus connection unit and serial communication units



##### (2) Standard size bus connection unit (GT15-QBUS and GT15-ABUS)

A bus connection unit can be installed in any position (1st to 3rd stage) of the extension interface.

Example: Installing a bus connection unit and serial communication units

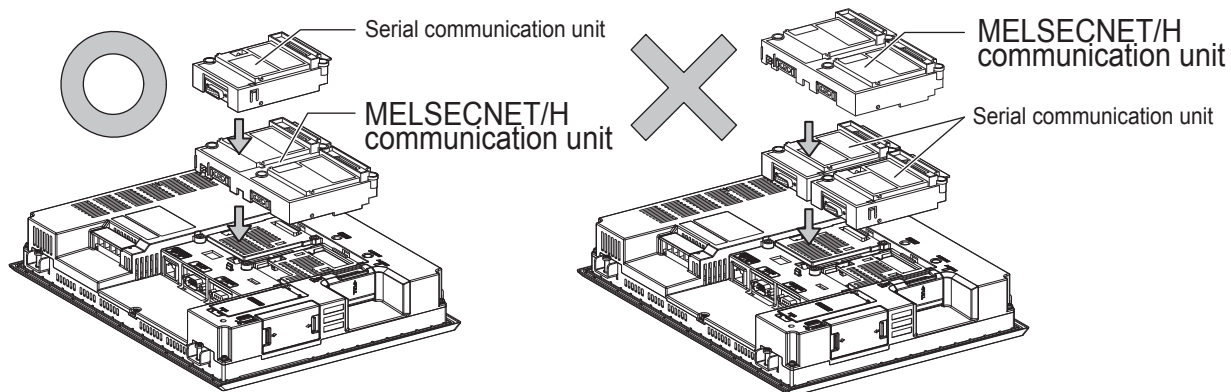


■ When using a MELSECNET/H communication unit, CC-Link IE Controller Network communication unit, or CC-Link communication unit (GT15-J61BT13)

Install a MELSECNET/H communication unit, CC-Link IE Controller Network communication unit, or CC-Link communication unit in the 1st stage of an extension interface.

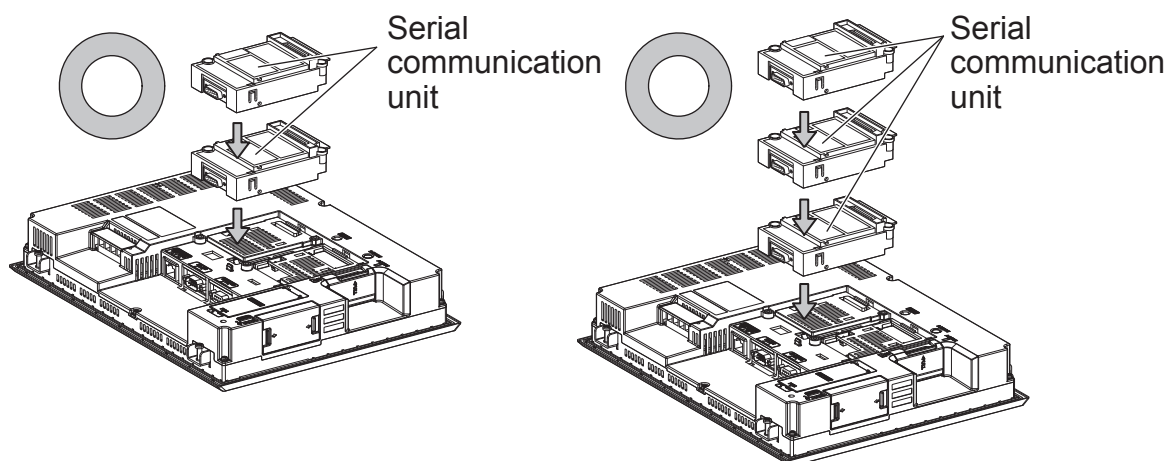
If a bus connection unit is installed in the 2nd stage or above, the unit cannot be used.

Example: When installing a MELSECNET/H communication unit and a serial communication unit



■ When using a serial communication unit

A serial communication unit can be installed in any position (1st to 3rd stage) of the extension interface.

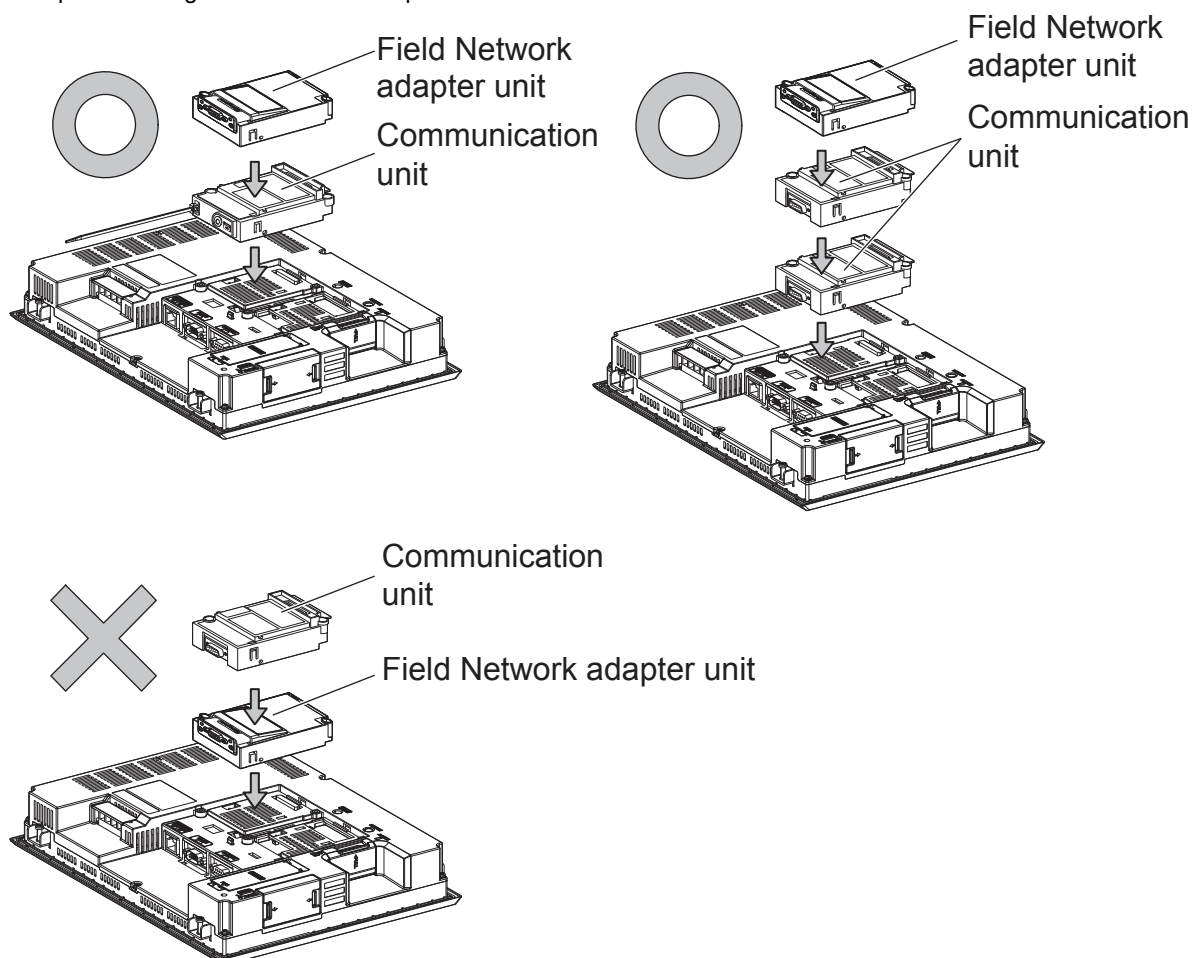


## ■ When using a field network adapter unit

A field network adapter unit can be installed in any position (1st to 3rd stage) of the extension interface.

However, at the top of the field network adapter unit, you will not be able to mount the each communication unit.

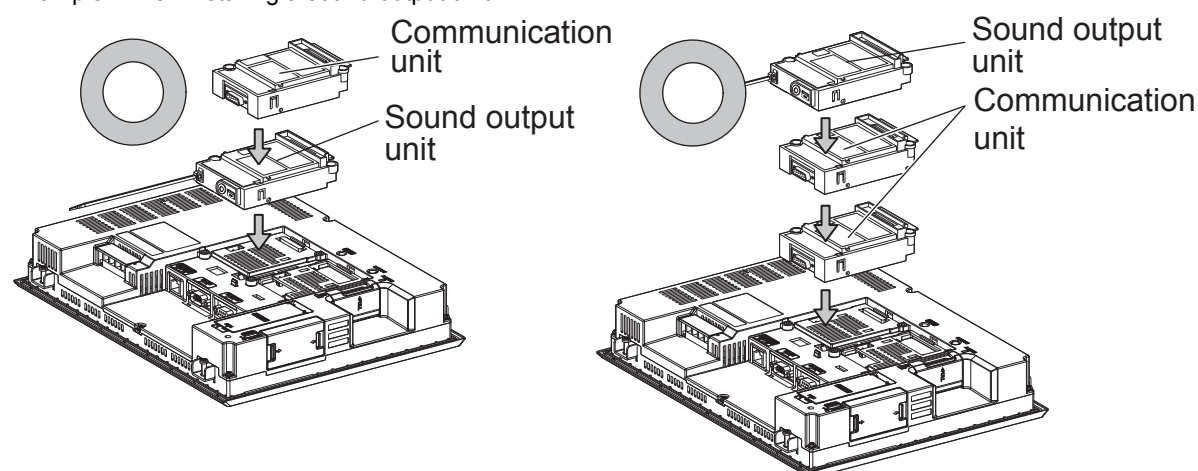
Example: Installing a field network adapter unit



## ■ When using the sound output unit or external I/O unit

The sound output unit or external I/O unit can be installed in any position (1st to 3rd stage) of the extension interface.

Example: When installing a sound output unit





■ When using the video input unit, RGB input unit, video/RGB input unit, RGB output unit, or multimedia unit

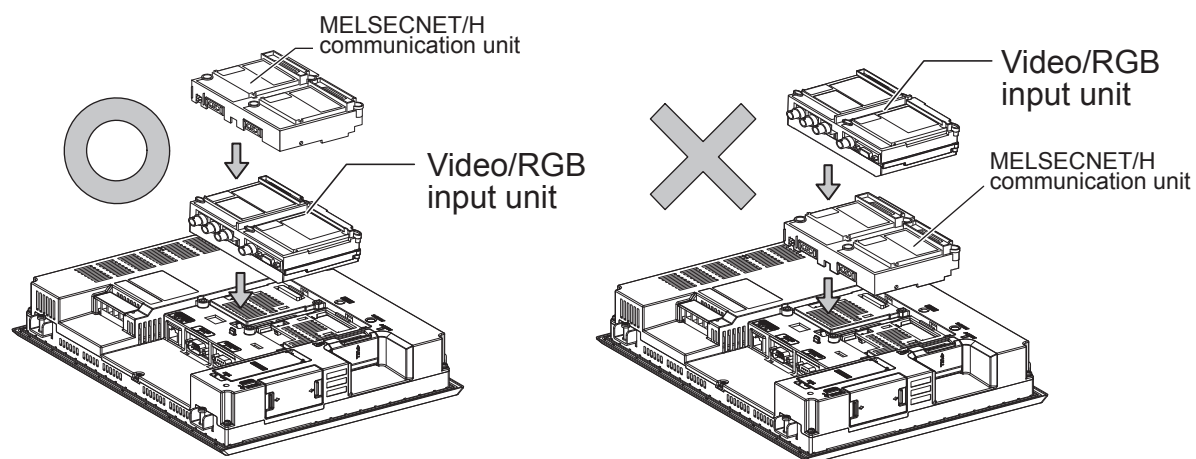
Only either one of the video input unit, RGB input unit, video/RGB input unit, RGB output unit, or multimedia unit can be installed to the GOT.

Install the video input unit, RGB input unit, video/RGB input unit, RGB output unit, or multimedia unit at the 1st stage of the extension interface. These communication units cannot be used if installed in the 2nd or higher stage.

When any of these units is used, the communication units indicated below must be installed in the 2nd stage of the extension interface.

| Communication unit                       | Model            |              |
|------------------------------------------|------------------|--------------|
| Bus connection unit                      | GT15-QBUS2,      | GT15-ABUS2   |
| MELSECNET/H communication unit           | GT15-J71LP23-25, | GT15-J71BR13 |
| CC-Link IE Controller Network connection | GT15-J71GP23-SX  |              |
| CC-Link communication unit               | GT15-J61BT13     |              |

Example: When installing a video input unit and a MELSECNET/H communication unit





## 1.4 Connection Cables for the Respective Connection

To connect the GOT to a device in the respective connection type, connection cables between the GOT and a device are necessary.

For cables needed for each connection, refer to each chapter for connection.

### 1.4.1 GOT connector specifications

The following shows the connector specifications on the GOT side.  
Refer to the following table when preparing connection cables by the user.

#### ■ RS-232 interface

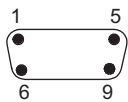
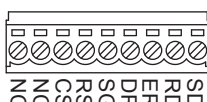
Use the following as the RS-232 interface and the RS-232 communication unit connector on the GOT. For the GOT side of the connection cable, use a connector and connector cover applicable to the GOT connector.

##### (1) Connector specifications

| GOT                           | Hardware Version | Connector type                              | Connector model     | Manufacturer        |
|-------------------------------|------------------|---------------------------------------------|---------------------|---------------------|
| GT27<br>GT25<br>GT23          | -                | 9-pin D-sub (male)<br>inch screw fixed type | 17LE-23090-27(D4C□) | DDK Ltd.            |
| GT15-RS2-9P<br>GT01-RS4-M     | -                | 9-pin D-sub (male)<br>inch screw fixed type | 17LE-23090-27(D3CC) | DDK Ltd.            |
| GT2104-RTBD,<br>GT2103-PMBDS2 | -                | 9-pin terminal block*1                      | MC1.5/9-G-3.5BK     | PHOENIX CONTACT Inc |

\*1 The terminal block (MC1.5/9-ST-3.5 or corresponding product) of the cable side is packed together with the GT2104-RTBD, GT2103-PMBDS2.

##### (2) Connector pin arrangement

| GT27, GT25, GT23, GT15-RS2-9P, GT01-RS4-M                                                                                                                           | GT2104-RTBD, GT2103-PMBDS2                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>GOT main part connector<br/>see from the front</p>  <p>9-pin D-sub (male)</p> | <p>See from the back of a<br/>GOT main part</p>  <p>9-pin terminal block</p> |

#### ■ RS-422/485 interface

Use the following as the RS-422/485 interface and the RS-422/485 communication unit connector on the GOT.  
For the GOT side of the connection cable, use a connector and connector cover applicable to the GOT connector.

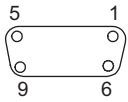
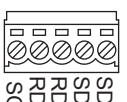
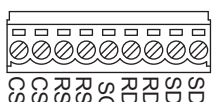
##### (1) Connector model

| GOT                                                         | Connector type                                              | Connector model     | Manufacturer         |
|-------------------------------------------------------------|-------------------------------------------------------------|---------------------|----------------------|
| GT27<br>GT25<br>GT23                                        | 9-pin D-Sub (female)<br>M2.6 millimeter screw<br>fixed type | 17LE-13090-27(D2AC) | DDK Ltd.             |
| GT2104-PMBD<br>GT2103-PMBD                                  | 5-pin terminal block*1                                      | MC1.5/5-G-3.5BK     | PHOENIX CONTACT Inc  |
| GT2104-RTBD<br>GT2104-PMBDS<br>GT2103-PMBDS<br>GT2103-PMBLS | 9-pin terminal block*2                                      | MC1.5/9-G-3.5BK     | PHOENIX CONTACT Inc  |
| GT15-RS4-9S<br>GT01-RS4-M                                   | 9-pin D-Sub (female)<br>M2.6 millimeter screw<br>fixed type | 17LE-13090-27(D3AC) | DDK Ltd.             |
| GT15-RS4-TE                                                 | -                                                           | -                   | SL-SMT3.5/10/90F BOX |

\*1 The terminal block (MC1.5/5-ST-3.5 or corresponding product) of the cable side is packed together with the GT2103-PMBD.

\*2 The terminal block (MC1.5/9-ST-3.5 or corresponding product) of the cable side is packed together with the GT2104-RTBD, GT2103-PMBDS, GT2103-PMBLS.

(2) Connector pin arrangement

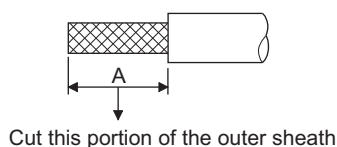
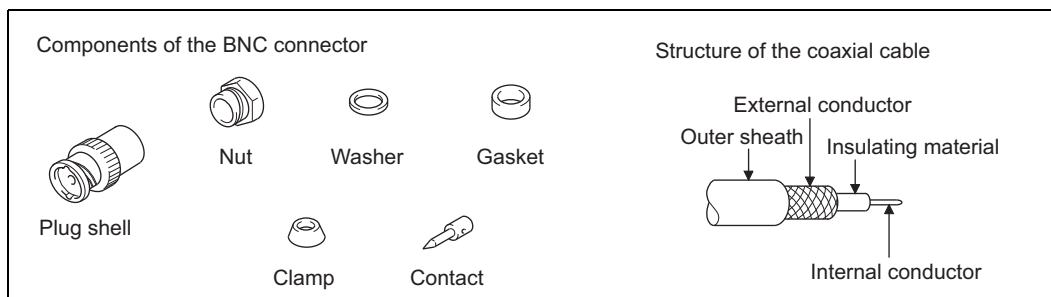
| GT27, GT25, GT23, GT01-RS4-M                                                                                                                               | GT2104-PMBD, GT2103-PMBD                                                                                                                             | GT2104-RTBD<br>GT2104-PMBDS<br>GT2103-PMBDS<br>GT2103-PMBLS                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| GOT main part connector<br>see from the front<br><br>9-pin D-sub (female) | See from the back of a<br>GOT main part<br><br>5-pin terminal block | See from the back of a<br>GOT main part<br><br>9-pin terminal block |

## 1.4.2 Coaxial cableconnector connection method

The following describes the method for connecting the BNC connector (connector plug for coaxial cable) and the cable.

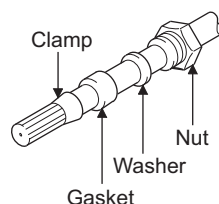
### ⚠ CAUTION

- Solder the coaxial cable connectors properly.  
Insufficient soldering may result in malfunctions.

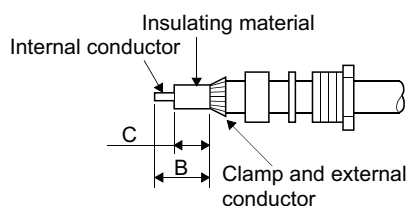


1. Remove the external sheath of the coaxial cable with dimensions as shown below.

| Cable in use     | A     |
|------------------|-------|
| 3C-2V            | 15 mm |
| 5C-2V, 5C-2V-CCY | 10 mm |

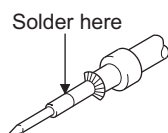


2. Pass the nut, washer, gasket, and clamp through the coaxial cable as shown on the left and loosen the external conductor.

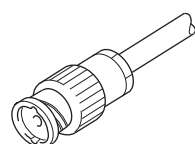


3. Cut the external conductor, insulating material, and internal conductor with the dimensions as shown below. Note that the external conductor should be cut to the same dimension as the tapered section of the clamp and smoothed down to the clamp.

| Cable in use     | B    | C    |
|------------------|------|------|
| 3C-2V            | 6 mm | 3 mm |
| 5C-2V, 5C-2V-CCY | 7 mm | 5 mm |



4. Solder the contact to the internal conductor.
5. Insert the connector assembly shown in ### into the plug shell and screw the nut into the plug shell.



#### Precautions for soldering

Note the following precautions when soldering the internal conductor and contact.

- Make sure that the solder does not bead up at the soldered section.
- Make sure there are no gaps between the connector and cable insulator or they do not cut into each other.
- Perform soldering quickly so the insulation material does not become deformed.

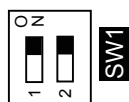
### 1.4.3 Terminating resistors of GOT

The following shows the terminating resistor specifications on the GOT side.  
When setting the terminating resistor in each connection type, refer to the following.

#### ■ RS-422/485 communication unit

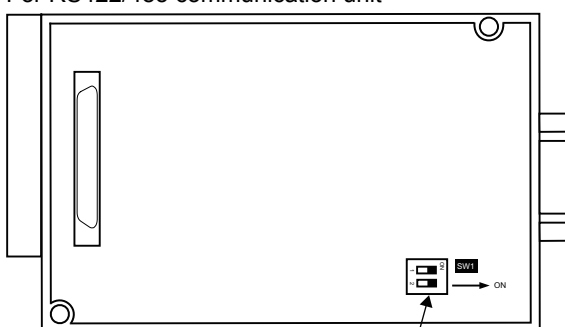
Set the terminating resistor using the terminating resistor setting switch.

| Terminating resistor*1 | Switch No. |     |
|------------------------|------------|-----|
|                        | 1          | 2   |
| 100 OHM                | ON         | ON  |
| Disable                | OFF        | OFF |



\*1 The default setting is "Disable".

- For RS422/485 communication unit



Terminating resistor setting switch

Rear view of RS-422/485 communication unit.

#### ■ GT27

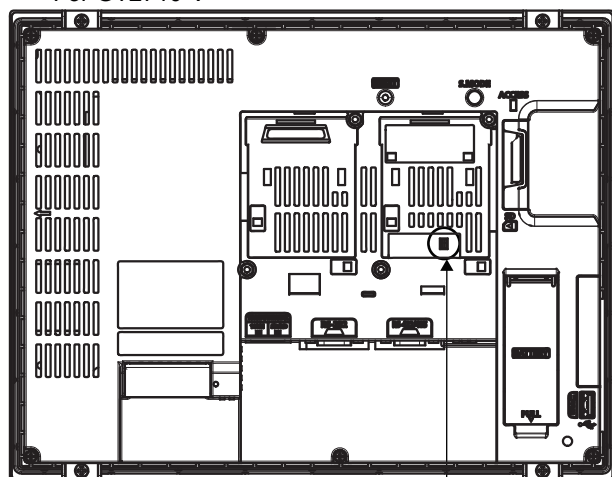
Set the terminating resistor using the terminating resistor setting switch.

| Terminating resistor*1 | Switch No. |     |
|------------------------|------------|-----|
|                        | 1          | 2   |
| 100 OHM                | ON         | ON  |
| Disable                | OFF        | OFF |



\*1 The default setting is "Disable".

- For GT2710-V



Terminating resistor setting switch  
(inside the cover)

#### ■ GT25

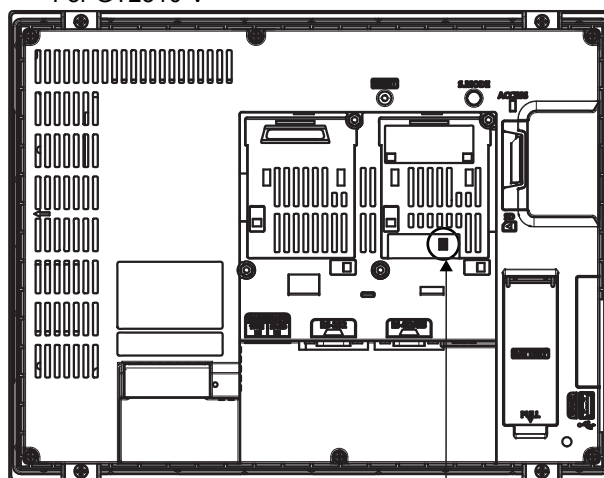
Set the terminating resistor using the terminating resistor setting switch.

| Terminating resistor*1 | Switch No. |     |
|------------------------|------------|-----|
|                        | 1          | 2   |
| 100 OHM                | ON         | ON  |
| Disable                | OFF        | OFF |



\*1 The default setting is "Disable".

- For GT2510-V



Terminating resistor setting switch  
(inside the cover)

#### ■ GT23

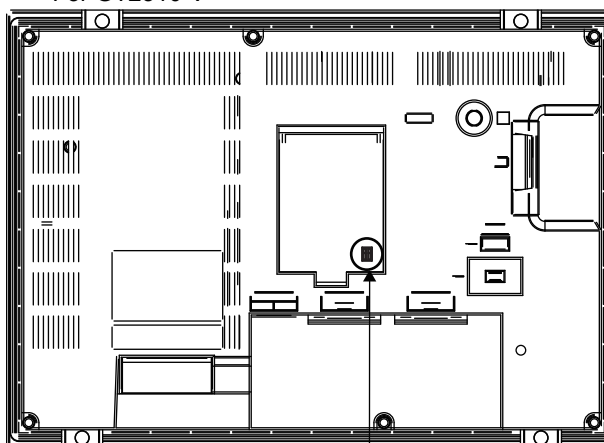
Set the terminating resistor using the terminating resistor setting switch.

| Terminating resistor*1 | Switch No. |     |
|------------------------|------------|-----|
|                        | 1          | 2   |
| 100 OHM                | ON         | ON  |
| Disable                | OFF        | OFF |



\*1 The default setting is "Disable".

- For GT2310-V

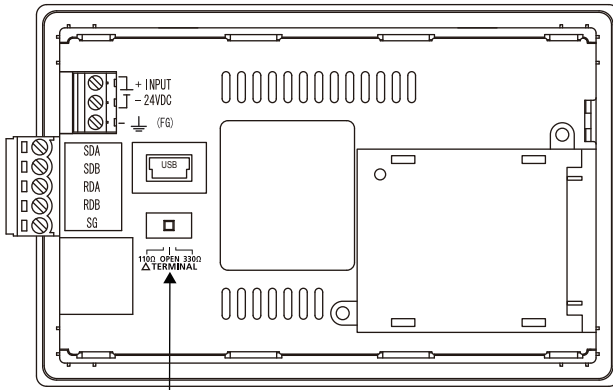


Terminating resistor setting switch  
(inside the cover)

## ■ GT21

Set the terminating resistor using the terminating resistor setting switch.

- For GT2103-PMBD



Terminating resistor selector switch

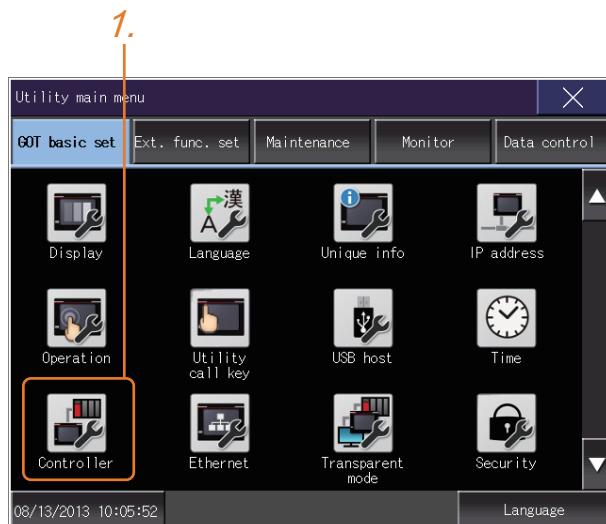
## 1.5 Verifying GOT Recognizes Connected Equipment

Verify the GOT recognizes controllers on [Communication Settings] of the Utility.

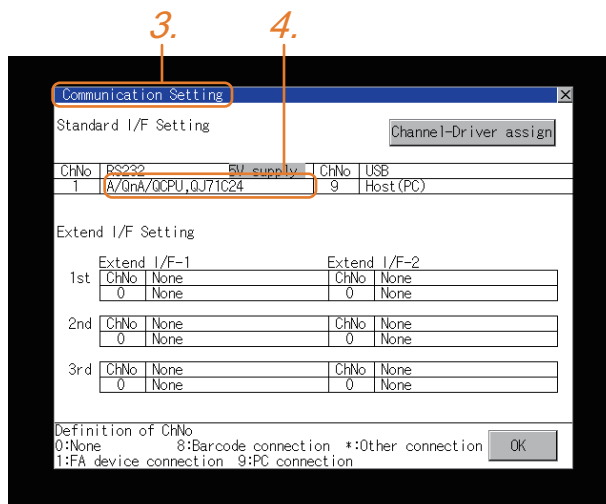
- Channel number of communication interface, communication drivers allocation status
- Communication unit installation status

For details on the Utility, refer to the following manual.

 GOT2000 Series User's Manual (Utility)



1. After powering up the GOT, touch [GOT basic set] → [Controller] from the Utility.



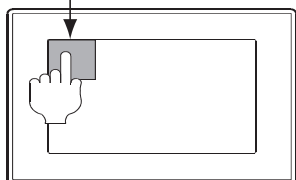
2. The [Communication Settings] appears.
3. Verify that the communication driver name to be used is displayed in the communication interface box to be used.
4. When the communication driver name is not displayed normally, carry out the following procedure again.  
 1.1 Setting the Communication Interface

## POINT

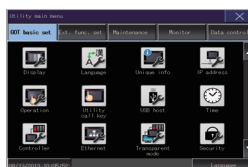
### Utility

#### (1) How to display Utility (at default)

Utility call key  
1-point press on GOT screen  
upper-left corner



Utility display



#### (2) Utility call

When setting [Pressing time] to other than 0 second on the setting screen of the utility call key, press and hold the utility call key until the buzzer sounds. For the setting of the utility call key, refer to the following.

 GOT2000 Series User's Manual (Utility)

#### (3) Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication setting] after writing [Communication Settings] of project data.

For details on the Utility, refer to the following manual.

 GOT2000 Series User's Manual (Utility)

#### (4) Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 1.6 Checking for Normal Monitoring

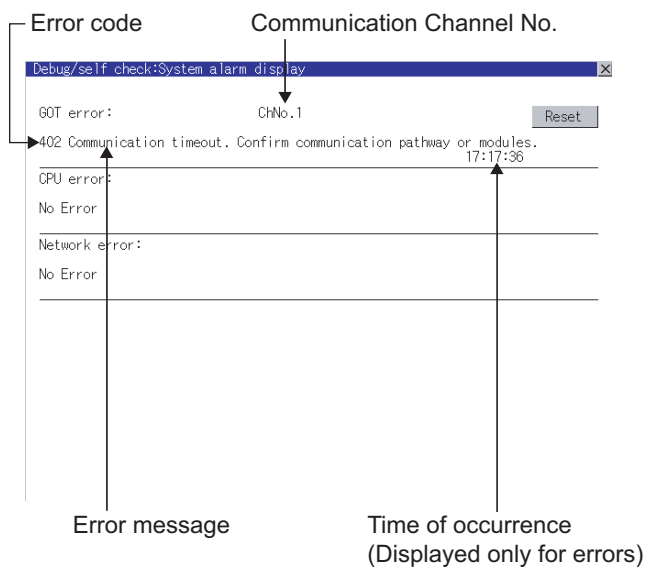
### 1.6.1 Check on the GOT

#### ■ Check for errors occurring on the GOT

Presetting the system alarm to project data allows you to identify errors occurred on the GOT, PLC CPU, servo amplifier and communications.

For details on the operation method of the GOT Utility screen, refer to the following manual.

👉 GOT2000 Series User's Manual (Utility)



#### Alarm popup display

With the alarm popup display function, alarms are displayed as a popup display regardless of whether an alarm display object is placed on the screen or not (regardless of the display screen).

Since comments can be flown from right to left, even a long comment can be displayed all.

For details of the alarm popup display, refer to the following manual.

👉 GT Designer3 (GOT2000) Help



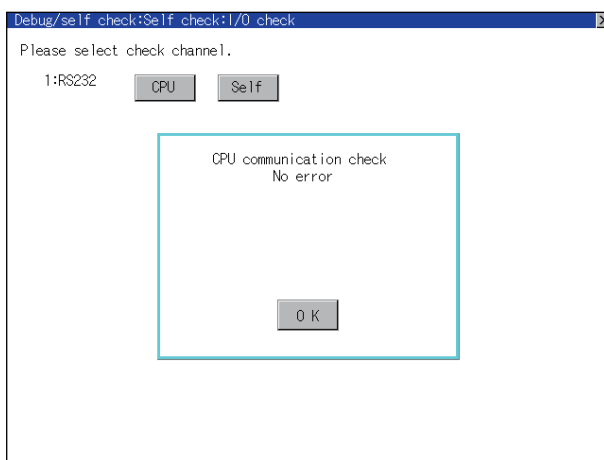
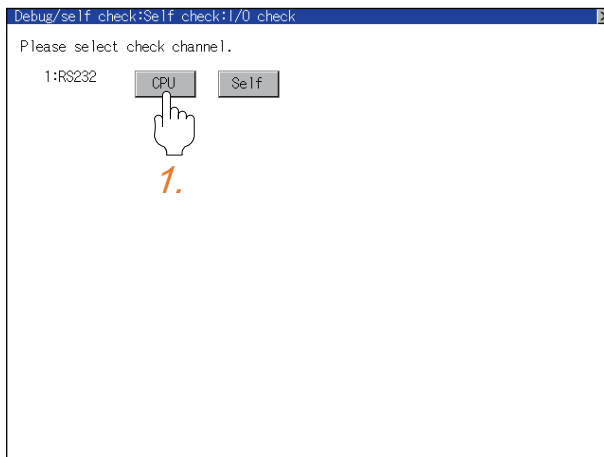
## ■ Perform an I/O check

Whether the PLC can communicate with the GOT or not can be checked by the I/O check function. If this check ends successfully, it means correct communication interface settings and proper cable connection. Display the I/O check screen by Main Menu.

- Display the I/O check screen by [Main menu] → [Self check] → [I/O check].

For details on the I/O check, refer to the following manual:

 GOT2000 Series User's Manual (Utility)



1. Touch [CPU] on the I/O check screen. Touching [CPU] executes the communication check with the connected PLC.

2. When the communication screen ends successfully, the screen on the left is displayed.

## ■ Communication monitoring function

The communication monitoring is a function that checks whether the PLC can communicate with the GOT.

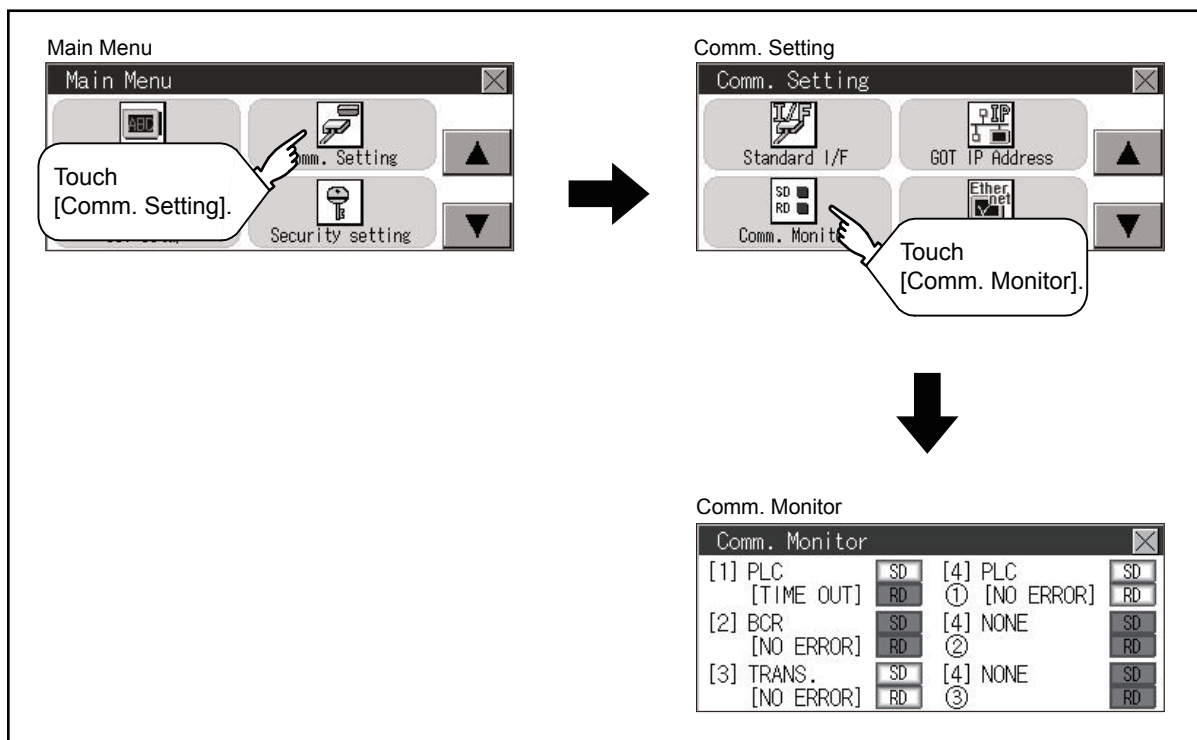
If this check ends successfully, it means correct communication interface settings and proper cable connection.

Display the communication monitoring function screen by [Main Menu] → [Comm. Setting] → [Comm. Monitor].

For details on the communication monitoring function, refer to the following manual:

☞ GOT2000 Series User's Manual (Utility)

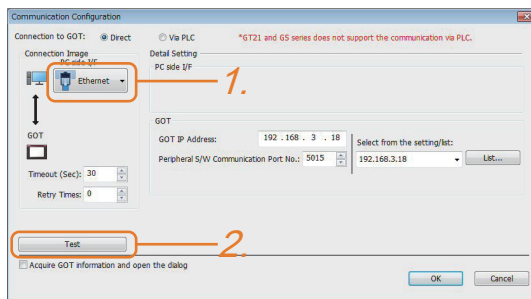
(Operation of communication monitoring function screen)



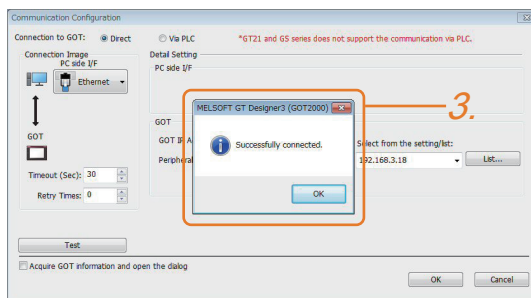
## 1.6.2 Confirming the communication state on the GOT side (For Ethernet connection)

### ■ Confirming the communication state on Windows®, GT Designer3

- (1) When using the Command Prompt of Windows®  
Execute a Ping command at the Command Prompt of Windows®.
  - (a) When normal communication  
C:\>Ping 192.168.3.18  
Reply from 192.168.3.18: bytes=32 time<1ms TTL=64
  - (b) When abnormal communication  
C:\>Ping 192.168.3.18  
Request timed out.
- (2) When using the [Connection Test] of GT Designer3  
Select [Communication] → [Communication settings] from the menu to display [TEST].



1. Set the [PC side I/F] to the [Ethernet].
2. Specify the [GOT IP Address] of the [Communication Configuration] and click the [Test] button.



3. Check if GT Designer3 has been connected to the GOT.

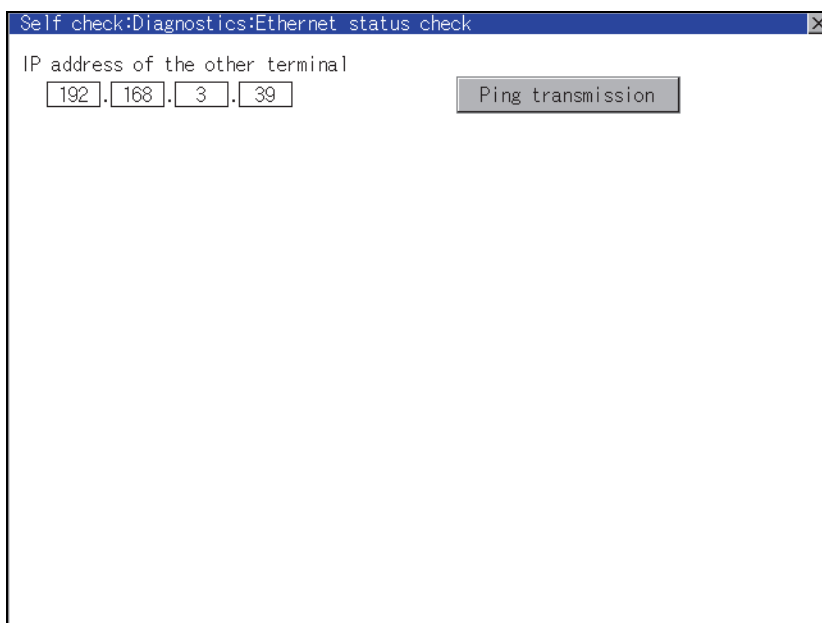
- (4) When abnormal communication  
At abnormal communication, check the followings and execute the Ping command or [Connection Test] again.
  - Mounting condition of Ethernet communication unit
  - Cable connecting condition
  - Confirmation of [Communication Settings]
  - IP address of GOT specified by Ping command

## ■ Confirming the communication state on the GOT

[PING Test] can be confirmed by the Utility screen of the GOT.

For details on the operation method of the GOT Utility screen, refer to the following manual.

 GOT2000 Series User's Manual (Utility)



### 1.6.3 Confirming the communication state to each station (Station monitoring function)

The station monitoring function detects the faults (communication timeout) of the stations monitored by the GOT. When detecting the abnormal state, it allocates the data for the faulty station to the GOT special register (GS).

(1) No. of faulty stations

(a) Ethernet connection (Except for Ethernet multiple connection)

Total No. of the faulty CPU is stored.

| Device | b15 to b8   | b7 to b0               |
|--------|-------------|------------------------|
| GS230  | (00H fixed) | No. of faulty stations |

(b) Ethernet multiple connection

Total No. of the faulty connected equipment is stored.

| Channel | Device | b15 to b8   | b7 to b0               |
|---------|--------|-------------|------------------------|
| Ch1     | GS280  | (00H fixed) | No. of faulty stations |
| Ch2     | GS300  | (00H fixed) | No. of faulty stations |
| Ch3     | GS320  | (00H fixed) | No. of faulty stations |
| Ch4     | GS340  | (00H fixed) | No. of faulty stations |

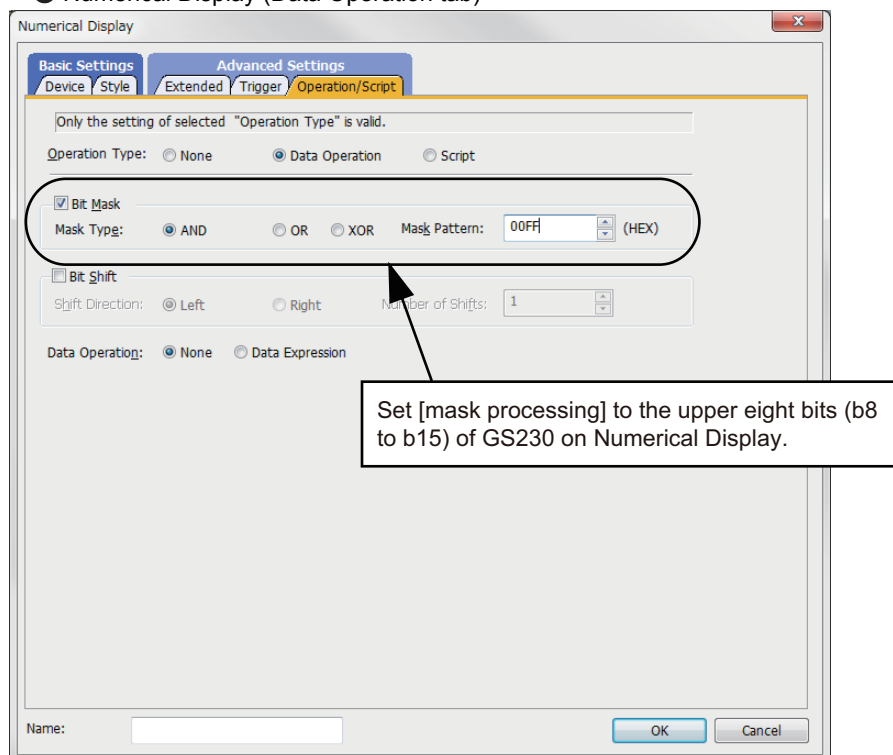
#### POINT

When monitoring GS230 on Numerical Display

When monitoring GS230 on Numerical Display, check [mask processing] with data operation tab as the following.  
For the data operation, refer to the following manual.

 GT Designer3 (GOT2000) Help

#### ● Numerical Display (Data Operation tab)



(2) Faulty station information

The bit corresponding to the faulty station is set. (0: Normal, 1: Abnormal)  
The bit is reset after the fault is recovered.

(a) Ethernet connection (Except for Ethernet multiple connection)

| Ethernet Setting |   |
|------------------|---|
| GS231 bit 0      | 1 |
| GS231 bit 1      | 2 |
| GS231 bit 2      | 3 |
| GS231 bit 3      | 4 |

| Host | Net No. | Station | Unit Type       | IP Address   | Port No. | Communication |
|------|---------|---------|-----------------|--------------|----------|---------------|
| 1    | *       | 2       | QJ71E71/LJ71E71 | 192.168.3.39 | 5001     | UDP           |
| 2    | 1       | 3       | QJ71E71/LJ71E71 | 192.168.3.40 | 5001     | UDP           |
| 3    | 1       | 4       | AJ71QE71        | 192.168.3.41 | 5001     | UDP           |
| 4    | 1       | 5       | AJ71E71         | 192.168.3.42 | 5006     | UDP           |

| Device | Ethernet setting No. |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|        | b15                  | b14 | b13 | b12 | b11 | b10 | b9  | b8  | b7  | b6  | b5  | b4  | b3  | b2  | b1  | b0  |
| GS231  | 16                   | 15  | 14  | 13  | 12  | 11  | 10  | 9   | 8   | 7   | 6   | 5   | 4   | 3   | 2   | 1   |
| GS232  | 32                   | 31  | 30  | 29  | 28  | 27  | 26  | 25  | 24  | 23  | 22  | 21  | 20  | 19  | 18  | 17  |
| GS233  | 48                   | 47  | 46  | 45  | 44  | 43  | 42  | 41  | 40  | 39  | 38  | 37  | 36  | 35  | 34  | 33  |
| GS234  | 64                   | 63  | 62  | 61  | 60  | 59  | 58  | 57  | 56  | 55  | 54  | 53  | 52  | 51  | 50  | 49  |
| GS235  | 80                   | 79  | 78  | 77  | 76  | 75  | 74  | 73  | 72  | 71  | 70  | 69  | 68  | 67  | 66  | 65  |
| GS236  | 96                   | 95  | 94  | 93  | 92  | 91  | 90  | 89  | 88  | 87  | 86  | 85  | 84  | 83  | 82  | 81  |
| GS237  | 112                  | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99  | 98  | 97  |
| GS238  | 128                  | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 |

(b) Ethernet multiple connection, servo amplifier connection, inverter connection

The station number to which each device corresponds changes according to the connection/non connection with Ethernet.

With Ethernet connection: 1 to 128

With other than Ethernet connection: 0 to 127

Example) With Ethernet connection, when PC No. 100 CPU connecting to Ch3 is faulty, GS327.b3 is set.  
The following table shows the case with Ethernet connection.

| Device |       |       |       | Station number |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-------|-------|-------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ch1    | Ch2   | Ch3   | Ch4   | b15            | b14 | b13 | b12 | b11 | b10 | b9  | b8  | b7  | b6  | b5  | b4  | b3  | b2  | b1  | b0  |
| GS281  | GS301 | GS321 | GS341 | 16             | 15  | 14  | 13  | 12  | 11  | 10  | 9   | 8   | 7   | 6   | 5   | 4   | 3   | 2   | 1   |
| GS282  | GS302 | GS322 | GS342 | 32             | 31  | 30  | 29  | 28  | 27  | 26  | 25  | 24  | 23  | 22  | 21  | 20  | 19  | 18  | 17  |
| GS283  | GS303 | GS323 | GS343 | 48             | 47  | 46  | 45  | 44  | 43  | 42  | 41  | 40  | 39  | 38  | 37  | 36  | 35  | 34  | 33  |
| GS284  | GS304 | GS324 | GS344 | 64             | 63  | 62  | 61  | 60  | 59  | 58  | 57  | 56  | 55  | 54  | 53  | 52  | 51  | 50  | 49  |
| GS285  | GS305 | GS325 | GS345 | 80             | 79  | 78  | 77  | 76  | 75  | 74  | 73  | 72  | 71  | 70  | 69  | 68  | 67  | 66  | 65  |
| GS286  | GS306 | GS326 | GS346 | 96             | 95  | 94  | 93  | 92  | 91  | 90  | 89  | 88  | 87  | 86  | 85  | 84  | 83  | 82  | 81  |
| GS287  | GS307 | GS327 | GS347 | 112            | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99  | 98  | 97  |
| GS288  | GS308 | GS328 | GS348 | 128            | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 |

For details on the GS Device, refer to the following help.

➡ GT Designer3 Version1 Screen Design Manual (Fundamentals) Appendix.2.3 GOT special register (GS)

(3) Network No., station No. notification

The network No. and station No. of the GOT in Ethernet connection are stored at GOT startup.

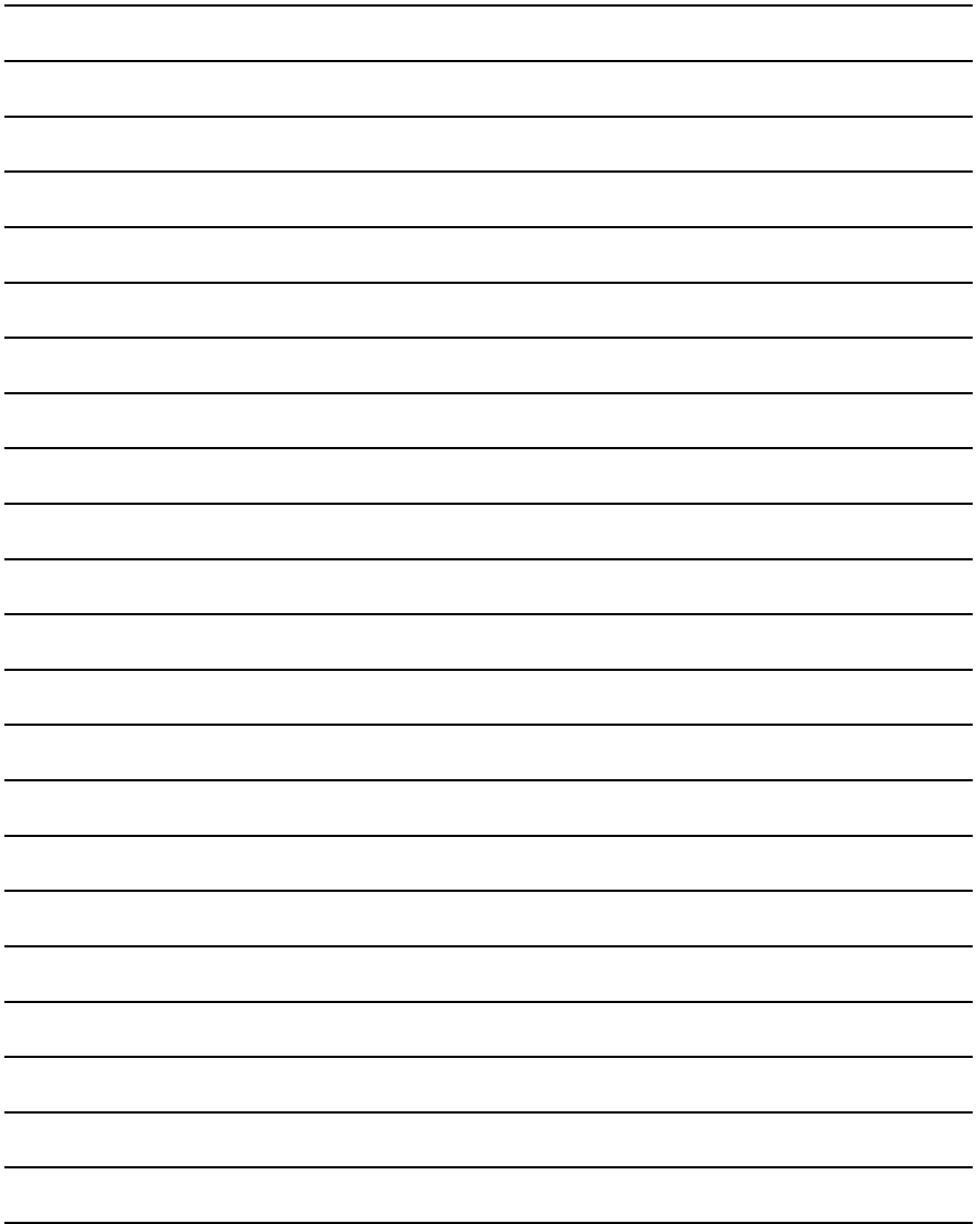
If connected by other than Ethernet, 0 is stored.

| Device |       |       |       | Description            |
|--------|-------|-------|-------|------------------------|
| CH1    | CH2   | CH3   | CH4   |                        |
| GS376  | GS378 | GS380 | GS382 | Network No. (1 to 239) |
| GS377  | GS379 | GS381 | GS383 | Station No. (1 to 64)  |

# CONNECTIONS TO NON-MITSUBISHI PRODUCTS

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|     |                                                                  |        |
|-----|------------------------------------------------------------------|--------|
| 2.  | CONNECTION TO IAI ROBOT CONTROLLER .....                         | 2 - 1  |
| 3.  | CONNECTION TO AZBIL (former YAMATAKE) CONTROL<br>EQUIPMENT ..... | 3 - 1  |
| 4.  | CONNECTION TO OMRON PLC .....                                    | 4 - 1  |
| 5.  | CONNECTION TO OMRON TEMPERATURE CONTROLLER<br>.....              | 5 - 1  |
| 6.  | CONNECTION TO KEYENCE PLC.....                                   | 6 - 1  |
| 7.  | CONNECTION TO KOYO EI PLC .....                                  | 7 - 1  |
| 8.  | CONNECTION TO JTEKT PLC .....                                    | 8 - 1  |
| 9.  | CONNECTION TO SHARP PLC .....                                    | 9 - 1  |
| 10. | CONNECTION TO SHINKO TECHNOS INDICATING<br>CONTROLLER.....       | 10 - 1 |
| 11. | CONNECTION TO CHINO CONTROLLER.....                              | 11 - 1 |
| 12. | CONNECTION TO TOSHIBA PLC .....                                  | 12 - 1 |
| 13. | CONNECTION TO TOSHIBA MACHINE PLC.....                           | 13 - 1 |
| 14. | CONNECTION TO PANASONIC SERVO AMPLIFIER ....                     | 14 - 1 |
| 15. | CONNECTION TO PANASONIC INDUSTRIAL DEVICES SUNX<br>PLC .....     | 15 - 1 |





# CONNECTION TO IAI ROBOT CONTROLLER

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|     |                                         |        |
|-----|-----------------------------------------|--------|
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| 2.2 | System Configuration . . . . .          | 2 - 3  |
| 2.3 | Connection Diagram . . . . .            | 2 - 17 |
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| 2.6 | Device Range that Can Be Set . . . . .  | 2 - 29 |
| 2.7 | Precautions . . . . .                   | 2 - 41 |

## 2. CONNECTION TO IAI ROBOT CONTROLLER

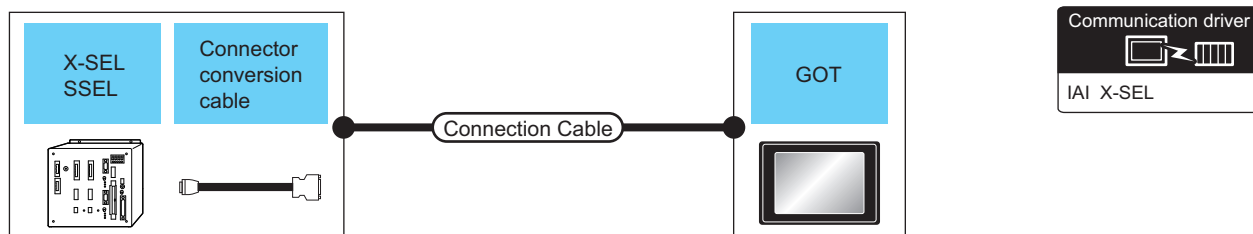
### 2.1 Connectable Model List

The following table shows the connectable models.

| Series | Model name | Clock | Communication Type | Connectable GOT                                                                   | Refer to                                                                                    |
|--------|------------|-------|--------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| X-SEL  | XSEL-J     | ×     | RS-232             | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GT 21</div> <div>GS</div> |  2.2.1   |
|        | XSEL-K     |       |                    |                                                                                   |                                                                                             |
|        | XSEL-KE    |       |                    |                                                                                   |                                                                                             |
|        | XSEL-KT    |       |                    |                                                                                   |                                                                                             |
|        | XSEL-KET   |       |                    |                                                                                   |                                                                                             |
|        | XSEL-P     |       |                    |                                                                                   |                                                                                             |
|        | XSEL-Q     |       |                    |                                                                                   |                                                                                             |
|        | XSEL-JX    |       |                    |                                                                                   |                                                                                             |
|        | XSEL-KX    |       |                    |                                                                                   |                                                                                             |
|        | XSEL-KTX   |       |                    |                                                                                   |                                                                                             |
|        | XSEL-PX    |       |                    |                                                                                   |                                                                                             |
|        | XSEL-QX    |       |                    |                                                                                   |                                                                                             |
| SSEL   | SSEL       |       |                    |                                                                                   |                                                                                             |
| ASEL   | ASEL       |       |                    |                                                                                   |                                                                                             |
| PSEL   | PSEL       |       |                    |                                                                                   |                                                                                             |
| PCON   | PCON-C     | ×     | RS-232             | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GT 21</div> <div>GS</div> |  2.2.2 |
|        | PCON-CG    |       |                    |                                                                                   |                                                                                             |
|        | PCON-CF    |       |                    |                                                                                   |                                                                                             |
|        | PCON-CY    |       |                    |                                                                                   |                                                                                             |
|        | PCON-SE    |       |                    |                                                                                   |                                                                                             |
|        | PCON-PL    |       |                    |                                                                                   |                                                                                             |
|        | PCON-PO    |       |                    |                                                                                   |                                                                                             |
|        | PCON-CA    |       |                    |                                                                                   |                                                                                             |
|        | PCON-CFA   |       |                    |                                                                                   |                                                                                             |
| ACON   | ACON-C     | ×     | RS-232<br>RS-422   | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GT 21</div> <div>GS</div> |  2.2.2 |
|        | ACON-CG    |       |                    |                                                                                   |                                                                                             |
|        | ACON-CY    |       |                    |                                                                                   |                                                                                             |
|        | ACON-SE    |       |                    |                                                                                   |                                                                                             |
|        | ACON-PL    |       |                    |                                                                                   |                                                                                             |
|        | ACON-PO    |       |                    |                                                                                   |                                                                                             |
| SCON   | SCON-C     |       |                    |                                                                                   |                                                                                             |
|        | SCON-CA    |       |                    |                                                                                   |                                                                                             |
| ERC2   | ERC2       |       |                    |                                                                                   |                                                                                             |

## 2.2 System Configuration

### 2.2.1 System Configuration for connecting to X-SEL, SSEL, ASEL, PSEL



| PLC                                      |                 |                    | Connection cable                                                                                       |               | GOT                           |       | Number of connectable equipment |
|------------------------------------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------|---------------|-------------------------------|-------|---------------------------------|
| Model name                               | RS-232C adapter | Communication Type | Cable model<br>Connection diagram number                                                               | Max. distance | Option device                 | Model |                                 |
| X-SEL<br>(Teaching connector)            | -               | RS-232             | CB-ST-E1MW050* <sup>1</sup><br>or<br>RS-232 connection diagram 1)                                      | 10m           | -<br>(Built into GOT)         |       | 1 GOT for 1 Controller          |
|                                          |                 |                    |                                                                                                        |               | GT15-RS2-9P                   |       |                                 |
|                                          |                 |                    |                                                                                                        |               | GT10-C02H-6PT9P* <sup>2</sup> |       |                                 |
|                                          |                 |                    | CB-ST-E1MW050* <sup>1</sup><br>+<br>RS-232 connection diagram 4)<br>or<br>RS-232 connection diagram 5) | 10m           | -<br>(Built into GOT)         |       |                                 |
| X-SEL<br>(General RS232C port connector) | -               | RS-232             | RS-232 connection diagram 2)                                                                           | 10m           | -<br>(Built into GOT)         |       |                                 |
|                                          |                 |                    |                                                                                                        |               | GT15-RS2-9P                   |       |                                 |
|                                          |                 |                    |                                                                                                        |               | GT10-C02H-6PT9P* <sup>2</sup> |       |                                 |
|                                          |                 |                    | RS-232 connection diagram 6)                                                                           | 10m           | -<br>(Built into GOT)         |       |                                 |

| PLC                  |                            |                       | Connection cable                                                                                                                                                                                                                                                                 | Max.<br>distance | GOT                               |                                                                                     | Number of<br>connectable<br>equipment |
|----------------------|----------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|
| Model name           | RS-232C<br>adapter         | Communication<br>Type | Cable model<br>Connection diagram<br>number                                                                                                                                                                                                                                      |                  | Option device                     | Model                                                                               |                                       |
| SSEL<br>ASEL<br>PSEL | CB-SEL-SJ002* <sup>1</sup> | RS-232                | CB-ST-E1MW050* <sup>1</sup>                                                                                                                                                                                                                                                      | 10m              | -<br>(Built into GOT)             |  | 1 GOT for 1<br>Controller             |
|                      |                            |                       |                                                                                                                                                                                                                                                                                  |                  | GT15-RS2-9P                       |  |                                       |
|                      |                            |                       |                                                                                                                                                                                                                                                                                  |                  | GT10-C02H-<br>6PT9P* <sup>2</sup> |  |                                       |
|                      |                            |                       | CB-ST-E1MW050* <sup>1</sup><br>+<br> RS-232 connection<br>diagram 4)<br>or<br> RS-232 connection<br>diagram 5) | 10m              | -<br>(Built into GOT)             |  |                                       |

\*1 Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

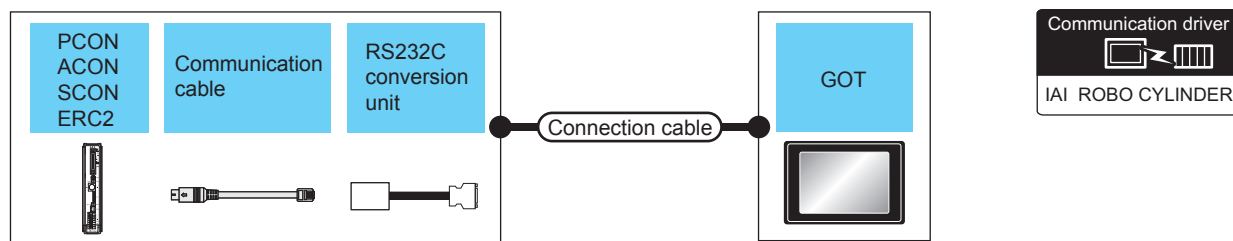
\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 2.2.2 System Configuration for connecting to PCON, ACON, SCON, ERC2

### ■ When connecting to one controller

#### (1) When using the RS-232 connection

##### (a) PCON, ACON, SCON, ERC2 (SIO specifications), ERC2 (NP/PN specifications)



| Controller                                                        |                                                                                                                        |                                   |                    | Connection cable                              |               | GOT                           |                                                                  | Number of connectable equipment |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------|-----------------------------------------------|---------------|-------------------------------|------------------------------------------------------------------|---------------------------------|
| Model name                                                        | Communication cable                                                                                                    | RS232C conversion unit            | Communication Type | Connection diagram number                     | Max. distance | Option device                 | Model                                                            |                                 |
| PCON<br>ACON<br>SCON<br>ERC2 (NP/PN specifications) <sup>*3</sup> | CB-RCA-SIO050 <sup>*1</sup><br>(5m)                                                                                    | RCB-CV-MW <sup>*1</sup><br>(0.3m) | RS-232             | -                                             | -             | (Built into GOT)              | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 Controller          |
|                                                                   |                                                                                                                        |                                   |                    |                                               |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|                                                                   |                                                                                                                        |                                   |                    |                                               |               | GT10-C02H-6PT9P <sup>*4</sup> | <div>GT 03P R4</div> <div>GT 03P R2</div>                        |                                 |
|                                                                   |                                                                                                                        |                                   |                    | (User preparing) RS-232 connection diagram 7) | 10m           | (Built into GOT)              | <div>GT 04P 21</div> <div>GT 03P 21 R2</div>                     |                                 |
| ERC2 (SIO specifications) <sup>*2</sup>                           | CB-ERC2-SIO020 <sup>*1</sup><br>+<br>CB-ERC2-PWBIO<br>□□□ <sup>*1</sup><br>or<br>CB-ERC2-PWBIO<br>□□□-RB <sup>*1</sup> | RCB-CV-MW <sup>*1</sup><br>(0.3m) | RS-232             | -                                             | -             | (Built into GOT)              | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 Controller          |
|                                                                   |                                                                                                                        |                                   |                    |                                               |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|                                                                   |                                                                                                                        |                                   |                    |                                               |               | GT10-C02H-6PT9P <sup>*4</sup> | <div>GT 03P R4</div> <div>GT 03P R2</div>                        |                                 |
|                                                                   |                                                                                                                        |                                   |                    | (User preparing) RS-232 connection diagram 7) | 10m           | (Built into GOT)              | <div>GT 04P 21</div> <div>GT 03P 21 R2</div>                     |                                 |

\*1 Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

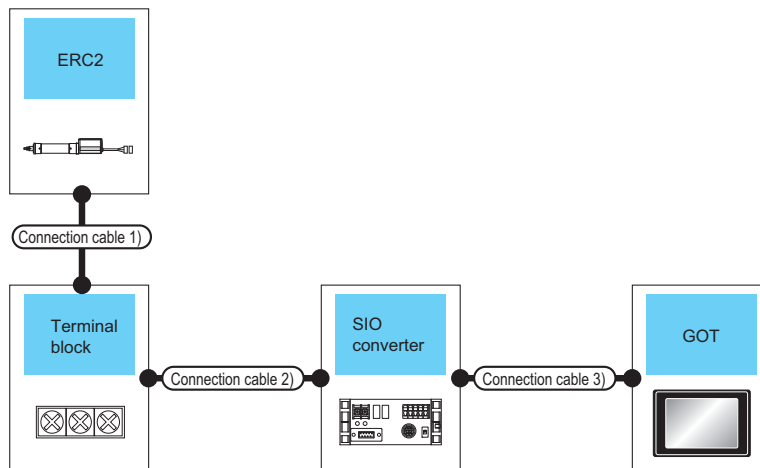
\*2 Use ERC2-□-□-□-□-SE-□-□.

\*3 Use the following models.

ERC2-□-□-□-□-NP-□-□, ERC2-□-□-□-□-PN-□-□

\*4 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

(b) ERC2 (NP/PN specifications) only



| Controller                                    | Connection cable 1)* <sup>1</sup>                   | Terminal block                     | Connection cable 2)                                                                                                                                                                                                                                    | Max. distance | SIO converter* <sup>1</sup> |                    | Connection cable 3)                                                                                                                                                                                   |               | GOT                               |                                                                                                                                                                                                                                                                                                                                                            | Number of connectable equipment |  |  |  |  |  |
|-----------------------------------------------|-----------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--|--|--|--|--|
| Model name                                    | Cable model                                         |                                    | Connection diagram number                                                                                                                                                                                                                              |               | Model name                  | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                              | Max. distance | Option device                     | Model                                                                                                                                                                                                                                                                                                                                                      |                                 |  |  |  |  |  |
| ERC2 (NP/PN specifications)<br>* <sup>2</sup> | CB-ERC-PWBIO<br>□□□<br>or<br>CB-ERC-PWBIO<br>□□□-RB | Terminal block<br>(User preparing) | <br>RS-422/485 connection diagram 7)<br>or<br><br>RS-422/485 connection diagram 8) | 100m          | RCB-TU-SIO-□                | RS-232             | RCB-CV-MW* <sup>1</sup> (0.3m)<br>+<br>CB-RCA-SIO050* <sup>1</sup> (5m)<br>or<br><br>RS-232 connection diagram 3) | 15m           | -<br>(Built into GOT)             |  <br>  | 1 GOT for 16 Controller         |  |  |  |  |  |
|                                               |                                                     | RC □ -TU-PIO* <sup>1</sup>         | <br>RS-422/485 connection diagram 9)                                                                                                                                |               |                             |                    |                                                                                                                                                                                                       |               | GT15-RS2-9P                       |                                                                                                                                                                                  |                                 |  |  |  |  |  |
|                                               |                                                     |                                    |                                                                                                                                                                                                                                                        |               |                             |                    |                                                                                                                                                                                                       |               | GT10-C02H-6PT9P<br>* <sup>3</sup> |  <br>  |                                 |  |  |  |  |  |
|                                               |                                                     |                                    | <br>RS-232 connection diagram 8)                                                                                                                                    |               |                             |                    |                                                                                                                                                                                                       |               | -<br>(Built into GOT)             |  <br>  |                                 |  |  |  |  |  |

<sup>\*1</sup> Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

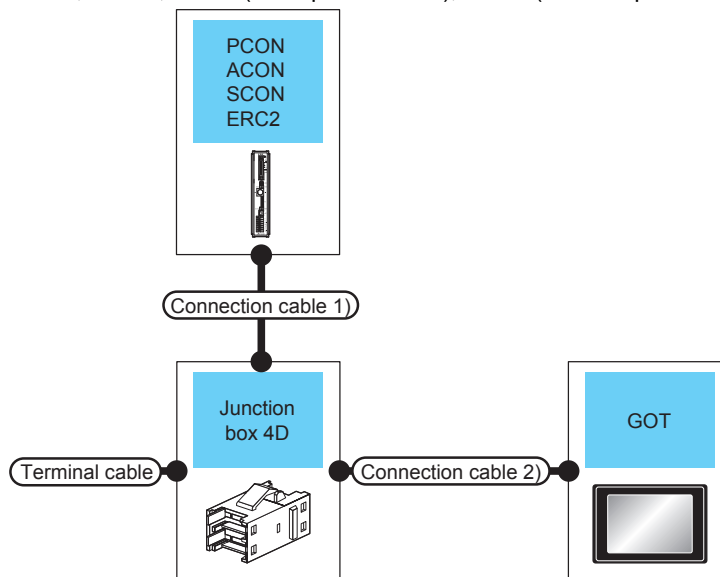
<sup>\*2</sup> Use the following models.

ERC2-□-□-□-□-NP-□-□, ERC2-□-□-□-□-PN-□-□

<sup>\*3</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

(2) When using the RS-422/485 cable

(a) PCON, ACON, SCON, ERC2 (SIO specifications), ERC2 (NP/PN specifications)



| Controller                                                   | Terminal cable                   | Connection cable 1)*1 | Junction box 4D*2 | Connection cable 2)               | GOT                                                                          |       | Max. distance | Number of connectable equipment |
|--------------------------------------------------------------|----------------------------------|-----------------------|-------------------|-----------------------------------|------------------------------------------------------------------------------|-------|---------------|---------------------------------|
| Model name                                                   | Connection diagram number        | Cable model           | Model name        | Connection diagram number         | Option device                                                                | Model |               |                                 |
| PCON<br>ACON<br>SCON<br>ERC2<br>(NP/PN specifications)<br>*5 | RS-422/485 connection diagram 1) | CB-RCB-CTL002 (0.2m)  | 5-1473574-4       | RS422/485 connection diagram 3)   | FA-LTBGT2R4CBL05(0.5m)*3<br>FA-LTBGT2R4CBL10(1m)*3<br>FA-LTBGT2R4CBL20(2m)*3 |       | 100m          | 16 Controllers for 1 GOT        |
|                                                              |                                  |                       |                   |                                   | -<br>(Built into GOT)                                                        |       |               |                                 |
|                                                              |                                  |                       |                   | RS-422/485 connection diagram 4)  | GT15-RS4-9S                                                                  |       |               |                                 |
|                                                              |                                  |                       |                   |                                   | GT10-C02H-9SC                                                                |       |               |                                 |
|                                                              |                                  |                       |                   | RS-422/485 connection diagram 5)  | GT15-RS4-TE                                                                  |       |               |                                 |
|                                                              |                                  |                       |                   | RS-422/485 connection diagram 14) | -<br>(Built into GOT)                                                        |       |               |                                 |

| Controller                                     | Terminal cable                                                                                                     | Connection cable 1)* <sup>1</sup>                                              | Junction box 4D* <sup>2</sup> | Connection cable 2)                                                                                                   | GOT                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max. distance | Number of connectable equipment |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------|
| Model name                                     | Connection diagram number                                                                                          | Cable model                                                                    | Model name                    | Connection diagram number                                                                                             | Option device                                                                                                    | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                                 |
| ERC2<br>(SIO specifications)<br>* <sup>4</sup> |  RS-422/485 connection diagram 1) | CB-ERC2-CTL001<br>+<br>CB-ERC2-PWBIO<br>□□□□<br>or<br>CB-ERC2-PWBIO<br>□□□□-RB | 5-1473574-4                   |  RS422/485 connection diagram 3)     | FA-LTBGT2R4CBL05(0.5m)* <sup>3</sup><br>FA-LTBGT2R4CBL10(1m)* <sup>3</sup><br>FA-LTBGT2R4CBL20(2m)* <sup>3</sup> | <br><br>                                                                                                                                                                                                                                                                                  | 100m          | 16 Controllers for 1 GOT        |
|                                                |                                                                                                                    |                                                                                |                               |  RS-422/485 connection diagram 4)    | -<br>(Built into GOT)                                                                                            | <br><br><br>                                                                                                                                                                                           |               |                                 |
|                                                |                                                                                                                    |                                                                                |                               |                                                                                                                       | GT15-RS4-9S                                                                                                      | <br>                                                                                                                                                                                                                                                                                                                                                                         |               |                                 |
|                                                |                                                                                                                    |                                                                                |                               |                                                                                                                       | GT10-C02H-9SC                                                                                                    | <br><br><br><br><br>             |               |                                 |
|                                                |                                                                                                                    |                                                                                |                               |  RS-422/485 connection diagram 5)    | GT15-RS4-TE                                                                                                      | <br>                                                                                                                                                                                                                                                                                                                                                                         |               |                                 |
|                                                |                                                                                                                    |                                                                                |                               |  RS-422/485 connection diagram 14) | -<br>(Built into GOT)                                                                                            | <br><br><br><br><br> |               |                                 |

\*<sup>1</sup> Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

\*<sup>2</sup> Product manufactured by Tyco Electronics. For details of the product, contact Tyco Electronics.

\*<sup>3</sup> Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

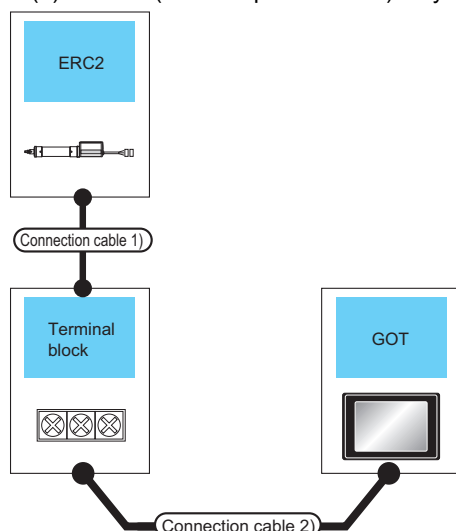
\*<sup>4</sup> Use ERC2-□-□-□-□-□-SE-□-□.

\*<sup>5</sup> Use the following models.

ERC2-□-□-□-□-□-NP-□-□, ERC2-□-□-□-□-□-PN-□-□



Communication driver  
IAI ROBO CYLINDER

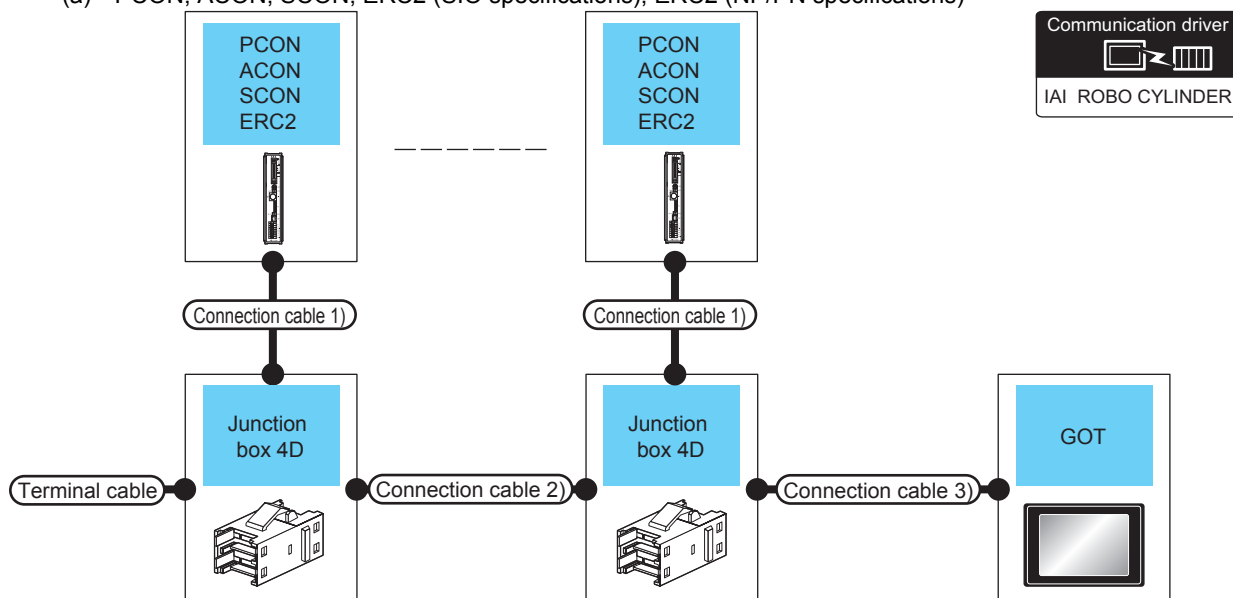


| Controller                                | Connection cable 1)* <sup>1</sup>                   | Terminal block                     | Connection cable 2)                                                                                                      | GOT                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Max. distance | Number of connectable equipment |
|-------------------------------------------|-----------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------|
| Model name                                | Cable model                                         |                                    | Connection diagram number                                                                                                | Option device                                                                                                    | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                                 |
| ERC2 (NP/PN specifications)* <sup>3</sup> | CB-ERC-PWBIO<br>□□□<br>or<br>CB-ERC-PWBIO<br>□□□-RB | Terminal block<br>(User preparing) | <br>RS-422/485 connection diagram 10)   | FA-LTBGT2R4CBL05(0.5m)* <sup>2</sup><br>FA-LTBGT2R4CBL10(1m)* <sup>2</sup><br>FA-LTBGT2R4CBL20(2m)* <sup>2</sup> | <br>                                                                                                                                                                                                                                                                      | 100m          | 16<br>Controllers<br>for 1 GOT  |
|                                           |                                                     |                                    | <br>RS-422/485 connection diagram 11) | -<br>(Built into GOT)                                                                                            |                                                                                                                                                                                 |               |                                 |
|                                           |                                                     |                                    |                                                                                                                          | GT15-RS4-9S                                                                                                      |                                                                                                                                                                                                                                                                      |               |                                 |
|                                           |                                                     |                                    |                                                                                                                          | GT10-C02H-9SC                                                                                                    |                                                                                            |               |                                 |
|                                           |                                                     |                                    | <br>RS-422/485 connection diagram 12) | GT15-RS4-TE                                                                                                      |                                                                                                                                                                                                                                                                      |               |                                 |
|                                           |                                                     |                                    | <br>RS-422/485 connection diagram 15) | -<br>(Built into GOT)                                                                                            |       |               |                                 |

ERC2-□-□-□-□-□-NP-□-□, ERC2-□-□-□-□-□-PN-□-□

## ■ When connecting to multiple controllers

(a) PCON, ACON, SCON, ERC2 (SIO specifications), ERC2 (NP/PN specifications)



| Controller                                                | Terminal cable                   | Connection cable 1)*1 | Junction box 4D*2 | Connection cable 2)              | Connection cable 3)               | GOT                                                                          |       | Max. distance | Number of connectable equipment |
|-----------------------------------------------------------|----------------------------------|-----------------------|-------------------|----------------------------------|-----------------------------------|------------------------------------------------------------------------------|-------|---------------|---------------------------------|
| Model name                                                | Connection diagram number        | Cable model           | Model name        | Connection diagram number        | Connection diagram number         | Option device                                                                | Model |               |                                 |
| PCON<br>ACON<br>SCON<br>ERC2 (NP/PN specifications)<br>*5 | RS-422/485 connection diagram 1) | CB-RCB-CTL002 (0.2m)  | 5-1473574-4       | RS-422/485 connection diagram 2) | RS422/485 connection diagram 3)   | FA-LTBGT2R4CBL05(0.5m)*3<br>FA-LTBGT2R4CBL10(1m)*3<br>FA-LTBGT2R4CBL20(2m)*3 |       | 100m          | 16<br>Controllers<br>for 1 GOT  |
|                                                           |                                  |                       |                   |                                  |                                   | -<br>(Built into GOT)                                                        |       |               |                                 |
|                                                           |                                  |                       |                   |                                  | RS-422/485 connection diagram 4)  | GT15-RS4-9S                                                                  |       |               |                                 |
|                                                           |                                  |                       |                   |                                  |                                   | GT10-C02H-9SC                                                                |       |               |                                 |
|                                                           |                                  |                       |                   |                                  | RS-422/485 connection diagram 5)  | GT15-RS4-TE                                                                  |       |               |                                 |
|                                                           |                                  |                       |                   |                                  | RS-422/485 connection diagram 14) | -<br>(Built into GOT)                                                        |       |               |                                 |

| Controller                         | Terminal cable                                                                                                     | Connection cable 1)* <sup>1</sup>                                                                                                                                                                                                         | Junction box 4D)* <sup>2</sup> | Connection cable 2)                                                                                                | Connection cable 3)                                                                                                   | GOT                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Max. distance | Number of connectable equipment |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------|
| Model name                         | Connection diagram number                                                                                          | Cable model                                                                                                                                                                                                                               | Model name                     | Connection diagram number                                                                                          | Connection diagram number                                                                                             | Option device                                                                                                    | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                                 |
| ERC2<br>(SIO specifications)<br>*4 |  RS-422/485 connection diagram 1) | CB-ERC2-CTL001<br>+<br>CB-ERC2-PWBIO<br><br>or<br>CB-ERC2-PWBIO<br> -RB | 5-1473574-4                    |  RS-422/485 connection diagram 2) |  RS422/485 connection diagram 3)     | FA-LTBGT2R4CBL05(0.5m)* <sup>3</sup><br>FA-LTBGT2R4CBL10(1m)* <sup>3</sup><br>FA-LTBGT2R4CBL20(2m)* <sup>3</sup> |  <br>                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100m          | 16<br>Controllers<br>for 1 GOT  |
|                                    |                                                                                                                    |                                                                                                                                                                                                                                           |                                |                                                                                                                    |                                                                                                                       | -<br>(Built into GOT)                                                                                            |  <br>                                                                                                                                                                                                                                                                                                                                                                        |               |                                 |
|                                    |                                                                                                                    |                                                                                                                                                                                                                                           |                                |                                                                                                                    |  RS-422/485 connection diagram 4)    | GT15-RS4-9S                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                                 |
|                                    |                                                                                                                    |                                                                                                                                                                                                                                           |                                |                                                                                                                    |  RS-422/485 connection diagram 5)    | GT10-C02H-9SC                                                                                                    |  <br> <br>                                                                                                                                                                                           |               |                                 |
|                                    |                                                                                                                    |                                                                                                                                                                                                                                           |                                |                                                                                                                    |  RS-422/485 connection diagram 14) | GT15-RS4-TE                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                                 |
|                                    |                                                                                                                    |                                                                                                                                                                                                                                           |                                |                                                                                                                    |  RS-422/485 connection diagram 14) | -<br>(Built into GOT)                                                                                            |  <br> <br> <br>  |               |                                 |

\*1 Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

\*2 Product manufactured by Tyco Electronics. For details of the product, contact Tyco Electronics.

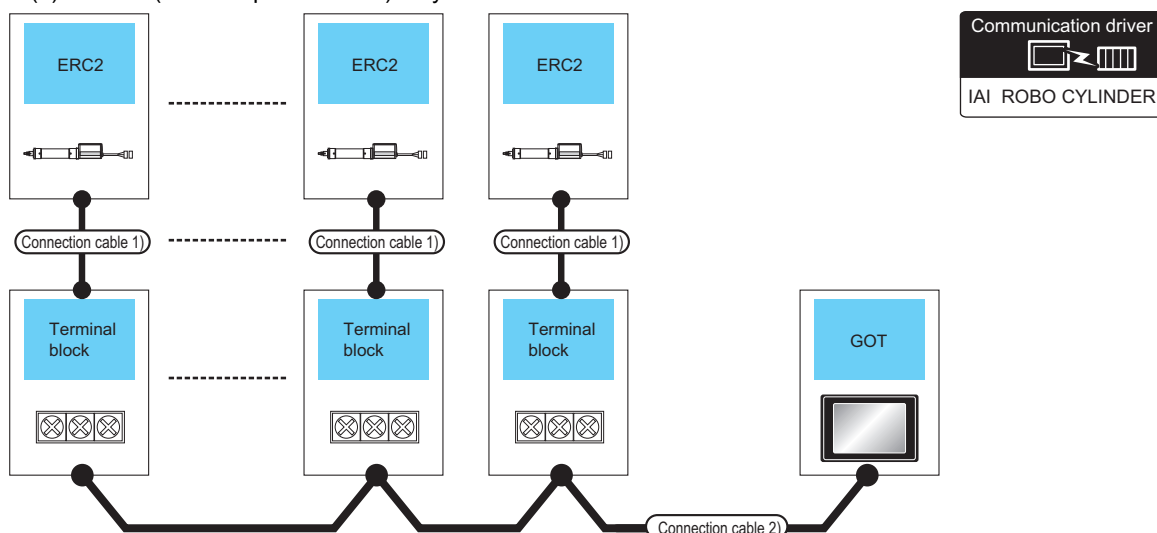
\*3 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

\*4 Use ERC2-□-□-□-□-SE-□-□.

\*5 Use the following models.

ERC2-□-□-□-□-NP-□-□, ERC2-□-□-□-□-PN-□-□

(b) ERC2 (NP/PN specifications) only



| Controller                                | Connection cable 1)* <sup>1</sup>                   | Terminal block                     | Connection cable 2)               | GOT                                                                                                                 |       | Max. distance | Number of connectable equipment |
|-------------------------------------------|-----------------------------------------------------|------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------|-------|---------------|---------------------------------|
| Model name                                | Cable model                                         |                                    | Connection diagram number         | Option device                                                                                                       | Model |               |                                 |
| ERC2 (NP/PN specifications)* <sup>4</sup> | CB-ERC-PWBIO<br>□□□<br>or<br>CB-ERC-PWBIO<br>□□□-RB | Terminal block<br>(User preparing) | RS-422/485 connection diagram 10) | FA-LTBGT2R4CBL05 (0.5m)* <sup>2</sup><br>FA-LTBGT2R4CBL10 (1m)* <sup>2</sup><br>FA-LTBGT2R4CBL20 (2m)* <sup>2</sup> |       | 100m          | 16<br>Controllers<br>for 1 GOT  |
|                                           |                                                     |                                    | RS-422/485 connection diagram 11) | -<br>(Built into GOT)                                                                                               |       |               |                                 |
|                                           |                                                     |                                    |                                   | GT15-RS4-9S                                                                                                         |       |               |                                 |
|                                           |                                                     |                                    |                                   | GT10-C02H-9SC                                                                                                       |       |               |                                 |
|                                           |                                                     |                                    | RS-422/485 connection diagram 12) | GT15-RS4-TE                                                                                                         |       |               |                                 |
|                                           |                                                     |                                    | RS-422/485 connection diagram 15) | -<br>(Built into GOT)                                                                                               |       |               |                                 |

\*1 Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

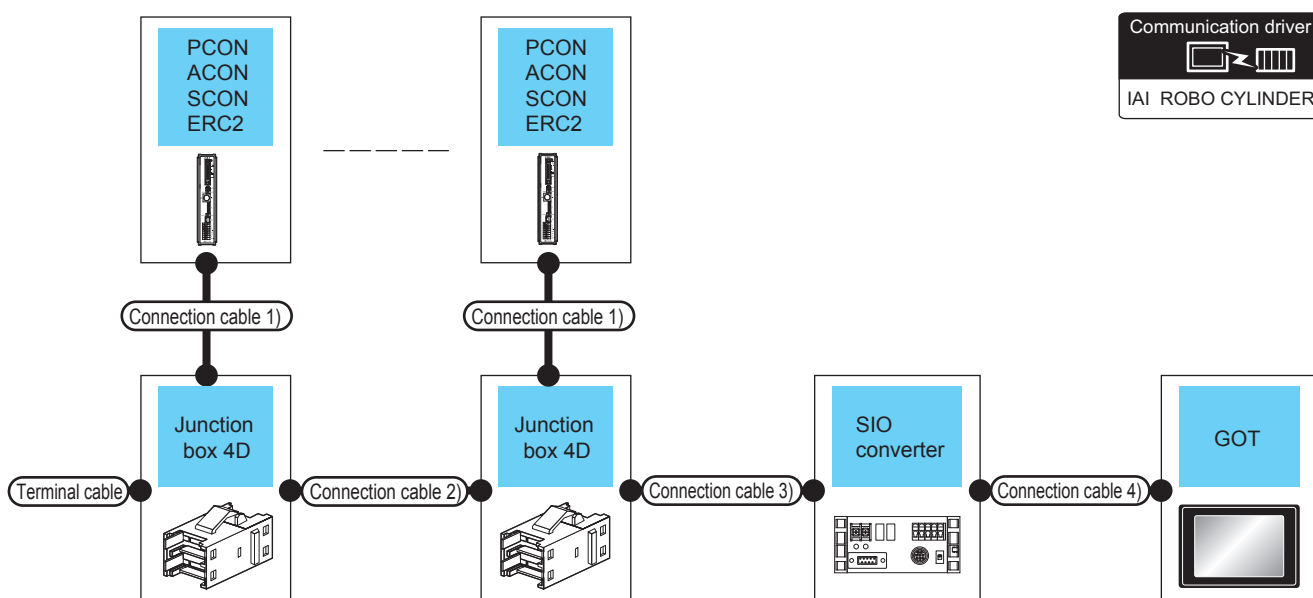
\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

\*3 Use the following models.

ERC2-□□□□□-NP-□□, ERC2-□□□□□-PN-□□

■ When connecting to multiple controllers (via SIO converter)

(a) PCON, ACON, SCON, ERC2 (SIO specifications), ERC2 (NP/PN specifications)



| Controller           | Terminal cable                          | Connection cable 1) <sup>1</sup> | Junction box 4D <sup>2</sup> | Connection cable 2)                     | Connection cable 3)                                                                      | Max. disat<br>ance | SIO converter <sup>*1</sup> |                        | Connection cable 4)                                                                                                        |                    | GOT                                   |          | Number of connectable equipment |
|----------------------|-----------------------------------------|----------------------------------|------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------|--------------------|-----------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------|----------|---------------------------------|
| Model name           | Connection diagram number               | Cable model                      | Model name                   | Connection diagram number               | Connection diagram number                                                                |                    | Model name                  | Communica<br>tion Type | Cable model<br>Connection diagram number                                                                                   | Max. disat<br>ance | Option device                         | Model    |                                 |
| PCON<br>ACON<br>SCON | RS-422/<br>485<br>connection diagram 1) | CB-RCB-<br>CTL002<br>(0.2m)      | 5-1473574-4                  | RS-422/<br>485<br>connection diagram 2) | RS-422/<br>485<br>connection diagram 2)<br>or<br>RS-422/<br>485<br>connection diagram 6) | 100m               | RCB-TU-<br>SIO-□            | RS-232                 | RCB-CV-MW <sup>*1</sup><br>(0.3m)<br>+<br>CB-RCA-<br>SIO050 <sup>*1</sup><br>(5m)<br>or<br>RS-232<br>connection diagram 3) | 15m                | -<br>(Built into<br>GOT)              | <br>     | 16 Controllers<br>for 1 GOT     |
|                      |                                         |                                  |                              |                                         |                                                                                          |                    |                             |                        |                                                                                                                            |                    | GT15-<br>RS2-9P                       |          |                                 |
|                      |                                         |                                  |                              |                                         |                                                                                          |                    |                             |                        |                                                                                                                            |                    | GT10-<br>C02H-<br>6PT9P <sup>*6</sup> | <br><br> |                                 |
|                      |                                         |                                  |                              |                                         |                                                                                          |                    |                             |                        | RS-232<br>connection diagram 8)                                                                                            |                    | -<br>(Built into<br>GOT)              | <br>     |                                 |

| Controller                                     | Terminal cable                                                                                                                         | Connection cable 1)* <sup>1</sup>                                            | Junction box 4D* <sup>2</sup> | Connection cable 2)                     | Connection cable 3)                                                                                                                                                                                                                                                                    | Max. distance | SIO converter* <sup>1</sup> |                    | Connection cable 4)                                                                                                                                                                                                  |               | GOT                                                                     |                                                                       | Number of connectable equipment |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------|
| Model name                                     | Connection diagram number                                                                                                              | Cable model                                                                  | Model name                    | Connection diagram number               | Connection diagram number                                                                                                                                                                                                                                                              |               | Model name                  | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                             | Max. distance | Option device                                                           | Model                                                                 |                                 |
| PCON<br>ACON<br>SCON                           | <div></div> RS-422/<br>485<br>connection diagram 1)   | CB-RCB-CTL002* <sup>3</sup><br>(0.2m)                                        | -                             | -                                       | -                                                                                                                                                                                                                                                                                      | 100m          | RCB-TU-SIO-□                | RS-232             | RCB-CV-MW* <sup>1</sup><br>(0.3m)<br>+<br>CB-RCA-SIO050* <sup>1</sup><br>(5m)<br>or<br><div></div> RS-232<br>connection diagram 3) | 15m           | -<br>(Built into GOT)                                                   | <div><div>GT27</div><div>GT23</div><div>GT25</div><div>GS</div></div> | 2 Controllers<br>for 1 GOT      |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | GT15-RS2-9P                                                                                                                                                                                                          |               | <div><div>GT27</div><div>GT25</div></div>                               |                                                                       |                                 |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | GT10-C02H-6PT9P* <sup>6</sup>                                                                                                                                                                                        |               | <div><div>GT03P<br/>21<br/>R4</div><div>GT03P<br/>21<br/>R2</div></div> |                                                                       |                                 |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | -<br>(Built into GOT)                                                                                                                                                                                                |               | <div><div>GT04R<br/>21</div><div>GT03P<br/>21<br/>R2</div></div>        |                                                                       |                                 |
| ERC2<br>(SIO specific<br>ations)* <sup>4</sup> | <div></div> RS-422/<br>485<br>connection diagram 1) | CB-ERC2-CTL001<br>+<br>CB-ERC2-PWBIO<br>□□□<br>or<br>CB-ERC2-PWBIO<br>□□□-RB | 5-1473574-4                   | RS-422/<br>485<br>connection diagram 2) | <div></div> RS-422/<br>485<br>connection diagram 2)<br>or<br><div></div> RS-422/<br>485<br>connection diagram 6) | 100m          | RCB-TU-SIO-□                | RS-232             | RCB-CV-MW* <sup>1</sup><br>(0.3m)<br>+<br>CB-RCA-SIO050* <sup>1</sup> (5m)<br>or<br><div></div> RS-232<br>connection diagram 3)  | 15m           | -<br>(Built into GOT)                                                   | <div><div>GT27</div><div>GT23</div><div>GT25</div><div>GS</div></div> | 16 Controllers<br>for 1 GOT     |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | GT15-RS2-9P                                                                                                                                                                                                          |               | <div><div>GT27</div><div>GT25</div></div>                               |                                                                       |                                 |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | GT10-C02H-6PT9P* <sup>6</sup>                                                                                                                                                                                        |               | <div><div>GT03P<br/>21<br/>R4</div><div>GT03P<br/>21<br/>R2</div></div> |                                                                       |                                 |
|                                                |                                                                                                                                        |                                                                              |                               |                                         |                                                                                                                                                                                                                                                                                        |               |                             |                    | -<br>(Built into GOT)                                                                                                                                                                                                |               | <div><div>GT04R<br/>21</div><div>GT03P<br/>21<br/>R2</div></div>        |                                                                       |                                 |

| Controller                                | Terminal cable                                       | Connection cable 1)* <sup>1</sup>                                                                                                                           | Junction box 4D)* <sup>2</sup> | Connection cable 2)                                  | Connection cable 3)                                                                                                | Max. disat<br>ance | SIO converter)* <sup>1</sup> |                    | Connection cable 4)                                                                                                                    |                    | GOT                            |                                    | Number of connectable equipment |
|-------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|------------------------------------|---------------------------------|
| Model name                                | Connection diagram number                            | Cable model                                                                                                                                                 | Model name                     | Connection diagram number                            | Connection diagram number                                                                                          |                    | Model name                   | Communication Type | Cable model<br>Connection diagram number                                                                                               | Max. disat<br>ance | Option device                  | Model                              |                                 |
| ERC2 (SIO specifications)* <sup>4</sup>   | -                                                    | CB-ERC2-CTL001 +<br>CB-ERC2-PWBIO<br>□□□□<br>or<br>CB-ERC2-PWBIO<br>□□□□-RB                                                                                 | -                              | -                                                    | -                                                                                                                  | 100m               | RCB-TU-SIO-□                 | RS-232             | RCB-CV-MW)* <sup>1</sup><br>(0.3m)<br>+<br>CB-RCA-SIO050)* <sup>1</sup> (5m)<br>or<br>(User preparing)<br>RS-232 connection diagram 3) | 15m                | -<br>(Built into GOT)          | GT 27 25<br>GT 23 GS               | 2 Controllers for 1 GOT         |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | GT15-RS2-9P                    | GT 27 25                           |                                 |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | GT10-C02H-6PT9P)* <sup>6</sup> | GT 21 03P<br>GT 21 04P<br>GT 21 R2 |                                 |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | -<br>(Built into GOT)          | GT 21 04R<br>GT 21 R2              |                                 |
| ERC2 (NP/PN specifications)* <sup>5</sup> | (User preparing)<br>RS-422/485 connection diagram 1) | CB-ERC-PWBIO<br>□□□□<br>or<br>CB-ERC-PWBIO<br>□□□□-RB<br>+<br>Terminal block (User preparing)<br>+<br>(User preparing)<br>RS-422/485 connection diagram 13) | 5-1473574-4                    | (User preparing)<br>RS-422/485 connection diagram 2) | (User preparing)<br>RS-422/485 connection diagram 2)<br>or<br>(User preparing)<br>RS-422/485 connection diagram 6) | 100m               | RCB-TU-SIO-□                 | RS-232             | RCB-CV-MW)* <sup>1</sup><br>(0.3m)<br>+<br>CB-RCA-SIO050)* <sup>1</sup> (5m)<br>or<br>(User preparing)<br>RS-232 connection diagram 3) | 15m                | -<br>(Built into GOT)          | GT 27 25<br>GT 23 GS               | 16 Controllers for 1 GOT        |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | GT15-RS2-9P                    | GT 27 25                           |                                 |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | GT10-C02H-6PT9P)* <sup>6</sup> | GT 21 03P<br>GT 21 04P<br>GT 21 R2 |                                 |
|                                           |                                                      |                                                                                                                                                             |                                |                                                      |                                                                                                                    |                    |                              |                    |                                                                                                                                        |                    | -<br>(Built into GOT)          | GT 21 04R<br>GT 21 R2              |                                 |

\*1 Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

\*2 Product manufactured by Tyco Electronics. For details of the product, contact Tyco Electronics.

\*3 When not using junction box 4D, connection cable 2) or connection cable 3), connect the controller to the SIO converter directly by the cable CR-RCB-CTL002.

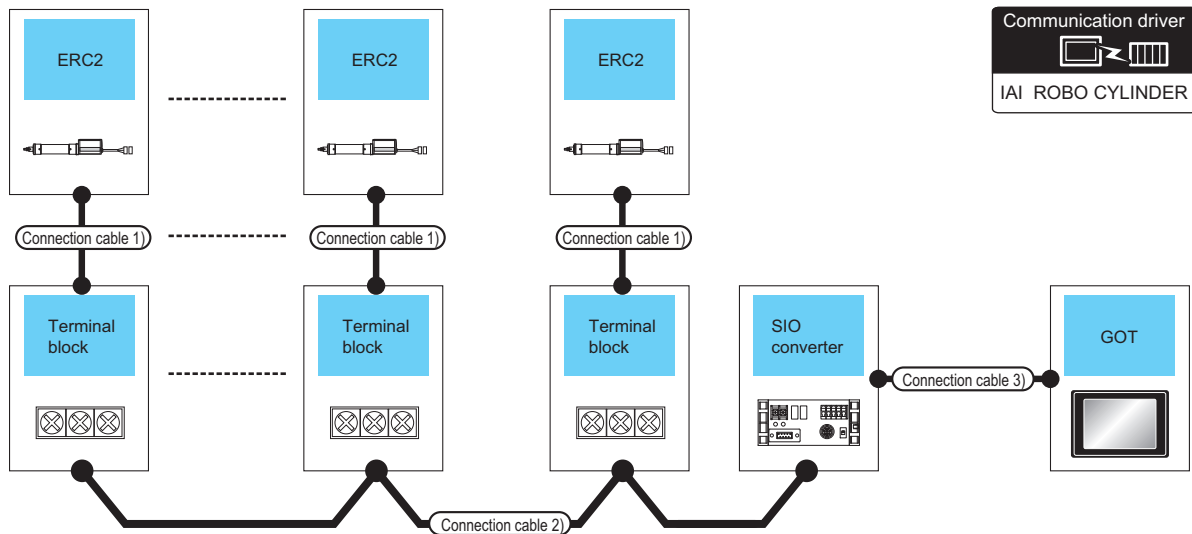
\*4 Use ERC2-□-□-□-□-SE-□-□.

\*5 Use the following models.

ERC2-□-□-□-□-NP-□-□, ERC2-□-□-□-□-PN-□-□

\*6 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

(b) ERC2 (NP/PN specifications) only



| Controller                                    | Connection cable 1)* <sup>1</sup>                   | Terminal block                  | Connection cable 2)                                                                                                                   | Max. disantance | SIO converter* <sup>1</sup> |                           | Connection cable 4)                                                                                                                              |                 | GOT                           |                                                                    | Number of connectable equipment |  |  |  |  |  |
|-----------------------------------------------|-----------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|--------------------------------------------------------------------|---------------------------------|--|--|--|--|--|
| Model name                                    | Cable model                                         |                                 | Connection diagram number                                                                                                             |                 | Model name                  | Connection diagram number | Cable model<br>Connection diagram number                                                                                                         | Max. disantance | Option device                 | Model* <sup>3</sup>                                                |                                 |  |  |  |  |  |
| ERC2 (NP/PN specifications)<br>* <sup>3</sup> | CB-ERC-PWBIO<br>□□□<br>or<br>CB-ERC-PWBIO<br>□□□-RB | Terminal block (User preparing) | <div>User preparing</div><br>RS-422/485 connection diagram 13)<br>or<br><div>User preparing</div><br>RS-422/485 connection diagram 8) | 100m            | RCB-TU-SIO-□                | RS-232                    | RCB-CV-MW* <sup>1</sup><br>(0.3m)<br>+<br>CB-RCA-SIO050* <sup>1</sup><br>(5m)<br>or<br><div>User preparing</div><br>RS-232 connection diagram 3) | 15m             | -<br>(Built into GOT)         | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div>   | 16<br>Controllers for 1 GOT     |  |  |  |  |  |
|                                               |                                                     | RC □-TU-PIO* <sup>1</sup>       | <div>User preparing</div><br>RS-422/485 connection diagram 9)                                                                         |                 |                             |                           |                                                                                                                                                  |                 | GT15-RS2-9P* <sup>2</sup>     | <div>GT 27</div> <div>GT 25</div>                                  |                                 |  |  |  |  |  |
|                                               |                                                     |                                 |                                                                                                                                       |                 |                             |                           |                                                                                                                                                  |                 | GT10-C02H-6PT9P* <sup>4</sup> | <div>GT 03R<br/>2104P<br/>R4</div> <div>GT 21<br/>03P<br/>R2</div> |                                 |  |  |  |  |  |
|                                               |                                                     |                                 | <div>User preparing</div><br>RS-232 connection diagram 8)                                                                             |                 |                             |                           |                                                                                                                                                  |                 | -<br>(Built into GOT)         | <div>GT 04R<br/>2104P<br/>R4</div> <div>GT 21<br/>03P<br/>R2</div> |                                 |  |  |  |  |  |

\*<sup>1</sup> Product manufactured by IAI Corporation. For details of the product, contact IAI Corporation.

\*<sup>2</sup> Connect it to the RS-232 interface (built into GOT). It cannot be mounted on GT1655 and GT155□.

\*<sup>3</sup> Use the following models.

ERC2-□-□-□-□-NP-□-□, ERC2-□-□-□-□-PN-□-□

\*<sup>4</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



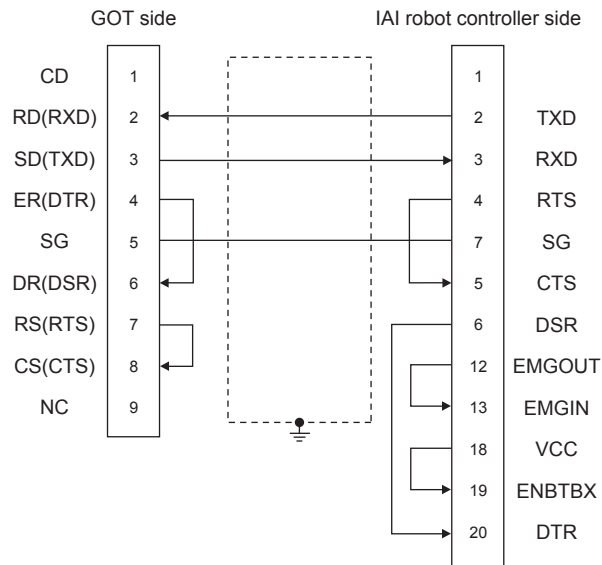
## 2.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

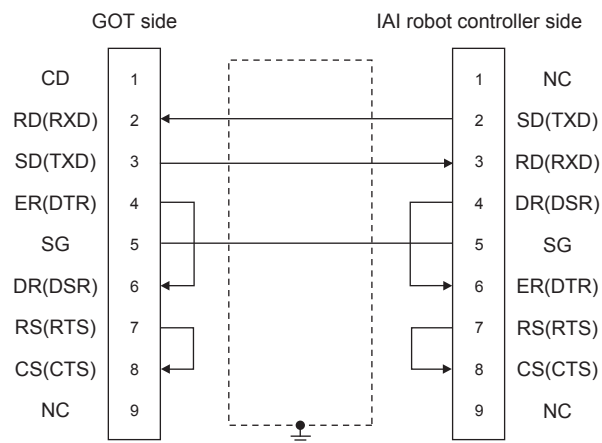
### 2.3.1 RS-232 cable

#### ■ Connection diagram

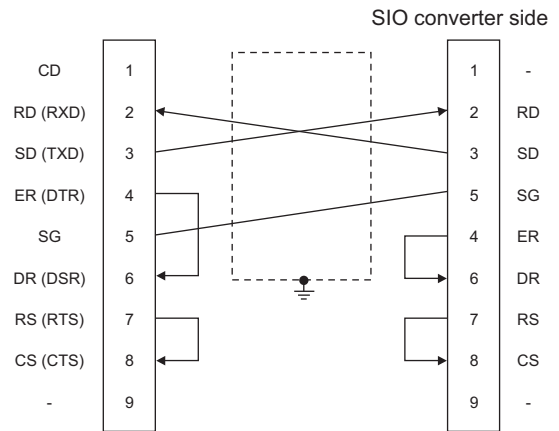
(1) RS-232 connection diagram 1)



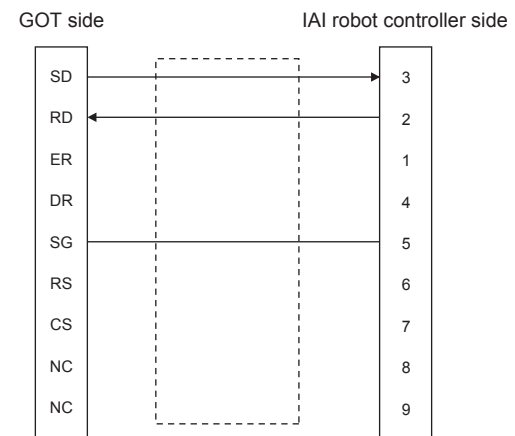
(2) RS-232 connection diagram 2)



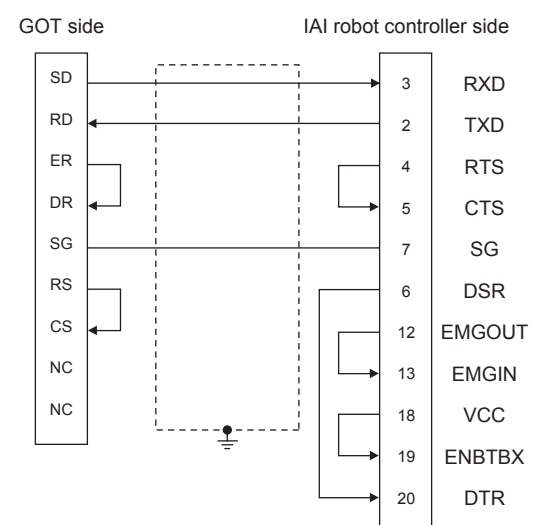
(3) RS-232 connection diagram 3)



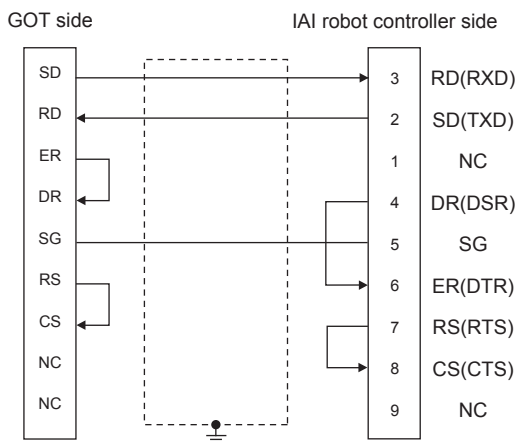
(4) RS-232 connection diagram 4)



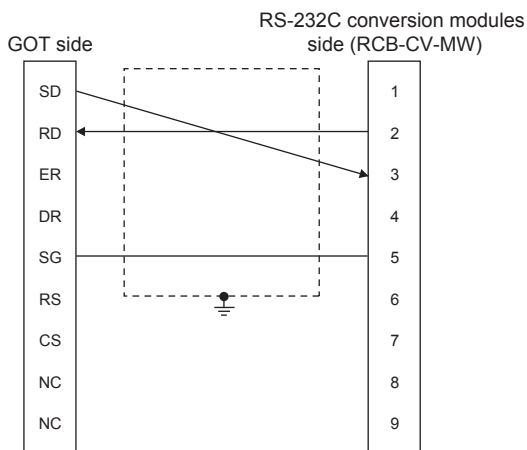
(5) RS-232 connection diagram 5)



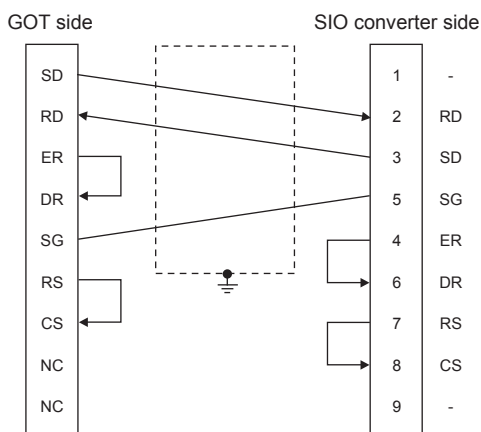
(6) RS-232 connection diagram 6)



(7) RS-232 connection diagram 7)



(8) RS-232 connection diagram 8)



## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-232 cable must be 10cm or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.



1.4.1 GOT connector specifications

### (3) IAI Robot Controller side connector

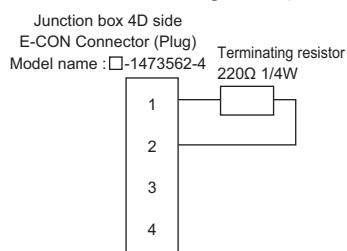
Use the connector compatible with the IAI Robot Controller.

For details, refer to the IAI Robot Controller user's manual.

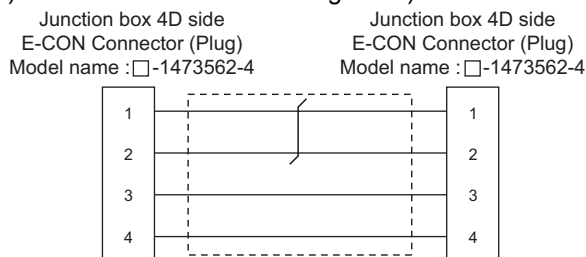
## 2.3.2 RS-422/485 cable

### ■ Connection diagram

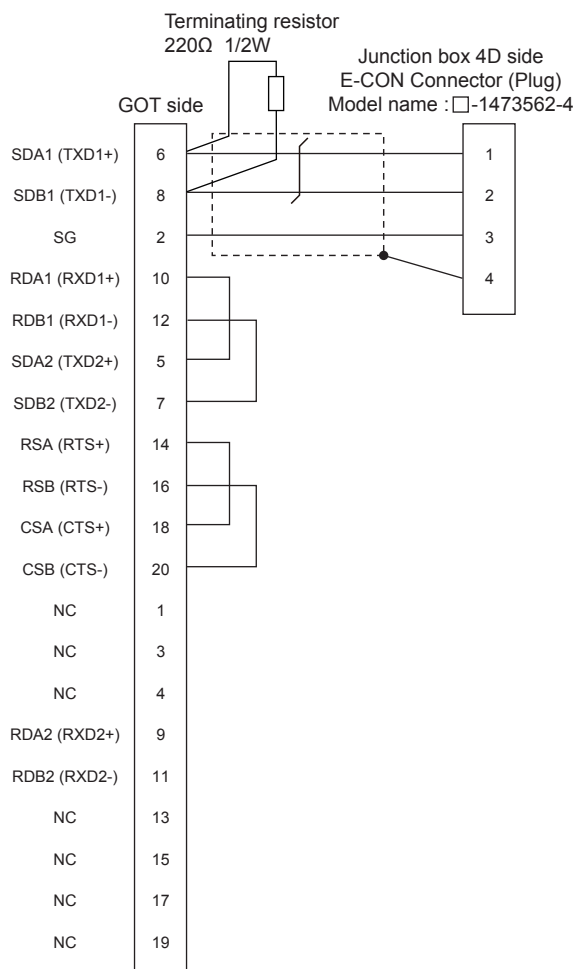
(1) RS-422/485 connection diagram 1)



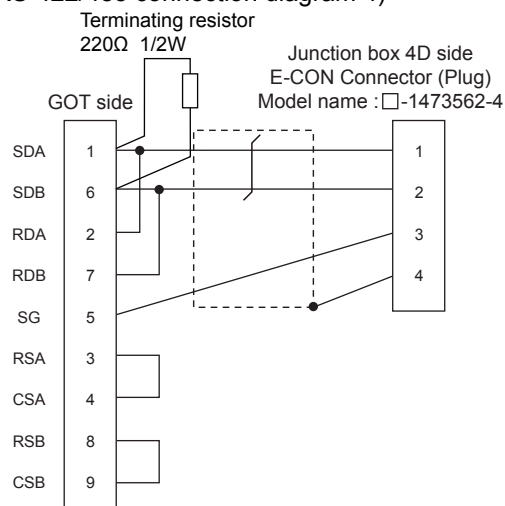
(2) RS-422/485 connection diagram 2)



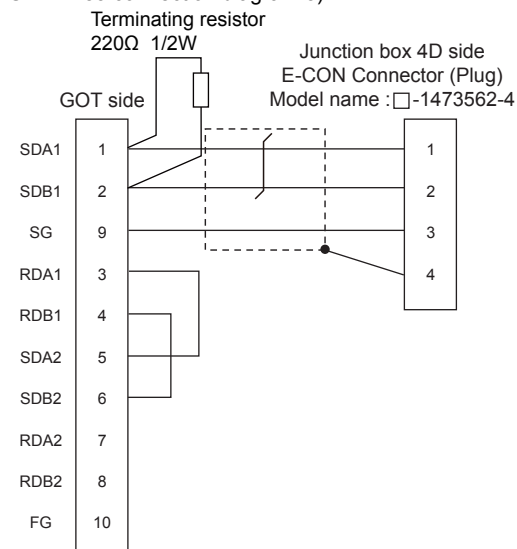
(3) RS-422/485 connection diagram 3)



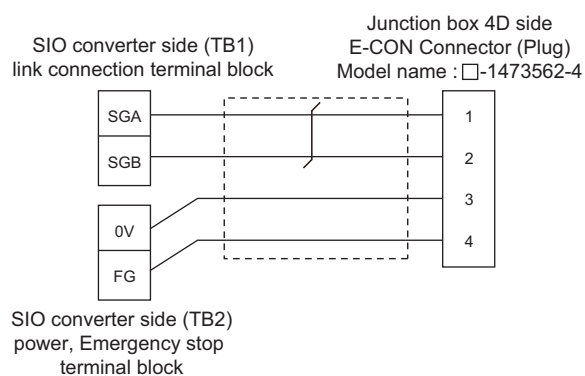
(4) RS-422/485 connection diagram 4)



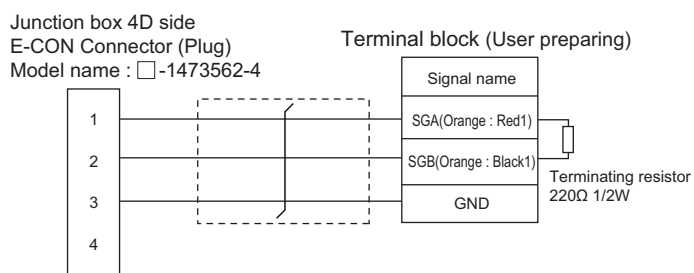
(5) RS-422/485 connection diagram 5)



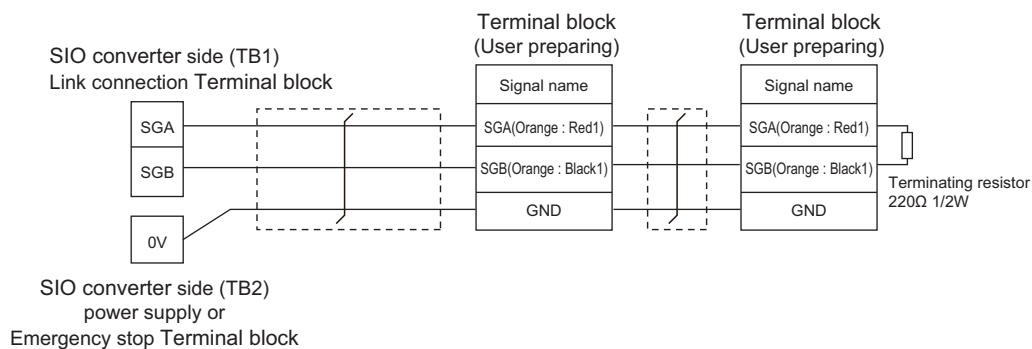
(6) RS-422/485 connection diagram 6)



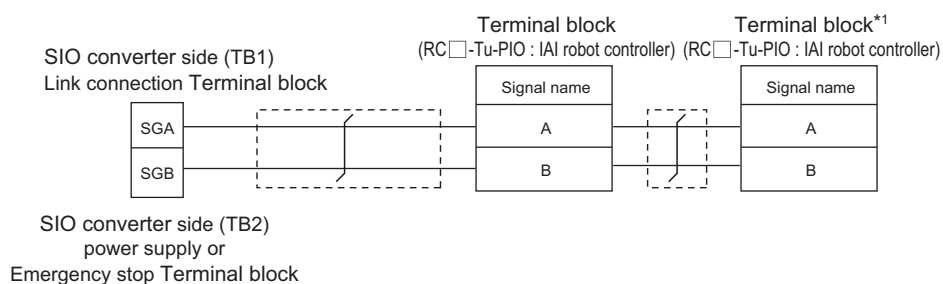
### (7) RS-422/485 connection diagram 7)



### (8) RS-422/485 connection diagram 8)

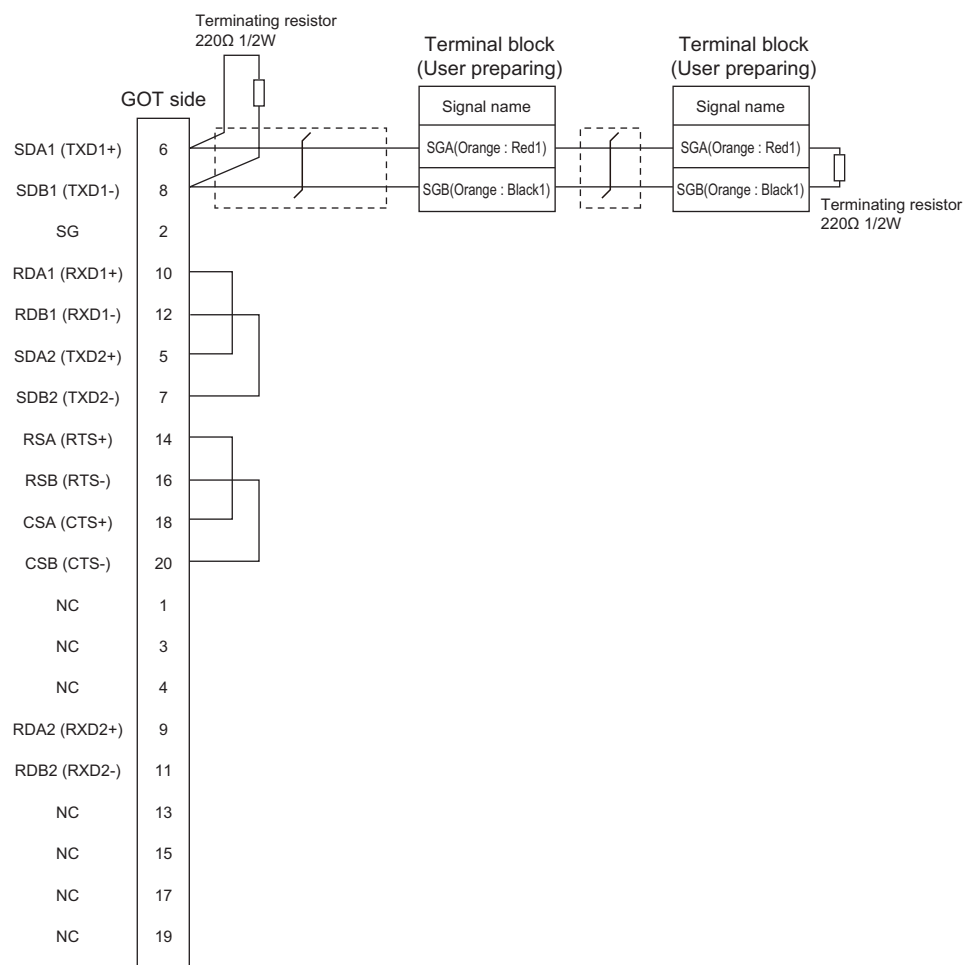


### (9) RS-422/485 connection diagram 9)

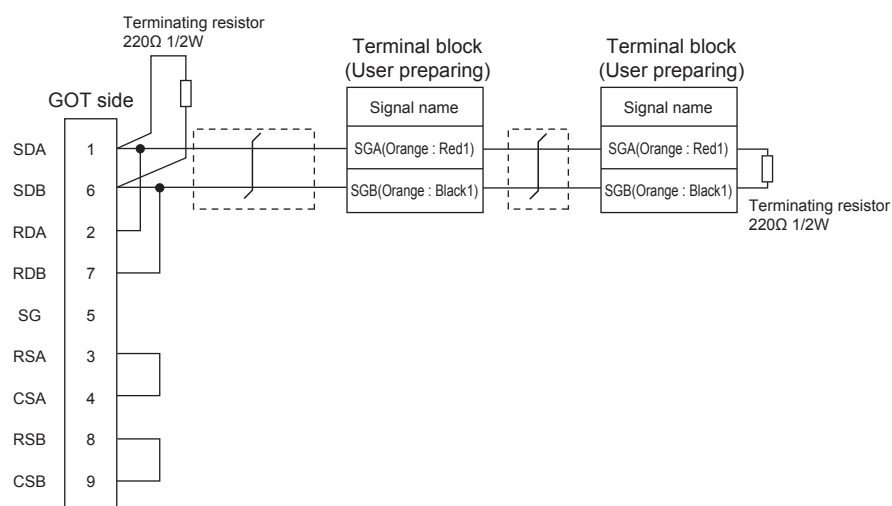


\*<sup>1</sup> Turn the terminator switch of a terminal block which will be a terminal to "RTON".

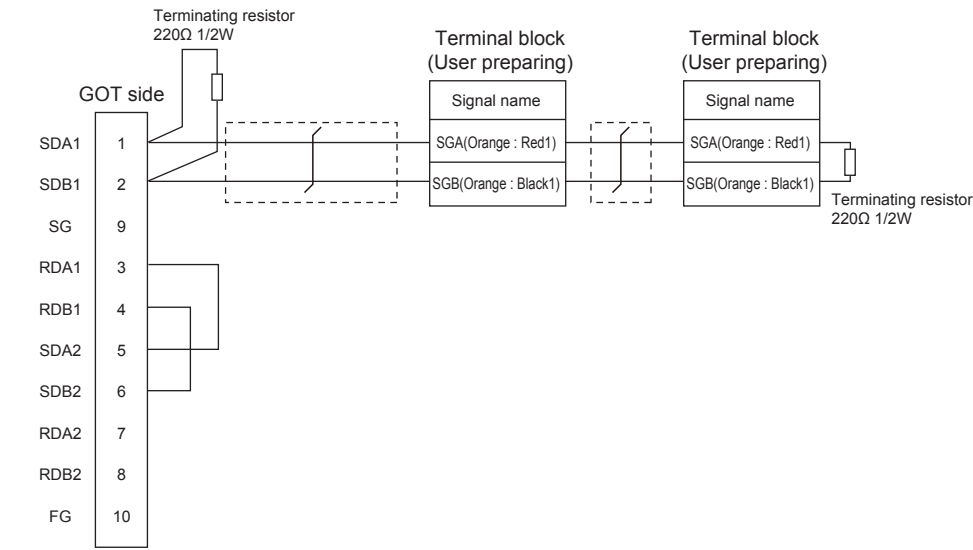
(10)RS-422/485 connection diagram 10)



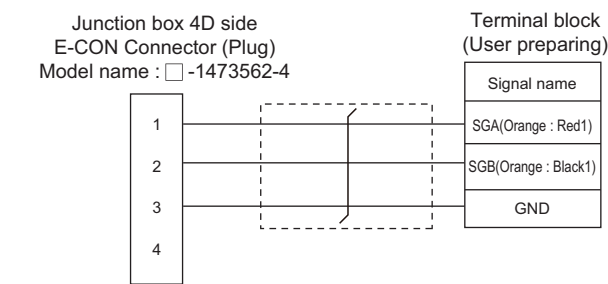
(11)RS-422/485 connection diagram 11)



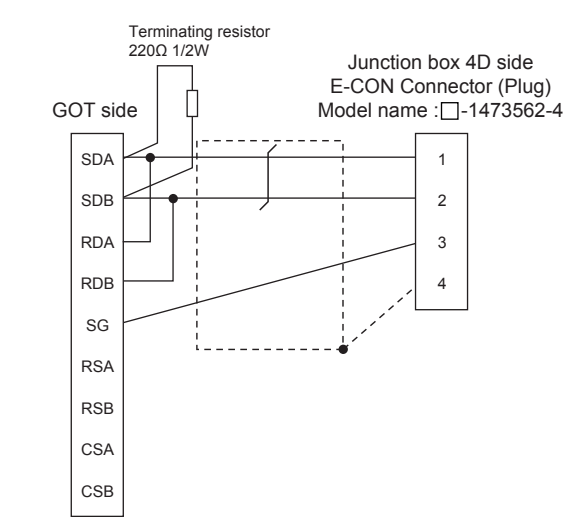
(12)RS-422/485 connection diagram 12)



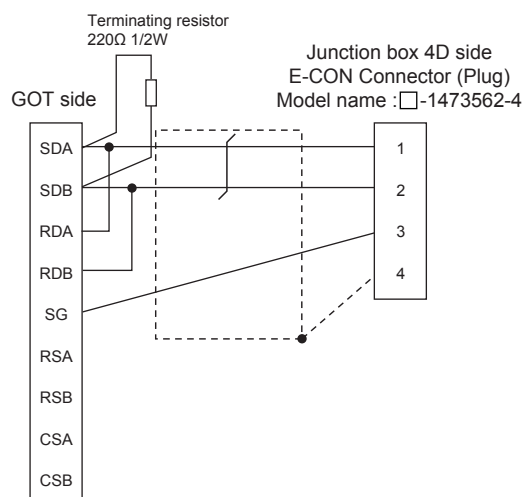
(13)RS-422/485 connection diagram 13)



(14)RS-422/485 connection diagram 14)



## (15) RS-422/485 connection diagram 15)



## ■ Precautions when preparing a cable

### (1) Cable length

The maximum length of the RS-422/485 cable must be 100m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

☞ 1.4.1 GOT connector specifications

### (3) E-CON connector (plug) (Type name: □-1473562-4)

Product manufactured by Tyco Electronics. For details of the product, contact Tyco Electronics.

## ■ Connecting terminating resistors

### (1) GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

#### (a) For GT27, GT25, GT23

Set the terminating resistor setting switch of the GOT main unit to "Disable".

#### (b) For GT21

Set the terminating resistor selector to "330".

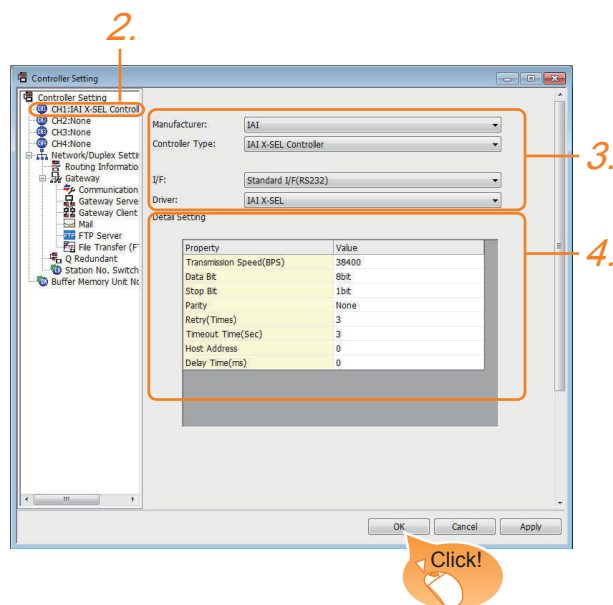
For the procedure to set the terminating resistor, refer to the following.

☞ 1.4.3 Terminating resistors of GOT

## 2.4 GOT Side Settings

### 2.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: IAI
  - Controller Type: Set either of followings.
    - <Connecting to X-SEL, SSEL, ASEL, PSEL>
    - IAI X-SEL Controller
    - <Connecting to PCON, ACON, SCON, ERC2>
    - IAI ROBO CYLINDER
  - I/F: Interface to be used
  - Driver: Set either of followings.
    - <Connecting to X-SEL, SSEL, ASEL, PSEL>
    - IAI X-SEL
    - <Connecting to PCON, ACON, SCON, ERC2>
    - IAI ROBO CYLINDER
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

☞ 2.4.2 Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

☞ 1.1.2 I/F communication setting

### 2.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 38400 |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | None  |
| Retry(Times)            | 3     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                               | Range                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 38400bps) | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps                                    |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 8bits)           | 7bit, 8bit                                                                          |
| Stop Bit           | Specify the stop bit length for communications. (Default: 1bits)                                                          | 1bit, 2bit                                                                          |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: None)           | None<br>Even<br>Odd                                                                 |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 3time)                             | 0 to 5times                                                                         |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                      | 1 to 30sec                                                                          |
| Host Address       | Make the settings according to the station number (station code) of the controller to be monitored. (Default: 0)          | <Connecting to X-SEL, SSEL><br>0 to 255<br><Connecting to PCON, ACON, SCON> 0 to 15 |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                 | 0 to 300 (ms)                                                                       |



**POINT**

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
 GOT2000 Series User's Manual (Utility)
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 2.5 Robot Controller Side Setting

### POINT

IAI Robot Controller

For details of IAI Robot Controller, refer to the following manuals.

 IAI Robot Controller user's Manual

### 2.5.1 Connecting to X-SEL

#### ■ Parameter setting

Enter the following parameters using peripheral software. When setting parameters, set the mode switch of the controller to "MANU".

| Parameter                      | Parameter Name                                                                     | Set Value <sup>*4</sup>                                                                                                                                                             |
|--------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I/O parameter 90               | Usage of SIO channel 1 <sup>*1</sup> opened to user                                | <ul style="list-style-type: none"> <li>When used in "MANU"<br/>Set either of the following.<br/>0: SEL opened program</li> <li>When used in "AUTO"<br/>2: IAI protocol B</li> </ul> |
| I/O parameter 91               | Station code of SIO channel 1 <sup>*1</sup> opened to user                         | 0 to 255<br>153*                                                                                                                                                                    |
| I/O parameter 92 <sup>*2</sup> | Baud rate type of SIO channel 1 <sup>*1</sup> opened to user                       | 0: 9600bps*<br>1: 19200bps<br>2: 38400bps<br>3: 57600bps<br>5: 115200bps                                                                                                            |
| I/O parameter 93               | Data length of SIO channel 1 <sup>*1</sup> opened to user                          | 7bit, 8bit*                                                                                                                                                                         |
| I/O parameter 94               | Stop bit length of SIO channel 1 <sup>*1</sup> opened to user                      | 1bit*, 2bit                                                                                                                                                                         |
| I/O parameter 95               | Parity type of SIO channel 1 <sup>*1</sup> opened to user                          | 0: None*<br>1: Odd<br>2: Even                                                                                                                                                       |
| I/O parameter 97 <sup>*3</sup> | IAI-protocol minimum response delay for SIO channel 1 <sup>*1</sup> opened to user | 0 to 999(ms)                                                                                                                                                                        |
| Other parameter 46             | Other setting bit pattern 1                                                        | bit0 to 3 = 1 (fixed)                                                                                                                                                               |

<sup>\*1</sup> For X-SEL(P/Q/PX/QX), the parameter becomes the SIO channel 0 opened to user.

<sup>\*2</sup> Indicates only the transmission that can be specified on the GOT side.  
Specify the transmission speed to match the baud rate of the GOT.

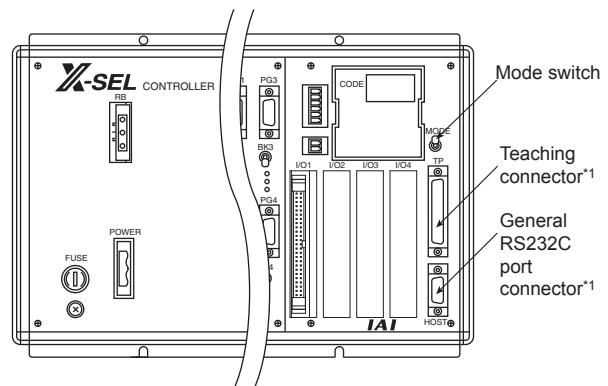
<sup>\*3</sup> Set it only when a wait time is required before the response and transmission to the GOT request. Normally, the communication is available using default values.

<sup>\*4</sup> When using the "MANU" mode, the set value is fixed to the value with \*. Adjust the settings of the GOT side to the \* settings.  
However, the communication setting of the PC software becomes the setting of X-SEL after the PC software for X-SEL is connected. In this case, adjust the communication setting of the GOT to the setting of the PC software.

#### ■ Mode switch

##### (1) X-SEL K type

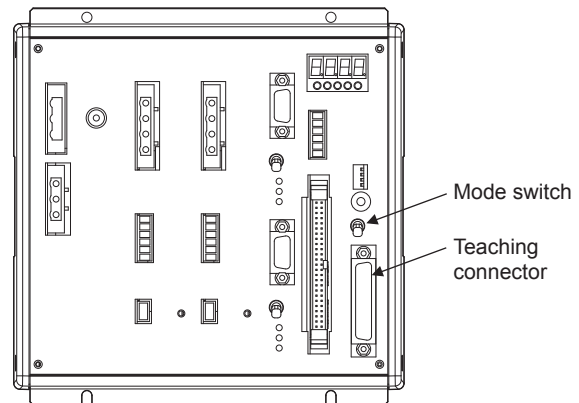
- When setting the mode switch to "MANU"  
Connect the GOT to the following teaching connector.
- When setting the mode switch to "AUTO"  
Connect the GOT to the following general RS232C port connector.



<sup>\*1</sup> The teaching connector and general RS232C port connector cannot be used at the same time.

##### (2) Other than X-SEL K type

Set the mode switch to "MANU" or "AUTO" and connect the GOT to the following teaching connector.



## 2.5.2 Connecting to SSEL, ASEL, PSEL

### ■ Parameter setting

Enter the following parameters using peripheral software. When setting parameters, set the mode switch of the controller to "MANU".

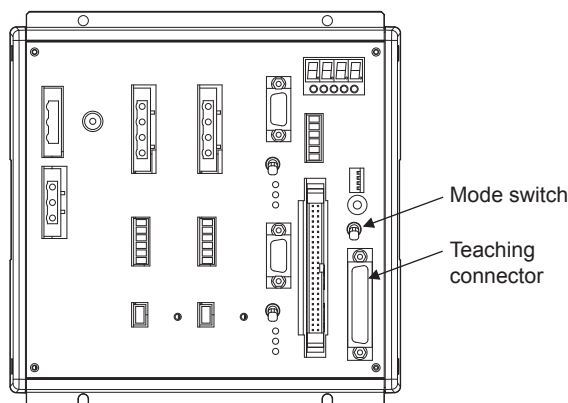
| Parameter              | Parameter Name                                                       | Set Value                                                               |
|------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| I/O parameter 90       | Usage of SIO channel 0 opened to user                                | 2: IAI protocol B (fixed)                                               |
| I/O parameter 91       | Station code of SIO channel 0 opened to user                         | 0 to 255                                                                |
| I/O parameter 92<br>*1 | Baud rate type of SIO channel 0 opened to user                       | 0: 9600bps<br>1: 19200bps<br>2: 38400bps<br>3: 57600bps<br>5: 115200bps |
| I/O parameter 93       | Data length of SIO channel 0 opened to user                          | 7bit, 8bit                                                              |
| I/O parameter 94       | Stop bit length of SIO channel 0 opened to user                      | 1bit, 2bit                                                              |
| I/O parameter 95       | Parity type of SIO channel 0 opened to user                          | 0: None<br>1: Odd<br>2: Even                                            |
| I/O parameter 97<br>*2 | IAI-protocol minimum response delay for SIO channel 0 opened to user | 0 to 999(ms)                                                            |
| Other parameter 46     | Other setting bit pattern 1                                          | bit0 to 3 = 1 (fixed)                                                   |

\*1 Indicates only the transmission that can be specified on the GOT side. Specify the transmission speed to match the baud rate of the GOT.

\*2 Set it only when a wait time is required before the response and transmission to the GOT request. Normally, the communication is available using default values.

### ■ Mode switch

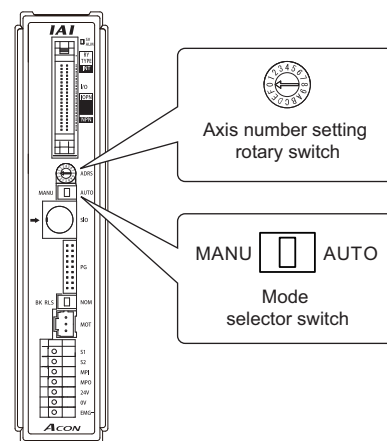
Set the mode switch to "AUTO" and connect the GOT to the following teaching connector.



## 2.5.3 Connecting to PCON, ACON, SCON

### ■ Axis number setting, Mode select

For controllers without the following switches, set from the setting tool (PC software).



| Switch                            | Setting details                                              |
|-----------------------------------|--------------------------------------------------------------|
| Axis number setting rotary switch | 0 to 15                                                      |
| Mode selector switch              | <Only the monitor><br>AUTO<br><monitor, data change><br>MANU |

### ■ Transmission speed setting

Set the transmission speed from the setting tool (PC software).

| Item                     | Range                                                 |
|--------------------------|-------------------------------------------------------|
| SIO transmission speed*1 | 9600/19200/38400/57600/115200bps<br>Default: 38400bps |

\*1 Indicates only the transmission speeds that can be set on the GOT side. Set the same transmission speed of the GOT.

## 2.5.4 Connecting to ERC2

### ■ Axis number setting, Mode select

Set from the setting tool (PC software).

### ■ Transmission speed setting

Set the transmission speed from the setting tool (PC software).

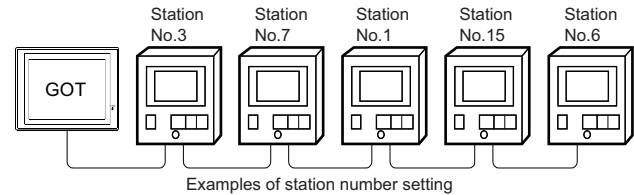
| Item                     | Range                                                 |
|--------------------------|-------------------------------------------------------|
| SIO transmission speed*1 | 9600/19200/38400/57600/115200bps<br>Default: 38400bps |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.

## 2.5.5 Station No.settings

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



### (1) Direct specification

When setting the device, specify the station number of the controller of which data is to be changed.

| Model name       | Specification range | Refer to |
|------------------|---------------------|----------|
| PCON, ACON, SCON | 0 to 15             | 2.5.3    |
| ERC2             | 0 to 15             | 2.5.4    |

### (2) Indirect specification

When setting the device, indirectly specify the station number of the controller of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from 100 to 115 on GT Designer3, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the controller.

| Specification station No. | Compatible device | Setting range                                                                   |
|---------------------------|-------------------|---------------------------------------------------------------------------------|
| 100                       | GD10              | 0 to 15<br>(If setting a value out of the range above, a timeout error occurs.) |
| 101                       | GD11              |                                                                                 |
| 102                       | GD12              |                                                                                 |
| 103                       | GD13              |                                                                                 |
| 104                       | GD14              |                                                                                 |
| 105                       | GD15              |                                                                                 |
| 106                       | GD16              |                                                                                 |
| 107                       | GD17              |                                                                                 |
| 108                       | GD18              |                                                                                 |
| 109                       | GD19              |                                                                                 |
| 110                       | GD20              |                                                                                 |
| 111                       | GD21              |                                                                                 |
| 112                       | GD22              |                                                                                 |
| 113                       | GD23              |                                                                                 |
| 114                       | GD24              |                                                                                 |
| 115                       | GD25              |                                                                                 |

## 2.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

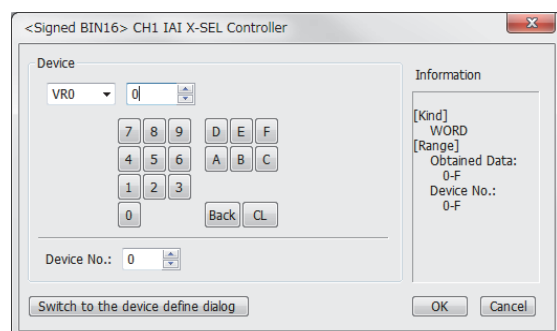
The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### 2.6.1 IAI robot controller (IAI X-SELController)

#### ■ Setting item



| Item                               | Description                                                                                                                   |                                                                            |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Device                             | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |                                                                            |
|                                    | Device No.                                                                                                                    | Set the number of the program for which the device is used.                |
|                                    | Information                                                                                                                   | Displays the device type and setting range which are selected in [Device]. |
| Switch to the device define dialog | Device definition can be checked.                                                                                             |                                                                            |

#### POINT

Memory area for writing position data

Position data can be written to RAM or E<sup>2</sup>PROM of the controller.

- (1) When written to RAM  
Remember that written position data are cleared when power supply to the controller is turned off.
- (2) When written to E<sup>2</sup>PROM  
Written position data are not cleared even when power supply to the controller is turned off. However, there are limits in the number of writing to E<sup>2</sup>PROM. If the data is frequently updated (more than once in an hour), write the parameters to the RAM. For details, refer to the manual of the controller used.

## ■ Device

|             | Device name                                                                 | Setting Range                                                                         | Device No. representation |
|-------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------|
| Bit device  | Input Port (IP) <sup>*1</sup>                                               | IP000 to IP299                                                                        | Decimal                   |
|             | Output Port (OP)                                                            | OP300 to OP599                                                                        |                           |
|             | Flag (FG)                                                                   | FG000:600 to FG000:899<br>FG001:900 to FG001:999<br>:<br>FG128:900 to FG128:999       |                           |
|             | Point Data Clear (PCLR) <sup>*2,6</sup>                                     | PCLR0001 to PCLR4E20                                                                  |                           |
|             | Point Data Total Count (PDT) <sup>*1</sup>                                  | PDT0                                                                                  |                           |
| Word device | String (STR) <sup>*3</sup>                                                  | STR000:300 to STR000:998<br>STR001:001 to STR001:299<br>:<br>STR128:001 to STR128:299 | Decimal                   |
|             | Axis Status (AXST) <sup>*1</sup>                                            | AXST00 to AXST2F                                                                      | Hexadecimal               |
|             | Scara Axis Status 0 (Base coordinate system) (SAXS0) <sup>*1</sup>          | SAXS000 to SAXS0FF                                                                    |                           |
|             | Scara Axis Status 1 (Selected work coordinate system) (SAXS1) <sup>*1</sup> | SAXS100 to SAXS1FF                                                                    |                           |
|             | Scara Axis Status 2 (Reserved for system use) (SAXS2) <sup>*1</sup>         | SAXS200 to SAXS2FF                                                                    |                           |
|             | Scara Axis Status 3 (Each axis system) (SAXS3) <sup>*1</sup>                | SAXS300 to SAXS3FF                                                                    |                           |
|             | Version 0 (Main CPU application/) (VR0) <sup>*1</sup>                       | VR00:0 to VR00:F<br>:<br>VR0F:0 to VR0F:F                                             | Hexadecimal               |
|             | Version 1 (Main CPU core) (VR1) <sup>*1</sup>                               | VR10:0 to VR10:F<br>:<br>VR1F:0 to VR1F:F                                             |                           |
|             | Version 2 (Driver CPU) (VR2) <sup>*1</sup>                                  | VR20:0 to VR20:F<br>:<br>VR2F:0 to VR2F:F                                             |                           |
|             | Version 3 (Mount SIO) (VR3) <sup>*1</sup>                                   | VR30:0 to VR30:F<br>:<br>VR3F:0 to VR3F:F                                             |                           |
|             | Program Status (PGST) <sup>*1</sup>                                         | PGST000 to PGST511                                                                    | Decimal                   |
|             | System Status (SYST) <sup>*1</sup>                                          | SYST0 to SYST6                                                                        |                           |
|             | Program Control (PRG) <sup>*2,4</sup>                                       | PRG000 to PRG128                                                                      |                           |
|             | Alarm Reset (AR) <sup>*2</sup>                                              | AR0                                                                                   |                           |

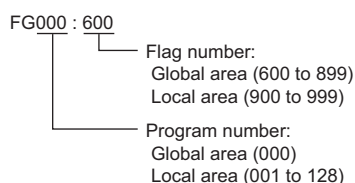
|                    | Device name                                                     | Setting Range                                                                               | Device No. representation |
|--------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------|
|                    | Software Reset (SR) <sup>*2,5</sup>                             | SR0                                                                                         | Decimal                   |
|                    | Drive-Source Recovery (DSR) <sup>*2</sup>                       | DSR0                                                                                        |                           |
|                    | Operation-Pause Reset (OPR) <sup>*2</sup>                       | OPR0                                                                                        |                           |
|                    | Servo (SV) <sup>*7</sup>                                        | SV0 to SV2                                                                                  |                           |
|                    | Write to Flash ROM (FRW) <sup>*7</sup>                          | FRW0 to FRW1                                                                                |                           |
| Double word device | Coordinate Affiliate Data 0 (CD0) <sup>*1</sup>                 | CD000:0 to CD000:F<br>:<br>CD0FF:0 to CD0FF:F                                               | Hexadecimal               |
|                    | Coordinate Affiliate Data 1 (CD1) <sup>*1</sup>                 | CD100:0 to CD100:F<br>:<br>CD1FF:0 to CD1FF:F                                               | Decimal                   |
|                    | Integer (INT)                                                   | INT000:0200 to INT000:1299<br>INT001:0001 to INT001:1099<br>:<br>INT128:0001 to INT128:1099 |                           |
|                    | Real (RL)                                                       | RL000:0300 to INT000:1399<br>RL001:0100 to INT001:1199<br>:<br>INT128:0100 to INT128:1199   |                           |
|                    | Error Detail 0 (System error) (ER0) <sup>*1</sup>               | ER000:000:00 to ER0FF:000:FF<br>:<br>ER000:FFF:00 to ER0FF:FFF:FF                           | Hexadecimal               |
|                    | Error Detail 1 (Axis-specific error) (ER1) <sup>*1</sup>        | ER100:000:00 to ER1FF:000:FF<br>:<br>ER100:FFF:00 to ER1FF:FFF:FF                           | Hexadecimal               |
|                    | Error Detail 2 (Program-specific error) (ER2) <sup>*1</sup>     | ER200:000:00 to ER2FF:000:FF<br>:<br>ER200:FFF:00 to ER2FF:FFF:FF                           |                           |
|                    | Error Detail 3 (Error in error list record) (ER3) <sup>*1</sup> | ER300:000:00 to ER3FF:000:FF<br>:<br>ER300:FFF:00 to ER3FF:FFF:FF                           |                           |
|                    | Error Detail 4 (Reserved for system use) (ER4) <sup>*1</sup>    | ER400:000:00 to ER4FF:000:FF<br>:<br>ER400:FFF:00 to ER4FF:FFF:FF                           | Hexadecimal               |
|                    | Error Detail 5 (Reserved for system use) (ER5) <sup>*1</sup>    | ER500:000:00 to ER5FF:000:FF<br>:<br>ER500:FFF:00 to ER5FF:FFF:FF                           |                           |
|                    | Error Detail 6 (Reserved for system use) (ER6) <sup>*1</sup>    | ER600:000:00 to ER6FF:000:FF<br>:<br>ER600:FFF:00 to ER6FF:FFF:FF                           |                           |
|                    | Error Detail 7 (Reserved for system use) (ER7) <sup>*1</sup>    | ER700:000:00 to ER7FF:000:FF<br>:<br>ER800:FFF:00 to ER8FF:FFF:FF                           |                           |
|                    | Point Data Total Count (PD) <sup>*7</sup>                       | PD00 to PD9E                                                                                |                           |
|                    | Simple Interference Check Zone Data (SD) <sup>*1</sup>          | SD01:0 to SD01:F<br>:<br>SDFF:0 to SDFF:F                                                   |                           |

- \*1 Write disabled
- \*2 Read disabled
- \*3 The following restrictions are applied depending on the program number.
  - When the program number is 000, the variable number can be only even numbers.
  - When the program number is 001 to 128, the variable number can be only odd numbers.
- \*4 For the program control device, the command to be sent differs depending on the write data. Write data other than the followings are processed as an internal error of GOT.
  - Write data 0: Program Exit Command(0x254)
  - Write data 1: Program Execution Command(0x253)
  - Write data 2: Program Pause Command(0x255)
  - Write data 3: Program 1 Step Execution Command(0x256)
  - Write data 4: Program Restart Command(0x257)
- \*5 When performing software reset, a no response error is displayed after a non-communicating period of ten and several seconds, and then the communication is resumed.
- \*6 For the word address, the value is specified only when the last digit is 1.
- \*7 For the device whose obtained data No.0 is a command trigger, a request is sent to the controller when the Write or Read is input to the command trigger. It is not sent when the Clear is input.

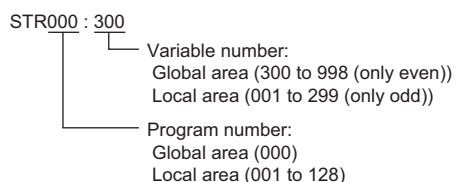
## POINT

### Device representation

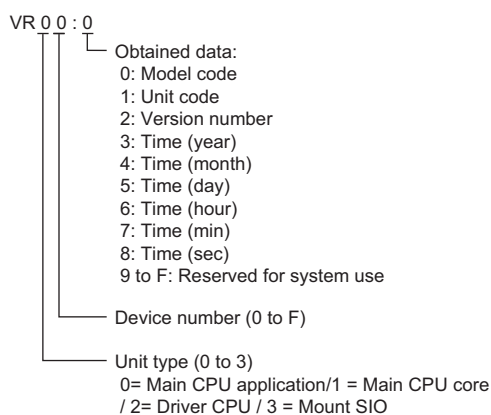
#### (1) Flag device



#### (2) String device



#### (3) Version device



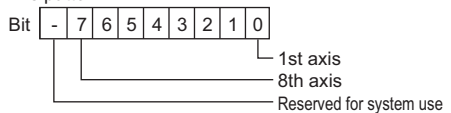
#### (4) Axis Status device

AXST00

Obtained data:  
 AXST00 to AXST05: Single-axis status  
 00: Axis status  
 Bit 7 (Reserved for system use)  
 Bit 6 (Reserved for system use)  
 Bit 5 (Push error detection): 0 = Not detected / 1 = Detected  
 Bit 4 (Operation command successful completion):  
     0 = Not yet complete / 1 = Completed successfully  
 \* Can be used only for completion check after an operation command.  
 Bit 3 (Servo): 0 = OFF / 1 = ON  
 Bit 1-2 (Origin return): 0 = Not yet performed / 1 = Returning to origin / 2 = Completed  
 Bit 0 (Servo axis in use): 0 = Not in use / 1 = In use (moving, etc.)  
 \* "Servo axis in use" indicates that a given task has the right to use the applicable axis.  
 Therefore, this bit will turn ON in the following conditions:  
 - When an operation command involving axis movement is in progress (including when an axis is moving)  
 - Servo is starting up from an OFF state  
 - Servo is shutting down from an ON state (excluding emergency stop)  
 - Operation axis is paused  
 01: Axis sensor input status  
 Bit 3 (Reserved for system use)  
 Bit 2 (Origin sensor): 0 = OFF / 1 = ON  
 Bit 1 (Overrun sensor): 0 = OFF / 1 = ON  
 Bit 0 (Creep sensor): 0 = OFF / 1 = ON  
 02: Axis error code  
 03: Encoder status  
 Bit 7 (Battery alarm (BA))  
 Bit 6 (Battery error (BE))  
 Bit 5 (Multi-rotation error (ME))  
 Bit 4 (Reserved for system use)  
 Bit 3 (Counter overflow (OF))  
 Bit 2 (Count error (CE))  
 Bit 1 (Full absolute status (FS))  
 Bit 0 (Overspeed (OS))  
 04: Current position (L) unit (0.001mm)  
     Indicates the lower 16 bits of the current position in Hex.  
 05: Current position (H) unit (0.001mm)  
     Indicates the upper 16 bits of the current position in Hex.  
 AXST06 to AXST11: Double axes status  
 AXST42 to AXST47: Eight axes status

#### (5) Scara Axis Status device

SAXS 0 00

Obtained data:  
 00: Work coordinate system selection number  
 01: Tool coordinate system selection number  
 02: Common axis status  
 Bit 7 (Reserved for system use)  
 Bit 6 (Reserved for system use)  
 Bit 5 (Reserved for system use)  
 Bit 4 (Reserved for system use)  
 Bit 2-3 (Scara axis current position coordinate system type):  
     0 = Base coordinate system  
     / 1 = Selected work coordinate system  
     / 2 = Reserved for system use / 3 = Each axis system  
 Bit 0-1: (Scara axis current arm system):  
     0 = Right arm system / 1 = Left arm system  
     / 2 = Indeterminable / 3 = Reserved for system use  
 03: Axis pattern  


04 to 09: Single-axis status  
 04: Axis status  
 Bit 7 (Reserved for system use)  
 Bit 6 (Reserved for system use)  
 Bit 5 (Push error detection): 0 = Not detected / 1 = Detected  
 Bit 4 (Operation command successful completion):  
     0 = Not yet complete / 1 = Completed successfully  
 \* Can be used only for completion check after an operation command. (For positioning that includes any of the X, Y and R axes, be sure to check completion for all of the X, Y and R axes.)  
 Bit 3 (Servo): 0 = OFF / 1 = ON  
 Bit 1-2 (Origin return): 0 = Not yet performed / 1 = Returning to origin / 2 = Completed  
 Bit 0 (Servo axis in use): 0 = Not in use / 1 = In use (moving, etc.)  
 \* "Servo axis in use" indicates that a given task has the right to use the applicable axis. Therefore, this bit will turn ON in the following conditions:  
 - When an operation command involving axis movement is in progress (including when an axis is moving)  
 - Servo is starting up from an OFF state  
 - Servo is shutting down from an ON state (excluding emergency stop)  
 - Operation axis is paused  
 05: Axis sensor input status  
 Bit 3 (Reserved for system use)  
 Bit 2 (Origin sensor): 0 = OFF / 1 = ON  
 Bit 1 (Overrun sensor): 0 = OFF / 1 = ON  
 Bit 0 (Creep sensor): 0 = OFF / 1 = ON  
 06: Axis error code  
 07: Encoder status  
 Bit 7 (Battery alarm (BA))  
 Bit 6 (Battery error (BE))  
 Bit 5 (Multi-rotation error (ME))  
 Bit 4 (Reserved for system use)  
 Bit 3 (Counter overflow (OF))  
 Bit 2 (Count error (CE))  
 Bit 1 (Full absolute status (FS))  
 Bit 0 (Overspeed (OS))  
 08: Current position (L) unit (0.001mm or 0.001deg)  
     Indicates the lower 16 bits of the current position in Hex.  
 09: Current position (H) unit (0.001mm or 0.001deg)  
     Indicates the upper 16 bits of the current position in Hex.  
 0A to 0E: Double axes status  
 . . .  
 2E to 33: Eight axes status  
 34 to FF: Reserved for system use  
 Unit type (0 to F)  
 Bit 3 (Reserved for system use) Fixed to 0  
 Bit 2 (Reserved for system use) Fixed to 0  
 Bit 0-1 (Scara axis current position type):  
     0 = Base coordinate system  
     / 1 = Selected work coordinate system  
     / 2 = Reserved for system use / 3 = Each axis system



## (6) Program Status device

PGST 000

Obtained data:

- 000 to 003: Program number 1 status
- 000: Status
  - Bit 3 (Reserved for system use)
  - Bit 2 (Reserved for system use)
  - Bit 1 (Reserved for system use)
  - Bit 0 (Start): 0 = Not started / 1 = Started
- 001: Execution program step number
- 002: Program-dependent error code
- 003: Error occurrence step number
- 004 to 007: Program number 2 status
- ...
- 508 to 511: Program number 128 status

## (7) System Status device

SYST 0

Obtained data:

- 0: System mode
  - 0 = Indeterminable / 1 = AUTO mode / 2 = MANUAL mode / 3 = Slave update mode / 4 = Core update mode
- 1: Critical level system error number
- 2: Latest system error number
- 3: System status byte 1
  - Bit 7 (Reserved for system use)
  - Bit 6 (Battery voltage error status): 0 = No error / 1 = Error
  - Bit 5 (Battery voltage low warning status): 0 = No low / 1 = Low
  - Bit 4 (Power error status): 0 = Normal / 1 = Error
  - Bit 3 (Emergency stop switch status):
    - 0 = No emergency stop / 1 = Emergency stop
  - Bit 2 (Safety gate status): 0 = CLOSE / 1 = OPEN
- \* X-SEL (P/Q Series) (Multi axes/Scara)/SSEL/ASEL/PSEL: Enable switch (Deadman switch / Enable switch) status is indicated.
- Bit 1 (TP enable switch status): 0 = ON / 1 = OFF
- \* X-SEL (P/Q Series) (Multi axes/Scara)/SSEL/ASEL/PSEL: This bit is disabled (fixed to 0).
- Bit 0 (Operation mode switch status): 0 = AUTO / 1 = MANUAL
- 4: System status byte 2
  - Bit 7 (Reserved for system use)
  - Bit 6 (Reserved for system use)
  - Bit 5 (Program run status): 0 = Not run / 1 = Running
  - Bit 4 (Restart wait status): 0 = Not waiting / 1 = Waiting
  - Bit 3 (I/O interlock status): 0 = No interlock / 1 = Interlock
  - Bit 2 (Servo interlock status): 0 = No interlock / 1 = Interlock
  - Bit 1 (Slave parameter writing status):
    - 0 = Not writing / 1 = Writing
- Bit 0 (Application data flash ROM write status):
  - 0 = Not writing/erasing / 1 = Writing/erasing
- \* When the core program is in operation (Application update mode), only Bit 0 is enabled. Data for System mode, Critical level system error number, Latest system error number, System status byte 1, System status byte 3 and System status byte 4 is disabled.
- 5: System status byte 3
  - Bit 7 (Reserved for system use)
  - Bit 6 (Reserved for system use)
  - Bit 5 (Reserved for system use)
  - Bit 4 (Operation mode):
    - 0 = Program mode / 1 = Position mode
  - Bit 3 (Reserved for system use)
  - Bit 2 (System ready status): 0 = Not ready / 1 = Ready
  - Bit 1 (System operation status):
    - 0 = Not operating in AUTO mode / 1 = Operating in AUTO mode
  - Bit 0 (Drive-source cutoff status): 0 = Not cut off / 1 = Cut off
- 6: System status byte 4
  - Reserved for system use

## (8) Coordinate Affiliate Data device

CD 0 00 : 0

Obtained data:

- 0: X axis coordinate offset
- 1: Y axis coordinate offset
- 2: Z axis coordinate offset
- 3: R axis coordinate offset
- 4 to F: Reserved for system use

Coordinate system definition data number (00 to FF)  
Work/tool coordinate system definition data number (0 to)

Type 1 (0 to 1)  
0 = Work coordinate system definition data  
1 = Tool coordinate system definition data

## (9) Servo device

SV 0

Obtained data:

- 0: Command trigger
- 1 = Write / 4 = Clear
- 1: Axis pattern

|     |   |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|---|
| Bit | - | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-----|---|---|---|---|---|---|---|---|---|

1st axis  
8th axis  
Reserved for system use

2: Operation type

- Bit 3 (Reserved for system use) Fixed to 0
- Bit 2 (Reserved for system use) Fixed to 0
- Bit 1 (Reserved for system use) Fixed to 0
- Bit 0 (Servo ON/OFF): 0 = OFF / 1 = ON

## (10) Write to Flash ROM device

FRW 0

Obtained data

- 0: Command trigger
- 1 = Write/
- 1: Reserved for system use

## (11) Integer device

INT000 : 0200

Variable number:

- Global area (0200 to 0299, 1200 to 1299)
- Local area (0001 to 0099, 1001 to 1099)

Program number:

- Global area (000)
- Local area (001 to 128)

## (12) Real device

RL000 : 0300

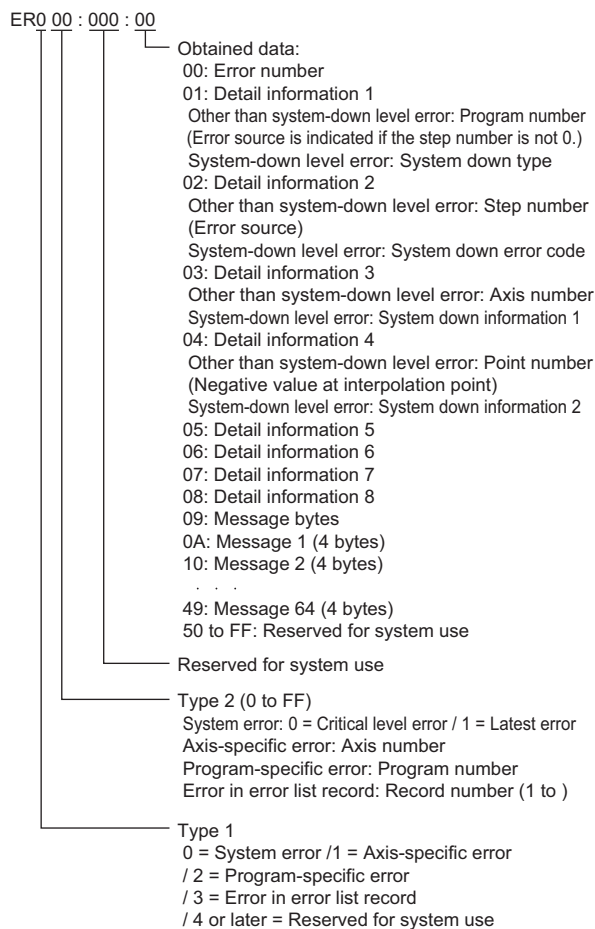
Variable number:

- Global area (0300 to 0399, 1300 to 1399)
- Local area (0100 to 0199, 1100 to 1199)

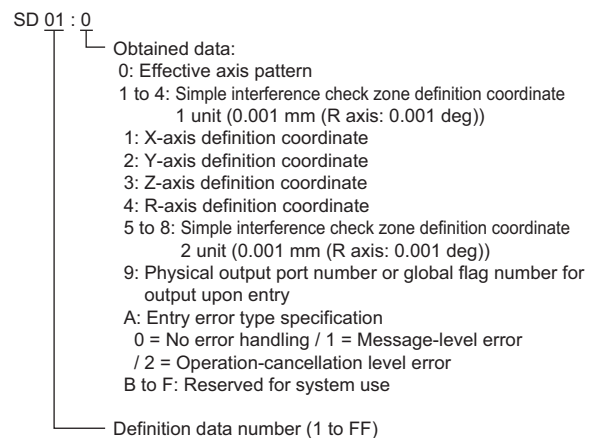
Program number:

- Global area (000)
- Local area (001 to 128)

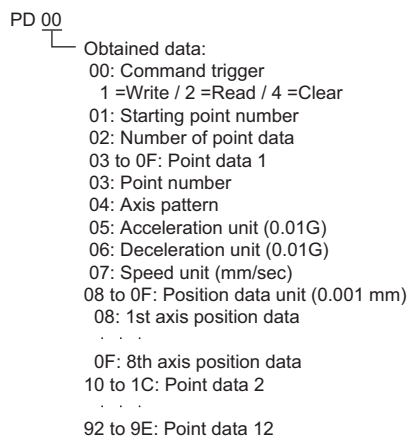
### (13) Error Detail device (Detail 0 to Detail 7)



### (15) Simple Interference Check Zone Data device



### (14) Point Data Total Count device



## 2.6.2 IAI robot controller (IAI PCON, ACON, SCON, ERC2 controller)

### ■ Setting item

| Item        | Description                                                                                                                   |                                                                                                                                                                                                                                                                |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |                                                                                                                                                                                                                                                                |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |                                                                                                                                                                                                                                                                |
| Network     | Station No.                                                                                                                   | Monitors the robo cylinder of the specified station No.<br>0 to 15: To monitor the robo cylinder of the specified station No.<br>100 to 115: To set the station No. of the robo cylinder to be monitored by the value of GOT data register (GD). <sup>*1</sup> |
|             | Switch to the device define dialog                                                                                            | Device definition can be checked.                                                                                                                                                                                                                              |

<sup>\*1</sup> The following shows the relation between station numbers of the robo cylinder and the GOT data register.

| Station No. | GOT data register (GD) | Setting range                                                                   |
|-------------|------------------------|---------------------------------------------------------------------------------|
| 100         | GD10                   | 0 to 15<br>(If setting a value out of the range above, a timeout error occurs.) |
| 101         | GD11                   |                                                                                 |
| :           | :                      |                                                                                 |
| 114         | GD24                   |                                                                                 |
| 115         | GD25                   |                                                                                 |

### ■ Device

#### (1) Device name

| Device name               |                                          | Setting Range                     | Device No. representation |
|---------------------------|------------------------------------------|-----------------------------------|---------------------------|
| Bit device                | Status (S)                               | S0000 to SFFFF                    | Hexadecimal               |
|                           | The bit specification of the word device | Setting range of each word device |                           |
| Word / Double word device | Register (R)                             | R0000 to RFFFF                    | Hexadecimal               |

(2) Status (S) (Bit device)

The following shows device numbers which can be set for the status and the corresponding device contents.

| Status       | Area name                               | Description                                     | Abbreviation |
|--------------|-----------------------------------------|-------------------------------------------------|--------------|
| 0000 to 00FF | - (Reserved for system)                 |                                                 |              |
| 0100         | Device status register 1 (DSS1)         | EMG status                                      | EMGS         |
| 0101         |                                         | Safety speed enabled status                     | SFTY         |
| 0102         |                                         | Controller ready status                         | PWR          |
| 0103         |                                         | Servo ON status                                 | SV           |
| 0104         |                                         | Missed work in push-motion operation            | PSFL         |
| 0105         |                                         | Major failure status                            | ALMH         |
| 0106         |                                         | Minor failure status                            | ALML         |
| 0107         |                                         | Absolute error status                           | ABER         |
| 0108         |                                         | Brake forced-release status                     | BKRL         |
| 0109         |                                         | Cannot be used                                  |              |
| 010A         |                                         | Pause status                                    | STP          |
| 010B         |                                         | HomingHome return status                        | HEND         |
| 010C         |                                         | Positioning completion Position complete status | PEND         |
| 010D to 010F |                                         | Cannot be used                                  |              |
| 0110         | Device status register 2 (DSS2)         | Cannot be used                                  |              |
| 0111         |                                         | Cannot be used                                  |              |
| 0112         |                                         | Load output judgment status                     | LOAD         |
| 0113         |                                         | Torque level status                             | TRQS         |
| 0114         |                                         | Teaching mode status                            | MODS         |
| 0115         |                                         | Position-data load command status               | TEAC         |
| 0116         |                                         | Jog+ status                                     | JOG+         |
| 0117         |                                         | Jog- status                                     | JOG-         |
| 0118         |                                         | Completed positionPosition complete 7           | PE7          |
| 0119         |                                         | Completed positionPosition complete 6           | PE6          |
| 011A         |                                         | Completed positionPosition complete 5           | PE5          |
| 011B         |                                         | Completed positionPosition complete 4           | PE4          |
| 011C         |                                         | Completed positionPosition complete 3           | PE3          |
| 011D         |                                         | Completed positionPosition complete 2           | PE2          |
| 011E         |                                         | Completed positionPosition complete 1           | PE1          |
| 011F         |                                         | Completed positionPosition complete 0           | PE0          |
| 0120         | Expansion device status register (DSSE) | Emergency stop status                           | EMGP         |
| 0121         |                                         | Motor voltage low status                        | MPUV         |
| 0122         |                                         | Operation mode status                           | RMDS         |
| 0123         |                                         | Cannot be used                                  |              |
| 0124         |                                         | HomingHome return status                        | GHMS         |
| 0125         |                                         | Push-motion operation in progress               | PUSH         |
| 0126         |                                         | Excitation detection status                     | PSNS         |
| 0127         |                                         | PIO/Modbus switching status                     | PMSS         |
| 0128         |                                         | Cannot be used                                  |              |
| 0129         |                                         | Cannot be used                                  |              |
| 012A         |                                         | Moving signal                                   | MOVE         |

(Continued to next page)

| Status       | Area name                                  | Description                                                      | Abbreviation |
|--------------|--------------------------------------------|------------------------------------------------------------------|--------------|
| 012B to 012F | Expansion device status register (DSSE)    | Cannot be used                                                   |              |
| 0130 to 0136 | Position number status register (POSS)     | Cannot be used                                                   |              |
| 0137         |                                            | Completed position numberPosition complete number status bit 256 | PM256        |
| 0138         |                                            | Completed position numberPosition complete number status bit 128 | PM128        |
| 0139         |                                            | Completed position numberPosition complete number status bit 64  | PM64         |
| 013A         |                                            | Completed position numberPosition complete number status bit 32  | PM32         |
| 013B         |                                            | Completed position numberPosition complete number status bit 16  | PM16         |
| 013C         |                                            | Completed position numberPosition complete number status bit 8   | PM8          |
| 013D         |                                            | Completed position numberPosition complete number status bit 4   | PM4          |
| 013E         |                                            | Completed position numberPosition complete number status bit 2   | PM2          |
| 013F         |                                            | Completed position numberPosition complete number status bit 1   | PM1          |
| 0140         | Zone status register (ZONS)                | Cannot be used                                                   |              |
| 0141         |                                            | Limit sensor output monitor 2                                    | LS2          |
| 0142         |                                            | Limit sensor output monitor 1                                    | LS1          |
| 0143         |                                            | Limit sensor output monitor 0                                    | LS0          |
| 0144 to 0146 |                                            | Cannot be used                                                   |              |
| 0147         |                                            | Position zone output monitor                                     | ZP           |
| 0148 to 014D |                                            | Cannot be used                                                   |              |
| 014E         |                                            | Zone output monitor 2                                            | Z2           |
| 014F         |                                            | Zone output monitor 1                                            | Z1           |
| 0150 to 015F | Input port monitor register (DIPM)         | PIO connector pin numbers 20A (IN15) to 5A (IN0)                 |              |
| 0160 to 016F | Output port monitor register (DOPM)        | PIO connector pin numbers 16B (OUT15) to 1B (OUT0)               |              |
| 0170         | Special input port monitor register (SIPM) | Cannot be used                                                   |              |
| 0171         |                                            | Command pulse NP signal status                                   | NP           |
| 0172         |                                            | Cannot be used                                                   |              |
| 0173         |                                            | Command pulse PP signal status                                   | PP           |
| 0174 to 0175 |                                            | Cannot be used                                                   |              |
| 0176         |                                            | Cannot be used                                                   |              |
| 0177         |                                            | Mode switch status                                               | MDSW         |
| 0178         |                                            | Cannot be used                                                   |              |
| 0179 to 017B |                                            | Cannot be used                                                   |              |
| 017C         |                                            | Home-check sensor monitor                                        | HMCK         |
| 017D         |                                            | Overtravel sensor                                                | OT           |
| 017E         |                                            | Creep sensor                                                     | CREP         |
| 017F         |                                            | Limit sensor                                                     | LS           |
| 0180 to 03FF | - (Reserved for system)                    |                                                                  |              |

(Continued to next page)

| Status       | Area name                                     | Description                        | Abbreviation |
|--------------|-----------------------------------------------|------------------------------------|--------------|
| 0400         | Device control register 1 (DRG1)              | EMG operation specification        | EMG          |
| 0401         |                                               | Safety speed command               | SFTY         |
| 0402         |                                               | Cannot be used                     |              |
| 0403         |                                               | Servo ON command                   | SON          |
| 0404 to 0406 |                                               | Cannot be used                     |              |
| 0407         |                                               | Alarm reset command                | ALRS         |
| 0408         |                                               | Brake forced-release command       | BKRL         |
| 0409         |                                               | Cannot be used                     |              |
| 040A         |                                               | Pause command                      | STP          |
| 040B         |                                               | HomingHome return command          | HOME         |
| 040C         |                                               | Positioning start command          | CSTR         |
| 040D to 040F |                                               | Cannot be used                     |              |
| 0410         | Device control register 2 (DRG2)              | Cannot be used                     |              |
| 0411         |                                               | Jog/inch switching                 | JISL         |
| 0412 to 0413 |                                               | Cannot be used                     |              |
| 0414         |                                               | Teaching mode command              | MOD          |
| 0415         |                                               | Position data load command         | TEAC         |
| 0416         |                                               | Jog+ command                       | JOG+         |
| 0417         |                                               | Jog- command                       | JOG-         |
| 0418         |                                               | Start position 7                   | ST7          |
| 0419         |                                               | Start position 6                   | ST6          |
| 041A         |                                               | Start position 5                   | ST5          |
| 041B         |                                               | Start position 4                   | ST4          |
| 041C         |                                               | Start position 3                   | ST3          |
| 041D         |                                               | Start position 2                   | ST2          |
| 041E         |                                               | Start position 1                   | ST1          |
| 041F         |                                               | Start position 0                   | ST0          |
| 0420 to 0426 | Expansion device control register (DRGE)      | Cannot be used                     |              |
| 0427         |                                               | PIO/Modbus switching specification | PMSL         |
| 0428 to 042B |                                               | Cannot be used                     |              |
| 042C         |                                               | Deceleration stop                  | STOP         |
| 042D to 042F |                                               | Cannot be used                     |              |
| 0430 to 0436 | Position number specification register (POSR) | Cannot be used                     |              |
| 0437         |                                               | Position command bit 256           | PC256        |
| 0438         |                                               | Position command bit 128           | PC128        |
| 0439         |                                               | Position command bit 64            | PC64         |
| 043A         |                                               | Position command bit 32            | PC32         |
| 043B         |                                               | Position command bit 16            | PC16         |
| 043C         |                                               | Position command bit 8             | PC8          |
| 043D         |                                               | Position command bit 4             | PC4          |
| 043E         |                                               | Position command bit 2             | PC2          |
| 043F         |                                               | Position command bit 1             | PC1          |
| 0440 to FFFF | - (Reserved for system)                       |                                    |              |

## ■ Register (R) (Word device/Double word device)

The following shows device numbers which can be set for the register and the corresponding device contents.

| Register                                                                                                        | Data length                                                                                                                          | Area name                                             | Description                                                    | Abbreviation                     |      |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|----------------------------------|------|
| 0000 to 0CFF                                                                                                    | - (Reserved for system)                                                                                                              |                                                       |                                                                |                                  |      |
| 0D00                                                                                                            | Word                                                                                                                                 | I/O control information category                      | Device control register 1                                      | DRG1                             |      |
| 0D01                                                                                                            | Word                                                                                                                                 |                                                       | Device control register 2                                      | DRG2                             |      |
| 0D03                                                                                                            | Word                                                                                                                                 |                                                       | Position number specification register                         | POSR                             |      |
| 0D04 to 0FFF                                                                                                    | - (Reserved for system)                                                                                                              |                                                       |                                                                |                                  |      |
| 1000 to 3FFF                                                                                                    |                                                                                                                                      | Position table information<br>(low-speed memory area) | Offset (Hex.)                                                  |                                  |      |
|                                                                                                                 | Double word                                                                                                                          |                                                       | +0000H                                                         | Target position                  | PCMD |
|                                                                                                                 | Double word                                                                                                                          |                                                       | +0002H                                                         | In-position bandPositioning band | INP  |
|                                                                                                                 | Double word                                                                                                                          |                                                       | +0004H                                                         | Speed command                    | VCMD |
|                                                                                                                 | Double word                                                                                                                          |                                                       | +0006H                                                         | Individual zone boundary +       | ZNMP |
|                                                                                                                 | Double word                                                                                                                          |                                                       | +0008H                                                         | Individual zone boundary -       | ZNLP |
|                                                                                                                 | Word                                                                                                                                 |                                                       | +000AH                                                         | Acceleration command             | ACMD |
|                                                                                                                 | Word                                                                                                                                 |                                                       | +000BH                                                         | Deceleration command             | DCMD |
|                                                                                                                 | Word                                                                                                                                 |                                                       | +000CH                                                         | Push-current limiting value      | PPOW |
|                                                                                                                 | Word                                                                                                                                 |                                                       | +000DH                                                         | Load current threshold           | LPOW |
|                                                                                                                 | Word                                                                                                                                 |                                                       | +000EH                                                         | Control flag specification       | CTLF |
|                                                                                                                 | (Calculation of detailed device number)                                                                                              |                                                       |                                                                |                                  |      |
|                                                                                                                 | Device number (Hex) = 1000H + (16 × Position number (0 to 767)) <sup>*1</sup> + (Offset value corresponding to the device content) H |                                                       |                                                                |                                  |      |
|                                                                                                                 | Example)                                                                                                                             |                                                       |                                                                |                                  |      |
|                                                                                                                 | Position number: 5                                                                                                                   |                                                       |                                                                |                                  |      |
| Device content: Speed command (Offset value = 0004H)                                                            |                                                                                                                                      |                                                       |                                                                |                                  |      |
| Device number (Hex) = 1000H + (16 × 5 = 80) <sup>*1*2</sup> + 0004H = 1000H + 50H <sup>*2</sup> + 0004H = 1054H |                                                                                                                                      |                                                       |                                                                |                                  |      |
| *1 Calculated in decimal.                                                                                       |                                                                                                                                      |                                                       |                                                                |                                  |      |
| *2 Converting 16 × 5 = 80 to hexadecimal results 50H.                                                           |                                                                                                                                      |                                                       |                                                                |                                  |      |
| 4000 to 8FFF                                                                                                    | - (Reserved for system)                                                                                                              |                                                       |                                                                |                                  |      |
| 9000                                                                                                            | Double word                                                                                                                          | Controller monitor information category               | Current position monitor                                       | PNOW                             |      |
| 9002                                                                                                            | Word                                                                                                                                 |                                                       | Present alarm code query                                       | ALMC                             |      |
| 9003                                                                                                            | Word                                                                                                                                 |                                                       | Input port query                                               | DIPM                             |      |
| 9004                                                                                                            | Word                                                                                                                                 |                                                       | Output port monitor query                                      | DOPM                             |      |
| 9005                                                                                                            | Word                                                                                                                                 |                                                       | Device status 1 query                                          | DSS1                             |      |
| 9006                                                                                                            | Word                                                                                                                                 |                                                       | Device status 2 query                                          | DSS2                             |      |
| 9007                                                                                                            | Word                                                                                                                                 |                                                       | Expanded device status query                                   | DSSE                             |      |
| 9008                                                                                                            | Double word                                                                                                                          |                                                       | System status query                                            | STAT                             |      |
| 900A                                                                                                            | Double word                                                                                                                          |                                                       | Current speed monitor                                          | VNOW                             |      |
| 900C                                                                                                            | Double word                                                                                                                          |                                                       | Current ampere monitor                                         | CNOW                             |      |
| 900E                                                                                                            | Double word                                                                                                                          |                                                       | Deviation monitor                                              | DEVI                             |      |
| 9010                                                                                                            | Double word                                                                                                                          |                                                       | System timer query                                             | STIM                             |      |
| 9012                                                                                                            | Word                                                                                                                                 |                                                       | Special input port query                                       | SIPM                             |      |
| 9013                                                                                                            | Word                                                                                                                                 |                                                       | Zone status query                                              | ZONS                             |      |
| 9014                                                                                                            | Word                                                                                                                                 |                                                       | Completed position numberPosition complete number status query | POSS                             |      |
| 9015 to 97FF                                                                                                    | - (Reserved for system)                                                                                                              |                                                       |                                                                |                                  |      |
| 9800                                                                                                            | Word                                                                                                                                 | Position command category                             | Position movement command register                             | POSR                             |      |
| 9801 to 98FF                                                                                                    | - (Reserved for system)                                                                                                              |                                                       |                                                                |                                  |      |

(Continued to next page)

| Register     | Data length             | Area name                        | Description                                             | Abbreviation |
|--------------|-------------------------|----------------------------------|---------------------------------------------------------|--------------|
| 9900         | Double word             | Numerical value command category | Target position coordinate specification register       | PCMD         |
| 9902         | Double word             |                                  | In-position bandPositioning band specification register | INP          |
| 9904         | Double word             |                                  | Speed specification register                            | VCMD         |
| 9906         | Word                    |                                  | Acceleration/deceleration speed specification register  | ACMD         |
| 9907         | Word                    |                                  | Push-current limiting value                             | PPOW         |
| 9908         | Word                    |                                  | Control flag specification register                     | CTLF         |
| 9909 to FFFF | - (Reserved for system) |                                  |                                                         |              |



## 2.7 Precautions

### ■ Program control device

- When Program Execution Command (0), Program Exit Command (2), or Program Restart Command (4) is written to the program control device (PRG 0), it will be a request for all programs running in the controllers.
- When unsupported write data is input to the program control device, the following error is displayed in the system alarm.  
315: Device writing error.  
Correct device.

### ■ Variable devices

The variable number 99 of Integer device and variable number 199 of Real device are special devices used for operations by the X-SEL controller system. Do not use these variables for general purpose.

### ■ Command trigger compatible device

- For the device whose obtained data No.0 is a command trigger, communication with the controller is performed when the Write(1)/Read(2) is set to the command trigger. When the command trigger and setting value are written in a batch, the communication is performed based on the value set with batch write.
- When Clear(4) is set to the command trigger, the communication with the controller is not performed and the set value is initialized.
- When an unsupported set value is input to the command trigger, the following error is displayed in the system alarm.  
315: Device writing error.  
Correct device.

### ■ Device reserved for system use

Devices of "Reserved for system use" are devices with indefinite values. Do not write to these devices.

### ■ Write to the flash ROM

- The point data can be written to the flash ROM of the X-SEL controller. When the point data is written to the flash ROM, it is not cleared even when power supply to the controller is turned off. However, there are limits in the number of writing. For details, refer to the user's manual of X-SEL controller used.
- Never turn off the main power supply during the flash ROM write. Doing so may cause the loss of data and malfunction of controllers. For details, refer to the user's manual of X-SEL controller used.

### ■ Communication disconnection

- Writing to the flash ROM disconnects the communication with controllers until the writing is completed.
- Resetting software restarts the controllers. During this time, the communication with controllers is disconnected.

### ■ Station number setting of the IAI robot controller system

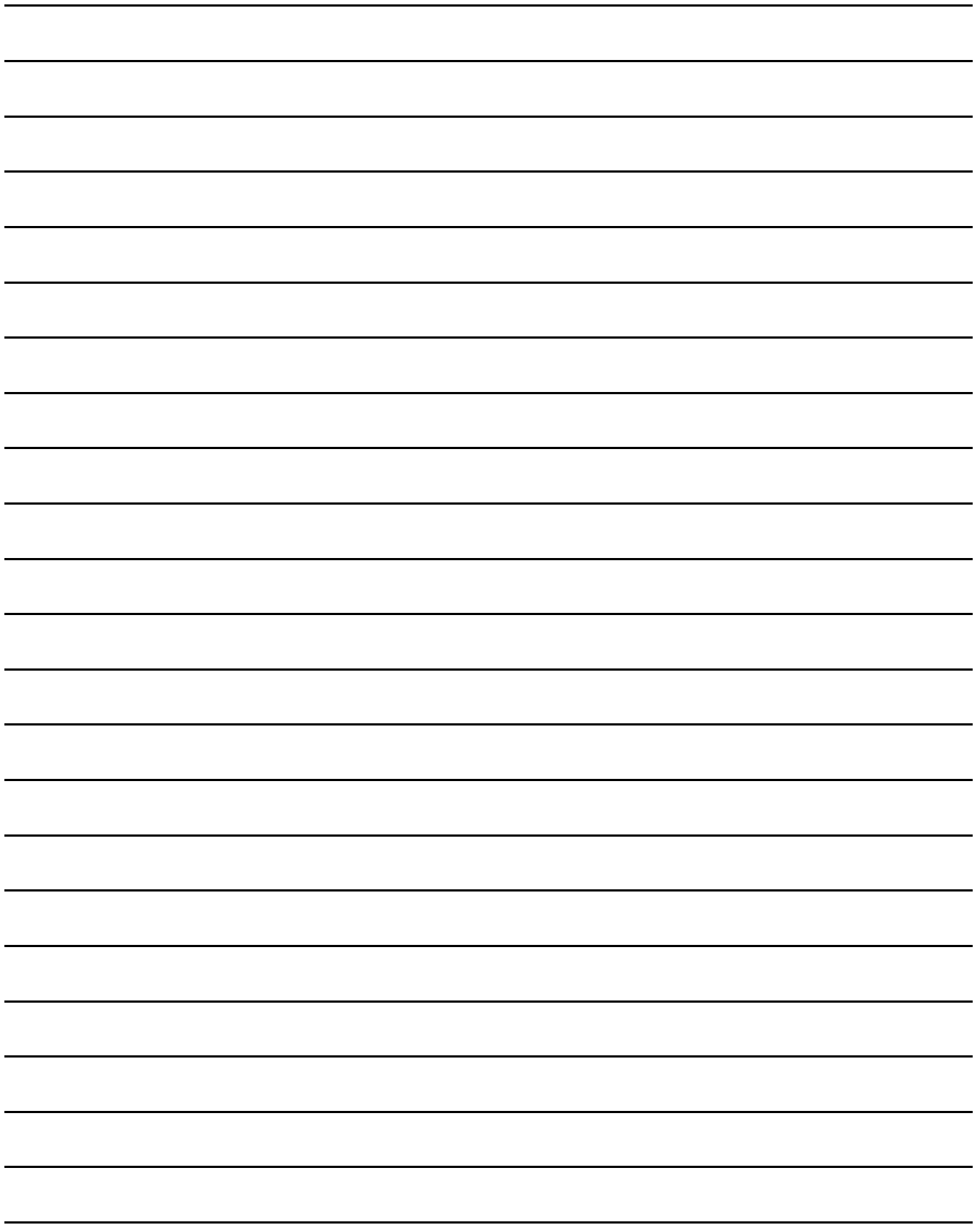
The robot controller with the station number set with the host address must be included.

 2.4.2 Communication detail settings

### ■ Connection of the IAI X-SEL K type

Note the following precaution when using the controller with the mode switch set to MANU.

- After powering up the X-SEL, connecting the GOT before the PC software causes the program startup disabled (A1D alarm) on the X-SEL side.



# CONNECTION TO AZBIL (former YAMATAKE) CONTROL EQUIPMENT

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|     |                                          |        |
|-----|------------------------------------------|--------|
| 3.1 | Connectable Model List . . . . .         | 3 - 2  |
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## 3. CONNECTION TO AZBIL CONTROL EQUIPMENT

### 3.1 Connectable Model List

The following table shows the connectable models.

| Series | Model name | Clock | Communication Type | Connectable model | Refer to                                                                                     |
|--------|------------|-------|--------------------|-------------------|----------------------------------------------------------------------------------------------|
| DMC    | DMC10      | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.1    |
|        | DMC50      | ×     | RS-485             | GT 27 GT 25 GT 23 |  3.2.2    |
| SDC    | SDC15      | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.3    |
|        | SDC25      |       |                    |                   |                                                                                              |
|        | SDC26      |       |                    |                   |                                                                                              |
|        | SDC35      |       |                    |                   |                                                                                              |
|        | SDC36      |       |                    |                   |                                                                                              |
|        | SDC20      | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.4  |
|        | SDC21      |       |                    |                   |                                                                                              |
|        | SDC30      | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.5  |
|        | SDC31      |       |                    |                   |                                                                                              |
|        | SDC40A     | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.6  |
|        | SDC40B     |       |                    |                   |                                                                                              |
|        | SDC40G     |       |                    |                   |                                                                                              |
|        | SDC45      | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.7  |
|        | SDC46      |       |                    |                   |                                                                                              |
| CMS    | CMS        | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.8  |
| CMF    | CMF015     | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.9  |
|        | CMF050     |       |                    |                   |                                                                                              |
| CML    | CML        | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.10 |
| MQV    | MQV        | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.8  |
| MPC    | MPC        |       |                    |                   |  3.2.8  |
| MVF    | MVF        |       |                    |                   |  3.2.8  |
| PBZ    | PBC201-VN2 | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.10 |
| AUR    | AUR350C    | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.11 |
|        | AUR450C    |       |                    |                   |                                                                                              |
| RX     | RX         | ×     | RS-232<br>RS-485   | GT 27 GT 25 GT 23 |  3.2.8  |

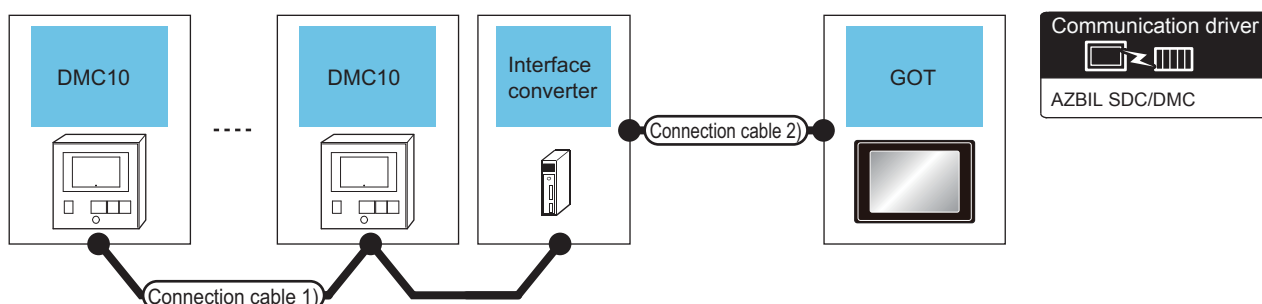
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| Series  | Model name | Clock | Communication Type           | Connectable GOT                                                                                                                                                                                                                                            | Refer to                                                                                   |
|---------|------------|-------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| CMC     | CMC10B     | ×     | RS-232<br>RS-485             |    |  3.2.12 |
| AHC2001 | AHC2001    | ×     | RS-232<br>RS-485             |    |  3.2.13 |
| NX      | NX-D15     | ×     | RS-232<br>RS-485<br>(MODBUS) |    |  3.2.14 |
|         | NX-D25     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-D35     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DX1     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DX2     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DY      |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S01     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S11     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S12     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S21     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-D15     | ×     | Ethernet<br>(MODBUS)         |    |  3.2.14 |
|         | NX-D25     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-D35     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DX1     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DX2     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-DY      |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S01     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S11     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S12     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |
|         | NX-S21     |       |                              |                                                                                                                                                                                                                                                            |                                                                                            |

## 3.2 System Configuration

### 3.2.1 Connecting to DMC10

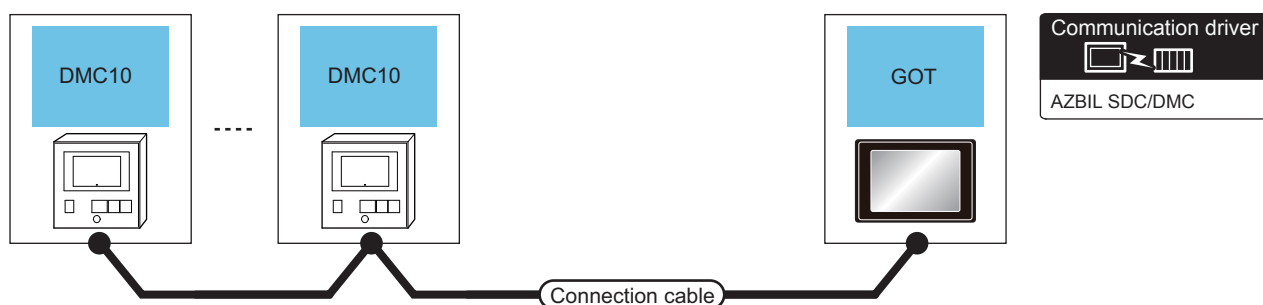
#### ■ When using the Interface converter



| Temperature controller | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment            |
|------------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------------|
| Model name             | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                            |
| DMC10                  | RS485<br>connection diagram 1)           | 500m          | CMC10L                | RS-232             | RS232<br>connection diagram 1)           | 15m           | - (Built into GOT) | <br>  | Up to 15 temperature controllers for 1 GOT |
|                        |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                            |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly



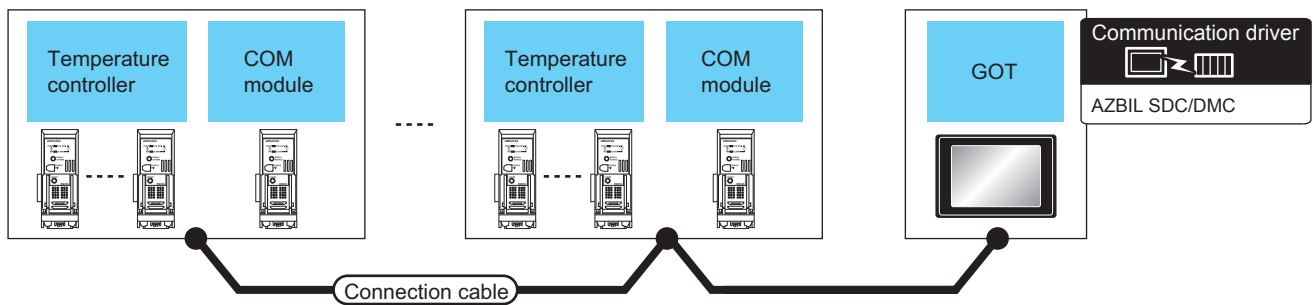
| Temperature controller |                    | Connection cable                         |                    | GOT                                                                                                                 |       | Number of connectable equipment            |
|------------------------|--------------------|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number | Max. distance      | Option device                                                                                                       | Model |                                            |
| DMC10                  | RS-485             | RS485 connection diagram 12)             | 500m               | - (Built into GOT)                                                                                                  |       | Up to 15 temperature controllers for 1 GOT |
|                        |                    | RS485 connection diagram 3)              | 500m* <sup>1</sup> | FA-LTBGT2R4CBL05 (0.5m)* <sup>2</sup><br>FA-LTBGT2R4CBL10 (1m)* <sup>2</sup><br>FA-LTBGT2R4CBL20 (2m)* <sup>2</sup> |       |                                            |
|                        |                    | RS485 connection diagram 5)              | 500m               | GT15-RS4-TE                                                                                                         |       |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.2 Connecting to DMC50

#### ■ When using the COM module



| Temperature controller | Connection cable                             |                    | COM module <sup>*1</sup> |                    | GOT                                                                                                                 |                      | Number of connectable equipment                                                      |
|------------------------|----------------------------------------------|--------------------|--------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------|
| Model name             | Connection diagram number                    | Max. distance      | Model name               | Communication Type | Option device                                                                                                       | Model                |                                                                                      |
| DMC50CX                | (User preparing) RS485 connection diagram 8) | 500m <sup>*2</sup> | DMC50M20X                | RS-485             | FA-LTBGT2R4CBL05 (0.5m) <sup>*3</sup><br>FA-LTBGT2R4CBL10 (1m) <sup>*3</sup><br>FA-LTBGT2R4CBL20 (2m) <sup>*2</sup> | GT 27 GT 25<br>GT 23 | Up to 8 COM module for 1 GOT.<br>Up to 120 temperature controllers for 1 COM module. |
|                        | (User preparing) RS485 connection diagram 9) | 500m               | DMC50M20X                | RS-485             | - (Built into GOT)                                                                                                  | GT 27 GT 25<br>GT 23 |                                                                                      |
|                        |                                              |                    |                          |                    | GT15-RS4-9S                                                                                                         | GT 27 GT 25          |                                                                                      |
|                        |                                              |                    |                          |                    | GT15-RS4-TE                                                                                                         | GT 27 GT 25          |                                                                                      |

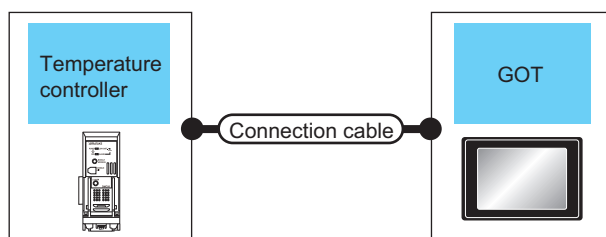
<sup>\*1</sup> Including the cable length of the option devices.

<sup>\*2</sup> Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

<sup>\*3</sup> Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.



■ When connecting directly to one temperature controller



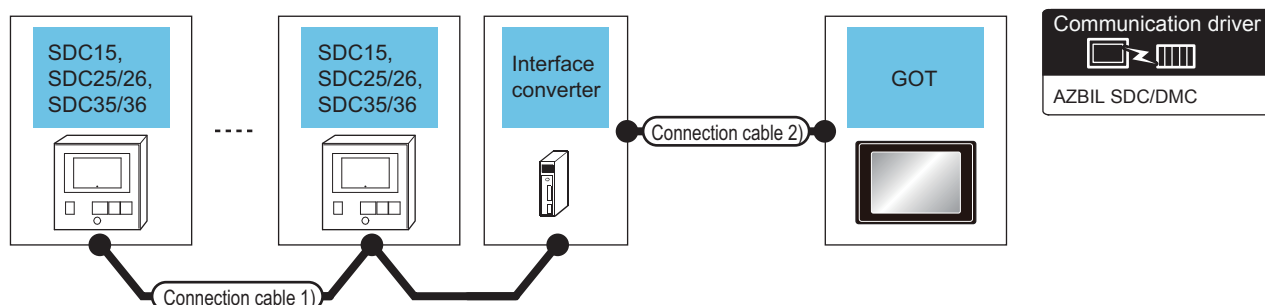
| Temperature controller | Connection cable             |                    |                    | GOT                                                                                                                 |       | Number of connectable equipment          |
|------------------------|------------------------------|--------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------|
| Model name             | Connection diagram number    | Max. distance      | Communication Type | Option device                                                                                                       | Model |                                          |
| DMC50CX                | RS485 connection diagram 10) | 500m <sup>*1</sup> | RS-485             | FA-LTBGT2R4CBL05 (0.5m) <sup>*2</sup><br>FA-LTBGT2R4CBL10 (1m) <sup>*2</sup><br>FA-LTBGT2R4CBL20 (2m) <sup>*2</sup> | <br>  | Up to 1 temperature controller for 1 GOT |
|                        | RS485 connection diagram 13) | 500m               | RS-485             | - (Built into GOT)                                                                                                  | <br>  |                                          |
|                        | RS485 connection diagram 11) | 500m               | RS-485             | GT15-RS4-TE                                                                                                         |       |                                          |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.3 Connecting to SDC15, SDC25/26 or SDC35/36

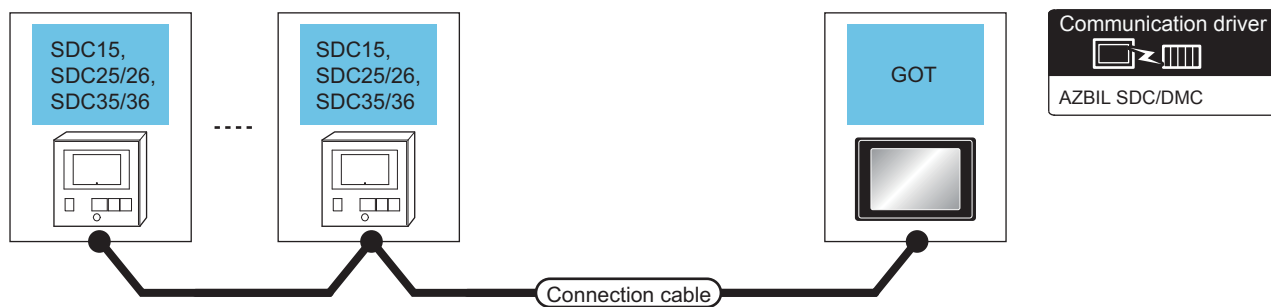
#### ■ When using the Interface converter



| Temperature controller        | Connection cable 1)                                                                                              |               | Interface converter*1 |                    | Connection cable 2)                                                                                              |               | GOT                |                                                                                                                                                                                                                                                                | Number of connectable equipment            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name                    | Cable model<br>Connection diagram number                                                                         | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number                                                                         | Max. distance | Option device      | Model                                                                                                                                                                                                                                                          |                                            |
| SDC15<br>SDC25/26<br>SDC35/36 |  RS485<br>connection diagram 1) | 500m          | CMC10L                | RS-232             |  RS232<br>connection diagram 1) | 15m           | - (Built into GOT) |  <br> | Up to 31 temperature controllers for 1 GOT |
|                               |                                                                                                                  |               |                       |                    |                                                                                                                  |               | GT15-RS2-9P        |                                                                                        |                                            |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly



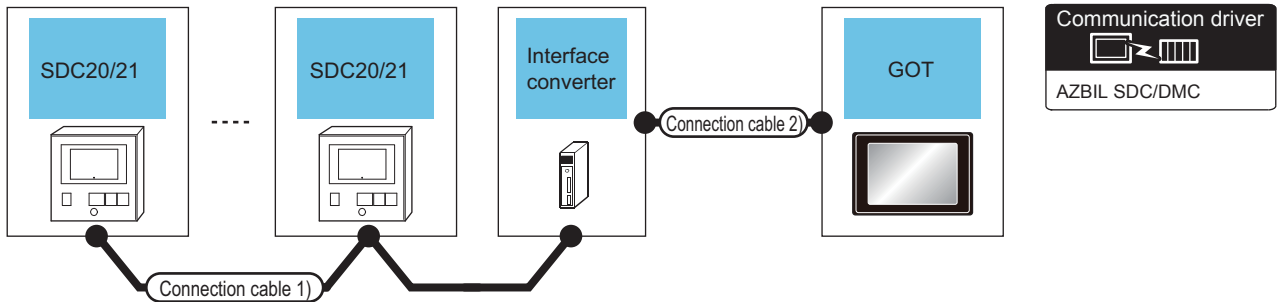
| Temperature controller        |                    | Connection cable                         |               | GOT                                                                             |       | Number of connectable equipment            |
|-------------------------------|--------------------|------------------------------------------|---------------|---------------------------------------------------------------------------------|-------|--------------------------------------------|
| Model name                    | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device                                                                   | Model |                                            |
| SDC15<br>SDC25/26<br>SDC35/36 | RS-485             | RS485 connection diagram 3)              | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 | <br>  | Up to 31 temperature controllers for 1 GOT |
|                               |                    | RS485 connection diagram 12)             | 500m          | - (Built into GOT)                                                              | <br>  |                                            |
|                               |                    | RS485 connection diagram 5)              | 500m          | GT15-RS4-TE                                                                     |       |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.4 Connecting to SDC20/21

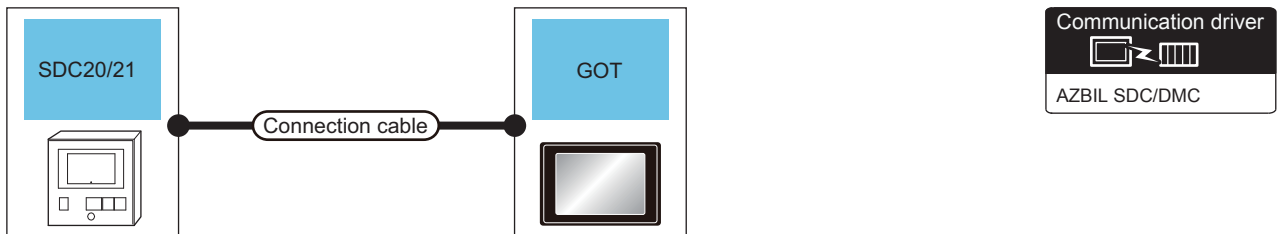
#### ■ When using the Interface converter



| Temperature controller | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment            |
|------------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------------|
| Model name             | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                            |
| SDC20/21               | RS485 connection diagram 2)              | 500m          | CMC10L                | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) |       | Up to 31 temperature controllers for 1 GOT |
|                        |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                            |

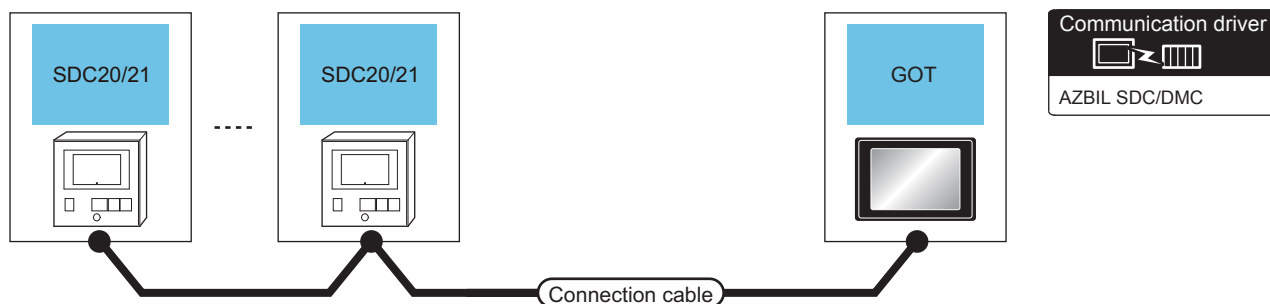
\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

#### ■ When connecting directly to one temperature controller



| Temperature controller | Connection cable   |                                          |               | GOT                |       | Number of connectable equipment          |
|------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|------------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                          |
| SDC20/21               | RS-232             | RS232 connection diagram 2)              | 15m           | - (Built into GOT) |       | Up to 1 temperature controller for 1 GOT |
|                        |                    |                                          |               | GT15-RS2-9P        |       |                                          |

■ When connecting directly to multiple temperature controllers



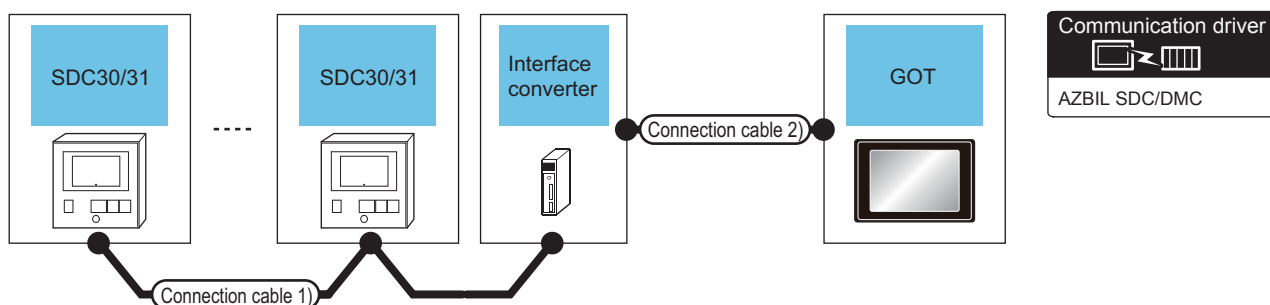
| Temperature controller                                                                                                   |                    | Connection cable                                                                                                         |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment            |
|--------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name                                                                                                               | Communication Type | Cable model<br>Connection diagram number                                                                                 | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                            |
| SDC20/21                                                                                                                 | RS-485             |  RS485 connection diagram 4)(4-wire)    | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 31 temperature controllers for 1 GOT |
|                                                                                                                          |                    |  RS485 connection diagram 14)(2-wire)   |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 6)(4-wire)    | 500m          | - (Built into GOT)                                                              |  <br>       |                                            |
|                                                                                                                          |                    |                                                                                                                          |               | GT15-RS4-9S                                                                     |                                                                                            |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 15)(2-wire) | 500m          | - (Built into GOT)                                                              |  <br> |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 7)(4-wire)  | 500m          | GT15-RS4-TE                                                                     |                                                                                            |                                            |
|  RS485 connection diagram 16)(2-wire) |                    |                                                                                                                          |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

## 3.2.5 Connecting to SDC30/31

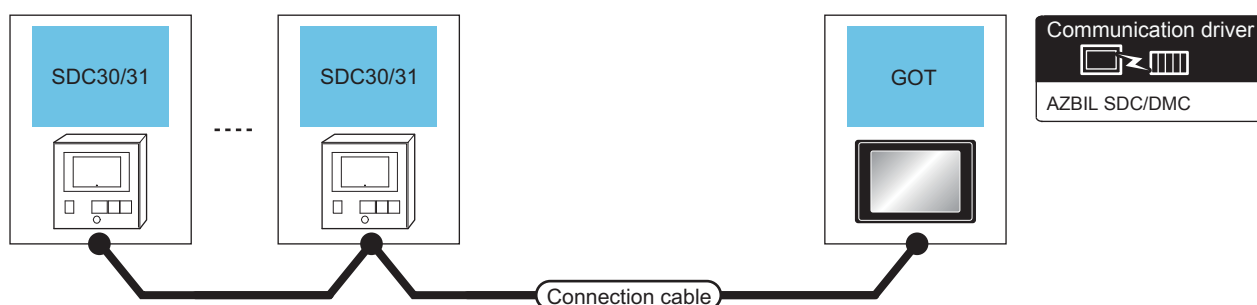
### ■ When using the Interface converter



| Temperature controller | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment            |
|------------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------------|
| Model name             | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                            |
| SDC30/31               | RS485 connection diagram 2)              | 500m          | CMC10L                | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) |       | Up to 31 temperature controllers for 1 GOT |
|                        |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                            |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly



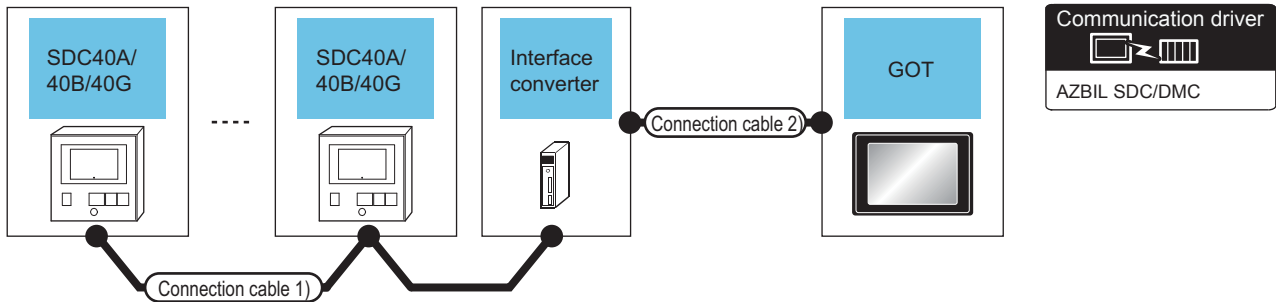
| Temperature controller                                                                                                   |                    | Connection cable                                                                                                         |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment            |
|--------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name                                                                                                               | Communication Type | Cable model<br>Connection diagram number                                                                                 | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                            |
| SDC30/31                                                                                                                 | RS-485             |  RS485 connection diagram 4)(4-wire)    | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 31 temperature controllers for 1 GOT |
|                                                                                                                          |                    |  RS485 connection diagram 14)(2-wire)   |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 6)(4-wire)    | 500m          | - (Built into GOT)                                                              |  <br>       |                                            |
|                                                                                                                          |                    |                                                                                                                          |               | GT15-RS4-9S                                                                     |                                                                                                |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 15)(2-wire) | 500m          | - (Built into GOT)                                                              |  <br> |                                            |
|                                                                                                                          |                    |  RS485 connection diagram 7)(4-wire)  | 500m          | GT15-RS4-TE                                                                     |                                                                                            |                                            |
|  RS485 connection diagram 16)(2-wire) |                    |                                                                                                                          |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.6 Connecting to SDC40A/40B/40G

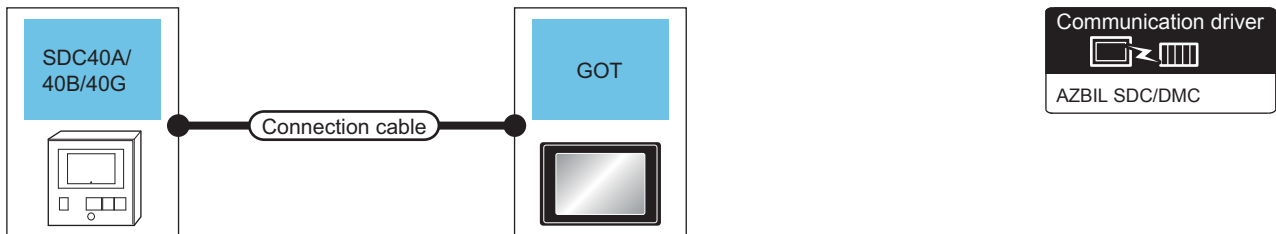
#### ■ When using the Interface converter



| Temperature controller | Connection cable 1)                                                                                           |               | Interface converter*1 |                    | Connection cable 2)                                                                                           |               | GOT                |                                                                                                                                                                                                                                                                | Number of connectable equipment            |
|------------------------|---------------------------------------------------------------------------------------------------------------|---------------|-----------------------|--------------------|---------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name             | Cable model<br>Connection diagram number                                                                      | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number                                                                      | Max. distance | Option device      | Model                                                                                                                                                                                                                                                          |                                            |
| SDC40A/40B/40G         |  RS485 connection diagram 2) | 500m          | CMC10L                | RS-232             |  RS232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> | Up to 31 temperature controllers for 1 GOT |
|                        |                                                                                                               |               |                       |                    |                                                                                                               |               | GT15-RS2-9P        |                                                                                        |                                            |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

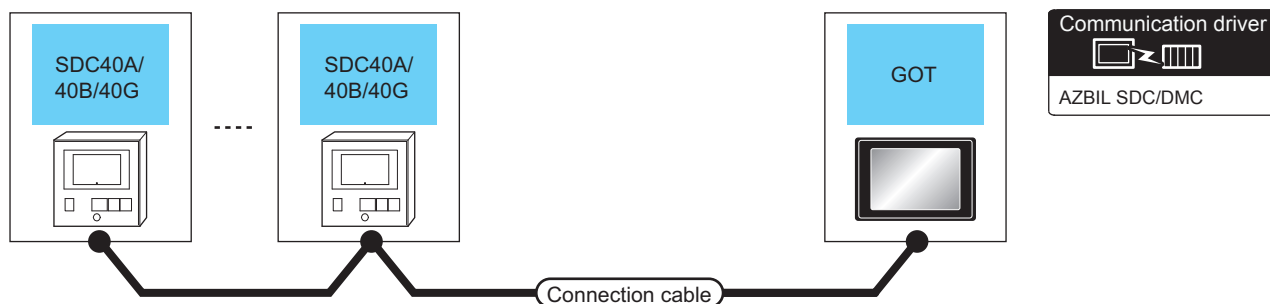
#### ■ When connecting directly to one temperature controller



| Temperature controller | Connection cable   |                                                                                                                 |               | GOT                |                                                                                                                                                                                                                                                                      | Number of connectable equipment          |
|------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number                                                                        | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                |                                          |
| SDC40A/40B/40G         | RS-232             |  RS232 connection diagram 2) | 15m           | - (Built into GOT) |  <br> | Up to 1 temperature controller for 1 GOT |
|                        |                    |                                                                                                                 |               | GT15-RS2-9P        |                                                                                            |                                          |



■ When connecting directly to multiple temperature controllers



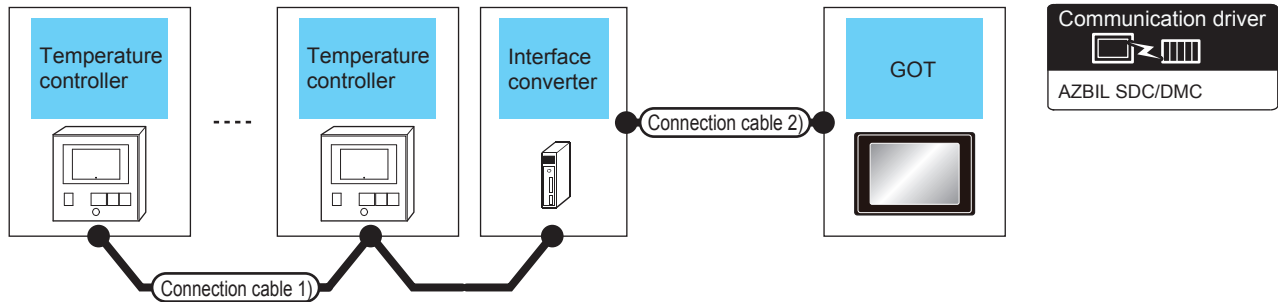
| Temperature controller |                    | Connection cable                                                                                                         |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment            |
|------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number                                                                                 | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                            |
| SDC40A/<br>40B/40G     | RS-485             |  RS485 connection diagram 4)(4-wire)    | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 31 temperature controllers for 1 GOT |
|                        |                    |  RS485 connection diagram 14)(2-wire)   |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |
|                        |                    |  RS485 connection diagram 6)(4-wire)    | 500m          | - (Built into GOT)                                                              |  <br>       |                                            |
|                        |                    |                                                                                                                          |               | GT15-RS4-9S                                                                     |                                                                                            |                                            |
|                        |                    |  RS485 connection diagram 15)(2-wire) | 500m          | - (Built into GOT)                                                              |  <br> |                                            |
|                        |                    |  RS485 connection diagram 7)(4-wire)  | 500m          | GT15-RS4-TE                                                                     |                                                                                            |                                            |
|                        |                    |                                                                                                                          |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.7 Connecting to SDC45/46

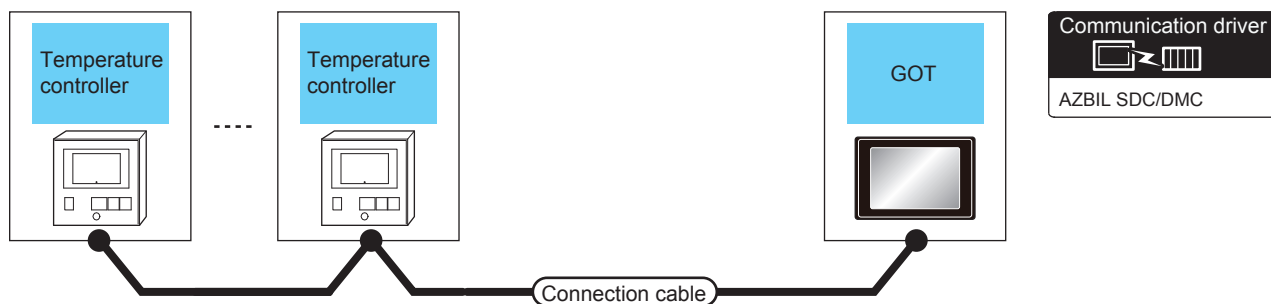
■ When using the Interface converter



| Temperature controller | Connection cable 1)                           |               | Interface converter*1 |                    | Connection cable 2)                          |               | GOT                |                                                    | Number of connectable equipment            |
|------------------------|-----------------------------------------------|---------------|-----------------------|--------------------|----------------------------------------------|---------------|--------------------|----------------------------------------------------|--------------------------------------------|
| Model name             | Cable model<br>Connection diagram number      | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number     | Max. distance | Option device      | Model                                              |                                            |
| SDC45/46               | (User preparing) RS485 connection diagram 17) | 500m          | CMC10L                | RS-232             | (User preparing) RS232 connection diagram 1) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> | Up to 31 temperature controllers for 1 GOT |
|                        |                                               |               |                       |                    |                                              |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                  |                                            |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly to multiple temperature controllers



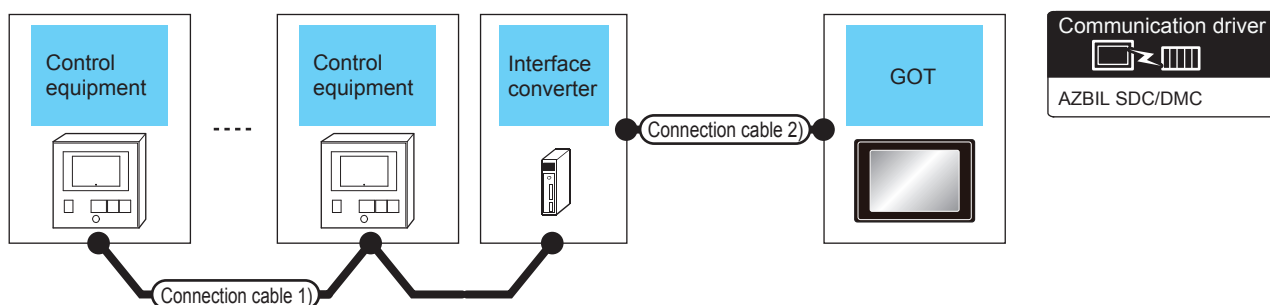
| Temperature controller |                    | Connection cable                         |                    | GOT                                                                                                                 |       | Number of connectable equipment           |
|------------------------|--------------------|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number | Max. distance      | Option device                                                                                                       | Model |                                           |
| SDC45/46               | RS-485             | RS485 connection diagram 18)             | 500m <sup>*1</sup> | FA-LTBGT2R4CBL05 (0.5m) <sup>*2</sup><br>FA-LTBGT2R4CBL10 (1m) <sup>*2</sup><br>FA-LTBGT2R4CBL20 (2m) <sup>*2</sup> |       | Up to 31 temperature controller for 1 GOT |
|                        |                    | RS485 connection diagram 19)             | 500m               | GT15-RS4-TE                                                                                                         |       |                                           |
|                        |                    | RS485 connection diagram 20)             | 500m               | - (Built into GOT)                                                                                                  |       |                                           |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

## 3.2.8 Connecting to CMS, MQV, MPC, MVF, RX

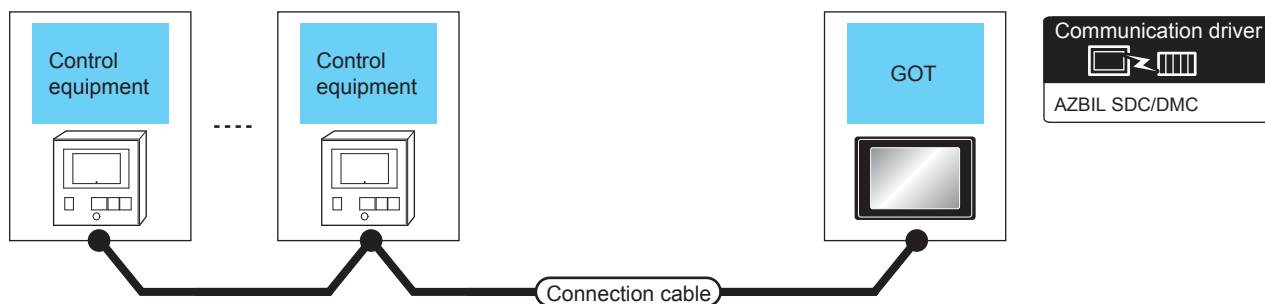
### ■ When using the Interface converter



| Control equipment              | Connection cable 1)                           |               | Interface converter <sup>*1</sup> |                    | Connection cable 2)                          |               | GOT                |                      | Number of connectable equipment      |
|--------------------------------|-----------------------------------------------|---------------|-----------------------------------|--------------------|----------------------------------------------|---------------|--------------------|----------------------|--------------------------------------|
| Model name                     | Cable model<br>Connection diagram number      | Max. distance | Model name                        | Communication Type | Cable model<br>Connection diagram number     | Max. distance | Option device      | Model                |                                      |
| CMS<br>MQV<br>MPC<br>MVF<br>RX | (User preparing) RS485 connection diagram 17) | 500m          | CMC10L                            | RS-232             | (User preparing) RS232 connection diagram 1) | 15m           | - (Built into GOT) | GT 27 GT 25<br>GT 23 | Up to 31 control equipment for 1 GOT |
|                                |                                               |               |                                   |                    |                                              |               | GT15-RS2-9P        | GT 27 GT 25          |                                      |

<sup>\*1</sup> Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly to multiple control equipments



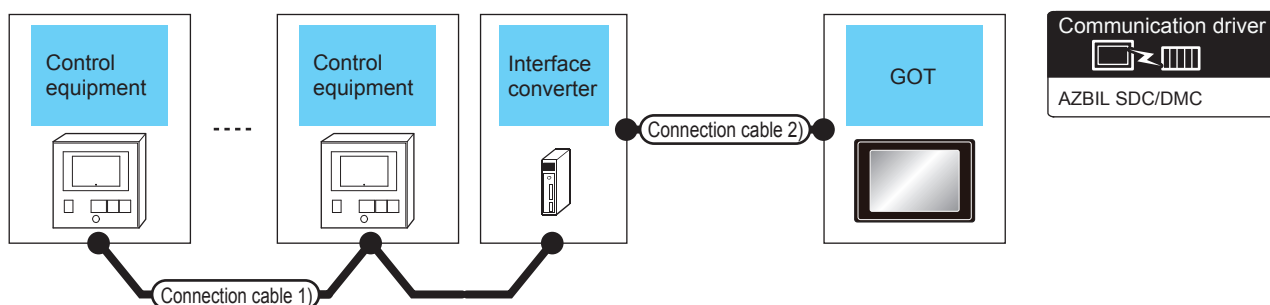
| Control equipment              |                    | Connection cable                         |                    | GOT                                                                                                                 |       | Number of connectable equipment     |
|--------------------------------|--------------------|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| Model name                     | Communication Type | Cable model<br>Connection diagram number | Max. distance      | Option device                                                                                                       | Model |                                     |
| CMS<br>MQV<br>MPC<br>MVF<br>RX | RS-485             | RS485 connection diagram 18)             | 500m <sup>*1</sup> | FA-LTBGT2R4CBL05 (0.5m) <sup>*2</sup><br>FA-LTBGT2R4CBL10 (1m) <sup>*2</sup><br>FA-LTBGT2R4CBL20 (2m) <sup>*2</sup> |       | Up to 1 control equipment for 1 GOT |
|                                |                    | RS485 connection diagram 19)             | 500m               | GT15-RS4-TE                                                                                                         |       |                                     |
|                                |                    | RS485 connection diagram 20)             | 500m               | - (Built into GOT)                                                                                                  |       |                                     |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.9 Connecting to CMF015, CMF050

#### ■ When using the Interface converter

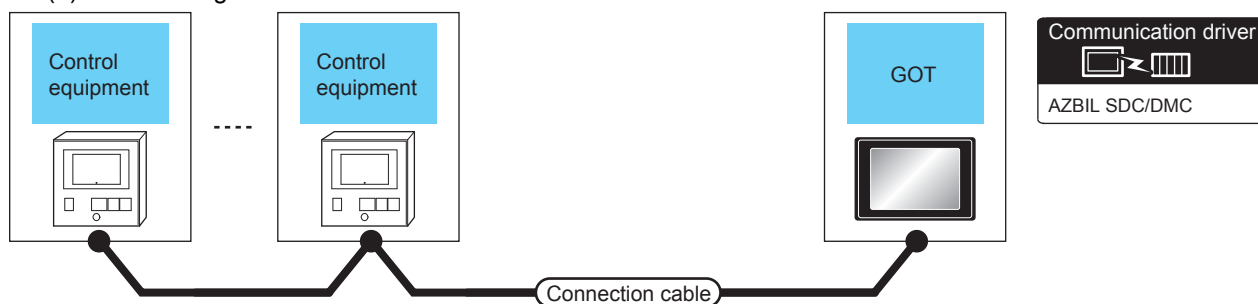


| Control equipment | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment      |
|-------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name        | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                      |
| CMF015            | RS485 connection diagram 17)             | 500m          | CMC10L                | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) |       | Up to 31 control equipment for 1 GOT |
|                   |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                      |
| CMF050            | RS485 connection diagram 2)              | 500m          | CMC10L                | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) |       | Up to 31 control equipment for 1 GOT |
|                   |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                      |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly

(1) Connecting to CMF015

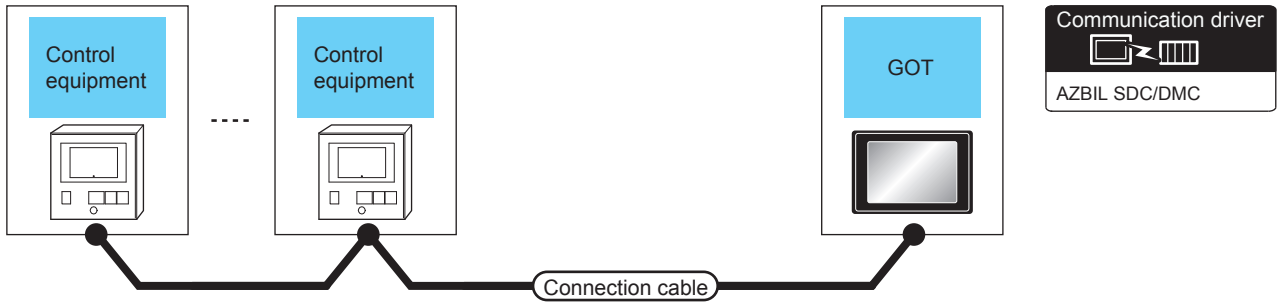


| Control equipment |                    | Connection cable                         |                    | GOT                                                                                                                 |       | Number of connectable equipment     |
|-------------------|--------------------|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| Model name        | Communication Type | Cable model<br>Connection diagram number | Max. distance      | Option device                                                                                                       | Model |                                     |
| CMF015            | RS-485             | RS485 connection diagram 18)             | 500m <sup>*1</sup> | FA-LTBGT2R4CBL05 (0.5m) <sup>*2</sup><br>FA-LTBGT2R4CBL10 (1m) <sup>*2</sup><br>FA-LTBGT2R4CBL20 (2m) <sup>*2</sup> | <br>  | Up to 1 control equipment for 1 GOT |
|                   |                    | RS485 connection diagram 19)             | 500m               | GT15-RS4-TE                                                                                                         |       |                                     |
|                   |                    | RS485 connection diagram 20)             | 500m               | - (Built into GOT)                                                                                                  | <br>  |                                     |

<sup>\*1</sup> Including the cable length of the option devices.

<sup>\*2</sup> Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

(2) Connecting to CMF050



| Control equipment |                    | Connection cable                                                                                                         |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment     |
|-------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Model name        | Communication Type | Cable model<br>Connection diagram number                                                                                 | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                     |
| CMF050            | RS-485             |  RS485 connection diagram 4)(4-wire)    | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 1 control equipment for 1 GOT |
|                   |                    |  RS485 connection diagram 14)(2-wire)   |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                     |
|                   |                    |  RS485 connection diagram 6)(4-wire)    | 500m          | - (Built into GOT)                                                              |  <br>       |                                     |
|                   |                    |                                                                                                                          |               | GT15-RS4-9S                                                                     |                                                                                                |                                     |
|                   |                    |  RS485 connection diagram 15)(2-wire) | 500m          | - (Built into GOT)                                                              |  <br> |                                     |
|                   |                    |  RS485 connection diagram 7)(4-wire)  | 500m          | GT15-RS4-TE                                                                     |                                                                                            |                                     |
|                   |                    |                                                                                                                          |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                     |

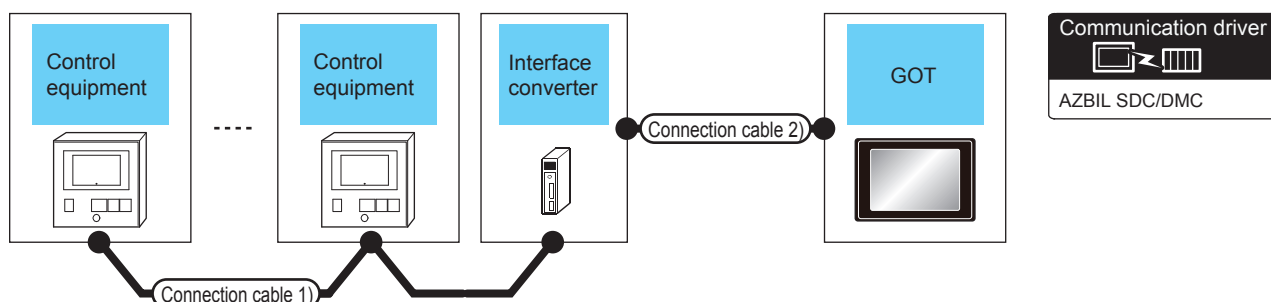
\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.



### 3.2.10 Connecting to CML, PBC201-VN2

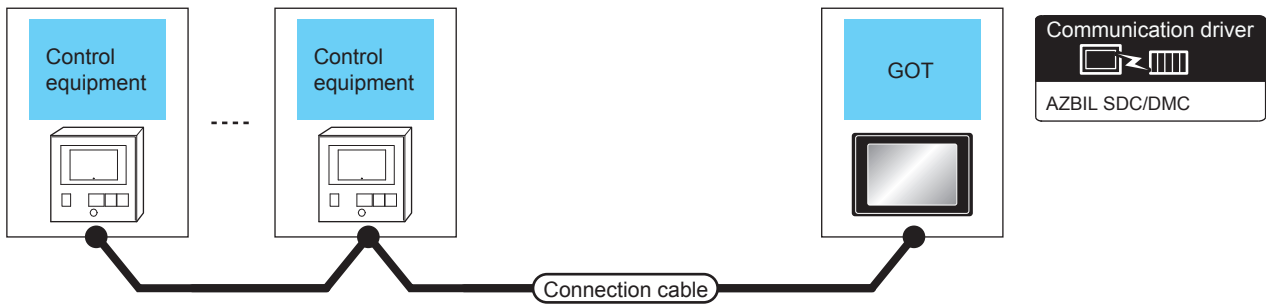
#### ■ When using the Interface converter



| Control equipment | Connection cable 1)                      |               | Interface converter <sup>*1</sup> |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment      |
|-------------------|------------------------------------------|---------------|-----------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name        | Cable model<br>Connection diagram number | Max. distance | Model name                        | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                      |
| CML<br>PBC201-VN2 | RS485 connection diagram 2)              | 500m          | CMC10L                            | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) | <br>  | Up to 31 control equipment for 1 GOT |
|                   |                                          |               |                                   |                    |                                          |               | GT15-RS2-9P        |       |                                      |

<sup>\*1</sup> Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly



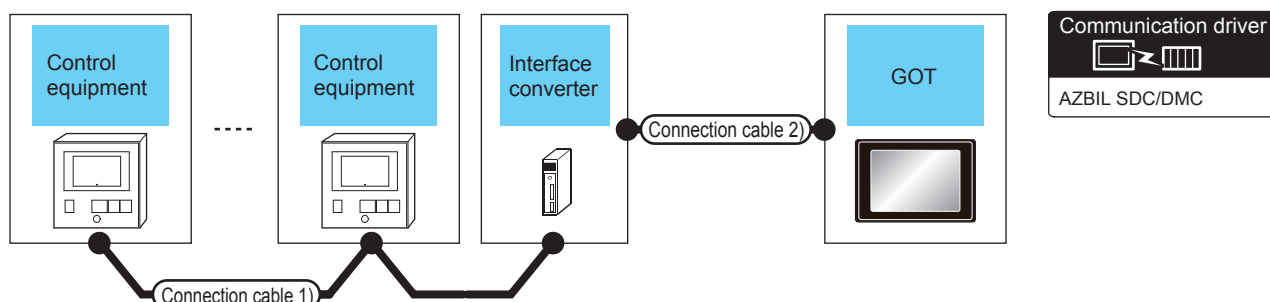
| Control equipment |                            | Connection cable                                                                                                         |                  | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment        |
|-------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Model name        | Communica-<br>tion<br>Type | Cable model<br>Connection diagram number                                                                                 | Max.<br>distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                        |
| CML<br>PBC201-VN2 | RS-485                     |  RS485 connection diagram 4)(4-wire)    | 500m*1           | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 1 control<br>equipment for 1 GOT |
|                   |                            |  RS485 connection diagram 14)(2-wire)   |                  |                                                                                 |                                                                                                                                                                                                                                                                      |                                        |
|                   |                            |  RS485 connection diagram 6)(4-wire)    | 500m             | - (Built into GOT)                                                              |  <br>       |                                        |
|                   |                            |                                                                                                                          |                  | GT15-RS4-9S                                                                     |                                                                                                |                                        |
|                   |                            |  RS485 connection diagram 15)(2-wire) | 500m             | - (Built into GOT)                                                              |  <br> |                                        |
|                   |                            |  RS485 connection diagram 7)(4-wire)  | 500m             | GT15-RS4-TE                                                                     |                                                                                            |                                        |
|                   |                            |                                                                                                                          |                  |                                                                                 |                                                                                                                                                                                                                                                                      |                                        |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.11 Connecting to AUR350C, AUR450C

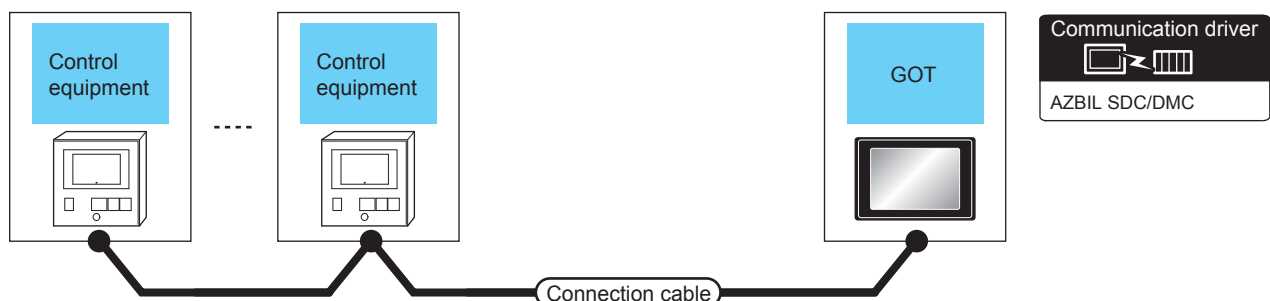
#### ■ When using the Interface converter



| Control equipment  | Connection cable 1)                          |               | Interface converter*1 |                    | Connection cable 2)                          |               | GOT                |                      | Number of connectable equipment      |
|--------------------|----------------------------------------------|---------------|-----------------------|--------------------|----------------------------------------------|---------------|--------------------|----------------------|--------------------------------------|
| Model name         | Cable model<br>Connection diagram number     | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number     | Max. distance | Option device      | Model                |                                      |
| AUR350C<br>AUR450C | (User preparing) RS485 connection diagram 1) | 500m          | CMC10L                | RS-232             | (User preparing) RS232 connection diagram 1) | 15m           | - (Built into GOT) | GT 27 GT 25<br>GT 23 | Up to 31 control equipment for 1 GOT |
|                    |                                              |               |                       |                    |                                              |               | GT15-RS2-9P        | GT 27 GT 25<br>GT 23 |                                      |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

#### ■ When connecting directly



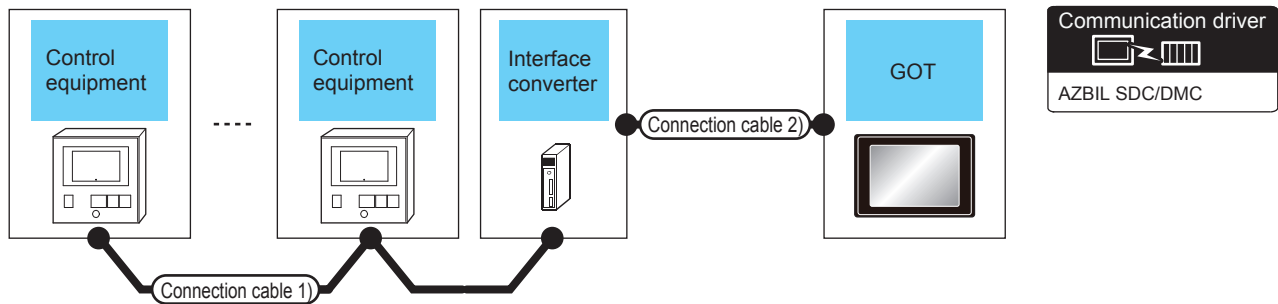
| Control equipment  | Connection cable   |                                               |               | GOT                                                                             |                      | Number of connectable equipment     |
|--------------------|--------------------|-----------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------|-------------------------------------|
| Model name         | Communication Type | Cable model<br>Connection diagram number      | Max. distance | Option device                                                                   | Model                |                                     |
| AUR350C<br>AUR450C | RS-485             | (User preparing) RS485 connection diagram 3)  | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 | GT 27 GT 25<br>GT 23 | Up to 1 control equipment for 1 GOT |
|                    |                    | (User preparing) RS485 connection diagram 5)  | 500m          | GT15-RS4-TE                                                                     | GT 27 GT 25          |                                     |
|                    |                    | (User preparing) RS485 connection diagram 12) | 500m          | - (Built into GOT)                                                              | GT 27 GT 25<br>GT 23 |                                     |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

3.2.12 Connecting to CMC10B

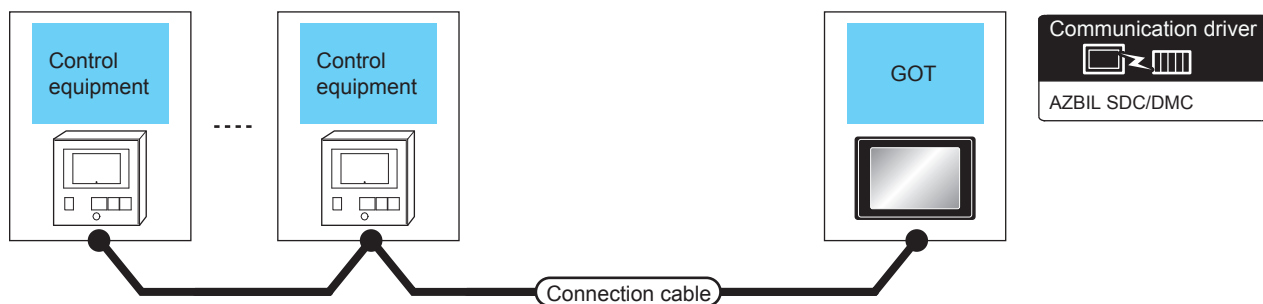
■ When using the Interface converter



| Control equipment | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment      |
|-------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name        | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                      |
| CMC10B            | RS485 connection diagram 2)              | 500m          | CMC10L                | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT) |       | Up to 31 control equipment for 1 GOT |
|                   |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                      |

\*1 Product manufactured by Azbil Corporation. For details on the product, contact Azbil Corporation.

■ When connecting directly to multiple control equipments



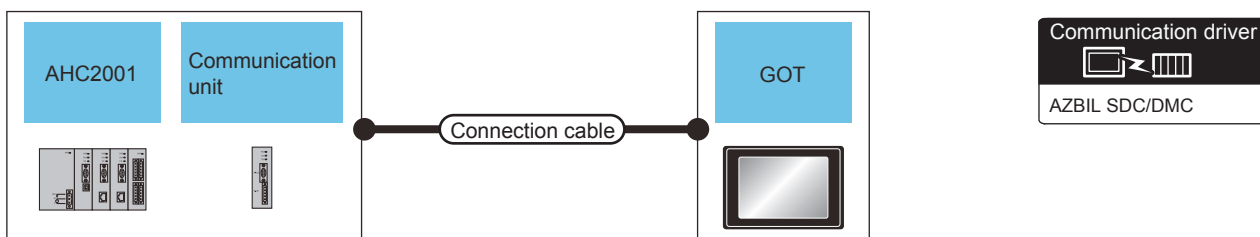
| Control equipment |                    | Connection cable                         |               | GOT                                                                             |       | Number of connectable equipment     |
|-------------------|--------------------|------------------------------------------|---------------|---------------------------------------------------------------------------------|-------|-------------------------------------|
| Model name        | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device                                                                   | Model |                                     |
| CMC10B            | RS-485             | RS485 connection diagram 4)              | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 | <br>  | Up to 1 control equipment for 1 GOT |
|                   |                    | RS485 connection diagram 6)              | 500m          | - (Built into GOT)                                                              | <br>  |                                     |
|                   |                    |                                          |               | GT15-RS4-9S                                                                     |       |                                     |
|                   |                    | RS485 connection diagram 7)              | 500m          | GT15-RS4-TE                                                                     |       |                                     |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.13 Connecting to AHC2001

#### ■ When connecting to one temperature controller

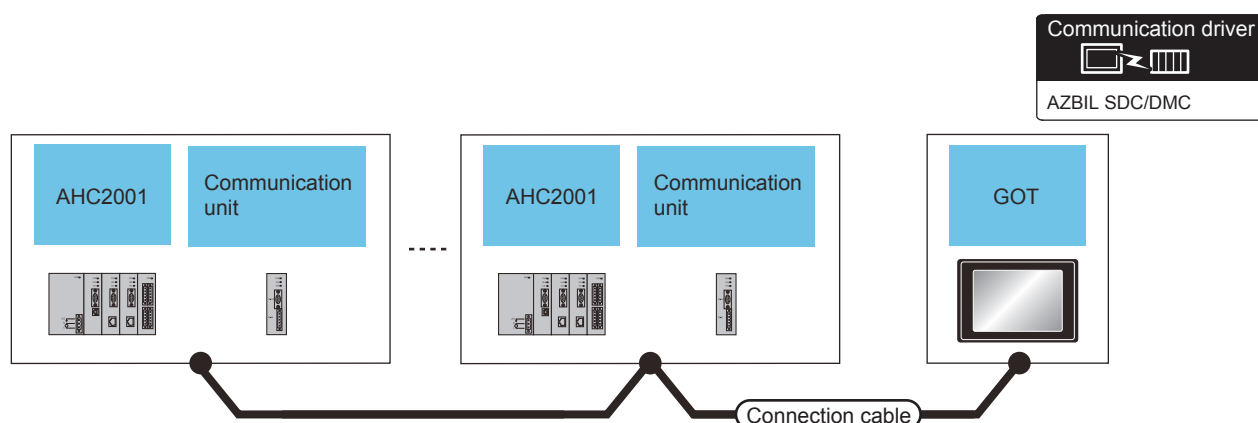


| Control equipment |                    |                    | Connection cable                                                                                                 |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment           |
|-------------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Model name        | Communication unit | Communication Type | Cable model<br>Connection diagram number                                                                         | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                           |
| AHC2001           | -                  | RS-232             |  RS232 connection diagram 2)    | 15m           | - (Built into GOT)                                                              |  <br>       | Up to 1 temperature controllers for 1 GOT |
|                   | SCU                |                    |                                                                                                                  |               | GT15-RS2-9P                                                                     |                                                                                                |                                           |
|                   | SCU                | RS-485             |  RS485 connection diagram 4)   | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>   |                                           |
|                   |                    |                    |  RS485 connection diagram 14) |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                           |
|                   |                    |                    |  RS485 connection diagram 6)  | 500m          | - (Built into GOT)                                                              |  <br> |                                           |
|                   |                    |                    |                                                                                                                  |               | GT15-RS4-9S                                                                     |                                                                                            |                                           |
|                   |                    |                    |  RS485 connection diagram 15) | 500m          | - (Built into GOT)                                                              |  <br> |                                           |
|                   |                    |                    |  RS485 connection diagram 7)  | 500m          | GT15-RS4-TE                                                                     |                                                                                            |                                           |
|                   |                    |                    |  RS485 connection diagram 16) |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                           |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

■ When connecting to multiple temperature controllers



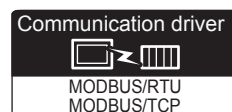
| Control equipment |                    |                    | Connection cable                                                                                                 |               | GOT                                                                             |                                                                                                                                                                                                                                                                      | Number of connectable equipment            |
|-------------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Model name        | Communication unit | Communication Type | Cable model<br>Connection diagram number                                                                         | Max. distance | Option device                                                                   | Model                                                                                                                                                                                                                                                                |                                            |
| AHC2001           | SCU                | RS-485             |  RS485 connection diagram 4)    | 500m*1        | FA-LTBGT2R4CBL05 (0.5m)*2<br>FA-LTBGT2R4CBL10 (1m)*2<br>FA-LTBGT2R4CBL20 (2m)*2 |  <br>       | Up to 31 temperature controllers for 1 GOT |
|                   |                    |                    |  RS485 connection diagram 14)   |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |
|                   |                    |                    |  RS485 connection diagram 6)  | 500m          | - (Built into GOT)                                                              |  <br>   |                                            |
|                   |                    |                    |                                                                                                                  |               | GT15-RS4-9S                                                                     |  <br> |                                            |
|                   |                    |                    |  RS485 connection diagram 15) | 500m          | - (Built into GOT)                                                              |  <br> |                                            |
|                   |                    |                    |  RS485 connection diagram 7)  | 500m          | GT15-RS4-TE                                                                     |  <br> |                                            |
|                   |                    |                    |  RS485 connection diagram 16) |               |                                                                                 |                                                                                                                                                                                                                                                                      |                                            |

\*1 Including the cable length of the option devices.

\*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED. For details of the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

### 3.2.14 Connecting to NX series

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Use a MODBUS(R)/RTU or MODBUS(R)/TCP communication driver to connect the GOT to NX series.  
For the MODBUS(R)/RTU or MODBUS(R)/TCP connection, refer to the following manual.

 GOT2000 Series Connection Manual (Microcomputer/MODBUS/Peripheral Connection)

4. MODBUS(R)/RTU CONNECTION

5. MODBUS(R)/TCP CONNECTION

For the valid devices, refer to the following Technical News.

 List of Valid Devices Applicable for GOT2000 Series with MODBUS Connection (GOT-A-0070)



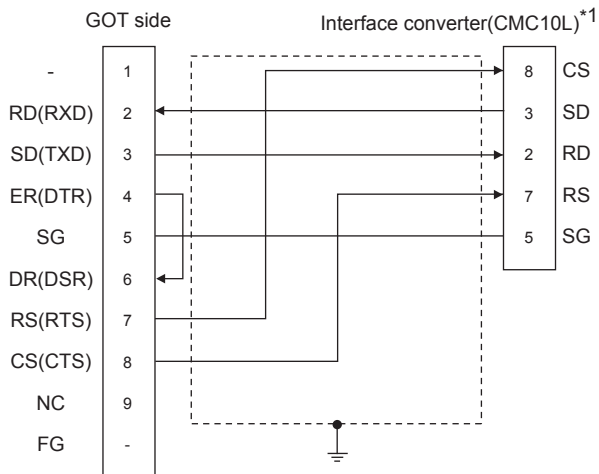
## 3.3 Connection Diagram

The following diagram shows the connection between the GOT and the control equipment.

### 3.3.1 RS-232 cable

#### ■ Connection diagram

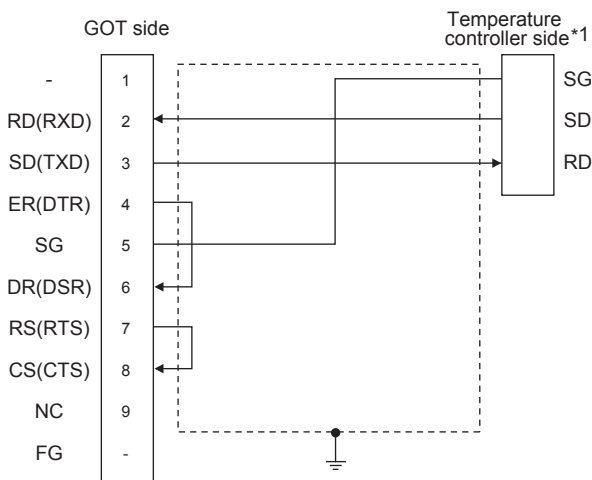
##### (1) RS232 connection diagram 1)



\*1 For details on the setting method of the TERMINAL mode, refer to the following.

3.5.5 Connecting to CMC10L

##### (2) RS232 connection diagram 2)



\*1 Pin No. of temperature controller differs depending on model and optional function model. Refer to the following table. The numbers in ( ) of the following table correspond to optional function models.

| Signal name | Model of temperature controller |         |              |                        |         |         |
|-------------|---------------------------------|---------|--------------|------------------------|---------|---------|
|             | SDC20                           |         | SDC21        | SDC40A, SDC40B, SDC40G | AHC2001 |         |
|             | (03, 05)                        | (10)    | (04, 07, 09) |                        | CPU     | SCU     |
|             | Pin No.                         | Pin No. | Pin No.      | Pin No.                | Pin No. | Pin No. |
| SG          | 5                               | 18      | 29           | 61                     | 5       | 5       |
| SD          | 17                              | 16      | 27           | 60                     | 3       | 3       |
| RD          | 18                              | 17      | 28           | 59                     | 2       | 2       |

## ■ Precautions when preparing a cable

### (3) Cable length

The length of the RS-232 cable must be 15m or less.

### (4) GOT side connector

For the GOT side connector, refer to the following.



1.4.1 GOT connector specifications

### (5) AZBIL control equipment side connector

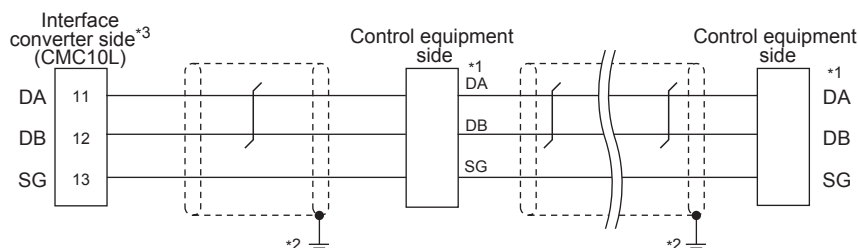
Use the connector compatible with the AZBIL control equipment side module.

For details, refer to the user's manual of the AZBIL control equipment

### 3.3.2 RS-485 cable

#### ■ Connection diagram

##### (1) RS485 connection diagram 1)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

| Signal name | Model of control equipment |         |                      |                    |
|-------------|----------------------------|---------|----------------------|--------------------|
|             | DMC10                      | SDC15   | SDC25/26<br>SDC35/36 | AUR350C<br>AUR450C |
|             | Pin No.                    | Pin No. | Pin No.              | Pin No.            |
| DA          | 4                          | 16      | 22                   | DA                 |
| DB          | 5                          | 17      | 23                   | DB                 |
| SG          | 6                          | 18      | 24                   | SG                 |

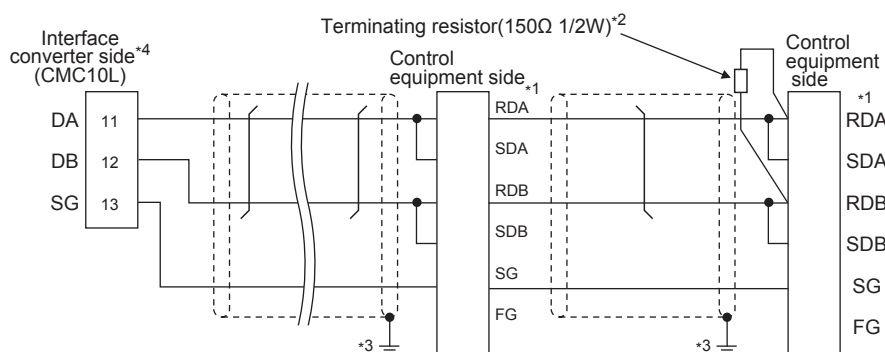
\*2 Connect FG grounding to the single-sided end of a cable shield line.

\*3 Set the terminal resistor to "Disable".

For details of terminating resistor settings, refer to the following.

☞ 3.5.5 Connecting to CMC10L

##### (2) RS485 connection diagram 2)



\*1 Pin No. of control equipment differs depending on model and optional function model. Refer to the following table. The numbers in ( ) of the following table correspond to optional function models.

| Signal<br>name | Model of control equipment |         |                 |               |         |               |                    |               |                |         |
|----------------|----------------------------|---------|-----------------|---------------|---------|---------------|--------------------|---------------|----------------|---------|
|                | SDC20                      |         | SDC21           | SDC30         | SDC31   |               | SDC40A/<br>40B/40G | CMF050<br>CML | PBC201-<br>VN2 | CMC10B  |
|                | (02, 04)                   | (09)    | (03, 06,<br>08) | (040,<br>041) | (045)   | (446,<br>546) |                    |               |                |         |
|                | Pin No.                    | Pin No. | Pin No.         | Pin No.       | Pin No. | Pin No.       | Pin No.            | Pin No.       | Pin No.        | Pin No. |
| RDA            | 17                         | 18      | 27              | 18            | 18      | 27            | 59                 | 9             | 12             | 11      |
| RDB            | 18                         | 19      | 28              | 19            | 19      | 28            | 60                 | 10            | 13             | 12      |
| SDA            | 15                         | 16      | 25              | 16            | 16      | 25            | 57                 | 7             | 14             | 13      |
| SDB            | 16                         | 17      | 26              | 17            | 17      | 26            | 58                 | 8             | 15             | 14      |
| SG             | 5                          | 5       | 29              | 5             | 5       | 29            | 61                 | 12            | 16             | 15      |
| FG             | 3, 4                       | 3, 4    | 3, 4            | 3, 4          | 3, 4    | 3, 4          | 3                  | 19            | 3              | -       |

\*2 Terminating resistor should be provided for a Interface converter and a control equipment which will be terminals.

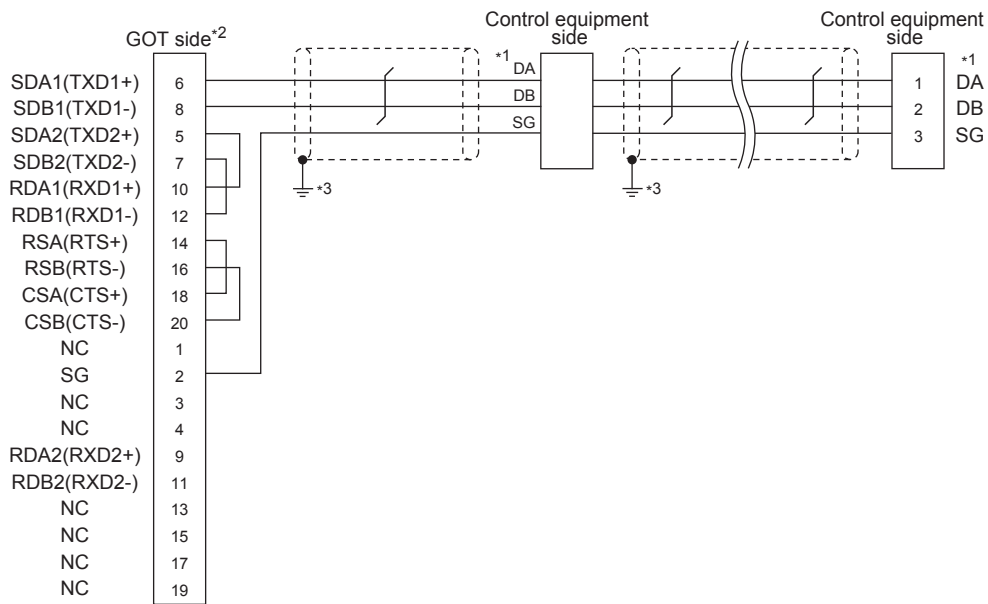
\*3 Connect FG grounding to the single-sided end of a cable shield line.

\*4 Since the Interface converter has a built-in terminating resistor, set the terminating resistor of GOT to "Enable".

For details of terminating resistor settings, refer to the following.

☞ 3.5.5 Connecting to CMC10L

### (3) RS485 connection diagram 3)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

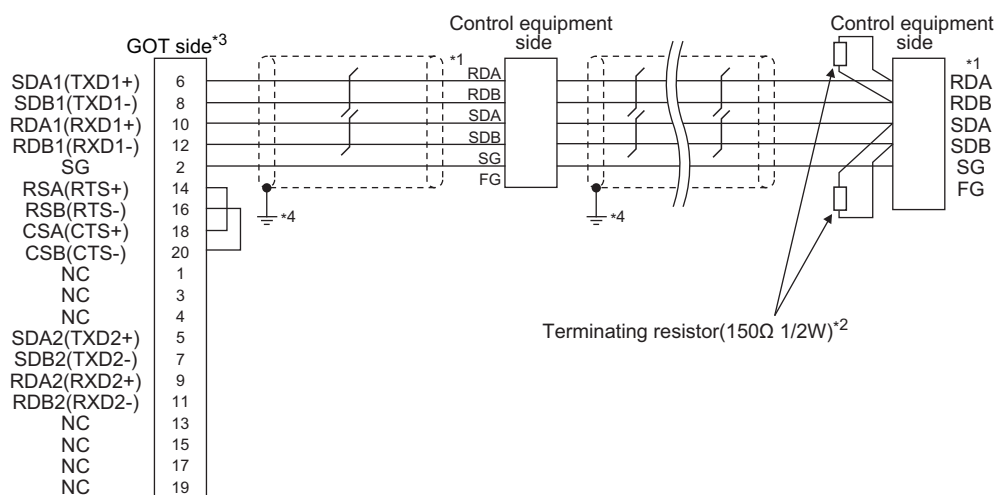
| Signal name | Model of control equipment |         |                      |                    |
|-------------|----------------------------|---------|----------------------|--------------------|
|             | DMC10                      | SDC15   | SDC25/26<br>SDC35/36 | AUR350C<br>AUR450C |
|             | Pin No.                    | Pin No. | Pin No.              | Pin No.            |
| DA          | 4                          | 16      | 22                   | DA                 |
| DB          | 5                          | 17      | 23                   | DB                 |
| SG          | 6                          | 18      | 24                   | SG                 |

\*2 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "Disable".

■ Connecting terminating resistors

\*3 Connect FG grounding to the single-sided end of a cable shield line.

(4) RS485 connection diagram 4)



\*1 Pin No. of control equipment differs depending on model or optional function model.  
Refer to the following table.The numbers in ( ) of the following table correspond to optional function models.

| Signal name | Model of control equipment |         |              |            |         |            |                |
|-------------|----------------------------|---------|--------------|------------|---------|------------|----------------|
|             | SDC20                      |         | SDC21        | SDC30      | SDC31   |            | SDC40A/40B/40G |
|             | (02, 04)                   | (09)    | (03, 06, 08) | (040, 041) | (045)   | (446, 546) |                |
|             | Pin No.                    | Pin No. | Pin No.      | Pin No.    | Pin No. | Pin No.    |                |
| RDA         | 17                         | 18      | 27           | 18         | 18      | 27         | 59             |
| RDB         | 18                         | 19      | 28           | 19         | 19      | 28         | 60             |
| SDA         | 15                         | 16      | 25           | 16         | 16      | 25         | 57             |
| SDB         | 16                         | 17      | 26           | 17         | 17      | 26         | 58             |
| SG          | 5                          | 5       | 29           | 5          | 5       | 29         | 61             |
| FG          | 3, 4                       | 3, 4    | 3, 4         | 3, 4       | 3, 4    | 3, 4       | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050 CML                 | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

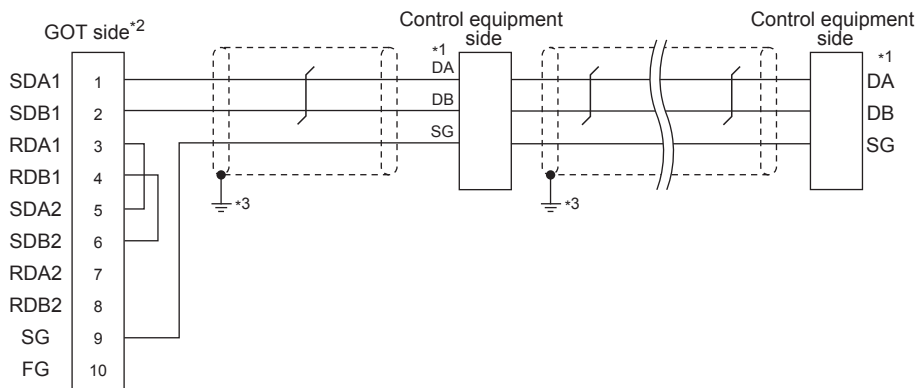
\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

\*3 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.

(5) RS485 connection diagram 5)



\*1 Pin No. of Model of control equipment differs depending on the model. Refer to the following table.

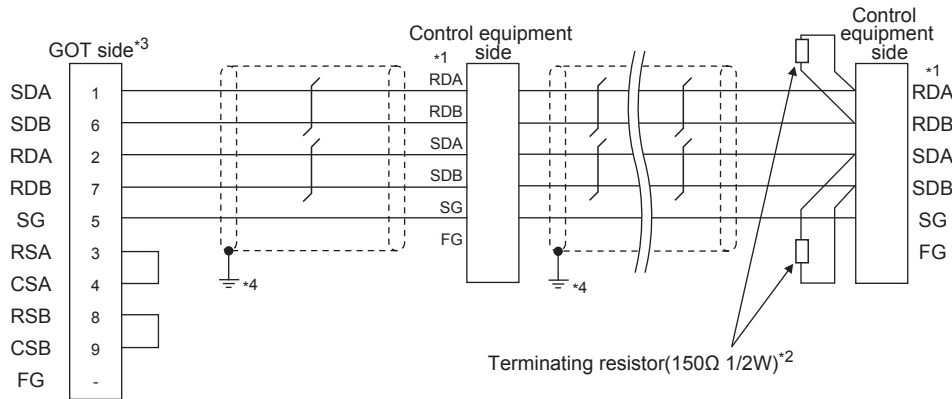
| Signal name | Model of control equipment |         |                      |                    |
|-------------|----------------------------|---------|----------------------|--------------------|
|             | DMC10                      | SDC15   | SDC25/26<br>SDC35/36 | AUR350C<br>AUR450C |
|             | Pin No.                    | Pin No. | Pin No.              | Pin No.            |
| DA          | 4                          | 16      | 22                   | DA                 |
| DB          | 5                          | 17      | 23                   | DB                 |
| SG          | 6                          | 18      | 24                   | SG                 |

\*2 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "Disable".

■ Connecting terminating resistors

\*3 Connect FG grounding to the single-sided end of a cable shield line.

(6) RS485 connection diagram 6)



\*1 Pin No. of control equipment differs depending on model or optional function model.  
Refer to the following table. The numbers in ( ) of the following table correspond to optional function models.

| Signal name | Model of control equipment |         |              |            |         |            |                |
|-------------|----------------------------|---------|--------------|------------|---------|------------|----------------|
|             | SDC20                      |         | SDC21        | SDC30      | SDC31   |            | SDC40A/40B/40G |
|             | (02, 04)                   | (09)    | (03, 06, 08) | (040, 041) | (045)   | (446, 546) |                |
|             | Pin No.                    | Pin No. | Pin No.      | Pin No.    | Pin No. | Pin No.    |                |
| RDA         | 17                         | 18      | 27           | 18         | 18      | 27         | 59             |
| RDB         | 18                         | 19      | 28           | 19         | 19      | 28         | 60             |
| SDA         | 15                         | 16      | 25           | 16         | 16      | 25         | 57             |
| SDB         | 16                         | 17      | 26           | 17         | 17      | 26         | 58             |
| SG          | 5                          | 5       | 29           | 5          | 5       | 29         | 61             |
| FG          | 3, 4                       | 3, 4    | 3, 4         | 3, 4       | 3, 4    | 3, 4       | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050<br>CML              | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

\*3 Set the terminating resistor of GOT as follows.

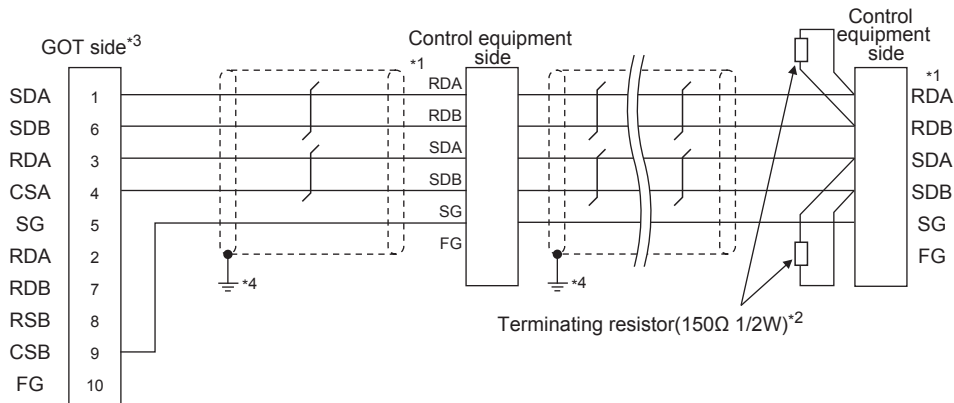
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

Set the terminating resistor selector to "330 Ω".

■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.

(7) RS485 connection diagram 7)



\*1 Pin No. of control equipment differs depending on model or optional function model.

Refer to the following table. The numbers in ( ) of the following table correspond to optional function models.

| Signal name | Model of control equipment |         |              |            |         |            |                |
|-------------|----------------------------|---------|--------------|------------|---------|------------|----------------|
|             | SDC20                      |         | SDC21        | SDC30      | SDC31   |            | SDC40A/40B/40G |
|             | (02, 04)                   | (09)    | (03, 06, 08) | (040, 041) | (045)   | (446, 546) |                |
|             | Pin No.                    | Pin No. | Pin No.      | Pin No.    | Pin No. | Pin No.    |                |
| RDA         | 17                         | 18      | 27           | 18         | 18      | 27         | 59             |
| RDB         | 18                         | 19      | 28           | 19         | 19      | 28         | 60             |
| SDA         | 15                         | 16      | 25           | 16         | 16      | 25         | 57             |
| SDB         | 16                         | 17      | 26           | 17         | 17      | 26         | 58             |
| SG          | 5                          | 5       | 29           | 5          | 5       | 29         | 61             |
| FG          | 3, 4                       | 3, 4    | 3, 4         | 3, 4       | 3, 4    | 3, 4       | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050<br>CML              | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

\*3 Set the terminating resistor of GOT as follows.

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

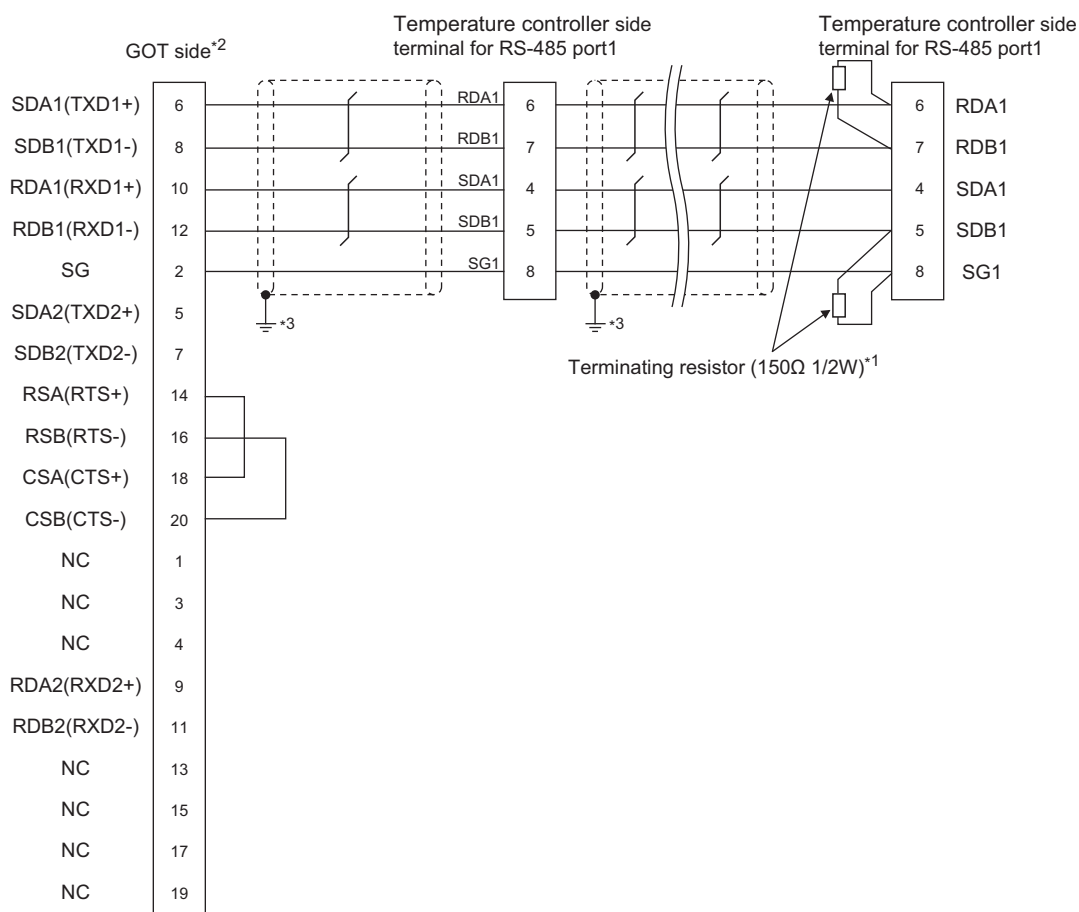


■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.



(8) RS485 connection diagram 8)



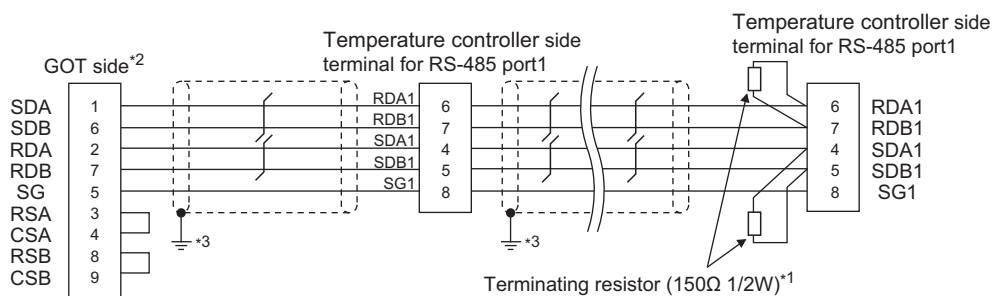
\*1 Terminating resistor should be provided for a temperature controller which will be a terminal.

\*2 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*3 Connect FG grounding to the single-sided end of a cable shield line.

(9) RS485 connection diagram 9)



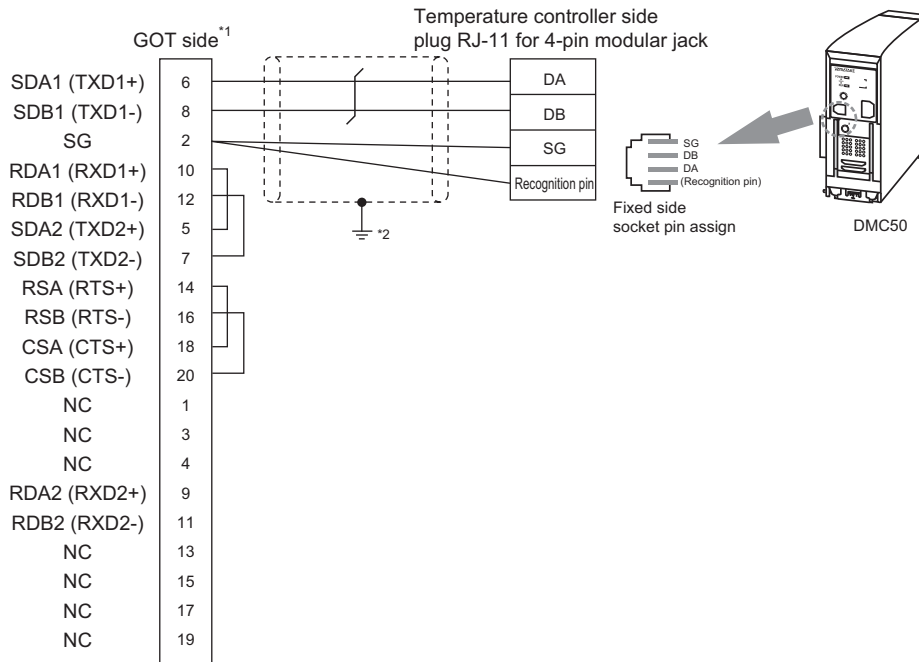
\*1 Terminating resistor should be provided for a temperature controller which will be a terminal.

\*2 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

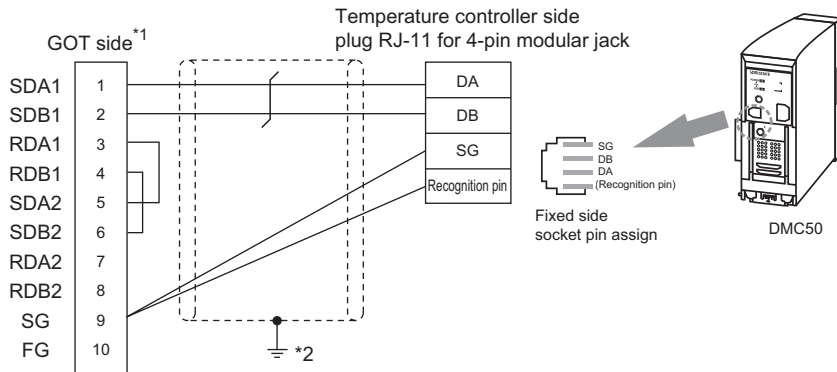
\*3 Connect FG grounding to the single-sided end of a cable shield line.

### (10) RS485 connection diagram 10)



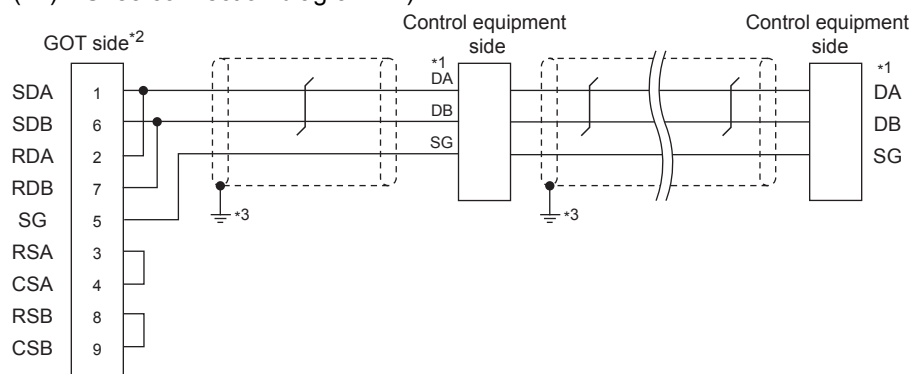
- \*1 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".
- Connecting terminating resistors
- \*2 Connect FG grounding to the single-sided end of a cable shield line.

### (11) RS485 connection diagram 11)



- \*1 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".
- Connecting terminating resistors
- \*2 Connect FG grounding to the single-sided end of a cable shield line.

(12) RS485 connection diagram 12)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

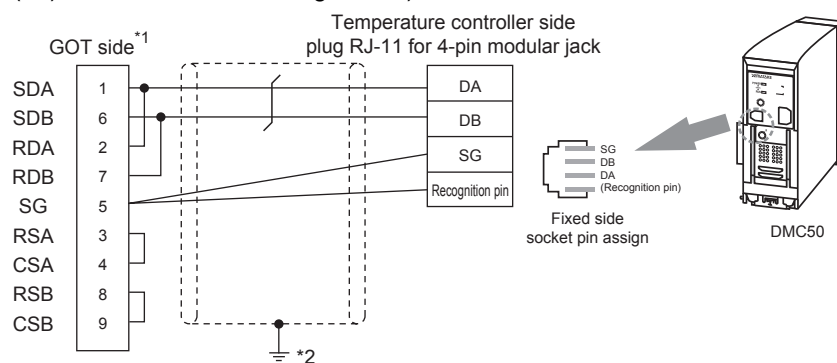
| Signal name | Model of control equipment |         |                      |                    |
|-------------|----------------------------|---------|----------------------|--------------------|
|             | DMC10                      | SDC15   | SDC25/26<br>SDC35/36 | AUR350C<br>AUR450C |
|             | Pin No.                    | Pin No. | Pin No.              | Pin No.            |
| DA          | 4                          | 16      | 22                   | DA                 |
| DB          | 5                          | 17      | 23                   | DB                 |
| SG          | 6                          | 18      | 24                   | SG                 |

\*2 Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*3 Connect FG grounding to the single-sided end of a cable shield line.

(13) RS485 connection diagram 13)

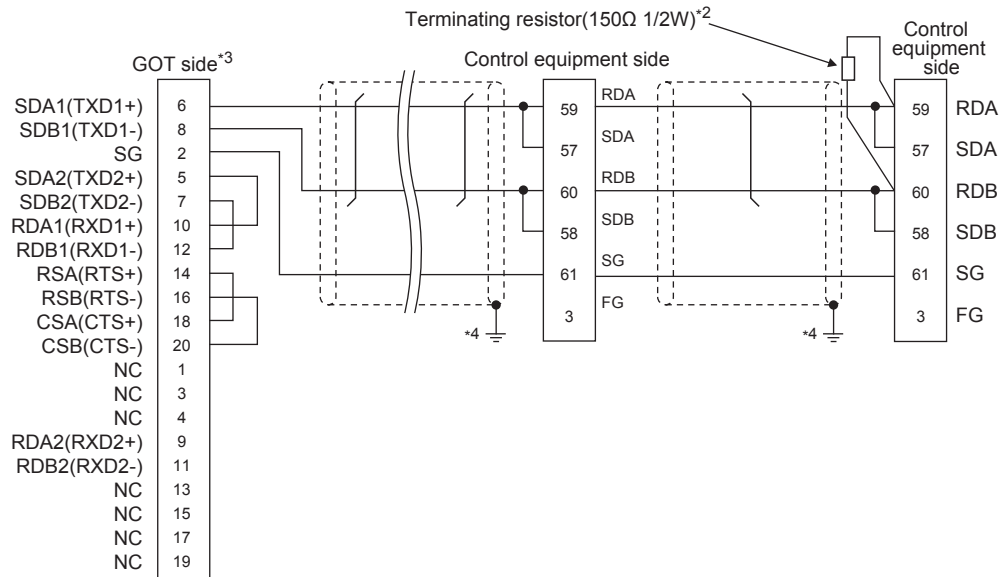


\*1 Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*2 Connect FG grounding to the single-sided end of a cable shield line.

(14) RS485 connection diagram 14)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

| Signal name | Model of control equipment |                 |                         |                       |                  |                       |                |
|-------------|----------------------------|-----------------|-------------------------|-----------------------|------------------|-----------------------|----------------|
|             | SDC20                      |                 | SDC21                   | SDC30                 | SDC31            |                       | SDC40A/40B/40G |
|             | (02, 04)<br>Pin No.        | (09)<br>Pin No. | (03, 06, 08)<br>Pin No. | (040, 041)<br>Pin No. | (045)<br>Pin No. | (446, 546)<br>Pin No. |                |
| RDA         | 17                         | 18              | 27                      | 18                    | 18               | 27                    | 59             |
| RDB         | 18                         | 19              | 28                      | 19                    | 19               | 28                    | 60             |
| SDA         | 15                         | 16              | 25                      | 16                    | 16               | 25                    | 57             |
| SDB         | 16                         | 17              | 26                      | 17                    | 17               | 26                    | 58             |
| SG          | 5                          | 5               | 29                      | 5                     | 5                | 29                    | 61             |
| FG          | 3, 4                       | 3, 4            | 3, 4                    | 3, 4                  | 3, 4             | 3, 4                  | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050<br>CML              | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

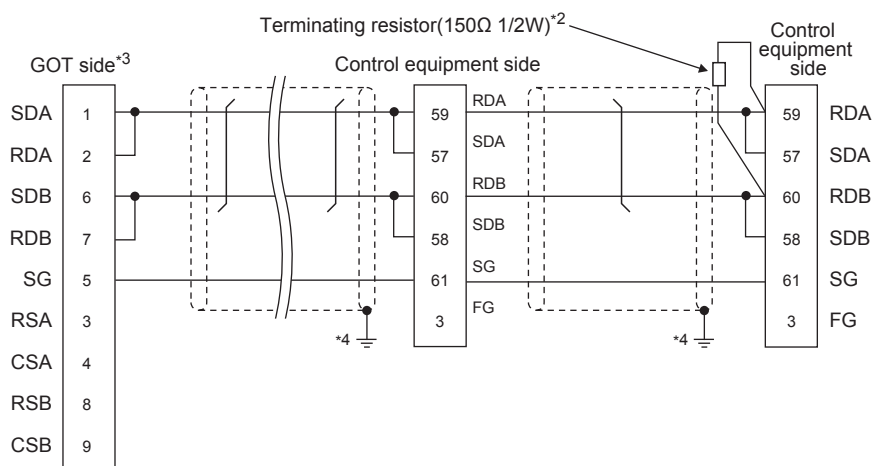
\*3 Set the terminating resistor of GOT as follows.

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.

(15) RS485 connection diagram 15)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

| Signal name | Model of control equipment |         |              |            |         |            |                |
|-------------|----------------------------|---------|--------------|------------|---------|------------|----------------|
|             | SDC20                      |         | SDC21        | SDC30      | SDC31   |            | SDC40A/40B/40G |
|             | (02, 04)                   | (09)    | (03, 06, 08) | (040, 041) | (045)   | (446, 546) |                |
|             | Pin No.                    | Pin No. | Pin No.      | Pin No.    | Pin No. | Pin No.    |                |
| RDA         | 17                         | 18      | 27           | 18         | 18      | 27         | 59             |
| RDB         | 18                         | 19      | 28           | 19         | 19      | 28         | 60             |
| SDA         | 15                         | 16      | 25           | 16         | 16      | 25         | 57             |
| SDB         | 16                         | 17      | 26           | 17         | 17      | 26         | 58             |
| SG          | 5                          | 5       | 29           | 5          | 5       | 29         | 61             |
| FG          | 3, 4                       | 3, 4    | 3, 4         | 3, 4       | 3, 4    | 3, 4       | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050 CML                 | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

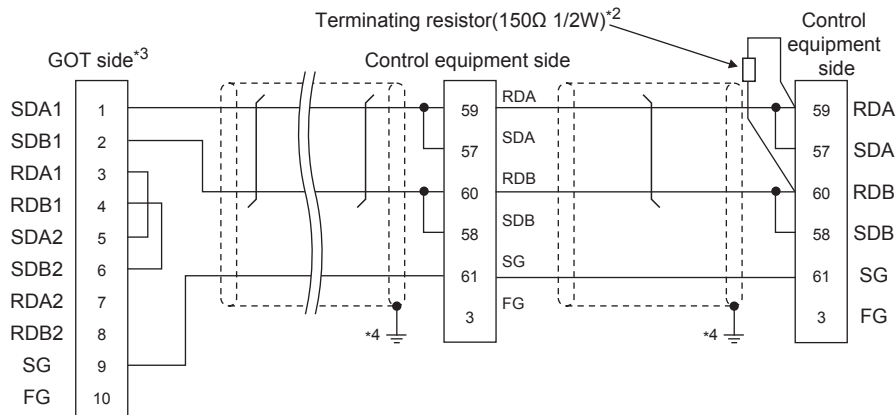
\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

\*3 Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.

(16) RS485 connection diagram 16)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table.

| Signal name | Model of control equipment |         |              |            |         |            |                |
|-------------|----------------------------|---------|--------------|------------|---------|------------|----------------|
|             | SDC20                      |         | SDC21        | SDC30      | SDC31   |            | SDC40A/40B/40G |
|             | (02, 04)                   | (09)    | (03, 06, 08) | (040, 041) | (045)   | (446, 546) |                |
|             | Pin No.                    | Pin No. | Pin No.      | Pin No.    | Pin No. | Pin No.    |                |
| RDA         | 17                         | 18      | 27           | 18         | 18      | 27         | 59             |
| RDB         | 18                         | 19      | 28           | 19         | 19      | 28         | 60             |
| SDA         | 15                         | 16      | 25           | 16         | 16      | 25         | 57             |
| SDB         | 16                         | 17      | 26           | 17         | 17      | 26         | 58             |
| SG          | 5                          | 5       | 29           | 5          | 5       | 29         | 61             |
| FG          | 3, 4                       | 3, 4    | 3, 4         | 3, 4       | 3, 4    | 3, 4       | 3              |

| Signal name | Model of control equipment |            |         |         |
|-------------|----------------------------|------------|---------|---------|
|             | CMF050 CML                 | PBC201-VN2 | CMC10B  | AHC2001 |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. |
| RDA         | 9                          | 12         | 11      | 3       |
| RDB         | 10                         | 13         | 12      | 2       |
| SDA         | 7                          | 14         | 13      | 5       |
| SDB         | 8                          | 15         | 14      | 4       |
| SG          | 12                         | 16         | 15      | 1       |
| FG          | 19                         | 3          | -       | -       |

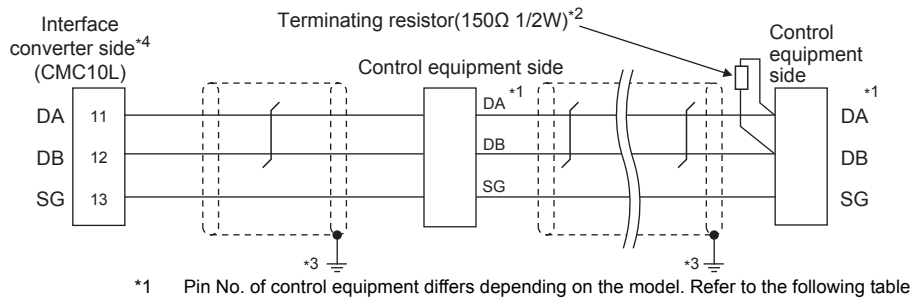
\*2 Terminating resistor should be provided for a control equipment which will be a terminal.

\*3 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

■ Connecting terminating resistors

\*4 Connect FG grounding to the single-sided end of a cable shield line.

(17) RS485 connection diagram 17)



| Signal name | Model of control equipment |            |         |         |         |
|-------------|----------------------------|------------|---------|---------|---------|
|             | SDC45/46                   | CMS CMF015 | MQV MPC | MVF     | RX      |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. | Pin No. |
| DA          | C10                        | 5          | 7       | 1       | 1       |
| DB          | C11                        | 6          | 8       | 2       | 2       |
| SG          | C12                        | 10         | 9       | 7       | 3       |

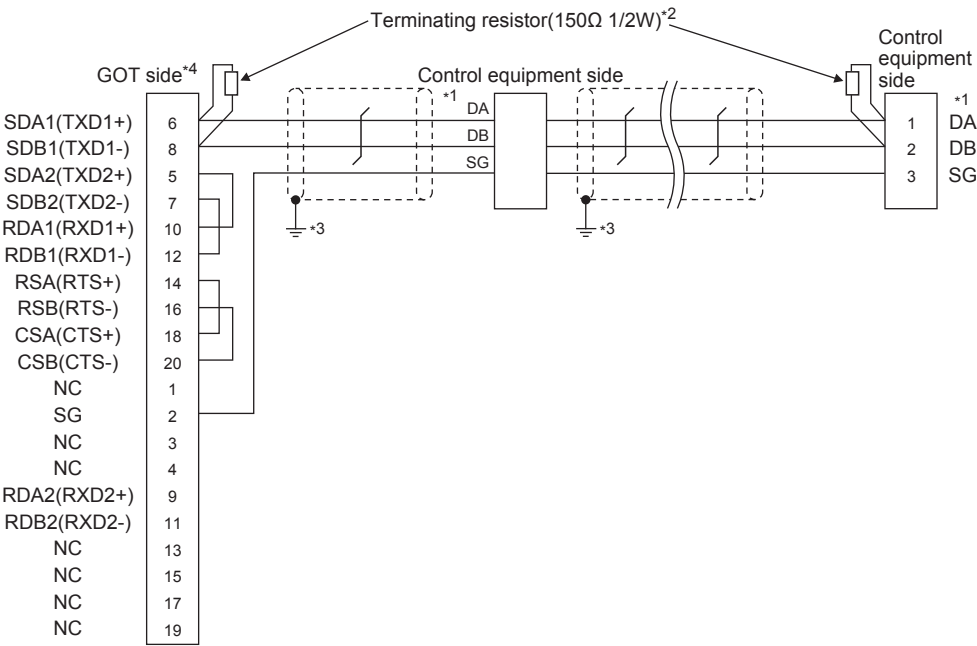
\*2 Terminating resistor should be provided for an Interface converter and a control equipment which will be terminals.

\*3 Connect FG grounding to the single-sided end of a cable shield line.

\*4 Since the Interface converter has a built-in terminating resistor, set the terminating resistor of GOT to "Enable". For details of terminating resistor settings, refer to the following.

☞ 3.5.5 Connecting to CMC10L

(18) RS485 connection diagram 18)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table

| Signal name | Model of control equipment |               |            |         |         |
|-------------|----------------------------|---------------|------------|---------|---------|
|             | SDC45/46                   | CMS<br>CMF015 | MQV<br>MPC | MVF     | RX      |
|             | Pin No.                    | Pin No.       | Pin No.    | Pin No. | Pin No. |
| DA          | C10                        | 5             | 7          | 1       | 1       |
| DB          | C11                        | 6             | 8          | 2       | 2       |
| SG          | C12                        | 10            | 9          | 7       | 3       |

\*2 Terminating resistor should be provided for an Interface converter and a control equipment which will be terminals.

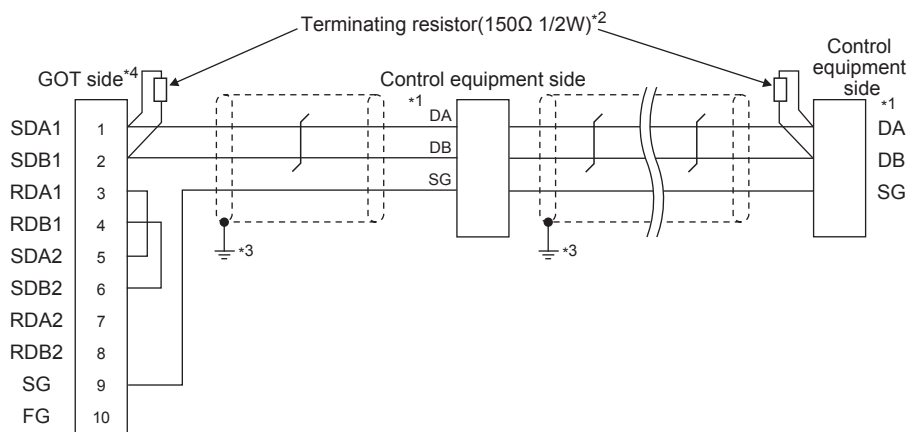
\*3 Connect FG grounding to the single-sided end of a cable shield line.

\*4 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "Disable".

■ Connecting terminating resistors



(19) RS485 connection diagram 19)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table

| Signal name | Model of control equipment |            |         |         |         |
|-------------|----------------------------|------------|---------|---------|---------|
|             | SDC45/46                   | CMS CMF015 | MQV MPC | MVF     | RX      |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. | Pin No. |
| DA          | C10                        | 5          | 7       | 1       | 1       |
| DB          | C11                        | 6          | 8       | 2       | 2       |
| SG          | C12                        | 10         | 9       | 7       | 3       |

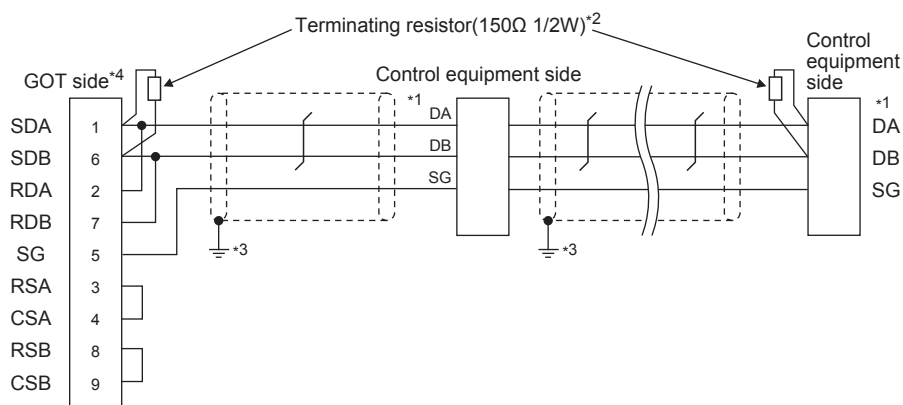
\*2 Terminating resistor should be provided for an Interface converter and a control equipment which will be terminals.

\*3 Connect FG grounding to the single-sided end of a cable shield line.

\*4 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "Disable".

■ Connecting terminating resistors

(20) RS485 connection diagram 20)



\*1 Pin No. of control equipment differs depending on the model. Refer to the following table

| Signal name | Model of control equipment |            |         |         |         |
|-------------|----------------------------|------------|---------|---------|---------|
|             | SDC45/46                   | CMS CMF015 | MQV MPC | MVF     | RX      |
|             | Pin No.                    | Pin No.    | Pin No. | Pin No. | Pin No. |
| DA          | C10                        | 5          | 7       | 1       | 1       |
| DB          | C11                        | 6          | 8       | 2       | 2       |
| SG          | C12                        | 10         | 9       | 7       | 3       |

\*2 Terminating resistor should be provided for an Interface converter and a control equipment which will be terminals.

\*3 Connect FG grounding to the single-sided end of a cable shield line.

\*4 Set the terminating resistor of GOT as follows.  
Set the terminating resistor setting switch of the GOT main unit to "Disable".

■ Connecting terminating resistors

## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-485 cable must be 500m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) AZBIL control equipment side connector

Use the connector compatible with the AZBIL control equipment side module.

For details, refer to the user's manual of the AZBIL control equipment.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor by operating the terminating resistor setting switch.

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) AZBIL control equipment side

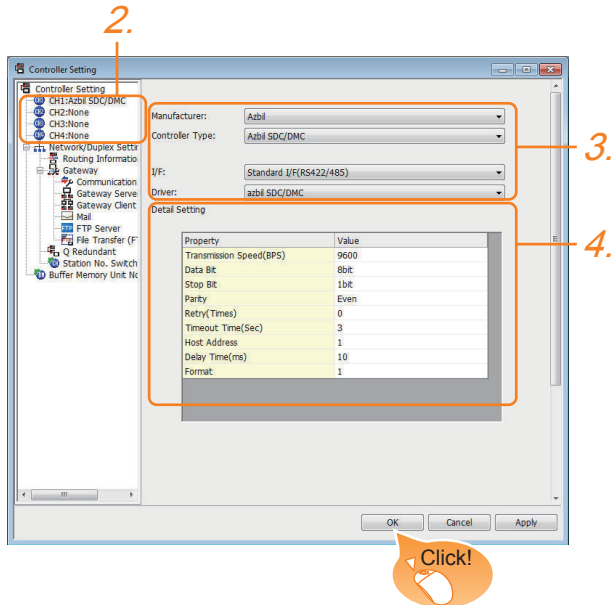
When connecting a AZBIL control equipment to the GOT, a terminating resistor must be connected.

 3.5 Control Equipment Side Setting

## 3.4 GOT Side Settings

### 3.4.1 Setting communication interface (Communication settings)

Set the channel of the connected equipment.



#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting].  
For details, refer to the following.

➡ 1.1.2 I/F communication setting

1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: Azbil
  - Controller Type: Set either of the followings.  
<Connecting to DMC50 and AHC2001>  
Azbil DMC50  
<Connecting to a module other than above>  
Azbil SDC/DMC
  - I/F: Interface to be used
  - Driver: Azbil SDC/DMC
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set.  
Make the settings according to the usage environment.

➡ 3.4.2 Communication detail settings

Click the [OK] button when settings are completed.

### 3.4.2 Communication detail settings

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 1     |
| Delay Time(ms)          | 10    |
| Format                  | 1     |

| Item                         | Description                                                                                                                                  | Range                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Transmission Speed           | Set this item when change the transmission speed used for communication with the connected equipment.<br>(Default: 9600bps)                  | 9600bps,<br>19200bps,<br>38400bps,<br>57600bps,<br>115200bps |
| Data Bit                     | Set this item when change the data length used for communication with the connected equipment.<br>(Default: 8bits)                           | 7bits/8bits                                                  |
| Stop Bit                     | Specify the stop bit length for communications.<br>(Default: 1bit)                                                                           | 1bit/2bits                                                   |
| Parity                       | Specify whether or not to perform a parity check, and how it is performed during communication.<br>(Default: Even)                           | None<br>Even<br>Odd                                          |
| Retry                        | Set the number of retries to be performed when a communication error occurs.<br>(Default: 0time)                                             | 0 to 5times                                                  |
| Timeout Time                 | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                      | 1 to 30sec                                                   |
| Host Address <sup>*3,4</sup> | Specify the host address (station No. of the GOT to which the temperature controller is connected) in the connected network.<br>(Default: 1) | 1 to 15                                                      |
| Delay Time                   | Set this item to adjust the transmission timing of the communication request from the GOT. <sup>*1</sup><br>(Default: 1ms)                   | 0 to 300ms                                                   |
| Format <sup>*2</sup>         | Select the communication format.<br>(Default: 1)<br>format 1: only continuous access<br>format 2: continuous and random access               | 1/2                                                          |

\*1 Do not specify "0".

\*2 Format is ignored when connecting to DMC50.

\*3 Host Address is ignored when connecting to DMC10 or SDC.

\*4 Host Address is valid when connecting to DMC50.

Devices to be the target of Host Address setting differ depending on the system configuration.  
<When connecting to the temperature controller via COM module>  
Specify the station No. of the COM module.  
<When connecting to the temperature controller directly>  
Specify the station No. of the temperature controller.

#### POINT

##### Format setting

The compatible format of control equipment differs depending on model.

| Model name                                                                       | Compatible format              |
|----------------------------------------------------------------------------------|--------------------------------|
| SDC20/21, SDC30/31, SDC40A/40B/40G, CMS, CMF, CML, MQV, MPC, MVF, PBC201-VN2, RX | Format 1 only                  |
| DMC10, SDC15, SDC25/26, SDC35/36, SDC45/46, AUR350C, AUR450C, CMC10B             | Format 1 or Format 2           |
| DMC50, AHC2001                                                                   | The format setting is invalid. |

For the continuous access and random access of the control equipment, refer to the following manual.

 User's Manual of the AZBIL control equipment

#### POINT

- Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication setting] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

 GOT2000 Series User's Manual (Utility)

- Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 3.5 Control Equipment Side Setting

### POINT

AZBIL control equipment

For details of AZBIL control equipment, refer to the following manual.

 User's Manual of the AZBIL control equipment

|                     | Model name                | Refer to |
|---------------------|---------------------------|----------|
| Control equipment   | DMC10                     | 3.5.1    |
|                     | SDC15, SDC25/26, SDC35/36 | 3.5.3    |
|                     | SDC20/21                  | 3.5.4    |
|                     | SDC30/31                  | 3.5.4    |
|                     | SDC40A/40B/40G            | 3.5.2    |
|                     | DMC50                     | 3.5.6    |
|                     | SDC45/46                  | 3.5.7    |
|                     | CMS, CMF015               | 3.5.8    |
|                     | CML, CMF050               | 3.5.9    |
|                     | MQV                       | 3.5.10   |
|                     | MPC                       | 3.5.11   |
|                     | PBC201-VN2                | 3.5.12   |
|                     | MVF                       | 3.5.13   |
|                     | AUR350C, AUR450C          | 3.5.14   |
|                     | RX                        | 3.5.15   |
|                     | CMC10B                    | 3.5.16   |
|                     | AHC2001 CPU               | 3.5.17   |
|                     | AHC2001 SCU               | 3.5.18   |
| Interface converter | CMC10L                    | 3.5.5    |

### 3.5.1 Connecting to DMC10

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-D10) of the temperature controller.

| Item                                | Set value               |
|-------------------------------------|-------------------------|
| Transmission speed*1                | 9600bps, 19200bps       |
| Communication mode*2                | CPL                     |
| Data bit                            | 8bits                   |
| Parity bit*1                        | Even, none              |
| Stop bit                            | 2bits                   |
| Communication minimum response time | 1ms, 10ms, 100ms, 200ms |
| Station address*3*4                 | 0 to F                  |

\*1 Adjust the settings with GOT settings.

\*2 Set to CPL.

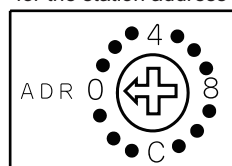
\*3 Do not set to "0".

\*4 Select the station address without overlapping with that of other units.

#### ■ Station address setting

Set the station address using the rotary switch for the station address.

Rotary switch for the station address



Front of the temperature controller body

### 3.5.2 Connecting to SDC40A/40B/40G

#### ■ Communication settings

Make the communication settings by operating the key of the temperature controller.

| Item                 | Set value   |
|----------------------|-------------|
| Transmission speed*1 | 9600bps     |
| Data Bit             | 8bits       |
| Parity bit*1         | Even, none  |
| Stop bit             | 1bit, 2bits |
| Station address*2*3  | 0 to 127    |

\*1 The transmission speed setting must be consistent with that of the GOT side.

\*2 Do not set to "0".

\*3 Select the station address without overlapping with that of other units.

### 3.5.3 Connecting to SDC15, SDC25/26 or SDC35/36

#### ■ Communication settings

Make the communication settings by operating the key or Smart Loader Package (SLP-C35) of the temperature controller.

| Item                                | Set value         |
|-------------------------------------|-------------------|
| Transmission speed*1                | 9600bps, 19200bps |
| Communication mode*2                | CPL               |
| Data bit*1                          | 7bits, 8bits      |
| Parity bit*1                        | Odd, even, none   |
| Stop bit*1                          | 1bit, 2bits       |
| Communication minimum response time | 1 to 250ms        |
| Station address*3*4                 | 0 to 127          |

\*1 The transmission speed setting must be consistent with that of the GOT side.

\*2 Set to CPL.

\*3 Do not set to "0".

\*4 Select the station address without overlapping with that of other units.

### 3.5.4 Connecting to SDC20/21, SDC30/31

#### ■ Communication settings

Make the communication settings by operating the key of the temperature controller.

| Item                             | Set value |
|----------------------------------|-----------|
| Transmission speed <sup>*1</sup> | 9600bps   |
| Data bit                         | 8bits     |
| Parity bit                       | Disable   |
| Stop bit                         | 2bits     |
| Station address <sup>*2,3</sup>  | 0 to 127  |

- <sup>\*1</sup> The transmission speed setting must be consistent with that of the GOT side.  
<sup>\*2</sup> Do not set to "0".  
<sup>\*3</sup> Select the station address without overlapping with that of other units.

### 3.5.5 Connecting to CMC10L

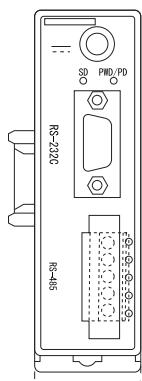
#### ■ Communication settings

Make the communication settings by operating the DIP switch of the Interface converter

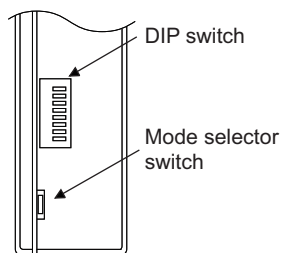
| Item                             | Set value                   |
|----------------------------------|-----------------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps |
| Frame length <sup>*2</sup>       | 9 to 15bits                 |

- <sup>\*1</sup> The transmission speed setting must be consistent with that of the GOT side.  
<sup>\*2</sup> The sum of data length, parity bit and stop bit

#### ■ Settings by switch



Front view of CMC10L body



Rear view of CMC10L body

#### (1) Setting DIP switches

##### (a) Transmission speed settings

| Transmission speed (bps) | Switch No. |     |    |
|--------------------------|------------|-----|----|
|                          | 1          | 2   | 3  |
| 9600                     | ON         | OFF | ON |
| 19200                    | OFF        | ON  | ON |
| 38400                    | ON         | ON  | ON |

Set these switches



##### (b) Frame length settings

| Frame length | Switch No. |     |     |
|--------------|------------|-----|-----|
|              | 4          | 5   | 6   |
| 8bits        | OFF        | OFF | OFF |
| 9bits        | ON         | OFF | OFF |
| 10bits       | OFF        | ON  | OFF |
| 11bits       | ON         | ON  | OFF |
| 12bits       | OFF        | OFF | ON  |
| 13bits       | ON         | OFF | ON  |
| 14bits       | OFF        | ON  | ON  |
| 15bits       | ON         | ON  | ON  |

Set these switches



##### (c) Connecting terminating resistors

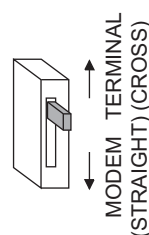
| Terminating resistor | Switch No. |
|----------------------|------------|
|                      | 8          |
| Enable               | ON         |
| Disable              | OFF        |

Set these switches



#### (2) Mode selector switch settings

Set the switch to "TERMINAL".



### 3.5.6 Connecting to DMC50

#### ■ Communication settings

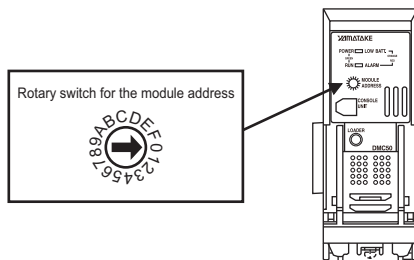
Make the communication settings by operating the Smart Loader Package (SLP-D50/SLP-H21) of the temperature controller.

| Item                             | Set value                   |
|----------------------------------|-----------------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps |
| Communication mode               | CPL                         |
| Data bit                         | 8bits (fixed)               |
| Parity bit                       | Even (fixed)                |
| Stop bit                         | 1bit (fixed)                |
| Module address <sup>*2*3*4</sup> | 0 to F                      |

- \*1 Adjust the settings with GOT settings.
- \*2 Set the module address using the rotary switch for module address.
- \*3 Do not set to "0".
- \*4 Select the module address without overlapping with that of other units.

#### ■ Module address setting

Set the module address using the rotary switch for module address.



### 3.5.7 Connecting to SDC45/46

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-C45) of the temperature controller.

| Item                                              | Set value                   |
|---------------------------------------------------|-----------------------------|
| Transmission speed <sup>*1</sup>                  | 9600bps, 19200bps, 38400bps |
| Communication mode <sup>*2</sup>                  | CPL                         |
| Data bit                                          | 7bits, 8bits                |
| Parity bit <sup>*1</sup>                          | Odd, even, none             |
| Stop bit                                          | 1bit, 2bits                 |
| Communication minimum response time <sup>*5</sup> | 1 to 250ms                  |
| Station address <sup>*3*4</sup>                   | 0 to 120                    |

- \*1 Adjust the settings with GOT settings.
- \*2 Set to CPL.
- \*3 Do not set to "0".
- \*4 Select the station address without overlapping with that of other units.
- \*5 When using the interface converter CMC10L, set the communication minimum response time to 3ms or more.

### 3.5.8 Connecting to CMS, CMF015

#### ■ Communication settings

Make the communication settings by operating the key of the control equipment.

| Item                              | Set value                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------|
| Transmission speed <sup>*1</sup>  | 9600bps                                                                                       |
| Communication condition selection | 0: 8-bit data length, Even parity, Stop bit 1<br>1: 8-bit data length, Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>   | 0 to 99                                                                                       |

- \*1 Adjust the settings with GOT settings.
- \*2 Do not set to "0".
- \*3 Select the station address without overlapping with that of other units.

### 3.5.9 Connecting to CML, CMF050

#### ■ Communication settings

Make the communication settings by operating the key of the control equipment.

| Item                                            | Set value                                                                                       |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Transmission speed <sup>*1</sup>                | 9600bps                                                                                         |
| Communication condition selection <sup>*1</sup> | 00: 8-bit data length, Even parity, Stop bit 1<br>01: 8-bit data length, Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>                 | 0 to 7F                                                                                         |

- \*1 Adjust the settings with GOT settings.
- \*2 Do not set to "0".
- \*3 Select the station address without overlapping with that of other units.

### 3.5.10 Connecting to MQV

#### ■ Communication settings

Make the communication settings by operating the key of the control equipment.

| Item                                            | Set value                                                                                       |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Transmission speed <sup>*1</sup>                | 9600bps, 19200bps, 38400bps                                                                     |
| Communication condition selection <sup>*1</sup> | 00: 8-bit data length, Even parity, Stop bit 1<br>01: 8-bit data length, Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>                 | 0 to 127                                                                                        |

- \*1 Adjust the settings with GOT settings.
- \*2 Do not set to "0".
- \*3 Select the station address without overlapping with that of other units.

### 3.5.11 Connecting to MPC

#### ■ Communication settings

Make the communication settings by operating the key of the control equipment.

| Item                                            | Set value                                                                                     |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Transmission speed <sup>*1</sup>                | 9600bps, 19200bps, 38400bps                                                                   |
| Communication condition selection <sup>*1</sup> | 0: 8-bit data length, Even parity, Stop bit 1<br>1: 8-bit data length, Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>                 | 0 to 127                                                                                      |

\*1 Adjust the settings with GOT settings.

\*2 Do not set to "0".

\*3 Select the station address without overlapping with that of other units.

### 3.5.12 Connecting to PBC201-VN2

#### ■ Communication settings

Make the communication settings by operating the key of the control equipment.

| Item                                            | Set value                                                                                                         |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Communication protocol                          | CPL                                                                                                               |
| Transmission speed <sup>*1</sup>                | 9600bps, 19200bps, 38400bps, 115200bps                                                                            |
| Communication condition selection <sup>*1</sup> | 0: Even parity, Stop bit 1<br>1: Odd parity, Stop bit 1<br>(Fixed 8-bit data length)<br>2: Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>                 | 0 to 126                                                                                                          |

\*1 Adjust the settings with GOT settings.

\*2 Do not set to "0".

\*3 Select the station address without overlapping with that of other units.

### 3.5.13 Connecting to MVF

#### ■ Communication settings

Make the communication settings by operating the switch of the control equipment.

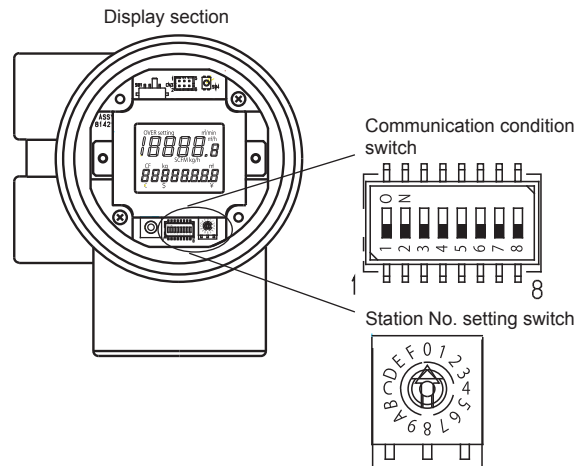
| Item                                            | Set value                                                                               |
|-------------------------------------------------|-----------------------------------------------------------------------------------------|
| Transmission speed <sup>*1</sup>                | 9600bps, 19200bps                                                                       |
| Communication condition selection <sup>*1</sup> | 8-bit data length, Even parity, Stop bit 1<br>8-bit data length, Non parity, Stop bit 2 |
| Station address <sup>*2*3</sup>                 | 0 to F                                                                                  |

\*1 Adjust the settings with GOT settings.

\*2 Do not set to "0".

\*3 Select the station address without overlapping with that of other units.

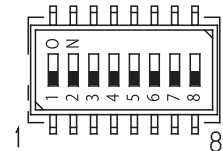
#### ■ Settings by switch



##### (1) Transmission speed settings

Set the communication condition switch.

| Transmission speed (bps) | Switch No. |     |     |
|--------------------------|------------|-----|-----|
|                          | 1          | 2   | 3   |
| 9600                     | ON         | ON  | OFF |
| 19200                    | ON         | OFF | OFF |



##### (2) Communication condition selection

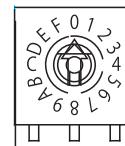
Set the communication condition switch.

| Communication condition                    | Switch No. |
|--------------------------------------------|------------|
|                                            | 4          |
| 8-bit data length, Even parity, Stop bit 1 | OFF        |
| 8-bit data length, Non parity, Stop bit 2  | ON         |

##### (3) Station address setting

Set the station address switch.

Station No. setting switch





### 3.5.14 Connecting to AUR350C, AUR450C

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-A35, SLP-A45) of the control equipment.

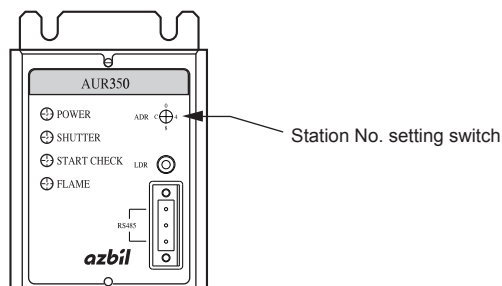
| Item                                | Set value                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------|
| Transmission speed*1                | 9600bps, 19200bps                                                                       |
| Communication condition selection*1 | 8-bit data length, Even parity, Stop bit 1<br>8-bit data length, Non parity, Stop bit 2 |
| Station address*2*3                 | 0 to F                                                                                  |

- \*1 Adjust the settings with GOT settings.  
 \*2 Do not set to "0".  
 \*3 Select the station address without overlapping with that of other units.

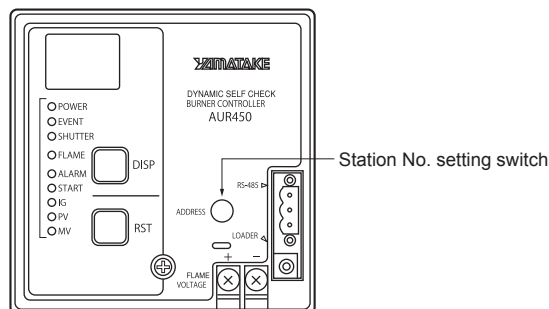
#### ■ Station address setting

Set the station address switch.

##### (1) For AUR350C



##### (2) For AUR450C



### 3.5.15 Connecting to RX

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-RX) of the control equipment.

| Item                                | Set value                                                                                                                                                                                                                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transmission speed*1                | 9600bps, 19200bps, 38400bps                                                                                                                                                                                                                                                      |
| Communication condition selection*1 | Even parity stop 1<br>(8-bit data length, Even parity, Stop bit 1)<br>Even parity stop 2<br>(8-bit data length, Even parity, Stop bit 2)<br>Odd parity stop 1<br>(8-bit data length, Odd parity, Stop bit 1)<br>Odd parity stop 2<br>(8-bit data length, Odd parity, Stop bit 2) |
| Station address*2*3                 | 1 to 32                                                                                                                                                                                                                                                                          |

- \*1 Adjust the settings with GOT settings.  
 \*2 Do not set to "0".  
 \*3 Select the station address without overlapping with that of other units.

### 3.5.16 Connecting to CMC10B

#### ■ Communication settings

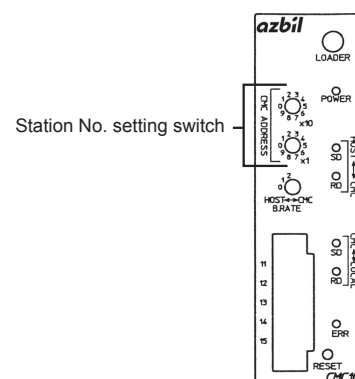
Make the communication settings by operating the Smart Loader Package (SLP-CM1) of the control equipment.

| Item                   | Set value                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------|
| Transmission speed*1   | 9600bps, 19200bps                                                                           |
| Communication format*1 | 0:8-bit data length, Even parity, Stop bit 1<br>1:8-bit data length, Non parity, Stop bit 2 |
| Station address*2*3    | 0 to 99                                                                                     |

- \*1 Adjust the settings with GOT settings.  
 \*2 Do not set to "0".  
 \*3 Select the station address without overlapping with that of other units.

#### ■ Station address setting

Set the station address switch.



### 3.5.17 Connecting to AHC2001 CPU

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-D50/SLP-H21) of the temperature controller.

| Item                             | Set value                             |
|----------------------------------|---------------------------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps, 57600bps |
| Communication mode <sup>*2</sup> | 0: MODBUS<br>1: CPL                   |
| Data bit                         | 8bits (fixed)                         |
| Parity bit                       | Even (fixed)                          |
| Stop bit                         | 1bit (fixed)                          |
| Station address <sup>*3</sup>    | 1 to 15 <sup>*4</sup>                 |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Set this item to 1: CPL.

<sup>\*3</sup> Select the station address without overlapping with that of other units.

<sup>\*4</sup> The station address for AHC2001 ranges from 1 to 127. However, use station address from 1 to 15, which are the range for DMC50.

### 3.5.18 Connecting to AHC2001 SCU

#### ■ Communication settings

Make the communication settings by operating the Smart Loader Package (SLP-D50/SLP-H21) of the temperature controller.

| Item                                  | Set value                      |
|---------------------------------------|--------------------------------|
| Transmission speed <sup>*1</sup>      | 9600bps, 19200bps, 38400bps    |
| Data bit <sup>*1</sup>                | 7bits, 8bits                   |
| Parity bit <sup>*1</sup>              | 0: None, 1: Even, 2: Odd       |
| Stop bit <sup>*1</sup>                | 1bit, 2bits                    |
| Half duplex/Full duplex <sup>*2</sup> | 0: Half duplex, 1: Full duplex |
| Space sending                         | 0 (fixed)                      |
| Protocol setup <sup>*3</sup>          | 1 to 30                        |

<sup>\*1</sup> Adjust the settings with GOT settings.

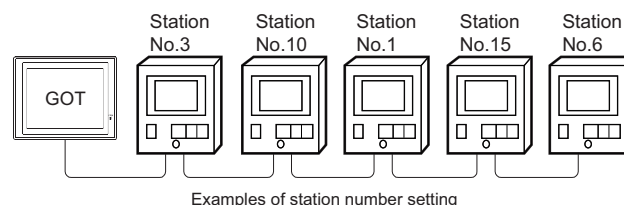
<sup>\*2</sup> Set this item to 0: Half duplex.

<sup>\*3</sup> Set this item to 2: CPL.

### 3.5.19 Station number setting

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



#### (1) Direct specification

When setting the device, specify the station number of the control equipment of which data is to be changed.

| Model name                                                                           | Specification range |
|--------------------------------------------------------------------------------------|---------------------|
| SDC40A/40B/40G, SDC15, SDC25/26, SDC35/36, SDC20/21, SDC30/31, CML, CMF050, MQV, MPC | 1 to 127            |
| PBC201-VN2                                                                           | 1 to 126            |
| SDC45/46                                                                             | 1 to 120            |
| CMS, CMF015, CMC10B                                                                  | 1 to 99             |
| RX                                                                                   | 1 to 32             |
| DMC10, DMC50, MVF, AUR350C, AUR450C, AHC2001 <sup>*1</sup>                           | 1 to 15             |

<sup>\*1</sup> The station number for AHC2001 ranges from 1 to 127. However, use station numbers from 1 to 15, which are the range for DMC50.

## (2) Indirect specification

When setting the device, indirectly specify the station number of the inverter of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from the following table on GT Designer3, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the control equipment.

| Specification station No. |                  | Compatible device | Setting range                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DMC50 AHC2001             | Other than DMC50 |                   |                                                                                                                                                                                                                                                                                                                                                          |
| 100                       | 200              | GD10              | 1 to 127: For SDC40A/40B/40G, SDC15, SDC25/26, SDC35/36, SDC20/21, SDC30/31, CML, CMF050, MQV, MPC<br>1 to 126: PBC201-VN2<br>1 to 120: SDC45/46<br>1 to 99: CMS, CMF015, CMC10B<br>1 to 32: RX<br>1 to 15: DMC10, DMC50, MVF, AUR350C, AUR450C, AHC2001*1<br>For the setting other than the above, error (dedicated device is out of range) will occur. |
| 101                       | 201              | GD11              |                                                                                                                                                                                                                                                                                                                                                          |
| 102                       | 202              | GD12              |                                                                                                                                                                                                                                                                                                                                                          |
| 103                       | 203              | GD13              |                                                                                                                                                                                                                                                                                                                                                          |
| 104                       | 204              | GD14              |                                                                                                                                                                                                                                                                                                                                                          |
| 105                       | 205              | GD15              |                                                                                                                                                                                                                                                                                                                                                          |
| 106                       | 206              | GD16              |                                                                                                                                                                                                                                                                                                                                                          |
| 107                       | 207              | GD17              |                                                                                                                                                                                                                                                                                                                                                          |
| 108                       | 208              | GD18              |                                                                                                                                                                                                                                                                                                                                                          |
| 109                       | 209              | GD19              |                                                                                                                                                                                                                                                                                                                                                          |
| 110                       | 210              | GD20              |                                                                                                                                                                                                                                                                                                                                                          |
| 111                       | 211              | GD21              |                                                                                                                                                                                                                                                                                                                                                          |
| 112                       | 212              | GD22              |                                                                                                                                                                                                                                                                                                                                                          |
| 113                       | 213              | GD23              |                                                                                                                                                                                                                                                                                                                                                          |
| 114                       | 214              | GD24              |                                                                                                                                                                                                                                                                                                                                                          |
| 115                       | 215              | GD25              |                                                                                                                                                                                                                                                                                                                                                          |

\*1 The station number for AHC2001 ranges from 1 to 127. However, use station numbers from 1 to 15, which are the range for DMC50.

## 3.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series. Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### ■ Setting item

For Azbil SDC/DMC Series

For Azbil DMC50

| Item                               | Description                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device                             | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Information                        | Displays the device type and setting range which are selected in [Device].                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Network                            | Set the monitor target of the set device.                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                    | Station                                                                                                                       | To monitor the control equipment of the specified station No.<br><ul style="list-style-type: none"> <li>When Azbil SDC/DMC Series is used.<br/>           0 to 127 :To monitor the control equipment of the specified station No.<br/>           200 to 215 :To specify the station No. of the control equipment to be monitored by the value of GOT data register (GD).<sup>*1</sup> </li> <li>When Azbil DMC50 is used.<br/>           1 to 15: To specify the station No. of the COM module or control equipment to be monitored.<br/>           100 to 115: To specify the station No. of the COM module or control equipment to be monitored, and the Sub Station of the control equipment by the value of GOT data register (GD).<sup>*2</sup> </li> </ul> |
|                                    | Sub Station                                                                                                                   | Specify the sub station number of the control equipment connected to the COM module specified in [Station] to monitor it. (0 to 15)If the specified [SubStation] is 0, the COM module/control equipment specified in [Station] is monitored.<br>For AHC2001, the sub station number is ignored.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Switch to the device define dialog | Device definition can be checked.                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

\*1 The following shows the relation between station numbers of the control equipment and the GOT data register.

| Station No. | GOT data register (GD) | Setting range                                                                          |
|-------------|------------------------|----------------------------------------------------------------------------------------|
| 200         | GD10                   | 0 to 127<br>(If setting a value outside the range above, a device range error occurs.) |
| 201         | GD11                   |                                                                                        |
| :           | :                      |                                                                                        |
| 214         | GD24                   |                                                                                        |
| 215         | GD25                   |                                                                                        |

- \*2 From the value of GD10 to 25, the upper 8bits are set for station No., and the lower 8bits for the Sub Station.  
In this case, the setting of [Sub Station] is invalid.  
The following shows the relation between station numbers of the control equipment and the GOT data register.

| Station No. | GOT data register (GD) | Setting range    |
|-------------|------------------------|------------------|
| 100         | GD10                   | 0x0000 to 0xFFFF |
| 101         | GD11                   |                  |
| :           | :                      |                  |
| 114         | GD24                   |                  |
| 115         | GD25                   |                  |

Example: When [Station No.] is set to 100  
When [Station No.] is set to 100, the monitoring target is set based on the GD10 value.  
GD10 = 0x010A  
(Upper 8bits) 0x01 → Station No.: 1  
(Lower 8bits) 0x0A → Sub Station: 10

### POINT

Station No. and Sub Station of AZBIL DMC50

The station No. and Sub Station set when using AZBIL DMC50 correspond to NW No. and Station number of MITSUBISHI PLC, respectively.

### 3.6.1 AZBIL SDC/DMC Series

| Device name |                                          | Setting range                     | Device No. representation |
|-------------|------------------------------------------|-----------------------------------|---------------------------|
| Bit device  | The bit specification of the word device | Setting range of each word device | —                         |
| Word device | Data (..)*1                              | ..273 to ..31243                  | Decimal                   |

\*1 Only 16-bit (1-word) designation is allowed.

### 3.6.2 AZBIL DMC50/AHC2001

| Device name        |                            | Setting range  | Device No. representation |
|--------------------|----------------------------|----------------|---------------------------|
| Double word device | Network Addresses (NA)*1   | 0000 to FFFF   | Hexadecimal               |
|                    | Parameter Addresses (PA)*1 | 00000 to FFFFF | Hexadecimal               |

\*1 Only 32-bit (2-word) designation is allowed.

#### (a) Network Addresses (NA)

The following shows the network address settings and definitions.

| Network Addresses | Definition        |
|-------------------|-------------------|
| 0000              | Network Addresses |

#### (b) Parameter Address (PA)

The following shows the parameter address settings and definitions.

| Parameter Address | Definition                                      |
|-------------------|-------------------------------------------------|
| 001               | H/W Information                                 |
| 002               | Date and Time Setup                             |
| 021               | AI Setup (High resolution type:standard inputs) |
| 022               | AI Setup (Special type)                         |
| 023               | AI Setup (High resolution type:option inputs)   |
| 041               | AUX-IN Setup                                    |
| 045               | AO Setup                                        |
| 061               | DO Setup                                        |
| 071               | TP Setup                                        |
| 0A1               | MR20X Communication Setup                       |
| 0A2               |                                                 |
| 0A3               | Front Port Communication Setup                  |
| 0C1               | System Status                                   |
| 0C5               | AI Alarm Log                                    |
| 0C3               | Date and Time Display                           |
| 0C4               | System Alarm Log                                |
| 0C6               | AUX-IN Alarm Log                                |

(Continued to next page)

| Parameter Address | Definition                                   |
|-------------------|----------------------------------------------|
| 0E1               | AI Status                                    |
| 0E2               | AUX-IN Status                                |
| 0E3               | AO Status                                    |
| 0E5               | DI Status                                    |
| 0E6               | DO Status                                    |
| 0E7               | TP Status                                    |
| 0E8               | Zener Barrier Adjustment Counts              |
| 0F1               | Present MR20X Communication Setup            |
| 0F2               |                                              |
| 0F3               |                                              |
| 103               | Memory Usage Monitor                         |
| 201               | PID_A Options Control Action                 |
| 202               | PID_A Constants Proportional Band            |
| 203               | PID_A Monitor SP                             |
| 211               | PID_CAS Options Control Action               |
| 212               | PID_CAS Constants (master) Proportional Band |
| 213               | PID_CAS Constants (slave) Proportional Band  |
| 214               | PID_CAS Monitor M_SP                         |
| 234               | Ra_PID Options Ra-PID Mode                   |
| 235               | Ra_PID Constants Proportional Band           |
| 236               | Ra_PID Monitor SP                            |
| 241               | UP_PID Options Control Action                |
| 242               | UP_PID Constants Proportional Band           |
| 243               | UP_PID Monitor U_SP(Use SP)                  |
| 301               | TBL/TBR Setup Contact Point X1               |
| C00               | Pattern Setup                                |
| C01 to C63        | Segment Setup                                |
| CF1               | Pattern FB Monitor                           |
| 801 to 9FF        | Type label defined by the user               |

## 3.7 Precautions

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### ■ Station number setting of the temperature controller system

- When connecting to DMC10 or SDC  
Make sure to establish temperature controller system with No.1 station.
- When connecting to DMC50 or AHC2001  
A COM module or temperature controller with the station number set with the host address must be included.

 3.4.2 Communication detail settings

### ■ GOT clock control

Since the control equipment does not have a clock function, the settings of "time adjusting" or "time broad cast" by GOT clock control will be disabled.

### ■ Disconnecting some of multiple connected equipment

The GOT can disconnect some of multiple connected equipment by setting GOT internal device. For example, the faulty station where a communication timeout error occurs can be disconnected from connected equipment. For details of GOT internal device setting, refer to the following manual.

 GT Designer3 (GOT2000) Help

### ■ When DMC50/AHC2001 and DMC10/SDC are mixed

GOT does not support connections with DMC50/AHC2001 and DMC10/SDC mixed.

### ■ Station number range for AHC2001

The station number for AHC2001 ranges from 1 to 127. However, use station numbers from 1 to 15, which are the range for DMC50.

### ■ Device range for AHC2001

The GOT only supports some devices for the AHC2001.  
Use the devices within the device range for the DMC50.



# 4

## CONNECTION TO OMRON PLC

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|     |                                        |        |
|-----|----------------------------------------|--------|
| 4.1 | Connectable Model List . . . . .       | 4 - 2  |
| 4.2 | Serial Connection . . . . .            | 4 - 4  |
| 4.3 | Ethernet Connection . . . . .          | 4 - 41 |
| 4.4 | Device Range that Can Be Set . . . . . | 4 - 47 |

## 4. CONNECTION TO OMRON PLC

### 4.1 Connectable Model List

The following table shows the connectable models.

| Series         | Model name             | Clock             | Communication Type | Connectable GOT                                                                      | Refer to                                                                                    |
|----------------|------------------------|-------------------|--------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| SYSMAC CPM     | CPM1                   | ×                 | RS-232             |    |  4.2.1   |
|                | CPM1A                  | ×                 |                    |                                                                                      |                                                                                             |
|                | CPM2A                  | ○                 |                    |                                                                                      |                                                                                             |
|                | CPM2C                  | ○ <sup>*3</sup>   |                    |                                                                                      |                                                                                             |
| SYSMAC CQM1    | CQM1 <sup>*1</sup>     | ○ <sup>*4</sup>   | RS-232             |    |  4.2.1   |
| SYSMAC CQM1H   | CQM1H                  | ○ <sup>*4*5</sup> | RS-232<br>RS-422   |    |  4.2.2   |
| SYSMAC CJ1     | CJ1H                   | ○                 | RS-232<br>RS-422   |    |  4.2.3   |
|                | CJ1G                   |                   |                    |                                                                                      |                                                                                             |
|                | CJ1M                   |                   |                    |                                                                                      |                                                                                             |
| SYSMAC CJ2     | CJ2H                   | ○                 | RS-232<br>RS-422   |  |  4.2.3 |
|                | CJ2M <sup>*9</sup>     |                   |                    |                                                                                      |                                                                                             |
| SYSMAC CP1     | CP1H                   | ○                 | RS-232<br>RS-422   |  |  4.2.4 |
|                | CP1L                   |                   |                    |                                                                                      |                                                                                             |
|                | CP1E                   |                   |                    |                                                                                      |                                                                                             |
|                | (N type) <sup>*8</sup> |                   |                    |                                                                                      |                                                                                             |
| SYSMAC C200HS  | C200HS                 | ○                 | RS-232<br>RS-422   |  |  4.2.5 |
| SYSMAC C200H   | C200H                  | ○ <sup>*6</sup>   |                    |                                                                                      |                                                                                             |
| SYSMAC α       | C200HX                 | ○                 | RS-232<br>RS-422   |  |  4.2.5 |
|                | C200HG                 |                   |                    |                                                                                      |                                                                                             |
|                | C200HE <sup>*2</sup>   | ○ <sup>*7</sup>   |                    |                                                                                      |                                                                                             |
| SYSMAC CS1     | CS1H                   | ○                 | RS-232<br>RS-422   |  |  4.2.6 |
|                | CS1G                   |                   |                    |                                                                                      |                                                                                             |
|                | CS1D                   |                   |                    |                                                                                      |                                                                                             |
| SYSMAC C1000H  | C1000H                 | ×                 | RS-232<br>RS-422   |  |  4.2.7 |
| SYSMAC C2000H  | C2000H                 |                   |                    |                                                                                      |                                                                                             |
| SYSMAC CVM1/CV | CV500 <sup>*10</sup>   | ○                 | RS-232<br>RS-422   |  |  4.2.8 |
|                | CV1000 <sup>*10</sup>  |                   |                    |                                                                                      |                                                                                             |
|                | CV2000 <sup>*10</sup>  |                   |                    |                                                                                      |                                                                                             |
|                | CVM1 <sup>*10</sup>    | ○ <sup>*3</sup>   |                    |                                                                                      |                                                                                             |

(Continued to next page)

- \*1 The CQM1-CPU11 is unable to communicate with GOT since the CQM1-CPU11 has no RS-232C interface.
- \*2 The C200HE-CPU11 does not support communication board.  
Use a host Link unit.
- \*3 Some models do not have a clock function.
- \*4 The memory cassette equipped with a clock is required.
- \*5 The EM device of the CQM-CPU61 cannot be monitored.
- \*6 To use the C200H-CPU21/CPU22/CPU23, the memory cassette equipped with a clock is required.  
The C200H-CPU01/CPU02/CPU03 does not support the clock function.
- \*7 The C200HE-CPU11 does not support the clock function.
- \*8 For CP1E (N type) CPU modules with 20 or less I/O points, only the direct CPU connection is available.
- \*9 The direct CPU connection is available for CJ2M-CPU1□ only.
- \*10 Use the CPU module Ver. V1 or later.

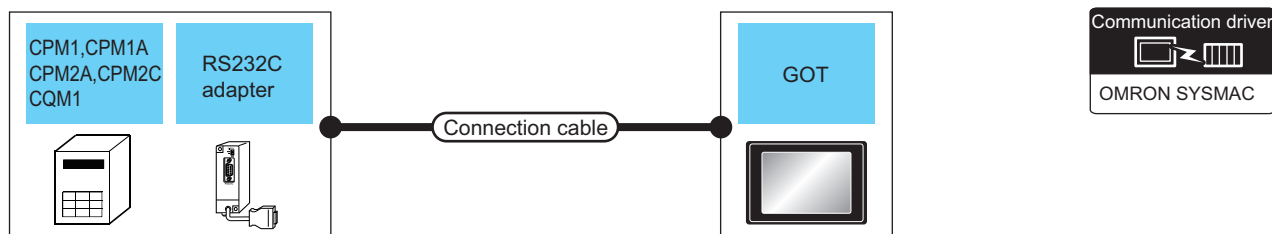
| Series     | Model name | Clock | Communication Type | Connectable GOT                                                                                    | Refer to                                                                                  |
|------------|------------|-------|--------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| SYSMAC CJ1 | CJ1H       | ○     | Ethernet           | <div><div>GT27</div><div>GT25</div><div>GT23</div><div>GT21</div><div>GS</div></div> <div>*1</div> |  4.3.1 |
|            | CJ1G       |       |                    |                                                                                                    |                                                                                           |
|            | CJ1M       |       |                    |                                                                                                    |                                                                                           |
| SYSMAC CJ2 | CJ2H       |       |                    |                                                                                                    |                                                                                           |
|            | CJ2M       |       |                    |                                                                                                    |                                                                                           |
| SYSMAC CS1 | CS1H       |       |                    |                                                                                                    |                                                                                           |
|            | CS1G       |       |                    |                                                                                                    |                                                                                           |
|            | CS1D       |       |                    |                                                                                                    |                                                                                           |

\*1 Not compatible with the redundant Ethernet.

## 4.2 Serial Connection

### 4.2.1 System Configuration for connecting to CPM1, CPM1A, CPM2A, CPM2C or CQM1

#### ■ When connecting to PLC or RS-232C



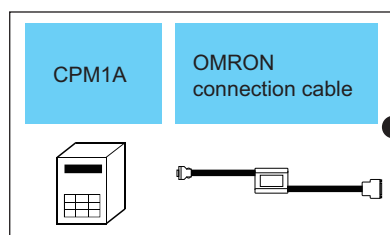
| PLC                             |                               |                    | Connection cable                                            |               | GOT                           |       | Number of connectable equipment |
|---------------------------------|-------------------------------|--------------------|-------------------------------------------------------------|---------------|-------------------------------|-------|---------------------------------|
| Model name                      | RS-232C adapter <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device                 | Model |                                 |
| CPM2A<br>CQM1                   | -                             | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | -<br>(Built into GOT)         |       | 1 GOT for 1 PLC                 |
|                                 |                               |                    |                                                             |               | GT15-RS2-9P                   |       |                                 |
|                                 |                               |                    |                                                             |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                 |
|                                 |                               |                    | RS-232 connection diagram 4)                                | 15m           | -<br>(Built into GOT)         |       |                                 |
| CPM1<br>CPM1A<br>CPM2A<br>CPM2C | CPM1-CIF01                    | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | -<br>(Built into GOT)         |       | 1 GOT for 1 RS-232C adapter     |
|                                 |                               |                    |                                                             |               | GT15-RS2-9P                   |       |                                 |
|                                 |                               |                    |                                                             |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                 |
|                                 |                               |                    | RS-232 connection diagram 4)                                | 15m           | -<br>(Built into GOT)         |       |                                 |

| PLC        |                   |                    | Connection cable                                                                                                                              |               | GOT                   |                                                                                                                                                                                                                                                                                                                                                    | Number of connectable equipment |
|------------|-------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | RS-232C adapter*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                      | Max. distance | Option device         | Model                                                                                                                                                                                                                                                                                                                                              |                                 |
| CPM2C      | CPM2C-CIF01-V1    | RS-232             | GT09-C30R20101-9P(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | -<br>(Built into GOT) |  <br>  | 1 GOT for 1 RS-232C adapter     |
|            |                   |                    |                                                                                                                                               |               | GT15-RS2-9P           |                                                                                                                                                                              |                                 |
|            |                   |                    |                                                                                                                                               |               | GT10-C02H-6PT9P*2     |  <br>  |                                 |
|            |                   |                    |  RS-232 connection diagram 4)                                | 15m           | -<br>(Built into GOT) |  <br>  |                                 |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to OMRON connection cable



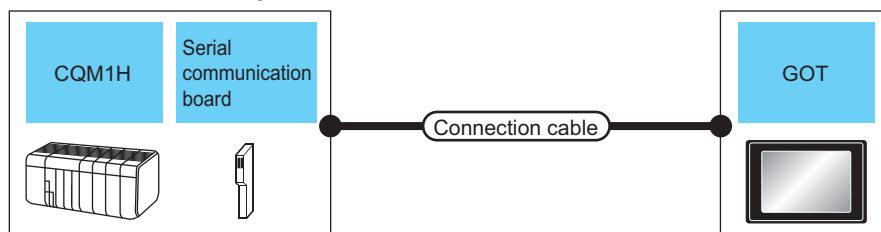
| PLC        |                          |                    | Connection cable                                             |               | GOT                |       | Number of connectable equipment |
|------------|--------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name | OMRON connection cable*1 | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                 |
| CPM1A      | CQM1-CIF01               | RS-232             | GT09-C30R20102-25S(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|            |                          |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|            |                          |                    |                                                              |               | GT10-C02H-6PT9P*2  |       |                                 |
|            |                          |                    | RS-232 connection diagram 5)                                 | 15m           | - (Built into GOT) |       |                                 |
| CPM2C      | CPM2C-CN111              | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)  | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|            |                          |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|            |                          |                    |                                                              |               | GT10-C02H-6PT9P*2  |       |                                 |
|            |                          |                    | RS-232 connection diagram 4)                                 | 15m           | - (Built into GOT) |       |                                 |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.2 System Configuration for connecting to CQM1H

### ■ When connecting to PLC or serial communication board



| PLC        |                              |                    | Connection cable                                                             |               | GOT                |                                                                  | Number of connectable equipment |
|------------|------------------------------|--------------------|------------------------------------------------------------------------------|---------------|--------------------|------------------------------------------------------------------|---------------------------------|
| Model name | Serial communication board*1 | Communication Type | Cable model<br>Connection diagram number                                     | Max. distance | Option device      | Model                                                            |                                 |
| CQM 1H     | -                            | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 1) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 PLC                 |
|            |                              |                    |                                                                              |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|            |                              |                    |                                                                              |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21 04P R4</div> <div>GT 03P 21 03P R2</div>          |                                 |
|            |                              |                    | (User preparing) RS-232 connection diagram 4)                                | 15m           | - (Built into GOT) | <div>GT 04R 21</div> <div>GT 03P 21 R2</div>                     |                                 |
|            | CQM1-SCB41                   | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 1) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
|            |                              |                    |                                                                              |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|            |                              |                    |                                                                              |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21 04P R4</div> <div>GT 03P 21 03P R2</div>          |                                 |
|            |                              |                    | (User preparing) RS-232 connection diagram 4)                                | 15m           | - (Built into GOT) | <div>GT 04R 21</div> <div>GT 03P 21 R2</div>                     |                                 |

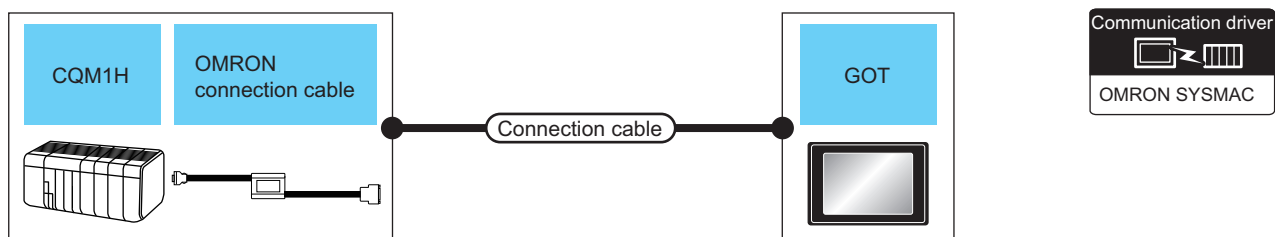
| PLC        |                              |                    | Connection cable                                                                                                                                                                                                               |               | GOT                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Number of connectable equipment        |
|------------|------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Model name | Serial communication board*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        |
| CQM 1H     | CQM1-SCB41                   | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br> RS-422 connection diagram 3) | 200m          | - (Built into GOT) |  <br><br>                                                                                                                                                                         | 1 GOT for 1 serial communication board |
|            |                              |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        |                                                                                                                                                                                                                                                                                                                                                         |                                        |
|            |                              |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      |  <br> <br>  |                                        |
|            |                              |                    |  RS-422 connection diagram 7)                                                                                                                 | 200m          | - (Built into GOT) |  <br> <br>  |                                        |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



■ When connecting to OMRON connection cable

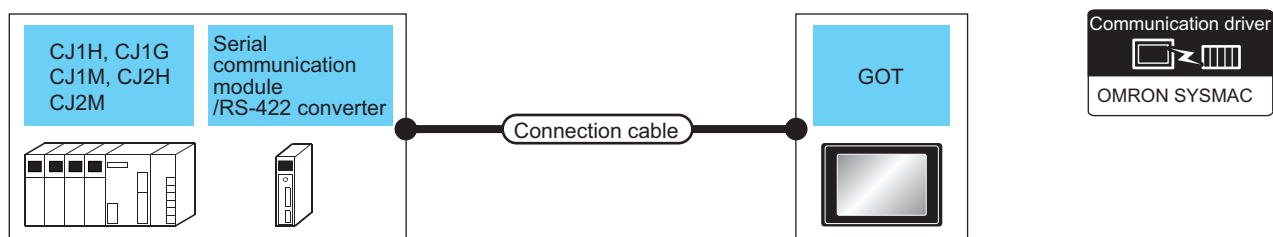


| PLC        |                          |                    | Connection cable                                            |               | GOT                |       | Number of connectable equipment |
|------------|--------------------------|--------------------|-------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name | OMRON connection cable*1 | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device      | Model |                                 |
| CQM 1H     | CQM1-CIF02               | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|            |                          |                    |                                                             |               | GT15-RS2-9P        |       |                                 |
|            |                          |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                 |
|            |                          |                    | RS-232 connection diagram 4)                                | 15m           | - (Built into GOT) |       |                                 |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.3 System Configuration for connecting to CJ1H, CJ1G, CJ1M, CJ2H, or CJ2M



| PLC                          |                                                 |                    | Connection cable                                            |               | GOT                |       | Number of connectable equipment |
|------------------------------|-------------------------------------------------|--------------------|-------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                   | Serial communication module/RS-422A converter*1 | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device      | Model |                                 |
| CJ1H<br>CJ1G<br>CJ1M<br>CJ2H | -                                               | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|                              |                                                 |                    |                                                             |               | GT15-RS2-9P        |       |                                 |
|                              |                                                 |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                 |
|                              |                                                 |                    | RS-232 connection diagram 4)                                | 15m           | - (Built into GOT) |       |                                 |
|                              | CJ1W-SCU21-V1<br>CJ1W-SCU41-V1                  | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                              |                                                 |                    |                                                             |               | GT15-RS2-9P        |       |                                 |
|                              |                                                 |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                 |
|                              |                                                 |                    | RS-232 connection diagram 4)                                | 15m           | - (Built into GOT) |       |                                 |

| PLC                          |                                                 |                    | Connection cable                                                                                                                                                                                                                 |               | GOT                |                                                                                       | Number of connectable equipment                      |
|------------------------------|-------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|------------------------------------------------------|
| Model name                   | Serial communication module/RS-422A converter*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                 |                                                      |
| CJ1H<br>CJ1G<br>CJ1M<br>CJ2H | CJ1W-SCU31-V1<br>CJ1W-SCU41-V1                  | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br> RS-422 connection diagram 3)   | 200m          | - (Built into GOT) |    | 1 GOT for 1 PLC                                      |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |    |                                                      |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |    |                                                      |
|                              |                                                 |                    |  RS-422 connection diagram 7)                                                                                                                   | 200m          | - (Built into GOT) |    |                                                      |
|                              | CJ1W-CIF11                                      | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4) | 50m           | - (Built into GOT) |    | 1 GOT for 1 RS-422A converter                        |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |   |                                                      |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |  |                                                      |
|                              |                                                 |                    |  RS-422 connection diagram 8)                                                                                                                 | 50m           | - (Built into GOT) |  |                                                      |
| CJ1H<br>CJ1G<br>CJ1M         | CJ1W-SCU21<br>CJ1W-SCU41                        | RS-232             | GT09-C30R20101-9P(3m)<br>or<br> RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |  | 1 GOT for each port of a serial communication module |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS2-9P        |  |                                                      |
|                              |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-6PT9P*2  |  |                                                      |
|                              |                                                 |                    |  RS-422 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |  |                                                      |

| PLC                  |                                                 |                    | Connection cable                                                                                                                                                                                                                 |               | GOT                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Number of connectable equipment                      |
|----------------------|-------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Model name           | Serial communication module/RS-422A converter*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                      |
| CJ1H<br>CJ1G<br>CJ1M | CJ1W-SCU41                                      | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br> RS-422 connection diagram 3)   | 200m          | - (Built into GOT) |  <br><br>                                                                                                                                                                                                                                                                                                                                                           | 1 GOT for each port of a serial communication module |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                      |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |                                                                                                                                                                                                                                                                                  |                                                      |
|                      |                                                 |                    |  RS-422 connection diagram 7)                                                                                                                   | 200m          | - (Built into GOT) |                         |                                                      |
| CJ2M-CPU1□           | -                                               | RS-232             | GT09-C30R20101-9P(3m)<br>or<br> RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |  <br><br>                                                                                                                                                                                                                                                                                                                                                          | 1 GOT for 1 PLC                                      |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS2-9P        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                      |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-6PT9P*2  |                                                                                                                                                                                   |                                                      |
|                      |                                                 |                    |  RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |                                                                                                                                                                                                                                                                        |                                                      |
|                      | CJ1W-CIF11                                      | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4) | 50m           | - (Built into GOT) |  <br><br>                                                                                                                                                                                                                                                                                                                                                   | 1 GOT for 1 RS-422A converter                        |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                      |
|                      |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |                                                                                                                                                                                                                                                                        |                                                      |
|                      |                                                 |                    |  RS-422 connection diagram 8)                                                                                                                 | 50m           | - (Built into GOT) |         |                                                      |

| PLC                      |                                                 |                    | Connection cable                                                                                                                                                                                                                 |               | GOT                |                                                                                       | Number of connectable equipment                      |
|--------------------------|-------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|------------------------------------------------------|
| Model name               | Serial communication module/RS-422A converter*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                 |                                                      |
| CJ2M-CPU1□<br>CJ2M-CPU3□ | CJ1W-SCU21-V1<br>CJ1W-SCU41-V1                  | RS-232             | GT09-C30R20101-9P(3m)<br>or<br> RS-232 connection diagram 1)                                                                                    | 15m           | - (Built into GOT) |    | 1 GOT for each port of a serial communication module |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS2-9P        |    |                                                      |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-6PT9P*2  |    |                                                      |
|                          |                                                 |                    |  RS-232 connection diagram 4)                                                                                                                   | 15m           | - (Built into GOT) |    |                                                      |
| CJ2M-CPU1□<br>CJ2M-CPU3□ | CJ1W-SCU31-V1<br>CJ1W-SCU41-V1                  | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br> RS-422 connection diagram 3) | 200m          | - (Built into GOT) |    | 1 GOT for each port of a serial communication module |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |   |                                                      |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |  |                                                      |
|                          |                                                 |                    |  RS-422 connection diagram 7)                                                                                                                 | 200m          | - (Built into GOT) |  |                                                      |
| CJ2M-CPU3□               | CP1W-CIF01                                      | RS-232             | GT09-C30R20101-9P(3m)<br>or<br> RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |  | 1 GOT for 1 RS-232C option board                     |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS2-9P        |  |                                                      |
|                          |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-6PT9P*2  |  |                                                      |
|                          |                                                 |                    |  RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |  |                                                      |

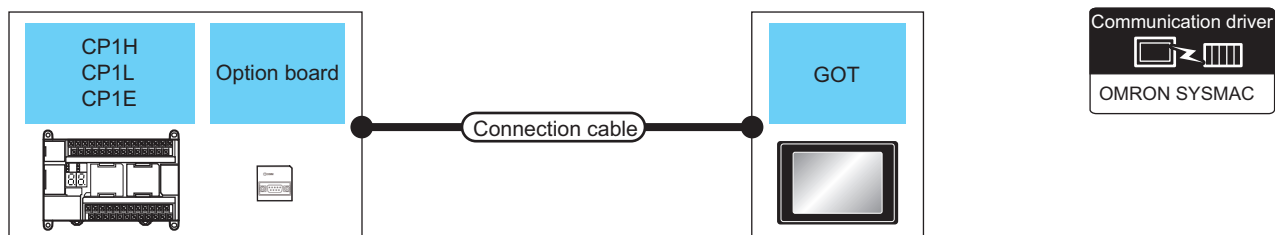
| PLC        |                                                 |                    | Connection cable                                                                                                                                                                                                                 |               | GOT                |                                                                                       | Number of connectable equipment          |
|------------|-------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|------------------------------------------|
| Model name | Serial communication module/RS-422A converter*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                 |                                          |
| CJ2M-CPU3□ | CP1W-CIF11                                      | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4)   | 50m           | - (Built into GOT) |    | 1 GOT for 1 RS-422A/<br>485 option board |
|            |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |    |                                          |
|            |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |    |                                          |
|            |                                                 |                    |  RS-422 connection diagram 8)                                                                                                                   | 50m           | - (Built into GOT) |    |                                          |
| CJ2M-CPU3□ | CP1W-CIF12                                      | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4) | 200m          | - (Built into GOT) |    | 1 GOT for 1 RS-422A/<br>485 option board |
|            |                                                 |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |  |                                          |
|            |                                                 |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |  |                                          |
|            |                                                 |                    |  RS-422 connection diagram 8)                                                                                                                 | 200m          | - (Built into GOT) |  |                                          |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.4 System Configuration for connecting to CP1H, CP1L, or CP1E

### ■ When connecting a PLC or option board



| PLC                  |                            |                    | Connection cable                                            |               | GOT                           |       | Number of connectable equipment  |
|----------------------|----------------------------|--------------------|-------------------------------------------------------------|---------------|-------------------------------|-------|----------------------------------|
| Model name           | Option board <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device                 | Model |                                  |
| CP1E                 | -                          | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT)            |       | 1 GOT for 1 PLC                  |
|                      |                            |                    |                                                             |               | GT15-RS2-9P                   |       |                                  |
|                      |                            |                    |                                                             |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                  |
|                      |                            |                    | RS-232 connection diagram 4)                                | 15m           | - (Built into GOT)            |       |                                  |
| CP1H<br>CP1L<br>CP1E | CP1W-CIF01                 | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT)            |       | 1 GOT for 1 RS-232C option board |
|                      |                            |                    |                                                             |               | GT15-RS2-9P                   |       |                                  |
|                      |                            |                    |                                                             |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                  |
|                      |                            |                    | RS-232 connection diagram 4)                                | 15m           | - (Built into GOT)            |       |                                  |

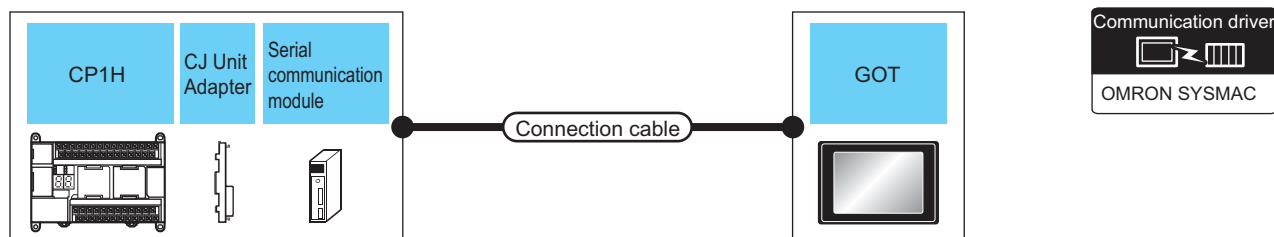
| PLC                  |                |                    | Connection cable                                                                                                                                                                                                                 |               | GOT                |                                                                                       | Number of connectable equipment      |
|----------------------|----------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|--------------------------------------|
| Model name           | Option board*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                 |                                      |
| CP1H<br>CP1L<br>CP1E | CP1W-CIF11     | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4)   | 50m           | - (Built into GOT) |    | 1 GOT for 1 RS-422A/485 option board |
|                      |                |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |    |                                      |
|                      |                |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |    |                                      |
|                      |                |                    |  RS-422 connection diagram 8)                                                                                                                   | 50m           | - (Built into GOT) |    |                                      |
|                      | CP1W-CIF12     | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4) | 200m          | - (Built into GOT) |    | 1 GOT for 1 RS-422A/485 option board |
|                      |                |                    |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |   |                                      |
|                      |                |                    |                                                                                                                                                                                                                                  |               | GT10-C02H-9SC      |  |                                      |
|                      |                |                    |  RS-422 connection diagram 8)                                                                                                                 | 200m          | - (Built into GOT) |  |                                      |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



■ When connecting to serial communication module



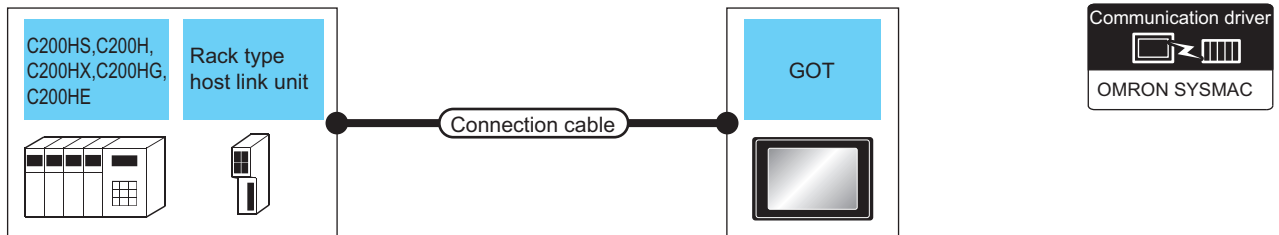
| PLC        |                   |                                                            |                    | Connection cable                                                                                                                             |               | GOT                |       | Number of connectable equipment                      |
|------------|-------------------|------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------|------------------------------------------------------|
| Model name | CJ unit adapter*1 | Serial communication module*1                              | Communication Type | Cable model<br>Connection diagram number                                                                                                     | Max. distance | Option device      | Model |                                                      |
| CP1H       | CP1W-EXT01        | CJ1W-SCU21<br>CJ1W-SCU41<br>CJ1W-SCU21-V1<br>CJ1W-SCU41-V1 | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |       | 1 GOT for each port of a serial communication module |
|            |                   |                                                            |                    |                                                                                                                                              |               | GT15-RS2-9P        |       |                                                      |
|            |                   |                                                            |                    |                                                                                                                                              |               | GT10-C02H-6PT9P*2  |       |                                                      |
|            |                   |                                                            |                    | RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |       |                                                      |
|            |                   | CJ1W-SCU41<br>CJ1W-SCU31-V1<br>CJ1W-SCU41-V1               | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br>RS-422 connection diagram 3) | 200m          | - (Built into GOT) |       |                                                      |
|            |                   |                                                            |                    |                                                                                                                                              |               | GT15-RS4-9S        |       |                                                      |
|            |                   |                                                            |                    |                                                                                                                                              |               | GT10-C02H-9SC      |       |                                                      |
|            |                   |                                                            |                    | RS-422 connection diagram 7)                                                                                                                 | 200m          | - (Built into GOT) |       |                                                      |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.5 System Configuration for connecting to C200HS, C200H, C200HX, C200HG, or C200HE

### ■ When connecting to PLC or rack type host link unit



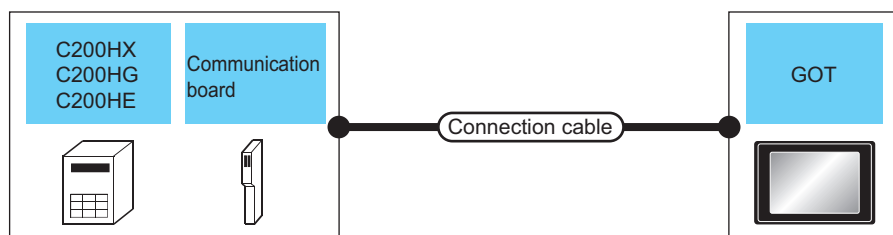
| PLC                                           |                            |                    | Connection cable                                             |               | GOT                |       | Number of connectable equipment         |
|-----------------------------------------------|----------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|-----------------------------------------|
| Model name                                    | Rack type host link unit*1 | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                         |
| C200HX<br>C200HG<br>C200HE                    | -                          | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)  | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                         |
|                                               |                            |                    |                                                              |               | GT15-RS2-9P        |       |                                         |
|                                               |                            |                    |                                                              |               | GT10-C02H-6PT9P*2  |       |                                         |
|                                               |                            |                    | RS-232 connection diagram 4)                                 | 15m           | - (Built into GOT) |       |                                         |
| C200HS<br>C200H<br>C200HX<br>C200HG<br>C200HE | C200H-LK201-V1             | RS-232             | GT09-C30R20103-25P(3m)<br>or<br>RS-232 connection diagram 3) | 15m           | - (Built into GOT) |       | 1 GOT for<br>1 rack type host link unit |
|                                               |                            |                    |                                                              |               | GT15-RS2-9P        |       |                                         |
|                                               |                            |                    |                                                              |               | GT10-C02H-6PT9P*2  |       |                                         |
|                                               |                            |                    | RS-232 connection diagram 6)                                 | 15m           | - (Built into GOT) |       |                                         |

| PLC                                           |                                        |                    | Connection cable                                                                                                                                                                                                            |               | GOT                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Number of connectable equipment         |
|-----------------------------------------------|----------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Model name                                    | Rack type host link unit <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                    | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |
| C200HS<br>C200H<br>C200HX<br>C200HG<br>C200HE | C200H-LK202-V1                         | RS-422             | GT09-C30R40102-9P(3m)<br>GT09-C100R40102-9P(10m)<br>GT09-C200R40102-9P(20m)<br>GT09-C300R40102-9P(30m) or<br> RS-422 connection diagram 2) | 200m          | - (Built into GOT) |  <br>                                                                                                                                                                             | 1 GOT for<br>1 rack type host link unit |
|                                               |                                        |                    |                                                                                                                                                                                                                             |               | GT15-RS4-9S        |                                                                                                                                                                                                                                                                                                                                                         |                                         |
|                                               |                                        |                    |                                                                                                                                                                                                                             |               | GT10-C02H-9SC      |  <br> <br>  |                                         |
|                                               |                                        |                    |  RS-422 connection diagram 6)                                                                                                              | 200m          | - (Built into GOT) |  <br> <br>  |                                         |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## ■ When connecting to a communication board



| PLC                          |                                              |                    | Connection cable                                                                                                                             |               | GOT                |       | Number of connectable equipment              |
|------------------------------|----------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------|----------------------------------------------|
| Model name                   | Communication board*1                        | Communication Type | Cable model<br>Connection diagram number                                                                                                     | Max. distance | Option device      | Model |                                              |
| C200HX<br>C200HG<br>C200HE*2 | C200HW-COM02<br>C200HW-COM05<br>C200HW-COM06 | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |       | 1 GOT for each port of a communication board |
|                              |                                              |                    |                                                                                                                                              |               | GT15-RS2-9P        |       |                                              |
|                              |                                              |                    |                                                                                                                                              |               | GT10-C02H-6PT9P*3  |       |                                              |
|                              |                                              |                    | RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |       |                                              |
|                              | C200HW-COM03<br>C200HW-COM06                 | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br>RS-422 connection diagram 3) | 200m          | - (Built into GOT) |       |                                              |
|                              |                                              |                    |                                                                                                                                              |               | GT15-RS4-9S        |       |                                              |
|                              |                                              |                    |                                                                                                                                              |               | GT10-C02H-9SC      |       |                                              |
|                              |                                              |                    | RS-422 connection diagram 7)                                                                                                                 | 200m          | - (Built into GOT) |       |                                              |

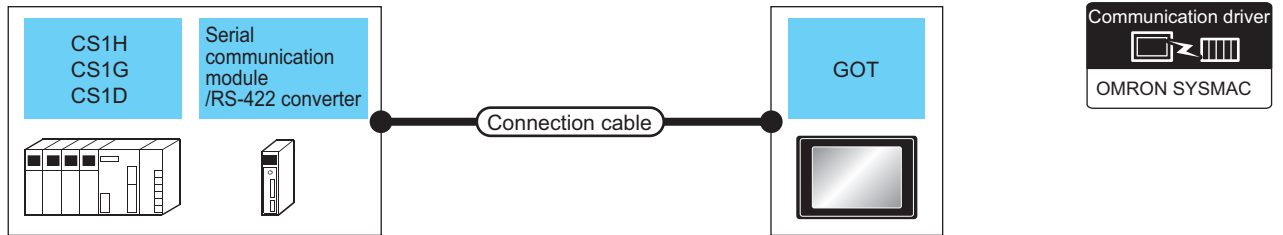
\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 The communication board cannot be mounted to the C2000HE-CPU11.  
Use a host Link unit.

\*3 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.6 System Configuration for connecting to CS1H, CS1G, or CS1D

### ■ When connecting to a PLC or a serial communication module



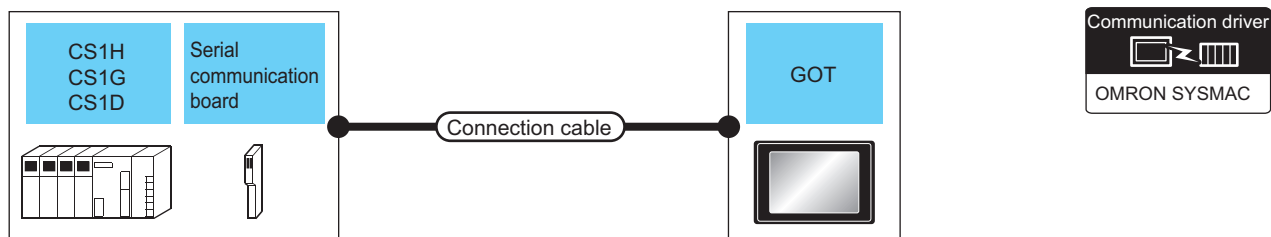
| PLC                  |                                                     |                    | Connection cable                                            |               | GOT                   |       | Number of connectable equipment         |
|----------------------|-----------------------------------------------------|--------------------|-------------------------------------------------------------|---------------|-----------------------|-------|-----------------------------------------|
| Model name           | Serial communication module*1<br>/RS-422A converter | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device         | Model |                                         |
| CS1H<br>CS1G<br>CS1D | -                                                   | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | -<br>(Built into GOT) |       | 1 GOT for 1 PLC                         |
|                      |                                                     |                    |                                                             |               | GT15-RS2-9P           |       |                                         |
|                      |                                                     |                    |                                                             |               | GT10-C02H-6PT9P*2     |       |                                         |
|                      |                                                     |                    | RS-232 connection diagram 4)                                | 15m           | -<br>(Built into GOT) |       |                                         |
|                      | CS1W-SCU21<br>CS1W-SCU21-V1                         | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | -<br>(Built into GOT) |       | 1 GOT for 1 serial communication module |
|                      |                                                     |                    |                                                             |               | GT15-RS2-9P           |       |                                         |
|                      |                                                     |                    |                                                             |               | GT10-C02H-6PT9P*2     |       |                                         |
|                      |                                                     |                    | RS-232 connection diagram 4)                                | 15m           | -<br>(Built into GOT) |       |                                         |

| PLC                  |                                                      |                    | Connection cable                                                                                                                                                                                                               |               | GOT                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Number of connectable equipment |
|----------------------|------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name           | Serial communication module *1<br>/RS-422A converter | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device         | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |
| CS1H<br>CS1G<br>CS1D | CJ1W-CIF11                                           | RS-422             | GT09-C30R40103-5T(3m)<br>GT09-C100R40103-5T(10m)<br>GT09-C200R40103-5T(20m)<br>GT09-C300R40103-5T(30m)<br>or<br> RS-422 connection diagram 4) | 50m           | -<br>(Built into GOT) |  <br>                                                                                                                                                                             | 1 GOT for 1 RS-422A converter   |
|                      |                                                      |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S           |                                                                                                                                                                                                                                                                                                                                                         |                                 |
|                      |                                                      |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC         |  <br> <br>  |                                 |
|                      |                                                      |                    |  RS-422 connection diagram 8)                                                                                                                 | 50m           | -<br>(Built into GOT) |  <br> <br>  |                                 |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to a serial communication board

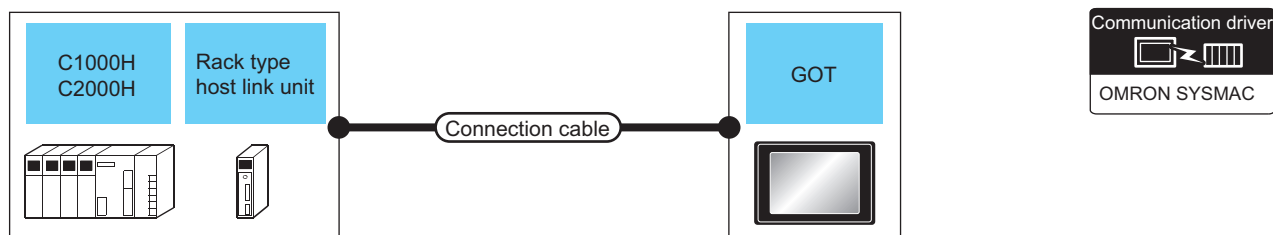


| PLC                  |                                                            |                    | Connection cable                                                                                                                             |               | GOT                |       | Number of connectable equipment                     |
|----------------------|------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------|-----------------------------------------------------|
| Model name           | Serial communication board*1                               | Communication Type | Cable model<br>Connection diagram number                                                                                                     | Max. distance | Option device      | Model |                                                     |
| CS1H<br>CS1G<br>CS1D | CS1W-SCB21<br>CS1W-SCB41<br>CS1W-SCB21-V1<br>CS1W-SCB41-V1 | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |       | 1 GOT for each port of a serial communication board |
|                      |                                                            |                    |                                                                                                                                              |               | GT15-RS2-9P        |       |                                                     |
|                      |                                                            |                    |                                                                                                                                              |               | GT10-C02H-6PT9P*2  |       |                                                     |
|                      |                                                            |                    | RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |       |                                                     |
|                      | CS1W-SCB41<br>CS1W-SCB41-V1                                | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br>RS-422 connection diagram 3) | 200m          | - (Built into GOT) |       |                                                     |
|                      |                                                            |                    |                                                                                                                                              |               | GT15-RS4-9S        |       |                                                     |
|                      |                                                            |                    |                                                                                                                                              |               | GT10-C02H-9SC      |       |                                                     |
|                      |                                                            |                    | RS-422 connection diagram 7)                                                                                                                 | 200m          | - (Built into GOT) |       |                                                     |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 4.2.7 System Configuration for connecting to C1000H or C2000H



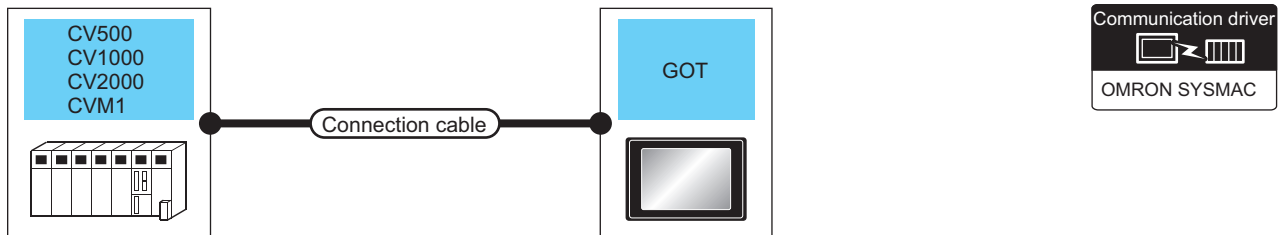
| PLC              |                            |                    | Connection cable                                             |               | GOT                |       | Number of connectable equipment            |
|------------------|----------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|--------------------------------------------|
| Model name       | Rack type host link unit*1 | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                            |
| C1000H<br>C2000H | C500-LK201-V1              | RS-232             | GT09-C30R20103-25P(3m)<br>or<br>RS-232 connection diagram 3) | 15m           | - (Built into GOT) |       | 1 GOT for<br>1 rack type<br>host link unit |
|                  |                            |                    |                                                              |               | GT15-RS2-9P        |       |                                            |
|                  |                            |                    |                                                              |               | GT10-C02H-6PT9P*2  |       |                                            |
|                  |                            |                    | RS-232 connection diagram 6)                                 | 15m           | - (Built into GOT) |       |                                            |
|                  |                            | RS-422             | RS-422 connection diagram 2)                                 | 200m          | - (Built into GOT) |       |                                            |
|                  |                            |                    |                                                              |               | GT15-RS4-9S        |       |                                            |
|                  |                            |                    |                                                              |               | GT10-C02H-9SC      |       |                                            |
|                  |                            |                    | RS-422 connection diagram 6)                                 | 200m          | - (Built into GOT) |       |                                            |

\*1 Product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



## 4.2.8 System Configuration for connecting to CV500, CV1000, CV2000, or CVM1



| PLC                               |                    | Connection cable                                                                                                                             |               | GOT                |       | Number of connectable equipment |
|-----------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                        | Communication Type | Cable model<br>Connection diagram number                                                                                                     | Max. distance | Option device      | Model |                                 |
| CV500<br>CV1000<br>CV2000<br>CVM1 | RS-232             | GT09-C30R20101-9P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                  | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|                                   |                    |                                                                                                                                              |               | GT15-RS2-9P        |       |                                 |
|                                   |                    |                                                                                                                                              |               | GT10-C02H-6PT9P*1  |       |                                 |
|                                   |                    | RS-232 connection diagram 4)                                                                                                                 | 15m           | - (Built into GOT) |       |                                 |
|                                   | RS-422             | GT09-C30R40101-9P(3m)<br>GT09-C100R40101-9P(10m)<br>GT09-C200R40101-9P(20m)<br>GT09-C300R40101-9P(30m)<br>or<br>RS-422 connection diagram 1) | 200m          | - (Built into GOT) |       |                                 |
|                                   |                    |                                                                                                                                              |               | GT15-RS4-9S        |       |                                 |
|                                   |                    |                                                                                                                                              |               | GT10-C02H-9SC      |       |                                 |
|                                   |                    | RS-422 connection diagram 5)                                                                                                                 | 200m          | - (Built into GOT) |       |                                 |

\*1 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

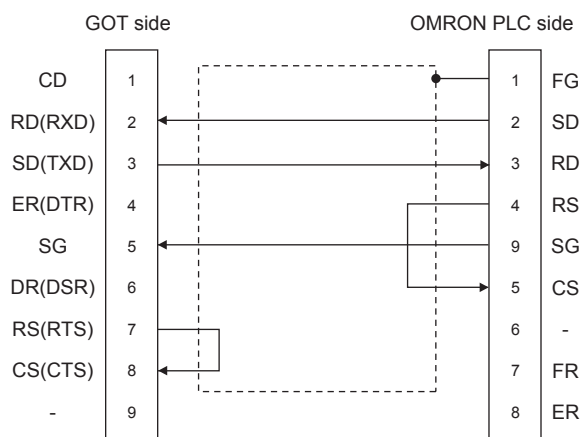
## 4.2.9 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

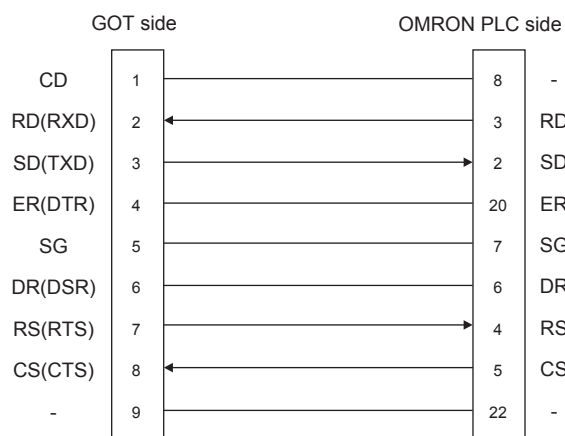
### ■ RS-232 cable

#### (1) Connection diagram

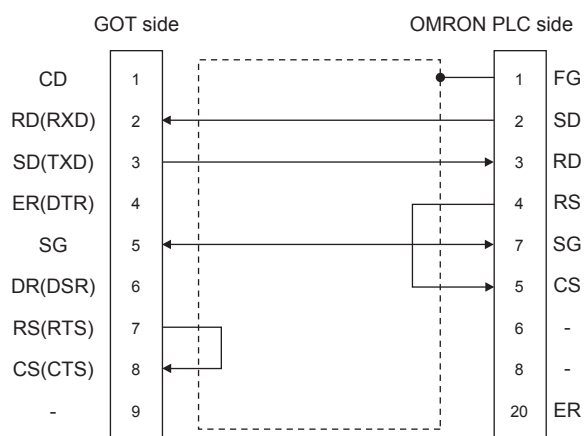
(a) RS-232 connection diagram 1)



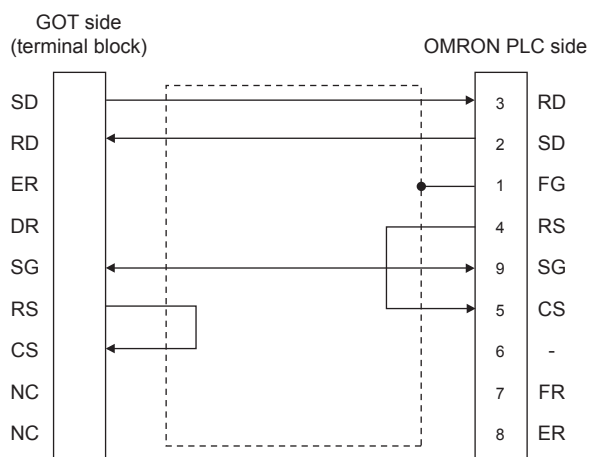
(b) RS-232 connection diagram 2)



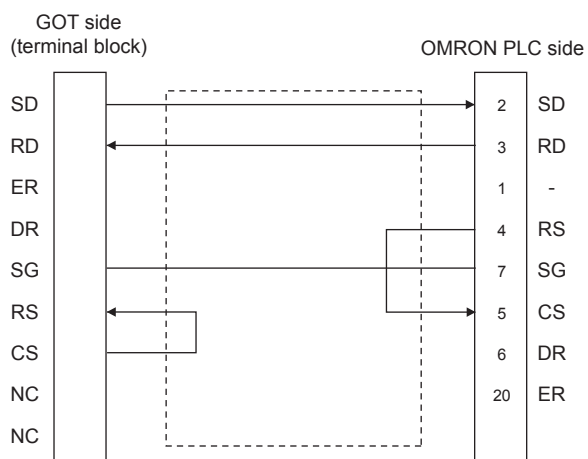
(c) RS-232 connection diagram 3)



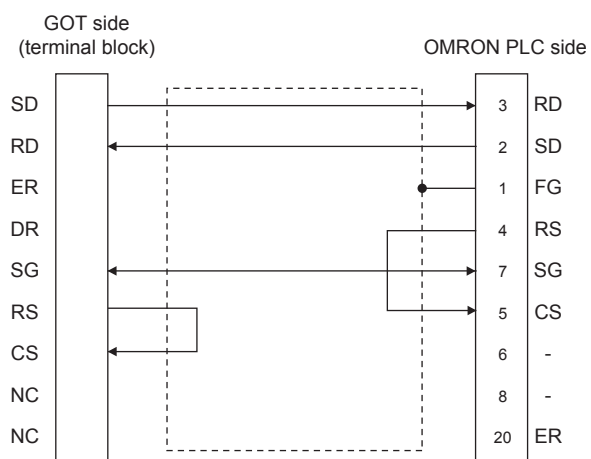
(d) RS-232 connection diagram 4)



(e) RS-232 connection diagram 5)



(f) RS-232 connection diagram 6)



## (2) Precautions when preparing a cable

## (a) Cable length

The length of the RS-232 cable must be 15m or less.

## (b) GOT side connector

For the GOT side connector, refer to the following.

☞ 1.4.1 GOT connector specifications

## (c) OMRON PLC side connector

Use the connector compatible with the OMRON PLC.

For details, refer to the OMRON PLC user's manual.

## ■ RS-422 cable

## POINT

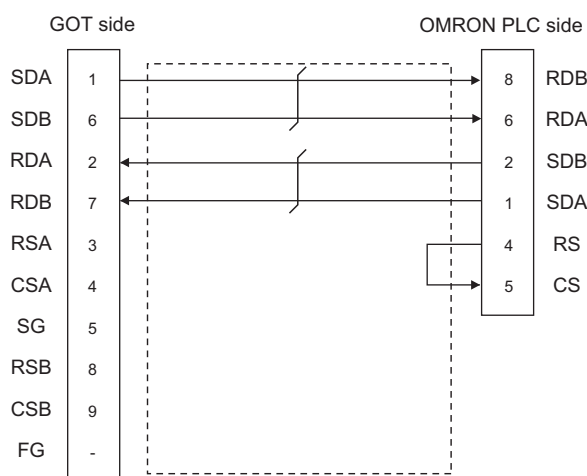
Differences in polarity between GOT and OMRON PLCs

The polarity of poles A and B in signal names is reversed between GOT and OMRON PLCs.

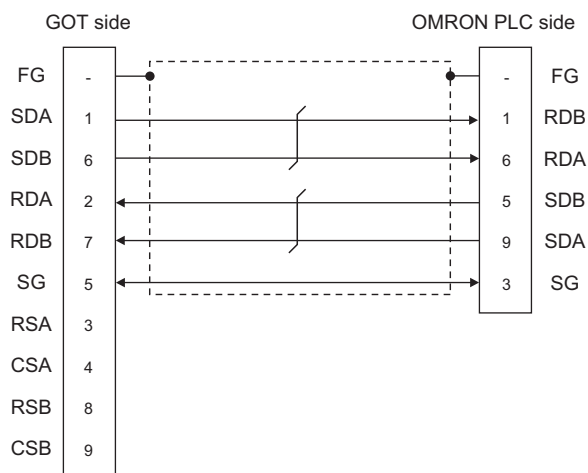
■ Connect a cable according to the following connection diagrams.

## (1) Connection diagram

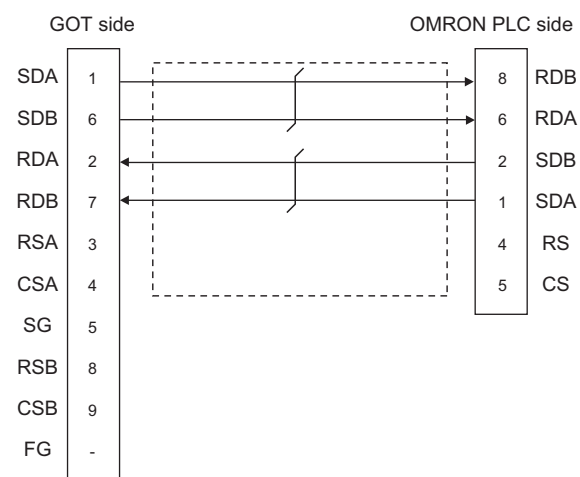
## (a) RS-422 connection diagram 1)



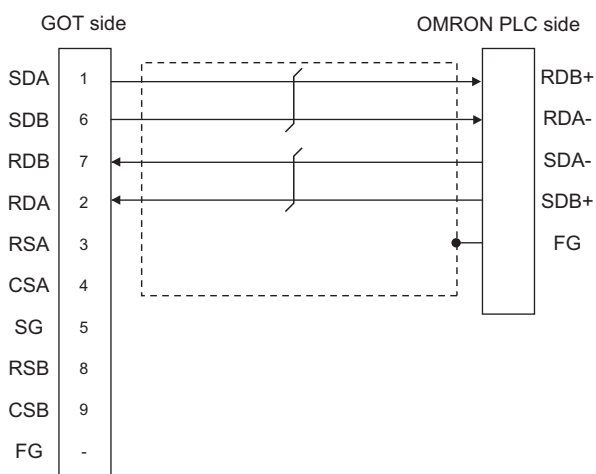
## (b) RS-422 connection diagram 2)



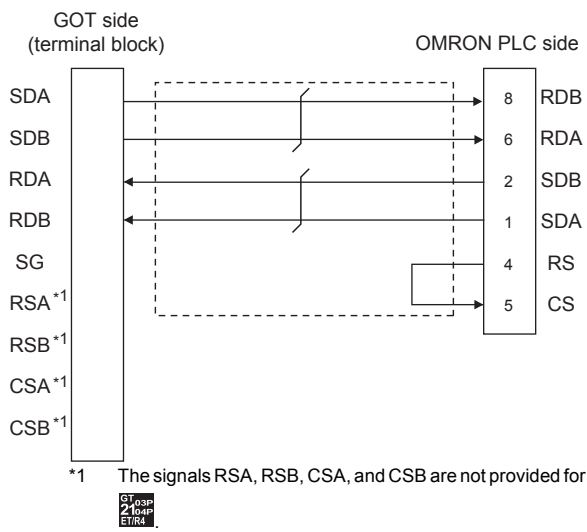
## (c) RS-422 connection diagram 3)



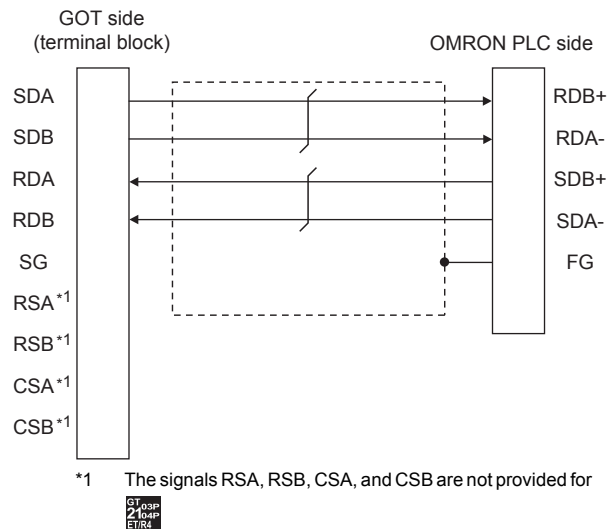
## (d) RS-422 connection diagram 4)



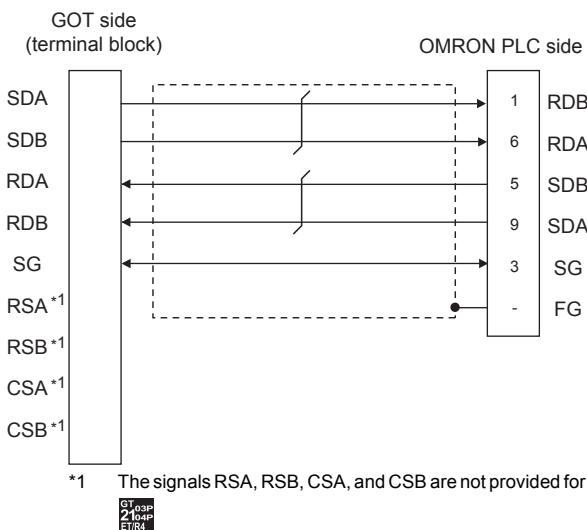
(e) RS-422 connection diagram 5)



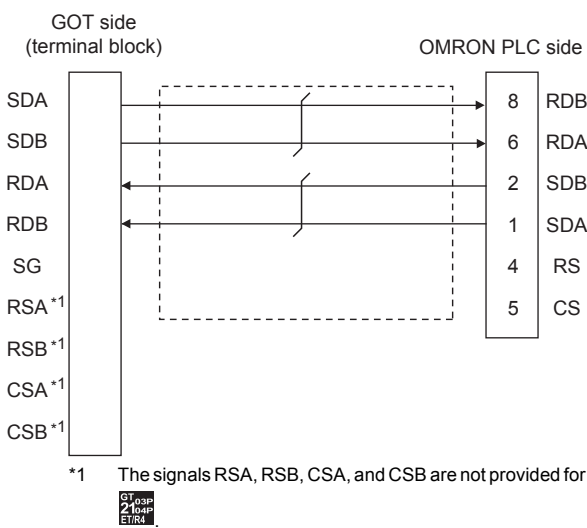
(h) RS-422 connection diagram 8)



(f) RS-422 connection diagram 6)



(g) RS-422 connection diagram 7)



## (2) Precautions when preparing a cable

### (a) Cable length

The distance between the GOT and the PLC of connection diagram 1), 2) and 3) must be 200 m or less.

The length of the RS-422 connection diagram 4) must be 50m or less.

### (b) GOT side connector

For the GOT side connector, refer to the following.

#### 1.4.1 GOT connector specifications

### (c) OMRON PLC side connector

Use the connector compatible with the OMRON PLC.

For details, refer to the OMRON PLC user's manual.

## (3) Setting terminating resistors

### (a) GOT side

- For GT16, GT15, GT12  
Set the terminating resistor setting switch of the GOT main unit to "Disable".
- For GT14, GT11, GT10  
Set the terminating resistor selector to "330Ω".

For details of terminating resistor settings, refer to the following.

#### 1.4.3 Terminating resistors of GOT

### (b) OMRON PLC side

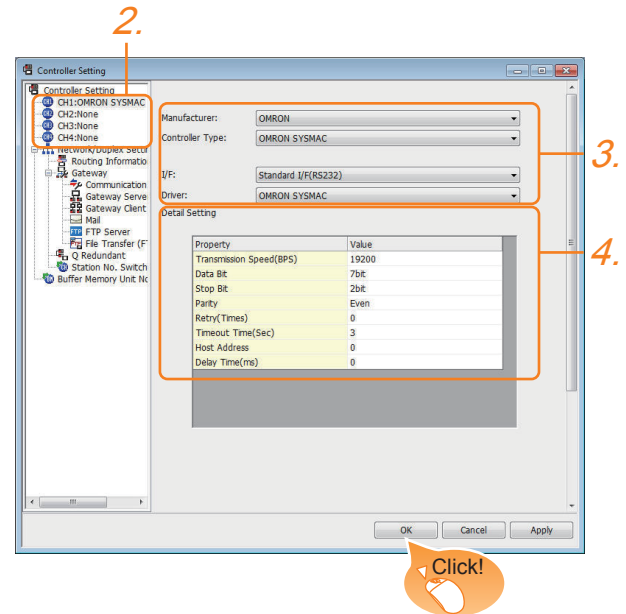
When connecting an OMRON PLC to a GOT, a terminating resistor must be set to the OMRON PLC.

#### 1.4.3 Terminating resistors of GOT

## 4.2.10 GOT Side Settings

### Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: OMRON
  - Controller Type: Set the option according to the Controller Type to be connected.
    - OMRON SYSMAC
    - OMRON SYSMAC CS/CJ
  - I/F: Interface to be used
  - Driver: OMRON SYSMAC
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

#### 4.2.10 Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

#### 1.1.2 I/F communication setting

## ■ Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 19200 |
| Data Bit                | 7 bit |
| Stop Bit                | 2 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                               | Range                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 19200bps) | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 7bits)           | 7bit (fixed)                                              |
| Stop Bit           | Specify the stop bit length for communications. (Default: 2bits)                                                          | 2bit (fixed)                                              |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: Even)           | Even (fixed)                                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 0time)                             | 0 to 5times                                               |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                      | 1 to 30sec                                                |
| Host Address       | Specify the host address (station No. of the PLC to which the GOT is connected) in the network of the GOT. (Default: 0)   | 0 to 31                                                   |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                 | 0 to 300 (ms)                                             |

### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
 GOT2000 Series User's Manual (Utility)
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 4.2.11 PLC Side Setting

### POINT

OMRON PLC

For details of OMRON PLCs, refer to the following manuals.



OMRON PLC user's Manual

| Model name                  |                             | Refer to |
|-----------------------------|-----------------------------|----------|
| PLC CPU                     | CPM2A                       | 4.2.12   |
|                             | CQM1, CQM1H                 |          |
|                             | CS1, CJ1, CJ2               | 4.2.13   |
|                             | CP1H, CP1L, CP1E            | 4.2.13   |
|                             | C200H $\alpha$              | 4.2.12   |
|                             | CV500, CV1000, CV2000, CVM1 | 4.2.14   |
| RS-232C adapter             | CPM1-CIF01, CPM2C-CIF01-V1  | 4.2.12   |
| Connection cable            | CQM1-CIF01                  | 4.2.15   |
|                             | CQM1-CIF02                  |          |
|                             | CPM2C-CN111                 |          |
| Rack type host link unit    | C200H-LK201-V1              | 4.2.16   |
|                             | C200H-LK202-V1              | 4.2.16   |
|                             | C500-LK201-V1               | 4.2.16   |
| Serial communication module | CJ1W-SCU21                  | 4.2.17   |
|                             | CJ1W-SCU41                  |          |
|                             | CJ1W-SCU21-V1               |          |
|                             | CJ1W-SCU31-V1               |          |
|                             | CJ1W-SCU41-V1               |          |
|                             | CS1W-SCU21                  |          |
| Communication board         | CS1W-SCU21-V1               | 4.2.18   |
|                             | C200HW-COM02                |          |
|                             | C200HW-COM03                |          |
|                             | C200HW-COM05                |          |
| Serial communication board  | C200HW-COM06                | 4.2.19   |
|                             | CQM1-SCB41                  |          |
|                             | CS1W-SCB21                  |          |
|                             | CS1W-SCB21-V1               |          |
| RS-422A/485 Option board    | CS1W-SCB41                  | 4.2.20   |
|                             | CS1W-SCB41-V1               |          |
|                             | CP1W-CIF11                  |          |
| RS-422A converter           | CP1W-CIF12                  | 4.2.21   |
|                             | CJ1W-CIF11                  |          |

## 4.2.12 Connecting to CPM2A, CQM1, CQM1H, C200Hα or RS-232C adapter

### ■ Device settings

Write the following set values to devices of each PLC CPU and initialize each port using a peripheral tool or DM monitor.

| Device name          | Set value                                                                                                                                                                                                                                                                               |    |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| DM6645               | 0001H(fixed)                                                                                                                                                                                                                                                                            |    |
| DM6646               | b15 to b8                      b7 to b0                                                                                                                                                                                                                                                 |    |
|                      | 2)                                                                                                                                                                                                                                                                                      | 1) |
|                      | 1) RS-232C port transmission speed setting *1*2<br>02H: 4800bps<br>03H: 9600bps<br>04H: 19200bps<br><br>2) RS-232C port communication frame format<br>03H (fixed): The settings are:<br>Start bit     : 1 bit<br>Data length: 7 bits<br>Stop bit    : 2 bits<br>Parity      : Even bits |    |
| DM6647               | 0000 (fixed)                                                                                                                                                                                                                                                                            |    |
| DM6648 <sup>*3</sup> | 0000 to 0031                                                                                                                                                                                                                                                                            |    |
| DM6649               | 0000 (fixed)                                                                                                                                                                                                                                                                            |    |

- \*1 Only transmission speeds available on the GOT side are shown.  
 \*2 Set the same transmission speed of the RS-232C port as that of the GOT side.  
 \*3 Set the RS-232C port host link station No. according to the Host Address on the GOT side.



#### Precautions for changing device values

Before changing the device values, make sure that the switch settings have been changed as follows:

CPM2A:

The communication condition switch to "individual"

Other PLC CPU:

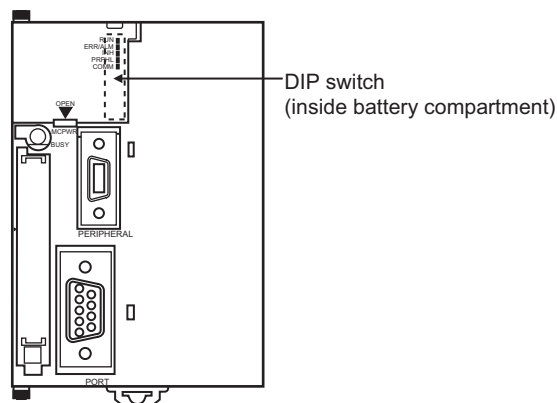
Front panel DIP switch SW5 to "OFF"

## 4.2.13 Connecting to CJ1, CJ2, CS1, CP1H, CP1L, or CP1E

### ■ Setting DIP switches

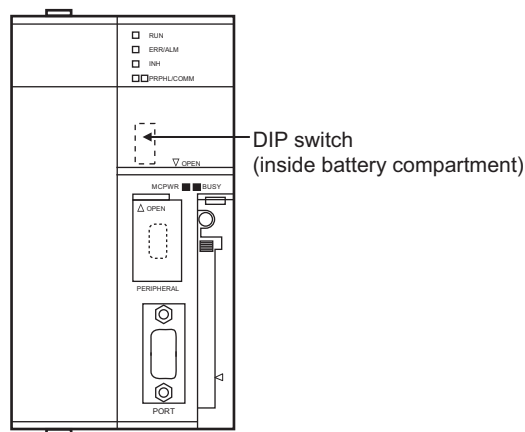
Set the DIP switches.

#### (1) Setting on the CJ1, CJ2



| Switch | Description                                                   | Settings |
|--------|---------------------------------------------------------------|----------|
| SW1    | Enable/disable write to user memory (UM)                      | OFF      |
| SW2    | Enable/disable automatic transfer of user program at power ON | OFF      |
| SW3    | Free                                                          | OFF      |
| SW4    | CJ1: Peripheral port communication condition<br>CJ2: Free     | OFF      |
| SW5    | RS-232C communication condition                               | OFF      |
| SW6    | User customized DIP switch                                    | OFF      |
| SW7    | Type specification for simplified backup                      | OFF      |
| SW8    | -                                                             | OFF      |

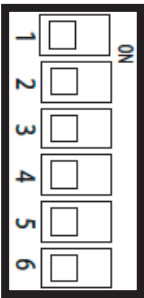
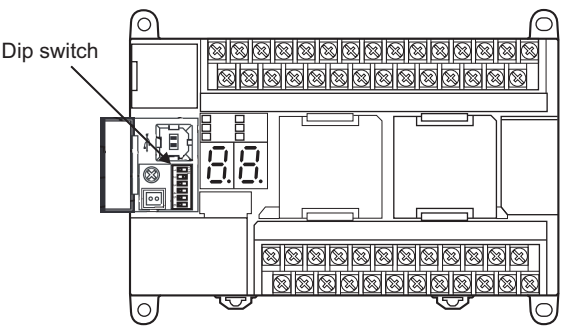
(2) Setting on the CS1



| Switch | Description                                                     | Settings |
|--------|-----------------------------------------------------------------|----------|
| SW1    | Enable/disable write to user memory (UM)                        | OFF      |
| SW2    | Enable/disable automatic transfer of user program at power ON   | OFF      |
| SW3    | Programming console message display language (Japanese/English) | OFF      |
| SW4    | Peripheral port communication condition                         | OFF      |
| SW5    | RS-232C communication condition                                 | OFF      |
| SW6    | User customized DIP switch                                      | OFF      |
| SW7    | Type specification for simplified backup                        | OFF      |
| SW8    | -                                                               | OFF      |



(3) Setting on the CP1H, CP1L



| Switch | Description        | Settings |
|--------|--------------------|----------|
| SW4    | Option Board Slot1 | OFF      |
| SW5    | Option Board Slot2 | OFF      |

(4) Setting on the CP1E  
Settings by DIP switch are not required.



## ■ Setting PLC system settings

### (1) CJ1, CJ2, CS1

Make the PLC system settings.

| Channel | Bit     | Item                                    | Set value                                                                                                         |
|---------|---------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 160     | 15      | Arbitrary settings ON/OFF               | 1H: Arbitrary settings (fixed)                                                                                    |
|         | 8 to 11 | Serial communication mode               | 0H: Upper link (fixed)                                                                                            |
|         | 3       | Data bit                                | 0H: 7bits (fixed)                                                                                                 |
|         | 2       | Stop bit                                | 0H: 2bits (fixed)                                                                                                 |
|         | 0 to 1  | Parity                                  | 0H: Even (fixed)                                                                                                  |
| 161     | 0 to 7  | Port transmission speed <sup>*1*2</sup> | 00H: 9600bps<br>05H: 4800bps<br>06H: 9600bps<br>07H: 19200bps<br>08H: 38400bps<br>09H: 57600bps<br>0AH: 115200bps |
| 163     | 0 to 7  | Host link station No. <sup>*3</sup>     | 0H to 1FH<br>: No.00 to 31                                                                                        |

- \*1 Only transmission speeds available on the GOT side are shown.  
 \*2 Set the same port transmission speed as that of the GOT side.  
 \*3 Set the host link station No. according to the Host Address on the GOT side.



**Precautions for changing the PLC system settings**  
 Before changing the PLC system settings, make sure that the switch settings have been changed as follows:  
 CJ1, CJ2, CS1: Front panel DIP switch SW5 to "OFF"

### (2) CP1H, CP1L, CP1E

Set the PLC system settings of the option slot connected to the GOT.

| Item                      | Set value                                                 |
|---------------------------|-----------------------------------------------------------|
| Mode                      | Host link                                                 |
| Parameter                 | 7, 2, E                                                   |
| Baud rate <sup>*1*2</sup> | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Unit number <sup>*3</sup> | 00 to 31                                                  |

- \*1 Only transmission speeds available on the GOT side are shown.  
 \*2 Set the same port transmission speed as that of the GOT side.  
 \*3 Set the host link station No. according to the Host Address on the GOT side.



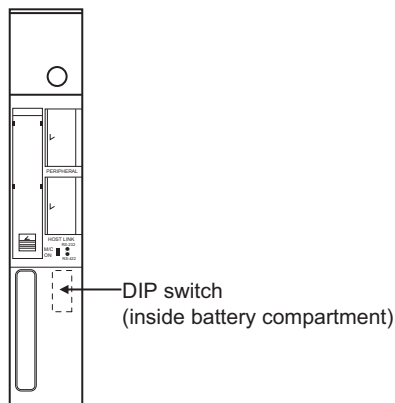
**Precautions for changing the PLC system settings**  
 Before changing the PLC system settings, check the setting of the front DIP switch corresponding to the option slot used at the time of communication with GOT.

➡ (3) Setting on the CP1H, CP1L

## 4.2.14 Connecting to CV500/CV1000/ CV2000 or CVM1

### ■ Setting DIP switches

Set the DIP switches.



#### (1) Host link RS-422/232 switch



| Settings                 |                          |
|--------------------------|--------------------------|
| For RS-232 communication | For RS-422 communication |
| RS-232 (up)              | RS-422 (down)            |

#### (2) DIP switches



| Switch No. | Settings                      |                                    |
|------------|-------------------------------|------------------------------------|
|            | For RS-232 communication      | For RS-422 communication           |
| 6          | OFF (no terminating resistor) | ON (terminating resistor attached) |
| 5          | OFF                           |                                    |
| 4          | OFF                           |                                    |
| 3          | OFF                           |                                    |
| 2          | OFF                           |                                    |
| 1          | OFF                           |                                    |

### ■ Setting PLC system settings

Make the PLC system settings.

| Item                               | Set value                |
|------------------------------------|--------------------------|
| Transmission speed <sup>*1*2</sup> | 4800bps/9600bps/19200bps |
| Stop bit                           | 2 stop bits (fixed)      |
| Parity                             | Even (fixed)             |
| Data bit                           | 7bits (fixed)            |
| Unit number <sup>*3</sup>          | 00 to 31                 |

<sup>\*1</sup> Only transmission speeds available on the GOT side are shown.

<sup>\*2</sup> Set the same transmission speed of the GOT.

<sup>\*3</sup> Set the station No. according to the Host Address on the GOT side.

## 4.2.15 Connecting to connection cable

### ■ Device settings

Write the following set values to devices of each PLC CPU and initialize each port using a peripheral tool or DM monitor.

| Device name          | Set value                                                                                                                                                                                                                                                                                                                             |           |          |    |    |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----|----|
| DM6650               | 0001 <sub>H</sub> (fixed)                                                                                                                                                                                                                                                                                                             |           |          |    |    |
| DM6651               | <table><tr><td>b15 to b8</td><td>b7 to b0</td></tr><tr><td>2)</td><td>1)</td></tr></table>                                                                                                                                                                                                                                            | b15 to b8 | b7 to b0 | 2) | 1) |
|                      | b15 to b8                                                                                                                                                                                                                                                                                                                             | b7 to b0  |          |    |    |
| 2)                   | 1)                                                                                                                                                                                                                                                                                                                                    |           |          |    |    |
|                      | 1) RS-232C port transmission speed setting <sup>*1*2</sup><br>02 <sub>H</sub> : 4800bps<br>03 <sub>H</sub> : 9600bps<br>04 <sub>H</sub> : 19200bps<br>2) RS-232C port communication frame format<br>03 <sub>H</sub> (fixed): The settings are:<br>Start bit : 1 bit<br>Data length: 7 bits<br>Stop bit : 2 bits<br>Parity : Even bits |           |          |    |    |
| DM6652               | 0000 (fixed)                                                                                                                                                                                                                                                                                                                          |           |          |    |    |
| DM6653 <sup>*3</sup> | 0000 to 0031                                                                                                                                                                                                                                                                                                                          |           |          |    |    |

<sup>\*1</sup> Only transmission speeds available on the GOT side are shown.

<sup>\*2</sup> Set the same transmission speed of the peripheral port as that of the GOT side.

<sup>\*3</sup> Set the peripheral port host link station No. according to the Host Address on the GOT side.



#### Precautions for changing device values

Before changing the device values, make sure that the switch settings have been changed as follows:

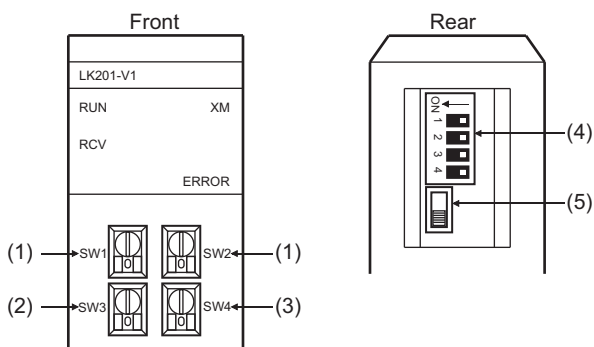
CPM2A: The communication condition switch to "individual"

CPM2C: The communication port function switch to "OFF"

## 4.2.16 Connecting to rack type host link unit

### Switch setting on C200H-LK201-V1

Set the switches accordingly.



#### (1) Setting Machine No. (SW1, SW2)

Set the Machine No. within the range of 00 to 31.  
Set the station No. according to the Host Address on the GOT side.

| Rotary switch | Description                               | Settings |
|---------------|-------------------------------------------|----------|
| SW1           | Machine No. upper digit ( $\times 10^1$ ) | 0 to 3   |
| SW2           | Machine No. lower digit ( $\times 10^0$ ) | 0 to 9   |

#### (2) Setting transmission speed (SW3)

Set the same transmission speed of the GOT.

| Setting <sup>*1</sup> | Settings |
|-----------------------|----------|
| 4                     | 4800bps  |
| 5                     | 9600bps  |
| 6                     | 19200bps |

<sup>\*1</sup> Only transmission speeds available on the GOT side are shown.

#### (3) Setting command level/parity/transmission code (SW4)



| Settings  | Setting details           |        |                          |
|-----------|---------------------------|--------|--------------------------|
|           | Command level             | Parity | Transmission code        |
| 2 (fixed) | Levels 1, 2 and 3 enabled | Even   | ASCII 7 bits 2 stop bits |

#### (4) Setting DIP switches



| Switch No. | Set value                |
|------------|--------------------------|
| 1          | OFF                      |
| 2          | OFF                      |
| 3          | ON (1:N procedure)       |
| 4          | OFF (no 5V power supply) |

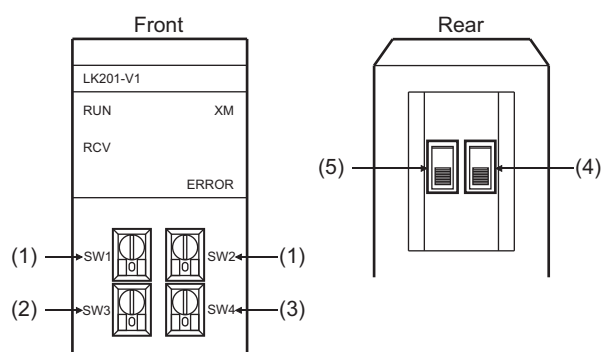
#### (5) Setting the CTS switch



| Settings |
|----------|
| 0V       |

### Switch setting on C200H-LK202-V1

Set the switches accordingly.



#### (1) Setting Machine No. (SW1, SW2)

Set the Machine No. within the range of 00 to 31.  
Set the station No. according to the Host Address on the GOT side.

| Rotary switch | Description                               | Settings |
|---------------|-------------------------------------------|----------|
| SW1           | Machine No. upper digit ( $\times 10^1$ ) | 0 to 3   |
| SW2           | Machine No. lower digit ( $\times 10^0$ ) | 0 to 9   |

- (2) Setting transmission speed (SW3)  
Set the same transmission speed of the GOT.

| Setting*1 | Settings |
|-----------|----------|
| 4         | 4800bps  |
| 5         | 9600bps  |
| 6         | 19200bps |

\*1 Only transmission speeds available on the GOT side are shown.

- (3) Setting command level/parity/transmission code (SW4)

| Settings  | Setting details           |        |                          |
|-----------|---------------------------|--------|--------------------------|
|           | Command level             | Parity | Transmission code        |
| 2 (fixed) | Levels 1, 2 and 3 enabled | Even   | ASCII 7 bits 2 stop bits |

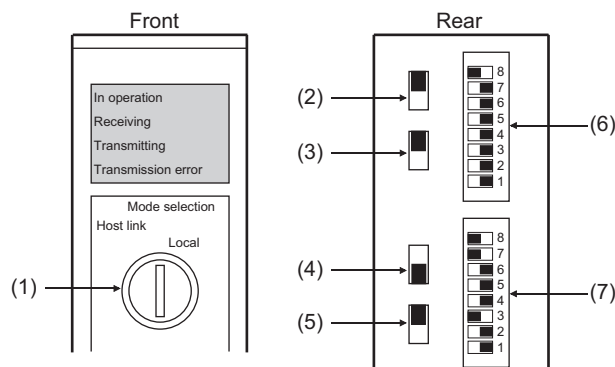
- (4) Setting the 1:1/1:N procedure switch

| Settings            |
|---------------------|
| OFF (1:N procedure) |

- (5) Setting the terminating resistor connection switch

| Settings                           |
|------------------------------------|
| ON (terminating resistor attached) |

- Switch setting on C500-LK201-V1  
Set the switches accordingly.



- (1) Setting host link/local



| Settings  |
|-----------|
| Host link |

- (2) RS-232C/RS-422 switch



| Settings                 |                          |
|--------------------------|--------------------------|
| For RS-232 communication | For RS-422 communication |
| RS-232 (down)            | RS-422 (up)              |

- (3) Internal/external clock switch



| Settings      |
|---------------|
| Internal (up) |

- (4) Terminating resistor connection switch



| Settings        |
|-----------------|
| Attached (down) |

- (5) CTS switch



| Settings |
|----------|
| 0V (up)  |

## (6) Setting SW1 (Station No., Run/Stop)



| Switch No. | Settings                                                                                                                    | Description |
|------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|
| 8          | ON                                                                                                                          | Run         |
| 7          | OFF                                                                                                                         | -           |
| 6          | OFF                                                                                                                         | -           |
| 5          | Set the station No. within the range of 00 to 31.<br>For details, refer to the following manual.<br>OMRON PLC user's Manual |             |
| 4          |                                                                                                                             |             |
| 3          |                                                                                                                             |             |
| 2          |                                                                                                                             |             |
| 1          |                                                                                                                             |             |

## (7) Setting SW2 (Transmission speed, Procedure, Level)



| Switch No. | Settings | Description               |
|------------|----------|---------------------------|
| 8          | ON       | Levels 1, 2 and 3 enabled |
| 7          | ON       |                           |
| 6          | OFF      | 1:N procedure             |
| 5          | OFF      | -                         |
| 4          | *1       | Transmission speed        |
| 3          |          |                           |
| 2          |          |                           |
| 1          |          |                           |

\*1 Only transmission speeds available on the GOT side are shown.

| Transmission speed | Switch No. |     |     |     |
|--------------------|------------|-----|-----|-----|
|                    | SW1        | SW2 | SW3 | SW4 |
| 4800bps            | OFF        | ON  | ON  | OFF |
| 9600bps            | ON         | OFF | ON  | OFF |
| 19200bps           | OFF        | OFF | ON  | OFF |

## 4.2.17 Connecting to serial communication unit

## ■ Device settings

Write the following set values to devices of each PLC CPU and initialize each port using a peripheral tool or DM monitor.

| Device name    |                 | Set value                                                                                                                                                                                                                                                      |           |          |    |    |
|----------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----|----|
| Port 1         | Port 2          |                                                                                                                                                                                                                                                                |           |          |    |    |
| DM (m)         | DM (m+10)       | 8000H(fixed): The settings are:<br>Port setting: Arbitrary setting<br>Serial communication mode: Host link<br>Start bit: 1bit<br>Data bit: 7bits<br>Stop bit: 2bits<br>Parity: Even                                                                            |           |          |    |    |
| DM (m+1)       | DM (m+11)       | <table><tr><td>b15 to b8</td><td>b7 to b0</td></tr><tr><td>0H</td><td>1)</td></tr></table><br>1) Transmission speed <sup>*1*2</sup><br>00H: 9600bps      08H: 38400bps<br>05H: 4800bps      09H: 57600bps<br>06H: 9600bps      0AH: 115200bps<br>07H: 19200bps | b15 to b8 | b7 to b0 | 0H | 1) |
| b15 to b8      | b7 to b0        |                                                                                                                                                                                                                                                                |           |          |    |    |
| 0H             | 1)              |                                                                                                                                                                                                                                                                |           |          |    |    |
| DM (m+2)       | DM (m+12)       | 8000H(fixed)                                                                                                                                                                                                                                                   |           |          |    |    |
| DM (m+3)<br>*3 | DM (m+13)<br>*3 | 8000H to 801FH                                                                                                                                                                                                                                                 |           |          |    |    |

m = 30000 + (100 × unit No.)

\*1 Only transmission speeds available on the GOT side are shown.

\*2 Set the same transmission speed of the GOT.

\*3 Set the host link station No. according to the Host Address on the GOT side.

## 4.2.18 Connecting to communication board, serial communication board (CQM1-SCB41)

### ■ Device settings

Write the following set values to devices of each PLC CPU and initialize each port using a peripheral tool or DM monitor.

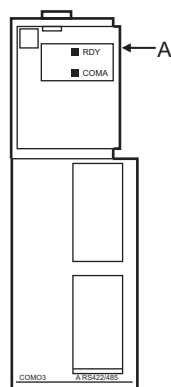
| Device name  |              | Set value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port B       | Port A       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DM6550       | DM6555       | 0001 <sub>H</sub> (fixed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DM6551       | DM6556       | <div> <div>b15 to b8</div> <div>b7 to b0</div> <div>2)</div> <div>1)</div> </div> <p>1) Transmission speed<sup>*1*2</sup><br/>           02<sub>H</sub>:4800bps<br/>           03<sub>H</sub>:9600bps<br/>           04<sub>H</sub>:19200bps</p> <p>2) Frame format setting<br/>           03<sub>H</sub> (fixed): The settings are:<br/>               Start bit :1 bit<br/>               Data length:7 bits<br/>               Stop bit :2 bits<br/>               Parity :Even bits</p> |
| DM6552       | DM6557       | 0000 (fixed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DM6553<br>*3 | DM6558<br>*3 | 0000 to 0031                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

- \*1 Only transmission speeds available on the GOT side are shown.  
 \*2 Set the same transmission speed as that of the GOT side.  
 \*3 Set the host link station No. according to the Host Address on the GOT side.

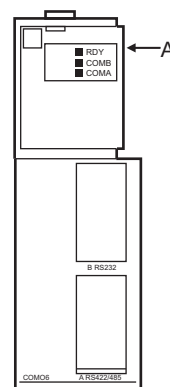
### ■ Setting DIP switches (C200HW-COM3 and C200HW-COM6 only)

Set the DIP switches when performing the RS-422 communications on the C200HW-COM3 and C200HW-COM6.

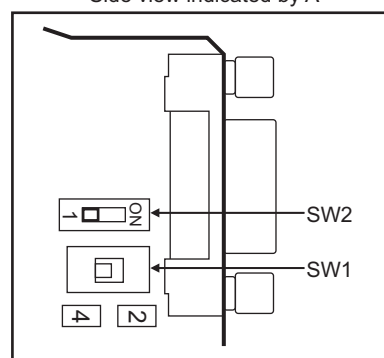
C200HW-COM3



C200HW-COM6



Side view indicated by A



| DIP switch |                                                 | Set value                            |
|------------|-------------------------------------------------|--------------------------------------|
| No.        | Item                                            |                                      |
| SW1        | RS-422/485 cable (2-wire/4-wire type) switching | 4 (4-wire type)                      |
| SW2        | Terminator ON/OFF                               | 1 (no terminating resistor attached) |

#### 4.2.19 Connecting to serial communication board (CS1W-SCB21(-V1), CS1W-SCB41(-V1))

##### ■ Device settings

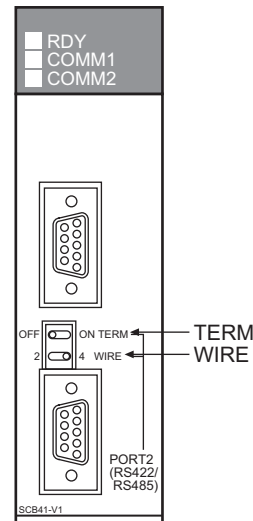
Write the following set values to devices of each PLC CPU and initialize each port using a peripheral tool or DM monitor.

| Device name  |              | Set value                                                                                                                                                                                                                                           |           |          |    |    |
|--------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----|----|
| Port 1       | Port 2       |                                                                                                                                                                                                                                                     |           |          |    |    |
| D32000       | D32010       | 8000H(fixed):<br>The settings are:<br>Port setting: Arbitrary setting<br>Serial communication mode: Host link<br>Start bit: 1bit<br>Data bit: 7bits<br>Stop bit: 2bits<br>Parity: Even                                                              |           |          |    |    |
| D32001       | D32011       | <table><tr><td>b15 to b8</td><td>b7 to b0</td></tr><tr><td>0H</td><td>1)</td></tr></table><br>1) Transmission speed**1*2<br>00H: 9600bps      08H: 38400bps<br>05H: 4800bps      09H: 57600bps<br>06H: 9600bps      0AH: 115200bps<br>07H: 19200bps | b15 to b8 | b7 to b0 | 0H | 1) |
| b15 to b8    | b7 to b0     |                                                                                                                                                                                                                                                     |           |          |    |    |
| 0H           | 1)           |                                                                                                                                                                                                                                                     |           |          |    |    |
| D32002       | D32012       | 8000H(fixed)                                                                                                                                                                                                                                        |           |          |    |    |
| D32003<br>*3 | D32013<br>*3 | 0000H to 0001FH                                                                                                                                                                                                                                     |           |          |    |    |

- \*1 Only transmission speeds available on the GOT side are shown.  
 \*2 Set the same transmission speed of the GOT.  
 \*3 Set the host link station No. according to the Host Address on the GOT side.

##### ■ Setting the DIP switches (CS1W-SCB41(-V1) only)

Set the DIP switches when performing the RS-422 communications on the CS1W-SCB41(-V1).



| DIP switch |                               | Set value                     |
|------------|-------------------------------|-------------------------------|
| Name       | Description                   |                               |
| WIRE       | Setting(2-wire/4-wire) Switch | 4 (4-wire type)               |
| TERM       | Terminator ON/OFF switch      | OFF (no terminating resistor) |

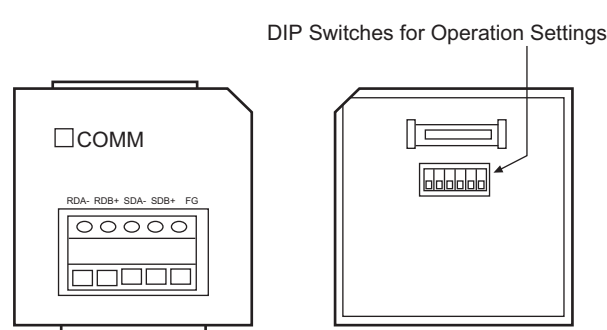


##### Precautions for changing the DM area

Before changing the DM area, make sure that the switch setting has been changed as follows.  
 CS1: Front panel DIP switch SW5 to "OFF"

4.2.20 Connecting to RS-422A/485  
Option board

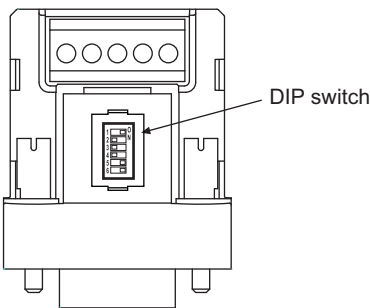
■ Setting DIP switches  
Set the DIP switches.



| Switch No. | Settings | Description        |                                  |
|------------|----------|--------------------|----------------------------------|
| 1          | ON       | Enable             | Terminating resistance selection |
| 2          | OFF      | 4-wire type        | 2-wire or 4-wire selection       |
| 3          | OFF      | 4-wire type        | 2-wire or 4-wire selection       |
| 5          | ON       | RS control enabled | RS control selection for RD      |
| 6          | ON       | RS control enabled | RS control selection for SD      |

4.2.21 Connecting to RS-422A  
converter

■ Setting DIP switches  
Set the DIP switches.

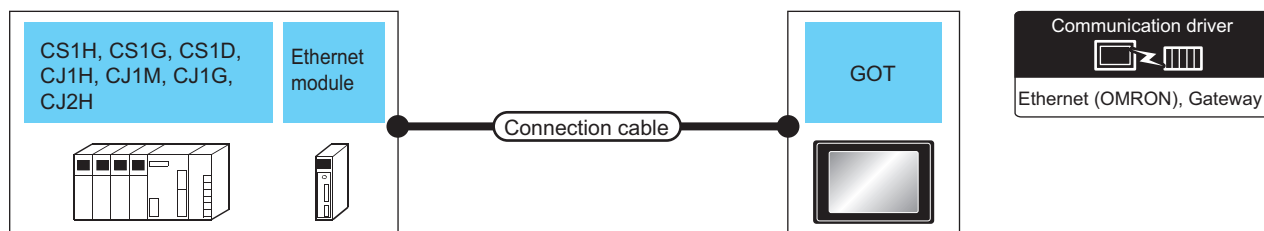


| Switch No. | Settings | Description        |                                  |
|------------|----------|--------------------|----------------------------------|
| 1          | ON       | Enable             | Terminating resistance selection |
| 2          | OFF      | 4-wire type        | 2-wire or 4-wire selection       |
| 3          | OFF      | 4-wire type        | 2-wire or 4-wire selection       |
| 5          | ON       | RS control enabled | RS control selection for RD      |
| 6          | ON       | RS control enabled | RS control selection for SD      |



## 4.3 Ethernet Connection

### 4.3.1 System configuration



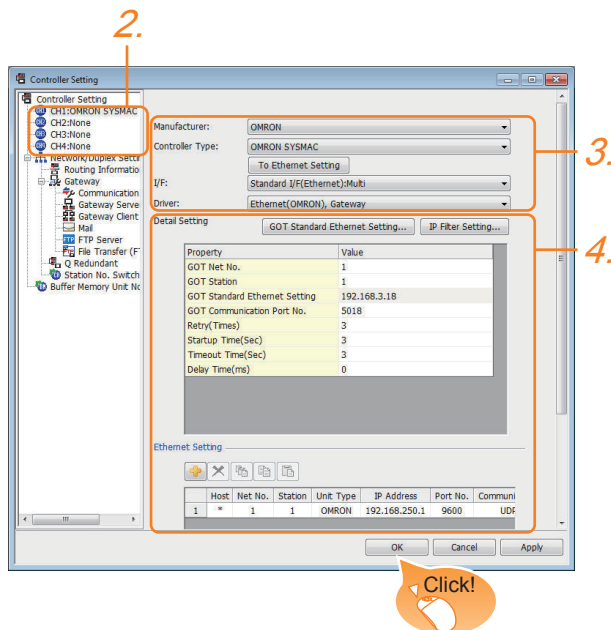
| PLC                               |                               | Connection cable                                                                                                                                                                                                               |                                      | GOT                |                                                                                      | Number of connectable equipment                                                                                                                                                                                                                                                  |
|-----------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series                            | Ethernet module <sup>*3</sup> | Cable model                                                                                                                                                                                                                    | Maximum segment length <sup>*2</sup> | Option device      | Model                                                                                |                                                                                                                                                                                                                                                                                  |
| CS1H<br>CS1G<br>CS1D              | CS1W-ETN21<br>CS1W-EIP21      | Twisted pair cable <sup>*1</sup><br>• 10BASE-T<br>Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP):<br>Category 3, 4, and 5<br>• 100BASE-TX<br>Shielded twisted pair cable (STP):<br>Category 5 and 5e | 100m                                 | - (Built into GOT) |  | <p>When PLC:GOT is N:1<br/>The following shows the number of PLCs for 1 GOT<br/>TCP: 128 or less<br/>UDP: 128 or less</p> <p>When PLC:GOT is 1:N<br/>The following shows the number of GOTs for 1 PLC<br/>TCP: 16 or less<sup>*4</sup><br/>UDP: No limit number<sup>*5</sup></p> |
| CS1D                              | CS1D-ETN21D                   |                                                                                                                                                                                                                                |                                      |                    |                                                                                      |                                                                                                                                                                                                                                                                                  |
| CJ1H<br>CJ1M<br>CJ1G              | CJ1W-ETN21<br>CS1W-EIP21      |                                                                                                                                                                                                                                |                                      |                    |                                                                                      |                                                                                                                                                                                                                                                                                  |
| CJ2H-<br>CPU6□-<br>EIP            | -                             |                                                                                                                                                                                                                                |                                      |                    |                                                                                      |                                                                                                                                                                                                                                                                                  |
| CJ2M-<br>CPU3□                    | CJ1W-ETN21<br>CS1W-EIP21      |                                                                                                                                                                                                                                |                                      |                    |                                                                                      |                                                                                                                                                                                                                                                                                  |
| CJ2H-<br>CPU6□-<br>CJ2M-<br>CPU1□ | CJ1W-ETN21<br>CS1W-EIP21      |                                                                                                                                                                                                                                |                                      |                    |                                                                                      |                                                                                                                                                                                                                                                                                  |

- <sup>\*1</sup> The destination connected with the twisted pair cable varies with the configuration of the applicable Ethernet network system. Connect to the Ethernet module, hub, transceiver or other system equipment corresponding to the applicable Ethernet network system.
- <sup>\*2</sup> A length between a hub and a node.  
The maximum distance differs depending on the Ethernet device to be used.  
The following shows the number of the connectable nodes when a repeater hub is used.  
• 10BASE-T: Max. 4 nodes for a cascade connection (500m)  
• 100BASE-TX: Max. 2 nodes for a cascade connection (205m)  
When switching hubs are used, the cascade connection between the switching hubs has no logical limit for the number of cascades.  
For the limit, contact the switching hub manufacturer.
- <sup>\*3</sup> Product manufactured by OMRON Corporation. For details of the product, contact OMRON Corporation.
- <sup>\*4</sup> If it is connected to devices other than the GOT using the connection, the number of connectable GOTs decreases.  
For details, refer to the OMRON PLC user's manual.
- <sup>\*5</sup> There is no restriction for the number of GOTs. However, if the number of GOTs increases, the communication becomes high-loaded, and it may affect the communication performance.

### 4.3.2 GOT side settings

#### ■ Setting communication interface (Communication settings)

Set the channel of the connected equipment.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: OMRON
  - Controller Type: OMRON SYSMAC
  - I/F: Standard I/F (Ethernet): multi-channel connection
  - Driver: Ethernet (OMRON), Gateway
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 4.3.2 ■ Communication detail settings

#### ■ Communication detail settings

Make the settings according to the usage environment.

| Property                   | Value        |
|----------------------------|--------------|
| GOT Net No.                | 1            |
| GOT Station                | 1            |
| GOT Ethernet Setting       | 192.168.3.18 |
| GOT Communication Port No. | 5018         |
| Retry(Times)               | 3            |
| Startup Time(Sec)          | 3            |
| Timeout Time(Sec)          | 3            |
| Delay Time(ms)             | 0            |

| Item                         | Description                                                                                                                                                                | Range                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| GOT Net No.                  | Set the network No. of the GOT.<br>(Default: 1)                                                                                                                            | 1 to 127                                                               |
| GOT Station*2                | Set the station No. of the GOT.<br>(Default: 1)                                                                                                                            | 1 to 254                                                               |
| GOT Ethernet setting         | Set the GOT IP address, subnet mask, default gateway, peripheral S/W communication port No., transparent port No.                                                          | 0.0.0.0 to 255.255.255.255                                             |
| GOT Communication Port No.*1 | Set the GOT port No. for the connection with the Ethernet module.<br>(Default: 5018)                                                                                       | 1024 to 5010, 5014 to 65534<br>(Except for 5011, 5012, 5013 and 49153) |
| Retry                        | Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.<br>(Default: 3times) | 0 to 5times                                                            |
| Startup Time                 | Specify the time period from the GOT startup until GOT starts the communication with the PLC CPU. (Default: 3sec)                                                          | 3 to 255sec                                                            |
| Timeout Time                 | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                                                    | 1 to 90sec                                                             |
| Delay Time                   | Set the delay time for reducing the load of the network/ destination PLC. (Default: 0ms)                                                                                   | 0 to 10000<br>(×10ms)                                                  |

\*1 By setting of the OMRON PLC, set the same [GOT Communication Port No.] setting as that of [FINS UDP Port] of CX-Programmer.

\*2 Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

➡ ■ Ethernet setting

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

➡ 1.1.2 I/F communication setting

## ■ GOT Ethernet setting

Make the settings according to the usage environment.

| Item                                  | Description                                                                                                                                                  | Range                                                               |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| GOT IP Address                        | Set the IP address of the GOT. (Default: 192.168.0.18)                                                                                                       | 0.0.0.0 to 255.255.255.255                                          |
| Subnet Mask                           | Set the subnet mask for the sub network. (Only for connection via router) If the sub network is not used, the default value is set. (Default: 255.255.255.0) | 0.0.0.0 to 255.255.255.255                                          |
| Default Gateway                       | Set the router address of the default gateway where the GOT is connected. (Only for connection via router) (Default: 0.0.0.0)                                | 0.0.0.0 to 255.255.255.255                                          |
| Peripheral S/W Communication Port No. | Set the GOT port No. for the S/W communication. (Default: 5015)                                                                                              | 1024 to 5010, 5014 to 65534 (Except for 5011, 5012, 5013 and 49153) |
| Transparent Port No.                  | Cannot be set                                                                                                                                                | -                                                                   |

\*1 By setting of the OMRON PLC, set the same [GOT Communication Port No.] setting as that of [FINS UDP Port] of CX-Programmer.

## ■ Ethernet setting

| Item                  | Description                                                            | Set value           |
|-----------------------|------------------------------------------------------------------------|---------------------|
| Host                  | The host is displayed. (The host is indicated with an asterisk (*).)   | -                   |
| N/W No.               | Set the network No. of the connected Ethernet module. (Default: blank) | 1 to 127            |
| Station <sup>*1</sup> | Set the station No. of the connected Ethernet module. (Default: blank) | 1 to 254            |
| Type                  | OMRON (fixed)                                                          | OMRON (fixed)       |
| IP Address            | Set the IP address of the connected Ethernet module. (Default: blank)  | PLC side IP address |
| Port No.              | Set the port No. of the connected Ethernet module. (Default: 9600)     | 256 to 65534        |
| Communication format  | Select a communication protocol. (Default: UDP)                        | UDP, TCP            |

\*1 Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

☞ ■ Communication detail settings

## POINT

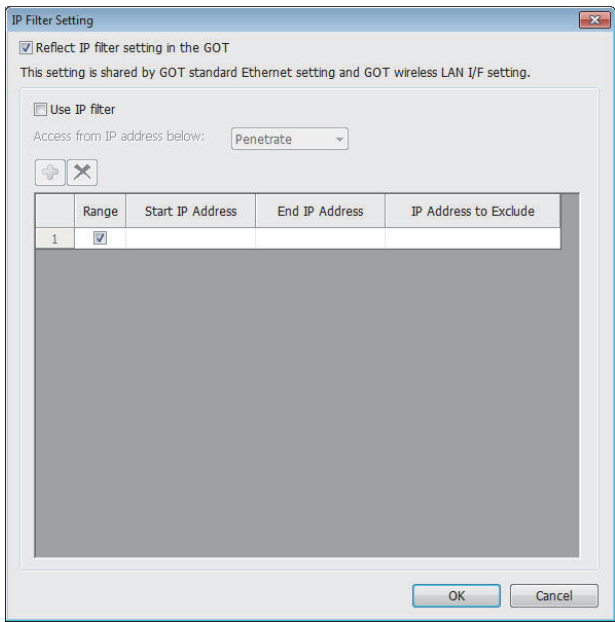
- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication setting] after writing [Communication Settings] of project data.

For details on the Utility, refer to the following manual.

☞ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

■ IP Filter Setting



To improve security, the GOT 2000 series supports the IP Filter Setting.

For details on the IP Filter Setting, refer to the following manual.

 GT Designer3 (GOT2000) Help

### 4.3.3 PLC side setting

#### POINT

#### OMRON PLC

For the communication between OMRON PLC and GOT, use the FINS communication.

For the FINS communication, the node must be specified according to the realm of FINS. However, for the Ethernet network, the data transfer according to the IP address is required.

- Automatic conversion method (dynamic)
- Automatic conversion method (static)
- IP address table conversion method
- Combined method

The following four methods are available for converting the FINS node address to the IP address.

For details of OMRON PLCs, refer to the following manual.

 OMRON PLC user's Manual

#### ■ Communication settings

For the PLC communication setting, set with a software for programming apparatus (CX-Programmer Ver.3.20 or later).

##### (1) CX-Programmer setting

| Item                         |                                      | Setting range                           |                                          |                                                         |                               |
|------------------------------|--------------------------------------|-----------------------------------------|------------------------------------------|---------------------------------------------------------|-------------------------------|
|                              |                                      | Automatic conversion method (dynamic)*4 | Automatic conversion method (static)*4*5 | IP address table method*4*6                             | Combined method*4*6           |
| Ethernet module              | Global                               | All 1 (Default)                         | All 1 (Default)                          | All 1 (Default)                                         | All 1 (Default)               |
|                              | IP address*1                         | [192]. [168]. [0]. [1]*3                | [192]. [168]. [0]. [1]*3                 | [192]. [168]. [0]. [1]                                  | [192]. [168]. [0]. [1]        |
|                              | Subnet Mask                          | [255]. [255]. [255]. [0]                | [255]. [255]. [255]. [0]                 | [255]. [255]. [255]. [0]                                | [255]. [255]. [255]. [0]      |
|                              | FINS UDP port*1                      | 9600                                    | 9600                                     | 9600                                                    | 9600                          |
| CPU highly-functional module | IP address conversion                | Automatic conversion method (dynamic)   | Automatic conversion method (static)     | IP address table method                                 | Combined method               |
|                              | IP address table                     | -                                       | -                                        | 10 [192]. [168]. [0]. [1]<br>11 [192]. [168]. [0]. [18] | 10 [192]. [168]. [0]. [1]     |
|                              | Transmission speed                   | Automatic detection (Default)           | Automatic detection (Default)            | Automatic detection (Default)                           | Automatic detection (Default) |
|                              | Node IP Address dynamically change*2 | Change dynamically (Default)            | Change dynamically (Default)             | Change dynamically (Default)                            | Change dynamically (Default)  |

\*1 Set the same [IP address] and [FINS UDP Port] settings as that of [IP address] and [Port No.] of the GT Designer3 Ethernet setting.

\*2 The Node IP Address dynamically change function is available only when the Ethernet module to be used is Ver.1.3 or later. For the setting, set in the module setting of CX-ProgrammerVer.5.0 or later or in the WEB function. For details of Node IP Address dynamically change, refer to the following manual.

 OMRON PLC user's Manual

\*3 Set the same lowermost bit of the [IP address] setting as that of the node setting switch of the module.

\*4 Set the same [GOT Port No. (Communication)] In Communication detail settings as that of [Port No.] of the Ethernet setting.

\*5 Set the same lowermost bit of the [GOT IP address] in Communication detail settings as that of [GOT PLC No.].

\*6 Set the same lowermost bit of the [GOT IP address] and [GOT PLC No.] in Communication detail settings of GT Designer3 as that of [IP address table].

## 4.3.4 Precautions

---

### ■ When connecting to multiple GOTs

#### (1) Setting PLC No.

When connecting two or more GOTs in the Ethernet network, set each [PLC No.] to the GOT.

 4.3.2 ■ Ethernet setting

#### (2) Setting IP address

Do not use the IP address "192.168.0.18" when using multiple GOTs.

A communication error may occur on the GOT with the IP address.

### ■ When setting IP address

Do not use "0" and "255" at the end of an IP address.

(Numbers of \*.\*\*.0 and \*.\*\*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT and controller.

### ■ When connecting to the multiple network equipment (including GOT) in a segment

By increasing the network load, the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Using a switching hub
- More high speed by 100BASE-TX (100Mbps)
- Reduction of the monitoring points on GOT

## 4.4 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

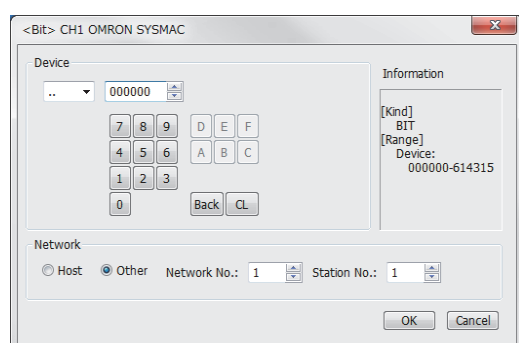
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### ■ Setting item

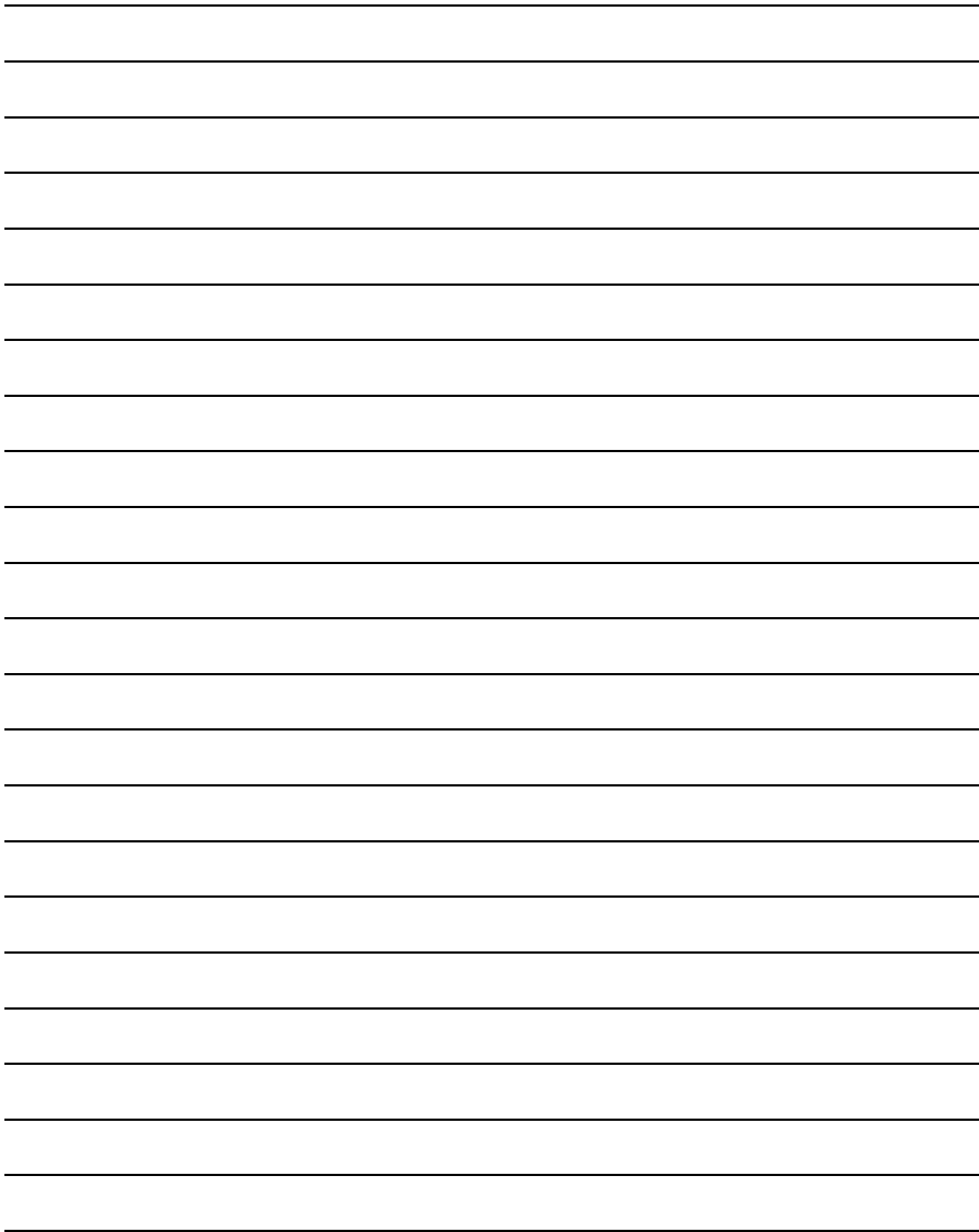


| Item        | Description                                                                                                                   |  |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|--|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |  |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |  |

### 4.4.1 OMRON PLC

|             | Device name                                                                                                                                   | Setting range                                   | Device No. representation |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------|
| Bit device  | I/O relay/internal auxiliary relay (...)                                                                                                      | ..000000 to ..614315                            | Decimal + Hexadecimal     |
|             | Data link relay (LR)                                                                                                                          | LR00000 to LR19915                              |                           |
|             | Auxiliary memory relay (AR)                                                                                                                   | AR000000 to AR147115<br>AR1000000 to AR1153515  |                           |
|             | Holding relay (HR)                                                                                                                            | HR00000 to HR51115                              |                           |
|             | Internal auxiliary relay/Work relay (WR)                                                                                                      | WR00000 to WR51115                              |                           |
|             | Timer contact (TIM)                                                                                                                           | TIM0000 to TIM4095                              | Decimal                   |
| Word device | Counter contact (CNT)                                                                                                                         | CNT0000 to CNT4095                              |                           |
|             | The bit specification of the word device*1*4<br>(except data link relay, auxiliary memory relay, holding relay and internal auxiliary relay.) | Setting range of each word device               | -                         |
|             | I/O relay/internal auxiliary relay (...)                                                                                                      | ..0000 to ..6143                                | Decimal                   |
| Word device | Data link relay (LR)                                                                                                                          | LR000 to LR199                                  |                           |
|             | Auxiliary memory relay (AR)                                                                                                                   | AR0000 to AR1471<br>AR10000 to AR11535          |                           |
|             | Holding relay (HR)                                                                                                                            | HR000 to HR511                                  |                           |
|             | Internal auxiliary relay/Work relay (WR)                                                                                                      | WR000 to WR511                                  |                           |
|             | Data memory (DM)                                                                                                                              | DM00000 to DM32767                              |                           |
|             | Timer (current value) (TIM)*3*5                                                                                                               | TIM0000 to TIM4095                              |                           |
|             | Counter (current value) (CNT)*3*5                                                                                                             | CNT0000 to CNT4095                              |                           |
|             | Extension data memory (EM current bank)*2                                                                                                     | EM00000 to EM32767                              |                           |
|             | Extension data memory (E0 to EC: 13banks)*2                                                                                                   | E000000 to E032767<br>:<br>E1800000 to E1832767 |                           |

- \*1 When executing the touch switch function set during the bit specification of the word device, do not write any data to the word device through the sequence program.
- \*2 Writing or reading the extension data memory using multiple banks is not allowed.
- \*3 Timer (current value) and counter (current value) are valid within the range of 0 to 9999.  
(This applies to the 16 bit/32 bit device data.)
- \*4 This is not supported by GT10.
- \*5 "Timer (current value)" and "Counter (current value)" are handled as BCD values by the PLC.  
If the connection form between the PLC and the GOT is serial, however, they are handled as unsigned binary 16-bit data by the GOT. Set the data type of "Monitor object" in the GOT to "Unsigned BIN16".





# 5

## CONNECTION TO OMRON TEMPERATURE CONTROLLER

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|     |                                               |        |
|-----|-----------------------------------------------|--------|
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## 5. CONNECTION TO OMRON TEMPERATURE CONTROLLER

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### 5.1 Connectable Model List

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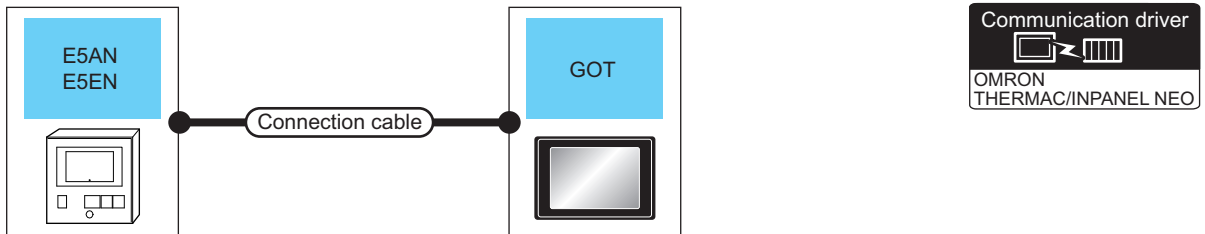
The following table shows the connectable models.

| Series      | Model name                   | Communication Type | Connectable GOT                                                                    | Refer to                                                                                  |
|-------------|------------------------------|--------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| THERMAC NEO | E5AN<br>E5EN<br>E5CN<br>E5GN | RS-232<br>RS-422   |  |  5.2.1 |
| INPANEL NEO | E5ZN                         | RS-232<br>RS-422   |  |  5.2.2 |

## 5.2 System Configuration

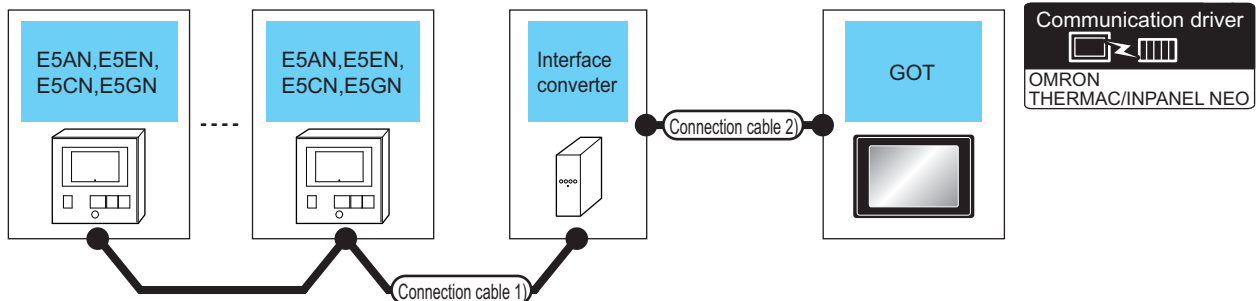
### 5.2.1 Connecting to the THERMAC NEO series

#### ■ When connecting to one temperature controller



| Temperature controller |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment    |
|------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                    |
| E5AN<br>E5EN           | RS-232             | RS-232 connection diagram 1)             | 15m           | - (Built into GOT) |       | 1 temperature controller for 1 GOT |
|                        |                    |                                          |               | GT15-RS2-9P        |       |                                    |

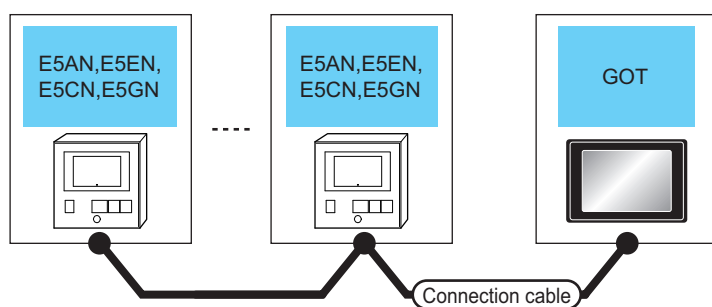
#### ■ When connecting to multiple temperature controllers (via an interface converter)



| Temperature controller       | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment      |
|------------------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name                   | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                      |
| E5AN<br>E5EN<br>E5CN<br>E5GN | RS-485 connection diagram 1)             | 500m          | K3SC-10               | RS-232             | RS-232 connection diagram 2)             | 15m           | - (Built into GOT) |       | 32 temperature controllers for 1 GOT |
|                              |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                      |

\*1 The interface converter is a product manufactured by OMRON Corporation. For details on the product, contact OMRON Corporation.

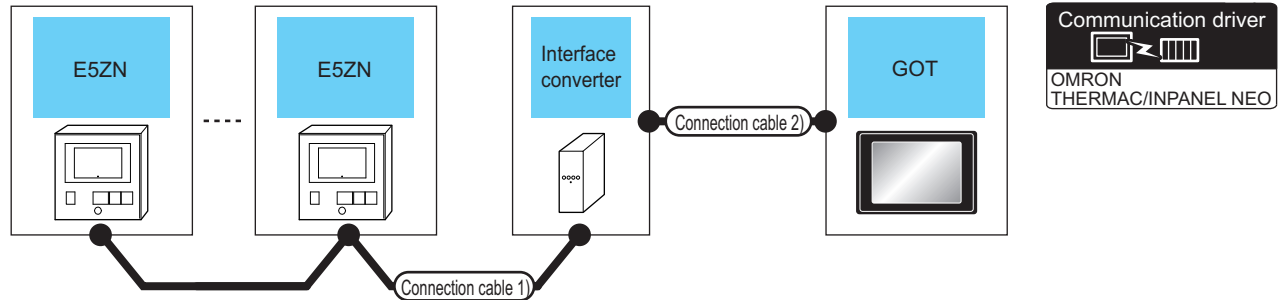
■ When connecting to multiple temperature controllers



| Temperature controller       |                    | Connection cable                                                                                                 |               | GOT                                                                       |                                                                                                                                                                                                                                                                      | Number of connectable equipment         |
|------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Model name                   | Communication Type | Cable model<br>Connection diagram number                                                                         | Max. distance | Option device                                                             | Model                                                                                                                                                                                                                                                                |                                         |
| E5AN<br>E5EN<br>E5CN<br>E5GN | RS-485             |  RS-485 connection diagram 2)   | 500m          | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) |  <br>       | 31 temperature controllers for<br>1 GOT |
|                              |                    |  RS-485 connection diagram 3)   | 500m          | GT15-RS4-TE                                                               |                                                                                                |                                         |
|                              |                    |  RS-485 connection diagram 4) | 500m          | - (Built into GOT)                                                        |  <br> |                                         |

## 5.2.2 Connecting to the INPANEL NEO

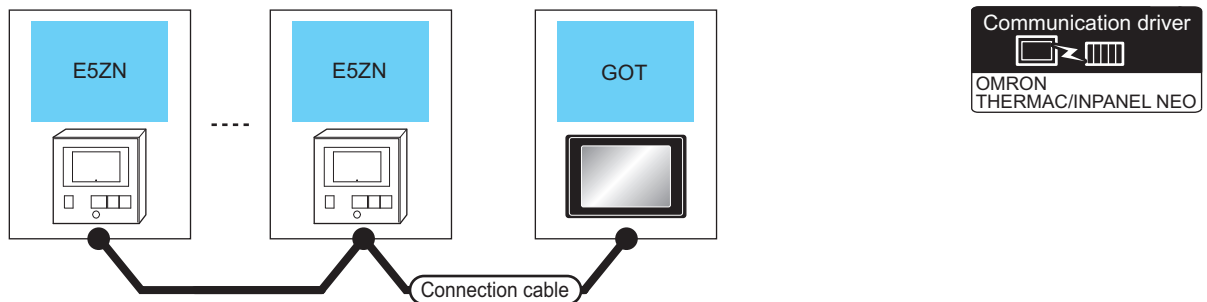
### ■ When connecting to multiple temperature controllers (via interface converter)



| Temperature controller | Connection cable 1)                      |               | Interface converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment      |
|------------------------|------------------------------------------|---------------|-----------------------|--------------------|------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name             | Cable model<br>Connection diagram number | Max. distance | Model name            | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                      |
| E5ZN                   | RS-485 connection diagram 1)             | 500m          | K3SC-10               | RS-232             | RS-232 connection diagram 2)             | 15m           | - (Built into GOT) |       | 16 temperature controllers for 1 GOT |
|                        |                                          |               |                       |                    |                                          |               | GT15-RS2-9P        |       |                                      |

\*1 The interface converter is a product manufactured by OMRON Corporation. For details of the product, contact OMRON Corporation.

### ■ When connecting to multiple temperature controllers



| Temperature controller | Connection cable   |                                          |               | GOT                                                                       |       | Number of connectable equipment      |
|------------------------|--------------------|------------------------------------------|---------------|---------------------------------------------------------------------------|-------|--------------------------------------|
| Model name             | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device                                                             | Model |                                      |
| E5ZN                   | RS-485             | RS-485 connection diagram 2)             | 500m          | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) |       | 15 temperature controllers for 1 GOT |
|                        |                    | RS-485 connection diagram 3)             | 500m          | GT15-RS4-TE                                                               |       |                                      |
|                        |                    | RS-485 connection diagram 4)             | 500m          | - (Built into GOT)                                                        |       |                                      |

\*1 Connect it to the RS-232 interface (built into GOT).

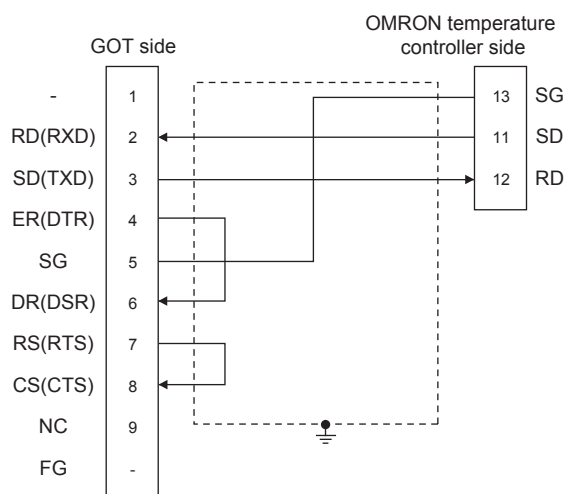
## 5.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

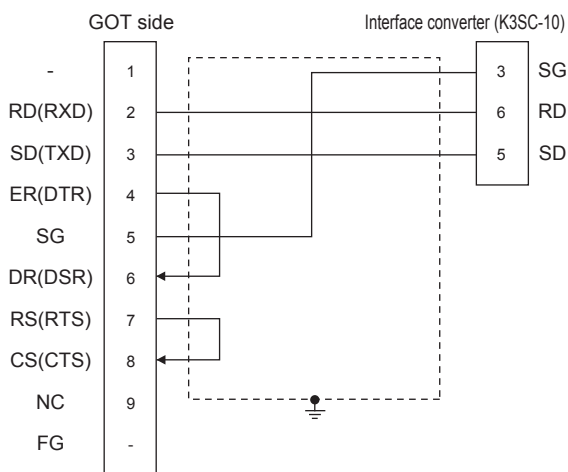
### 5.3.1 RS-232 cable

#### ■ Connection diagram

RS-232 connection diagram 1)



RS-232 connection diagram 2)



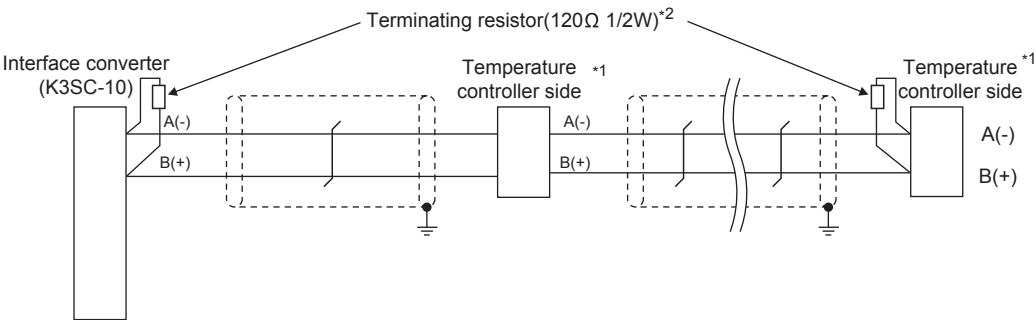
#### ■ Precautions when preparing a cable

- (1) Cable length  
The length of the RS-232 cable must be 15m or less
- (2) GOT side connector  
For the GOT side connector, refer to the following.  
1.4.1 GOT connector specifications
- (3) OMRON temperature controller side connector  
Use the connector compatible with the OMRON temperature controller.  
For details, refer to the user's manual of the OMRON temperature controller.

5.3.2 RS-485 cable

■ Connection diagram

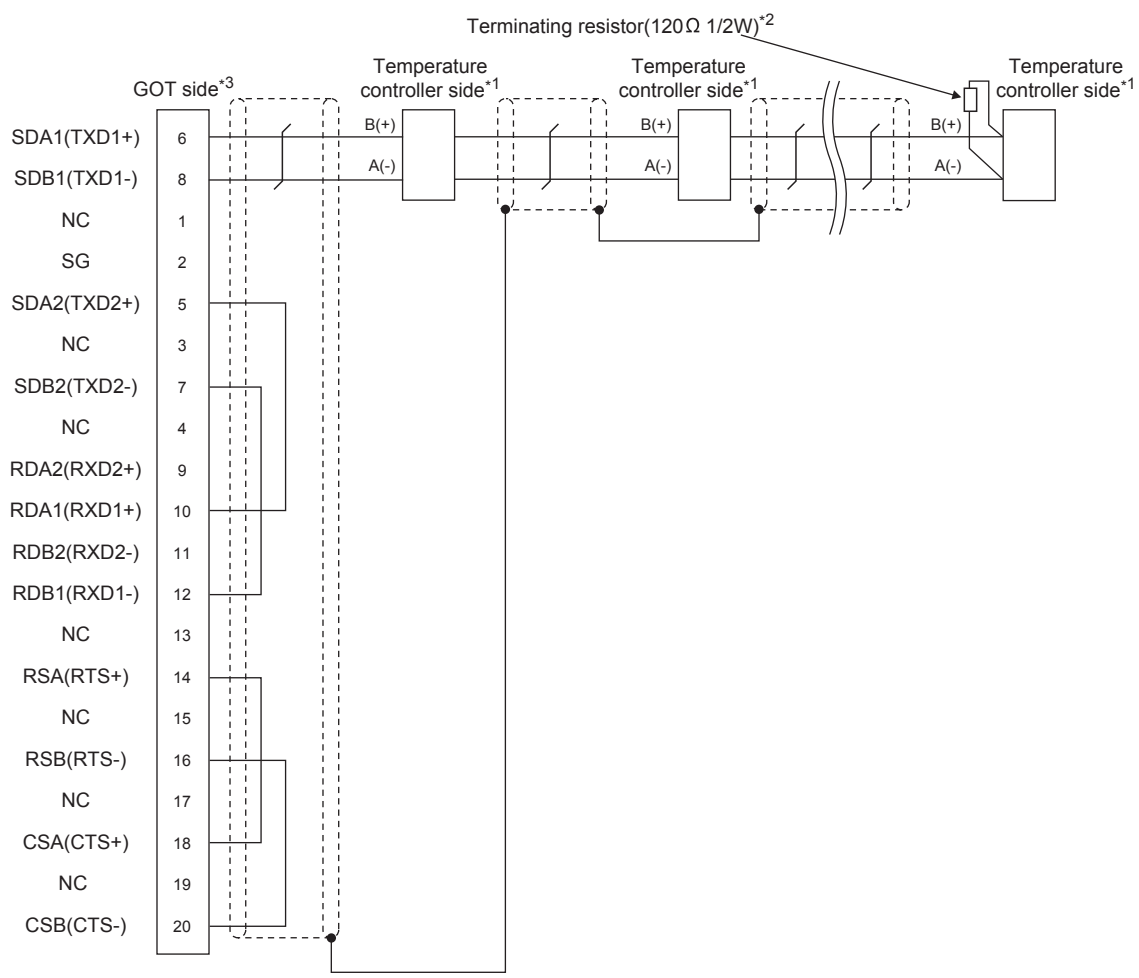
(1) RS-485 connection diagram 1)



\*1 Pin No. of temperature controller differs depending on the model. Refer to the following.  
\*2 Terminating resistor should be provided for a temperature controller and an interface converter which will be terminating resistors.

| Signal name | Model of temperature controller |         |         | Interface converter (K3SC-10)<br>Pin No. |
|-------------|---------------------------------|---------|---------|------------------------------------------|
|             | E5AN<br>E5EN<br>E5CN            | E5GN    | E5ZN    |                                          |
|             | Pin No.                         | Pin No. | Pin No. |                                          |
| A(-)        | 12                              | 6       | 24      | 8                                        |
| B(+)        | 11                              | 5       | 23      | 11                                       |

(2) RS-485 connection diagram 2)



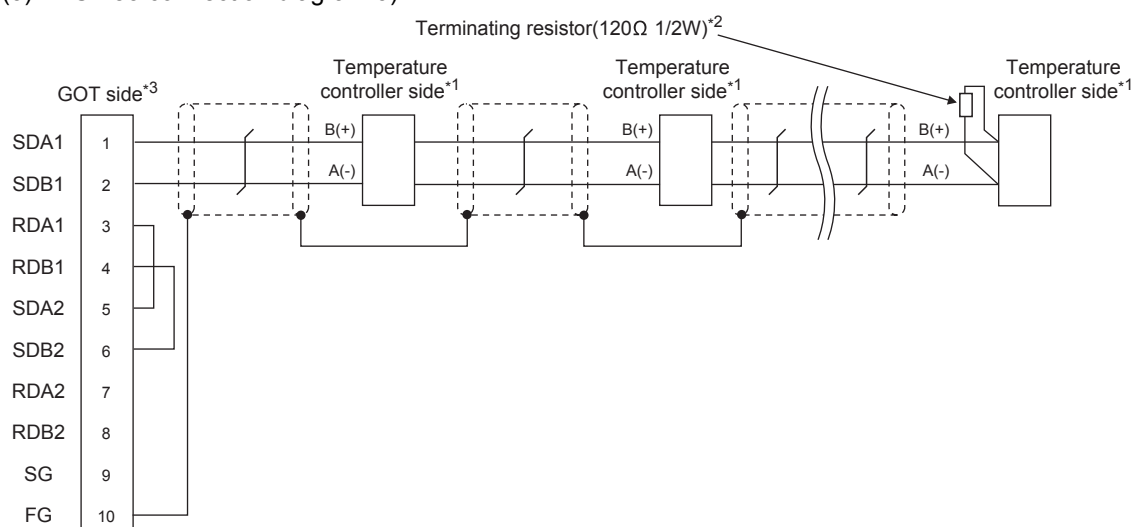
\*1 Pin No. of temperature controller differs depending on the model.Refer to the following.  
\*2 Terminating resistor should be provided for a temperature controller and an interface converter which will be terminating resistors.  
\*3 Set the terminating resistor of GOT side, which will be a terminal, to "Enable".

1.4.3 Terminating resistors of GOT

| Signal name | Model of temperature controller |         |         |
|-------------|---------------------------------|---------|---------|
|             | E5AN<br>E5EN<br>E5CN            | E5GN    | E5ZN    |
|             | Pin No.                         | Pin No. | Pin No. |
| A(-)        | 12                              | 6       | 24      |
| B(+)        | 11                              | 5       | 23      |



## (3) RS-485 connection diagram 3)



\*1 Pin No. of temperature controller differs depending on the model. Refer to the following.

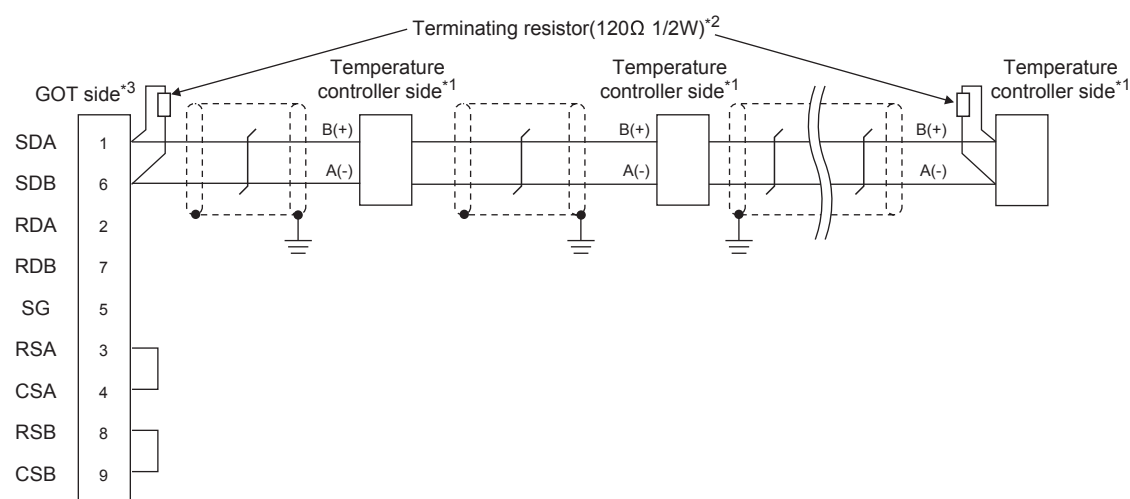
\*2 Terminating resistor should be provided for a temperature controller and an interface converter which will be terminating resistors.

\*3 Set the terminating resistor of GOT side, which will be a terminal, to "Enable".

1.4.3 Terminating resistors of GOT

| Signal name | Model of temperature controller |         |         |
|-------------|---------------------------------|---------|---------|
|             | E5AN<br>E5EN<br>E5CN            | E5GN    | E5ZN    |
|             | Pin No.                         | Pin No. | Pin No. |
| A(-)        | 12                              | 6       | 24      |
| B(+)        | 11                              | 5       | 23      |

## (4) RS-485 connection diagram 4)



\*1 Pin No. of temperature controller differs depending on the model. Refer to the following.

\*2 Terminating resistor should be provided for a temperature controller and an interface converter which will be terminating resistors.

\*3 Set the terminating resistor of GOT side, which will be a terminal, to "110Ω".

1.4.3 Terminating resistors of GOT

| Signal name | Model of temperature controller |         |         |
|-------------|---------------------------------|---------|---------|
|             | E5AN<br>E5EN<br>E5CN            | E5GN    | E5ZN    |
|             | Pin No.                         | Pin No. | Pin No. |
| A(-)        | 12                              | 6       | 24      |
| B(+)        | 11                              | 5       | 23      |

## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-485 cable must be 500m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) OMRON temperature controller side connector

Use the connector compatible with the OMRON temperature controller.

For details, refer to the user's manual of the OMRON temperature controller.

## ■ Setting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

For details of terminating resistor settings, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) OMRON temperature controller side

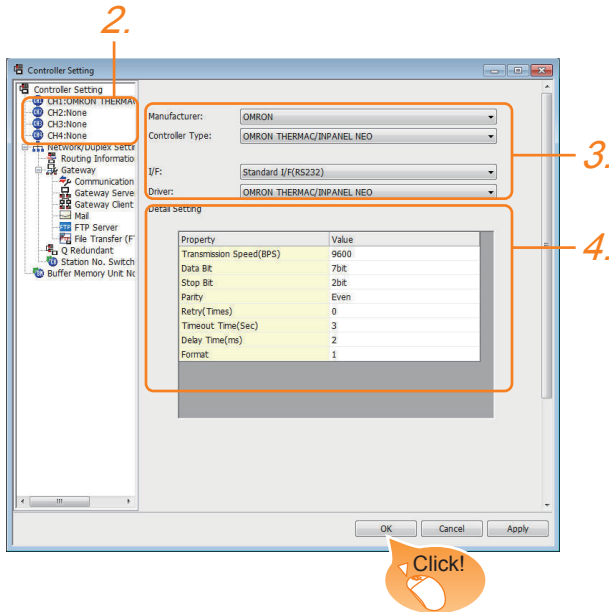
When connecting a OMRON temperature controller to the GOT, the terminating resistor must be connected to the OMRON temperature controller.

 User's Manual of the OMRON temperature controller

## 5.4 GOT Side Settings

### 5.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: OMRON
  - Controller Type: OMRON THERMAC/INPANEL NEO
  - I/F: Interface to be used
  - Driver: OMRON THERMAC/INPANEL NEO
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 5.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 5.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 7 bit |
| Stop Bit                | 2 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Delay Time(ms)          | 2     |
| Format                  | 1     |

| Item               | Description                                                                                                                 | Range                                            |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps)    | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 7bits)             | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications. (Default: 2bits)                                                            | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: Even)             | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 0time)                               | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                        | 3 to 30sec                                       |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 2ms)                   | 0 to 300 (ms)                                    |
| Format             | Select the communication format. (Default: 1)<br>format 1: only continuous access<br>format 2: continuous and random access | 1/2                                              |

## POINT

- (1) Delay Time  
When connecting to the temperature controller E5ZN, set the delay time to 5ms or more.
- (2) Format setting  
The compatible format of temperature controller differs depending on models.

| Model                  | Compatible format    |
|------------------------|----------------------|
| E5AN, E5CN, E5EN, E5GN | Format 1 only        |
| E5ZN                   | Format 1 or Format 2 |

For the continuous access and random access of the temperature controller, refer to the following manual.

 User's Manual of the OMRON temperature controller

- (3) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

 GOT2000 Series User's Manual (Utility)

- (4) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 5.5 Temperature Controller Side Setting

### POINT

OMRON temperature controller

For details of OMRON temperature controller, refer to the following manual.

 User's Manual of the OMRON temperature controller

| Model name             |                        | Refer to |
|------------------------|------------------------|----------|
| Temperature controller | E5AN, E5EN, E5CN, E5GN | 5.5.1    |
|                        | E5ZN                   | 5.5.2    |
| Interface converter    | K3SC-10                | 5.5.3    |

### 5.5.1 Connecting E5AN, E5EN, E5CN, E5GN

Set the communication data by operating the key of the temperature controller.

| Item                                        | Set value           |
|---------------------------------------------|---------------------|
| Protocol                                    | CompoWay/F (Sysway) |
| Transmission speed <sup>*1</sup>            | 9600bps, 19200bps   |
| Data bit <sup>*1</sup>                      | 8 bits, 7 bits      |
| Parity bit <sup>*1</sup>                    | Odd, Even, None     |
| Stop bit <sup>*1</sup>                      | 1bit, 2bits         |
| Communication unit No. <sup>*2</sup>        | 0 to 99             |
| CMWT (Communications writing) <sup>*3</sup> | ON                  |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Select the communication unit No. without overlapping with that of other units.

<sup>\*3</sup> When changing the device values of the temperature controller from the GOT, turn ON CMWT (Communications writing) in advance.

### 5.5.2 Connecting E5ZN

Set the communication data by operating the key of the temperature controller.

| Item                                        | Set value         |
|---------------------------------------------|-------------------|
| Transmission speed <sup>*1</sup>            | 9600bps, 38400bps |
| Data bit <sup>*1</sup>                      | 8 bits, 7 bits    |
| Parity bit <sup>*1</sup>                    | Odd, Even, None   |
| Stop bit <sup>*1</sup>                      | 1bit, 2bits       |
| Communication unit No. <sup>*2</sup>        | 0 to 15           |
| CMWT (Communications writing) <sup>*3</sup> | ON                |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Select the communication unit No. without overlapping with that of other units.

<sup>\*3</sup> When changing the device values of the temperature controller from the GOT, turn ON CMWT (Communications writing) in advance.

### 5.5.3 Connection to interface converter (K3SC-10)

#### ■ Communication settings

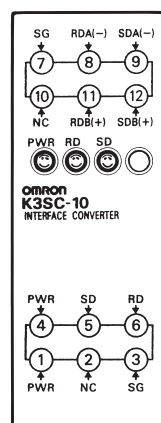
Make the communication settings by operating the DIP switch of the temperature controller.

| Item                             | Set value          |
|----------------------------------|--------------------|
| Transmission speed <sup>*1</sup> | 19200bps, 38400bps |
| Data bit <sup>*1</sup>           | 7 bits, 8 bits     |
| Parity bit <sup>*1</sup>         | Odd, Even, None    |
| Stop bit <sup>*1</sup>           | 1bit, 2bits        |
| Communication Type               | RS-232↔RS485       |
| Echo back <sup>*2</sup>          | With, Without      |

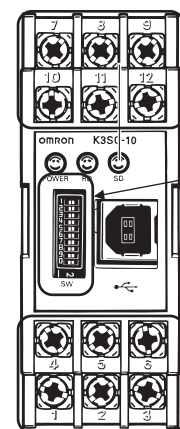
<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Set to "Without".

#### ■ Settings by DIP switch



Front of K3SC-10 body



Inside of K3SC-10 body  
(When removing the front cover)

Terminal block  
for RS-422/485  
communication

Terminal block  
for RS-232  
communication

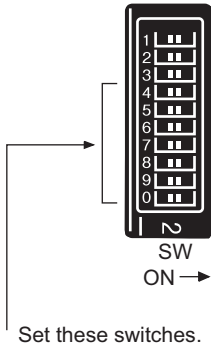
#### (1) Transmission speed settings

| Transmission speed (bps) | Switch No. |     |     |
|--------------------------|------------|-----|-----|
|                          | 1          | 2   | 3   |
| 1200                     | ON         | OFF | OFF |
| 2400                     | OFF        | ON  | OFF |
| 4800                     | ON         | ON  | OFF |
| 9600                     | OFF        | OFF | OFF |
| 19200                    | ON         | OFF | ON  |
| 38400                    | OFF        | ON  | ON  |

Set these switches.



(2) Settings of data length, parity bit, stop bit, master/slave device and echoback

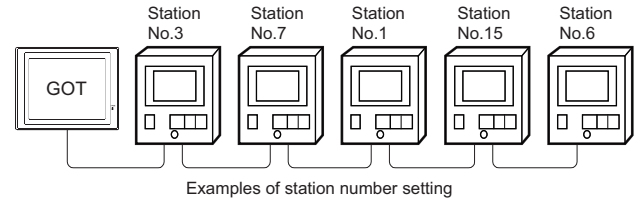


| Setting item            | Set value    | Switch No. |     |     |     |     |     |     |
|-------------------------|--------------|------------|-----|-----|-----|-----|-----|-----|
|                         |              | 4          | 5   | 6   | 7   | 8   | 9   | 0   |
| Data bit                | 7bits        | OFF        |     |     |     |     |     |     |
|                         | 8bits        | ON         |     |     |     |     |     |     |
| Stop bit                | 2bits        |            | OFF |     |     |     |     |     |
|                         | 1bit         |            | ON  |     |     |     |     |     |
| Parity                  | Even         |            |     | OFF | OFF |     |     |     |
|                         | Odd          |            |     | ON  | OFF |     |     |     |
|                         | None         |            |     | OFF | ON  |     |     |     |
| Communica-<br>tion Type | RS232↔RS422  |            |     |     |     | OFF | ON  |     |
|                         | RS-232↔RS485 |            |     |     |     | OFF | OFF |     |
| Echo back               | Without      |            |     |     |     |     |     | OFF |
|                         | With         |            |     |     |     |     |     | ON  |

## 5.5.4 Station No. settings

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



### (1) Direct specification

When setting the device, specify the station number of the temperature controller of which data is to be changed.

| Model name             | Specification range |
|------------------------|---------------------|
| E5AN, E5EN, E5CN, E5GN | 0 to 99             |
| E5ZN                   | 0 to 15             |

### (2) Indirect specification

When setting the device, indirectly specify the station number of the temperature controller of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from 100 to 115 on GT Designer3, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the temperature controller.

| Specification station NO. | Compatible device | Setting range                                                                                                                                            |
|---------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100                       | GD10              | 0 to 99: For E5AN, E5EN, E5CN or E5GN<br>0 to 15: For E5ZN<br>For the setting other than the above, error (dedicated device is out of range) will occur. |
| 101                       | GD11              |                                                                                                                                                          |
| 102                       | GD12              |                                                                                                                                                          |
| 103                       | GD13              |                                                                                                                                                          |
| 104                       | GD14              |                                                                                                                                                          |
| 105                       | GD15              |                                                                                                                                                          |
| 106                       | GD16              |                                                                                                                                                          |
| 107                       | GD17              |                                                                                                                                                          |
| 108                       | GD18              |                                                                                                                                                          |
| 109                       | GD19              |                                                                                                                                                          |
| 110                       | GD20              |                                                                                                                                                          |
| 111                       | GD21              |                                                                                                                                                          |
| 112                       | GD22              |                                                                                                                                                          |
| 113                       | GD23              |                                                                                                                                                          |
| 114                       | GD24              |                                                                                                                                                          |
| 115                       | GD25              |                                                                                                                                                          |

### (3) All station specification

Target station differs depending on write-in operation or read-out operation.

- For write-in operation, all station will be a target.
- For read-out operation, only one station will be a target.

## 5.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

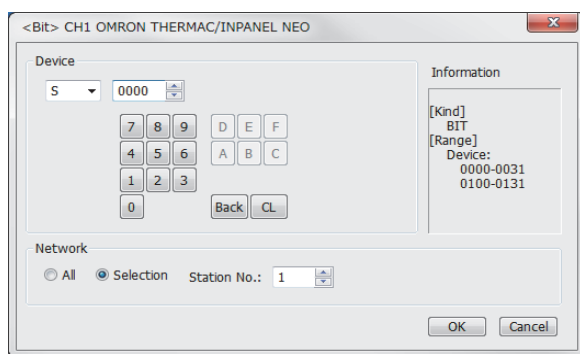
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



| Item        | Description                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device.                                                                                                                                                                                                                                                                        |
| Information | Displays the device type and setting range which are selected in [Device].                                                                                                                                                                                                                                                                                                                           |
| Network     | Set the monitor target of the set device.                                                                                                                                                                                                                                                                                                                                                            |
|             | All<br>Select this item when writing data to all temperature connected.<br>During monitoring, the temperature controller of station No.0 is monitored.<br>(When writing the data in numerical input, the data is written to all connected temperature controllers during input, and the temperature controller of station No. 0 is monitored during other than input (displaying).)                  |
|             | Station No.<br>Select this item when monitoring the temperature controller of the specified station No.<br>After selecting, set the station No. in the following range.<br>0 to 99: To monitor the temperature controller of the specified station No.<br>100 to 115: To specify the station No. of the temperature controller to be monitored by the value of GOT data register (GD). <sup>*1</sup> |

<sup>\*1</sup> The following table shows the relation between station numbers of the PLC and the GOT data register.

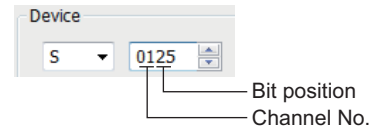
| Station No. | GOT data register (GD) | Setting range                                                                         |
|-------------|------------------------|---------------------------------------------------------------------------------------|
| 100         | GD10                   | 0 to 99<br>(If setting a value outside the range above, a device range error occurs.) |
| 101         | GD11                   |                                                                                       |
| :           | :                      |                                                                                       |
| 114         | GD24                   |                                                                                       |
| 115         | GD25                   |                                                                                       |

### POINT

Device settings of OMRON temperature controller

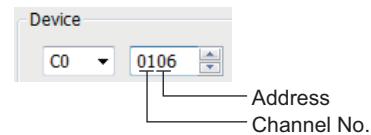
(1) When setting the (S)

Make settings for status by a channel number and a bit position.



(2) When setting variable area (0), variable area (1) and variable area (2)

Make setting for variable areas by a channel number and address.



### 5.6.1 OMRON temperature controller (OMRON THERMAC/INPANEL NEO)

|                    | Device name                          | Setting range                        | Device No. representation |
|--------------------|--------------------------------------|--------------------------------------|---------------------------|
| Bit device         | Status (S) <sup>*1</sup>             | S0000 to S0031<br>S0100 to S0131     | Decimal                   |
| Word device        | Operation command (A) <sup>*2</sup>  | A0000 to A000C                       | Hexadecimal               |
| Double word device | Variable area 0 (C0) <sup>*1*3</sup> | C00000 to C00006<br>C00100 to C00106 | Decimal + Hexadecimal     |
|                    | Variable area 1 (C1) <sup>*3</sup>   | C10000 to C1001C<br>C10100 to C1011C |                           |
|                    | Variable area 3 (C3) <sup>*3</sup>   | C30000 to C3003E<br>C30100 to C3013E |                           |

<sup>\*1</sup> Only reading is possible.

<sup>\*2</sup> Only writing is possible.

Numerical input cannot be used.

When writing, use [Word Set] of a data set switch.

<sup>\*3</sup> Only 32-bit (2-word) designation is allowed.

## 5.7 Precautions

---

### ■ Station number setting of the temperature controller system

Make sure to establish temperature controller system with No.1 station.

### ■ GOT clock control

Since the temperature controller does not have a clock function, the settings of [time adjusting] or [Broadcast] by GOT clock control will be disabled.

### ■ Disconnecting some of multiple connected equipment

The GOT can disconnect some of multiple connected equipment by setting GOT internal device. For example, the faulty station where a communication timeout error occurs can be disconnected from connected equipment.

For details of GOT internal device setting, refer to the following manual.



GT Designer3 GT Designer3 (GOT2000) Help



# 6

## CONNECTION TO KEYENCE PLC

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|     |                                        |        |
|-----|----------------------------------------|--------|
| 6.1 | Connectable Model List . . . . .       | 6 - 2  |
| 6.2 | Serial Connection . . . . .            | 6 - 3  |
| 6.3 | Ethernet Connection . . . . .          | 6 - 21 |
| 6.4 | Device Range that Can Be Set . . . . . | 6 - 25 |

## 6. CONNECTION TO KEYENCE PLC

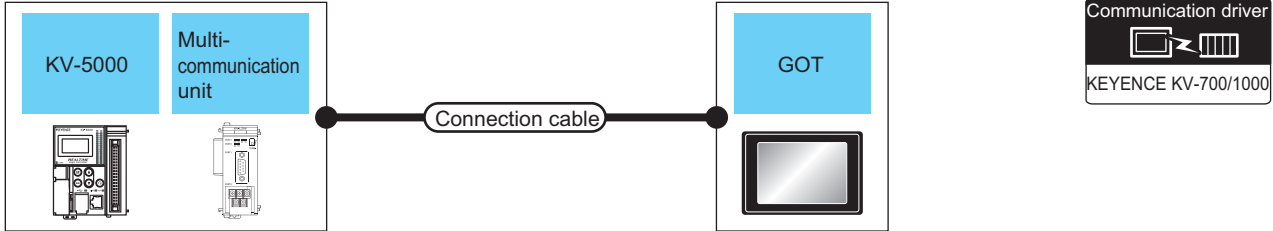
### 6.1 Connectable Model List

The following table shows the connectable models.

| Model name         | Clock | Communication Type | Connectable GOT                                                                                                                                                                                                                                                                                                                                                                                                                     | Refer to                                                                                    |
|--------------------|-------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| KV-5500<br>KV-5000 | ○     | RS-232             |                |  6.2.1   |
|                    |       | RS-422             |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |
|                    |       | RS-485             |                                                                                                 |  6.3.1   |
|                    |       | Ethernet           |                                                                                                 |                                                                                             |
| KV-3000            | ○     | RS-232             |                |  6.2.2   |
|                    |       | RS-422             |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |
|                    |       | RS-485             |                                                                                                 |  6.3.1   |
|                    |       | Ethernet           |                                                                                             |                                                                                             |
| KV-1000            | ○     | RS-232             |      |  6.2.3 |
|                    |       | RS-422             |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |
|                    |       | RS-485             |                                                                                         |  6.3.1 |
|                    |       | Ethernet           |                                                                                         |                                                                                             |
| KV-700             | ○     | RS-232             |      |  6.2.4 |
|                    |       | RS-422             |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |
|                    |       | RS-485             |                                                                                         |  6.3.1 |
|                    |       | Ethernet           |                                                                                         |                                                                                             |

# 6.2 Serial Connection

## 6.2.1 Connecting to KV-5500, KV-5000



| PLC                |                            |                    | Connection cable                                            |               | GOT                |       | Number of connectable equipment      |
|--------------------|----------------------------|--------------------|-------------------------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name         | Multi-communication unit*1 | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device      | Model |                                      |
| KV-5500<br>KV-5000 | KV-L20V<br>(port 1)        | RS-232             | GT09-C30R21102-9S(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) |       | 1 GOT for 1 multi-communication unit |
|                    |                            |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|                    |                            |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|                    |                            |                    | RS-232 connection diagram 5)                                | 15m           | - (Built into GOT) |       |                                      |
|                    | KV-L20V<br>(port 2)        | RS-232             | GT09-C30R21103-3T(3m)<br>or<br>RS-232 connection diagram 3) | 15m           | - (Built into GOT) |       |                                      |
|                    |                            |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|                    |                            |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|                    |                            |                    | RS-232 connection diagram 6)                                | 15m           | - (Built into GOT) |       |                                      |

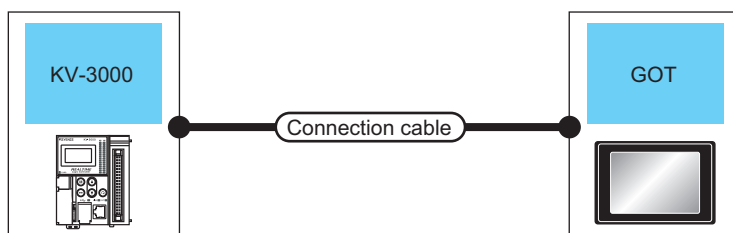
| PLC                |                            |                    | Connection cable                                                                                                                                                                                                               |               | GOT                |                                                                                       | Number of connectable equipment      |
|--------------------|----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|--------------------------------------|
| Model name         | Multi-communication unit*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device      | Model                                                                                 |                                      |
| KV-5500<br>KV-5000 | KV-L20V<br>(port 2)        | RS-422             | GT09-C30R41101-5T(3m)<br>GT09-C100R41101-5T(10m)<br>GT09-C200R41101-5T(20m)<br>GT09-C300R41101-5T(30m)<br>or<br> RS-422 connection diagram 1) | 500m          | - (Built into GOT) |    | 1 GOT for 1 multi-communication unit |
|                    |                            |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        |    |                                      |
|                    |                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      |    |                                      |
|                    |                            |                    |  RS-422 connection diagram 2)                                                                                                                 | 500m          | - (Built into GOT) |    |                                      |
|                    |                            | RS-485             |  RS-485 connection diagram 1)                                                                                                               | 500m          | - (Built into GOT) |    |                                      |
|                    |                            |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        |   |                                      |
|                    |                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      |  |                                      |
|                    |                            |                    |  RS-485 connection diagram 2)                                                                                                               | 500m          | - (Built into GOT) |  |                                      |

\*1 The multi-communication unit is a product manufactured by KEYENCE CORPORATION.  
For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 6.2.2 Connecting to KV-3000

### ■ When connecting to a PLC

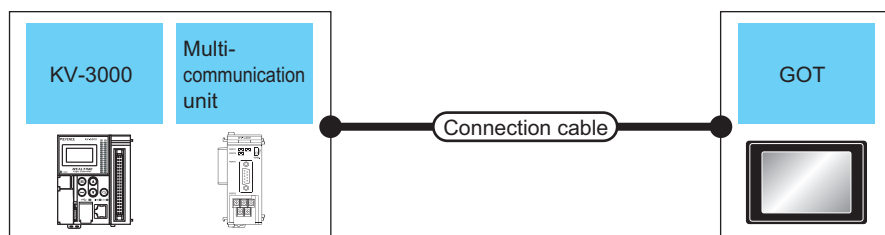


| PLC        |                    | Connection cable                                        |                        |               | GOT                |          | Number of connectable equipment |
|------------|--------------------|---------------------------------------------------------|------------------------|---------------|--------------------|----------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                | Conversion connector*1 | Max. distance | Option device      | Model    |                                 |
| KV-3000    | RS-232             | GT09-C30R21101-6P<br>or<br>RS-232 connection diagram 1) | -                      | 15m           | - (Built into GOT) | <br><br> | 1 GOT for 1 PLC                 |
|            |                    |                                                         |                        |               | GT15-RS2-9P        |          |                                 |
|            |                    |                                                         |                        |               | GT10-C02H-6PT9P*2  |          |                                 |
|            |                    | RS-232 connection diagram 4)                            | -                      | 15m           | - (Built into GOT) |          |                                 |
|            |                    | OP-26487*1                                              | OP-26486               | 2.5m          | - (Built into GOT) | <br><br> |                                 |
|            |                    |                                                         |                        |               | GT15-RS2-9P        |          |                                 |
|            |                    |                                                         |                        |               | GT10-C02H-6PT9P*2  |          |                                 |

\*1 The cable and conversion connector are products manufactured by KEYENCE CORPORATION.  
For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to multi-communication unit



| PLC        |                            |                    | Connection cable                                            |               | GOT                |       | Number of connectable equipment      |
|------------|----------------------------|--------------------|-------------------------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name | Multi-communication unit*1 | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device      | Model |                                      |
| KV-3000    | KV-L20V<br>(port 1)        | RS-232             | GT09-C30R21102-9S(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) |       | 1 GOT for 1 multi-communication unit |
|            |                            |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|            |                            |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|            |                            |                    | RS-232 connection diagram 5)                                | 15m           | - (Built into GOT) |       |                                      |
|            | KV-L20V<br>(port 2)        | RS-232             | GT09-C30R21103-3T(3m)<br>or<br>RS-232 connection diagram 3) | 15m           | - (Built into GOT) |       |                                      |
|            |                            |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|            |                            |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|            |                            |                    | RS-232 connection diagram 6)                                | 15m           | - (Built into GOT) |       |                                      |

| PLC        |                            |                    | Connection cable                                                                                                                                                                                                               |               | GOT                |                                                                                                                                                                                                                                                                         | Number of connectable equipment      |
|------------|----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Model name | Multi-communication unit*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                   |                                      |
| KV-3000    | KV-L20V<br>(port 2)        | RS-422             | GT09-C30R41101-5T(3m)<br>GT09-C100R41101-5T(10m)<br>GT09-C200R41101-5T(20m)<br>GT09-C300R41101-5T(30m)<br>or<br> RS-422 connection diagram 1) | 500m          | - (Built into GOT) | <br><br>       | 1 GOT for 1 multi-communication unit |
|            |                            |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        | <br>                                                                                              |                                      |
|            |                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      | <br><br>       |                                      |
|            |                            |                    |  RS-422 connection diagram 2)                                                                                                                 | 500m          | - (Built into GOT) | <br><br>       |                                      |
|            | KV-L20V<br>(port 2)        | RS-485             |                                                                                                                                                                                                                                |               | - (Built into GOT) | <br><br>      | 1 GOT for 1 multi-communication unit |
|            |                            |                    |  RS-485 connection diagram 1)                                                                                                               | 500m          | GT15-RS4-9S        | <br>                                                                                          |                                      |
|            |                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      | <br><br> |                                      |
|            |                            |                    |  RS-485 connection diagram 2)                                                                                                               | 500m          | - (Built into GOT) | <br><br> |                                      |

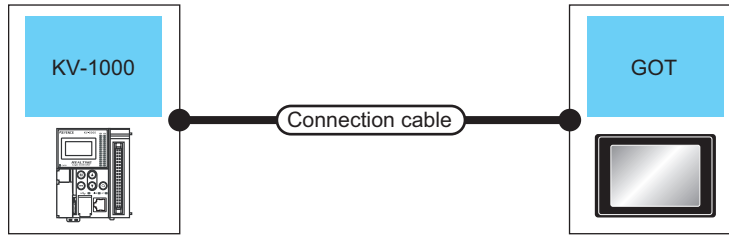
\*1 The multi-communication unit is a product manufactured by KEYENCE CORPORATION.

For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 6.2.3 Connecting to KV-1000

### ■ When connecting to PLC



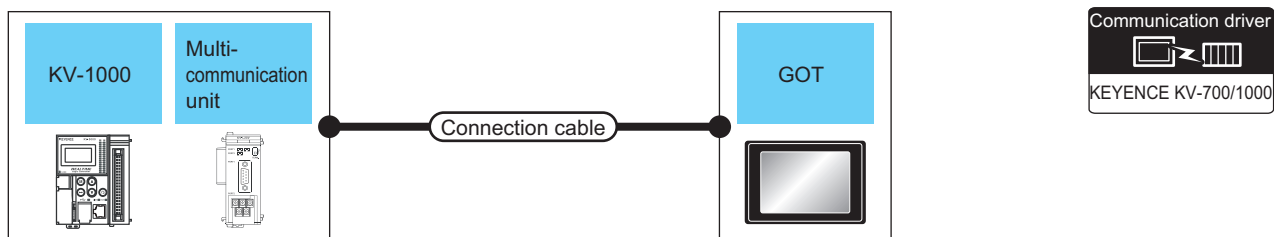
| PLC        |                    | Connection cable                                                                                                                          |                        |               | GOT                |                                                                                                                                                                                                                                                                         | Number of connectable equipment |
|------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                                  | Conversion connector*1 | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                   |                                 |
| KV-1000    | RS-232             | GT09-C30R21101-6P<br>or<br> RS-232 connection diagram 1) | -                      | 15m           | - (Built into GOT) | <br><br>       | 1 GOT for 1 PLC                 |
|            |                    |                                                                                                                                           |                        |               | GT15-RS2-9P        |                                                                                                                                                                                      |                                 |
|            |                    |                                                                                                                                           |                        |               | GT10-C02H-6PT9P*2  | <br>                                                                                            |                                 |
|            |                    |  RS-232 connection diagram 4)                          | -                      | 15m           | - (Built into GOT) | <br>                                                                                          |                                 |
|            |                    | OP-26487*1                                                                                                                                | OP-26486               | 2.5m          | - (Built into GOT) | <br><br> |                                 |
|            |                    |                                                                                                                                           |                        |               | GT15-RS2-9P        |                                                                                                                                                                                    |                                 |
|            |                    |                                                                                                                                           |                        |               | GT10-C02H-6PT9P*2  | <br>                                                                                          |                                 |

\*1 The cable and conversion connector are products manufactured by KEYENCE CORPORATION.  
For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



■ When connecting to multi-communication unit



| PLC        |                                 |                    | Connection cable                                            |               | GOT                |       | Number of connectable equipment      |
|------------|---------------------------------|--------------------|-------------------------------------------------------------|---------------|--------------------|-------|--------------------------------------|
| Model name | Multi-communication unit*2      | Communication Type | Cable model<br>Connection diagram number                    | Max. distance | Option device      | Model |                                      |
| KV-1000    | KV-L20R,<br>KV-L20V<br>(port 1) | RS-232             | GT09-C30R21102-9S(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) |       | 1 GOT for 1 multi-communication unit |
|            |                                 |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|            |                                 |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|            |                                 |                    | RS-232 connection diagram 5)                                | 15m           | - (Built into GOT) |       |                                      |
|            | KV-L20R,<br>KV-L20V<br>(port 2) | RS-232             | GT09-C30R21103-3T(3m)<br>or<br>RS-232 connection diagram 3) | 15m           | - (Built into GOT) |       |                                      |
|            |                                 |                    |                                                             |               | GT15-RS2-9P        |       |                                      |
|            |                                 |                    |                                                             |               | GT10-C02H-6PT9P*2  |       |                                      |
|            |                                 |                    | RS-232 connection diagram 6)                                | 15m           | - (Built into GOT) |       |                                      |

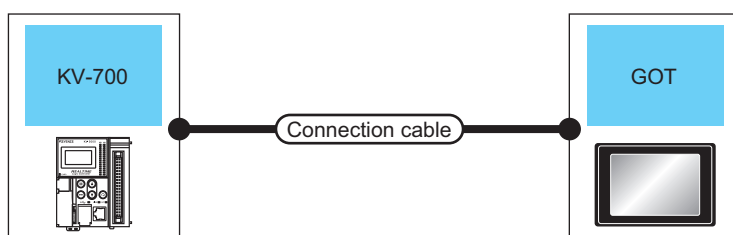
| PLC        |                                 |                    | Connection cable                                                                                                                                                                                                               |               | GOT                |                                                                                                                                                                                                                                                                                                                                                            | Number of connectable equipment      |
|------------|---------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Model name | Multi-communication unit*2      | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                      |                                      |
| KV-1000    | KV-L20R,<br>KV-L20V<br>(port 2) | RS-422             | GT09-C30R41101-5T(3m)<br>GT09-C100R41101-5T(10m)<br>GT09-C200R41101-5T(20m)<br>GT09-C300R41101-5T(30m)<br>or<br> RS-422 connection diagram 1) | 500m          | - (Built into GOT) |  <br>          | 1 GOT for 1 multi-communication unit |
|            |                                 |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        |                                                                                                                                                                                      |                                      |
|            |                                 |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      |  <br>          |                                      |
|            |                                 |                    |  RS-422 connection diagram 2)                                                                                                                 | 500m          | - (Built into GOT) |  <br>          |                                      |
|            |                                 | RS-485             |  RS-485 connection diagram 1)                                                                                                               | 500m          | - (Built into GOT) |  <br>         |                                      |
|            |                                 |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        |                                                                                                                                                                                  |                                      |
|            |                                 |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      |  <br>  |                                      |
|            |                                 |                    |  RS-485 connection diagram 2)                                                                                                               | 500m          | - (Built into GOT) |  <br>  |                                      |

\*1 The multi-communication unit is a product manufactured by KEYENCE CORPORATION.  
For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 6.2.4 Connecting to KV-700

### ■ When connecting to PLC

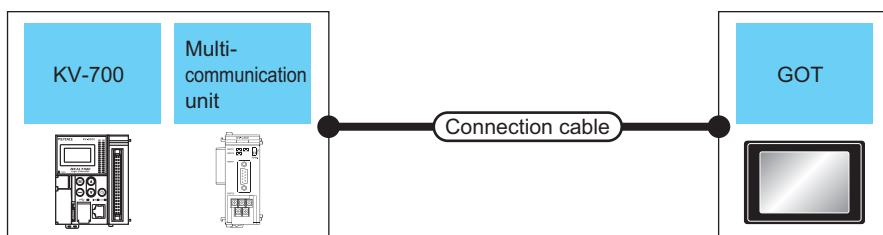


| PLC        |                    | Connection cable                                                                                                                          |                        |               | GOT                |                                                                                                                                                                                                                                                                                                                                                               | Number of connectable equipment |
|------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                                  | Conversion connector*1 | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                         |                                 |
| KV-700     | RS-232             | GT09-C30R21101-6P<br>or<br> RS-232 connection diagram 1) | -                      | 15m           | - (Built into GOT) |  <br><br>         | 1 GOT for 1 PLC                 |
|            |                    |                                                                                                                                           |                        |               | GT15-RS2-9P        |                                                                                                                                                                                         |                                 |
|            |                    |                                                                                                                                           |                        |               | GT10-C02H-6PT9P*2  |                                                                                                                                                                                         |                                 |
|            |                    |  RS-232 connection diagram 4)                          | -                      | 15m           | - (Built into GOT) |                                                                                                                                                                                     |                                 |
|            |                    | OP-26487*1                                                                                                                                | OP-26486               | 2.5m          | - (Built into GOT) |  <br><br> |                                 |
|            |                    |                                                                                                                                           |                        |               | GT15-RS2-9P        |                                                                                                                                                                                     |                                 |
|            |                    |                                                                                                                                           |                        |               | GT10-C02H-6PT9P*2  |                                                                                                                                                                                     |                                 |

\*1 The cable, conversion connector, and multi-communication unit are products manufactured by KEYENCE CORPORATION. For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to multi-communication unit



| PLC        |                                            |                    | Connection cable                                                             |               | GOT                |                                                                  | Number of connectable equipment      |
|------------|--------------------------------------------|--------------------|------------------------------------------------------------------------------|---------------|--------------------|------------------------------------------------------------------|--------------------------------------|
| Model name | Multi-communication unit*2                 | Communication Type | Cable model<br>Connection diagram number                                     | Max. distance | Option device      | Model                                                            |                                      |
| KV-700     | KV-L20R,<br>KV-L20,<br>KV-L20V<br>(port 1) | RS-232             | GT09-C30R21102-9S(3m)<br>or<br>(User preparing) RS-232 connection diagram 2) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 multi-communication unit |
|            |                                            |                    |                                                                              |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                      |
|            |                                            |                    |                                                                              |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21 04P R4</div> <div>GT 03P 21 R2</div>              |                                      |
|            |                                            |                    | (User preparing) RS-232 connection diagram 5)                                | 15m           | - (Built into GOT) | <div>GT 04R 21</div> <div>GT 03P 21 R2</div>                     |                                      |
|            | KV-L20R,<br>KV-L20,<br>KV-L20V<br>(port 2) | RS-232             | GT09-C30R21103-3T(3m)<br>or<br>(User preparing) RS-232 connection diagram 3) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                      |
|            |                                            |                    |                                                                              |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                      |
|            |                                            |                    |                                                                              |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21 04P R4</div> <div>GT 03P 21 R2</div>              |                                      |
|            |                                            |                    | (User preparing) RS-232 connection diagram 6)                                | 15m           | - (Built into GOT) | <div>GT 04R 21</div> <div>GT 03P 21 R2</div>                     |                                      |

| PLC        |                                            |                    | Connection cable                                                                                                                                                                                                               |               | GOT                |                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Number of connectable equipment      |
|------------|--------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Model name | Multi-communication unit*2                 | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                       | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                      |
| KV-700     | KV-L20R,<br>KV-L20,<br>KV-L20V<br>(port 2) | RS-422             | GT09-C30R41101-5T(3m)<br>GT09-C100R41101-5T(10m)<br>GT09-C200R41101-5T(20m)<br>GT09-C300R41101-5T(30m)<br>or<br> RS-422 connection diagram 1) | 500m          | - (Built into GOT) | <br><br>                                                                                                                                                                                         | 1 GOT for 1 multi-communication unit |
|            |                                            |                    |  RS-422 connection diagram 1)                                                                                                                 | 500m          | GT15-RS4-9S        | <br>                                                                                                                                                                                                                                                                                |                                      |
|            |                                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      | <br><br><br><br>           |                                      |
|            |                                            |                    |  RS-422 connection diagram 2)                                                                                                                 | 500m          | - (Built into GOT) | <br><br><br><br>           |                                      |
|            | KV-L20R,<br>KV-L20,<br>KV-L20V<br>(port 2) | RS-485             |  RS-485 connection diagram 1)                                                                                                               | 500m          | - (Built into GOT) | <br><br>                                                                                                                                                                                        |                                      |
|            |                                            |                    |                                                                                                                                                                                                                                |               | GT15-RS4-9S        | <br>                                                                                                                                                                                                                                                                              |                                      |
|            |                                            |                    |                                                                                                                                                                                                                                |               | GT10-C02H-9SC      | <br><br><br><br> |                                      |
|            |                                            |                    |  RS-485 connection diagram 2)                                                                                                               | 500m          | - (Built into GOT) | <br><br><br><br> |                                      |

\*1 The conversion connector and multi-communication unit are products manufactured by KEYENCE CORPORATION.  
For details of the product, contact KEYENCE CORPORATION.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

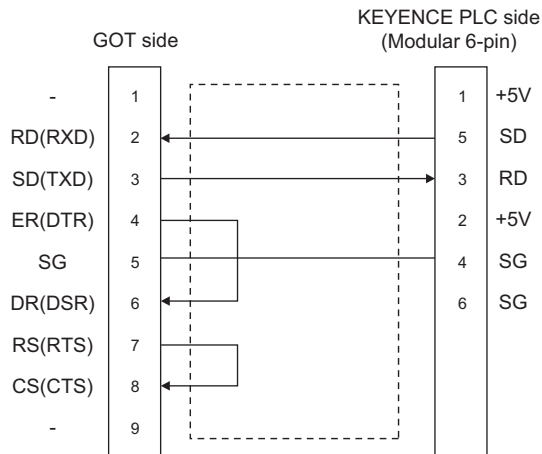
## 6.2.5 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

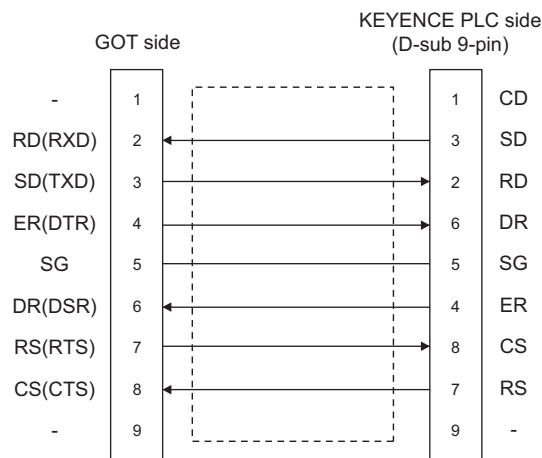
### ■ RS-232 cable

#### (1) Connection diagram

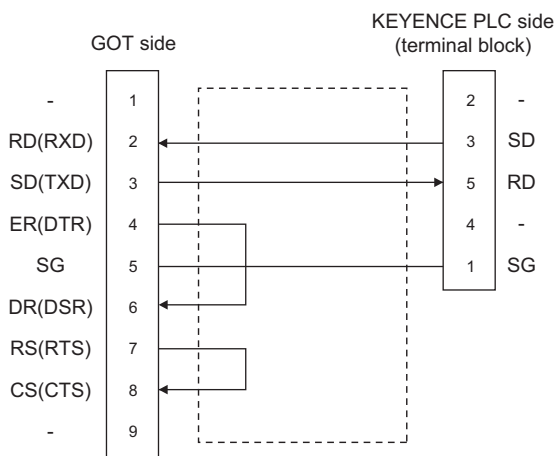
(a) RS-232 connection diagram 1)



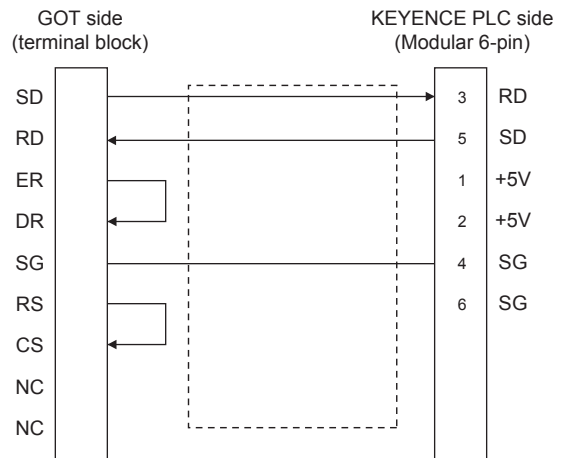
(b) RS-232 connection diagram 2)



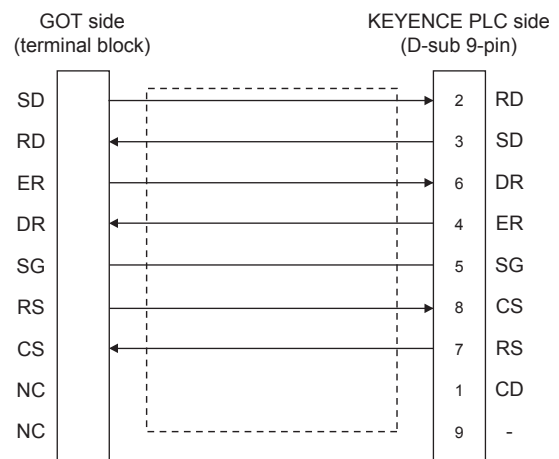
(c) RS-232 connection diagram 3)



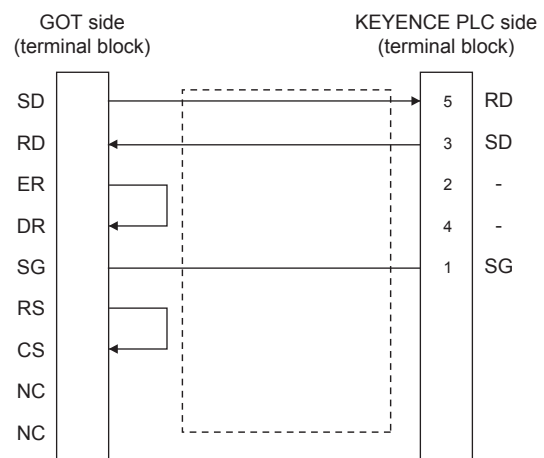
(d) RS-232 connection diagram 4)



(e) RS-232 connection diagram 5)



(f) RS-232 connection diagram 6)



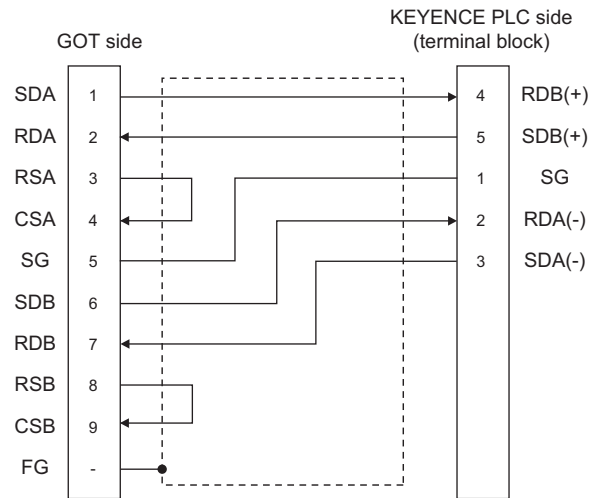
## (2) Precaution when preparing a cable

- (a) Cable length  
The length of the RS-232 cable must be within 15m.
- (b) GOT side connector  
For the GOT side connector, refer to the following.  
➡ 1.4.1 GOT connector specifications
- (c) KEYENCE PLC side connector  
Use the connector compatible with the KEYENCE PLC side module.  
For details, refer to the KEYENCE PLC user's manual.

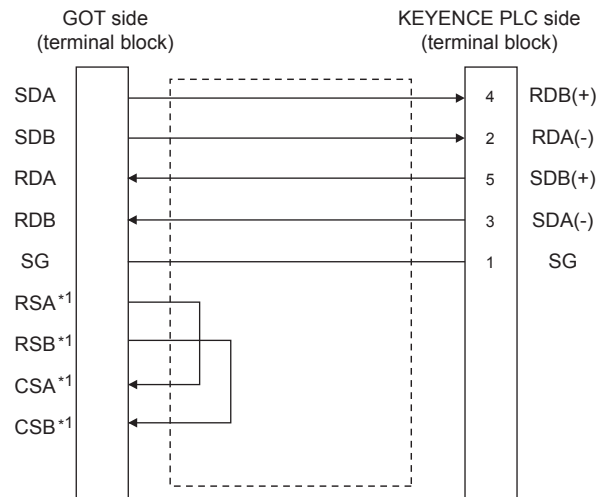
## ■ RS-422 cable

### (1) Connection diagram

(a) RS-422 connection diagram 1)



(b) RS-422 connection diagram 2)



\*1 The signals RSA, RSB, CSA, and CSB are not provided for . Return connection is not required.

### (2) Precautions when preparing a cable

- (a) Cable length  
The length of the RS-422 cable must be 500m or less
- (b) GOT side connector  
For the GOT side connector, refer to the following.  
➡ 1.4.1 GOT connector specifications
- (c) KEYENCE PLC side connector  
Use the connector compatible with the KEYENCE PLC side module.  
For details, refer to the KEYENCE PLC user's manual.

### (3) Connecting terminating resistors

#### (a) GOT side

When connecting a KEYENCE PLC to the GOT, a terminating resistor must be connected to the GOT.

- For GT16, GT15, GT12

Set the terminating resistor setting switch of the GOT main unit to "Disable".

- For GT14, GT11, GT10

Set the terminating resistor selector to "330Ω".

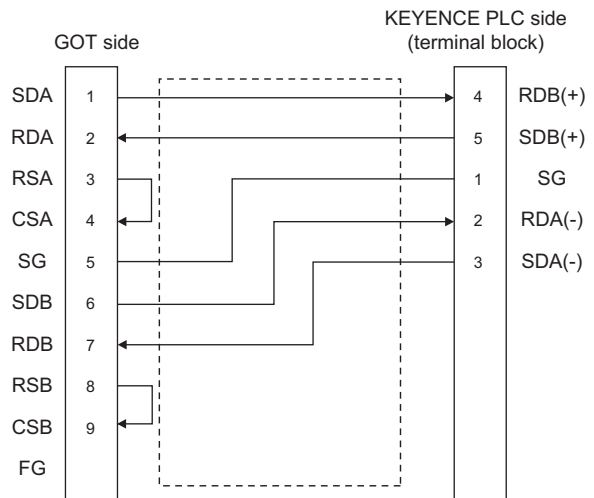
For the procedure to set the terminating resistor, refer to the following.

#### ➡ 1.4.3 Terminating resistors of GOT

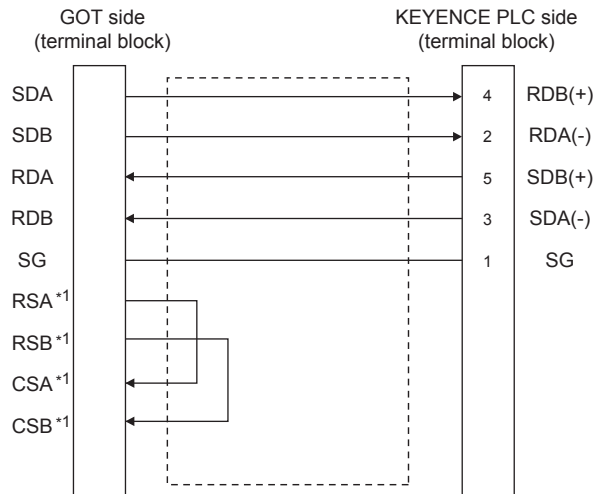
## ■ RS-485 cable

### (1) Connection diagram

#### (a) RS-485 connection diagram 1)



#### (b) RS-485 connection diagram 2)



\*1 The signals RSA, RSB, CSA, and CSB are not provided for



Return connection is not required.

### (2) Precautions when preparing a cable

#### (a) Cable length

The length of the RS-485 cable must be 500m or less

#### (b) GOT side connector

For the GOT side connector, refer to the following.

#### ➡ 1.4.1 GOT connector specifications

#### (c) KEYENCE PLC side connector

Use the connector compatible with the KEYENCE PLC side module.

For details, refer to the KEYENCE PLC user's manual.



### (3) Connecting terminating resistors

#### (a) GOT

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

#### (b) KEYENCE PLC

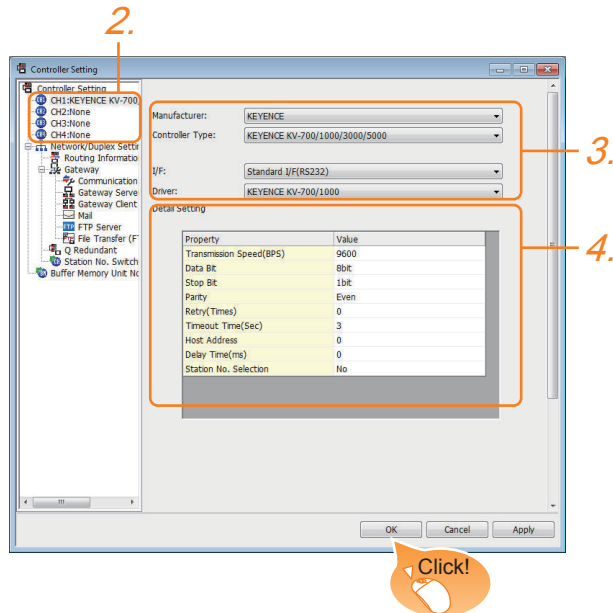
Connect the terminating resistor on the KEYENCE PLC side when connecting a GOT to a KEYENCE PLC.

 6.2.7 PLC Side Setting

## 6.2.6 GOT Side Settings

### ■ Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: KEYENCE
  - Controller Type: KEYENCE KV-700/1000/3000/5000
  - I/F: Interface to be used
  - Driver: KEYENCE KV-700/1000
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

☞ ■ Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting].  
For details, refer to the following.

☞ 1.1.2 I/F communication setting

### ■ Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 0     |
| Station No. Selection   | No    |

| Item                  | Contents                                                                                                                 | Range                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed    | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps) | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit              | Set this item when change the data length used for communication with the connected equipment. (Default: 8bits)          | 7bits/8bits                                      |
| Stop Bit              | Specify the stop bit length for communications. (Default: 1bit)                                                          | 1bit/2bits                                       |
| Parity                | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: Even)          | None<br>Even<br>Odd                              |
| Retry                 | Set the number of retries to be performed when a communication error occurs. (Default: 0time)                            | 0 to 5times                                      |
| Timeout Time          | Set the time period for a communication to time out. (Default: 3sec)                                                     | 1 to 30sec                                       |
| Host Address          | Specify the host address (station No. of the PLC to which the GOT is connected) in the network of the GOT. (Default: 0)  | 0 to 9                                           |
| Delay Time            | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                | 0 to 300ms                                       |
| Station No. Selection | Specify whether to use the station No. during communication. (Default: None)                                             | Yes or No                                        |

### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

☞ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 6.2.7 PLC Side Setting

### POINT

#### KEYENCE PLC

For details of KEYENCE PLC, refer to the following manual.

➡ KEYENCE PLC user's Manual

| Model name               | Reference      |
|--------------------------|----------------|
| PLC CPU                  | KV-3000 6 - 19 |
|                          | KV-1000 6 - 19 |
|                          | KV-700 6 - 19  |
| Multi-communication unit | KV-L20R 6 - 19 |
|                          | KV-L20 6 - 19  |
|                          | KV-L20V 6 - 19 |

### ■ Connecting KV-3000,KV-1000

| Setting items      | Set value                        |
|--------------------|----------------------------------|
| Transmission Speed | 9600 to 115200 bps <sup>*1</sup> |
| Data bit           | 8bits                            |
| Parity bit         | Even                             |
| Stop bit           | 1bit                             |

<sup>\*1</sup> There is no transmission speed setting on the PLC side. The transmission speed of the PLC side is automatically adjusted to that of the GOT side.

### ■ Connecting to KV-700

| Setting items      | Set value |
|--------------------|-----------|
| Transmission Speed | 9600bps   |
| Data bit           | 8bits     |
| Parity bit         | Even      |
| Stop bit           | 1bit      |

### ■ Connecting to KV-L20R, KV-L20, KV-L20V

#### (1) Communication settings

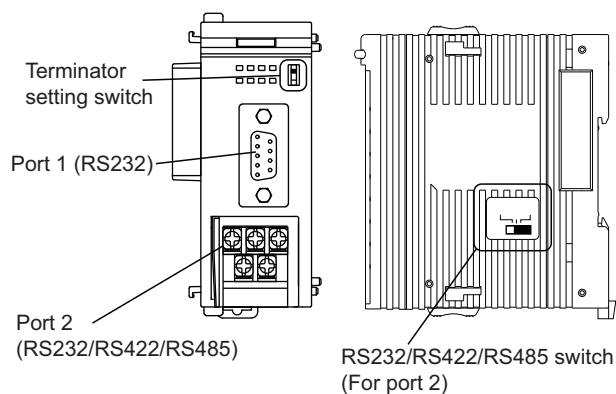
| Setting items                      | Set value                                                 |
|------------------------------------|-----------------------------------------------------------|
| Communication mode                 | KV mode (Upper link)                                      |
| Transmission speed <sup>*1*2</sup> | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data bit                           | 8bits                                                     |
| Parity bit                         | Even                                                      |
| Stop bit                           | 1bit                                                      |
| Station No. <sup>*3</sup>          | 0 to 9                                                    |

- <sup>\*1</sup> Only transmission speeds available on the GOT side are shown.
- <sup>\*2</sup> The transmission speed setting must be consistent with that of the GOT side.  
For the transmission speed setting on the GOT side, refer to the following.  
➡ ■ Setting communication interface (Communication settings)
- <sup>\*3</sup> Set the station No. according to the host address on the GOT side.  
For the Host Address setting on the GOT side, refer to the following.  
➡ ■ Setting communication interface (Communication settings)

#### (2) Setting DIP switches

Set the DIP switches.

##### (a) When using KV-L20R or KV-L20



- RS232/RS422/RS485 switch (For port 2)  
(For KV-L20R)

| Settings                 |                          |
|--------------------------|--------------------------|
| For RS-232 communication | For RS-422 communication |
| RS-232C                  | RS-422A 485(4)           |

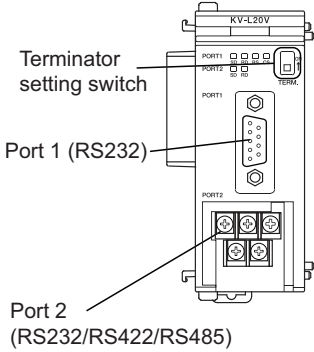
(For KV-L20)

| Settings                 |                          |
|--------------------------|--------------------------|
| For RS-232 communication | For RS-422 communication |
| RS-232C                  | RS-422A                  |

- Terminator setting switch  
Set when carrying out RS-422 communication.

| Settings                                    |                                                 |
|---------------------------------------------|-------------------------------------------------|
| When multi-communication unit is a terminal | When multi-communication unit is not a terminal |
| ON                                          | OFF                                             |

(b) When using KV-L20

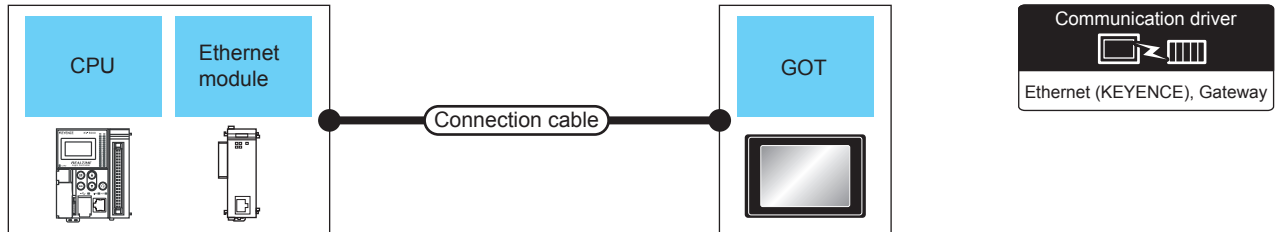


- Terminator setting switch  
Set when carrying out RS-422 communication.

|                                                                                   |                                             |                                                 |
|-----------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------|
|  | Settings                                    |                                                 |
|                                                                                   | When multi-communication unit is a terminal | When multi-communication unit is not a terminal |
| ON                                                                                | ON                                          | OFF                                             |
| OFF                                                                               |                                             |                                                 |

## 6.3 Ethernet Connection

### 6.3.1 Connecting to KV-700/1000/3000/5000/5500



| PLC                                                |                               | Connection cable                                                                                                                                                                                           |                                      | GOT                |                     | Number of connectable equipment                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series                                             | Ethernet module <sup>*3</sup> | Cable model                                                                                                                                                                                                | Maximum segment length <sup>*2</sup> | Option device      | Model <sup>*3</sup> |                                                                                                                                                                                                                                                                                                                                        |
| KV-5000                                            | -                             |                                                                                                                                                                                                            |                                      |                    |                     |                                                                                                                                                                                                                                                                                                                                        |
| KV-700<br>KV-1000<br>KV-3000<br>KV-5000<br>KV-5500 | KV-LE20V<br>KV-LE21V          | Twisted pair cable<br>• 10BASE-T<br>Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP): Category 3, 4, and 5<br>• 100BASE-TX<br>Shielded twisted pair cable (STP): Category 5 and 5e | 100m                                 | - (Built into GOT) |                     | <p>When PLC:GOT is N:1<br/>The following shows the number of PLCs for 1 GOT<br/>&lt;For GT27, GT25&gt;<br/>TCP: 128 or less<br/>UDP: 128 or less<br/>&lt;For GT21&gt;<br/>TCP: 4 or less<br/>UDP: 4 or less</p> <p>When PLC:GOT is 1:N<br/>The following shows the number of GOTs for 1 PLC<br/>TCP: 15 or less<br/>UDP: 1 or less</p> |

\*1 The destination connected with the twisted pair cable varies with the configuration of the applicable Ethernet network system. Connect to the Ethernet module, hub, transceiver or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX standards.

\*2 A length between a hub and a node.

The maximum distance differs depending on the Ethernet device to be used.

The following shows the number of the connectable nodes when a repeater hub is used.

• 10BASE-T: Max. 4 nodes for a cascade connection (500m)

• 100BASE-TX: Max. 2 nodes for a cascade connection (205m)

When switching hubs are used, the cascade connection between the switching hubs has no logical limit for the number of cascades.

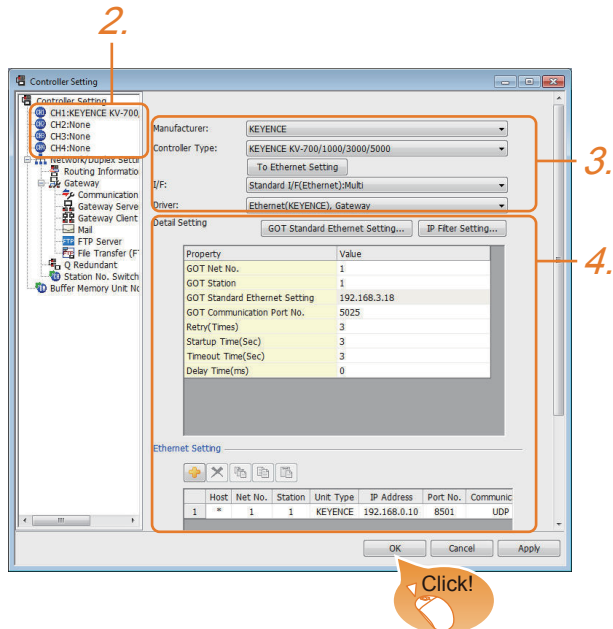
For the limit, contact the switching hub manufacturer.

\*3 Product manufactured by KEYENCE CORPORATION. For details of the product, contact KEYENCE CORPORATION.

## 6.3.2 GOT side settings

### ■ Setting communication interface (Communication settings)

Set the channel of the connected equipment.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: KEYENCE
  - Controller Type: KEYENCE KV-700/1000/3000/5000
  - I/F: Interface to be used
  - Driver: Ethernet(KEYENCE), Gateway
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

6.3.2 ■ Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting].  
For details, refer to the following.

1.1.2 I/F communication setting

### ■ Communication detail settings

Make the settings according to the usage environment.

| Property                   | Value        |
|----------------------------|--------------|
| GOT Net No.                | 1            |
| GOT Station                | 1            |
| GOT Ethernet Setting       | 192.168.3.18 |
| GOT Communication Port No. | 5025         |
| Retry(Times)               | 3            |
| Startup Time(Sec)          | 3            |
| Timeout Time(Sec)          | 3            |
| Delay Time(ms)             | 0            |

| Item                       | Description                                                                                                                                                                   | Range                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| GOT Net No.                | Set the network No. of the GOT.<br>(Default: 1)                                                                                                                               | 1 to 239                                                                |
| GOT Station <sup>*1</sup>  | Set the station No. of the GOT.<br>(Default: 1)                                                                                                                               | 1 to 254                                                                |
| GOT Ethernet Setting       | Set the GOT IP address, subnet mask, default gateway, peripheral S/W communication port No., transparent port No.                                                             | GOT Ethernet setting                                                    |
| GOT Communication Port No. | Set the GOT port No. for the connection with the Ethernet module.<br>(Default: 5025)                                                                                          | 1024 to 5010, 5014 to 65534<br>(Except for 5011, 5012, 5013, and 49153) |
| Retry                      | Set the number of retries to be performed when a communication timeout occurs.<br>When receiving no response after retries, the communication times out.<br>(Default: 3times) | 0 to 5times                                                             |
| Startup Time               | Specify the time period from the GOT startup until GOT starts the communication with the PLC CPU.<br>(Default: 3sec)                                                          | 3 to 255sec                                                             |
| Timeout Time               | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                                                       | 1 to 90sec                                                              |
| Delay Time                 | Set the delay time for reducing the load of the network/destination PLC.<br>(Default: 0ms)                                                                                    | 0 to 10000<br>(×10ms)                                                   |

<sup>\*1</sup> Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

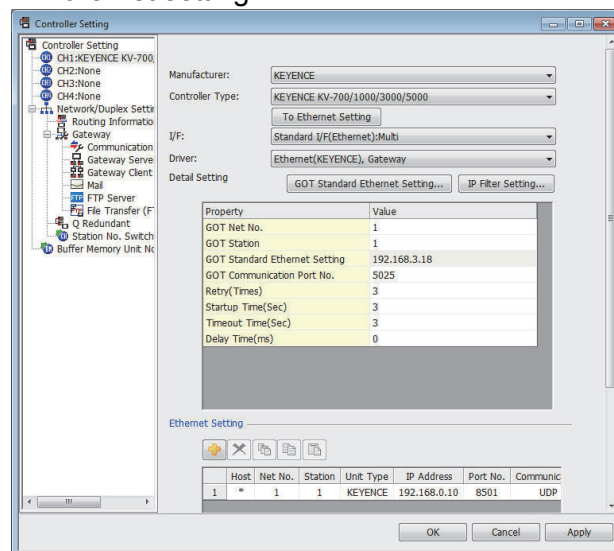
■ Ethernet setting

## ■ GOT Ethernet setting

| Property                   | Value        |
|----------------------------|--------------|
| GOT Net No.                | 1            |
| GOT Station                | 1            |
| GOT Ethernet Setting       | 192.168.3.18 |
| GOT Communication Port No. | 5025         |
| Retry(Times)               | 3            |
| Startup Time(Sec)          | 3            |
| Timeout Time(Sec)          | 3            |
| Delay Time(ms)             | 0            |

| Item                                  | Description                                                                                                                                                  | Range                                                               |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| GOT IP Address                        | Set the IP address of the GOT. (Default: 192.168.0.18)                                                                                                       | 0.0.0.0 to 255.255.255.255                                          |
| Subnet Mask*1                         | Set the subnet mask for the sub network. (Only for connection via router) If the sub network is not used, the default value is set. (Default: 255.255.255.0) | 0.0.0.0 to 255.255.255.255                                          |
| Default Gateway                       | Set the router address of the default gateway where the GOT is connected. (Only for connection via router) (Default: 0.0.0.0)                                | 0.0.0.0 to 255.255.255.255                                          |
| Peripheral S/W Communication Port No. | Set the GOT port No. for the communication with the peripheral S/W. (Default: 5015)                                                                          | 1024 to 5010, 5014 to 65534 (Except for 5011, 5012, 5013 and 49153) |
| Transparent Port No.                  | Cannot be set                                                                                                                                                | -                                                                   |

## ■ Ethernet setting



| Item          | Description                                                                  | Set value                                  |
|---------------|------------------------------------------------------------------------------|--------------------------------------------|
| Host          | The host is displayed. (The host is indicated with an asterisk (*).)         | -                                          |
| N/W No.       | Set the network No. of the connected Ethernet module. (Default: blank)       | 1 to 239                                   |
| Station*1     | Set the station No. of the connected Ethernet module. (Default: blank)       | 1 to 254                                   |
| Type          | KEYENCE (fixed)                                                              | KEYENCE (fixed)                            |
| IP Address    | Set the IP address of the connected Ethernet module. (Default: 192.168.0.10) | PLC side IP address                        |
| Port No.      | Set the port No. of the connected Ethernet module. (Default: 8501)           | PLC side port No.                          |
| Communication | UDP, TCP (Default: UDP)                                                      | Adjust the settings with the PLC settings. |

\*1 Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

☞ ■ Communication detail settings

## POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication setting] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

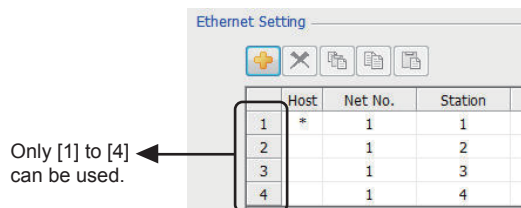
☞ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

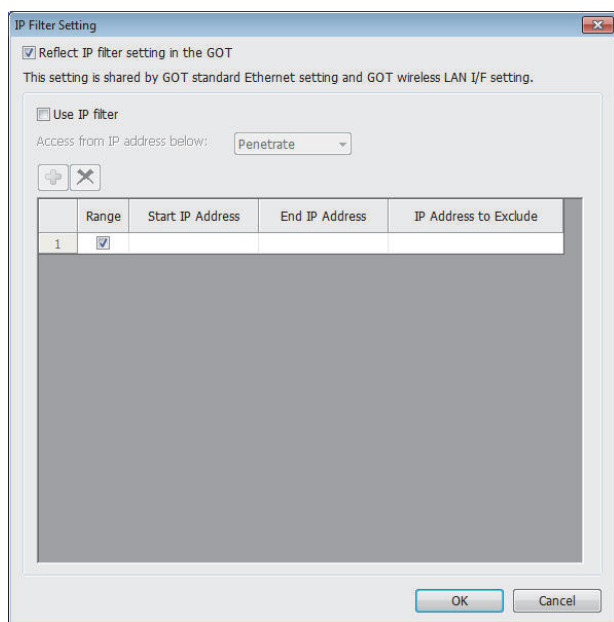
## POINT

Ethernet setting for GT21

- (1) Effective range of the Ethernet setting  
Only [1] to [4] of the Ethernet setting can be used for GT21. Even though [5] or later of the Ethernet setting is written to the GT21, the setting is disabled on the GT21 side.
- (2) Range of the host station setting  
Set a host station within the range of [1] to [4] of the Ethernet setting.



## IP Filter Setting



To improve security, the GOT 2000 series supports the IP Filter Setting.

For details on the IP Filter Setting, refer to the following manual.

GT Designer3 (GOT2000) Help

## 6.3.3 PLC side setting

### POINT

KEYENCE PLC

For details of KEYENCE PLC, refer to the following manual.

KEYENCE PLC user's Manual

### KV-LE21V/KV-LE21V setting

Set the IP address and port No. by the unit editor of KV STUDIO.

| Item                                  | Description         | Range                      |
|---------------------------------------|---------------------|----------------------------|
| Communication mode                    | Ethernet            | -                          |
| IP address <sup>*1</sup>              | Set the IP address. | 0.0.0.0 to 255.255.255.255 |
| Port No. <sup>*1</sup><br>(Host link) | Set the port No.    | 256 to 65534               |

<sup>\*1</sup> Adjust the settings with the Ethernet settings of the GOT side.

■ Ethernet setting



## 6.4 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

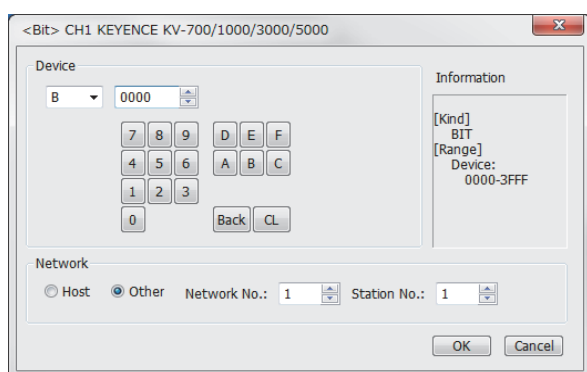
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



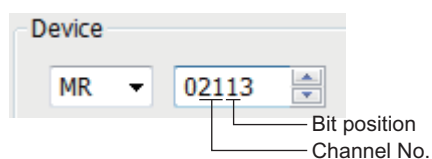
| Item        | Description                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device.                                                                            |
| Information | Displays the device type and its setting range selected in [Device].                                                                                                                                     |
| Network     | Set the station number of the controller to be monitored.                                                                                                                                                |
|             | Host Select this item for monitoring the host controller.                                                                                                                                                |
|             | Other Select this item for monitoring other controllers.<br>After selecting, set the station number of the controller to be monitored.<br>NWNo.: Set the network No.<br>Station No.: Set the station No. |

### POINT

Device settings of KEYENCE PLC

- Setting setting procedure for relays (...), internal auxiliary relays (MR), latch relays (LR) and control relays (CR).

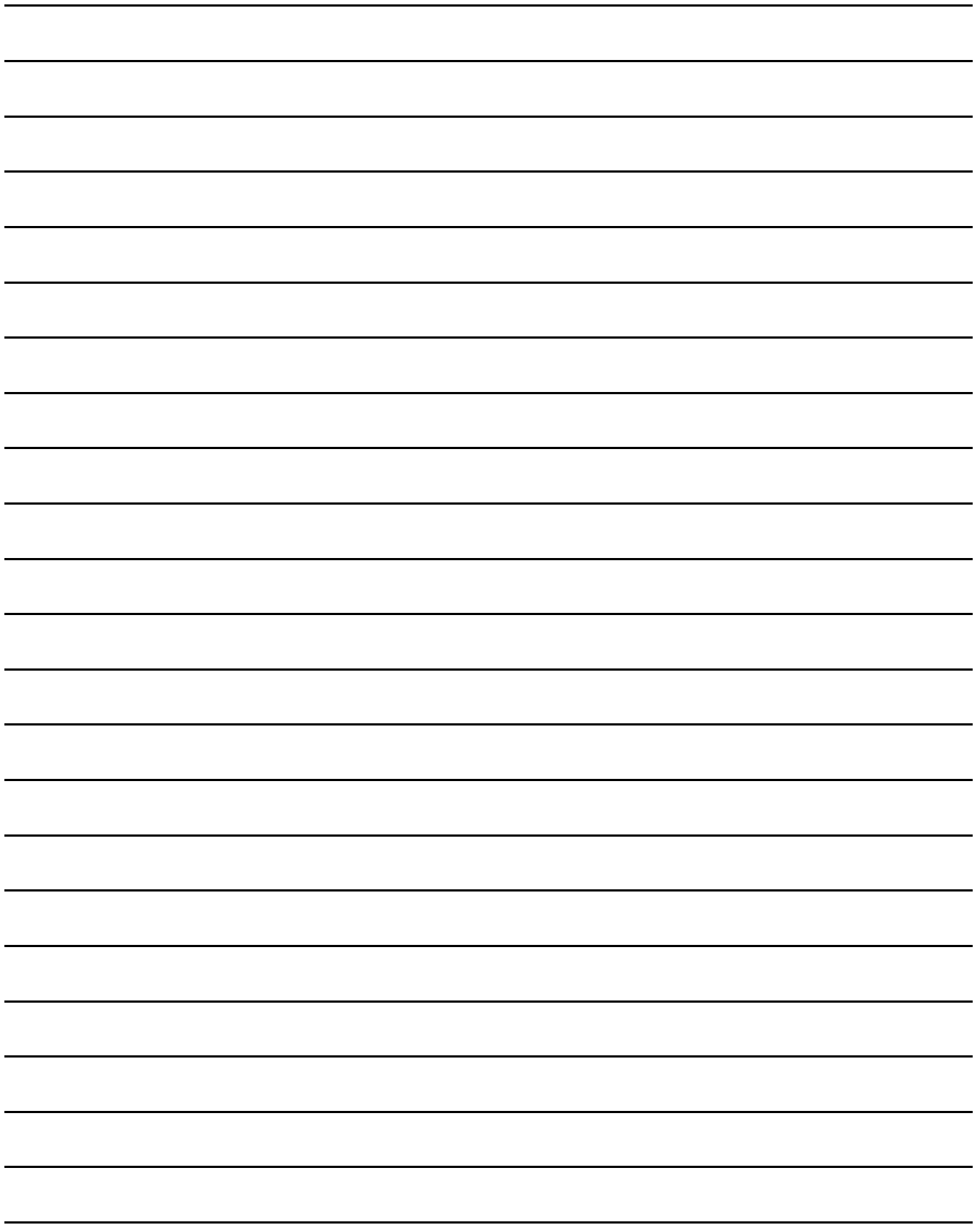
Make settings for status by a channel number and a bit position.



### 6.4.1 KV-700/1000/3000/5000

|                    | Device name                                                                                                                   | Setting range                                                                                | Device No. representation |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------|
| Bit device         | Relay (...)                                                                                                                   | ..00000 to ..99915                                                                           | Decimal                   |
|                    | Internal auxiliary relay (MR)                                                                                                 | MR00000 to MR99915                                                                           |                           |
|                    | Latch relay (LR)                                                                                                              | LR00000 to LR99915                                                                           |                           |
|                    | Control relay (CR)                                                                                                            | CR00000 to CR3915                                                                            |                           |
|                    | Link relay (B) <sup>*2</sup>                                                                                                  | B0000 to B3FFF                                                                               | Hexadecimal               |
|                    | Work relay (VB) <sup>*2</sup>                                                                                                 | VB0000 to VB3FFF                                                                             | Decimal                   |
|                    | Timer (Contact) (T) <sup>*1*2</sup>                                                                                           | T0000 to T3999                                                                               |                           |
|                    | Counter (Contact) (C) <sup>*1*2</sup>                                                                                         | C0000 to C3999                                                                               |                           |
|                    | High-speed counter comparator (Contact) (CTC) <sup>*2*3*6</sup>                                                               | CTC0 to CTC3                                                                                 |                           |
|                    | The bit specification of the word device (except Control memory, Temporary data memory, Work memory, Index register)          | Setting range of each word device                                                            | -                         |
| Word device        | Data memory (DM)                                                                                                              | DM00000 to DM65534                                                                           | Decimal                   |
|                    | Extension data memory (EM)                                                                                                    | EM00000 to EM65534                                                                           |                           |
|                    | Extension data memory 2 (FM)                                                                                                  | FM00000 to FM32767                                                                           |                           |
|                    | File register (ZF)                                                                                                            | ZF000000 to ZF032767<br>ZF032768 to ZF065535<br>ZF065536 to ZF098303<br>ZF098304 to ZF131071 |                           |
|                    | Link register (W)                                                                                                             | W0000 to W3FFF                                                                               | Hexadecimal               |
|                    | Control memory (CM)                                                                                                           | CM00000 to CM11998                                                                           | Decimal                   |
|                    | Temporary data memory (TM)                                                                                                    | TM000 to TM511                                                                               |                           |
|                    | Work memory (VM)                                                                                                              | VM00000 to VM59999                                                                           |                           |
|                    | Index register (Z) <sup>*7</sup>                                                                                              | Z1 to Z12                                                                                    |                           |
|                    | The word specification of the bit device (except Timer (Contact), Counter (Contact), High-speed counter comparator (Contact)) | Setting range of each bit device                                                             | -                         |
| Double word device | Timer (Current value) (TC) <sup>*2*4</sup>                                                                                    | TC0000 to TC3999                                                                             | -                         |
|                    | Timer (Set value) (TS) <sup>*2*4</sup>                                                                                        | TS0000 to TS3999                                                                             |                           |
|                    | Counter (Current value) (CC) <sup>*2*4</sup>                                                                                  | CC0000 to CC3999                                                                             |                           |
|                    | Counter (Set value) (CS) <sup>*2*4</sup>                                                                                      | CS0000 to CS3999                                                                             |                           |
|                    | High-speed counter (Current value) (CTH) <sup>*2*4</sup>                                                                      | CTH0 to CTH1                                                                                 | -                         |
|                    | High-speed counter comparator (Set value) (CTC) <sup>*2*4</sup>                                                               | CTC0 to CTC3                                                                                 |                           |
|                    | Index register (DZ)                                                                                                           | DZ01 to DZ12                                                                                 |                           |
|                    | Digital trimmer (TRM) <sup>*4*5</sup>                                                                                         | TRM0 to TRM7                                                                                 |                           |

- \*1 Monitoring or writing is not possible in the continuous device designation mode.
- \*2 Monitoring by GOT is possible only when a device is used in the sequence program.
- \*3 When writing, only the reset of the contact is possible.
- \*4 Only 32-bit (2-word) designation is allowed.
- \*5 Only reading is possible.
- \*6 Monitoring or writing to continuous devices is not possible. With KV-3000 and KV-5000, Z devices cannot be specified as 32-bit (2 words) data. Use DZ devices.
- \*7



# 7

## CONNECTION TO KOYO EI PLC

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|     |                                        |        |
|-----|----------------------------------------|--------|
| 7.1 | Connectable Model List . . . . .       | 7 - 2  |
| 7.2 | System Configuration . . . . .         | 7 - 3  |
| 7.3 | Connection Diagram . . . . .           | 7 - 17 |
| 7.4 | GOT Side Settings . . . . .            | 7 - 22 |
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| 7.6 | Device Range that Can Be Set . . . . . | 7 - 27 |
| 7.7 | Precautions . . . . .                  | 7 - 28 |

# 7. CONNECTION TO KOYO EI PLC

## 7.1 Connectable Model List

The following table shows the connectable models.

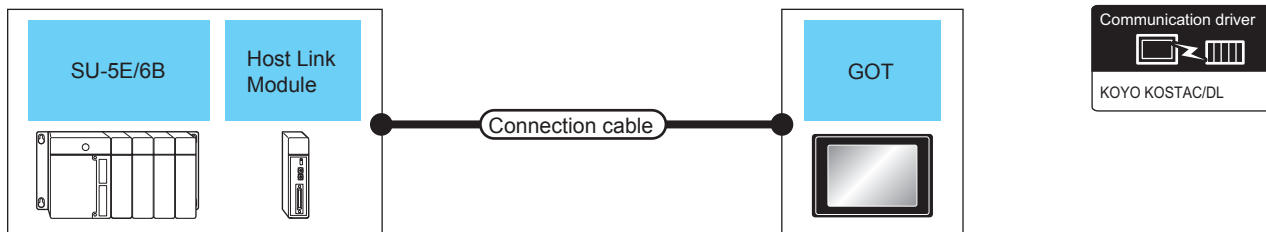
| Series                 | Model name | Clock <sup>*1</sup> | Communication Type | Connectable GOT                                                                                                                                                                                                                                                  | Refer to                                                                                    |
|------------------------|------------|---------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| KOSTAC SU Series       | SU-5E      | ×                   | RS232<br>RS422     |          |  7.2.1   |
|                        | SU-6B      | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | SU-5M      | ○                   | RS232<br>RS422     |          |  7.2.2   |
|                        | SU-6M      | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
| DirectLOGIC 05 Series  | D0-05AA    | ×                   | RS232<br>RS422     |          |  7.2.3   |
|                        | D0-05AD    | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-05AR    | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-05DA    | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-05DD    | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-05DD-D  | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-05DR    | ×                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
| DirectLOGIC 06 Series  | D0-06DD1   | ○                   | RS232<br>RS422     |    |  7.2.4 |
|                        | D0-06DD2   | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06DR    | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06DA    | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06AR    | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06AA    | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06DD1-D | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06DD2-D | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D0-06DR-D  | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
| DirectLOGIC 205 Series | D2-240     | ○                   | RS232<br>RS422     |    |  7.2.5 |
|                        | D2-250-1   | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
|                        | D2-260     | ○                   |                    |                                                                                                                                                                                                                                                                  |                                                                                             |
| PZ series              | PZ3        | ×                   | RS232<br>RS422     |    |  7.2.6 |

\*1 The GOT can only read the clock data. In the clock setting, though the adjust is available, the broadcast is not available.

## 7.2 System Configuration

### 7.2.1 Connecting to SU-5E or SU-6B

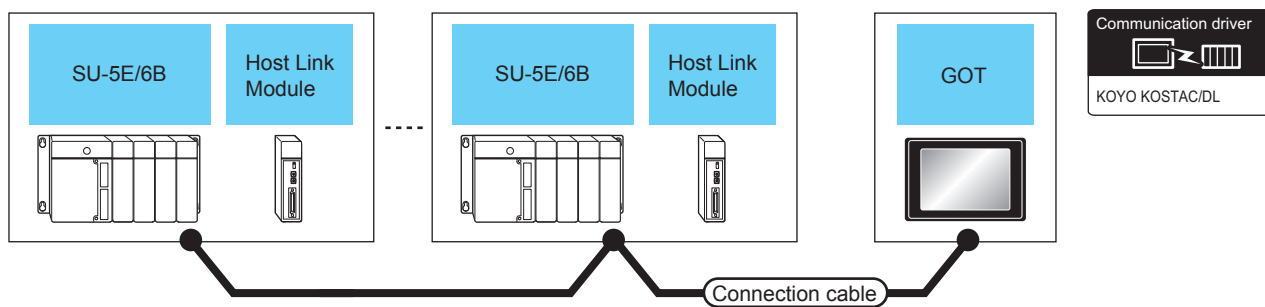
#### ■ When connecting to one PLC



| PLC                                      |                     |                    | Connection cable                         |               | GOT               |       | Number of connectable equipment |
|------------------------------------------|---------------------|--------------------|------------------------------------------|---------------|-------------------|-------|---------------------------------|
| Model name                               | Host link module *1 | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device     | Model |                                 |
| SU-5E/6B<br>(general communication port) | -                   | RS-232             | RS-232 connection diagram 1)             | 15m           | -(Built into GOT) |       | 1 PLC for 1 GOT                 |
|                                          |                     |                    |                                          |               | GT15-RS2-9P       |       |                                 |
|                                          |                     | RS-422             | RS-422 connection diagram 1)             | 1000m         | -(Built into GOT) |       |                                 |
|                                          |                     |                    |                                          |               | GT15-RS4-9S       |       |                                 |
| SU-5E/6B                                 | U-01DM              | RS-232             | RS-232 connection diagram 1)             | 15m           | -(Built into GOT) |       | 1 host link module for 1 GOT    |
|                                          |                     |                    |                                          |               | GT15-RS2-9P       |       |                                 |
|                                          |                     | RS-422             | RS-422 connection diagram 3)             | 1200m         | -(Built into GOT) |       |                                 |
|                                          |                     |                    |                                          |               | GT15-RS4-9S       |       |                                 |

\*1 The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD. For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

## ■ When connecting to multiple PLCs



| PLC        |                                |                    | Connection cable                              |               | GOT                |                      | Number of connectable equipment             |
|------------|--------------------------------|--------------------|-----------------------------------------------|---------------|--------------------|----------------------|---------------------------------------------|
| Model name | Host link module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number      | Max. distance | Option device      | Model                |                                             |
| SU-5E/6B   | -                              | RS-422             | (User preparing) RS-422 connection diagram 5) | 1000m         | - (Built into GOT) | GT 27 GT 25<br>GT 23 | 90 PLCs for 1 GOT <sup>*2</sup>             |
|            |                                |                    |                                               |               | GT15-RS4-9S        | GT 27 GT 25<br>GT 23 |                                             |
| SU-5E/6B   | U-01DM                         | RS-422             | (User preparing) RS-422 connection diagram 7) | 1200m         | - (Built into GOT) | GT 27 GT 25<br>GT 23 | 90 host link module for 1 GOT <sup>*2</sup> |
|            |                                |                    |                                               |               | GT15-RS4-9S        | GT 27 GT 25<br>GT 23 |                                             |

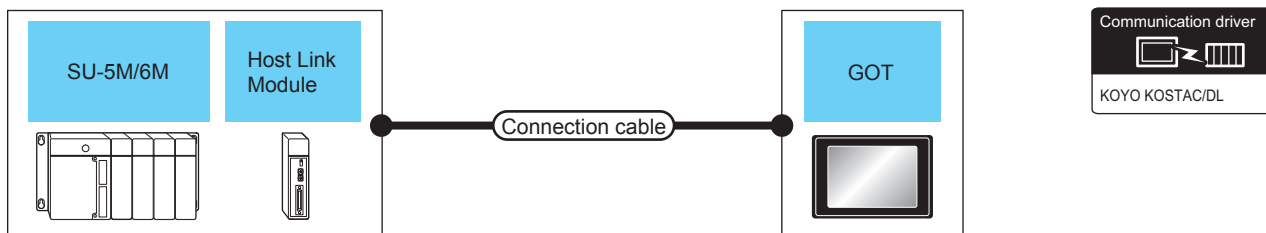
<sup>\*1</sup> The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD. For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

<sup>\*2</sup> When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links. For details, refer to the following manual.

KOYO EI PLC user's Manual

## 7.2.2 Connecting to SU-5M or SU-6M

### ■ When connecting to one PLC



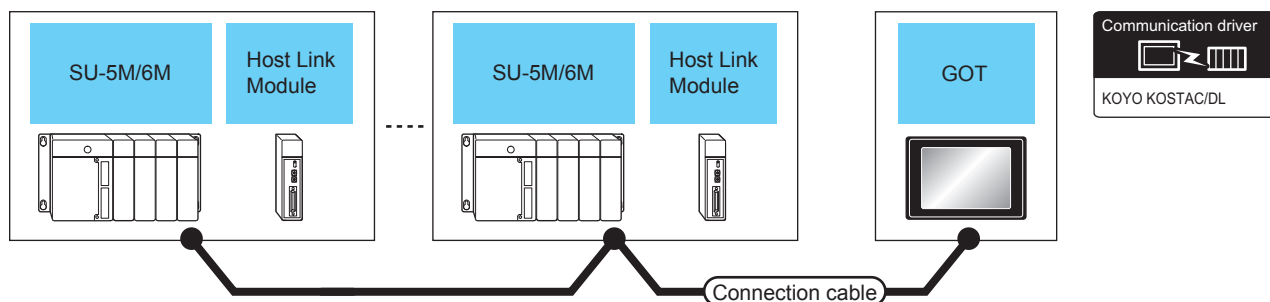
| PLC                                        |                    |                    | Connection cable                                                                  |               | GOT               |       | Number of connectable equipment |
|--------------------------------------------|--------------------|--------------------|-----------------------------------------------------------------------------------|---------------|-------------------|-------|---------------------------------|
| Model name                                 | Host link module*1 | Communication Type | Cable model<br>Connection diagram number                                          | Max. distance | Option device     | Model |                                 |
| SU-5M/6M<br>(general communication port 1) | -                  | RS-232             | RS-232 connection diagram 1)                                                      | 15m           | -(Built into GOT) |       | 1 PLC for<br>1 GOT              |
|                                            |                    |                    |                                                                                   |               | GT15-RS2-9P       |       |                                 |
|                                            |                    | RS-422             | RS-422 connection diagram 1)                                                      | 1000m         | -(Built into GOT) |       |                                 |
|                                            |                    |                    |                                                                                   |               | GT15-RS4-9S       |       |                                 |
| SU-5M/6M<br>(general communication port 2) | -                  | RS-232             | Z-20JP<br>(Programmable connecting cable)<br>+<br>S-9CNS1(Conversion connector)*1 | 3m            | -(Built into GOT) |       |                                 |
|                                            |                    |                    |                                                                                   |               | GT15-RS2-9P       |       |                                 |
| SU-5M/6M<br>(general communication port 3) | -                  | RS-422             | RS-422 connection diagram 2)                                                      | 1000m         | -(Built into GOT) |       |                                 |
|                                            |                    |                    |                                                                                   |               | GT15-RS4-9S       |       |                                 |

| PLC        |                    |                    | Connection cable                                                                                               |               | GOT                |                                                                                                                                                                                                                                                                | Number of connectable equipment |
|------------|--------------------|--------------------|----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | Host link module*1 | Communication Type | Cable model<br>Connection diagram number                                                                       | Max. distance | Option device      | Model                                                                                                                                                                                                                                                          |                                 |
| SU-5M/6M   | U-01DM             | RS-232             |  RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> | 1 host link module for 1 GOT    |
|            |                    |                    |                                                                                                                |               | GT15-RS2-9P        |                                                                                          |                                 |
|            |                    | RS-422             |  RS-422 connection diagram 3) | 1200m         | - (Built into GOT) |  <br> |                                 |
|            |                    |                    |                                                                                                                |               | GT15-RS4-9S        |                                                                                          |                                 |

\*1 The programmable connecting cable and conversion connector are products manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.



## ■ When connecting to multiple PLCs



| PLC                                        |                                |                    | Connection cable                         |               | GOT               |       | Number of connectable equipment             |
|--------------------------------------------|--------------------------------|--------------------|------------------------------------------|---------------|-------------------|-------|---------------------------------------------|
| Model name                                 | Host link module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device     | Model |                                             |
| SU-5M/6M<br>(general communication port 1) | -                              | RS-422             | RS-422 connection diagram 5)             | 1000m         | -(Built into GOT) |       | 90 PLCs for 1 GOT <sup>*2</sup>             |
|                                            |                                |                    |                                          |               | GT15-RS4-9S       |       |                                             |
| SU-5M/6M<br>(general communication port 3) | -                              | RS-422             | RS-422 connection diagram 6)             | 1000m         | -(Built into GOT) |       |                                             |
|                                            |                                |                    |                                          |               | GT15-RS4-9S       |       |                                             |
| SU-5M/6M                                   | U-01DM                         | RS-422             | RS-422 connection diagram 7)             | 1200m         | -(Built into GOT) |       | 90 host link module for 1 GOT <sup>*2</sup> |
|                                            |                                |                    |                                          |               | GT15-RS4-9S       |       |                                             |

<sup>\*1</sup> The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.

For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

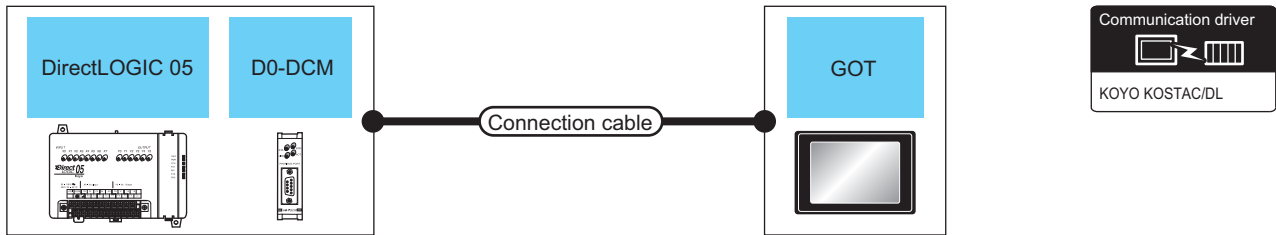
<sup>\*2</sup> When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.

For details, refer to the following manual.

KOYO EI PLC user's Manual

## 7.2.3 Connecting to DirectLOGIC 05 series

### ■ When connecting to one PLC

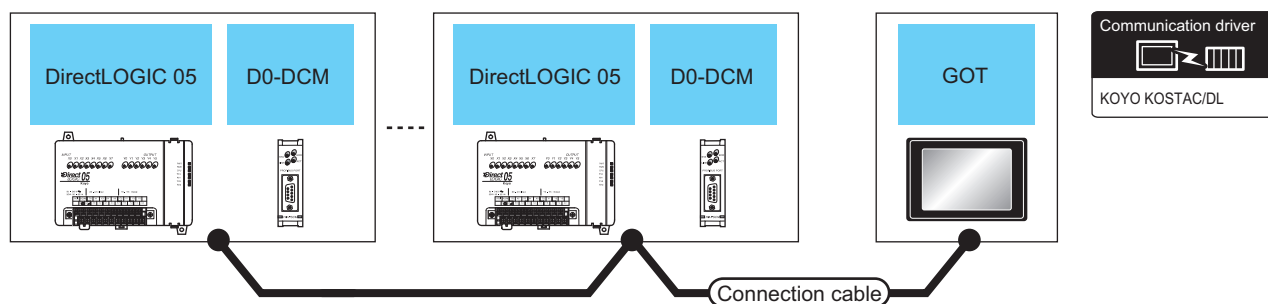


| PLC                                                                 |                                |                     | Connection cable                                                                                                 |               | GOT                |                                                                                                                                                                                                                                                                      | Number of connectable equipment       |
|---------------------------------------------------------------------|--------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Model name                                                          | Data communication s module *2 | Communi cation Type | Cable model<br>Connection diagram number                                                                         | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                |                                       |
| Direct LOGIC 05<br>(communication port 1)<br>(communication port 2) | -                              | RS-232              | Z-20JP<br>(Programmable connecting cable)<br>+<br>S-9CNS1(Conversion connector)*1                                | 3m            | - (Built into GOT) |  <br>       | 1 PLC for<br>1 GOT                    |
|                                                                     |                                |                     |                                                                                                                  |               | GT15-RS2-9P        |  <br>      |                                       |
| Direct LOGIC 05                                                     | D0-DCM<br>(port 1)             | RS-232              | Z-20JP<br>(Programmable connecting cable)<br>+<br>S-9CNS1(Conversion connector)*1                                | 3m            | - (Built into GOT) |  <br> |                                       |
|                                                                     |                                |                     |                                                                                                                  |               | GT15-RS2-9P        |  <br> |                                       |
| Direct LOGIC 05                                                     | D0-DCM<br>(port 2)             | RS-232              |  RS-232 connection diagram 2) | 15m           | - (Built into GOT) |  <br> | 1 data communication module for 1 GOT |
|                                                                     |                                |                     |                                                                                                                  |               | GT15-RS2-9P        |  <br> |                                       |
|                                                                     |                                | RS-422              |  RS-422 connection diagram 4) | 1000m         | - (Built into GOT) |  <br> |                                       |
|                                                                     |                                |                     |                                                                                                                  |               | GT15-RS4-9S        |  <br> |                                       |

\*1 The programmable connecting cable and conversion connector are products manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

\*2 The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

## ■ When connecting to multiple PLCs



| PLC             |                                          |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment                      |
|-----------------|------------------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|------------------------------------------------------|
| Model name      | Data communications module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                                      |
| Direct LOGIC 05 | D0-DCM (port 2)                          | RS-422             | RS-422 connection diagram 8)             | 1000m         | - (Built into GOT) |       | 90 data communication module for 1 GOT <sup>*2</sup> |
|                 |                                          |                    |                                          |               | GT15-RS4-9S        |       |                                                      |

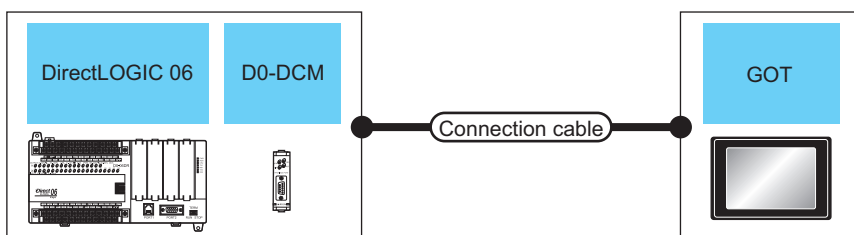
\*1 The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

\*2 When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

## 7.2.4 Connecting to DirectLOGIC 06 series

### ■ When connecting to one PLC



| PLC                                    |                                          |                    | Connection cable                                                                              |               | GOT               |                                                    | Number of connectable equipment |
|----------------------------------------|------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------|---------------|-------------------|----------------------------------------------------|---------------------------------|
| Model name                             | Data communications module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                                                      | Max. distance | Option device     | Model                                              |                                 |
| Direct LOGIC 06 (communication port 1) | -                                        | RS-232             | Z-20JP<br>(Programmable connecting cable)<br>+<br>S-9CNS1(Conversion connector) <sup>*2</sup> | 3m            | -(Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> | 1 PLC for<br>1 GOT              |
|                                        |                                          |                    |                                                                                               |               | GT15-RS2-9P       | <div>GT 27</div> <div>GT 25</div>                  |                                 |
| Direct LOGIC 06 (communication port 2) | -                                        | RS-232             | <div>User preparing</div> RS-232 connection diagram 2)                                        | 15m           | -(Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |                                 |
|                                        |                                          |                    |                                                                                               |               | GT15-RS2-9P       | <div>GT 27</div> <div>GT 25</div>                  |                                 |
|                                        | -                                        | RS-422             | <div>User preparing</div> RS-422 connection diagram 4)                                        | 1000m         | -(Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |                                 |
|                                        |                                          |                    |                                                                                               |               | GT15-RS4-9S       | <div>GT 27</div> <div>GT 25</div>                  |                                 |

| PLC             |                              |                    | Connection cable                                                                                                |               | GOT                |                                                                                      | Number of connectable equipment       |
|-----------------|------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|--------------------------------------------------------------------------------------|---------------------------------------|
| Model name      | Data communications module*1 | Communication Type | Cable model<br>Connection diagram number                                                                        | Max. distance | Option device      | Model                                                                                |                                       |
| Direct LOGIC 06 | D0-DCM (port 1)              | RS-232             | Z-20JP<br>(Programmable connecting cable)<br>+<br>S-9CNS1(Conversion connector)*2                               | 3m            | - (Built into GOT) |   | 1 data communication module for 1 GOT |
|                 |                              |                    |                                                                                                                 |               | GT15-RS2-9P        |   |                                       |
| Direct LOGIC 06 | D0-DCM (port 2)              | RS-232             |  RS-232 connection diagram 2)  | 15m           | - (Built into GOT) |   |                                       |
|                 |                              |                    |                                                                                                                 |               | GT15-RS2-9P        |   |                                       |
|                 |                              | RS-422             |  RS-422 connection diagram 4) | 1000m         | - (Built into GOT) |   |                                       |
|                 |                              |                    |                                                                                                                 |               | GT15-RS4-9S        |  |                                       |

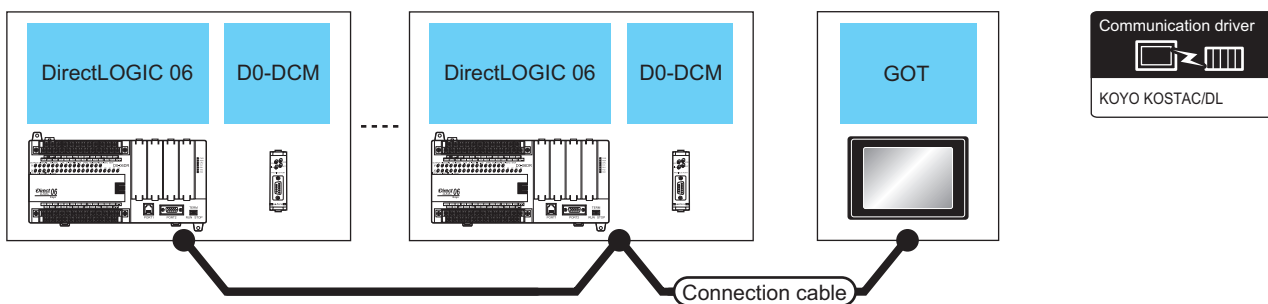
\*1 The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.

For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

\*2 The programmable connecting cable and conversion connector are products manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.

For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

## ■ When connecting to multiple PLCs



| PLC                                    |                                         |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment                      |
|----------------------------------------|-----------------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|------------------------------------------------------|
| Model name                             | Data communication module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                                      |
| Direct LOGIC 06 (communication port 2) | -                                       | RS-422             | RS-422 connection diagram 8)             | 1000m         | - (Built into GOT) |       | 90 PLCs for 1 GOT <sup>*2</sup>                      |
|                                        |                                         |                    |                                          |               | GT15-RS4-9S        |       |                                                      |
| Direct LOGIC 06                        | D0-DCM (port 2)                         | RS-422             | RS-422 connection diagram 8)             | 1000m         | - (Built into GOT) |       | 90 data communication module for 1 GOT <sup>*2</sup> |
|                                        |                                         |                    |                                          |               | GT15-RS4-9S        |       |                                                      |

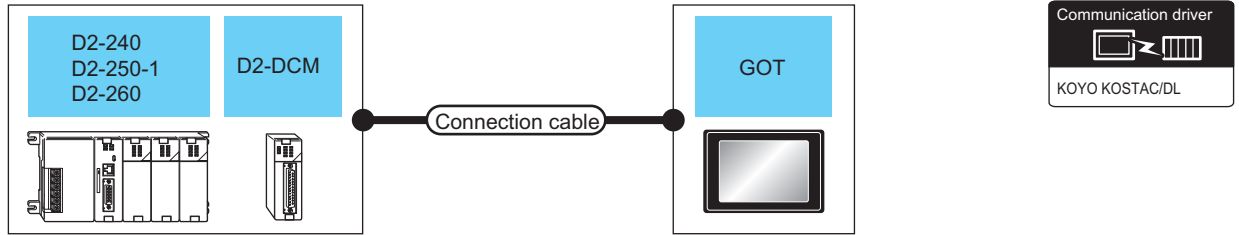
<sup>\*1</sup> The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

<sup>\*2</sup> When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

## 7.2.5 Connecting to D2-240, D2-250-1 or D2-260

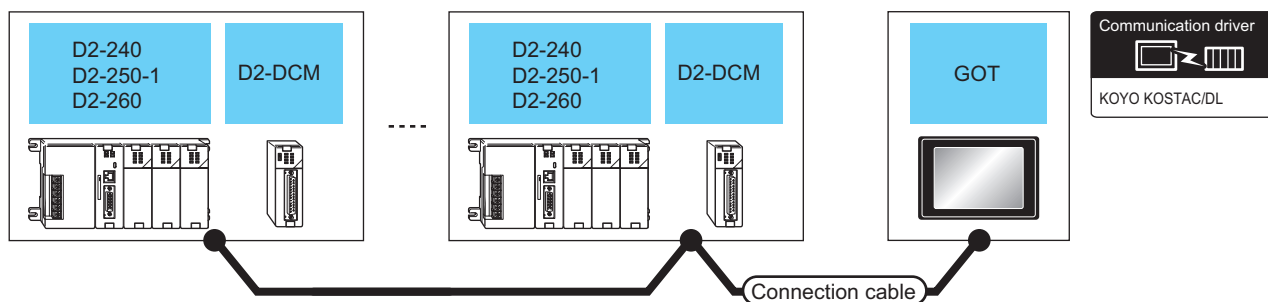
### ■ When connecting to one PLC



| PLC                                                    |                                          |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment       |
|--------------------------------------------------------|------------------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|---------------------------------------|
| Model name                                             | Data communications module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                       |
| D2-240<br>D2-250-1<br>D2-260<br>(communication port 2) | -                                        | RS-232             | RS-232 connection diagram 2)             | 3m            | - (Built into GOT) |       | 1 PLC for 1 GOT                       |
|                                                        |                                          |                    |                                          |               | GT15-RS2-9P        |       |                                       |
| D2-250-1<br>D2-260<br>(communication port 2)           | -                                        | RS-422             | RS-422 connection diagram 4)             | 1000m         | - (Built into GOT) |       | 1 PLC for 1 GOT                       |
|                                                        |                                          |                    |                                          |               | GT15-RS4-9S        |       |                                       |
| D2-240<br>D2-250-1<br>D2-260                           | D2-DCM                                   | RS-232             | RS-232 connection diagram 1)             | 15m           | - (Built into GOT) |       | 1 data communication module for 1 GOT |
|                                                        |                                          |                    |                                          |               | GT15-RS2-9P        |       |                                       |
|                                                        |                                          | RS-422             | RS-422 connection diagram 3)             | 1200m         | - (Built into GOT) |       |                                       |
|                                                        |                                          |                    |                                          |               | GT15-RS4-9S        |       |                                       |

<sup>\*1</sup> The programmable connecting cable and conversion connector are products manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.  
For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

## ■ When connecting to multiple PLCs



| PLC                                          |                                          |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment                         |
|----------------------------------------------|------------------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|---------------------------------------------------------|
| Model name                                   | Data communications module <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                                         |
| D2-250-1<br>D2-260<br>(communication port 2) | -                                        | RS-422             | RS-422<br>connection diagram 8)          | 1000m         | - (Built into GOT) |       | 90 PLCs for<br>1 GOT <sup>*2</sup>                      |
|                                              |                                          |                    |                                          |               | GT15-RS4-9S        |       |                                                         |
| D2-240<br>D2-250-1<br>D2-260                 | D2-DCM                                   | RS-422             | RS-422<br>connection diagram 7)          | 1200m         | - (Built into GOT) |       | 90 data communication<br>module for 1 GOT <sup>*2</sup> |
|                                              |                                          |                    |                                          |               | GT15-RS4-9S        |       |                                                         |

<sup>\*1</sup> The data communications module is manufactured by KOYO ELECTRONICS INDUSTRIES CO., LTD.

For details of the product, contact KOYO ELECTRONICS INDUSTRIES CO., LTD.

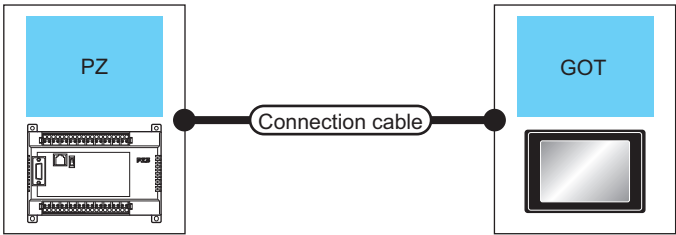
<sup>\*2</sup> When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual



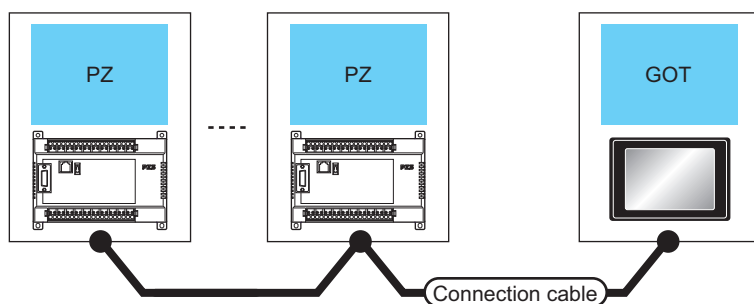
7.2.6 Connecting to PZ

■ When connecting to one PLC



| PLC                                        |                            | Connection cable                         |                  | GOT                |       | Number of connectable equipment |
|--------------------------------------------|----------------------------|------------------------------------------|------------------|--------------------|-------|---------------------------------|
| Model name                                 | Communi-<br>cation<br>Type | Cable model<br>Connection diagram number | Max.<br>distance | Option device      | Model |                                 |
| PZ<br>(general<br>communication port<br>2) | RS-232                     | RS-232 connection diagram 2)             | 15m              | - (Built into GOT) | <br>  | 1 PLC for 1 GOT                 |
|                                            |                            |                                          |                  | GT15-RS2-9P        |       |                                 |
|                                            | RS-422                     | RS-422 connection diagram 4)             | 1000m            | - (Built into GOT) | <br>  |                                 |
|                                            |                            |                                          |                  | GT15-RS4-9S        |       |                                 |

## ■ When connecting to multiple PLCs



| PLC                                  |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment    |
|--------------------------------------|--------------------|------------------------------------------|---------------|--------------------|-------|------------------------------------|
| Model name                           | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                    |
| PZ<br>(general communication port 2) | RS-422             | RS-422 connection diagram 8)             | 1000m         | - (Built into GOT) |       | 90 PLCs for<br>1 GOT <sup>*1</sup> |
|                                      |                    |                                          |               | GT15-RS4-9S        |       |                                    |

\*1 When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

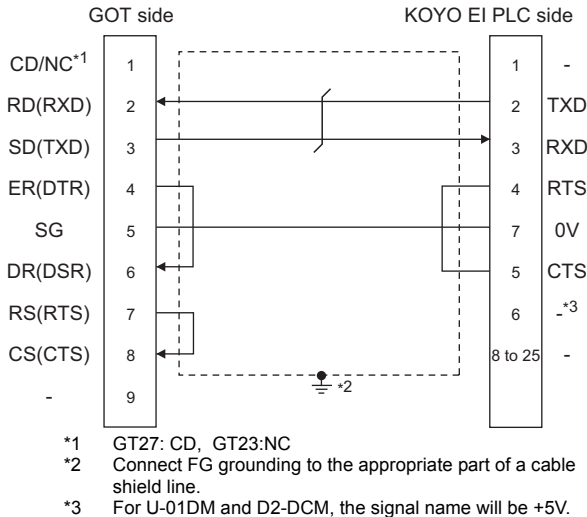
## 7.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

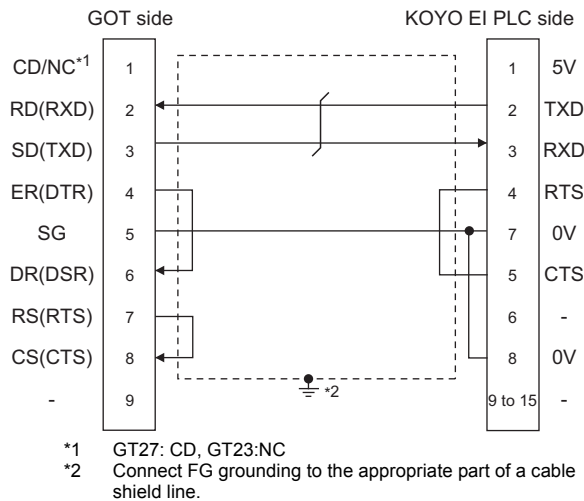
### 7.3.1 RS-232 cable

#### ■ Connection diagram

##### (1) RS-232 connection diagram 1)



##### (2) RS-232 connection diagram 2)



#### ■ Precautions when preparing a cable

##### (3) Cable length

The length of the RS-232 cable must be 15m or less.

##### (4) GOT side connector

For the GOT side connector, refer to the following.

➡ 1.4.1 GOT connector specifications

##### (5) KOYO EI PLC side connector

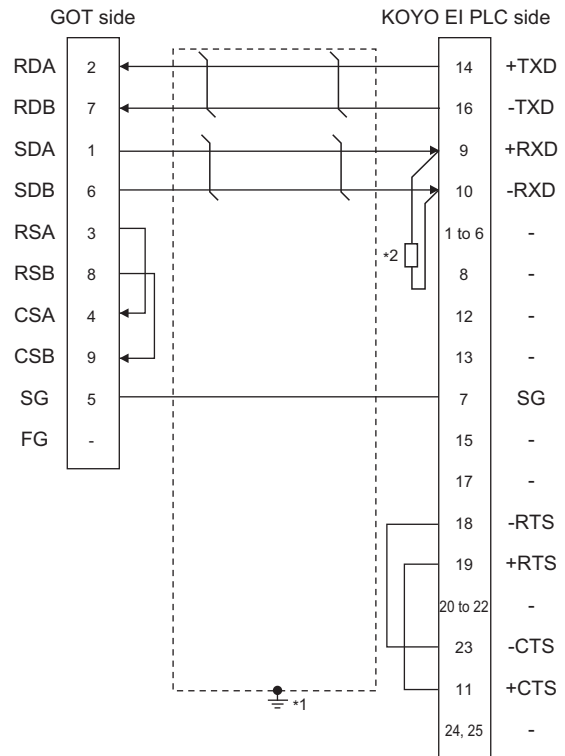
Use the connector compatible with the KOYO EI PLC side.

For details, refer to the KOYO EI PLC user's manual.

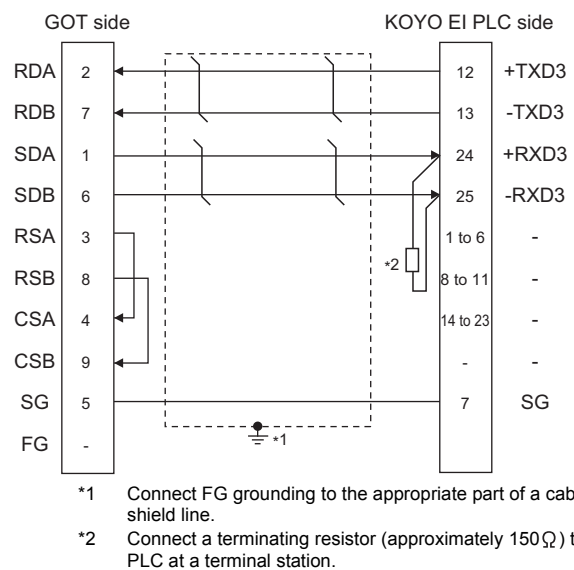
### 7.3.2 RS-422 cable

#### ■ Connection diagram

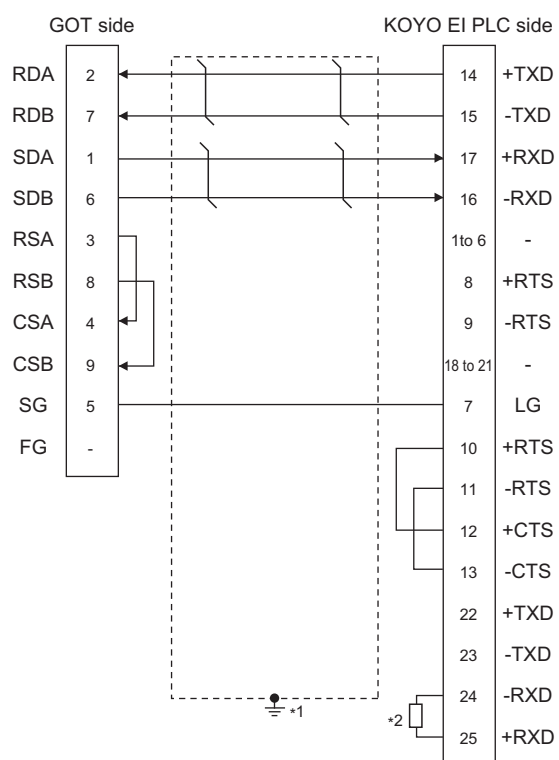
##### (1) RS-422 connection diagram 1)



##### (2) RS-422 connection diagram 2)



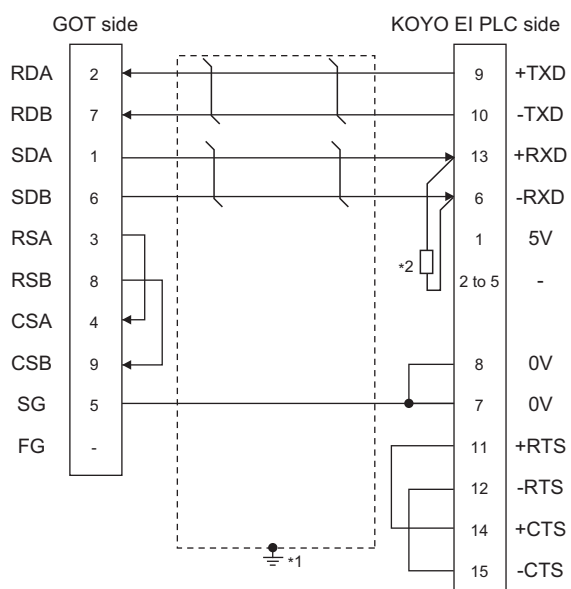
### (3) RS-422 connection diagram 3)



\*1 Connect FG grounding to the appropriate part of a cable shield line.

\*2 Connect a terminating resistor (approximately 150Ω) to the PLC at a terminal station.

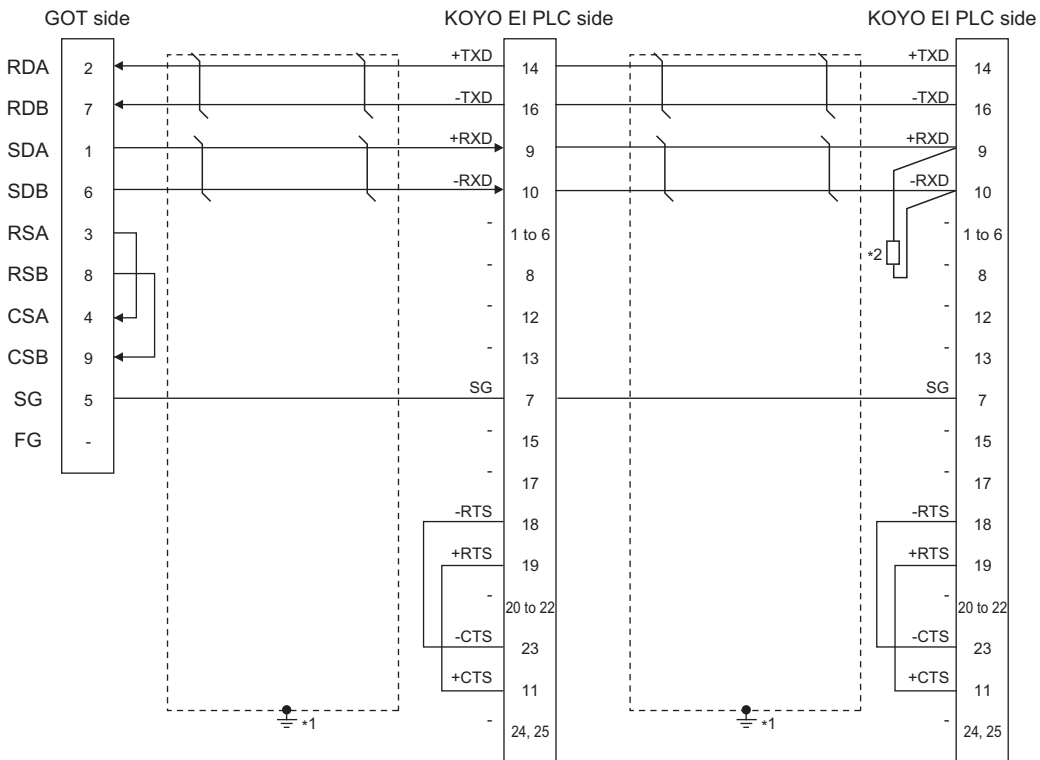
### (4) RS-422 connection diagram 4)



\*1 Connect FG grounding to the appropriate part of a cable shield line.

\*2 Connect a terminating resistor (approximately 100 to 500Ω) to the PLC to be a terminal.

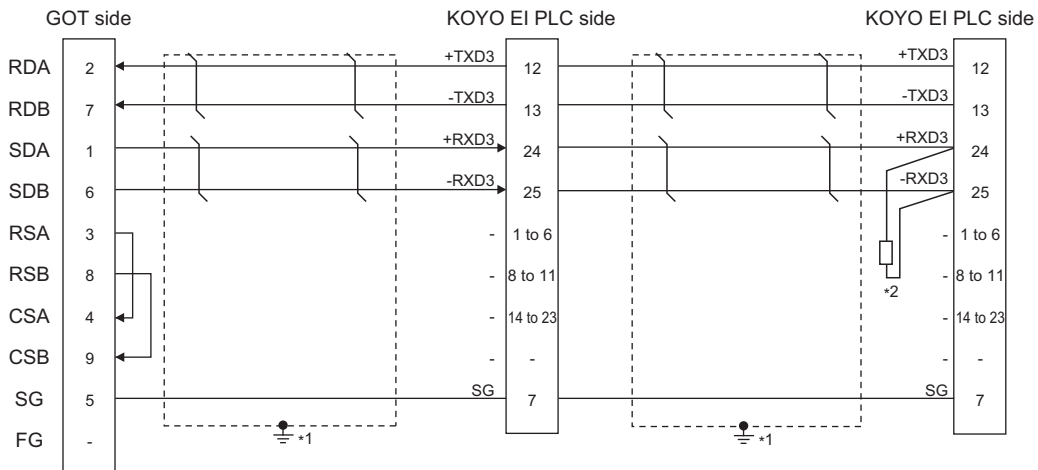
(5) RS-422 connection diagram 5)



- \*1 Connect FG grounding to the appropriate part of a cable shield line.
- \*2 Connect a terminating resistor (approximately 150  $\Omega$ ) to the PLC at a terminal station.  
When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

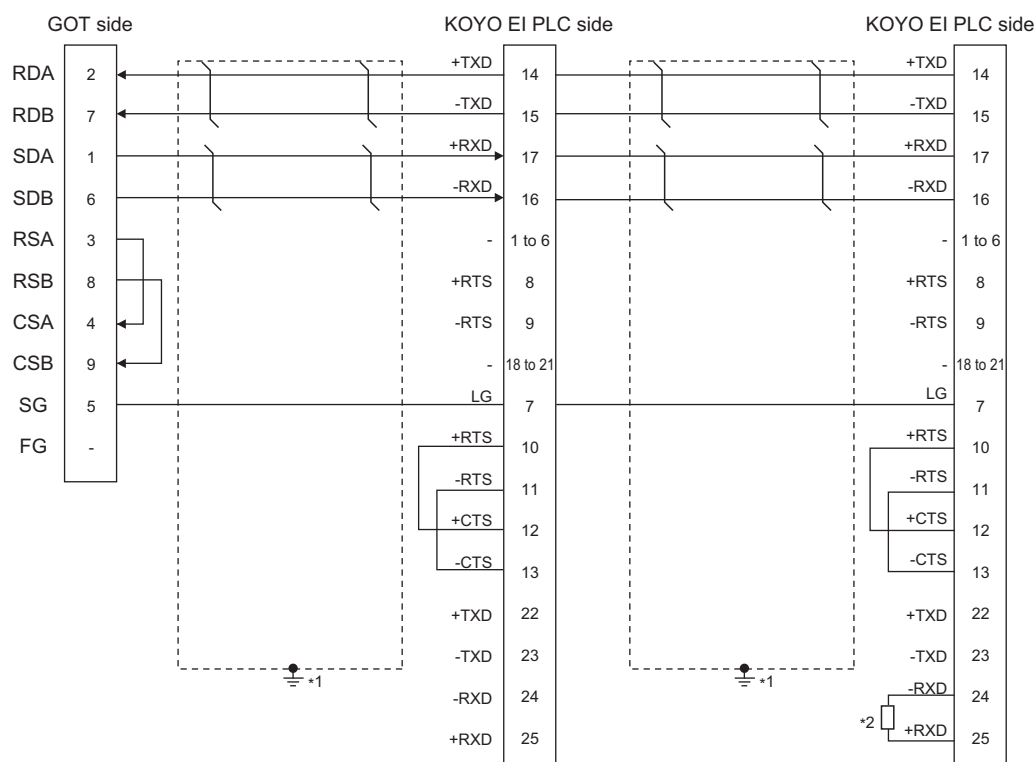
(6) RS-422 connection diagram 6)



- \*1 Connect FG grounding to the appropriate part of a cable shield line.
- \*2 Connect a terminating resistor (approximately 150  $\Omega$ ) to the PLC at a terminal station.  
When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

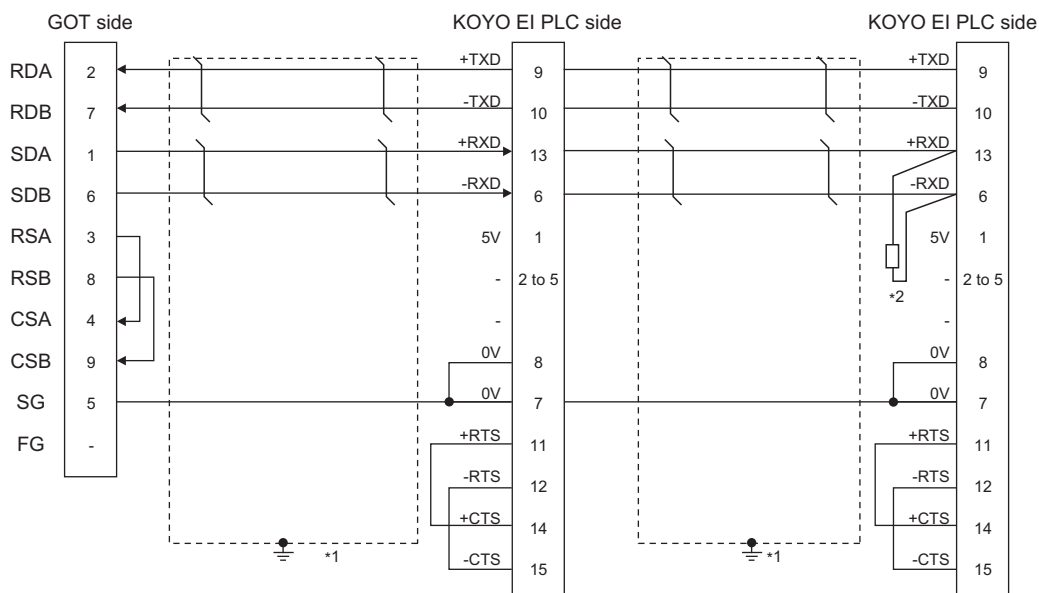
## (7) RS-422 connection diagram 7)



- \*1 Connect FG grounding to the appropriate part of a cable shield line.
- \*2 Connect a terminating resistor (approximately  $150\Omega$ ) to the PLC at a terminal station.  
When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

## (8) RS-422 connection diagram 8)



- \*1 Connect FG grounding to the appropriate part of a cable shield line.
- \*2 Connect a terminating resistor (approximately  $100$  to  $500\Omega$ ) to the PLC to be a terminal.  
When the number of links exceeds 30, use a transmission line conversion unit D-01CV per 30 links.  
For details, refer to the following manual.

KOYO EI PLC user's Manual

## ■ Precautions when preparing a cable

### (1) Cable length

The maximum length of the RS-422 cable differs according to the specifications of the KOYO EI PLC side module.

For details, refer to the following manual.

 KOYO EI PLC user's Manual

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) KOYO EI PLC side connector

Use the connector compatible with the KOYO EI PLC side.

For details, refer to the KOYO EI PLC user's manual.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "Disable".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) KOYO EI PLC

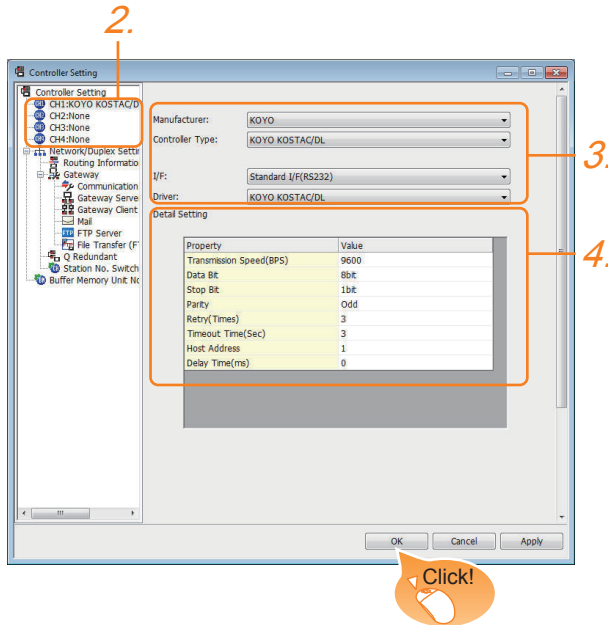
To connect a KOYO EI PLC to a GOT, a terminating resistor must be set to the KOYO EI PLC.

 KOYO EI PLC user's Manual

## 7.4 GOT Side Settings

### 7.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: KOYO
  - Controller Type: KOYO KOSTAC/DL
  - I/F: Interface to be used
  - Driver: KOYO KOSTAC/DL
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

☞ 7.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

☞ 1.1.2 I/F communication setting

### 7.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | Odd   |
| Retry(Times)            | 3     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 1     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                              | Range                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps) | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 8bits)          | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications. (Default: 1bit)                                                          | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: Odd)           | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 3times)                           | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                     | 1 to 50sec                                       |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                | 0 to 300ms                                       |
| Host Address       | Specify the host address (station No. of the GOT to which the PLC is connected) in the connected network. (Default: 1)   | 1 to 90                                          |

#### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
☞ GOT2000 Series User's Manual (Utility)
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.



## 7.5 PLC Side Setting

### POINT

#### KOYO EI PLC

For details of KOYO EI PLCs, refer to the following manuals.

 KOYO EI PLC user's Manual

#### ■ PLC CPU

| Model name                                     |          | Refer to |
|------------------------------------------------|----------|----------|
| KOSTAC SU Series                               | SU-5E/6B | 7.5.1    |
|                                                | SU-5M/6M | 7.5.2    |
| DirectLOGIC 05 Series<br>DirectLOGIC 06 Series |          | 7.5.3    |
| DirectLOGIC 205 Series                         |          | 7.5.4    |
| PZ series                                      |          | 7.5.5    |

#### ■ Data Communications Module

| Model name                 |        | Refer to |
|----------------------------|--------|----------|
| Host Link Module           | U-01DM | 7.5.6    |
| Data Communications Module | D0-DCM | 7.5.7    |
|                            | D2-DCM | 7.5.8    |

### 7.5.1 Connecting to SU-5E/6B

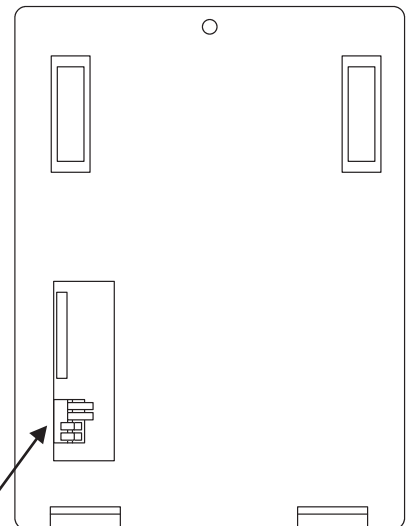
#### ■ Communication settings

Make the following settings using the programmer system parameter setting.

| Item              | Set value        |
|-------------------|------------------|
| Station No.       | 1 to 90          |
| Transmission mode | HEX              |
| Parity            | NONE, ODD        |
| Data bit          | 8 bit (Fixation) |
| Stop bit          | 1 bit (Fixation) |

#### ■ Setting DIP switches

Set the transmission speed using the CPU DIP switch.



CPU DIP switch



| Item                 | Set value | Switch No. |     |
|----------------------|-----------|------------|-----|
|                      |           | 3          | 4   |
| Transmission speed*1 | 9600bps   | ON         | OFF |
|                      | 19200bps  | ON         | ON  |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface (Communication settings)

## 7.5.2 Connecting to SU-5M/6M

### ■ Communication settings

Make the following settings using the programmer system parameter setting.

| Item                             | Set value                                                   |
|----------------------------------|-------------------------------------------------------------|
| Protocol                         | CCM                                                         |
| Response delay time              | 0ms                                                         |
| Timeout Time                     | 800ms/960ms/1200ms/1600ms/4000ms/<br>8000ms/16000ms/40000ms |
| Station No.                      | 1 to 90                                                     |
| Transmission mode                | HEX                                                         |
| Stop bit                         | 1bit, 2bits                                                 |
| Data bit                         | 8bits (Fixed)                                               |
| Parity                           | NONE, ODD, EVEN                                             |
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps                                 |

<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

## 7.5.3 Connecting to DirectLOGIC 05 series or DirectLOGIC 06 series

### ■ Communication settings

Make the following settings using the programmer system parameter setting.

| Item                             | Set value                   |
|----------------------------------|-----------------------------|
| Protocol                         | CCM NET (DirectNET)         |
| Timeout                          | 780ms or more               |
| RTS On Delay Time                | 0ms <sup>*1</sup>           |
| RTS Off Delay Time               | 0ms <sup>*1</sup>           |
| Station No.                      | 1 to 90                     |
| Transmission speed <sup>*2</sup> | 9600bps, 19200bps, 38400bps |
| Stop bit                         | 1bit, 2bits                 |
| Parity                           | NONE, ODD, EVEN             |
| Communication format             | HEX                         |

<sup>\*1</sup> To use a PLC with multidrop, set the "RTS on delay time" to 5ms or more and the "RTS off delay time" to 2ms or more.  
<sup>\*2</sup> Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

## 7.5.4 Connecting to DirectLOGIC 205 series

### ■ Communication settings

Make the following settings using the programmer system parameter setting.

| Item                             | Set value                   |
|----------------------------------|-----------------------------|
| Protocol                         | CCM NET (DirectNET)         |
| Station No.                      | 1 to 90                     |
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps |
| Data bit                         | 8bits (fixed)               |
| Stop bit                         | 1bit (fixed)                |
| Parity                           | NONE, ODD                   |
| Self-diagnostic mode             | OFF                         |
| Response delay time              | 0ms                         |
| Peer to Peer                     | OFF                         |
| Master/Slave                     | Slave                       |
| Timeout                          | Enable                      |
| Transmission mode                | HEX                         |
| MODBUS                           | OFF                         |

<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

## 7.5.5 Connecting to PZ Series

### ■ Communication settings

Make the following settings using the programmer system parameter setting.

| Item                             | Set value                                                   |
|----------------------------------|-------------------------------------------------------------|
| Protocol                         | CCM NET                                                     |
| Timeout                          | 800ms/960ms/1200ms/1600ms/4000ms/<br>8000ms/16000ms/40000ms |
| Response delay time              | 0ms                                                         |
| Station No.                      | 1 to 90                                                     |
| Communication format             | HEX                                                         |
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps                                 |
| Stop bit                         | 1bit                                                        |
| Parity                           | NONE, ODD                                                   |

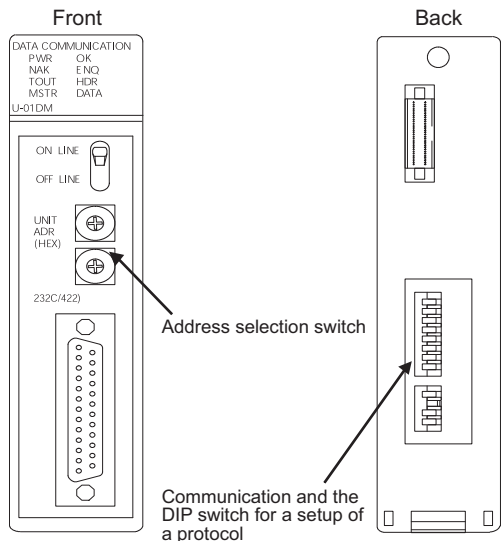
<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

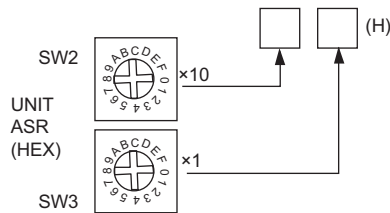
7.5.6 Connecting to U-01DM

Setting switches

Make the communication settings using each setting switch.

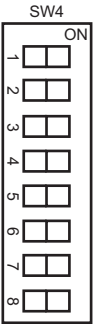


(1) Address selection switch(SW2, SW3)



| Switch No. | Settings                                      | Setting details |
|------------|-----------------------------------------------|-----------------|
| SW2        | Code higher rank<br>(10 <sup>1</sup> figures) | 01 to 5A        |
| SW3        | Code low rank<br>(10 <sup>0</sup> figures)    |                 |

(2) Communication and the DIP switch for a setup of a protocol(SW4)

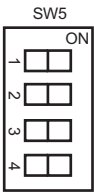


| Setting item         | Set value | Switch No. |     |     |     |   |     |     |     |
|----------------------|-----------|------------|-----|-----|-----|---|-----|-----|-----|
|                      |           | 1          | 2   | 3   | 4   | 5 | 6   | 7   | 8   |
| Transmission speed*1 | 9600bps   | OFF        | ON  | ON  |     |   |     |     |     |
|                      | 19200bps  | ON         | ON  | ON  |     |   |     |     |     |
|                      | 38400bps  | OFF        | OFF | OFF |     |   |     |     |     |
| Parity               | ODD       |            |     |     | ON  |   |     |     |     |
|                      | NONE      |            |     |     | OFF |   |     |     |     |
| Self-diagnostic      | OFF       |            |     |     | OFF |   |     |     |     |
| Response delay time  | 0ms       |            |     |     |     |   | OFF | OFF | OFF |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

7.4.1 Setting communication interface  
(Communication settings)

(3) Communication and the DIP switch for a setup of a protocol(SW5)



| Item           | Set value | Switch No. |     |     |     |
|----------------|-----------|------------|-----|-----|-----|
|                |           | 1          | 2   | 3   | 4   |
| Peer to Peer   | OFF       | OFF        |     |     |     |
| M/S            | Slave     |            | OFF |     |     |
| TOUT existence | Enable    |            |     | OFF |     |
| ASCII/HEX      | HEX       |            |     |     | OFF |

## 7.5.7 Connecting to D0-DCM

### ■ Communication settings

Write the following communication settings to the specified register using the programmer. For details of the register, refer to the following manual.

 KOYO EI PLC user's Manual

| Item                                                             | Set value                                                   |
|------------------------------------------------------------------|-------------------------------------------------------------|
| Transmission mode                                                | HEX                                                         |
| Protocol                                                         | DirectNet                                                   |
| Station No.                                                      | 1 to 90                                                     |
| Transmission speed*1                                             | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps            |
| Parity                                                           | NONE, ODD, EVEN (Only communication port 2)                 |
| RTS On Delay Time<br>(Only communication port 2)                 | 0ms                                                         |
| RTS Off Delay Time<br>(Only communication port 2)                | 0ms                                                         |
| Timeout<br>(Only communication port 2)                           | 800ms/960ms/1200ms/1600ms/4000ms/<br>8000ms/16000ms/40000ms |
| 485 mode selection<br>(Only communication port 2)                | RS232, RS422/485 4 line type                                |
| Data bit<br>(Only communication port 2)                          | 8bits, 7bits                                                |
| Stop bit<br>(Only communication port 2)                          | 1bit, 2bits                                                 |
| The timeout between<br>characters<br>(Only communication port 2) | 0 to 9999ms                                                 |
| The completion of a<br>setting                                   | Default use, A preset value is effective                    |
| Reset timeout                                                    | Invalid, Effective                                          |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

## 7.5.8 Connecting to D2-DCM

### ■ Communication settings

Make the following settings using the programmer.

| Item                 | Set value                   |
|----------------------|-----------------------------|
| Station No.          | 1 to 90                     |
| Transmission speed*1 | 9600bps, 19200bps, 38400bps |
| Data bit             | 8bits (fixed)               |
| Stop bit             | 1bit (fixed)                |
| Parity               | NONE, ODD                   |
| Self-diagnostic mode | OFF                         |
| Response delay time  | 0ms                         |
| Peer to Peer         | OFF                         |
| Master/Slave         | Slave                       |
| Timeout              | Enable                      |
| Transmission mode    | HEX                         |
| MODBUS               | OFF                         |

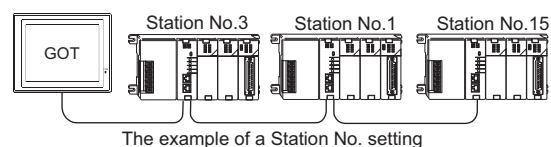
\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 7.4.1 Setting communication interface  
(Communication settings)

## 7.5.9 Station No. settings

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



### (1) Direct specification

Specify the station No. of the PLC to be changed when setting device.

| Specification range |
|---------------------|
| 1 to 90             |

## 7.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

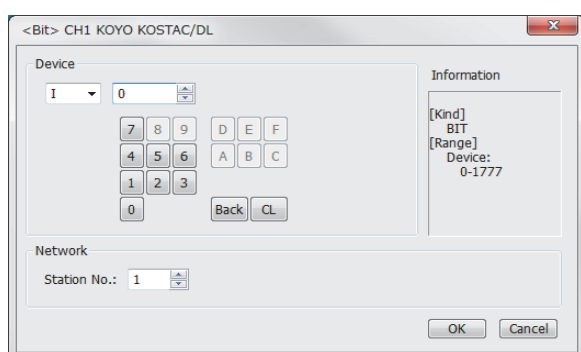
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



| Item        | Description                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |
| Network     | Set the monitor target of the set device.                                                                                     |
| Station No. | Select this item when monitoring the PLC of the specified station No.                                                         |

### 7.6.1 KOYO EI PLC (KOYO KOSTAC/DL)

|             | Device name                              | Setting range    | Device No. representation |
|-------------|------------------------------------------|------------------|---------------------------|
| Bit device  | Input (I) <sup>*5</sup>                  | I0 to I1777      |                           |
|             | Output (Q) <sup>*5</sup>                 | Q0 to Q1777      |                           |
|             | Link relay (GI)                          | GI0 to GI3777    |                           |
|             | Link output (GQ)                         | GQ0 to GQ3777    |                           |
|             | Internal relay (M)                       | M0 to M3777      |                           |
|             | Stage (S)                                | S0 to S1777      |                           |
|             | Timer (T)                                | T0 to T377       |                           |
|             | Counter (C)                              | C0 to C377       |                           |
| Word device | Special relay (SP) <sup>*1</sup>         | SP0 to SP777     | Octal                     |
|             | Timer (current value) (R)                | R0 to R377       |                           |
|             | Preparatory register (R) <sup>*5</sup>   | R400 to R677     |                           |
|             | Special register 1 (R) <sup>*1*5</sup>   | R700 to R777     |                           |
|             | Timer (current value) (R) <sup>*3</sup>  | R1000 to R1377   |                           |
|             | Data register 1 (R) <sup>*2*5</sup>      | R1400 to R7377   |                           |
|             | Special register 2 (R) <sup>*1*4*5</sup> | R7400 to R7777   |                           |
|             | Data register 2 (R) <sup>*5</sup>        | R10000 to R36777 |                           |
|             | Special register 3 (R) <sup>*1*5</sup>   | R37000 to R37777 |                           |
|             | Link relay (R)                           | R40000 to R40177 |                           |
|             | Link output (R)                          | R40200 to R40377 |                           |
|             | Input (R)                                | R40400 to R40477 |                           |
|             | Output (R)                               | R40500 to R40577 |                           |
|             | Internal relay (R)                       | R40600 to R40777 |                           |
|             | Stage (R)                                | R41000 to R41077 |                           |
|             | Timer (R)                                | R41100 to R41117 |                           |
|             | Counter (R)                              | R41140 to R41157 |                           |
|             | Special relay (R)                        | R41200 to R41237 |                           |

- \*1 Read-only device for KOSTAC SU series  
 \*2 The GOT cannot write data to R7377 for the SU-5M and SU-6M.  
 \*3 For Direct Logic 05 series and Direct Logic 06 series, devices from R1200 to R1377 are used as V-memory 2.  
 \*4 The GOT cannot write data to devices from R7766 to R7774 (calendar area).  
 \*5 The device names differ according to the series.  
 The following shows the device names for each series.

| KOSTAC SU<br>PZ      | Direct Logic 05<br>Direct Logic 06 | Direct Logic 205   |
|----------------------|------------------------------------|--------------------|
| Input                | Input relay                        | Input              |
| Output               | Output relay                       | Output             |
| Preparatory register | V-memory 1                         | Data register 1    |
| Special register 1   | System parameter 1                 | System parameter 1 |
| Data register 1      | V-memory 2                         | Data register 2    |
| Special register 2   | System parameter 2                 | System parameter 2 |
| Data register 2      | V-memory 3                         | Data register 3    |
| Special register 3   | System parameter 4                 | System parameter 4 |

## 7.7 Precautions

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### ■ GOT clock control

The GOT clock function is available only for the PLC with a calendar function. Note: Although the "time adjusting" and "time broadcast" functions can be selected on the GOT, the "time broadcast" function is not available. Do not select the "time broadcast" function. If both of the functions are selected, not only the "time broadcast" function but also the "time adjusting" function will be disabled.

# CONNECTION TO JTEKT PLC

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|     |                                        |        |
|-----|----------------------------------------|--------|
| 8.1 | Connectable Model List . . . . .       | 8 - 2  |
| 8.2 | System Configuration . . . . .         | 8 - 2  |
| 8.3 | Connection Diagram . . . . .           | 8 - 10 |
| 8.4 | GOT Side Settings . . . . .            | 8 - 14 |
| 8.5 | PLC Side Setting . . . . .             | 8 - 16 |
| 8.6 | Device Range that Can Be Set . . . . . | 8 - 19 |
| 8.7 | Precautions . . . . .                  | 8 - 20 |

## 8. CONNECTION TO JTEKT PLC

### 8.1 Connectable Model List

The following table shows the connectable models.

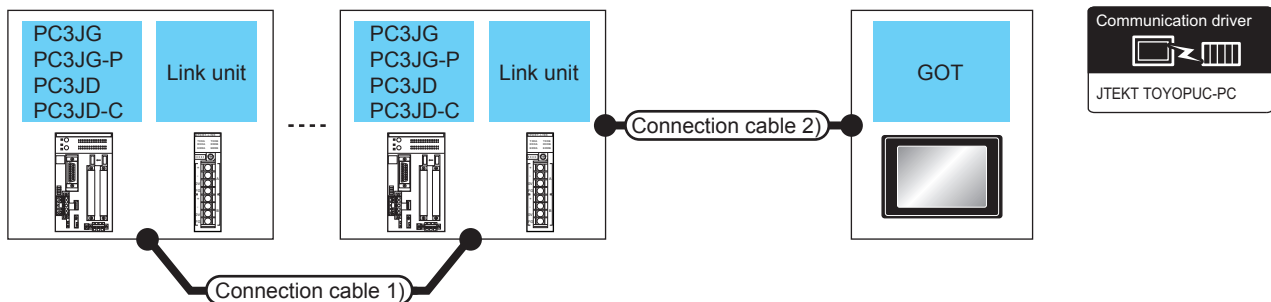
| Model name | Model type | Clock | Communication Type | Connectable GOT                                                                    | Refer to                                                                                  |
|------------|------------|-------|--------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| PC3JG-P    | TIC-6088   | ○     | RS-232<br>RS-422   |  |  8.2.1 |
| PC3JG      | TIC-6125   |       |                    |                                                                                    |                                                                                           |
| PC3JD      | TIC-5642   |       |                    |                                                                                    |                                                                                           |
| PC3JD-C    | TIC-6029   |       |                    |                                                                                    |                                                                                           |
| PC3J*1     | TIC-5339   | ○     | RS-232<br>RS-422   |  |  8.2.2 |
| PC3JL      | TIC-5783   |       |                    |                                                                                    |                                                                                           |
| PC2J       | THC-2764   | ○     | RS-232<br>RS-422   |  |  8.2.3 |
| PC2JS      | THC-2994   |       |                    |                                                                                    |                                                                                           |
| PC2JR      | THC-5053   |       |                    |                                                                                    |                                                                                           |
| PC2JC      | THC-5070   | ○     | RS-232<br>RS-422   |  |  8.2.4 |
| PC2J16P    | THC-5169   |       |                    |                                                                                    |                                                                                           |
| PC2J16PR   | THC-5173   |       |                    |                                                                                    |                                                                                           |

\*1 Use PC3J of the version 2.1 or later.

### 8.2 System Configuration

#### 8.2.1 Connecting to PC3JG, PC3JG-P, PC3JD or PC3JD-C

■ For the RS-422 connection

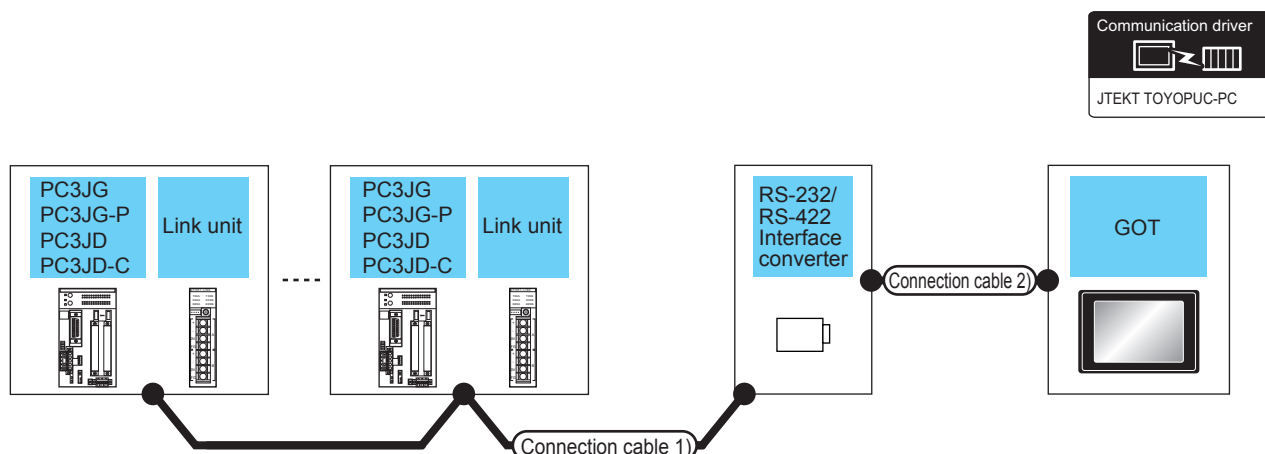


| PLC                                  |                            | Connection cable 1) |                                                                                                                  | Connection cable 2)                                                                                                                                                                                                              |               | GOT                |                                                                                       | Number of connectable equipment |
|--------------------------------------|----------------------------|---------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------------|---------------------------------|
| Model name                           | Link unit*1                | Communication Type  | Cable model<br>Connection diagram number                                                                         | Cable model<br>Connection diagram number                                                                                                                                                                                         | Max. distance | Option device      | Model                                                                                 |                                 |
| PC3JG<br>PC3JG-P<br>PC3JD<br>PC3JD-C | PC/CMP2-LINK<br>(THU-5139) | RS-422              |  RS-422 connection diagram 4) | GT09-C30R41201-6C(3m)<br>GT09-C100R41201-6C(10m)<br>GT09-C200R41201-6C(20m)<br>GT09-C300R41201-6C(30m)<br>or<br> RS-422 connection diagram 7) | 500m          | - (Built into GOT) |  | 32 PLCs for 1 GOT               |
|                                      |                            |                     |                                                                                                                  |                                                                                                                                                                                                                                  |               | GT15-RS4-9S        |  |                                 |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.



■ For the RS-232 connection (via an interface converter)



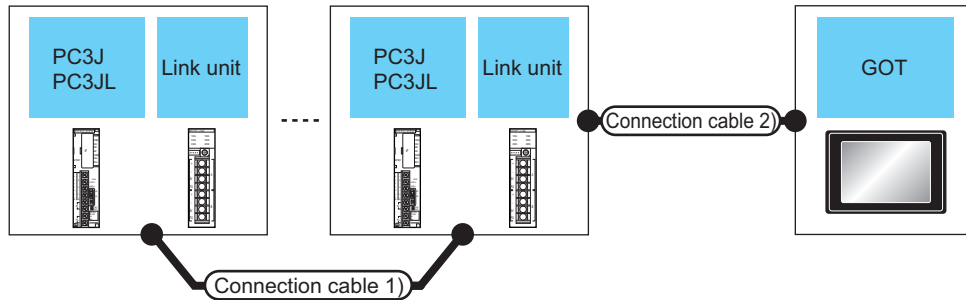
| PLC                                  |                                                 | Connection cable 1)                      |               | RS-232/RS-422 interface converter*2 |                    | Connection cable 2)                                          |               | GOT                |       | Number of connectable equipment |
|--------------------------------------|-------------------------------------------------|------------------------------------------|---------------|-------------------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                           | Link unit*1                                     | Cable model<br>Connection diagram number | Max. distance | Model name                          | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                 |
| PC3JG<br>PC3JG-P<br>PC3JD<br>PC3JD-C | -                                               | RS-422 connection diagram 1)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       | 32 PLCs for 1 GOT               |
|                                      |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|                                      | PC/CMP-LINK (THU-2755)<br>2PORT-LINK (THU-2927) | RS-422 connection diagram 2)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                                      |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|                                      | PC/CMP2-LINK (THU-5139)                         | RS-422 connection diagram 3)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                                      |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

\*2 The interface converter is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

## 8.2.2 Connecting to PC3J or PC3JL

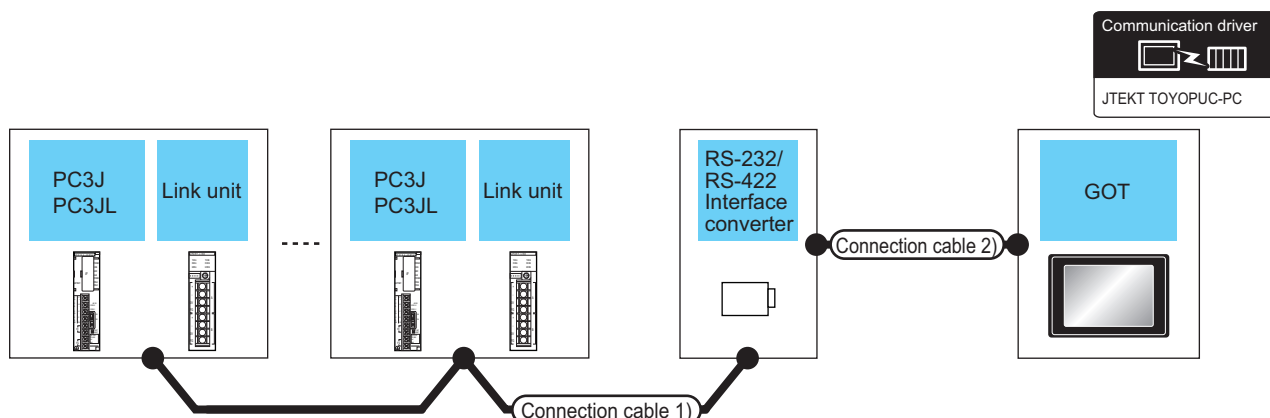
### ■ For the RS-422 connection



| PLC           |                            |                            | Connection cable 1)                         | Connection cable 2)                                                                                                                             | Max.<br>distance | GOT                |       | Number of<br>connectable<br>equipment |
|---------------|----------------------------|----------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|-------|---------------------------------------|
| Model<br>name | Link unit*1                | Commu-<br>nication<br>Type | Cable model<br>Connection diagram<br>number | Cable model<br>Connection diagram number                                                                                                        |                  | Option device      | Model |                                       |
| PC3J<br>PC3JL | -                          | RS-422                     | RS-422<br>connection diagram 6)             | GT09-C30R41201-6C(3m)<br>GT09-C100R41201-6C(10m)<br>GT09-C200R41201-6C(20m)<br>GT09-C300R41201-6C(30m)<br>or<br>RS-422 connection<br>diagram 7) | 500m             | - (Built into GOT) | <br>  | 32 PLCs for<br>1 GOT                  |
|               |                            |                            |                                             |                                                                                                                                                 |                  | GT15-RS4-9S        | <br>  |                                       |
|               | PC/CMP2-LINK<br>(THU-5139) | RS-422                     | RS-422<br>connection diagram 4)             | GT09-C30R41201-6C(3m)<br>GT09-C100R41201-6C(10m)<br>GT09-C200R41201-6C(20m)<br>GT09-C300R41201-6C(30m)<br>or<br>RS-422 connection<br>diagram 7) | 500m             | - (Built into GOT) | <br>  |                                       |
|               |                            |                            |                                             |                                                                                                                                                 |                  | GT15-RS4-9S        | <br>  |                                       |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

■ For the RS-232 connection (via interface converter)



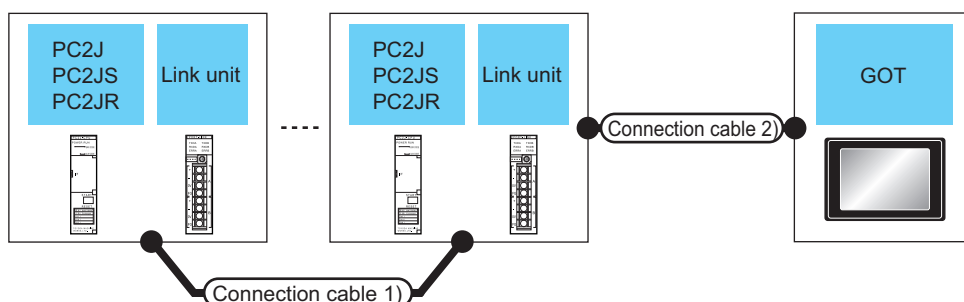
| PLC           |                                                 | Connection cable 1)                                                                                              |               | RS-232/RS-422 interface converter <sup>*2</sup> |                    | Connection cable 2)                                                                                                                              |               | GOT                |                                                                                                                                                                                                                                                                      | Number of connectable equipment |
|---------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name    | Link unit <sup>*1</sup>                         | Cable model<br>Connection diagram number                                                                         | Max. distance | Model name                                      | Communication Type | Cable model<br>Connection diagram number                                                                                                         | Max. distance | Option device      | Model                                                                                                                                                                                                                                                                |                                 |
| PC3J<br>PC3JL | -                                               |  RS-422 connection diagram 1)  | 500m          | TXU-2051                                        | RS-232             | GT09-C30R21201-25P(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br>       | 32 PLCs for 1 GOT               |
|               |                                                 |                                                                                                                  |               |                                                 |                    |                                                                                                                                                  |               | GT15-RS2-9P        |                                                                                            |                                 |
|               |                                                 |  RS-422 connection diagram 5) | 500m          | TXU-2051                                        | RS-232             | GT09-C30R21201-25P(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> |                                 |
|               |                                                 |                                                                                                                  |               |                                                 |                    |                                                                                                                                                  |               | GT15-RS2-9P        |                                                                                            |                                 |
|               | PC/CMP-LINK (THU-2755)<br>2PORT-LINK (THU-2927) |  RS-422 connection diagram 2) | 500m          | TXU-2051                                        | RS-232             | GT09-C30R21201-25P(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> |                                 |
|               |                                                 |                                                                                                                  |               |                                                 |                    |                                                                                                                                                  |               | GT15-RS2-9P        |                                                                                            |                                 |
|               | PC/CMP2-LINK (THU-5139)                         |  RS-422 connection diagram 4) | 500m          | TXU-2051                                        | RS-232             | GT09-C30R21201-25P(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> |                                 |
|               |                                                 |                                                                                                                  |               |                                                 |                    |                                                                                                                                                  |               | GT15-RS2-9P        |                                                                                            |                                 |

<sup>\*1</sup> The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

<sup>\*2</sup> The interface converter is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

## 8.2.3 Connecting to PC2J, PC2JS or PC2JR

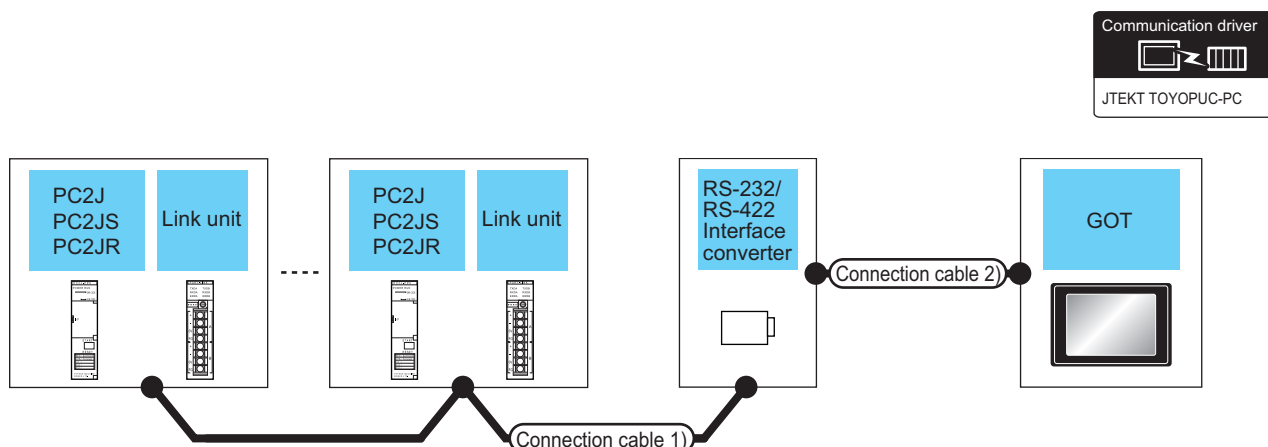
### ■ For the RS-422 connection



| PLC                    |                                |                            | Connection cable 1)                                                                                                 | Connection cable 2)                                                                                                                                                                                                                 | Max.<br>distance | GOT                |                                                                                                                                                                                                                                                                 | Number of<br>connectable<br>equipment |
|------------------------|--------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Model<br>name          | Link unit <sup>*1</sup>        | Commu-<br>nication<br>Type | Cable model<br>Connection diagram<br>number                                                                         | Cable model<br>Connection diagram number                                                                                                                                                                                            |                  | Option device      | Model                                                                                                                                                                                                                                                           |                                       |
| PC2J<br>PC2JS<br>PC2JR | PC/CMP2-<br>LINK<br>(THU-5139) | RS-422                     |  RS-422<br>connection diagram 4) | GT09-C30R41201-6C(3m)<br>GT09-C100R41201-6C(10m)<br>GT09-C200R41201-6C(20m)<br>GT09-C300R41201-6C(30m)<br>or<br> RS-422 connection<br>diagram 7) | 500m             | - (Built into GOT) |  <br> | 32 PLCs for<br>1 GOT                  |
|                        |                                |                            |                                                                                                                     |                                                                                                                                                                                                                                     |                  | GT15-RS4-9S        |                                                                                       |                                       |

<sup>\*1</sup> The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

■ For the RS-232 connection (via interface converter)



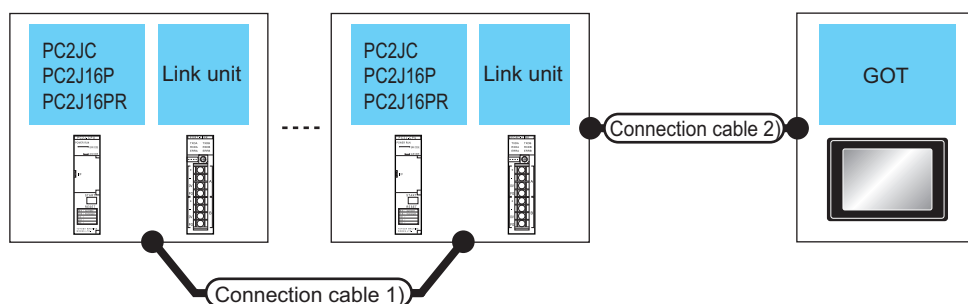
| PLC                    |                                                 | Connection cable 1)                      |               | RS-232/RS-422 interface converter*2 |                    | Connection cable 2)                                          |               | GOT                |       | Number of connectable equipment |
|------------------------|-------------------------------------------------|------------------------------------------|---------------|-------------------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name             | Link unit*1                                     | Cable model<br>Connection diagram number | Max. distance | Model name                          | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                 |
| PC2J<br>PC2JS<br>PC2JR | PC/CMP-LINK (THU-2755)<br>2PORT-LINK (THU-2927) | RS-422 connection diagram 2)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       | 32 PLCs for 1 GOT               |
|                        |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|                        | PC/CMP2-LINK (THU-5139)                         | RS-422 connection diagram 3)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                        |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

\*2 The interface converter is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

## 8.2.4 Connecting to PC2JC, PC2J16P or PC2J16PR

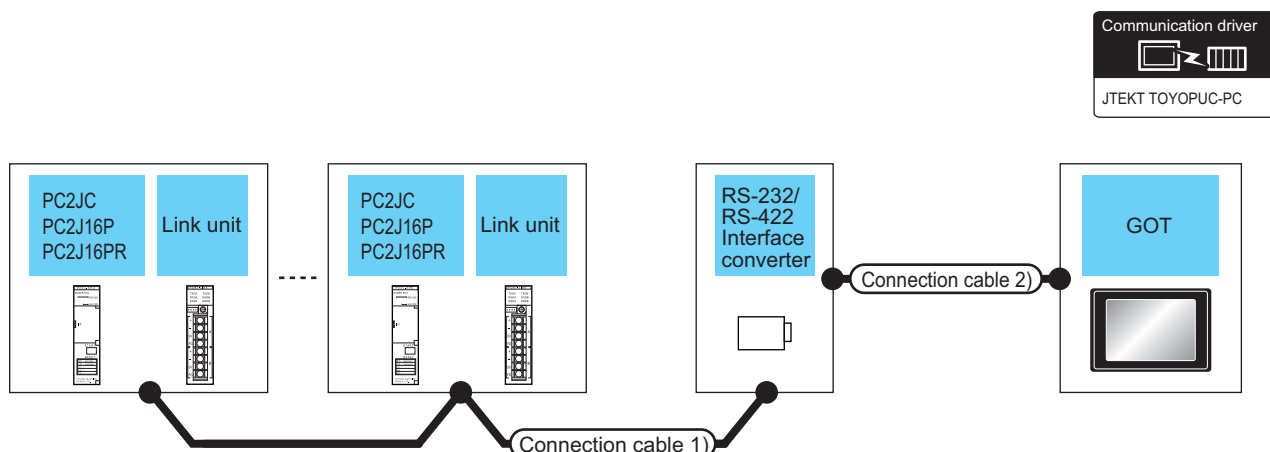
### ■ For the RS-422 connection



| PLC                          |                            |                            | Connection cable 1)                                 | Connection cable 2)                                 | Max.<br>distance | GOT                |                               | Number of<br>connectable<br>equipment |
|------------------------------|----------------------------|----------------------------|-----------------------------------------------------|-----------------------------------------------------|------------------|--------------------|-------------------------------|---------------------------------------|
| Model<br>name                | Link unit*1                | Commu-<br>nication<br>Type | Cable model<br>Connection diagram<br>number         | Cable model<br>Connection diagram<br>number         |                  | Option device      | Model                         |                                       |
| PC2JC<br>PC2J16P<br>PC2J16PR | PC/CMP2-LINK<br>(THU-5139) | RS-422                     | (User<br>preparing) RS-422<br>connection diagram 4) | (User<br>preparing) RS-422<br>connection diagram 7) | 500m             | - (Built into GOT) | GT<br>27 GT<br>25<br>GT<br>23 | 32 PLCs for<br>1 GOT                  |
|                              |                            |                            |                                                     |                                                     |                  | GT15-RS4-9S        | GT<br>27 GT<br>25             |                                       |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

■ For the RS-232 connection (via interface converter)



| PLC                          |                                                 | Connection cable 1)                      |               | RS-232/RS-422 interface converter*2 |                    | Connection cable 2)                                          |               | GOT                |       | Number of connectable equipment |
|------------------------------|-------------------------------------------------|------------------------------------------|---------------|-------------------------------------|--------------------|--------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                   | Link unit*1                                     | Cable model<br>Connection diagram number | Max. distance | Model name                          | Communication Type | Cable model<br>Connection diagram number                     | Max. distance | Option device      | Model |                                 |
| PC2JC<br>PC2J16P<br>PC2J16PR | -                                               | RS-422 connection diagram 1)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       | 32 PLCs for 1 GOT               |
|                              |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|                              | PC/CMP-LINK (THU-2755)<br>2PORT-LINK (THU-2927) | RS-422 connection diagram 2)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                              |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |
|                              | PC/CMP2-LINK (THU-5139)                         | RS-422 connection diagram 3)             | 500m          | TXU-2051                            | RS-232             | GT09-C30R21201-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                              |                                                 |                                          |               |                                     |                    |                                                              |               | GT15-RS2-9P        |       |                                 |

\*1 The link unit is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

\*2 The interface converter is a product manufactured by JTEKT Corporation. For details of the product, contact JTEKT Corporation.

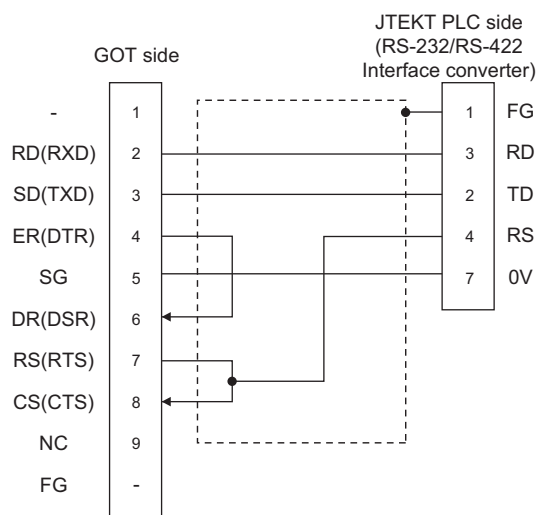
## 8.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

### 8.3.1 RS-232 cable

#### ■ Connection diagram

(1) RS-232 connection diagram 1)



#### ■ Precautions when preparing a cable

(2) Cable length

The length of the RS-232 cable must be 15m or less.

(3) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

(4) JTEKT PLC side connector

Use the connector compatible with the JTEKT PLC side module.

For details, refer to the JTEKT PLC user's manual.

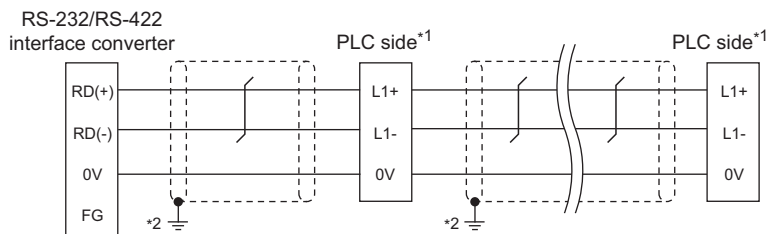


## 8.3.2 RS-422 cable

### ■ Connection diagram

#### (1) RS-422 connection diagram 1)

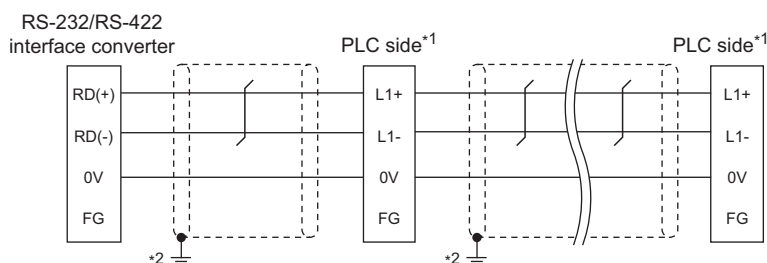
(For PC3JG-P/PC3JG/PC3JD/PC3JD-C)



\*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.

\*2 Connect FG grounding to the appropriate part of a cable shield line.

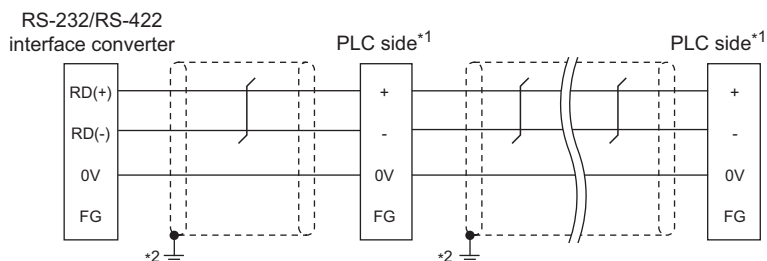
(For PC3J/PC3JL)



\*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.

\*2 Connect FG grounding to the appropriate part of a cable shield line.

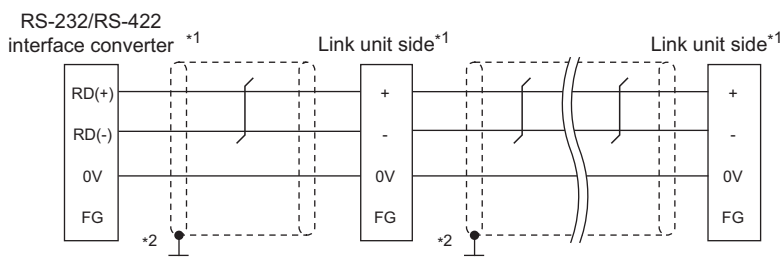
(For PC2JC/PC2J16P, PC2J16PR)



\*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.

\*2 Connect FG grounding to the appropriate part of a cable shield line.

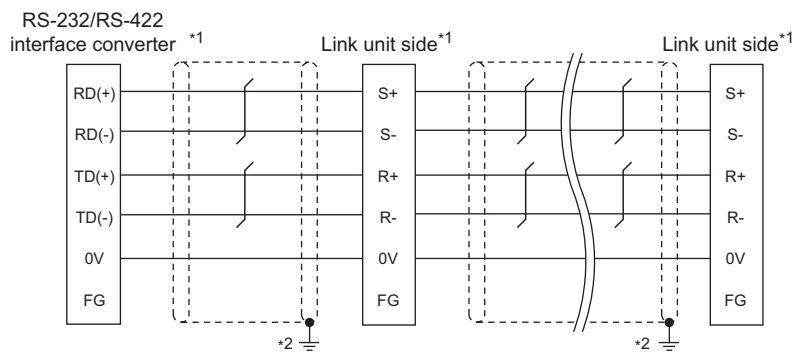
#### (2) RS-422 connection diagram 2)



\*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.

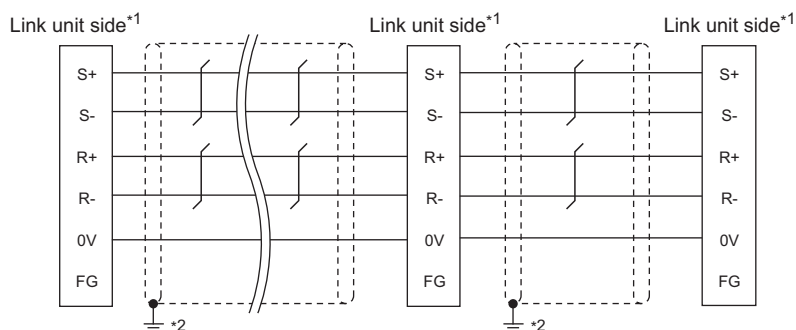
\*2 Connect FG grounding to the appropriate part of a cable shield line.

### (3) RS-422 connection diagram 3)



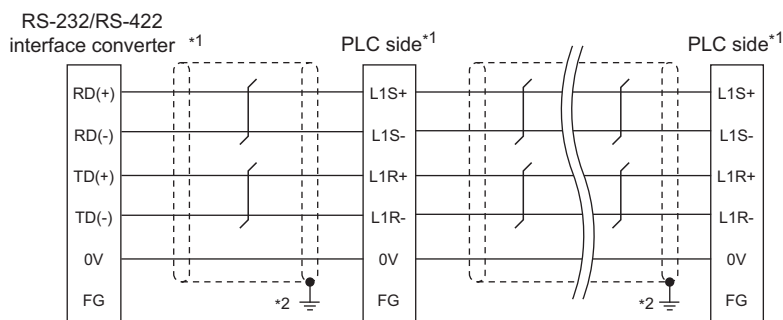
- \*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.
- \*2 Connect FG grounding to the appropriate part of a cable shield line.

### (4) RS-422 connection diagram 4)



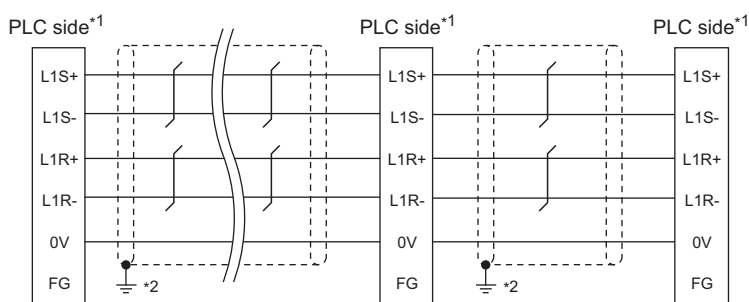
- \*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.
- \*2 Connect FG grounding to the appropriate part of a cable shield line.

### (5) RS-422 connection diagram 5)



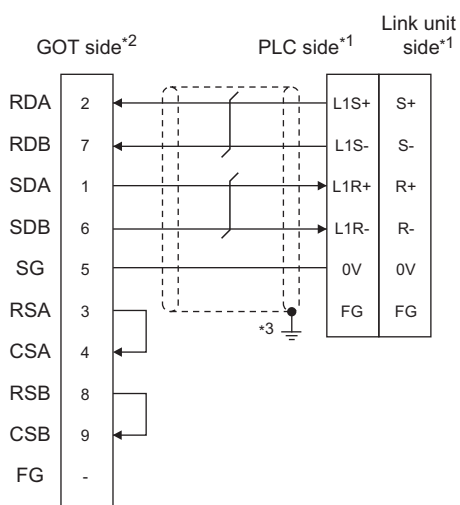
- \*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.
- \*2 Connect FG grounding to the appropriate part of a cable shield line.

### (6) RS-422 connection diagram 6)



- \*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.
- \*2 Connect FG grounding to the appropriate part of a cable shield line.

### (7) RS-422 connection diagram 7)



\*1 Terminating resistors should not be provided for a PLC and an RS-232/RS-422 interface converter which will be terminals.

\*2 Set the terminating resistor of GOT side which will be a terminal.

■ Connecting terminating resistors

\*3 Connect FG grounding to the appropriate part of a cable shield line.

## ■ Precautions when preparing a cable

### (8) Cable length

The maximum length of the RS-422 cable must be 500m or less.

### (9) GOT side connector

For the GOT side connector, refer to the following.

➡ 1.4.1 GOT connector specifications

### (10) JTEKT PLC side connector

Use the connector compatible with the JTEKT PLC side module.

For details, refer to the JTEKT PLC user's manual.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "Disable".

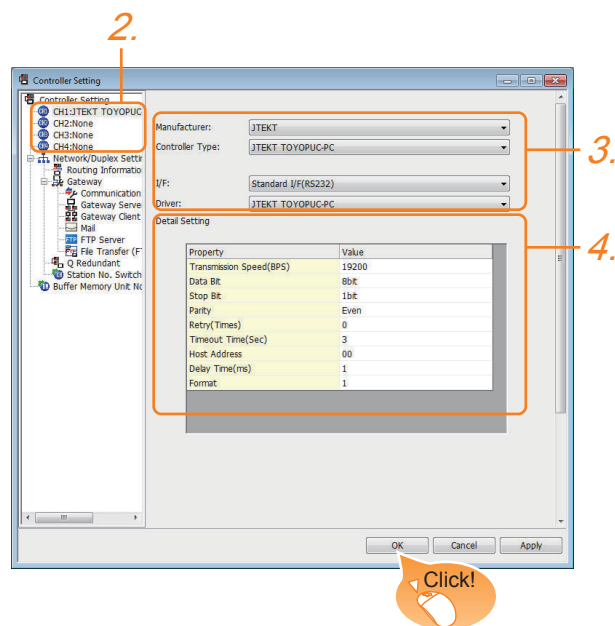
For the procedure to set the terminating resistor, refer to the following.

➡ 1.4.3 Terminating resistors of GOT

## 8.4 GOT Side Settings

### 8.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: JTEKT
  - Controller Type: JTEKT TOYOPUC-PC
  - I/F: Interface to be used
  - Driver: JTEKT TOYOPUC-PC
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 8.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 8.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 19200 |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 00    |
| Delay Time(ms)          | 1     |
| Format                  | 1     |

| Item               | Description                                                                                                                                    | Range                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment.<br>(Default: 19200bps)                   | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment.<br>(Default: 8bits)                             | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications.<br>(Default: 1bit)                                                                             | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication.<br>(Default: Even)                             | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs.<br>(Default: 0time)                                               | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                        | 3 to 30sec                                       |
| Host Address       | Specify the host address (station No. of the GOT to which the PLC is connected) in the connected network.<br>(Default: 00)                     | 00 to 37 (Octal)                                 |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT.<br>(Default: 0)                                     | 0 to 300ms                                       |
| Format             | Select the communication format.<br>(Default: 1)<br>format 1: PC3J extended function incompliant<br>format 2: PC3J extended function compliant | 1/2                                              |

## POINT

### (1) Format setting

The compatible format of PLC differs depending on model.

| Model name                                   | Compatible format    |
|----------------------------------------------|----------------------|
| PC2J, PC2JS, PC2JR, PC2JC, PC2J16P, PC2J16PR | Format 1 only        |
| PC3JG, PC3JG-P, PC3JD, PC3JD-C, PC3J, PC3JL  | Format 1 or Format 2 |

For details of PC3J extended function, refer to the following manual.

☞ JTEKT PLC user's manual

### (2) Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.

For details on the Utility, refer to the following manual.

☞ GOT2000 Series User's Manual (Utility)

### (3) Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 8.5 PLC Side Setting

### POINT

#### JTEKT PLC

For details of JTEKT PLCs, refer to the following manuals.

 JTEKT PLC user's manual

| Model name                        | Refer to                                                                                                                 |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| PLC CPU                           | <div>PC3JG, PC3JG-P, PC3JD, PC3JD-C, PC3J, PC3JL, PC2J, PC2JS, PC2JR</div> <div>PC2JC</div> <div>PC2J16P, PC2J16RR</div> |
| RS-232/RS-422 interface converter | RS-232/RS-422 interface converter                                                                                        |
| Link unit                         | <div>PC/CMP-LINK</div> <div>2PORT-LINK</div> <div>PC/CMP2-LINK</div>                                                     |

### 8.5.1 Connecting to PC3JG, PC3JD, PC3JD-C, PC3JG-P, PC3J, PC3JL, PC2J, PC2JS or PC2JR

#### ■ Communication settings

Make the communication settings using the PLC peripheral device (PCwin).

| Item                             | Set value                   |
|----------------------------------|-----------------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps, 38400bps |
| Data bit <sup>*1</sup>           | 8bits, 7bits                |
| Parity bit                       | Even (fixed)                |
| Stop bit <sup>*1</sup>           | 1bit, 2bits                 |
| Station No. <sup>*2</sup>        | 0 to 37 (Octal)             |
| 2-wire/4-wire type <sup>*3</sup> | 2-wire type or 4-wire type  |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Avoid duplication of the station No. with any of the other units.

<sup>\*3</sup> Make the settings referring to the following connection diagram.

 8.3.2 RS-422 cable

### 8.5.2 Connecting to PC2JC

#### ■ Communication settings

Make the communication settings using each setting switch.

For the detail settings, refer to the following manual.

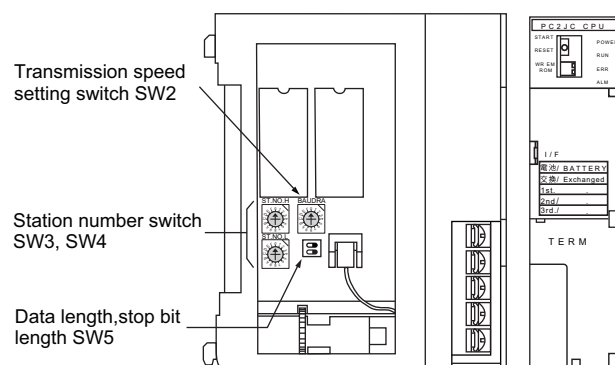
 JTEKT PLC user's manual

| Item                             | Set value         |
|----------------------------------|-------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps |
| Data bit <sup>*1</sup>           | 8bits, 7bits      |
| Stop bit <sup>*1</sup>           | 1bit, 2bits       |
| Station No. <sup>*1</sup>        | 0 to 37 (Octal)   |

<sup>\*1</sup> Adjust the settings with GOT settings.

#### ■ Settings by switch

Make the communication settings using each setting switch.



#### (1) Setting of the station No.

Set the station No. between 00 and 37 (Octal).

| Switch name | Station number setting |
|-------------|------------------------|
| SW3         | Upper digit            |
| SW4         | Lower digit            |

#### (2) Transmission speed settings

| Switch name | Switch position | Transmission speed (bps) |
|-------------|-----------------|--------------------------|
| SW2         | 1               | 19200                    |
|             | 2               | 9600                     |

#### (3) Settings of data length and stop bit length

| Switch name | Setting item    | Set value | Switch No. |     |
|-------------|-----------------|-----------|------------|-----|
|             |                 |           | 2          | 1   |
| SW5         | Data bit        | 8bits     | OFF        |     |
|             |                 | 7bits     | ON         |     |
|             | Stop bit length | 2bits     |            | OFF |
|             |                 | 1bit      |            | ON  |

## 8.5.3 Connecting to PC2J16P or PC2J16PR

### ■ Communication settings

Make the communication settings using each setting switch.

For the detail settings, refer to the following manual.

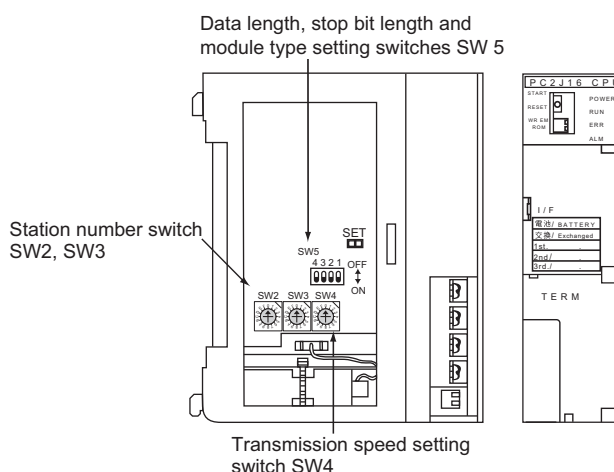
JTEKT PLC user's manual

| Item                             | Set value         |
|----------------------------------|-------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps |
| Data bit <sup>*1</sup>           | 8bits, 7bits      |
| Stop bit <sup>*1</sup>           | 1bit, 2bits       |
| Station No. <sup>*1</sup>        | 0 to 37 (Octal)   |
| Selection of module type         | Computer link     |

<sup>\*1</sup> Adjust the settings with GOT settings.

### ■ Settings by switch

Make the communication settings using each setting switch.



#### (1) Setting of the station No.

Set the station No. between 00 and 37 (Octal).

| Switch name | Station number setting |
|-------------|------------------------|
| SW2         | Upper digit            |
| SW3         | Lower digit            |

#### (2) Transmission speed settings

| Switch name | Switch position | Transmission speed (bps) |
|-------------|-----------------|--------------------------|
| SW4         | 1               | 19200                    |
|             | 2               | 9600                     |

#### (3) Settings of data length, stop bit length and module type

| Switch name | Setting item    | Set value     | Switch No. |     |     |
|-------------|-----------------|---------------|------------|-----|-----|
|             |                 |               | 4          | 3   | 2   |
| SW5         | Data bit        | 8bits         | OFF        |     |     |
|             |                 | 7bits         | ON         |     |     |
|             | Stop bit length | 2bits         |            | OFF |     |
|             |                 | 1bit          |            | ON  |     |
|             | Module type     | Computer link |            |     | OFF |

## 8.5.4 RS-232C/RS-422 interface converter setting

### ■ Communication settings

Make the communication settings by the setting switch of the RS-232C/RS-422 interface converter.

| Item                             | Set value                  |
|----------------------------------|----------------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps          |
| 2-wire/4-wire type <sup>*2</sup> | 2-wire type or 4-wire type |
| Echo back                        | OFF                        |

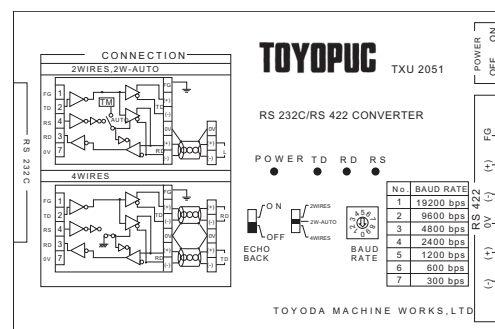
<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Set referring to the RS-422 connection diagram. For details, refer to the following.

8.3.2 RS-422 cable

### ■ Settings by switch

Make the communication settings by each setting switch of the RS-232C/RS-422 interface converter.



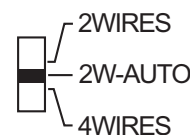
#### (1) Transmission speed settings

| Transmission speed (bps) | Switch position |
|--------------------------|-----------------|
| 9600                     | 2               |
| 19200                    | 1               |



#### (2) Mode setting switch

| Mode        | Switch position |
|-------------|-----------------|
| 2-wire type | 2W-AUTO         |
| 4-wire type | 4 WIRES         |



#### (3) Echoback setting switch

| Setting | Switch position |
|---------|-----------------|
| OFF     | OFF             |



## 8.5.5 Link unit setting

### ■ Communication settings

Make the communication settings using each setting switch of the link unit.

For the detail settings, refer to the following manual.

 User's Manual of the JTEKT link unit

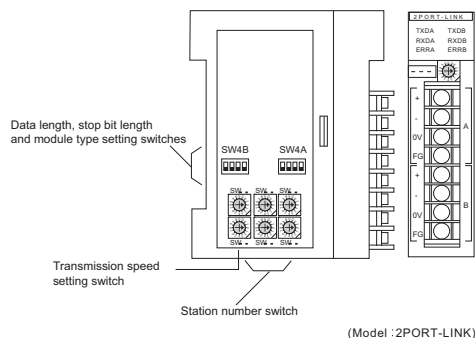
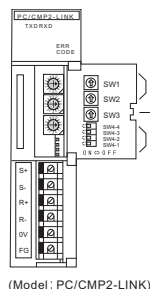
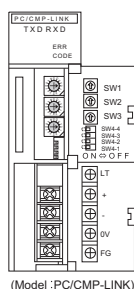
| Item                                                  | Set value                  |
|-------------------------------------------------------|----------------------------|
| Transmission speed <sup>*1</sup>                      | 9600bps, 19200bps          |
| Data bit <sup>*1</sup>                                | 8bits, 7bits               |
| Stop bit <sup>*1</sup>                                | 1bit, 2bits                |
| Station No. <sup>*1</sup>                             | 0 to 37 (Octal)            |
| Selection of module type                              | Computer link              |
| Selection of 2-wire type or 4-wire type <sup>*2</sup> | 2-wire type or 4-wire type |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Set referring to the RS-422 connection diagram. For details, refer to the following.

 8.3.2 RS-422 cable

### ■ Settings by switch



#### (1) Setting of the station No.

Set the station No. between 00 and 37 (Octal).

| Switch name | Station number setting |
|-------------|------------------------|
| SW1         | Upper digit            |
| SW2         | Lower digit            |

#### (2) Transmission speed settings

| Switch name | Switch position | Transmission speed (bps) |
|-------------|-----------------|--------------------------|
| SW3         | 2               | 9600                     |
|             | 1               | 19200                    |

#### (3) Data length, stop bit length, module type and 2-wire/4-wire type communication selection setting

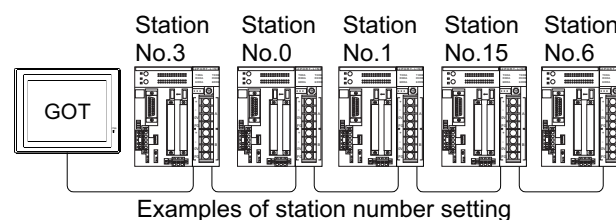
| Switch name | Setting item                                                  | Set value     | Switch No. |     |   |     |
|-------------|---------------------------------------------------------------|---------------|------------|-----|---|-----|
|             |                                                               |               | 4          | 3   | 2 | 1   |
| SW4         | Data bit                                                      | 8bits         | OFF        |     |   |     |
|             |                                                               | 7bits         | ON         |     |   |     |
|             | Stop bit length                                               | 2bits         |            | OFF |   |     |
|             |                                                               | 1bit          |            | ON  |   |     |
|             | Module type                                                   | PLC link unit |            |     |   | OFF |
|             |                                                               | Computer link |            |     |   | ON  |
|             | 2-wire type/4-wire type communication selection <sup>*1</sup> | 2-wire type   |            |     |   | OFF |
|             |                                                               | 4-wire type   |            |     |   | ON  |

<sup>\*1</sup> The setting is available only for the link unit (Model: PC/CMP2-LINK).

## 8.5.6 Station number setting

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



#### (1) Direct specification

Specify the station No. of the PLC to be changed when setting device.

| Specification range |
|---------------------|
| 00 to 37 (Octal)    |



## 8.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

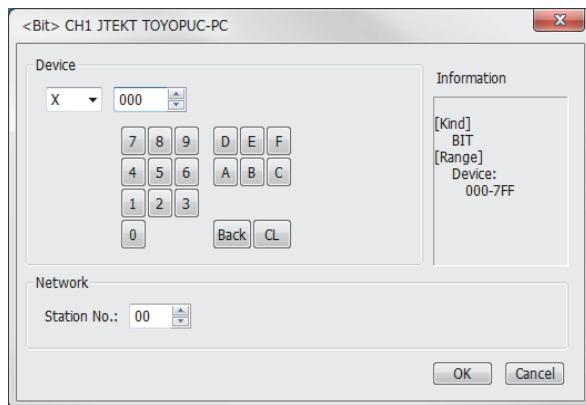
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



| Item        | Description                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |
|             | Program No. Sets the number of the program for which the device is set.                                                       |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |
| Network     | Set the monitor target of the set device.                                                                                     |
|             | Station No. Set this item when monitoring the PLC of the specified station No. (octal)                                        |

### POINT

Program number setting (when PC3JG, PC3J or PC3JD is used)

Setting of a program number is allowed for the devices indicated below.

Internal relay (M), keep relay (K), link relay (L), special relay (V), edge detection (P), timer (T), counter (C), data register (D), link register (R), special register (S), current value register (N)

### 8.6.1 JTEKT PLC (JTEKT TOYOPUC-PLC)

| Device name                                                                                      | Setting range                                                                        | Device No. representation |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------|
| Input (X) <sup>*1</sup>                                                                          | X000 to X7FF                                                                         | Hexadecimal               |
| Output (Y) <sup>*1</sup>                                                                         | Y000 to Y7FF                                                                         |                           |
| Link relay (L)                                                                                   | L000 to L7FF                                                                         |                           |
| Internal relay (M)                                                                               | M000 to M7FF                                                                         |                           |
| Keep relay (K)                                                                                   | K000 to K2FF                                                                         |                           |
| Edge detection (P)                                                                               | P000 to P1FF                                                                         |                           |
| Timer (T) <sup>*1</sup>                                                                          | T000 to T1FF                                                                         |                           |
| Counter (C) <sup>*1</sup>                                                                        | C000 to C1FF                                                                         |                           |
| Special relay (V)                                                                                | V000 to V0FF                                                                         |                           |
| Extended input (EX) <sup>*1</sup>                                                                | EX000 to EX7FF                                                                       |                           |
| Extended output (EY) <sup>*1</sup>                                                               | EY000 to EY7FF                                                                       |                           |
| Extended internal relay (EM)                                                                     | EM0000 to EM1FFF                                                                     |                           |
| Extended keep-relay (EK)                                                                         | EK000 to EKFFF                                                                       |                           |
| Extended special relay (EV)                                                                      | EV000 to EVFFF                                                                       |                           |
| Extended timer (ET) <sup>*1</sup>                                                                | ET000 to ET7FF                                                                       |                           |
| Extended counter (EC) <sup>*1</sup>                                                              | EC000 to EC7FF                                                                       |                           |
| Extended link relay (EL)                                                                         | EL0000 to EL1FFF                                                                     |                           |
| Extended edge detection (EP)                                                                     | EP000 to EPFFF                                                                       |                           |
| Extended input 2 (GX) <sup>*1*3</sup>                                                            | GX0000 to GXFFFF                                                                     | Hexadecimal               |
| Extended output 2 (GY) <sup>*1*3</sup>                                                           | GY0000 to GYFFFF                                                                     |                           |
| Extended internal relay (GM) <sup>*3</sup>                                                       | GM0000 to GMFFFF                                                                     |                           |
| The bit specification of the word device (except extended buffer register, setup value register) | Setting range of each word device                                                    |                           |
| Data register (D)                                                                                | D0000 to D2FFF                                                                       | Hexadecimal               |
| Link register (R)                                                                                | R0000 to R07FF                                                                       |                           |
| Current value register (N)                                                                       | N0000 to N01FF                                                                       |                           |
| Special register (S)                                                                             | S0000 to S03FF                                                                       |                           |
| File register (B)                                                                                | B0000 to B1FFF                                                                       |                           |
| Extended present value register (EN)                                                             | EN0000 to EN07FF                                                                     |                           |
| Extended setup value register (H)                                                                | H0000 to H07FF                                                                       |                           |
| Extended special register (ES)                                                                   | ES0000 to ES07FF                                                                     |                           |
| Extended data register (U)                                                                       | U0000 to U7FFF                                                                       |                           |
| Extended buffer register (EB) <sup>*3</sup>                                                      | EB00000 to EB07FFF<br>EB08000 to EB0FFFF<br>EB10000 to EB17FFF<br>EB18000 to EB1FFFF |                           |
| Setup value register (TCS) <sup>*2</sup>                                                         | TCS0000 to TCS01FF                                                                   |                           |
| The word specification of the bit device                                                         | Setting range of each bit device                                                     |                           |

- <sup>\*1</sup> Overlapped device designation of an input (X, EX, GX) and an output (Y, EY, GY), or a timer (T, ET) and a counter (C, EC) is not allowed. (Example: X0000 and Y0000, EX0000 and EY0000)
- <sup>\*2</sup> To store a setting value of T (timer) or C (counter), use TCS. Setting value of a timer and a counter is stored in TCS. (TCS cannot be used if a timer or a counter is not in a program.)
- <sup>\*3</sup> GX, GY, GM and EB can be used only in the PC3JG separate mode. Access to GX, GY, GM and EB through a link module is not possible.

## 8.7 Precautions

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### ■ Station No. settings of the PLC side

In the system configuration, the PLC with the station number set with the host address must be included. For details of host address setting, refer to the following.

 8.4.1 Setting communication interface  
(Communication settings)

### ■ GOT clock control

The GOT clock function is available only for the PLC with the station number set with the host address. For details of host address setting, refer to the following.

 8.4.1 Setting communication interface  
(Communication settings)

### ■ System configuration

If the system is configured by mixing the PC3J extended function compliant PLC with the PC3J extended function noncompliant PLC, normal communication may not be performed. Unify the PLCs into PC3J extended function compliant or PC3J extended function noncompliant to configure the system.

### ■ System alarm

The system alarm can be displayed only for the PLC set with a host address. When connected to the PC3J extended function compliant PLC, only the system alarm of program No. 1 can be displayed.

# 9

## CONNECTION TO SHARP PLC

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|     |                                        |        |
|-----|----------------------------------------|--------|
| 9.1 | Connectable Model List . . . . .       | 9 - 2  |
| 9.2 | System Configuration . . . . .         | 9 - 3  |
| 9.3 | Connection Diagram . . . . .           | 9 - 7  |
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| 9.5 | PLC Side Setting . . . . .             | 9 - 11 |
| 9.6 | Device Range that Can Be Set . . . . . | 9 - 15 |

## 9. CONNECTION TO SHARP PLC

### 9.1 Connectable Model List

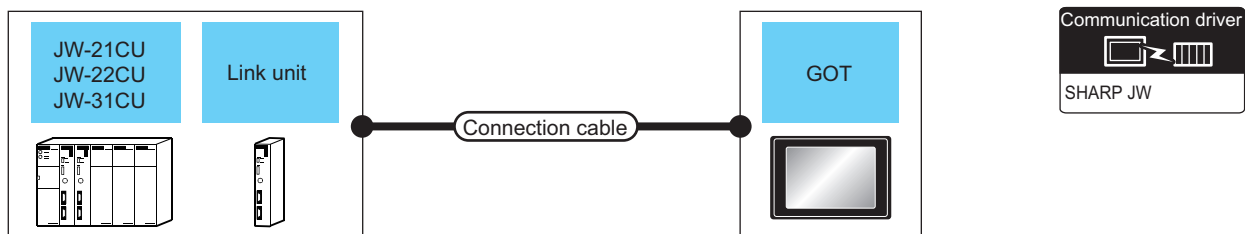
The following table shows the connectable models.

| Model name | Clock           | Communication Type | Connectable GOT                                                                    | Refer to                                                                                    |
|------------|-----------------|--------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| JW-21CU    | ×               | RS-422             |   |  9.2.1   |
| JW-22CU    | ○               | RS-232<br>RS-422   |                                                                                    |                                                                                             |
| JW-31CUH   | ×               | RS-422             |   |  9.2.2   |
| JW-32CUH   | ○               | RS-232             |                                                                                    |                                                                                             |
| JW-33CUH   | ○               | RS-422             |                                                                                    |                                                                                             |
| JW-50CUH   | ×               | RS-422             |   |  9.2.3   |
| JW-70CUH   | ○ <sup>*1</sup> | RS-232<br>RS-422   |                                                                                    |                                                                                             |
| JW-100CUH  | ○ <sup>*1</sup> |                    |                                                                                    |                                                                                             |
| JW-100CU   | ○               |                    |                                                                                    |                                                                                             |
| Z-512J     | ○               | RS-232<br>RS-422   |  |  9.2.4 |

\*1 When the link unit (ZW-10CM) is used in JW-70CUH/100CUH, the clock function is not available.

## 9.2 System Configuration

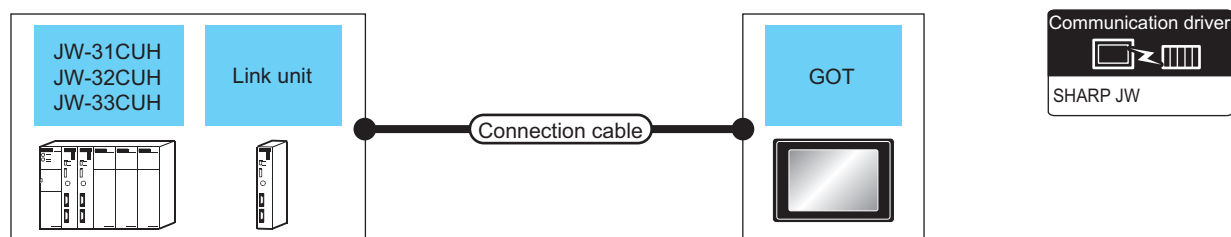
### 9.2.1 Connecting to JW-21CU or JW-22CU



| PLC                |                         |                    | Connection cable                                                                                                                                 |                                               | GOT                |       | Number of connectable equipment |
|--------------------|-------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-------|---------------------------------|
| Model name         | Link unit <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                                                                                                         | Max. distance                                 | Option device      | Model |                                 |
| JW-22CU            | -                       | RS-232             | GT09-C30R20601-15P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                     | Differs according to PLC side specifications. | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|                    |                         |                    |                                                                                                                                                  |                                               | GT15-RS2-9P        |       |                                 |
|                    |                         |                    | GT09-C30R40601-15P(3m)<br>GT09-C100R40601-15P(10m)<br>GT09-C200R40601-15P(20m)<br>GT09-C300R40601-15P(30m)<br>or<br>RS-422 connection diagram 1) | Differs according to PLC side specifications. | - (Built into GOT) |       |                                 |
|                    |                         |                    |                                                                                                                                                  |                                               | GT15-RS4-9S        |       |                                 |
| JW-21CU<br>JW-22CU | JW-21CM                 | RS-422             | GT09-C30R40603-6T(3m)<br>GT09-C100R40603-6T(10m)<br>GT09-C200R40603-6T(20m)<br>GT09-C300R40603-6T(30m)<br>or<br>RS-422 connection diagram 3)     | Differs according to PLC side specifications. | - (Built into GOT) |       |                                 |
|                    |                         |                    |                                                                                                                                                  |                                               | GT15-RS4-9S        |       |                                 |

<sup>\*1</sup> The link unit is a product manufactured by SHARP Corporation.  
For details of this product, contact SHARP Corporation.

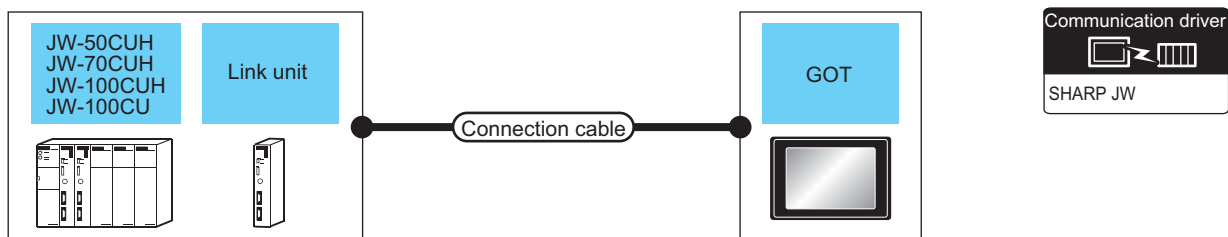
## 9.2.2 Connecting to JW-31CUH, JW-32CUH or JW-33CUH



| PLC                              |             |                    | Connection cable                                                                                                                                 |                                               | GOT               |       | Number of connectable equipment |
|----------------------------------|-------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------|-------|---------------------------------|
| Model name                       | Link unit*1 | Communication Type | Cable model<br>Connection diagram number                                                                                                         | Max. distance                                 | Option device     | Model |                                 |
| JW-32CUH<br>JW-33CUH             | -           | RS-232             | GT09-C30R20602-15P(3m)<br>or<br>RS-232 connection diagram 2)                                                                                     | Differs according to PLC side specifications. | -(Built into GOT) | <br>  | 1 GOT for 1 PLC                 |
|                                  |             |                    |                                                                                                                                                  |                                               | GT15-RS2-9P       |       |                                 |
|                                  |             | RS-422             | GT09-C30R40602-15P(3m)<br>GT09-C100R40602-15P(10m)<br>GT09-C200R40602-15P(20m)<br>GT09-C300R40602-15P(30m)<br>or<br>RS-422 connection diagram 2) | Differs according to PLC side specifications. | -(Built into GOT) | <br>  |                                 |
|                                  |             |                    |                                                                                                                                                  |                                               | GT15-RS4-9S       |       |                                 |
| JW-31CUH<br>JW-32CUH<br>JW-33CUH | JW-21CM     | RS-422             | GT09-C30R40603-6T(3m)<br>GT09-C100R40603-6T(10m)<br>GT09-C200R40603-6T(20m)<br>GT09-C300R40603-6T(30m)<br>or<br>RS-422 connection diagram 3)     | Differs according to PLC side specifications. | -(Built into GOT) | <br>  |                                 |
|                                  |             |                    |                                                                                                                                                  |                                               | GT15-RS4-9S       |       |                                 |

\*1 Use the link unit supporting JW-31CUH, JW-32CUH or JW-33CUH.  
The link unit is a product manufactured by SHARP Corporation.  
For details of this product, contact SHARP Corporation.

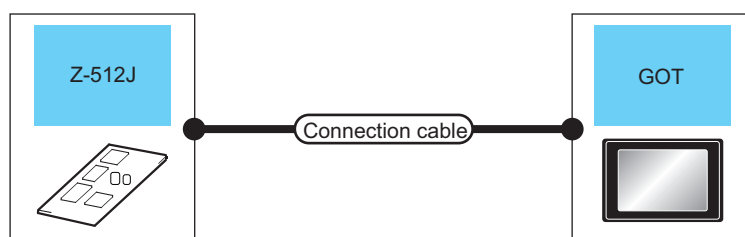
## 9.2.3 Connecting to JW-50CUH, JW-70CUH, JW-100CUH or JW-100CU



| PLC                                           |                         | Connection cable   |                                                                                                                                                  | Max. distance                                 | GOT                |       | Number of connectable equipment |
|-----------------------------------------------|-------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-------|---------------------------------|
| Model name                                    | Link unit <sup>*1</sup> | Communication Type | Cable model<br>Connection diagram number                                                                                                         |                                               | Option device      | Model |                                 |
| JW-70CUH<br>JW-100CUH<br>JW-100CU             | -                       | RS-232             | GT09-C30R20601-15P(3m)<br>or<br>RS-232 connection diagram 1)                                                                                     | Differs according to PLC side specifications. | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|                                               |                         |                    |                                                                                                                                                  |                                               | GT15-RS2-9P        |       |                                 |
|                                               |                         | RS-422             | GT09-C30R40601-15P(3m)<br>GT09-C100R40601-15P(10m)<br>GT09-C200R40601-15P(20m)<br>GT09-C300R40601-15P(30m)<br>or<br>RS-422 connection diagram 1) | Differs according to PLC side specifications. | - (Built into GOT) |       |                                 |
|                                               |                         |                    |                                                                                                                                                  |                                               | GT15-RS4-9S        |       |                                 |
| JW-50CUH<br>JW-70CUH<br>JW-100CUH<br>JW-100CU | JW-10CM<br>ZW-10CM      | RS-422             | GT09-C30R40603-6T(3m)<br>GT09-C100R40603-6T(10m)<br>GT09-C200R40603-6T(20m)<br>GT09-C300R40603-6T(30m)<br>or<br>RS-422 connection diagram 3)     | Differs according to PLC side specifications. | - (Built into GOT) |       |                                 |
|                                               |                         |                    |                                                                                                                                                  |                                               | GT15-RS4-9S        |       |                                 |

<sup>\*1</sup> The link unit is a product manufactured by SHARP Corporation.  
For details of this product, contact SHARP Corporation.

## 9.2.4 Connecting to Z-512J



| PLC        |                    | Connection cable                                                                                                                                                                                                                     | Max. distance                                 | GOT                |                                                                                                                                                                                                                                                                 | Number of connectable equipment |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                             |                                               | Option device      | Model                                                                                                                                                                                                                                                           |                                 |
| Z-512J     | RS-232             | GT09-C30R20602-15P(3m)<br>or<br> RS-232 connection diagram 2)                                                                                       | Differs according to PLC side specifications. | - (Built into GOT) |  <br>  | 1 GOT for 1 PLC                 |
|            |                    |                                                                                                                                                                                                                                      |                                               | GT15-RS2-9P        |                                                                                           |                                 |
|            | RS-422             | GT09-C30R40602-15P(3m)<br>GT09-C100R40602-15P(10m)<br>GT09-C200R40602-15P(20m)<br>GT09-C300R40602-15P(30m)<br>or<br> RS-422 connection diagram 2) | Differs according to PLC side specifications. | - (Built into GOT) |  <br> |                                 |
|            |                    |                                                                                                                                                                                                                                      |                                               | GT15-RS4-9S        |                                                                                       |                                 |



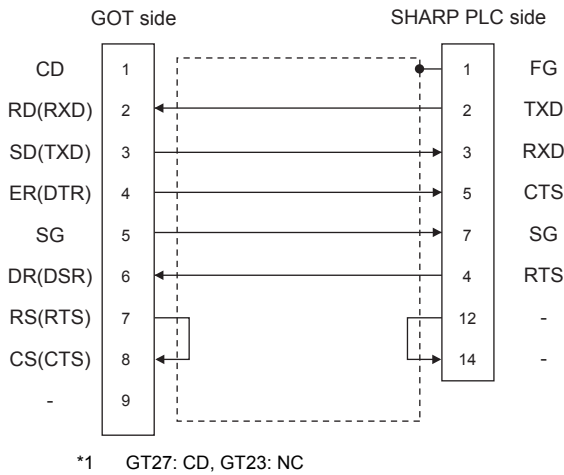
# 9.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

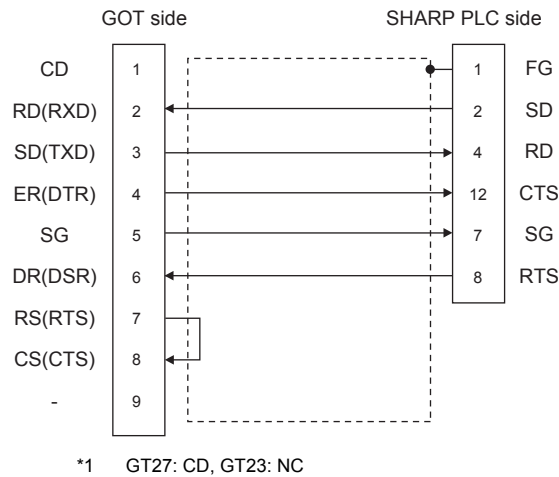
## 9.3.1 RS-232 cable

### ■ Connection diagram

#### (1) RS-232 connection diagram 1)



#### (2) RS-232 connection diagram 2)



### ■ Precautions when preparing a cable

#### (3) Cable length

The maximum length of the RS-232 cable differs according to the specifications of the SHARP PLC. For details, refer to the following manual.

➡ SHARP PLC user's Manual

#### (4) GOT side connector

For the GOT side connector, refer to the following.

➡ 1.4.1 GOT connector specifications

#### (5) SHARP PLC side connector

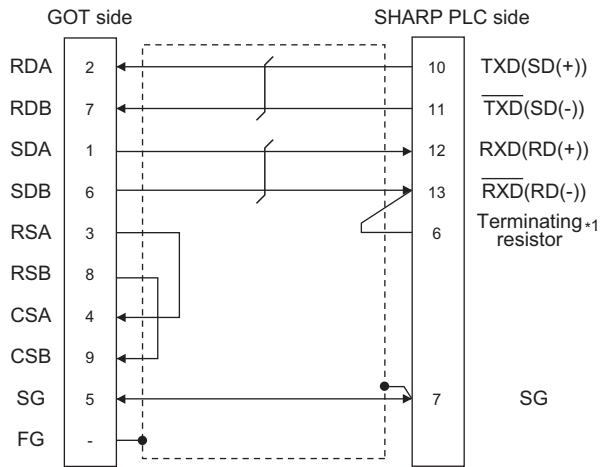
Use the connector compatible with the SHARP PLC side module.

For details, refer to the SHARP PLC user's manual.

## 9.3.2 RS-422 cable

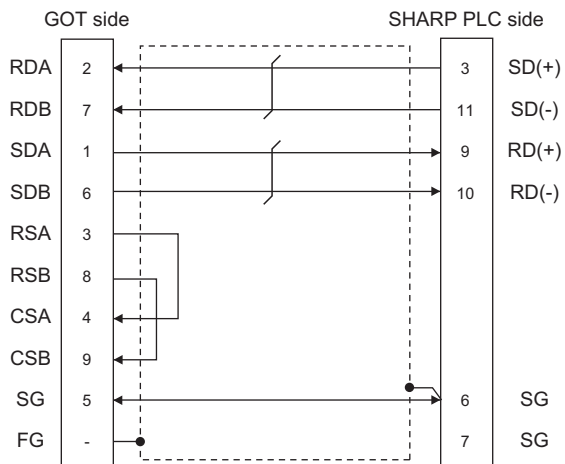
### ■ Connection diagram

#### (1) RS-422 connection diagram 1)

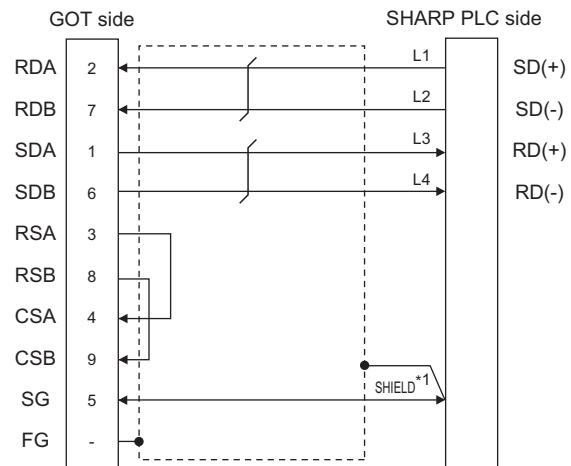


\*1 Connect the terminating resistor at pin 6 with pin 13 (RXD) only at the terminal station.  
(Valid for JW-70CUH and JW-100CUH. The terminating resistor does not exist in JW-22CU and JW-100CU.)

#### (2) RS-422 connection diagram 2)



#### (3) RS-422 connection diagram 3)



\*1 Two SHIELD terminals are provided for JW-10CM and ZW-10CM. Connect to either SHIELD terminal.

### ■ Precautions when preparing a cable

#### (4) Cable length

The maximum length of the RS-422 cable differs according to the specifications of the SHARP PLC. For details, refer to the following manual.

SHARP PLC user's Manual

#### (5) GOT side connector

For the GOT side connector, refer to the following.

1.4.1 GOT connector specifications

#### (6) SHARP PLC side connector

Use the connector compatible with the SHARP PLC side module.

For details, refer to the SHARP PLC user's manual.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "Disable".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) SHARP PLC side

Connect the terminating resistor on the SHARP PLC side when connecting a GOT to a SHARP PLC.

The PLC CPUs and the modules on the PLC CPU side requiring a terminating resistor are shown below.

#### (a) JW-22CU

Turn "ON" the terminating resistor setting switch (SW1) on the back of JW-22CU to validate the terminating resistor.

#### (b) JW-70CUH and JW-100CUH

Connect the pin 6 (terminating resistor) of the communication port connection connector with the pin 13 (RXD) only at the terminal station to validate the terminating resistor.

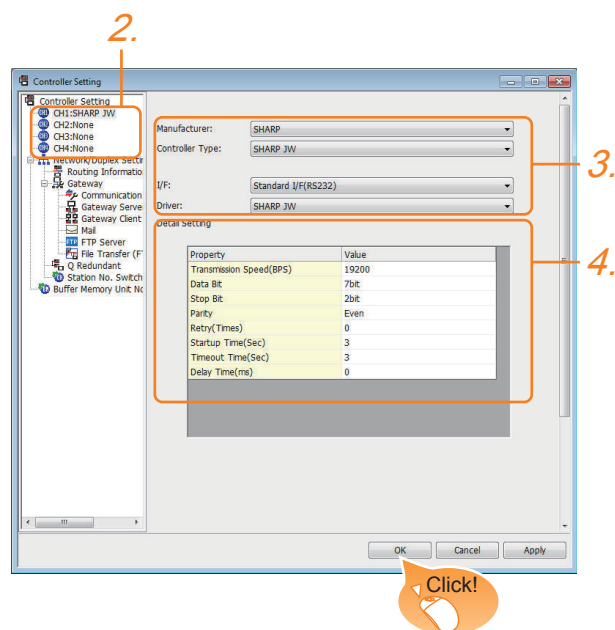
#### (c) JW-21CM, JW-10CM and ZW-10CM

Turn "ON" the terminator switch (SW7) on the front panel only at the terminal station to validate the terminating resistor.

## 9.4 GOT Side Settings

### 9.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: SHARP
  - Controller Type: SHARP JW
  - I/F: Interface to be used
  - Driver: SHARP JW
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 9.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 9.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 19200 |
| Data Bit                | 7 bit |
| Stop Bit                | 2 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Startup Time(Sec)       | 3     |
| Timeout Time(Sec)       | 3     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                                  | Range                      |
|--------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment.<br>(Default: 19200bps) | 4800bps, 9600bps, 19200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment.<br>(Default: 7bits)           | 7bit (fixed)               |
| Stop Bit           | Specify the stop bit length for communications.<br>(Default: 2bit)                                                           | 2bit (fixed)               |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication.<br>(Default: Even)           | Even (fixed)               |
| Retry              | Set the number of retries to be performed when a communication error occurs.<br>(Default: 0time)                             | 0 to 5times                |
| Startup Time       | Specify the time period from the GOT startup until GOT starts the communication with the PLC CPU.<br>(Default: 3sec)         | 3 to 30sec                 |
| Timeout Time*1     | Set the time period for a communication to time out.<br>(Default: 3sec)                                                      | 3 to 30sec                 |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT.<br>(Default: 0ms)                 | 0 to 300ms                 |

\*1 When connecting to the communication port, set "Delay Time" of the GOT side to 30ms or more.

#### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

➡ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

# 9.5 PLC Side Setting

## POINT

SHARP PLC  
For details of the SHARP PLC, refer to the following manual.  
SHARP PLC user's Manual

| Model name |                                     | Refer to |
|------------|-------------------------------------|----------|
| PLC CPU    | JW-22CU                             | 9.5.1    |
|            | JW-32CUH,<br>JW-33CUH               | 9.5.2    |
|            | JW-70CUH,<br>JW-100CUH,<br>JW-100CU | 9.5.1    |
|            | Z-512J                              | 9.5.2    |
|            |                                     |          |
| Link unit  | JW-21CM                             | 9.5.3    |
|            | JW-10CM,<br>ZW-10CM                 | 9.5.4    |
|            |                                     |          |

## 9.5.1 Connecting to JW-22CU, JW-70CUH, JW-100CUH or JW-100CU

### System memory setting

Set the system memory.

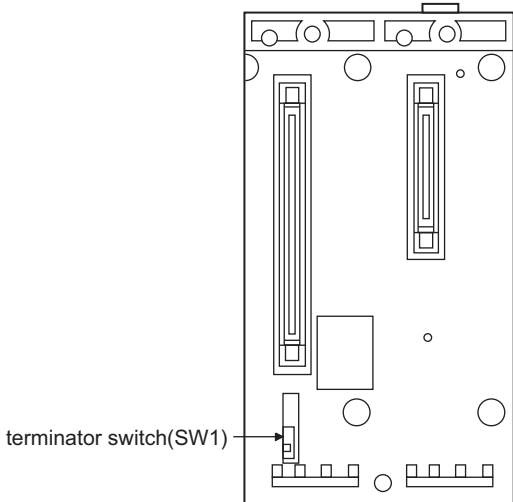
| System memory No. | Item                                    | Set value                                                                                                                                            |
|-------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| #236              | Transmission speed, parity and stop bit | D7 D6 D5 D4 D3 D2 to D0<br>0 0 (3) (2) (1)                                                                                                           |
|                   |                                         | (1) Transmission speed *1 *2<br>000: 19200bps<br>001: 9600bps<br>010: 4800bps<br>(2) Parity<br>10 (fixed): Even<br>(3) Stop bit<br>1 (fixed): 2 bits |
| #237              | Station No.                             | 1: Station No. 1 (fixed)                                                                                                                             |

- \*1 Indicates only the transmission speeds that can be set on the GOT side.  
\*2 Set the same transmission speed of the GOT. For the transmission speed setting on the GOT side, refer to the following.  
9.4.1 Setting communication interface (Communication settings)

### Terminating resistor setting switch (For JW-22CU only)

Set the terminating resistor setting switch.

(1) When using KV-L20R or KV-L20



| Settings                      |                                    |
|-------------------------------|------------------------------------|
| For RS-232 communication      | RS-422 communication               |
| OFF (no terminating resistor) | ON (terminating resistor attached) |

## 9.5.2 Connecting to JW-32CUH, JW-33CUH or Z-512J

### ■ Settings for connecting to communication port 1 (PG/COMM1 port)

Set the system memory.

| System memory No. | Item                                    | Set value                                                                                                                                            |
|-------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| #234              | Transmission speed, parity and stop bit | D7 D6 D5 D4 D3 D2 to D0<br>0 0 (3) (2) (1)                                                                                                           |
|                   |                                         | (1) Transmission speed *1 *2<br>000: 19200bps<br>001: 9600bps<br>010: 4800bps<br>(2) Parity<br>10 (fixed): Even<br>(3) Stop bit<br>1 (fixed): 2 bits |
| #235              | Station No.                             | 1: Station No. 1 (fixed)                                                                                                                             |

\*1 Indicates only the transmission speeds that can be set on the GOT side.

\*2 Set the same transmission speed of the GOT. For the transmission speed setting on the GOT side, refer to the following.

➞ 9.4.1 Setting communication interface (Communication settings)

### ■ Settings for connecting to communication port 2 (PG/COMM2 port)

Set the system memory.

| System memory No. | Item                                    | Set value                                                                                                                                            |
|-------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| #236              | Transmission speed, parity and stop bit | D7 D6 D5 D4 D3 D2 to D0<br>0 0 (3) (2) (1)                                                                                                           |
|                   |                                         | (1) Transmission speed *1 *2<br>000: 19200bps<br>001: 9600bps<br>010: 4800bps<br>(2) Parity<br>10 (fixed): Even<br>(3) Stop bit<br>1 (fixed): 2 bits |
| #237              | Station No.                             | 1: Station No. 1 (fixed)                                                                                                                             |

\*1 Indicates only the transmission speeds that can be set on the GOT side.

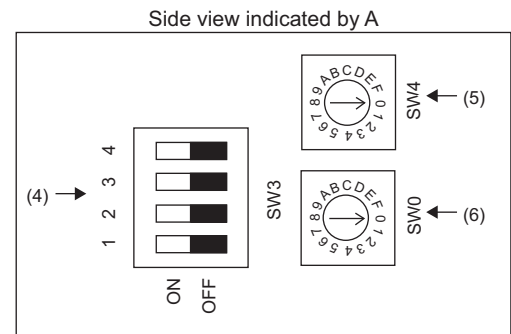
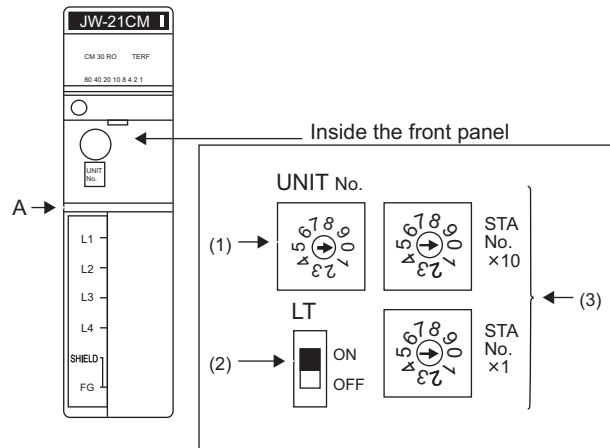
\*2 Set the same transmission speed of the GOT. For the transmission speed setting on the GOT side, refer to the following.

➞ 9.4.1 Setting communication interface (Communication settings)

## 9.5.3 Connecting to the link unit (JW-21CM)

### ■ Switch setting of the link unit (JW-21CM)

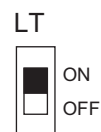
Make setting for each switch.



#### (1) Module No. switch (SW8)

The module No. switch is not used for communication with the GOT.

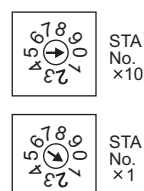
#### (2) Terminator switch (SW7)



| Settings | Setting details                |
|----------|--------------------------------|
| ON*1     | Terminating resistor validated |

\*1 Turn on only for the terminal station.

#### (3) Station number setting switch (SW1, SW2)



| Switch No. | Settings                                        | Setting details |
|------------|-------------------------------------------------|-----------------|
| SW1        | Station No. lower digit (10 <sup>0</sup> digit) | 1 (fixed)       |
| SW2        | Station No. upper digit (10 <sup>1</sup> digit) | 0 (fixed)       |

(4) Operation mode setting switch(SW3)

| Switch No. | Settings    | Setting details |
|------------|-------------|-----------------|
| SW3-1      | OFF (fixed) | Invalid         |
| SW3-2      | ON (fixed)  | 4-wire type     |
| SW3-3      | OFF (fixed) | Invalid         |
| SW3-4      | ON (fixed)  | Even            |

(5) Transmission speed setting switch (SW4)

Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side,  
refer to the following.

9.4.1 Setting communication interface  
(Communication settings)

| Setting <sup>*1</sup> | Setting details |
|-----------------------|-----------------|
| 0                     | 19200bps        |
| 1                     | 9600bps         |
| 2                     | 4800bps         |

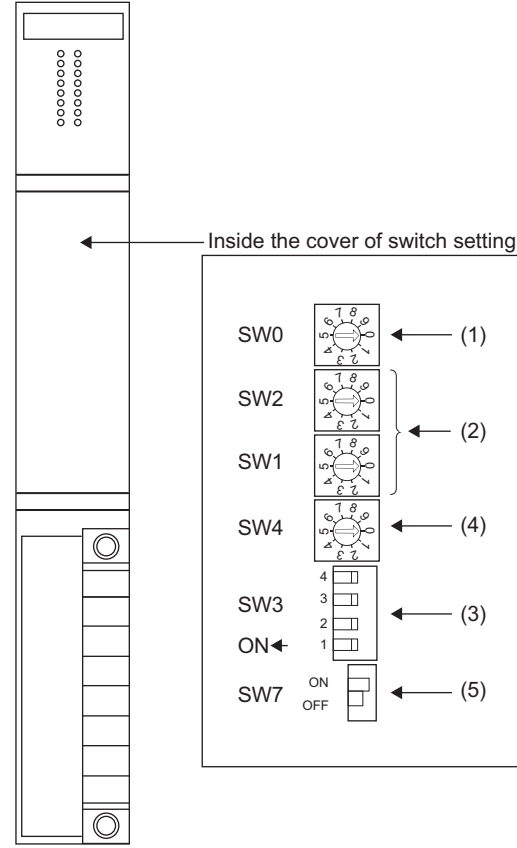
<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.

(6) Function setting switch(SW0)

| Settings  | Setting details |
|-----------|-----------------|
| 4 (fixed) | Computer link   |

9.5.4 Connecting to the link unit  
(JW-10CM or ZW-10CM)

Switch setting of link unit (JW-10CM and ZW-10CM)



(1) Function setting switch(SW0)

| Settings  | Setting details                 |
|-----------|---------------------------------|
| 4 (fixed) | Computer link<br>(command mode) |

(2) Station number switch(SW1,SW2)

| Switch No. | Settings                                              | Setting details |
|------------|-------------------------------------------------------|-----------------|
| SW2        | Station No.<br>lower digit<br>(10 <sup>0</sup> digit) | 1 (fixed)       |
| SW1        | Station No.<br>upper digit<br>(10 <sup>1</sup> digit) | 0 (fixed)       |

(3) Operation mode setting switch(SW3)

| Switch No. | Settings    | Setting details |
|------------|-------------|-----------------|
| SW3-1      | OFF (fixed) | Invalid         |
| SW3-2      | ON (fixed)  | 4-wire type     |
| SW3-3      | OFF (fixed) | Invalid         |
| SW3-4      | ON (fixed)  | Even            |

- (4) Transmission speed setting switch (SW4)  
 Set the same transmission speed of the GOT.  
 For the transmission speed setting on the GOT side,  
 refer to the following.

 9.4.1 Setting communication interface  
 (Communication settings)

SW4



| Setting <sup>*1</sup> | Setting details |
|-----------------------|-----------------|
| 0                     | 19200bps        |
| 1                     | 9600bps         |
| 2                     | 4800bps         |

<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.

- (5) Terminator switch(SW7)

SW7

ON

OFF



| Settings         | Setting details                |
|------------------|--------------------------------|
| ON <sup>*2</sup> | Terminating resistor validated |

<sup>\*2</sup> Set to ON only for the terminal station.



## 9.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

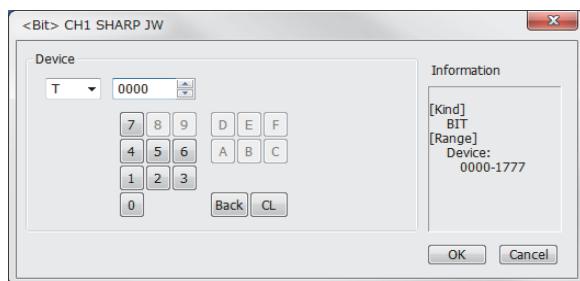
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



| Item        | Description                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number. The bit number can be set only when specifying the bit of word device. |
| Information | Displays the device type and setting range which are selected in [Device].                                                 |

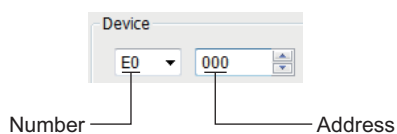
### POINT

#### (1) Device settings of SHARP PLC

##### (a) When setting a register as a bit device

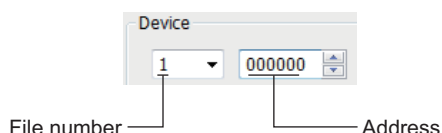
###### • Registers

Set the type (first 2 digits) and the address.



###### • File register

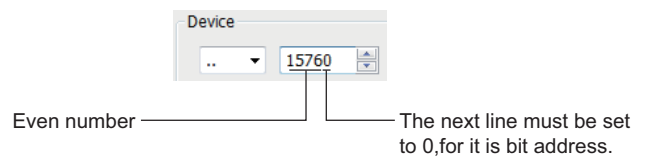
Set the file number and the address.



##### (b) When setting a register and memory as a word device.

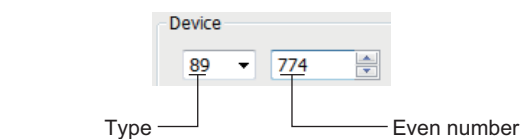
###### • I/O relay

Set a combination of the device address (multiple of 16)+bit address format (fixed to 0).



###### • Registers and file register

Set the device address (multiple of 16).



#### (2) Monitoring the timer (T) and the counter (C)

##### (a) Address setting

Be sure not to set the same address range for the timer (T) and the counter (C). Even if these addresses are overlapped, GOT displays no error.

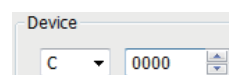
GOT monitors them according to the address instead of the device name. Therefore, if a device which is invalid for the SHARP PLC side parameter is set using GT Designer3, GOT monitors other device (a device corresponding to the address range of the set device).

Example:

Content in SHARP PLC parameter setting

T0000 to T1000  
C1001 to C1777

Content in GT Designer3 parameter setting



Even if GT Designer3 is set to "C0000", GOT will also monitor "T0000".

##### (b) Contact writing into timer (T) and the counter (C)

Writing the contact for the timer (T) and the counter (C) can only be done while the CPU is in RUN (while the timer and counter is in operation).

## 9.6.1 SHARP PLC (SHARP JW)

| Device name |                                          | Setting range                            | Device No. representation |
|-------------|------------------------------------------|------------------------------------------|---------------------------|
| Bit device  | I/O relay                                | ..00000 to ..15777<br>..20000 to ..75777 | Octal                     |
|             | Timer (Contact) (T)                      | T0000 to T1777                           |                           |
|             | Counter (Contact) (C)                    | C0000 to C1777                           |                           |
|             | The bit specification of the word device | Setting range of each word device        | -                         |
| Word device | Timer (Current value) (T)                | T0000 to T1777                           | Octal                     |
|             | Counter (Current value) (C)              | C0000 to C1777                           |                           |
|             | Register (09 to E7)                      | 09000 to 09776                           |                           |
|             |                                          | 19000 to 19776                           |                           |
|             |                                          | 29000 to 29776                           |                           |
|             |                                          | 39000 to 39776                           |                           |
|             |                                          | 49000 to 49776                           |                           |
|             |                                          | 59000 to 59776                           |                           |
|             |                                          | 69000 to 69776                           |                           |
|             |                                          | 79000 to 79776                           |                           |
|             |                                          | 89000 to 89776                           |                           |
|             |                                          | 99000 to 99776                           |                           |
|             |                                          | E0000 to E0776                           |                           |
|             |                                          | E1000 to E1776                           |                           |
|             |                                          | E2000 to E2776                           |                           |
|             |                                          | E3000 to E3776                           |                           |
|             |                                          | E4000 to E4776                           |                           |
|             |                                          | E5000 to E5776                           |                           |
|             |                                          | E6000 to E6776                           |                           |
|             |                                          | E7000 to E7776                           |                           |
|             | File register (1 to 7)                   | 1000000 to 1177776                       |                           |
|             |                                          | 2000000 to 2177776                       |                           |
|             |                                          | 3000000 to 3177776                       |                           |
|             |                                          | 4000000 to 4177776                       |                           |
|             |                                          | 5000000 to 5177776                       |                           |
|             |                                          | 6000000 to 6177776                       |                           |
|             |                                          | 7000000 to 7177776                       |                           |

# 10

## CONNECTION TO SHINKO TECHNOS INDICATING CONTROLLER

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|                                               |         |
|-----------------------------------------------|---------|
| 10.1 Connectable Model List .....             | 10 - 2  |
| 10.2 System Configuration .....               | 10 - 4  |
| 10.3 Connection Diagram .....                 | 10 - 9  |
| 10.4 GOT Side Settings .....                  | 10 - 15 |
| 10.5 Indicating Controller Side Setting ..... | 10 - 16 |
| 10.6 Device Range that Can Be Set .....       | 10 - 18 |
| 10.7 Precautions .....                        | 10 - 19 |

## 10. CONNECTION TO SHINKO TECHNOS INDICATING CONTROLLER

## 10.1 Connectable Model List

The following table shows the connectable models.

| Series                       | Model name                      | Clock | Communication Type | Connectable GOT                                                                                                                                                                                                                                                | Refer to                                                                                     |
|------------------------------|---------------------------------|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| ACS-13A Series               | ACS-13A□/□,□, C5 <sup>*2</sup>  | ×     | RS-232<br>RS-485   |          |  10.2.1   |
| JC Series                    | JCS-33A-□/□□, C5 <sup>*2</sup>  | ×     | RS-232<br>RS-485   |          |  10.2.1   |
|                              | JCR-33A-□/□□, C5 <sup>*2</sup>  |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
|                              | JCD-33A-□/□□, C5 <sup>*2</sup>  |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
| JCM-33A Series               | JCM-33A□/□,□ C5 <sup>*2</sup>   | ×     | RS-232<br>RS-485   |          |  10.2.1   |
| JIR-301-M Series             | JIR-301-M□, C5 <sup>*2</sup>    | ×     | RS-232<br>RS-485   |          |  10.2.1   |
| PCD-300 Series               | PCD-33A-□/M, C5 <sup>*2</sup>   | ×     | RS-232<br>RS-485   |       |  10.2.1  |
| PC-900 Series                | PC935-□/M, C5 <sup>*2</sup>     | ×     | RS-232<br>RS-485   |    |  10.2.1 |
|                              | PC955-□/M, C5 <sup>*2</sup>     |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
|                              | PC935-□/M, C <sup>*1</sup>      | ×     | RS-232             |    |  10.2.2 |
|                              | PC955-□/M, C <sup>*1</sup>      |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
| FCD-100 Series <sup>*1</sup> | FCD-13A-□/M, C                  | ×     | RS-232             |    |  10.2.2 |
|                              | FCD-15A-□/M, C                  |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
| FCR-100 Series <sup>*1</sup> | FCR-13A-□/M, C                  | ×     | RS-232             |    |  10.2.2 |
|                              | FCR-15A-□/M, C                  |       |                    |                                                                                                                                                                                                                                                                |                                                                                              |
| FCR-23A Series <sup>*1</sup> | FCR-23A-□/M, C                  | ×     | RS-232             |    |  10.2.2 |
|                              | FCR-23A-□/M, C5                 |       |                    |    |                                                                                              |
| FIR Series <sup>*1</sup>     | FIR-201-M, C                    | ×     | RS-232             |    |  10.2.2 |
| DCL-33A Series               | DCL-33A-□/M,□, C5 <sup>*2</sup> | ×     | RS-232<br>RS-485   |    |  10.2.3 |

\*1 Only the indicating controller equipped with RS-232 communication function can be connected.

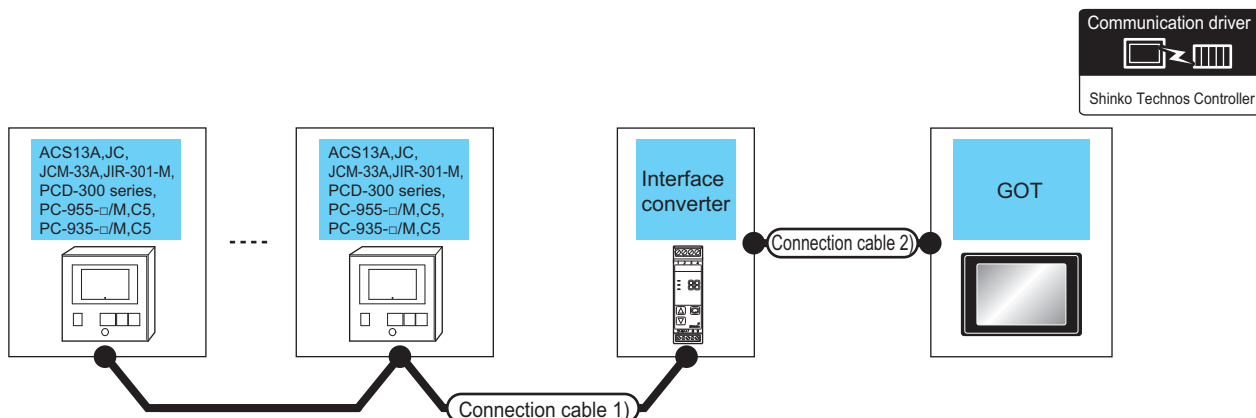
\*2 The indicating controller of the following version or later can be connected.

| Series           | Model name       | Version                                                                                                                                                                                                                               |
|------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACS-13A Series   | ACS-13A□/□□,C5   | Products manufactured in October 2007 or later<br>(Indicating controllers with the serial numbers 07Axxxxxx, 07Kxxxxxx, and 07Xxxxxxx or later)<br>(The first two digits of the serial numbers show the last two digits of the year.) |
| JC Series        | JCS-33A-□/□□,C5  |                                                                                                                                                                                                                                       |
|                  | JCR-33A-□/□□,C5  |                                                                                                                                                                                                                                       |
|                  | JCD-33A-□/□□,C5  |                                                                                                                                                                                                                                       |
| JCM-33A Series   | JCM-33A-□/□□,C5  |                                                                                                                                                                                                                                       |
| JIR-301-M Series | JIR-301-M□,C5    |                                                                                                                                                                                                                                       |
| PCD-300 Series   | PCD-33A-□/M,C5   |                                                                                                                                                                                                                                       |
| PC-900 Series    | PC935-□/M,C5     |                                                                                                                                                                                                                                       |
|                  | PC955-□/M,C5     |                                                                                                                                                                                                                                       |
| DCL-33A Series   | DCL-33A-□/M,□,C5 |                                                                                                                                                                                                                                       |

## 10.2 System Configuration

### 10.2.1 Connecting to ACS-13A, JC, JCM-33A, JIR-301-M, PCD-300 Series, PC-900 Series (PC-955-[ ]/M,C5, PC-935-[ ]/M,C5)

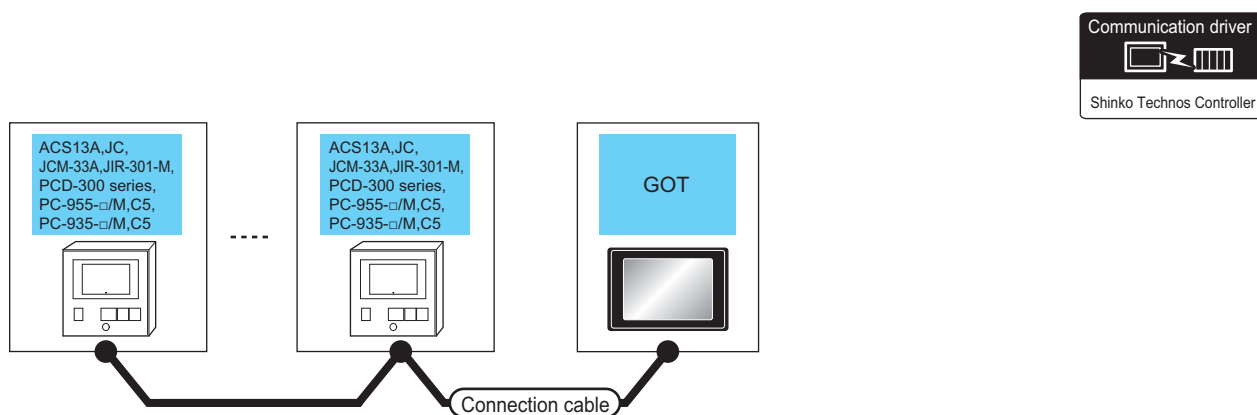
- For the RS-232 connection (via interface converter)



| Indicating controller                                                                        |                    | Connection cable 1)                          |               | Communication converter*1 | Connection cable 2)                      |               | GOT                                   |                                         | Number of connectable equipment     |
|----------------------------------------------------------------------------------------------|--------------------|----------------------------------------------|---------------|---------------------------|------------------------------------------|---------------|---------------------------------------|-----------------------------------------|-------------------------------------|
| Model name                                                                                   | Communication Type | Cable model<br>Connection diagram number     | Max. distance |                           | Cable model<br>Connection diagram number | Max. distance | Option device                         | Model                                   |                                     |
| ACS13A<br>JC<br>JCM-33A<br>JIR-301-M<br>PCD-300 Series<br>PC-955-[ ]/M,C5<br>PC-935-[ ]/M,C5 | RS-232             | (User pressing) RS-485 connection diagram 1) | 1,200m        | IF-400                    | RS-232C CFP-C2*1                         | 15m           | - (Built into GOT)<br><br>GT15-RS2-9P | GT 27 GT 25<br>GT 23<br><br>GT 27 GT 25 | 31 indicating controllers for 1 GOT |

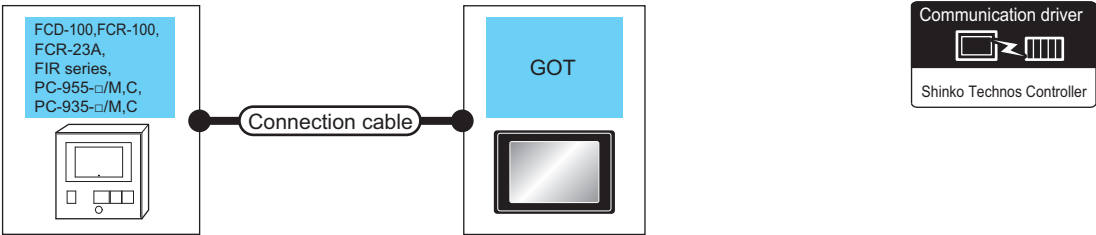
\*1 The communication converter is a product manufactured by Shinko Technos Co., Ltd. For details of the product, contact Shinko Technos Co., Ltd.

■ For the RS-485 connection



| Indicating controller                                                                    |                    | Connection cable                         |               | GOT                                                                       |       | Number of connectable equipment     |
|------------------------------------------------------------------------------------------|--------------------|------------------------------------------|---------------|---------------------------------------------------------------------------|-------|-------------------------------------|
| Model name                                                                               | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device                                                             | Model |                                     |
| ACS13A<br>JC<br>JCM-33A<br>JIR-301-M<br>PCD-300 Series<br>PC-955-□/M,C5<br>PC-935-□/M,C5 | RS-485             | RS-485 connection diagram 7)             | 500m          | - (Built into GOT)                                                        | <br>  | 31 indicating controllers for 1 GOT |
|                                                                                          |                    | RS-485 connection diagram 2)             | 500m          | GT15-RS4-TE                                                               |       |                                     |
|                                                                                          |                    | RS-485 connection diagram 6)             | 500m          | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) | <br>  |                                     |

10.2.2 Connecting to FCD-100, FCR-100, FCR-23A, FIR Series, PC-900 Series (PC-955[ ]/M,C, PC-935-[ ]/M,C)



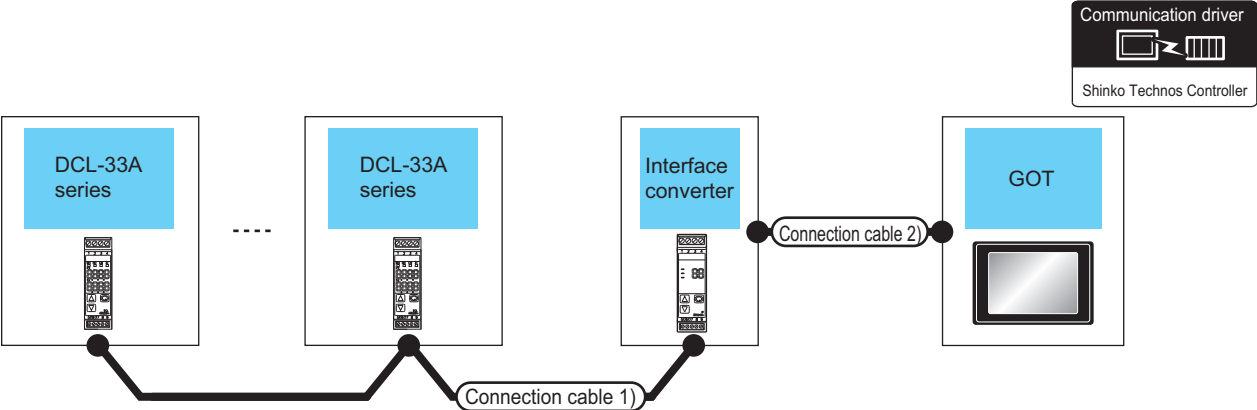
| Indicating controller*1                                                     |                    | Connection cable                                                                                                                              |               | GOT                |                                                                                                                                                                                                                                                                | Number of connectable equipment     |
|-----------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Model name                                                                  | Communication Type | Cable model<br>Connection diagram number                                                                                                      | Max. distance | Option device      | Model                                                                                                                                                                                                                                                          |                                     |
| FCD-100<br>FCR-100<br>FCR-23A<br>FIR Series<br>PC-955-□/M,C<br>PC-935-□/M,C | RS-232             | GT09-C30R21401-4T(3m)<br>or<br> RS-232 connection diagram 1) | 15m           | - (Built into GOT) |  <br> | 31 indicating controllers for 1 GOT |
|                                                                             |                    |                                                                                                                                               |               | GT15-RS2-9P        |                                                                                          |                                     |

\*1 Only the indicating controller equipped with RS-232 communication function can be connected.



10.2.3 When connecting to DCL-33A Series

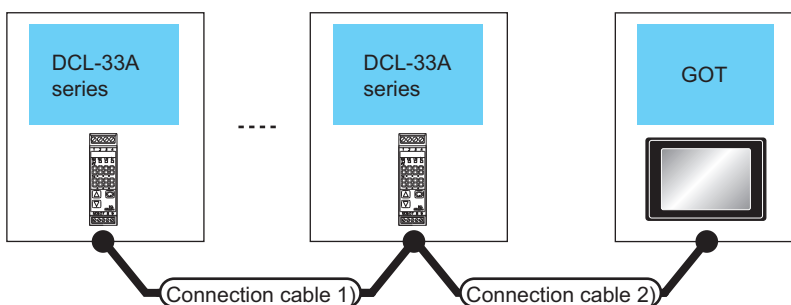
■ For the RS-232 connection (via communication converter)



| Indicating controller |                           | Connection cable 1)                         |                  | Communi<br>cation<br>converter<br>*1 | Connection cable 2)                         |                      | GOT                |       | Number of<br>connectable<br>equipment  |
|-----------------------|---------------------------|---------------------------------------------|------------------|--------------------------------------|---------------------------------------------|----------------------|--------------------|-------|----------------------------------------|
| Model<br>name         | Commun<br>ication<br>Type | Cable model<br>Connection<br>diagram number | Max.<br>distance |                                      | Cable model<br>Connection diagram<br>number | Max.<br>dista<br>nce | Option device      | Model |                                        |
| DCL-33A<br>Series     | RS-232                    | RS485-CPP *1                                | 1,200m           | IF-400                               | RS-232CCFP-C2 *1                            | 15m                  | - (Built into GOT) |       | 31 indicating<br>controllers for 1 GOT |
|                       |                           |                                             |                  |                                      |                                             |                      | GT15-RS2-9P        |       |                                        |

\*1 Product manufactured by Shinko Technos Co., Ltd. For details of the product, contact Shinko Technos Co., Ltd.

■ For the RS-485 connection



| Indicating controller |                    | Connection cable 1)                      | Connection cable 2)                                                                                              | Max. distance | GOT                                                                       |                                                                                                                                                                                                                                                                      | Number of connectable equipment     |
|-----------------------|--------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Model name            | Communication Type | Cable model<br>Connection diagram number | Cable model<br>Connection diagram number                                                                         |               | Option device                                                             | Model                                                                                                                                                                                                                                                                |                                     |
| DCL-33A Series        | RS-485             | RS-485 CPP*1                             |  RS-485 connection diagram 5)   | 500m          | - (Built into GOT)                                                        |  <br>       | 31 indicating controllers for 1 GOT |
|                       |                    |                                          |  RS-485 connection diagram 3) | 500m          | GT15-RS4-TE                                                               |                                                                                              |                                     |
|                       |                    |                                          |  RS-485 connection diagram 4) | 500m          | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) |  <br> |                                     |

\*1 Product manufactured by Shinko Technos Co., Ltd. For details of the product, contact Shinko Technos Co., Ltd.

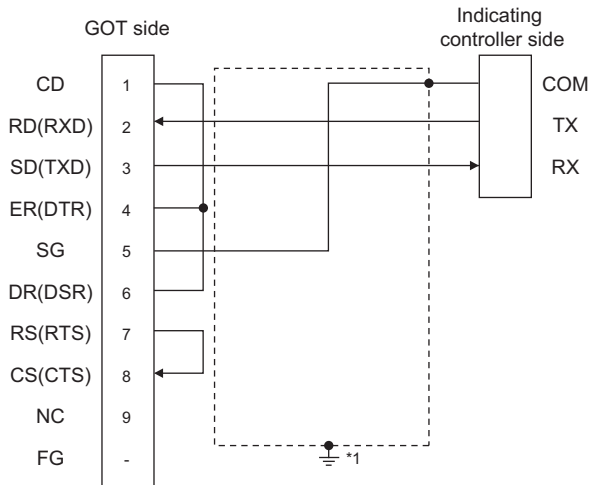
# 10.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

## 10.3.1 RS-232 cable

### ■ Connection diagram

(1) RS-232 connection diagram 1)



\*1 Connect FG grounding to the appropriate part of a cable shield line.

### ■ Precautions when preparing a cable

(2) Cable length

The length of the RS-232 cable must be 15m or less.

(3) GOT side connector

For the GOT side connector, refer to the following.

➡ 1.4.1 GOT connector specifications

(4) Shinko Technos indicating controller side connector

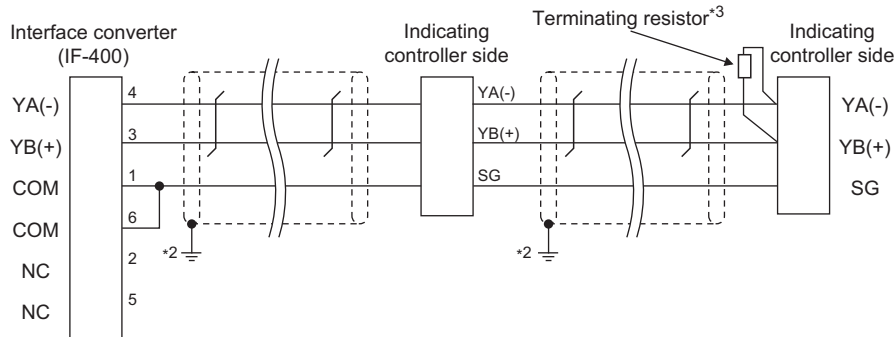
Use the connector compatible with the Shinko Technos indicating controller side.

For details, refer to the user's manual of the Shinko Technos indicating controller.

## 10.3.2 RS-485 cable

### ■ Connection diagram

#### (1) RS-485 connection diagram 1)



\*1 Pin No. of communication converter differs depending on the model.  
Refer to the following table.

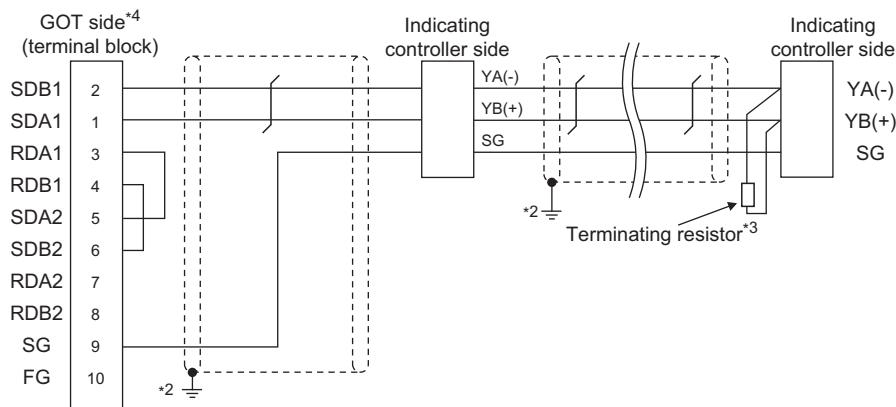
\*2 Connect FG grounding to the appropriate part of a cable shield line.

\*3 For details of the terminating resistor specifications, refer to the following manual.

User's Manual of the Shinko Technos indicating controller

| Signal name | Model of indicating controller |         |         |         |           |         |         |         |         |
|-------------|--------------------------------|---------|---------|---------|-----------|---------|---------|---------|---------|
|             | JCS-33A                        | JCR-33A | JCD-33A | JCM-33A | JIR-301-M | ACS-13A | PCD-33A | PC-955  | PC-935  |
|             | Pin No.                        | Pin No. | Pin No. | Pin No. | Pin No.   | Pin No. | Pin No. | Pin No. | Pin No. |
| YA(-)       | 13                             | 11      | 11      | 10      | 11        | 16      | 11      | 11      | 11      |
| YB(+)       | 14                             | 14      | 14      | 13      | 14        | 17      | 14      | 12      | 12      |
| SG          | 15                             | 17      | 17      | 14      | 17        | 18      | 17      | 16      | 16      |

#### (2) RS-485 connection diagram 2)



\*1 Pin No. of communication converter differs depending on the model.  
Refer to the following table.

\*2 Connect FG grounding to the appropriate part of a cable shield line.

\*3 For details of the terminating resistor specifications, refer to the following manual.

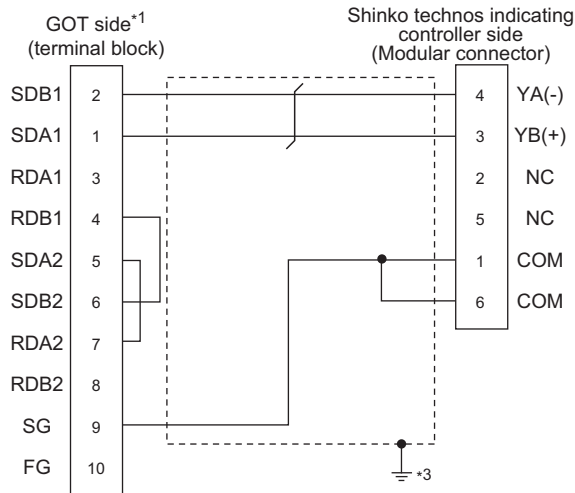
User's Manual of the Shinko Technos indicating controller

\*4 Set the terminating resistor of GOT side which will be a terminal.

■ Connecting terminating resistors

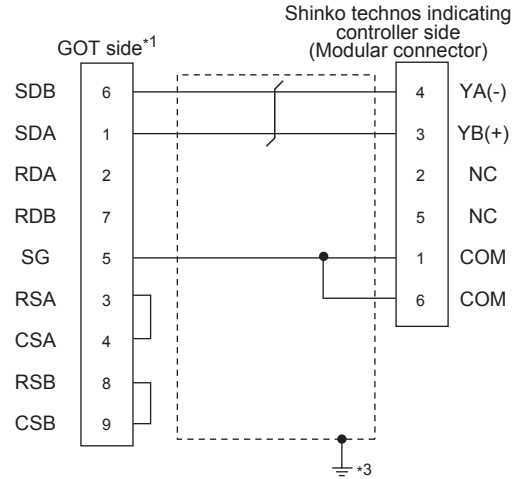
| Signal name | Model of indicating controller |         |         |         |           |         |         |         |         |
|-------------|--------------------------------|---------|---------|---------|-----------|---------|---------|---------|---------|
|             | JCS-33A                        | JCR-33A | JCD-33A | JCM-33A | JIR-301-M | ACS-13A | PCD-33A | PC-955  | PC-935  |
|             | Pin No.                        | Pin No. | Pin No. | Pin No. | Pin No.   | Pin No. | Pin No. | Pin No. | Pin No. |
| YA(-)       | 13                             | 11      | 11      | 10      | 11        | 16      | 11      | 11      | 11      |
| YB(+)       | 14                             | 14      | 14      | 13      | 14        | 17      | 14      | 12      | 12      |
| SG          | 15                             | 17      | 17      | 14      | 17        | 18      | 17      | 16      | 16      |

(3) RS-485 connection diagram 3)



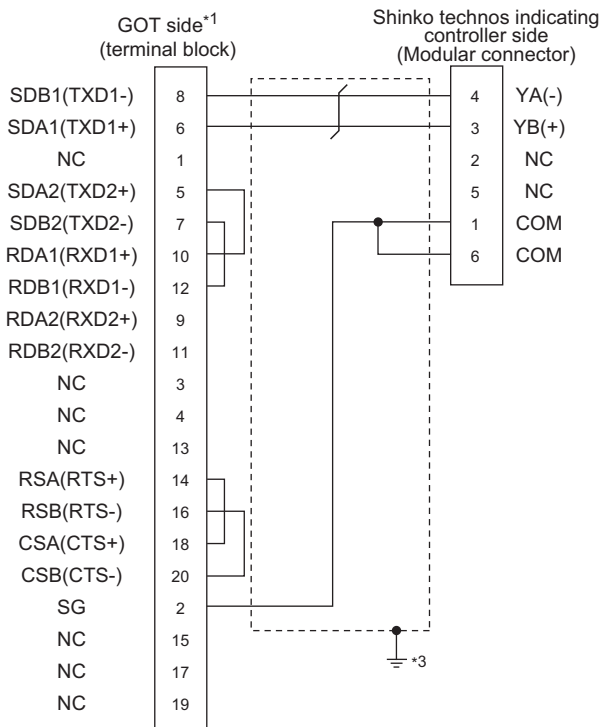
- \*1 Set the terminating resistor of The GOT side.  
 ■ Connecting terminating resistors
- \*2 For details of the pin assignment, refer to the following manual.  
 User's Manual of the Shinko Technos indicating controller
- \*3 Connect FG grounding to the appropriate part of a cable shield line.

(5) RS-485 connection diagram 5)



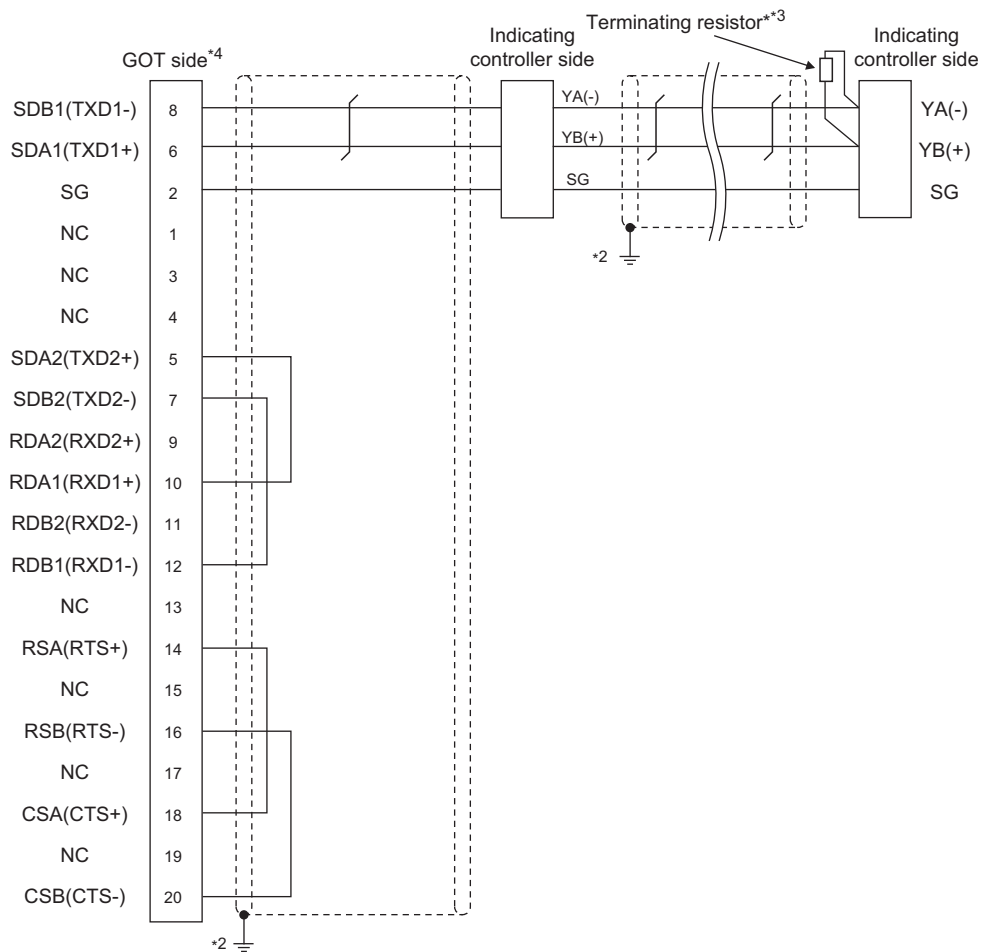
- \*1 Set the terminating resistor of GOT side.  
 ■ Connecting terminating resistors
- \*2 For details of the pin assignment, refer to the following manual.  
 User's Manual of the Shinko Technos indicating controller
- \*3 Connect FG grounding to the appropriate part of a cable shield line.

(4) RS-485 connection diagram 4)



- \*1 Set the terminating resistor of GOT side.  
 ■ Connecting terminating resistors
- \*2 For details of the pin assignment, refer to the following manual.  
 User's Manual of the Shinko Technos indicating controller
- \*3 Connect FG grounding to the appropriate part of a cable shield line.

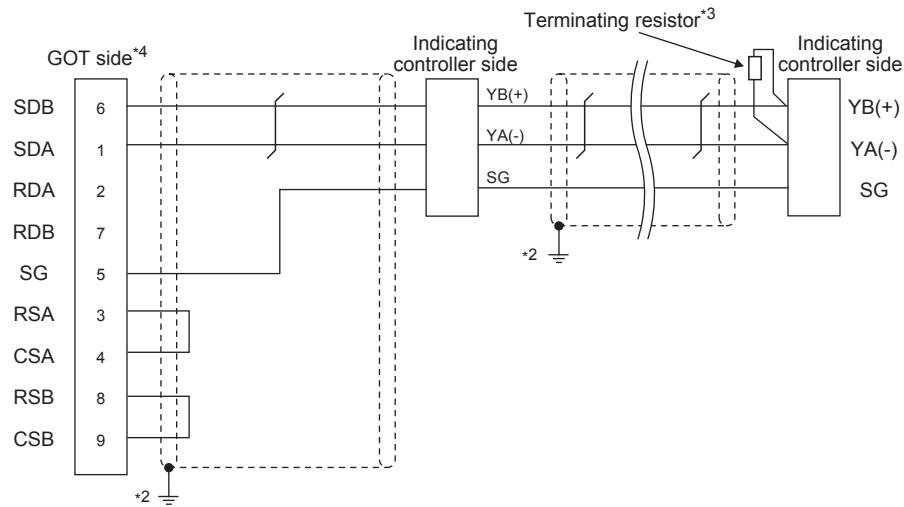
(6) RS-485 connection diagram 6)



- \*1 Pin No. of communication converter differs depending on the model. Refer to the following table.
- \*2 Connect FG grounding to the appropriate part of a cable shield line.
- \*3 For details of the terminating resistor specifications, refer to the following manual.  
User's Manual of the Shinko Technos indicating controller
- \*4 Set the terminating resistor of GOT side which will be a terminal.  
■ Connecting terminating resistors

| Signal name | Model of indicating controller |         |         |         |           |         |         |         |         |
|-------------|--------------------------------|---------|---------|---------|-----------|---------|---------|---------|---------|
|             | JCS-33A                        | JCR-33A | JCD-33A | JCM-33A | JIR-301-M | ACS-13A | PCD-33A | PC-955  | PC-935  |
|             | Pin No.                        | Pin No. | Pin No. | Pin No. | Pin No.   | Pin No. | Pin No. | Pin No. | Pin No. |
| YA(-)       | 13                             | 11      | 11      | 10      | 11        | 16      | 11      | 11      | 11      |
| YB(+)       | 14                             | 14      | 14      | 13      | 14        | 17      | 14      | 12      | 12      |
| SG          | 15                             | 17      | 17      | 14      | 17        | 18      | 17      | 16      | 16      |

(7) RS-485 connection diagram 7)



\*1 Pin No. of communication converter differs depending on the model. Refer to the following table.

\*2 Connect FG grounding to the appropriate part of a cable shield line.

\*3 For details of the terminating resistor specifications, refer to the following manual.

☞ User's Manual of the Shinko Technos indicating controller

\*4 Set the terminating resistor of GOT side which will be a terminal.

☞ ■ Connecting terminating resistors

| Signal name | Model of indicating controller |         |         |         |           |         |         |         |         |
|-------------|--------------------------------|---------|---------|---------|-----------|---------|---------|---------|---------|
|             | JCS-33A                        | JCR-33A | JCD-33A | JCM-33A | JIR-301-M | ACS-13A | PCD-33A | PC-955  | PC-935  |
|             | Pin No.                        | Pin No. | Pin No. | Pin No. | Pin No.   | Pin No. | Pin No. | Pin No. | Pin No. |
| YA(-)       | 13                             | 11      | 11      | 10      | 11        | 16      | 11      | 11      | 11      |
| YB(+)       | 14                             | 14      | 14      | 13      | 14        | 17      | 14      | 12      | 12      |
| SG          | 15                             | 17      | 17      | 14      | 17        | 18      | 17      | 16      | 16      |

## ■ Precautions when preparing a cable

### (8) Cable length

- (a) The length of the RS-485 cable used for direct connecting the indicating controller to the communication converter  
The length of the RS-485 cable must be 1200m or less.
- (b) The length of the RS-485 cable used for direct connecting the indicating controller to GOT  
The length of the RS-485 cable must be 500m or less.

### (9) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (10) Shinko Technos indicating controller side connector

Use the connector compatible with the Shinko Technos indicating controller side.

For details, refer to the user's manual of the Shinko Technos indicating controller.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) Shinko Technos indicating controller side

When connecting a Shinko Technos indicating controller to the GOT, a terminating resistor must be connected to the Shinko Technos indicating controller.

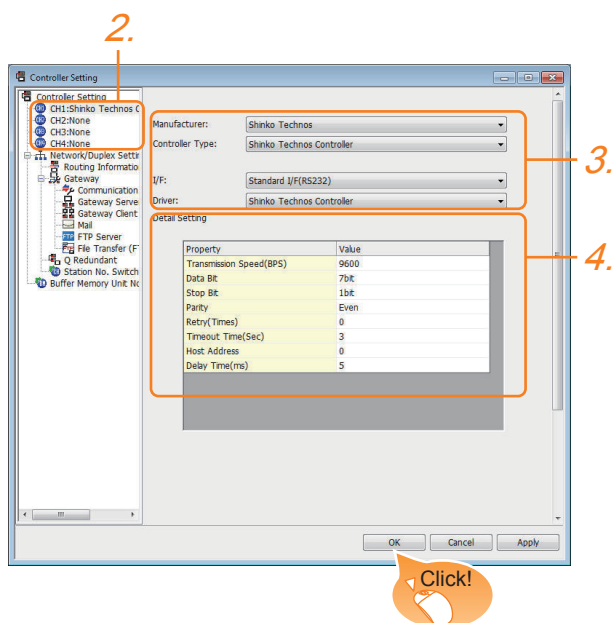
 User's Manual of the Shinko Technos indicating controller



## 10.4 GOT Side Settings

### 10.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: Shinko Technos
  - Controller Type: Shinko Technos Controller
  - I/F: Interface to be used
  - Driver: Shinko Technos Controller
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 10.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 10.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 7 bit |
| Stop Bit                | 1 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 5     |

| Item               | Description                                                                                                                              | Range                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps)                 | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 7bits)                          | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications. (Default: 1bit)                                                                          | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: Even)                          | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 0time)                                            | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                                     | 3 to 30sec                                       |
| Host Address       | Specify the host address (station No. of the GOT to which the indicating controller is connected) in the connected network. (Default: 0) | 0 to 94                                          |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 5ms)                                | 0 to 300ms                                       |

#### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
➡ GOT2000 Series User's Manual (Utility)
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 10.5 Indicating Controller Side Setting

### POINT

- (1) Shinko Technos indicating controller  
For details of Shinko Technos indicating controller, refer to the following manual.

 User's Manual of the Shinko Technos indicating controller

- (2) Communication converter  
For details on communication settings of the communication converter, refer to the following manual.

 User's Manual of communication converter

| Model name              |                                                                                                            | Refer to |
|-------------------------|------------------------------------------------------------------------------------------------------------|----------|
| Indicating controller   | ACS-13A, DCL-33A, JC, JCM-33A, JIR-301-M, PCD-300 Series, PC-900 Series (PC-955-[ ]/M,C5, PC-935-[ ]/M,C5) | 10.5.1   |
|                         | FCD-100, FCR-100, FCR-23A, FIR Series, PC-900 Series (PC-955-[ ]/M,C, PC-935-[ ]/M,C)                      | 10.5.2   |
| Communication converter | IF-400                                                                                                     | 10.5.3   |

### 10.5.1 Connecting to ACS-13A, DCL-33A, JC, JCM-33A, JIR-301-M, PCD-300 Series, PC-900 Series (PC-955-[ ]/M,C5, PC-935-[ ]/M,C5)

#### ■ Communication settings

Make the communication settings by operating the key of the indicating controller.

| Item                             | Set value         |
|----------------------------------|-------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps |
| Data bit                         | 7bits (fixed)     |
| Parity bit                       | Even (fixed)      |
| Stop bit                         | 1bit (fixed)      |
| Station No. <sup>*2*3</sup>      | 0 to 95           |
| Communication protocol           | Shinko protocol   |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> Avoid duplication of the station No. with any of the other units.

<sup>\*3</sup> When setting the "95" to the station No., the read-out of data cannot be performed.

### 10.5.2 Connecting to FCD-100, FCR-100, FCR-23A, FIR Series, PC-900 Series (PC-955-[ ]/M,C, PC-935-[ ]/M,C)

#### ■ Communication settings

Make the communication settings by operating the key of the indicating controller.

| Item                             | Set value         |
|----------------------------------|-------------------|
| Transmission speed <sup>*1</sup> | 9600bps, 19200bps |
| Data bit                         | 7bits (fixed)     |
| Parity bit                       | Even (fixed)      |
| Stop bit                         | 1bit (Fixed)      |
| Station No. <sup>*1*2</sup>      | 0 to 95           |
| Communication protocol           | Shinko protocol   |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> When setting the "95" to the station No., the read-out of data cannot be performed.

### 10.5.3 Connecting to communication converter (IF-400)

#### ■ Communication settings

Make the communication settings by operating the key of the communication converter.

| Item                                             | Set value                |
|--------------------------------------------------|--------------------------|
| Transmission speed <sup>*1</sup>                 | 9600bps, 19200bps        |
| Sending/Receiving switching period <sup>*2</sup> | 1 character, 2 character |

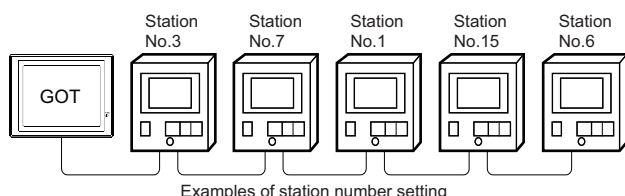
<sup>\*1</sup> Adjust the settings with GOT and the indicating controller settings.

<sup>\*2</sup> The setting of 1 character is recommended.

## 10.5.4 Station No. settings

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



### (1) Direct specification

When setting the device, specify the station number of the indicating controller of which data is to be changed.

| Specification range |
|---------------------|
| 0 to 94             |

### (2) Indirect specification

When setting the device, indirectly specify the station number of the indicating controller of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from 100 to 115 on GT Designer3, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the indicating controller.

| Specification station NO. | Compatible device | Setting range                                                                                         |
|---------------------------|-------------------|-------------------------------------------------------------------------------------------------------|
| 100                       | GD10              | 0 to 94<br>For the setting other than the above, error (dedicated device is out of range) will occur. |
| 101                       | GD11              |                                                                                                       |
| 102                       | GD12              |                                                                                                       |
| 103                       | GD13              |                                                                                                       |
| 104                       | GD14              |                                                                                                       |
| 105                       | GD15              |                                                                                                       |
| 106                       | GD16              |                                                                                                       |
| 107                       | GD17              |                                                                                                       |
| 108                       | GD18              |                                                                                                       |
| 109                       | GD19              |                                                                                                       |
| 110                       | GD20              |                                                                                                       |
| 111                       | GD21              |                                                                                                       |
| 112                       | GD22              |                                                                                                       |
| 113                       | GD23              |                                                                                                       |
| 114                       | GD24              |                                                                                                       |
| 115                       | GD25              |                                                                                                       |

### (3) All station specification

Target station differs depending on write-in operation or read-out operation.

- For write-in operation, all station will be a target.  
In the WORD BIT write-in operation, only the indicating controller whose station No. is the same as host address is applicable. For details of host address setting, refer to the following.

➡ 10.4.1 Setting communication interface (Communication settings)

- In the read-out operation, only the indicating controller whose station No. is the same as host address is applicable.  
For details of host address setting, refer to the following.

➡ 10.4.1 Setting communication interface (Communication settings)

## 10.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

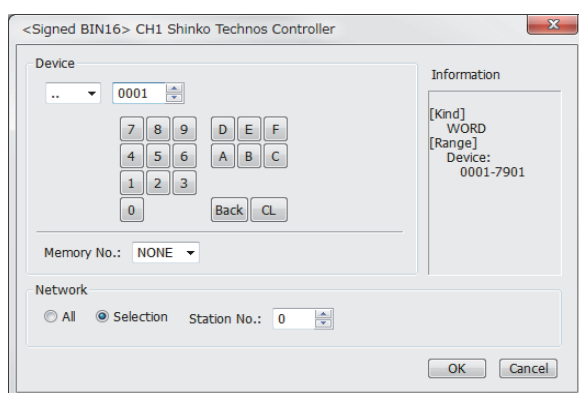
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### ■ Setting item



| Item        | Description                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number. The bit number can be set only when specifying the bit of word device. |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|             | Memory No.*1                                                                                                               | Set the memory number (None, 0 to 7) of the device to be monitored.                                                                                                                                                                                                                                                                                                                                                                                  |
| Information | Displays the device type and setting range which are selected in [Device].                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Network     | Set the monitor target of the set device.                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|             | All                                                                                                                        | Select this item when writing data to all the indicating controllers connected. During monitoring, the indicating controller which is set for [Host Address] of the communication detail setting is monitored. (When writing the data in numerical input, the data is written to all connected indicating controllers during input, and the indicating controller that is set for [Host Address] is monitored during other than input (displaying).) |
|             | Station No.                                                                                                                | Select this item when monitoring the indicating controller of the specified station No. After selecting, set the station No. of the indicating controller in the following range.<br>0 to 94: To monitor the indicating controller of the specified station No.<br>95: Same as the setting of [All].<br>100 to 115: To specify the station No. of the indicating controller to be monitored by the value of GOT data register (GD). <sup>*2</sup>    |

\*1 The device name is displayed as follows when the memory number (0 to 7) is set.

| Memory No. | Displayed device name |
|------------|-----------------------|
| None       | Device Number         |
| 0          | M0/Device Number      |
| 1          | M1/Device Number      |
| 2          | M2/Device Number      |
| 3          | M3/Device Number      |
| 4          | M4/Device Number      |
| 5          | M5/Device Number      |
| 6          | M6/Device Number      |
| 7          | M7/Device Number      |

\*2 The following shows the relation between station numbers of the indicating controller and the GOT data register.

| Station No. | GOT data register (GD) | Setting range                                                                         |
|-------------|------------------------|---------------------------------------------------------------------------------------|
| 100         | GD10                   | 0 to 94<br>(If setting a value outside the range above, a device range error occurs.) |
| 101         | GD11                   |                                                                                       |
| :           | :                      |                                                                                       |
| 114         | GD24                   |                                                                                       |
| 115         | GD25                   |                                                                                       |

### 10.6.1 SHINKO indicating controller (Shinko Technos Controller)

|             | Device name                                | Setting range                     | Device No. representation |
|-------------|--------------------------------------------|-----------------------------------|---------------------------|
| Bit device  | The bit specification of the word device*1 | Setting range of each word device | -                         |
| Word device | Data item (..)                             | ..0001 to ..7901                  | Hexadecimal               |

\*1 As bit specification of a word device is performed after the GOT reads the value, do not change the value with the indicating controller during this period.

## 10.7 Precautions

### ■ Station number settings of indicating controller

In the system configuration, the indicating controller with the station number set with the host address must be included.

For details of host address setting, refer to the following.

 10.4.1 Setting communication interface  
(Communication settings)

### ■ GOT clock control

Since the indicating controller does not have a clock function, the settings of [time adjusting] or [time broadcast] by GOT clock control will be disabled.

### ■ When using the communication converter IF-400

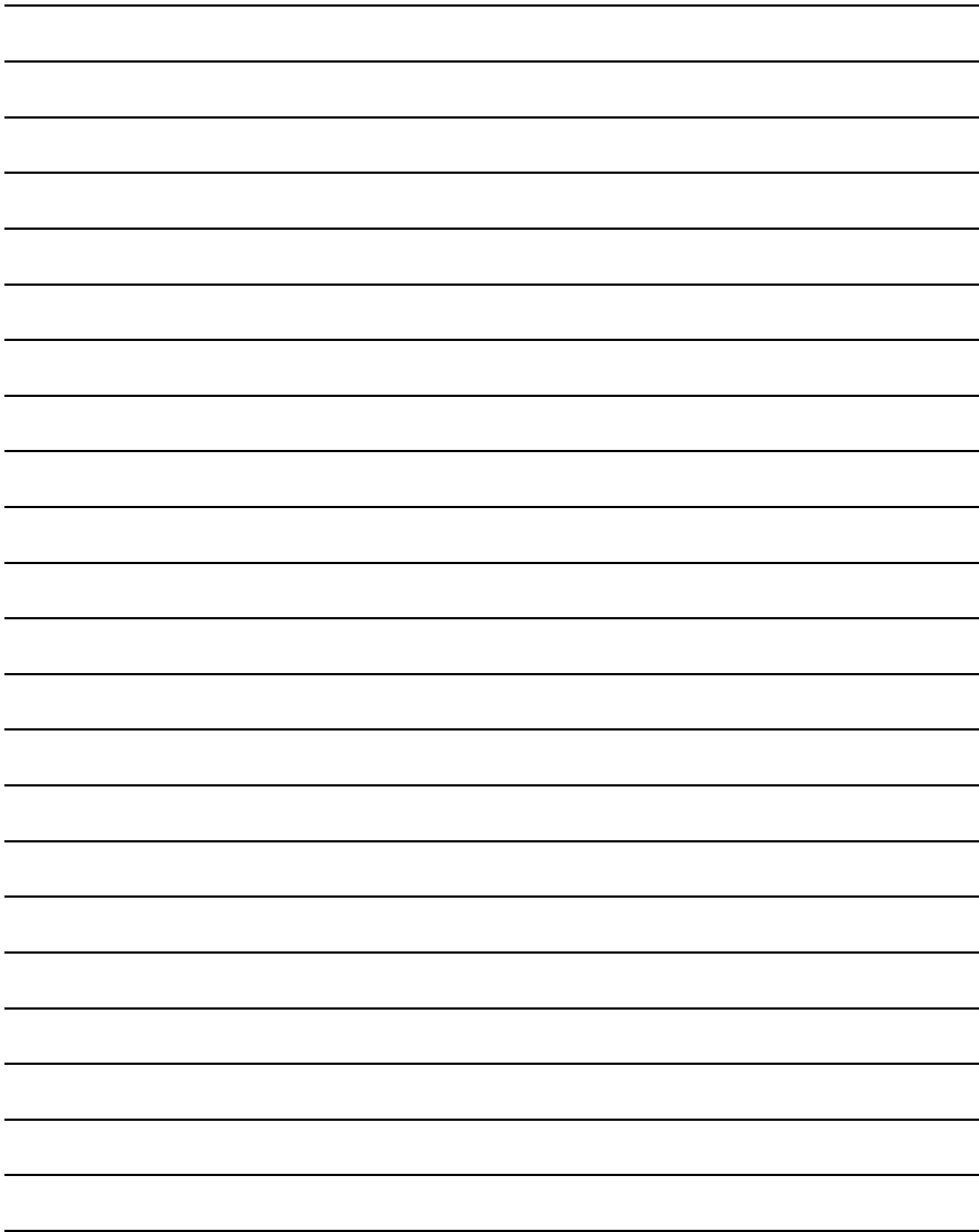
When using the communication converter IF-400, some communication error may occur. Set the number of retries to more than one time.

### ■ Disconnecting some of multiple connected equipment

The GOT can disconnect some of multiple connected equipment by setting GOT internal device. For example, the faulty station where a communication timeout error occurs can be disconnected from connected equipment.

For details of GOT internal device setting, refer to the following manual.

 GT Designer3 (GOT2000) Help



# 11

## CONNECTION TO CHINO CONTROLLER

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|                                             |         |
|---------------------------------------------|---------|
| 11.1 Connectable Model List . . . . .       | 11 - 2  |
| 11.2 System Configuration . . . . .         | 11 - 3  |
| 11.3 Connection Diagram . . . . .           | 11 - 11 |
| 11.4 GOT Side Settings . . . . .            | 11 - 25 |
| 11.5 Controller Side Setting . . . . .      | 11 - 27 |
| 11.6 Device Range that Can Be Set . . . . . | 11 - 33 |
| 11.7 Precautions . . . . .                  | 11 - 34 |

# 11. CONNECTION TO CHINO CONTROLLER

## 11.1 Connectable Model List

The following table shows the connectable models.

| Series        | Model name*1     | Clock | Communication Type         | Connectable GOT         | Refer to                                                                                                |
|---------------|------------------|-------|----------------------------|-------------------------|---------------------------------------------------------------------------------------------------------|
| LT230 Series  | LT230            | ×     | RS-232<br>RS-485           | <div>GT27GT25GT23</div> | <div> 11.2.1</div>   |
| LT300 Series  | LT350            | ×     | RS-232<br>RS-422<br>RS-485 |                         |                                                                                                         |
|               | LT370            |       |                            |                         |                                                                                                         |
| LT400 Series  | LT450            | ×     |                            |                         |                                                                                                         |
|               | LT470            |       |                            |                         |                                                                                                         |
| LT830 Series  | LT830            | ×     | RS-232<br>RS-485           |                         |                                                                                                         |
| DZ1000 Series | DZ1000           | ×     | RS-232<br>RS-422<br>RS-485 |                         |                                                                                                         |
| DZ2000 Series | DZ2000           | ×     |                            |                         |                                                                                                         |
| DB1000 Series | DB1000           | ×     |                            |                         |                                                                                                         |
| DB2000 Series | DB2000           | ×     |                            |                         |                                                                                                         |
| KP Series     | KP1000<br>KP2000 | ×     | RS-232<br>RS-422<br>RS-485 | <div>GT27GT25GT23</div> | <div> 11.2.2</div> |
| AL3000 Series | AL3000           | ×     |                            |                         |                                                                                                         |
| AH3000 Series | AH3000           | ×     |                            |                         |                                                                                                         |
| SE3000 Series | SE3000           | ×     | RS-232<br>RS-422<br>RS-485 | <div>GT27GT25GT23</div> | <div> 11.2.3</div> |
| JU Series     | JU               | ×     | RS-422<br>RS-485           |                         |                                                                                                         |
| KE Series     | KE3000           | ×     |                            |                         |                                                                                                         |
| LE5000 Series | LE5000           | ×     |                            |                         |                                                                                                         |
| GT120 Series  | GT120            | ×     | RS-232<br>RS-485           | <div>GT27GT25GT23</div> | <div> 11.2.4</div> |

\*1 From the models of controller, select the detailed model name which supports each communication type. For details of CHINO controller detailed model names, refer to the following catalog.

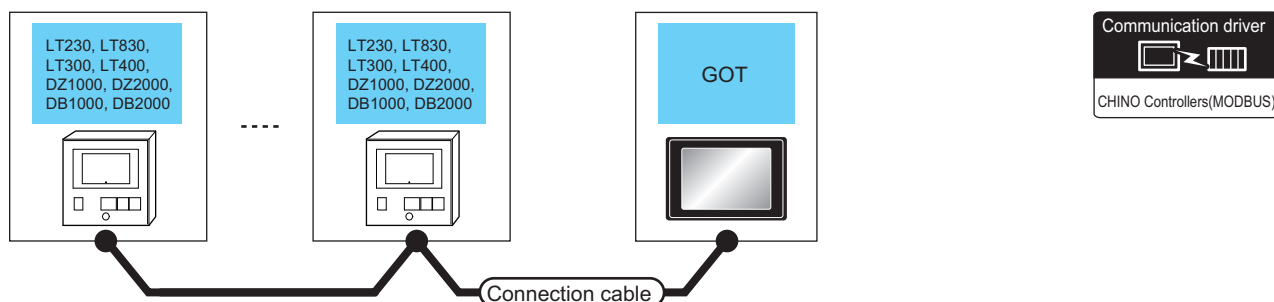
 Catalog of CHINO controllers



## 11.2 System Configuration

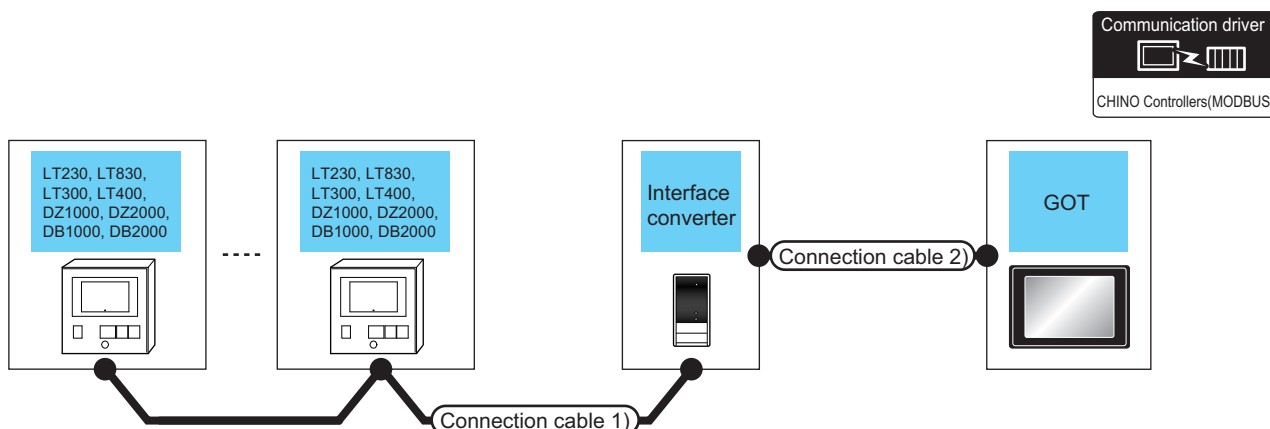
### 11.2.1 Connecting to LT230, LT300, LT400, LT830, DZ1000, DZ2000, DB1000, DB2000 series

#### ■ When connecting to controller



| Indicating controller                                                    |                    | Connection cable                         |               | GOT                                                                    |       | Number of connectable equipment |
|--------------------------------------------------------------------------|--------------------|------------------------------------------|---------------|------------------------------------------------------------------------|-------|---------------------------------|
| Model name                                                               | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device                                                          | Model |                                 |
| LT300<br>LT400<br>DZ1000<br>DZ2000<br>DB1000<br>DB2000                   | RS-232             | RS232 connection diagram 1)              | 15m           | - (Built into GOT)                                                     |       | 1 controller for 1 GOT          |
|                                                                          |                    |                                          |               | GT15-RS2-9P                                                            |       |                                 |
|                                                                          | RS-422             | RS422 connection diagram 2)              | 1200m         | - (Built into GOT)                                                     |       | 31 controllers for 1 GOT*2      |
|                                                                          |                    |                                          |               | GT15-RS4-9S                                                            |       |                                 |
| LT230<br>LT300<br>LT400<br>LT830<br>DZ1000<br>DZ2000<br>DB1000<br>DB2000 | RS-485             | RS485 connection diagram 1)              | 1200m         | FA-LTBGTR4CBL05 (0.5m)<br>FA-LTBGTR4CBL10 (1m)<br>FA-LTBGTR4CBL20 (2m) |       | 31 controllers for 1 GOT*2      |
|                                                                          |                    | RS485 connection diagram 1)              | 1200m         | GT15-RS4-TE                                                            |       |                                 |
|                                                                          |                    | RS485 connection diagram 12)             | 1200m         | - (Built into GOT)                                                     |       |                                 |

## ■ When connecting to converter

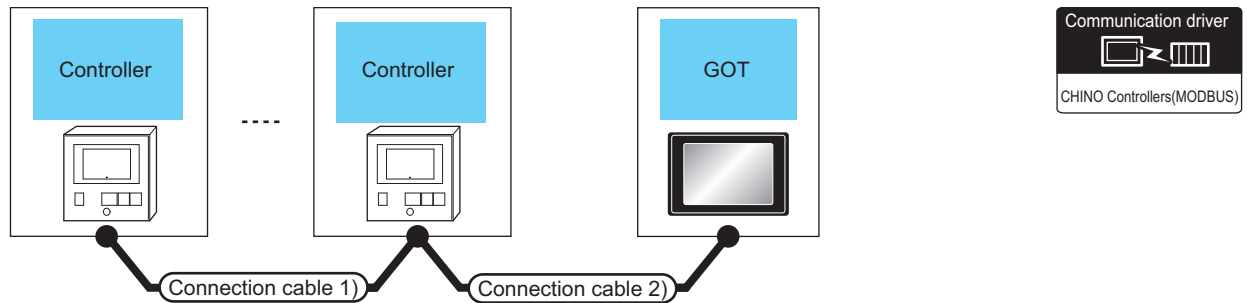


| Indicating controller                                                    | Connection cable 1)                      |               | Converter*1 |                    | Connection cable 2)                      |               | GOT                |       | Number of connectable equipment |
|--------------------------------------------------------------------------|------------------------------------------|---------------|-------------|--------------------|------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                                                               | Cable model<br>Connection diagram number | Max. distance | Model name  | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                 |
| LT300<br>LT400<br>DZ1000<br>DZ2000<br>DB1000<br>DB2000                   | RS422<br>connection diagram 1)           | 1200m         | SC8-10      | RS-232             | RS232<br>connection diagram 1)           | 15m           | - (Built into GOT) |       | 31 controllers for 1 GOT        |
|                                                                          |                                          |               |             |                    |                                          |               | GT15-RS2-9P        |       |                                 |
| LT230<br>LT300<br>LT400<br>LT830<br>DZ1000<br>DZ2000<br>DB1000<br>DB2000 | RS485<br>connection diagram 2)           | 1200m         | SC8-10      | RS-232             | RS232<br>connection diagram 1)           | 15m           | - (Built into GOT) |       |                                 |
|                                                                          |                                          |               |             |                    |                                          |               | GT15-RS2-9P        |       |                                 |

\*1 The converter is a product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.

## 11.2.2 Connecting to KP1000, KP2000, AL3000, AH3000 series

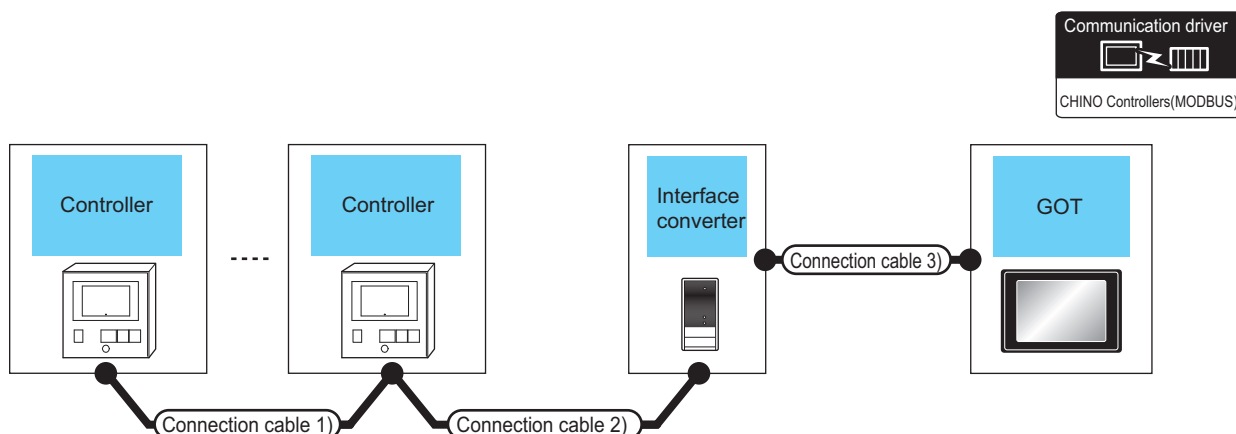
### ■ When connecting to controller



| Indicating controller                |                    | Connection cable 1)                        | Connection cable 2)                            | Max. distance | GOT                                                                    |       | Number of connectable equipment |
|--------------------------------------|--------------------|--------------------------------------------|------------------------------------------------|---------------|------------------------------------------------------------------------|-------|---------------------------------|
| Model name                           | Communication Type | Cable model*1<br>Connection diagram number | Cable model*1<br>Connection diagram number     |               | Option device                                                          | Model |                                 |
| KP1000<br>KP2000<br>AL3000<br>AH3000 | RS-232             | -                                          | RZ-CRS6□□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT)                                                     | <br>  | 1 controller for 1 GOT          |
|                                      |                    |                                            |                                                |               | GT15-RS2-9P                                                            | <br>  |                                 |
|                                      | RS-422             | RZ-CRA1□□                                  | RS422 connection diagram 2)                    | 1200m         | - (Built into GOT)                                                     | <br>  | 31 controllers for 1 GOT*3      |
|                                      |                    |                                            |                                                |               | GT15-RS4-9S                                                            | <br>  |                                 |
|                                      |                    | RS422 connection diagram 2)                |                                                | 1200m         | - (Built into GOT)                                                     | <br>  |                                 |
|                                      |                    |                                            |                                                |               | GT15-RS4-9S                                                            | <br>  |                                 |
|                                      | RS-485             | RZ-CRA1□□                                  | RS422 connection diagram 1)                    | 1200m         | FA-LTBGTR2CBL05 (0.5m)<br>FA-LTBGTR2CBL10 (1m)<br>FA-LTBGTR2CBL20 (2m) | <br>  | 31 controllers for 1 GOT        |
|                                      |                    | RS485 connection diagram 1)                |                                                |               |                                                                        |       |                                 |
|                                      |                    | RZ-LEC□□□                                  | RS485 connection diagram 4)                    | 1200m         | GT15-RS4-TE                                                            | <br>  |                                 |
|                                      |                    | RS485 connection diagram 12)               |                                                | 1200m         | - (Built into GOT)                                                     | <br>  |                                 |

\*1 Product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.

## ■ When connecting to converter

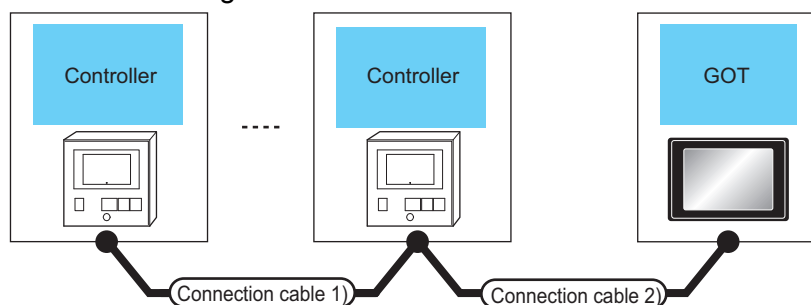


| Indicating controller                | Connection cable 1)                                      | Connection cable 2)                                                                                           | Max. distance | Converter*1 |                    | Connection cable 3)                           | GOT           |                        | Number of connectable equipment |
|--------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------------|-----------------------------------------------|---------------|------------------------|---------------------------------|
|                                      | Model name<br>Cable model*1<br>Connection diagram number | Cable model*1<br>Connection diagram number                                                                    |               | Model name  | Communication Type | Cable model<br>Connection diagram number      | Max. distance | Option device<br>Model |                                 |
| KP1000<br>KP2000<br>AL3000<br>AH3000 | RZ-CRA1□□<br>or<br>RS422 connection diagram 1)           | RZ-CRA2□□<br>or<br>RS422 connection diagram 1)                                                                | 1200m         | SC8<br>-10  | RS<br>-232         | RZ-CRS6□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT)     | 31 controllers for 1 GOT        |
|                                      |                                                          |                                                                                                               |               |             |                    |                                               |               | GT15-RS2-9P            |                                 |
|                                      | RZ-LEC□□□<br>or<br>RS485 connection diagram 2)           | RZ-LEC□□□<br>(only KP1000, KP2000)<br>RZ-LED□□□<br>(only AL3000, AH3000)<br>or<br>RS485 connection diagram 2) | 1200m         | SC8<br>-10  | RS<br>-232         | RZ-CRS6□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT)     |                                 |
|                                      |                                                          |                                                                                                               |               |             |                    |                                               |               | GT15-RS2-9P            |                                 |

\*1 Product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.

## 11.2.3 Connecting to SE3000, JU, KE3000, LE5000 series

### ■ When connecting to controller



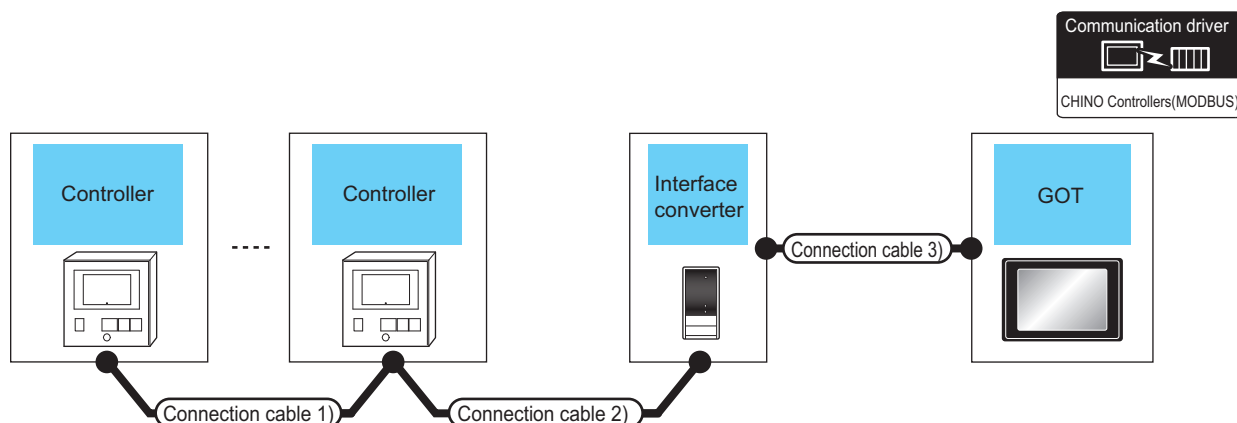
| Indicating controller            |                    | Connection cable 1)                        | Connection cable 2)                            | Max. distance | GOT                                                                    |       | Number of connectable equipment |
|----------------------------------|--------------------|--------------------------------------------|------------------------------------------------|---------------|------------------------------------------------------------------------|-------|---------------------------------|
| Model name                       | Communication Type | Cable model*1<br>Connection diagram number | Cable model*1<br>Connection diagram number     |               | Option device                                                          | Model |                                 |
| SE3000                           | RS-232             | --                                         | RZ-CRS6□□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT)                                                     |       | 1 controller for 1 GOT          |
|                                  |                    |                                            |                                                |               | GT15-RS2-9P                                                            |       |                                 |
| SE3000<br>JU<br>KE3000<br>LE5000 | RS-422             | RZ-CRA1□□*2                                | RS422 connection diagram 2)                    | 1200m         | - (Built into GOT)                                                     |       | 31 controllers for 1 GOT*3      |
|                                  |                    |                                            |                                                |               | GT15-RS4-9S                                                            |       |                                 |
|                                  |                    | RS422 connection diagram 2)                |                                                | 1200m         | - (Built into GOT)                                                     |       |                                 |
|                                  |                    |                                            |                                                |               | GT15-RS4-9S                                                            |       |                                 |
|                                  | RS-485             | RZ-LEC□□□*2<br>or<br>RZ-CSS1Z2*3           | RS485 connection diagram 9)                    | 1200m         | FA-LTBGTR2CBL05 (0.5m)<br>FA-LTBGTR2CBL10 (1m)<br>FA-LTBGTR2CBL20 (2m) |       | 31 controllers for 1 GOT        |
|                                  |                    | RS485 connection diagram 9)                |                                                |               |                                                                        |       |                                 |
|                                  |                    | RZ-LEC□□□*2<br>or<br>RZ-CSS1Z2*3           | RS485 connection diagram 10)                   | 1200m         | GT15-RS4-TE                                                            |       |                                 |
|                                  |                    | RS485 connection diagram 13)               |                                                | 1200m         | - (Built into GOT)                                                     |       |                                 |

\*1 Product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.

\*2 RZ-CRA1□□ and RZ-LEC□□□ can be used in SE3000, JU or LE5000 series only.

\*3 RZ-CSS1Z2 can be used in JU series only.

## ■ When connecting to converter



| Indicating controller            | Connection cable 1)                                                                                           | Connection cable 2)                                                                                | Max. distance | Converter*1 |                    | Connection cable 3)                           |               | GOT                |       | Number of connectable equipment |
|----------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------|-------------|--------------------|-----------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name                       | Cable model*1<br>Connection diagram number                                                                    | Cable model*1<br>Connection diagram number                                                         |               | Model name  | Communication Type | Cable model<br>Connection diagram number      | Max. distance | Option device      | Model |                                 |
| SE3000<br>JU<br>KE3000<br>LE5000 | RZ-CRA1□□□ <sup>*2</sup><br>or<br>RS422 connection diagram 1)                                                 | RZ-CRA2□□□ <sup>*2</sup><br>or<br>RS422 connection diagram 1)                                      | 1200m         | SC8-10      | RS-232             | RZ-CRS6□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT) |       | 31 controllers for 1 GOT        |
|                                  |                                                                                                               |                                                                                                    |               |             |                    |                                               |               | GT15-RS2-9P        |       |                                 |
|                                  | RZ-LEC□□□<br>(only SE3000, JU, LE5000)<br>or<br>RZ-CSS1Z2 <sup>*3</sup><br>or<br>RS485 connection diagram 11) | RZ-LEC□□□<br>(only JU, LE5000)<br>RZ-LED□□□<br>(only SE3000)<br>or<br>RS485 connection diagram 11) | 1200m         | SC8-10      | RS-232             | RZ-CRS6□<br>or<br>RS232 connection diagram 1) | 15m           | - (Built into GOT) |       |                                 |
|                                  |                                                                                                               |                                                                                                    |               |             |                    |                                               |               | GT15-RS2-9P        |       |                                 |

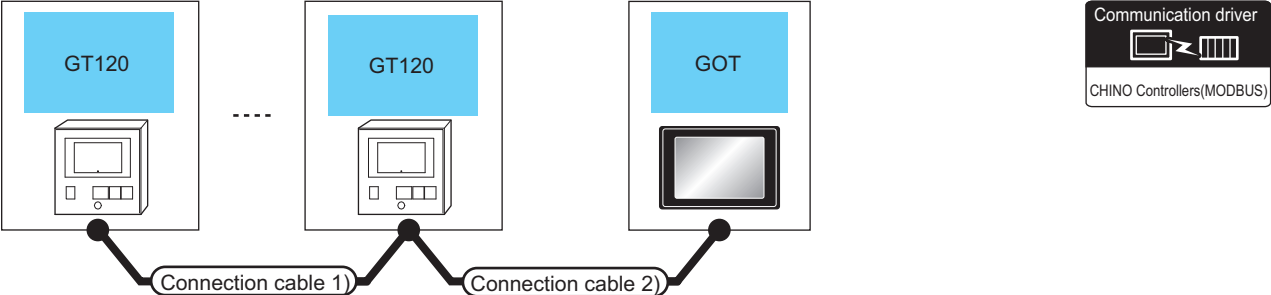
\*1 Product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.

\*2 RZ-CRA1□□□ and RZ-CRA2□□□ can be used in SE3000, JU or LE5000 series only.

\*3 RZ-CSS1Z2 can be used in JU series only.

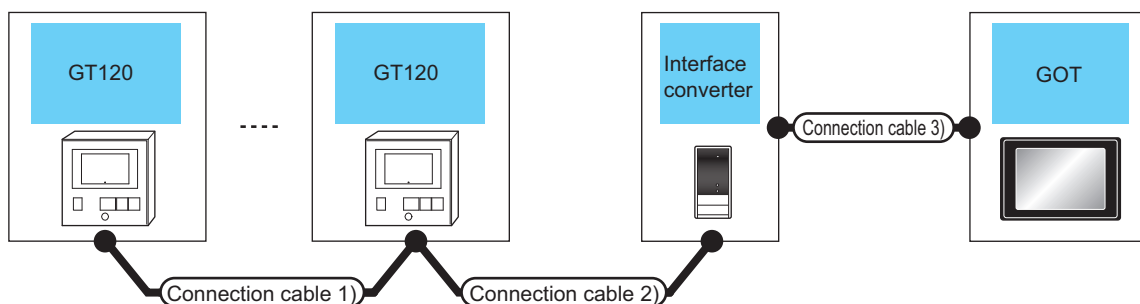
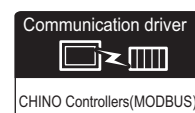
11.2.4 Connecting to GT120 Series

■ When connecting to controller



| Indicating controller |                           | Connection cable 1)                                   | Connection cable 2)                         | Max.<br>distance | GOT                                                                       |       | Number of<br>connectable<br>equipment |
|-----------------------|---------------------------|-------------------------------------------------------|---------------------------------------------|------------------|---------------------------------------------------------------------------|-------|---------------------------------------|
| Model<br>name         | Commun<br>ication<br>Type | Cable model<br>Connection diagram<br>number           | Cable model<br>Connection diagram<br>number |                  | Option device                                                             | Model |                                       |
| GT120                 | RS-485                    | GT8-CDD(60mm)<br>or<br>RS485 connection<br>diagram 4) | RS485<br>connection diagram 6)              | 1200m            | - (Built into GOT)                                                        | <br>  | 31 controllers for 1<br>GOT           |
|                       |                           |                                                       | RS485<br>connection diagram 7)              | 1200m            | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) | <br>  |                                       |
|                       |                           |                                                       | RS485<br>connection diagram 8)              | 1200m            | GT15-RS4-TE                                                               | <br>  |                                       |

## ■ When connecting to converter



| Indicating controller | Connection cable 1)                                   | Connection cable 2)                                 | Max. distance | Converter*1 |                    | Connection cable 3)                      |               | GOT                |       | Number of connectable equipment |
|-----------------------|-------------------------------------------------------|-----------------------------------------------------|---------------|-------------|--------------------|------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name            | Cable model<br>Connection diagram number              | Cable model<br>Connection diagram number            |               | Model name  | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                 |
| GT120                 | GT8-CDD(60mm)<br>or<br>RS485<br>connection diagram 4) | GT8-CDM(3m)<br>or<br>RS485<br>connection diagram 8) | 1200m         | SC8-10      | RS-232             | RS232<br>connection diagram 1)           | 15m           | - (Built into GOT) | <br>  | 31 controllers for 1 GOT        |
|                       |                                                       |                                                     |               |             |                    |                                          |               | GT15-RS2-9P        |       |                                 |

\*1 The converter is a product manufactured by CHINO corporation. For details of the product, contact CHINO corporation.



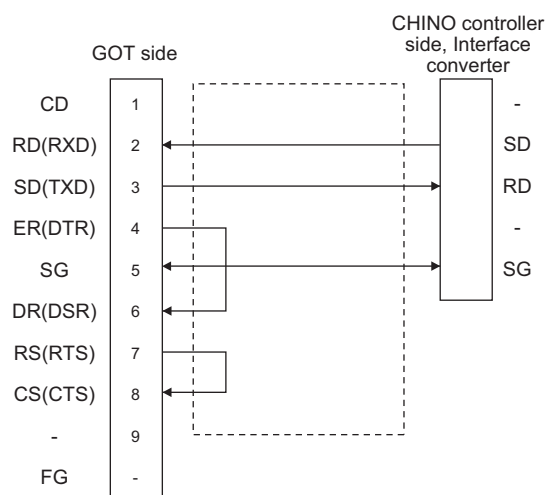
## 11.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

### 11.3.1 RS-232 cable

#### ■ Connection diagram

##### (1) RS232 connection diagram 1)



\*1 Terminal number of the controller and the converter differ depending on the model. Refer to the following table.

| Signal name | Controller   |              |                |              |              | Converter    |
|-------------|--------------|--------------|----------------|--------------|--------------|--------------|
|             | LT300        | LT400        | DZ1000, DZ2000 | DB1000       | DB2000       | SC8-10       |
|             | Terminal No. | Terminal No. | Terminal No.   | Terminal No. | Terminal No. | Terminal No. |
| SD          | 11           | 11           | 19             | 13           | 27           | 2            |
| RD          | 13           | 13           | 21             | 12           | 26           | 1            |
| SG          | 15           | 15           | 23             | 14           | 28           | 3            |

| Signal name | Controller   |                 |  |               |               |
|-------------|--------------|-----------------|--|---------------|---------------|
|             | KP1000       | KP2000          |  | SE3000        | AL3000 AH3000 |
|             | Terminal No. | Terminal No. *1 |  | Terminal name | Terminal name |
| SD          | 13           | 27              |  | SD            | SD            |
| RD          | 12           | 26              |  | RD            | RD            |
| SG          | 14           | 28              |  | SG            | SG            |

\*1 For KP2000 series, the terminal No. differs according to the model.

\*2 This indicates the symbols of the position 10) (third zone) of the following models.  
Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)  
For the symbol B, two terminal numbers are available. Select as necessary.

#### ■ Precautions when preparing a cable

##### (1) Cable length

The length of the RS-232 cable must be 15m or less.

##### (2) GOT side connector

For the GOT side connector, refer to the following.

☞ 1.4.1 GOT connector specifications

##### (3) CHINO controller side connector

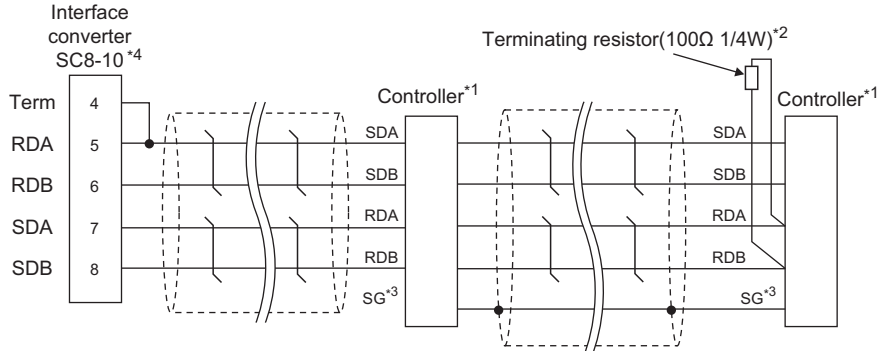
Use the connector compatible with the CHINO controller side module.

For details, refer to the user's manual of the CHINO controller.

## 11.3.2 RS-422 cable

### ■ Connection diagram

#### (1) RS422 connection diagram 1)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be a terminal.

\*3 Do not connect SG of the controller and SG of the converter.

\*4 Set the Communication Type switch of the converter to RS-422.

| Signal name | Controller type |              |                |              |              |
|-------------|-----------------|--------------|----------------|--------------|--------------|
|             | LT300           | LT400        | DZ1000, DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No.   | Terminal No. | Terminal No. |
| SDA         | 11              | 11           | 19             | 14           | 28           |
| SDB         | 12              | 12           | 20             | 15           | 29           |
| RDA         | 13              | 13           | 21             | 12           | 26           |
| RDB         | 14              | 14           | 22             | 13           | 27           |
| SG          | 15              | 15           | 23             | 16           | 30           |

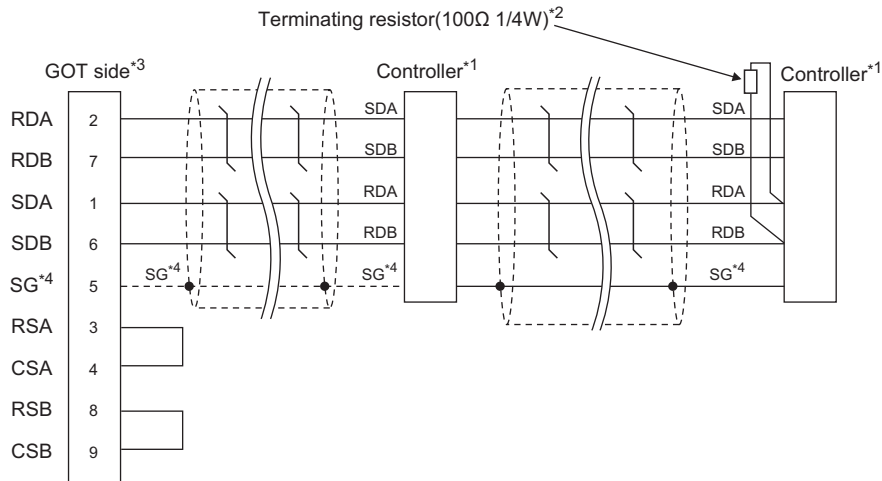
| Signal name | Controller type |                |          |               |                  |              |               |               |
|-------------|-----------------|----------------|----------|---------------|------------------|--------------|---------------|---------------|
|             | KP1000          | KP2000         |          | SE3000        | AL3000<br>AH3000 | JU           | KE3000        | LE5000        |
|             | Terminal No.    | Terminal No.*5 |          | Terminal name | Terminal name    | Terminal No. | Terminal name | Terminal name |
|             |                 | A*6            | C*6, F*6 |               |                  |              |               |               |
| SDA         | 14              | 28             | 31       | SDA           | SDA              | 1            | SDA           | SDA           |
| SDB         | 15              | 29             | 32       | SDB           | SDB              | 2            | SDB           | SDB           |
| RDA         | 12              | 26             | 29       | RDA           | RDA              | 3            | RDA           | RDA           |
| RDB         | 13              | 27             | 30       | RDB           | RDB              | 4            | RDB           | RDB           |
| SG          | 16              | 30             | 28       | SG            | SG               | 5            | SG            | SG            |

\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.

Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)

## (2) RS422 connection diagram 2)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be a terminal.

\*3 Set the terminating resistor of GOT side.

■ Connecting terminating resistors

\*4 When connecting to DB1000 or DB200 Series, connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |                |              |              |
|-------------|-----------------|--------------|----------------|--------------|--------------|
|             | LT300           | LT400        | DZ1000, DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No.   | Terminal No. | Terminal No. |
| SDA         | 11              | 11           | 19             | 14           | 28           |
| SDB         | 12              | 12           | 20             | 15           | 29           |
| RDA         | 13              | 13           | 21             | 12           | 26           |
| RDB         | 14              | 14           | 22             | 13           | 27           |
| SG          | 15              | 15           | 23             | 16           | 30           |

| Signal name | Controller type |                |          |               |                  |              |               |               |
|-------------|-----------------|----------------|----------|---------------|------------------|--------------|---------------|---------------|
|             | KP1000          | KP2000         |          | SE3000        | AL3000<br>AH3000 | JU           | KE3000        | LE5000        |
|             | Terminal No.    | Terminal No.*5 |          | Terminal name | Terminal name    | Terminal No. | Terminal name | Terminal name |
|             |                 | A*6            | C*6, F*6 |               |                  |              |               |               |
| SDA         | 14              | 28             | 31       | SDA           | SDA              | 1            | SDA           | SDA           |
| SDB         | 15              | 29             | 32       | SDB           | SDB              | 2            | SDB           | SDB           |
| RDA         | 12              | 26             | 29       | RDA           | RDA              | 3            | RDA           | RDA           |
| RDB         | 13              | 27             | 30       | RDB           | RDB              | 4            | RDB           | RDB           |
| SG          | 16              | 30             | 28       | SG            | SG               | 5            | SG            | SG            |

\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.  
Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)

## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-422 cable must be 1200m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) CHINO controller side connector

Use the connector compatible with the CHINO controller side module.

For details, refer to the user's manual of the CHINO controller.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) CHINO controller side

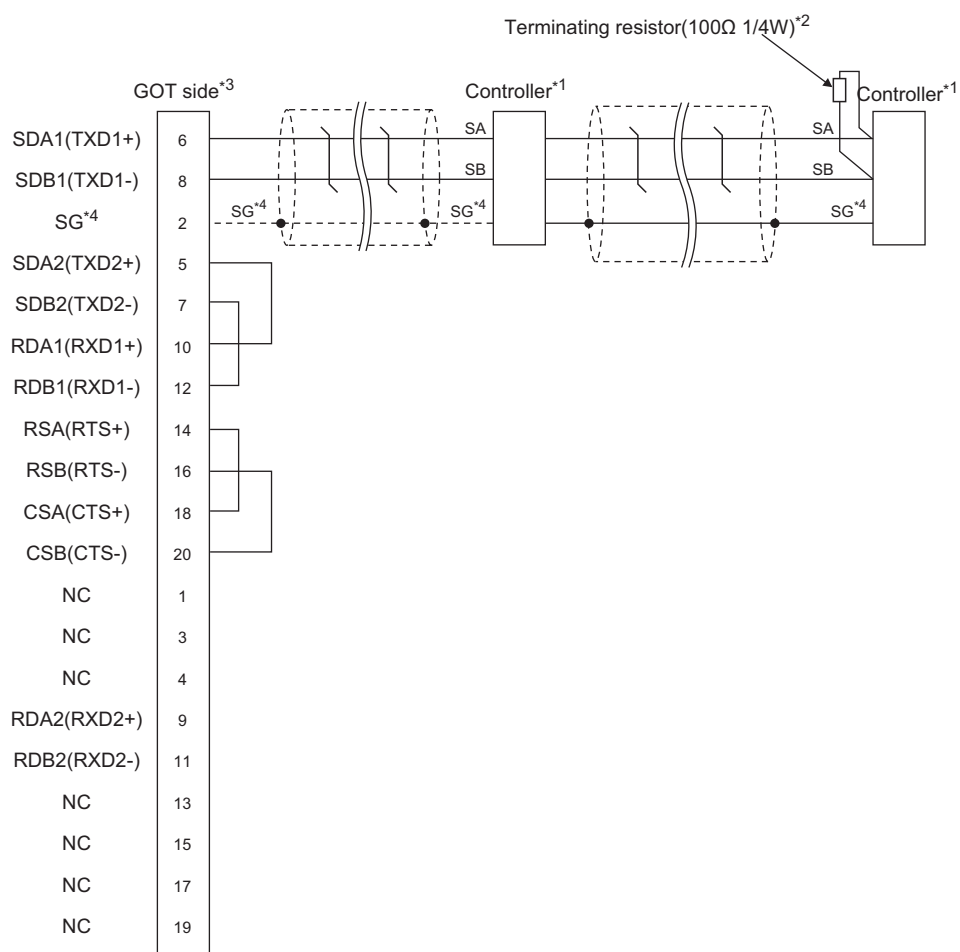
When connecting a CHINO controller to the GOT, a terminating resistor must be connected to the CHINO controller.

 User's Manual of the CHINO controller

### 11.3.3 RS-485 cable

#### ■ Connection diagram

##### (1) RS485 connection diagram 1)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be a terminal.

\*3 Set the terminating resistor of GOT side.



■ Connecting terminating resistors

\*4 When connecting to DB1000 or DB200 Series, connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |              |              |                   |              |              |
|-------------|-----------------|--------------|--------------|--------------|-------------------|--------------|--------------|
|             | LT230           | LT300        | LT400        | LT830        | DZ1000,<br>DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No. | Terminal No. | Terminal No.      | Terminal No. | Terminal No. |
| SA          | 6               | 11           | 11           | 6            | 19                | 12           | 26           |
| SB          | 7               | 12           | 12           | 7            | 20                | 13           | 27           |
| SG          | 8               | 15           | 15           | 8            | 23                | 14           | 28           |

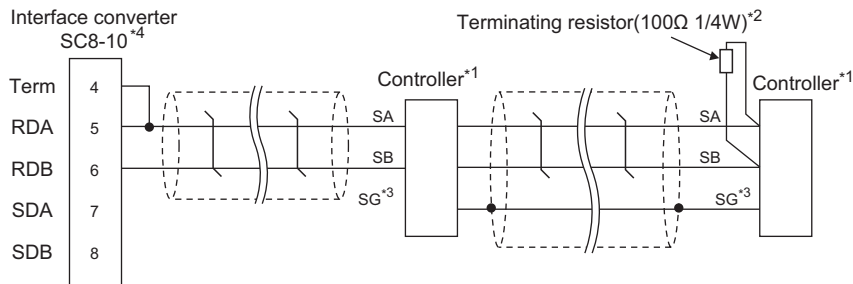
| Signal name | Controller type |                    |          |                  |
|-------------|-----------------|--------------------|----------|------------------|
|             | KP1000          | KP2000             |          | AL3000<br>AH3000 |
|             | Terminal No.    | Terminal No. *5    |          | Terminal name    |
|             |                 | S*6, E*6, F*6, G*6 | D*6, G*6 |                  |
| SA          | 12              | 26                 | 29       | SA               |
| SB          | 13              | 27                 | 30       | SB               |
| SG          | 14              | 28                 | 31       | SG               |

\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.  
Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)

For the symbol G, two terminal numbers are available. Select as necessary.

## (2) RS485 connection diagram 2)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be a terminal.

\*3 Do not connect SG of the controller and SG of the GOT.

\*4 Set the Communication Type switch of the converter to RS-485.

| Signal name | Controller type |              |              |              |                   |              |              |
|-------------|-----------------|--------------|--------------|--------------|-------------------|--------------|--------------|
|             | LT230           | LT300        | LT400        | LT830        | DZ1000,<br>DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No. | Terminal No. | Terminal No.      | Terminal No. | Terminal No. |
| SA          | 6               | 11           | 11           | 6            | 19                | 12           | 26           |
| SB          | 7               | 12           | 12           | 7            | 20                | 13           | 27           |
| SG          | 8               | 15           | 15           | 8            | 23                | 14           | 28           |

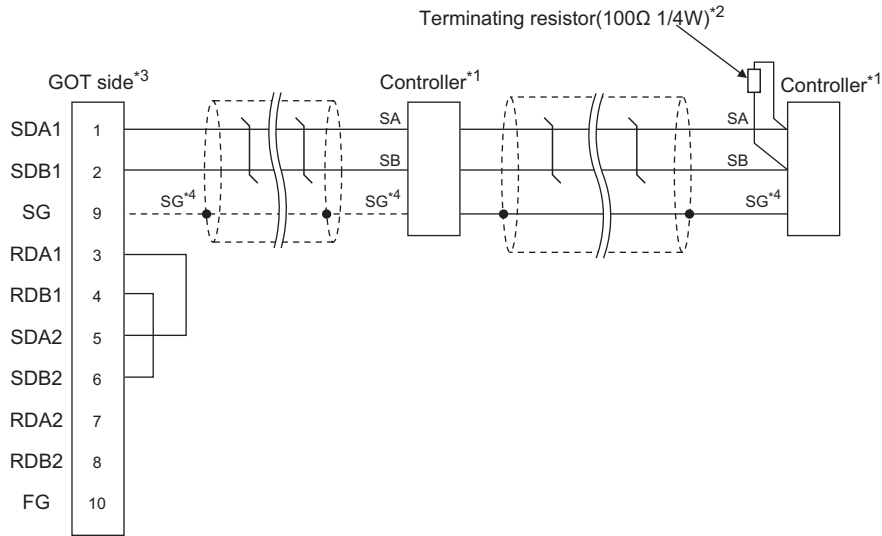
| Signal name | Controller type |                    |          |                  |
|-------------|-----------------|--------------------|----------|------------------|
|             | KP1000          | KP2000             |          | AL3000<br>AH3000 |
|             | Terminal No.    | Terminal No. *5    |          | Terminal name    |
|             |                 | S*6, E*6, F*6, G*6 | D*6, G*6 |                  |
| SA          | 12              | 26                 | 29       | SA               |
| SB          | 13              | 27                 | 30       | SB               |
| SG          | 14              | 28                 | 31       | SG               |

\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.  
Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)

For the symbol G, two terminal numbers are available. Select as necessary.

### (3) RS485 connection diagram 3)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be a terminal.

\*3 Set the terminating resistor of GOT side.



■ Connecting terminating resistors

\*4 When connecting to DB1000 or DB200 Series, connect SG of the controller and SG of the GOT.

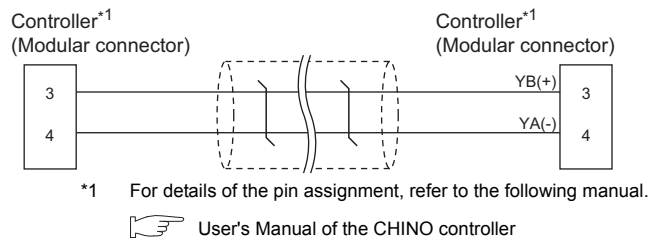
| Signal name | Controller type |              |              |              |                   |              |              |
|-------------|-----------------|--------------|--------------|--------------|-------------------|--------------|--------------|
|             | LT230           | LT300        | LT400        | LT830        | DZ1000,<br>DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No. | Terminal No. | Terminal No.      | Terminal No. | Terminal No. |
| SA          | 6               | 11           | 11           | 6            | 19                | 12           | 26           |
| SB          | 7               | 12           | 12           | 7            | 20                | 13           | 27           |
| SG          | 8               | 15           | 15           | 8            | 23                | 14           | 28           |

| Signal name | Controller type |                    |          |                  |
|-------------|-----------------|--------------------|----------|------------------|
|             | KP1000          | KP2000             |          | AL3000<br>AH3000 |
|             | Terminal No.    | Terminal No.*5     |          | Terminal name    |
|             |                 | S*6, E*6, F*6, G*6 | D*6, G*6 |                  |
| SA          | 12              | 26                 | 29       | SA               |
| SB          | 13              | 27                 | 30       | SB               |
| SG          | 14              | 28                 | 31       | SG               |

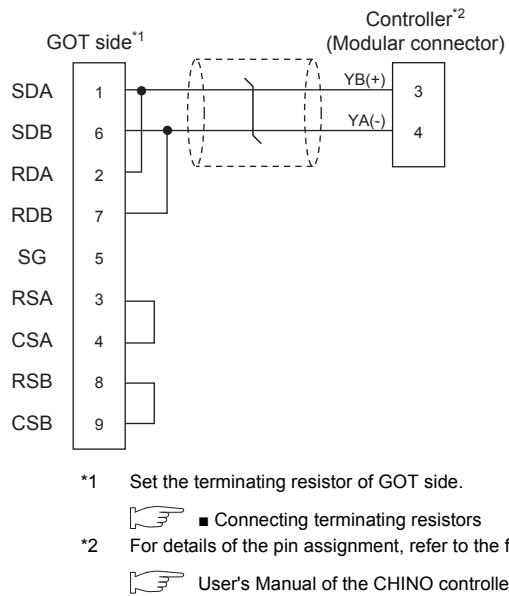
\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.  
Model: KP2 4) 5) 6) 7) 8) 9) 10) – 12) 13) 14)  
For the symbol G, two terminal numbers are available. Select as necessary.

(4) RS485 connection diagram 4)

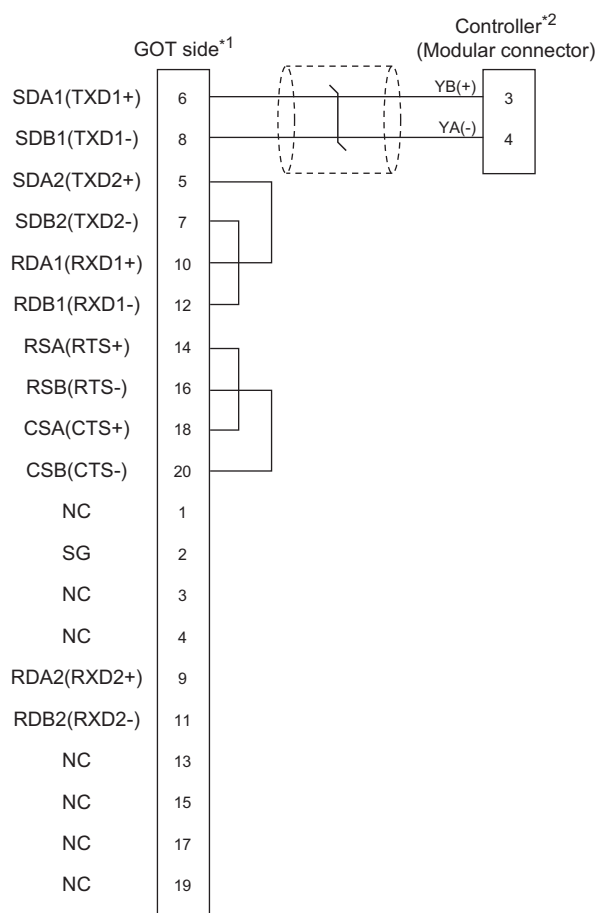


(5) RS485 connection diagram 5)





## (6) RS485 connection diagram 6)



\*1 Set the terminating resistor of GOT side.



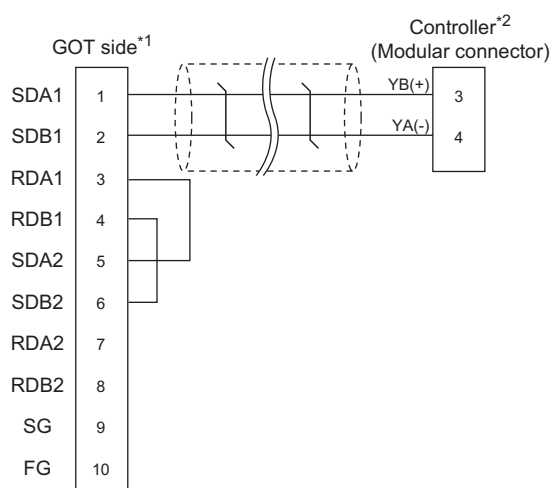
■ Connecting terminating resistors

\*2 For details of the pin assignment, refer to the following manual.



User's Manual of the CHINO controller

## (7) RS485 connection diagram 7)



\*1 Set the terminating resistor of GOT side.



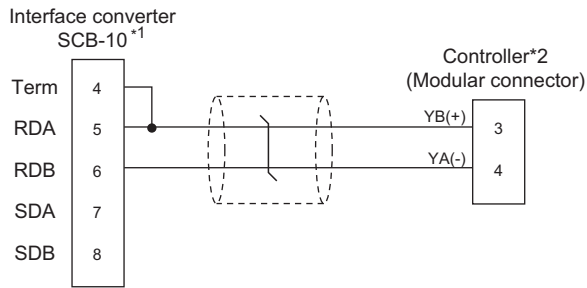
■ Connecting terminating resistors

\*2 For details of the pin assignment, refer to the following manual.



User's Manual of the CHINO controller

## (8) RS485 connection diagram 8)

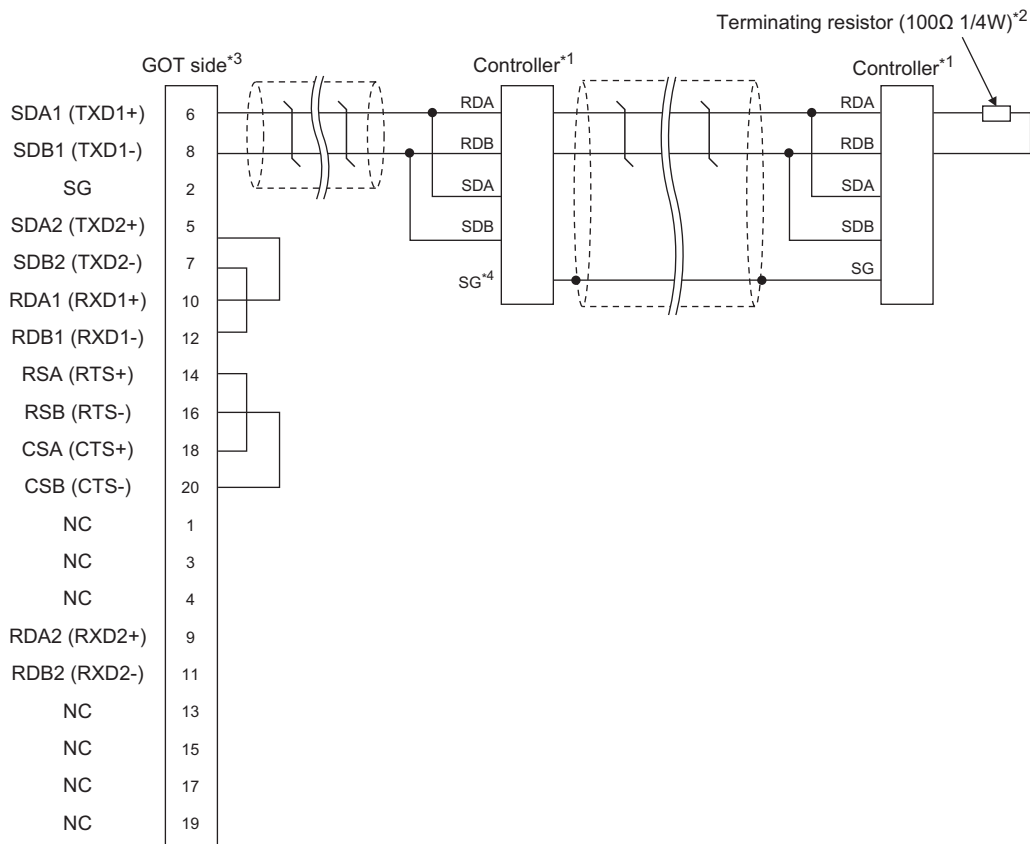


\*1 Set the Communication Type switch of the converter to RS-485.

\*2 For details of the pin assignment, refer to the following manual.

User's Manual of the CHINO controller

## (9) RS485 connection diagram 9)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be terminating resistors.

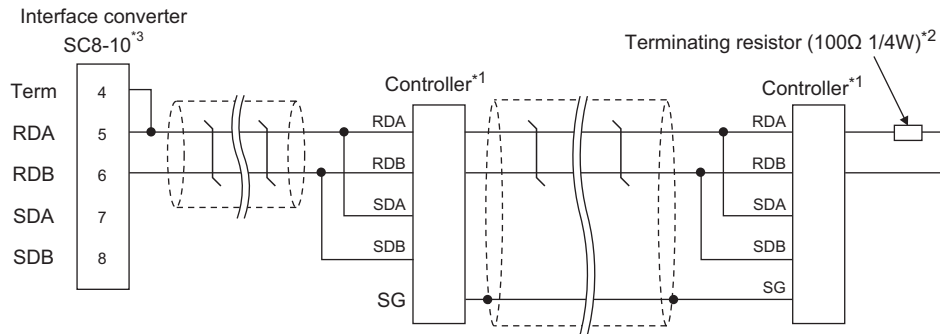
\*3 Set the terminating resistor of The GOT side.

■ Connecting terminating resistors

\*4 Do not connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |               |               |
|-------------|-----------------|--------------|---------------|---------------|
|             | SE3000          | JU           | KE3000        | LE5000        |
|             | Terminal name   | Terminal No. | Terminal name | Terminal name |
| RDA         | RDA             | 3            | RDA           | RDA           |
| RDB         | RDB             | 4            | RDB           | RDB           |
| SDA         | SDA             | 1            | SDA           | SDA           |
| SDB         | SDB             | 2            | SDB           | SDB           |
| SG          | SG              | 5            | SG            | SG            |

(10) RS485 connection diagram 10)



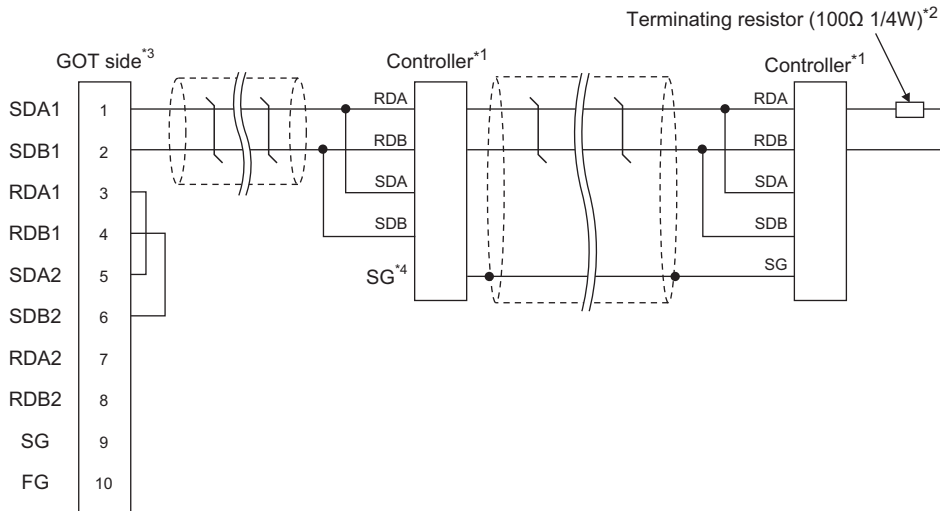
\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be terminating resistors.

\*3 Set the Communication Type switch of the converter to RS-485.

| Signal name | Controller type |              |               |               |
|-------------|-----------------|--------------|---------------|---------------|
|             | SE3000          | JU           | KE3000        | LE5000        |
|             | Terminal name   | Terminal No. | Terminal name | Terminal name |
| RDA         | RDA             | 3            | RDA           | RDA           |
| RDB         | RDB             | 4            | RDB           | RDB           |
| SDA         | SDA             | 1            | SDA           | SDA           |
| SDB         | SDB             | 2            | SDB           | SDB           |
| SG          | SG              | 5            | SG            | SG            |

(11) RS485 connection diagram 11)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be terminating resistors.

\*3 Set the terminating resistor of The GOT side.

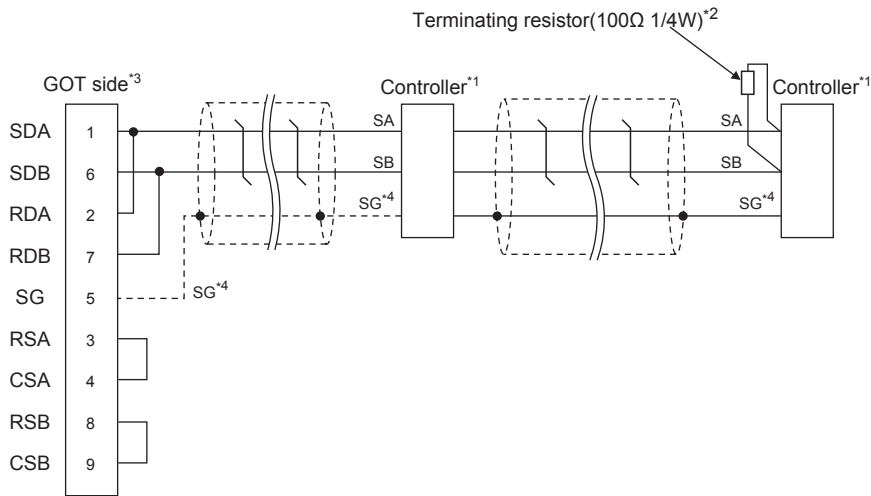


■ Connecting terminating resistors

\*4 Do not connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |               |               |
|-------------|-----------------|--------------|---------------|---------------|
|             | SE3000          | JU           | KE3000        | LE5000        |
|             | Terminal name   | Terminal No. | Terminal name | Terminal name |
| RDA         | RDA             | 3            | RDA           | RDA           |
| RDB         | RDB             | 4            | RDB           | RDB           |
| SDA         | SDA             | 1            | SDA           | SDA           |
| SDB         | SDB             | 2            | SDB           | SDB           |
| SG          | SG              | 5            | SG            | SG            |

(12) RS485 connection diagram 12)



\*1 Pin No. of controller differs depending on the model. Refer to the following table.

\*2 Terminating resistor should be provided for a controller which will be terminating resistors.

\*3 Set the terminating resistor of The GOT side.



■ Connecting terminating resistors

\*4 When connecting to DB1000 or DB200 Series, connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |              |              |                   |              |              |
|-------------|-----------------|--------------|--------------|--------------|-------------------|--------------|--------------|
|             | LT230           | LT300        | LT400        | LT830        | DZ1000,<br>DZ2000 | DB1000       | DB2000       |
|             | Terminal No.    | Terminal No. | Terminal No. | Terminal No. | Terminal No.      | Terminal No. | Terminal No. |
| SA          | 6               | 11           | 11           | 6            | 19                | 12           | 26           |
| SB          | 7               | 12           | 12           | 7            | 20                | 13           | 27           |
| SG          | 8               | 15           | 15           | 8            | 23                | 14           | 28           |

| Signal name | Controller type |                    |          |                  |
|-------------|-----------------|--------------------|----------|------------------|
|             | KP1000          | KP2000             |          | AL3000<br>AH3000 |
|             | Terminal No.    | Terminal No.*5     |          | Terminal name    |
|             |                 | S*6, E*6, F*6, G*6 | D*6, G*6 |                  |
| SA          | 12              | 26                 | 29       | SA               |
| SB          | 13              | 27                 | 30       | SB               |
| SG          | 14              | 28                 | 31       | SG               |

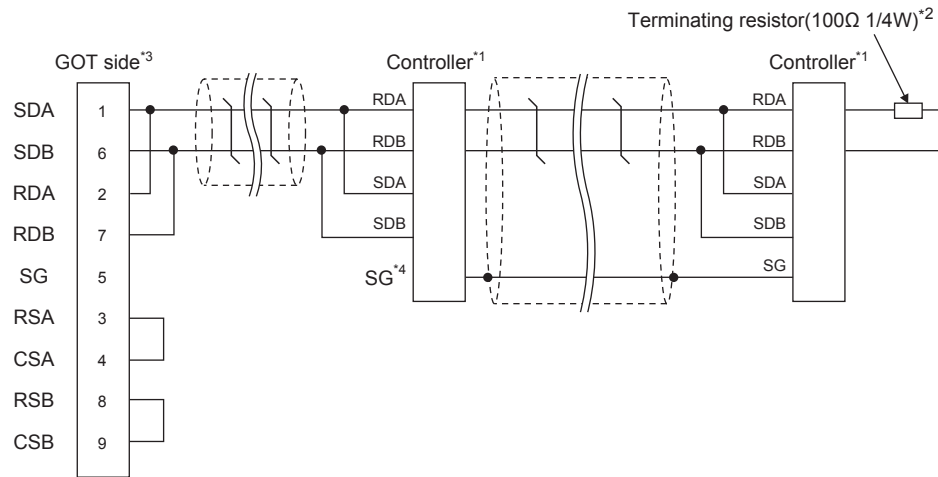
\*5 For KP2000 series, the terminal No. differs according to the model.

\*6 This indicates the symbols of the position 10) (third zone) of the following models.

Model: KP2 4) 5) 6) 7) 8) 9) 10) - 12) 13) 14)

For the symbol G, two terminal numbers are available. Select as necessary.

(13) RS485 connection diagram 13)



- \*1 Pin No. of controller differs depending on the model. Refer to the following table.
- \*2 Terminating resistor should be provided for a controller which will be terminating resistors.
- \*3 Set the terminating resistor of The GOT side.
- Connecting terminating resistors
- \*4 Do not connect SG of the controller and SG of the GOT.

| Signal name | Controller type |              |               |               |
|-------------|-----------------|--------------|---------------|---------------|
|             | SE3000          | JU           | KE3000        | LE5000        |
|             | Terminal name   | Terminal No. | Terminal name | Terminal name |
| RDA         | RDA             | 3            | RDA           | RDA           |
| RDB         | RDB             | 4            | RDB           | RDB           |
| SDA         | SDA             | 1            | SDA           | SDA           |
| SDB         | SDB             | 2            | SDB           | SDB           |
| SG          | SG              | 5            | SG            | SG            |

## ■ Precautions when preparing a cable

### (1) Cable length

The maximum length of the RS-485 cable must be 1,200m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) CHINO controller side connector

Use the connector compatible with the CHINO controller side module.

For details, refer to the user's manual of the CHINO controller.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "100 OHM".

For the procedure to set the terminating resistor, refer to the following.

 1.4.3 Terminating resistors of GOT

### (2) CHINO controller side

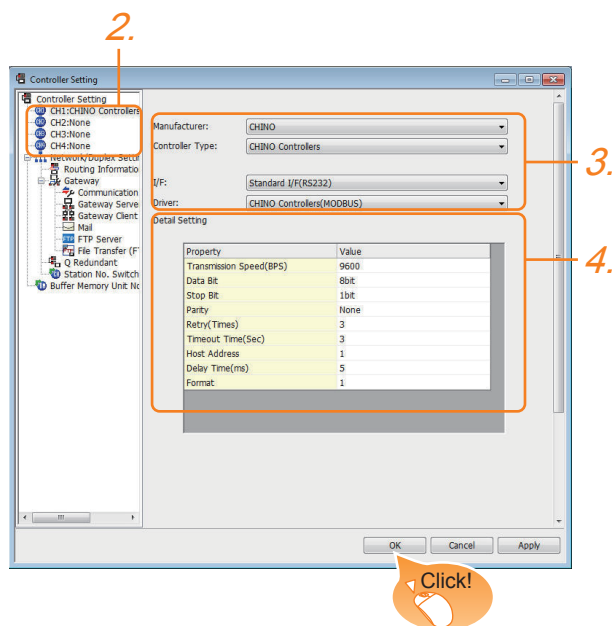
When connecting a CHINO controller to the GOT, a terminating resistor must be connected to the CHINO controller.

 User's Manual of the CHINO controller

## 11.4 GOT Side Settings

### 11.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: CHINO
  - Controller Type: CHINO Controllers
  - I/F: Interface to be used
  - Driver: CHINO Controller(MODBUS)
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 11.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 11.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | None  |
| Retry(Times)            | 3     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 1     |
| Delay Time(ms)          | 5     |
| Format                  | 1     |

| Item               | Description                                                                                                                                                             | Range                                            |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps)                                                | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 8bits)                                                         | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications. (Default: 1bit)                                                                                                         | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: None)                                                         | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 3times)                                                                          | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out. (Default: 1sec)                                                                                                    | 1 to 30sec                                       |
| Host Address       | Specify the host address (station No. of the GOT to which the controller is connected) in the connected network. (Default: 1)                                           | 1 to 99                                          |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 5ms)                                                               | 0 to 300ms                                       |
| Format             | Select the communication format. (Default: 1)<br>Format 1:<br>Accessible to LT230/300/400/830, DZ1000/2000, Not accessible to GT120<br>Format 2:<br>Accessible to GT120 | 1/2                                              |

## POINT

- (1) Format  
When connecting to GT120, specify format 2.
- (2) Delay Time  
When connecting to the following models, set the send delay time to 30ms or more.

| Model name     |
|----------------|
| DZ1000, DZ2000 |

- (3) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
 GOT2000 Series User's Manual (Utility)
- (4) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.



## 11.5 Controller Side Setting

### POINT

- (1) CHINO controller  
For details of CHINO controller, refer to the following manual.

☞ User's Manual of the CHINO controller

- (2) Converter  
For details on communication settings of the converter, refer to the following manual.

☞ User's Manual for converter

|            | Model name     | Refer to |
|------------|----------------|----------|
| Controller | LT230, LT300   | 11.5.1   |
|            | LT400, LT830   | 11.5.2   |
|            | DZ1000, DZ2000 | 11.5.3   |
|            | DB1000, DB2000 | 11.5.4   |
|            | GT120          | 11.5.5   |
|            | KP1000, KP2000 | 11.5.6   |
|            | AL3000, AH3000 | 11.5.7   |
|            | SE3000         | 11.5.8   |
|            | JU             | 11.5.9   |
|            | KE3000         | 11.5.10  |
|            | LE5000         | 11.5.11  |
| Converter  | SC8-10         | 11.5.12  |

### 11.5.1 Connecting to LT230, LT300 Series

#### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting to Lock 4.

#### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                              | Set value                                                                                                                             |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                                          | rtU: MODBUS RTU                                                                                                                       |
| Function                                          | Com: Upper communication                                                                                                              |
| Station No.*1                                     | 1 to 99                                                                                                                               |
| Transmission speed*2                              | 9600bps, 19200bps                                                                                                                     |
| Character*2<br>(Bit length, Parity bit, Stop bit) | 5: 8bit, None, 1bit<br>6: 8bit, None, 2bit<br>7: 8bit, Even, 1bit<br>8: 8bit, Even, 2bit<br>9: 8bit, Odd, 1bit<br>10: 8bit, Odd, 2bit |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

### 11.5.2 Connecting to LT400, LT830 Series

#### ■ Key Lock setting

To write the Digital and the Analog parameters, set the following Key Lock setting

- LT400: Lock4
- LT830: Lock3

#### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                              | Set value                                                                                                                                        |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                                          | rtU: MODBUS RTU                                                                                                                                  |
| Function                                          | Com: Upper communication                                                                                                                         |
| Station No.*1                                     | 1 to 99                                                                                                                                          |
| Transmission speed*2                              | 9600bps, 19200bps                                                                                                                                |
| Character*2<br>(Bit length, Parity bit, Stop bit) | 8N1: 8bit, None, 1bit<br>8N2: 8bit, None, 2bit<br>8E1: 8bit, Even, 1bit<br>8E2: 8bit, Even, 2bit<br>8O1: 8bit, Odd, 1bit<br>8O2: 8bit, Odd, 2bit |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

### 11.5.3 Connecting to DZ1000, DZ2000 Series

#### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting to Lock 2.

#### ■ Communication settings

Set the communication settings with controller key operation.

| Item                 | Set value                |
|----------------------|--------------------------|
| Protocol             | rtU: MODBUS RTU          |
| Function             | Com: Upper communication |
| Station No.*1        | 1 to 31                  |
| Transmission speed*2 | 9600bps, 19200bps        |
| Data bit             | 8bits (fixed)            |
| Stop bit             | 1bit (fixed)             |
| Parity bit           | None (fixed)             |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

## 11.5.4 Connecting to DB1000, DB2000 Series

### ■ Communication settings

Set the communication settings with controller key operation.

| Item                 | Set value                                                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol             | MODBUS (RTU)                                                                                                                                                                         |
| Function             | Com: Upper communication                                                                                                                                                             |
| Station No.*1        | 01 to 99                                                                                                                                                                             |
| Transmission speed*2 | 9600bps, 19200bps, 38400bps                                                                                                                                                          |
| Character            | 7BIT/EVEN/STOP1<br>7BIT/EVEN/STOP2<br>7BIT/ODD/STOP1<br>7BIT/ODD/STOP2<br>8BIT/NON/STOP1<br>8BIT/NON/STOP2<br>8BIT/EVEN/STOP1<br>8BIT/EVEN/STOP2<br>8BIT/ODD/STOP1<br>8BIT/ODD/STOP2 |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

## 11.5.5 Connecting to GT120 Series

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting to Lock 3.

### ■ Communication settings

Release the controller lock function in advance and set the following communication settings.

After completing the communication settings, set the Key Lock setting to Lock 3.

| Item                   | Set value                            |
|------------------------|--------------------------------------|
| Communication protocol | comr: MODBUS RTU                     |
| Station No.*1          | 1 to 95                              |
| Transmission speed*2   | 96: 9600bps<br>192: 19200bps         |
| Data bit               | 8bits (fixed)                        |
| Stop bit*2             | 1bit, 2bits                          |
| Parity bit*2           | nonE: None<br>EVEN: Even<br>odd: Odd |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

## 11.5.6 Connecting to KP1000, KP2000

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                              | Set value                                                                                                  |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Protocol                                          | MODBUS (RTU)                                                                                               |
| Function                                          | COM                                                                                                        |
| Station No.*1                                     | 1 to 99                                                                                                    |
| Transmission speed*2                              | 2400bps, 4800bps, 9600bps,<br>19200bps, 38400bps                                                           |
| Character*2<br>(Bit length, Parity bit, Stop bit) | 8BIT/NON/STOP1<br>8BIT/NON/STOP2<br>8BIT/EVEN/STOP1<br>8BIT/EVEN/STOP2<br>8BIT/ODD/STOP1<br>8BIT/ODD/STOP2 |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

## 11.5.7 Connecting to AL3000, AH3000

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                              | Set value                                                                                                                                                    |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                                          | MODBUS                                                                                                                                                       |
| Transmission code                                 | rtu                                                                                                                                                          |
| Communication type                                | RS232C, RS-422A, RS-485                                                                                                                                      |
| Station No.*1                                     | 1 to 31                                                                                                                                                      |
| Transmission speed*2                              | 2400bps, 4800bps, 9600bps,<br>19200bps                                                                                                                       |
| Character*2<br>(Bit length, Parity bit, Stop bit) | [8N1]: 8bit, None, 1bit<br>[8N2]: 8bit, None, 2bit<br>[8E1]: 8bit, Even, 1bit<br>[8E2]: 8bit, Even, 2bit<br>[8O1]: 8bit, Odd, 1bit<br>[8O2]: 8bit, Odd, 2bit |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

## 11.5.8 Connecting to SE3000

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Make the communication settings using the engineering software package (PASS)

| Item                   | Set value         |
|------------------------|-------------------|
| Protocol               | MODBUS RTU        |
| Station No.*1*3        | 1 to 31           |
| Transmission speed*2*3 | 9600bps, 19200bps |
| Data bit               | 8bits (fixed)     |
| Parity bit*2           | Even, Odd, Non    |
| Stop bit*2             | 1bit, 2bits       |
| Transmission code      | Binary (fixed)    |
| Error check            | CRC-16 (fixed)    |

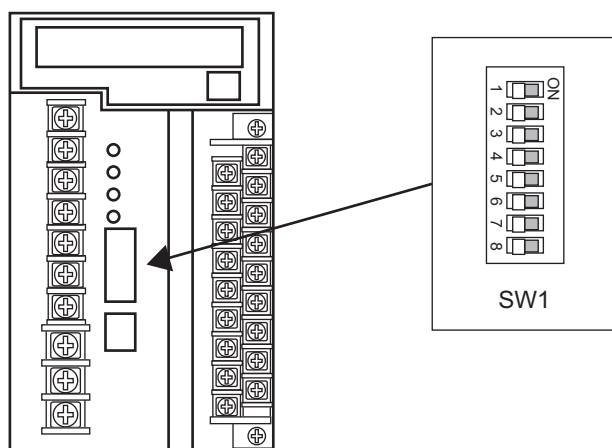
\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

\*3 Station No. and Transmission speed can also be set by switch SW1.

### ■ Setting by Switch (SW1)

Station No. and Transmission speed can be set.



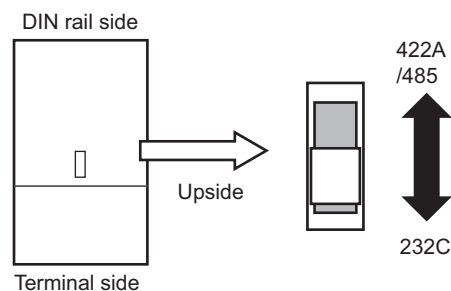
#### (1) Station No.

| SW1-1 | SW1-2 | SW1-3 | SW1-4 | SW1-5 | Station No. |
|-------|-------|-------|-------|-------|-------------|
| OFF   | OFF   | OFF   | OFF   | OFF   | 1           |
| ON    | OFF   | OFF   | OFF   | OFF   | 1           |
| OFF   | ON    | OFF   | OFF   | OFF   | 2           |
| ON    | ON    | OFF   | OFF   | OFF   | 3           |
|       |       |       |       |       | :           |
|       |       |       |       |       | :           |
| ON    | OFF   | ON    | ON    | ON    | 29          |
| OFF   | ON    | ON    | ON    | ON    | 30          |
| ON    | ON    | ON    | ON    | ON    | 31          |

#### (2) Transmission speed

| SW1-6 | SW1-7 | communication port     | Transmission speed |
|-------|-------|------------------------|--------------------|
| OFF   | OFF   | Upper communication    | 9600bps            |
| OFF   | ON    | Upper communication    | 19200bps           |
| ON    | OFF   | ENG                    | -                  |
| ON    | ON    | User setting inhibited |                    |

### ■ Setting by Switch (SW2)



| SW2                        |                           |
|----------------------------|---------------------------|
| Front side (Terminal side) | Rear side (DIN rail side) |
| RS232C                     | RS422A/485                |

## 11.5.9 Connecting to JU

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                              | Set value                                                                                                                                                    |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                                          | rtU                                                                                                                                                          |
| Station No.*1                                     | 1 to 99                                                                                                                                                      |
| Transmission speed*2                              | 9600bps, 19200bps                                                                                                                                            |
| Character*2<br>(Bit length, Parity bit, Stop bit) | [8N1]: 8bit, None, 1bit<br>[8N2]: 8bit, None, 2bit<br>[8E1]: 8bit, Even, 1bit<br>[8E2]: 8bit, Even, 2bit<br>[8O1]: 8bit, Odd, 1bit<br>[8O2]: 8bit, Odd, 2bit |

\*1 Avoid duplication of the station No. with any of the other units.

\*2 Adjust the settings with GOT settings.

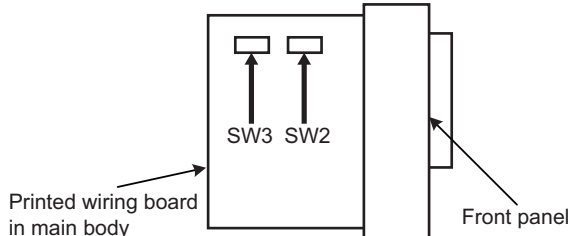
## 11.5.10 Connecting to KE3000

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Make the communication settings by operating the switches SW2 and SW3 of the module.



#### (1) Setting by SW2

| Item                                           | Set value                 | SW2-2 | SW2-3 |
|------------------------------------------------|---------------------------|-------|-------|
| Transmission code <sup>*2</sup>                | MODBUS RTU                | OFF   | -     |
| Transmission speed <sup>*1</sup>               | 9600bps                   | -     | OFF   |
|                                                | 19200bps                  | -     | ON    |
| Transmission character structure <sup>*2</sup> | 8bits, None, 1bit (fixed) | -     | -     |

<sup>\*1</sup> Adjust the settings with GOT settings.

<sup>\*2</sup> When the transmission code is MODBUS RTU, the setting of the transmission character structure is fixed.

#### (2) Setting by SW3

Set the station No. as follows.

| SW3-4 | SW3-5 | SW3-6 | SW3-7 | SW3-8 | Station No. <sup>*1</sup> |
|-------|-------|-------|-------|-------|---------------------------|
| OFF   | OFF   | OFF   | OFF   | OFF   | 1                         |
| ON    | OFF   | OFF   | OFF   | OFF   | 1                         |
| OFF   | ON    | OFF   | OFF   | OFF   | 2                         |
| ON    | ON    | OFF   | OFF   | OFF   | 3                         |
| :     |       |       |       |       |                           |
| :     |       |       |       |       |                           |
| ON    | OFF   | ON    | ON    | ON    | 29                        |
| OFF   | ON    | ON    | ON    | ON    | 30                        |
| ON    | ON    | ON    | ON    | ON    | 31                        |

<sup>\*1</sup> Avoid duplication of the station No. with any of the other units.

## 11.5.11 Connecting to LE5000

### ■ Key Lock setting

To write the Digital and the Analog parameters, set the Key Lock setting.

### ■ Communication settings

Set the communication settings with controller key operation.

| Item                                                          | Set value               |
|---------------------------------------------------------------|-------------------------|
| RTU/ASCII                                                     | RTU                     |
| Station No. <sup>*1</sup>                                     | 1 to 99                 |
| Transmission speed <sup>*2</sup>                              | 9600bps, 19200bps       |
| Character <sup>*2</sup><br>(Bit length, Parity bit, Stop bit) | [8N1]: 8bit, None, 1bit |
|                                                               | [8N2]: 8bit, None, 2bit |
|                                                               | [8E1]: 8bit, Even, 1bit |
|                                                               | [8E2]: 8bit, Even, 2bit |
|                                                               | [8O1]: 8bit, Odd, 1bit  |
|                                                               | [8O2]: 8bit, Odd, 2bit  |

<sup>\*1</sup> Avoid duplication of the station No. with any of the other units.

<sup>\*2</sup> Adjust the settings with GOT settings.

# 11.5.12 Connecting to converter SC8-10

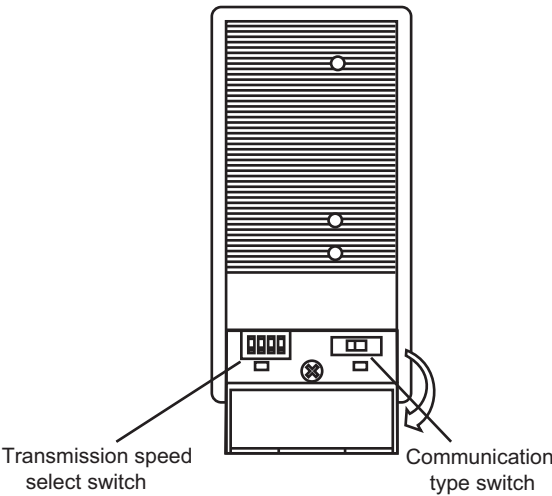
## ■ Communication settings

Make the communication settings using setting switches.

| Item                               | Set value         |
|------------------------------------|-------------------|
| Transmission speed select switch*1 | 9600bps, 19200bps |
| Communication type switch          | RS-485, RS-422    |

\*1 Adjust the settings with GOT and controller settings.

## ■ Settings by switch



### (1) Transmission speed setting

| Setting item       | Set value | Switch No. |     |     |     |
|--------------------|-----------|------------|-----|-----|-----|
|                    |           | 1          | 2   | 3   | 4   |
| Transmission speed | 9600bps   | OFF        | ON  | OFF | OFF |
|                    | 19200bps  | OFF        | OFF | ON  | OFF |

### (2) Communication type setting

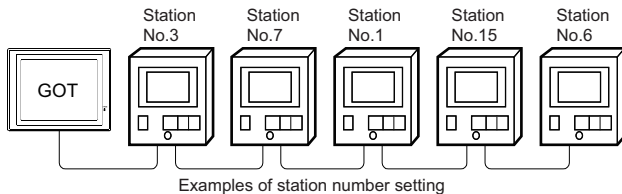
| Setting item  |
|---------------|
| RS-485/RS-422 |

RS-485 ↔ RS-422A

### 11.5.13 Station number setting

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



#### (1) Direct specification

When setting the device, specify the station number of the controller of which data is to be changed.

| Model name                 | Specification range | Refer to         |
|----------------------------|---------------------|------------------|
| LT230, LT300, LT400, LT830 | 1 to 99             | 11.5.1<br>11.5.2 |
| DZ1000, DZ2000             | 1 to 31             | 11.5.3           |
| DB1000, DB2000             | 1 to 99             | 11.5.4           |
| GT120                      | 1 to 95             | 11.5.5           |
| KP1000, KP2000             | 1 to 99             | 11.5.6           |
| AL3000, AH3000             | 1 to 31             | 11.5.7           |
| SE3000                     | 1 to 31             | 11.5.8           |
| JU                         | 1 to 99             | 11.5.9           |
| KE3000                     | 1 to 31             | 11.5.10          |
| LE5000                     | 1 to 99             | 11.5.11          |

#### (2) Indirect specification

When setting the device, indirectly specify the station number of the controller of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from 100 to 115 on GT Designer3, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the controller.

| Specification station NO. | Compatible device | Setting range                                                                                                                                                                                                                                                |
|---------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100                       | GD10              | 1 to 99: LT230, LT300, LT400, LT830<br>DB1000, DB2000, KP1000, KP2000, JU, LE5000<br>1 to 31: DZ1000, DZ2000, AL3000, AH3000, KE3000, SE3000<br>1 to 95: GT120<br>For the setting other than the above, error (dedicated device is out of range) will occur. |
| 101                       | GD11              |                                                                                                                                                                                                                                                              |
| 102                       | GD12              |                                                                                                                                                                                                                                                              |
| 103                       | GD13              |                                                                                                                                                                                                                                                              |
| 104                       | GD14              |                                                                                                                                                                                                                                                              |
| 105                       | GD15              |                                                                                                                                                                                                                                                              |
| 106                       | GD16              |                                                                                                                                                                                                                                                              |
| 107                       | GD17              |                                                                                                                                                                                                                                                              |
| 108                       | GD18              |                                                                                                                                                                                                                                                              |
| 109                       | GD19              |                                                                                                                                                                                                                                                              |
| 110                       | GD20              |                                                                                                                                                                                                                                                              |
| 111                       | GD21              |                                                                                                                                                                                                                                                              |
| 112                       | GD22              |                                                                                                                                                                                                                                                              |
| 113                       | GD23              |                                                                                                                                                                                                                                                              |
| 114                       | GD24              |                                                                                                                                                                                                                                                              |
| 115                       | GD25              |                                                                                                                                                                                                                                                              |

#### (3) All station specification

Target station differs depending on write-in operation or read-out operation.

- For write-in operation, all station will be a target.
- For read-out operation, only one station will be a target.
- All station specification is not available for KE3000. Do not use the all station specification for systems which include KE3000.

## 11.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

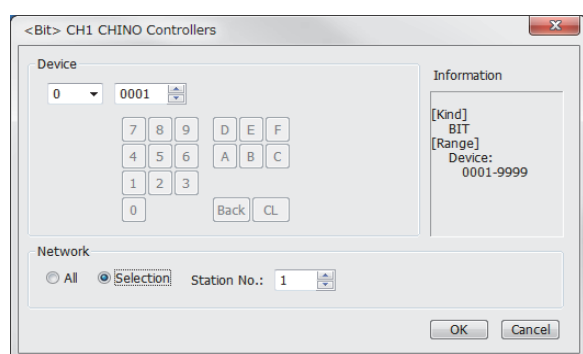
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### ■ Setting item



| Item        | Description                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number. The bit number can be set only when specifying the bit of word device. |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Information | Displays the device type and setting range which are selected in [Device].                                                 |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Network     | Set the monitor target of the set device.                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                        |
|             | All                                                                                                                        | Select this item when writing data to all controllers connected. During monitoring, the controller which is set for [Host Address] of the communication detail settings is monitored. (When inputting data with the numerical input function, data is written to all the connected controllers during input. The controller set for [Host Address] is monitored during other than input (displaying).) |
|             | Station No.                                                                                                                | Select this item when monitoring the controller of the specified station No. After selecting, set the station No. of the controller in the following range.<br>1 to 99: To monitor the controller of the specified station No.<br>100 to 115: To specify the station No. of the controller to be monitored by the value of GOT data register (GD). <sup>*1</sup>                                       |

<sup>\*1</sup> The following shows the relation between station numbers of the controller and the GOT data register.

| Station No. | GOT data register (GD) | Setting range                                                                         |
|-------------|------------------------|---------------------------------------------------------------------------------------|
| 100         | GD10                   | 1 to 99<br>(If setting a value outside the range above, a device range error occurs.) |
| 101         | GD11                   |                                                                                       |
| :           | :                      |                                                                                       |
| 114         | GD24                   |                                                                                       |
| 115         | GD25                   |                                                                                       |

### POINT

Device settings of CHINO controller  
Devices are set with reference numbers.  
For parameters corresponding to each reference number, refer to the manual of the controller to be used.

### 11.6.1 CHINO controller (CHINO Controllers)

|             | Device name                          | Setting range  | Device No. representation |
|-------------|--------------------------------------|----------------|---------------------------|
| Bit device  | Digital parameter (0)                | 00001 to 09999 | Decimal                   |
|             | Digital input data (1) <sup>*1</sup> | 10001 to 19999 |                           |
| Word device | Analog input data (3) <sup>*1</sup>  | 30001 to 39999 | Decimal                   |
|             | Analog parameter (4)                 | 40001 to 49999 |                           |

<sup>\*1</sup> Only reading is possible.

## 11.7 Precautions

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### ■ Station number settings of temperature controller

In the system configuration, the controller with the station number set with the host address must be included.

For details of host address setting, refer to the following.

 11.4.1 Setting communication interface  
(Communication settings)

### ■ GOT clock control

Since the controller does not have a clock function, the settings of [time adjusting] or [time broad cast] by GOT clock control will be disabled.

### ■ Disconnecting some of multiple connected equipment

The GOT can disconnect some of multiple connected equipment by setting GOT internal device. For example, the faulty station where a communication timeout error occurs can be disconnected from connected equipment.

For details of GOT internal device setting, refer to the following manual.

 GT Designer3 (GOT2000) Help



# 12

## CONNECTION TO TOSHIBA PLC

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|                                             |         |
|---------------------------------------------|---------|
| 12.1 Connectable Model List . . . . .       | 12 - 2  |
| 12.2 Serial Connection . . . . .            | 12 - 3  |
| 12.3 Ethernet Connection . . . . .          | 12 - 9  |
| 12.4 Device Range that Can Be Set . . . . . | 12 - 14 |

# 12. CONNECTION TO TOSHIBA PLC

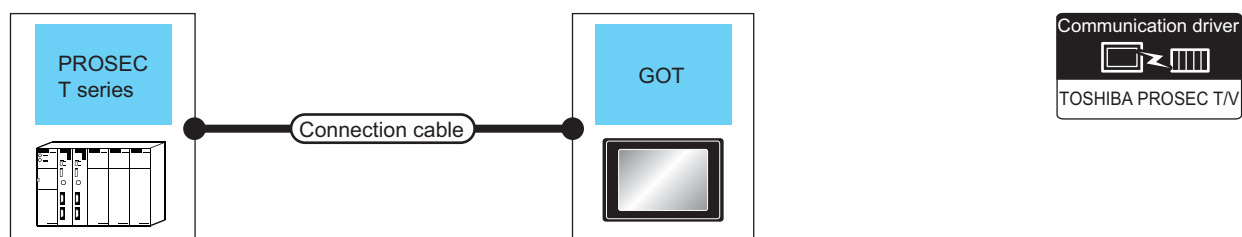
## 12.1 Connectable Model List

The following table shows the connectable models.

| Series                          | Model name                | Clock | Communi-<br>cation<br>Type | Connectable GOT                                    | Refer to                                                                                     |
|---------------------------------|---------------------------|-------|----------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------|
| PROSEC<br>T Series              | T2 (PU224)                | ○     | RS-422                     | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |  12.2.1   |
|                                 | T3                        | ○     |                            |                                                    |                                                                                              |
|                                 | T3H                       | ○     |                            |                                                    |                                                                                              |
|                                 | T2E                       | ○     | RS-232<br>RS-422           |                                                    |                                                                                              |
|                                 | T2N                       | ○     |                            |                                                    |                                                                                              |
| PROSEC<br>V Series              | model 2000(S2)            | ○     | RS-422                     | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |  12.2.2   |
|                                 | model 2000(S2T)           | ○     |                            |                                                    |                                                                                              |
|                                 | model 2000(S2E)           | ○     |                            |                                                    |                                                                                              |
|                                 | model 3000 (S3)           | ○     |                            |                                                    |                                                                                              |
| Unified Controller<br>nv Series | Controller type1<br>PU811 | ○     | Ethernet                   | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |  12.3.1 |

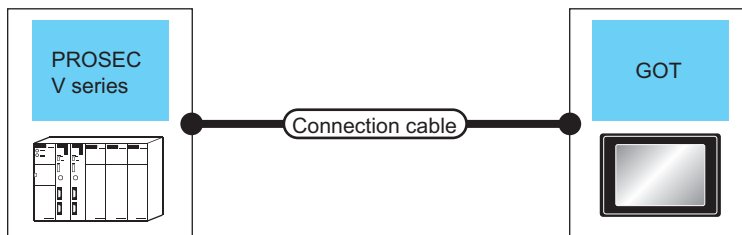
## 12.2 Serial Connection

### 12.2.1 System configuration for connecting to PROSEC T series



| PLC                     |                    | Connection cable                                                                                                                                |               | GOT                |       | Number of connectable equipment |
|-------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name              | Communication Type | Cable model<br>Connection diagram number                                                                                                        | Max. distance | Option device      | Model |                                 |
| T2 (PU224)<br>T3<br>T3H | RS-422             | GT09-C30R40501-15P(3m)<br>GT09-C100R40501-15P(10m)<br>GT09-C200R40501-15P(20m)<br>GT09-C300R40501-15P(30m)<br>or<br>RS422 connection diagram 1) | 1km           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|                         |                    |                                                                                                                                                 |               | GT15-RS4-9S        |       |                                 |
| T2E                     | RS-232             | GT09-C30R40102-9P(3m)<br>or<br>RS232 connection diagram 1)                                                                                      | 15m           | - (Built into GOT) |       |                                 |
|                         |                    |                                                                                                                                                 |               | GT15-RS2-9P        |       |                                 |
|                         | RS-422             | GT09-C30R40502-6C(3m)<br>GT09-C100R40502-6C(10m)<br>GT09-C200R40502-6C(20m)<br>GT09-C300R40502-6C(30m)<br>or<br>RS422 connection diagram 2)     | 1km           | - (Built into GOT) |       |                                 |
|                         |                    |                                                                                                                                                 |               | GT15-RS4-9S        |       |                                 |
| T2N                     | RS-232             | GT09-C30R20502-15P(3m)<br>or<br>RS232 connection diagram 2)                                                                                     | 15m           | - (Built into GOT) |       |                                 |
|                         |                    |                                                                                                                                                 |               | GT15-RS2-9P        |       |                                 |
|                         | RS-422             | GT09-C30R40503-15P(3m)<br>GT09-C100R40503-15P(10m)<br>GT09-C200R40503-15P(20m)<br>GT09-C300R40503-15P(30m)<br>or<br>RS422 connection diagram 3) | 1km           | - (Built into GOT) |       |                                 |
|                         |                    |                                                                                                                                                 |               | GT15-RS4-9S        |       |                                 |

## 12.2.2 System configuration for connecting to PROSEC V series



| PLC                                                     |                    | Connection cable                                                                                                                                |               | GOT                |          | Number of connectable equipment |
|---------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------|---------------------------------|
| Model name                                              | Communication Type | Cable model<br>Connection diagram number                                                                                                        | Max. distance | Option device      | Model    |                                 |
| model 2000 (S2)<br>model 2000 (S2T)<br>model 2000 (S2E) | RS-422             | GT09-C30R40502-6C(3m)<br>GT09-C100R40502-6C(10m)<br>GT09-C200R40502-6C(20m)<br>GT09-C300R40502-6C(30m)<br>or<br>RS422 connection diagram 2)     | 1km           | - (Built into GOT) | <br><br> | 1 GOT for 1 PLC                 |
|                                                         |                    |                                                                                                                                                 |               | GT15-RS4-9S        | <br>     |                                 |
| model 3000 (S3)                                         | RS-422             | GT09-C30R40501-15P(3m)<br>GT09-C100R40501-15P(10m)<br>GT09-C200R40501-15P(20m)<br>GT09-C300R40501-15P(30m)<br>or<br>RS422 connection diagram 1) | 1km           | - (Built into GOT) | <br><br> |                                 |
|                                                         |                    |                                                                                                                                                 |               | GT15-RS4-9S        | <br>     |                                 |

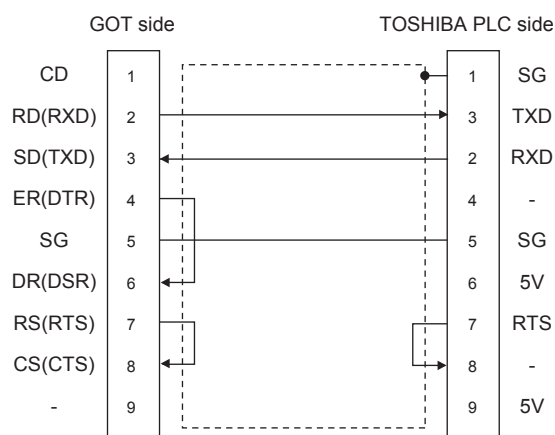
## 12.2.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

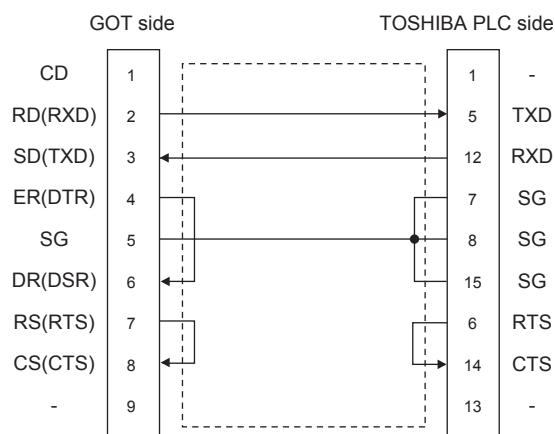
### ■ RS-232 cable

#### (1) Connection diagram

##### (a) RS232 connection diagram 1)



##### (b) RS232 connection diagram 2)



#### (2) Precautions when preparing a cable

##### (a) Cable length

The length of the RS-232 cable must be 15m or less.

##### (b) GOT side connector

For the GOT side connector, refer to the following.

☞ 1.4.1 GOT connector specifications

##### (c) TOSHIBA PLC side connector

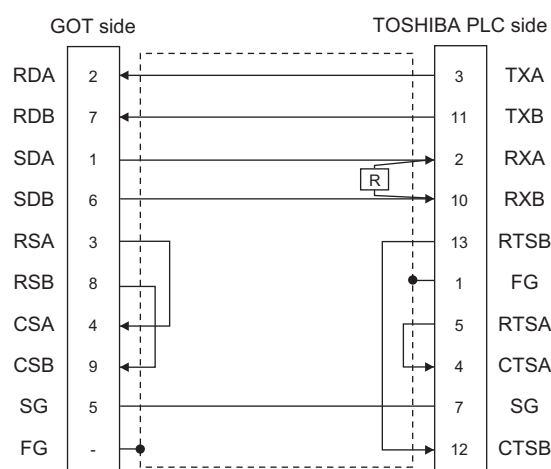
Use the connector compatible with the TOSHIBA PLC.

For details, refer to the TOSHIBA PLC user's manual.

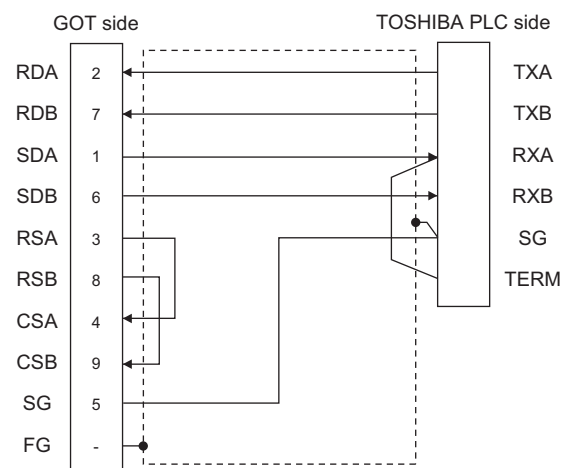
### ■ RS-422 cable

#### (1) Connection diagram

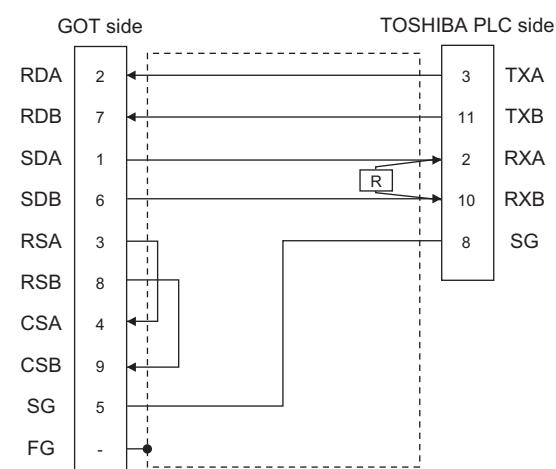
##### (a) RS422 connection diagram 1)



##### (b) RS422 connection diagram 2)



##### (c) RS422 connection diagram 3)



## (2) Precautions when preparing a cable

- (a) Cable length  
The length of the RS-422 cable must be 1km or less.
- (b) GOT side connector  
For the GOT side connector, refer to the following.  
 1.4.1 GOT connector specifications
- (c) TOSHIBA PLC side connector  
Use the connector compatible with the TOSHIBA PLC.  
For details, refer to the TOSHIBA PLC user's manual.

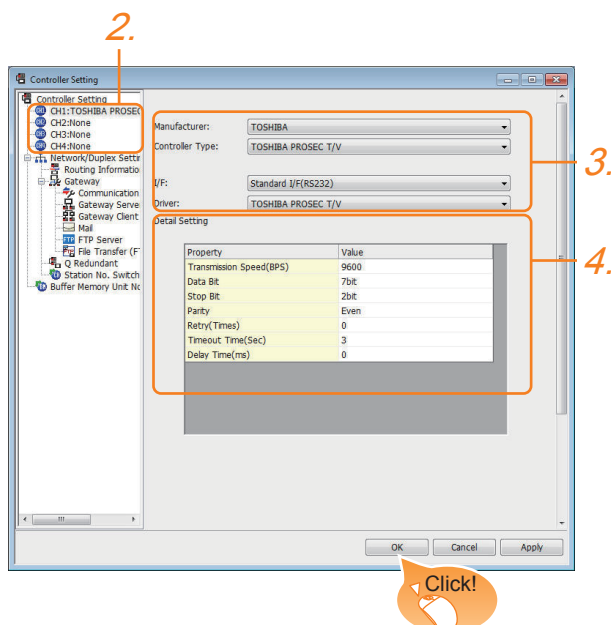
## (3) Setting terminating resistors

- (a) GOT side  
Set the terminating resistor setting switch of the  
For details of terminating resistor settings, refer to the following.  
 1.4.3 Terminating resistors of GOT
- (b) TOSHIBA PLC side  
When connecting an TOSHIBA PLC to a GOT, a terminating resistor must be set to the TOSHIBA PLC.  
For the setting of the terminating resistor, refer to the following manual.  
 TOSHIBA PLC user's Manual
  - T2 (PU224), T2N, T3, T3H, model 3000 (S3)  
Connect the terminating resistor (1/2W-120Ω) across RXA and RXB.
  - T2E, model 2000 (S2, S2T)  
Short across the RXA and TERM terminals.

## 12.2.4 GOT Side Settings

### ■ Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: TOSHIBA
  - Controller Type: TOSHIBA PROSEC T/V
  - I/F: Interface to be used
  - Driver: TOSHIBA PROSEC T/V
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

☞ ■ Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

☞ 1.1.2 I/F communication setting

### ■ Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 7 bit |
| Stop Bit                | 2 bit |
| Parity                  | Even  |
| Retry(Times)            | 0     |
| Timeout Time(Sec)       | 3     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                                 | Range                                                                    |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment.<br>(Default: 9600bps) | 4800bps,<br>9600bps,<br>19200bps,<br>38400bps,<br>57600bps,<br>115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment.<br>(Default: 7bits)          | 7bit,<br>8bit                                                            |
| Stop Bit           | Specify the stop bit length for communications.<br>(Default: 2bit)                                                          | 1bit,<br>2bit                                                            |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication.<br>(Default: Even)          | None,<br>Even,<br>Odd                                                    |
| Retry              | Set the number of retries to be performed when a communication error occurs.<br>(Default: 0time)                            | 0 to 5times                                                              |
| Timeout Time       | Set the time period for a communication to time out.<br>(Default: 3sec)                                                     | 1 to 30sec                                                               |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT.<br>(Default: 0ms)                | 0 to 300 (ms)                                                            |

### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 12.2.5 PLC Side Setting

### POINT

#### TOSHIBA PLC

For details of the TOSHIBA PLC, refer to the following manual.

 TOSHIBA PLC user's Manual

| Model name |                                               | Refer to |
|------------|-----------------------------------------------|----------|
| PLC CPU    | T2 (PU224),<br>T2E, T2N                       | 12 - 8   |
|            | T3, T3H                                       | 12 - 8   |
|            | model 2000 (S2, S2T, S2E),<br>model 3000 (S3) | 12 - 8   |

### ■ Connecting to T2 (PU224), T2E or T2N

#### (1) Switch setting

Set the switches accordingly.

##### (a) Operation mode setting switch

| Switch No. | Settings    | Setting details |
|------------|-------------|-----------------|
| 4          | OFF (fixed) | Computer link   |
| 5          | OFF (fixed) |                 |

##### (b) DIP switch on module PCB (T2N only)

| Switch No.        | Set value                |                             |
|-------------------|--------------------------|-----------------------------|
|                   | For RS-232 communication | For RS-422 communication    |
| DIP switch: No. 1 | ON (RS-232C)             | OFF (RS-485 <sup>*1</sup> ) |

<sup>\*1</sup> Can be used as RS-422.

#### (2) Transmission parameter setting

Enter the transmission parameters.

| Item                                 | Set value                  |
|--------------------------------------|----------------------------|
| Transmission speed <sup>*1*2*3</sup> | 4800bps, 9600bps, 19200bps |
| Data bit                             | 7bit                       |
| Stop bit                             | 2bit                       |
| Parity bit                           | Even                       |
| Station No.                          | 1                          |

<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.

<sup>\*2</sup> Fixed to 9600bps for T2E only.

<sup>\*3</sup> The transmission speed setting must be consistent with that of the GOT side.  
For the transmission speed setting on the GOT side, refer to the following.

 ■ Setting communication interface (Communication settings)

### ■ Connecting to T3 or T3H

Enter the transmission parameters.

| Item                               | Set value                  |
|------------------------------------|----------------------------|
| Transmission speed <sup>*1*2</sup> | 4800bps, 9600bps, 19200bps |
| Data bit                           | 7bit                       |
| Stop bit                           | 2bit                       |
| Parity bit                         | Even                       |
| Station No.                        | 1                          |

<sup>\*1</sup> Indicates only the transmission speeds that can be set on the GOT side.

<sup>\*2</sup> The transmission speed setting must be consistent with that of the GOT side.  
For the transmission speed setting on the GOT side, refer to the following.

 ■ Setting communication interface (Communication settings)

### ■ Connecting to model 2000 (S2, S2T, S2E), model 3000 (S3)

Enter the transmission parameters.

| Item                               | Set value                  |
|------------------------------------|----------------------------|
| Transmission method                | RS485 <sup>*1</sup>        |
| RS485                              | COM1                       |
| Timeout time                       | 5sec                       |
| Transmission speed <sup>*2*3</sup> | 4800bps, 9600bps, 19200bps |
| Data bit                           | 7bit                       |
| Stop bit                           | 2bit                       |
| Parity bit                         | Even                       |
| Station No.                        | 1                          |

<sup>\*1</sup> Can be used as RS-422.

<sup>\*2</sup> Indicates only the transmission speeds that can be set on the GOT side.

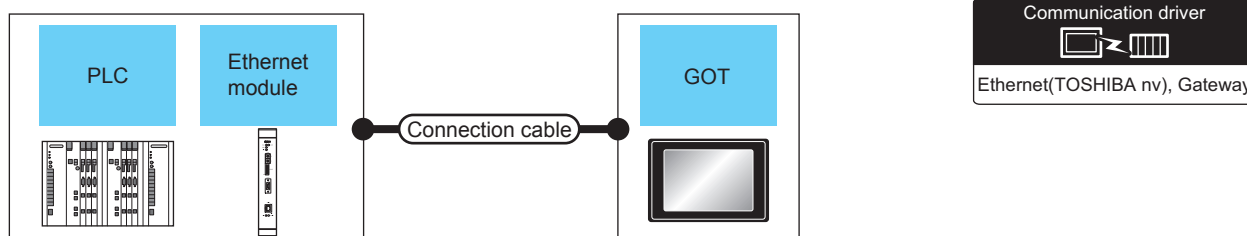
<sup>\*3</sup> The transmission speed setting must be consistent with that of the GOT side.  
For the transmission speed setting on the GOT side, refer to the following.

 ■ Setting communication interface (Communication settings)



## 12.3 Ethernet Connection

### 12.3.1 System configuration for connecting to Unified Controller nv Series



| PLC                          |                               | Connection cable                                                                                                                                                                                                                                                            |                                      | GOT                |                                                    | Number of connectable equipment                                                                                                                              |
|------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series                       | Ethernet module <sup>*3</sup> | Cable model                                                                                                                                                                                                                                                                 | Maximum segment length <sup>*2</sup> | Option device      | Model                                              |                                                                                                                                                              |
| Unified Controller nv Series | EN811                         | Twisted pair cable <sup>*1</sup> <ul style="list-style-type: none"> <li>10BASE-T<br/>Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP): Category 3, 4, and 5</li> <li>100BASE-TX<br/>Shielded twisted pair cable (STP): Category 5 and 5e</li> </ul> | 100m                                 | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> | When PLC:GOT is N: 1<br>The number of PLCs for 1 GOT 32 or less<br><br>When PLC:GOT is 1: N<br>The number of GOTs for 1 PLC<br>No limit number <sup>*4</sup> |

<sup>\*1</sup> The destination connected with the twisted pair cable varies with the configuration of the applicable Ethernet network system. Connect to the Ethernet module, hub, transceiver or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX standard.

<sup>\*2</sup> A length between a hub and a node.

The maximum distance differs depending on the Ethernet device to be used.

The following shows the number of the connectable nodes when a repeater hub is used.

- 10BASE-T: Max. 4 nodes for a cascade connection (500m)

- 100BASE-TX: Max. 2 nodes for a cascade connection (205m)

When switching hubs are used, the cascade connection between the switching hubs has no logical limit for the number of cascades.

For the limit, contact the switching hub manufacturer.

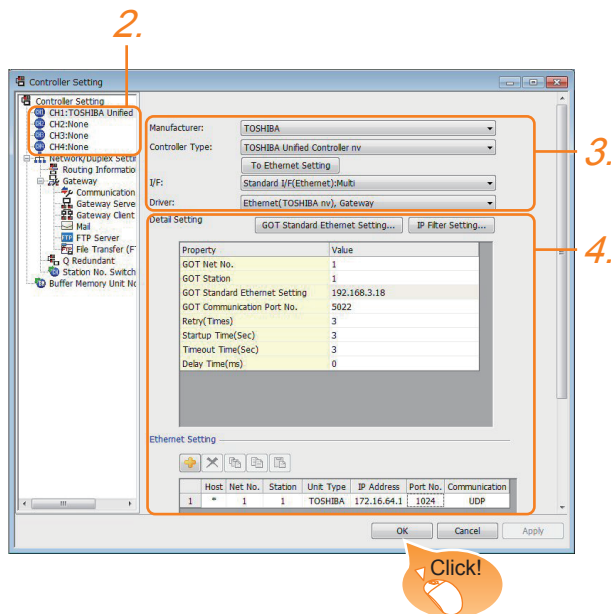
<sup>\*3</sup> Product manufactured by TOSHIBA Corporation. For details of the product, contact TOSHIBA Corporation.

<sup>\*4</sup> There is no restriction for the number of GOTs. However, if the number of GOTs increases, the communication becomes high-loaded, and it may affect the communication performance.

## 12.3.2 GOT side settings

### ■ Setting communication interface (Communication settings)

Set the channel of the connected equipment.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: TOSHIBA
  - Controller Type: TOSHIBA Unified Controller nv
  - I/F: Interface to be used
  - Driver: Ethernet (TOSHIBA nv), Gateway
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 12.3.2 ■ Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting].  
For details, refer to the following.

➡ 1.1.2 I/F communication setting

### ■ Communication detail settings

Make the settings according to the usage environment.

| Property                      | Value        |
|-------------------------------|--------------|
| GOT Net No.                   | 1            |
| GOT Station                   | 1            |
| GOT Standard Ethernet Setting | 192.168.3.18 |
| GOT Communication Port No.    | 5022         |
| Retry(Times)                  | 3            |
| Startup Time(Sec)             | 3            |
| Timeout Time(Sec)             | 3            |
| Delay Time(ms)                | 0            |

| Item                       | Description                                                                                                                                                                | Range                                                                       |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| GOT Net No.                | Set the network No. of the GOT.<br>(Default: 1)                                                                                                                            | 1 to 239                                                                    |
| GOT Station*1              | Set the station No. of the GOT.<br>(Default: 1)                                                                                                                            | 1 to 254                                                                    |
| GOT Ethernet setting       | Set the GOT IP address, subnet mask, default gateway, peripheral S/W communication port No., transparent port No.                                                          | 0.0.0.0 to 255.255.255.255                                                  |
| GOT Communication Port No. | Set the GOT port No. for the connection with the Ethernet module.<br>(Default: 5022)                                                                                       | 1024 to 5010, 5014 to 65534<br>(Except for 5011 to 5013 and 49153 to 49170) |
| Retry                      | Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.<br>(Default: 3times) | 0 to 5times                                                                 |
| Startup Time               | Specify the time period from the GOT startup until GOT starts the communication with the PLC CPU. (Default: 3sec)                                                          | 3 to 255sec                                                                 |
| Timeout Time               | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                                                    | 1 to 90sec                                                                  |
| Delay Time                 | Set the delay time for reducing the load of the network/destination PLC. (Default: 0ms)                                                                                    | 0 to 10000<br>(×10ms)                                                       |

\*1 Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

➡ ■ Ethernet setting

## ■ GOT Ethernet setting

Make the settings according to the usage environment.

| Item                                  | Description                                                                                                                                                     | Range                                                               |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| GOT IP Address                        | Set the IP address of the GOT.<br>(Default: 192.168.0.18)                                                                                                       | 0.0.0.0 to 255.255.255.255                                          |
| Subnet Mask                           | Set the subnet mask for the sub network. (Only for connection via router) If the sub network is not used, the default value is set.<br>(Default: 255.255.255.0) | 0.0.0.0 to 255.255.255.255                                          |
| Default Gateway                       | Set the router address of the default gateway where the GOT is connected. (Only for connection via router)<br>(Default: 0.0.0.0)                                | 0.0.0.0 to 255.255.255.255                                          |
| Peripheral S/W Communication Port No. | Set the GOT port No. for the S/W communication.<br>(Default: 5015)                                                                                              | 1024 to 5010, 5014 to 65534 (Except for 5011, 5012, 5013 and 49153) |
| Transparent Port No.                  | Set the GOT port No. for the transparent function.<br>(Default: 5014)                                                                                           | 1024 to 65534 (Except for 5011 to 5013 and 49153 to 49170)          |

\*1 By setting of the OMRON PLC, set the same [GOT Communication Port No.] setting as that of [FINS UDP Port] of CX-Programmer.

## ■ Ethernet setting

| Item                 | Description                                                                    | Set value           |
|----------------------|--------------------------------------------------------------------------------|---------------------|
| Host                 | The host is displayed. (The host is indicated with an asterisk (*).)           | -                   |
| N/W No.              | Set the network No. of the connected Ethernet module.<br>(Default: 1)          | 1 to 239            |
| Station*1            | Set the station No. of the connected Ethernet module.<br>(Default: 1)          | 1 to 254            |
| Type                 | TOSHIBA (fixed)                                                                | TOSHIBA (fixed)     |
| IP Address           | Set the IP address of the connected Ethernet module.<br>(Default: 172.16.64.1) | PLC side IP address |
| Port No.             | Set the port No. of the connected Ethernet module.<br>(Default: 1024)          | 1024 to 65534       |
| Communication format | UDP (fixed)                                                                    | UDP (fixed)         |

\*1 Each of [GOT Station] set in the communication detail setting and [Station] set in the Ethernet setting must be set to different station numbers.

☞ ■ Communication detail settings

### POINT

- Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication setting] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
☞ GOT2000 Series User's Manual (Utility)
- Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

■ IP Filter Setting

IP Filter Setting

☒ Reflect IP filter setting in the GOT

This setting is shared by GOT standard Ethernet setting and GOT wireless LAN I/F setting.

☐ Use IP filter

Access from IP address below: Penetrate

|   | Range                               | Start IP Address | End IP Address | IP Address to Exclude |
|---|-------------------------------------|------------------|----------------|-----------------------|
| 1 | <input checked="" type="checkbox"/> |                  |                |                       |

OK

Cancel

To improve security, the GOT 2000 series supports the IP Filter Setting.

For details on the IP Filter Setting, refer to the following manual.

 GT Designer3 (GOT2000) Help

### 12.3.3 PLC side setting

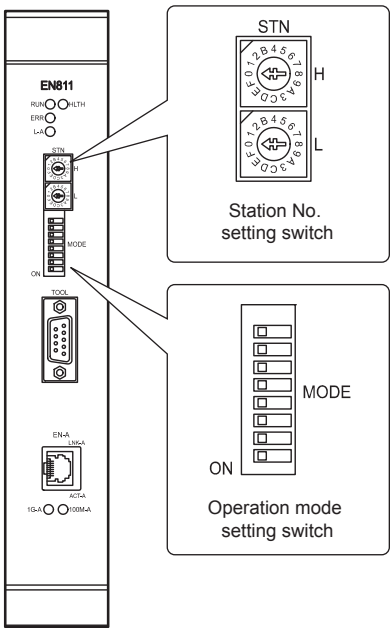
#### POINT

#### TOSHIBA PLC

For details of TOSHIBA PLCs, refer to the following manual.

 TOSHIBA PLC user's Manual

#### ■ Setting of operation mode switch and station No. switch



##### (1) Station No. setting switch

The station No. setting switches are hexadecimal rotary switches that determine the station No. on the Ethernet network.

Set the station address (1 to 254) that has been assigned upon system configuration in a HEX code. Assign an address with a different value to each of the nodes in the system.

| Switch name | Setting details               | Setting range   |
|-------------|-------------------------------|-----------------|
| STN-H       | Upper address : 0 to F (Hex.) | 01 to FE (Hex.) |
| STN-L       | Lower address : 0 to F (Hex.) |                 |

##### (2) Operation mode setting switch

###### (a) Operation mode

| Switch No.     | Settings |     |                 |
|----------------|----------|-----|-----------------|
| 1              | OFF      | ON  | OFF             |
| 2              | OFF      | OFF | ON              |
| 3              | OFF      | OFF | OFF             |
| Operation mode | Normal   |     | For maintenance |

| Switch No. | Settings   |
|------------|------------|
| 4          | Not in use |
| 5          |            |

###### (b) IP address type

| Switch No.     | Settings                |          |                         |              |
|----------------|-------------------------|----------|-------------------------|--------------|
| 6              | OFF                     | OFF      | OFF                     | ON           |
| 7              | OFF                     | ON       | OFF                     | ON           |
| 8              | OFF                     | OFF      | ON                      | ON           |
| Operation mode | Class B<br>172.16.64.XX | Reserved | Class C<br>192.168.0.XX | Tool setting |

- Class B 172.16.64.XX  
XX indicates the value of the station No. setting switches.  
Subnet mask : 255.255.192.0
- Class B 192.168.0.XX  
XX indicates the value of the station No. setting switches.  
Subnet mask : 255.255.255.0
- Tool setting  
It can be set freely from the engineering tool, and the value has precedence over the value of the station No. setting switches.

### 12.3.4 Precautions

#### ■ Delay of device communication

Note that if a non-existent station, or a station which power is turned OFF is monitored, the communication of normal stations is also delayed.

#### ■ Redundant system

When configuring a redundant system, the "Multicast address setting" for the configured PLC pair (System A: Primary, System B: Secondary) is required.

# 12.4 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

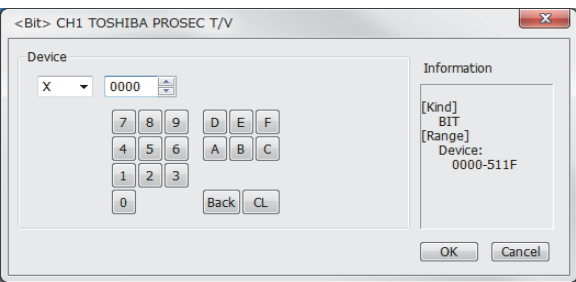
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

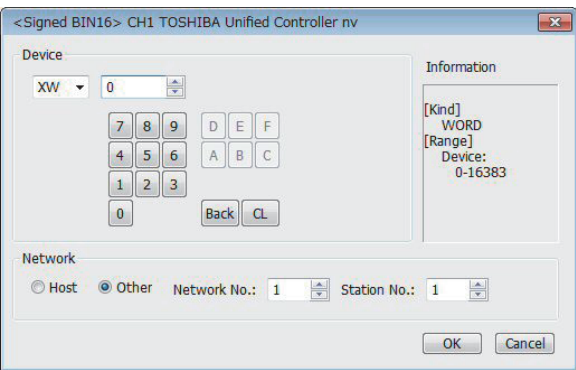
Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

## (1) Setting item



TOSHIBA PROSEC T/V Series

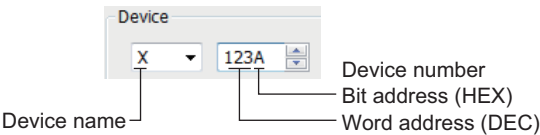


TOSHIBA Unified Controller nv Series

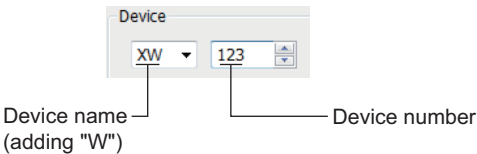
| Item        | Description                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device.                                                                                 |
| Information | Displays the device type and setting range which are selected in [Device].                                                                                                                                    |
| Network     | Set the station number of the controller to be monitored.                                                                                                                                                     |
|             | Host Select this item for monitoring the host controller.                                                                                                                                                     |
|             | Other Select this for monitoring other controllers.<br>After selecting the item, set the station number of the controller to be monitored.<br>NW No.: Set the network No.<br>Station No.: Set the station No. |

## POINT

- (1) Device settings of TOSHIBA PLC
  - (a) When setting a relay as a bit device  
Set the device using the format of word address (DEC) + bit address (HEX).



- (b) When setting a relay as a word device  
Set the device using the format of word address (DEC).  
For the device name setting, enter "w" before the bit device name.



- (2) Notation of device address (when using PROSEC V series)  
The notation of device address setting is different between the TOSHIBA PLC peripheral software and GOT.  
For the difference of notations between peripheral softwares and GOT, refer to the following.

■ TOSHIBA PLC (TOSHIBA PROSEC T/V Series)

## TOSHIBA PLC (TOSHIBA PROSEC T/V Series)

|             | Device name                                                                                                                                                      | Setting range                     | Device No. representation |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------|
| Bit device  | External input (X)                                                                                                                                               | X0000 to X511F                    | Hexadecimal               |
|             | External output (Y)                                                                                                                                              | Y0000 to Y511F                    |                           |
|             | Internal relay (R) <sup>*7</sup>                                                                                                                                 | R0000 to R4095F                   |                           |
|             | Special relay (S) <sup>*7</sup>                                                                                                                                  | S0000 to S511F                    |                           |
|             | Link register relay (Z)                                                                                                                                          | Z0000 to Z999F                    |                           |
|             | Link relay (L)                                                                                                                                                   | L0000 to L255F                    |                           |
|             | Timer (Contact) (T) <sup>*1</sup>                                                                                                                                | T0 to T999                        | Decimal                   |
|             | Counter (Contact) (C) <sup>*1</sup>                                                                                                                              | C0 to C511                        |                           |
|             | The bit specification of the word device <sup>*2*5*7</sup> (except external input, external output, internal relay, special relay link relay, timer and counter) | Setting range of each word device | -                         |
| Word device | External input (XW)                                                                                                                                              | XW0 to XW511                      | Decimal                   |
|             | External output (YW)                                                                                                                                             | YW0 to YW511                      |                           |
|             | Internal relay (RW) <sup>*6*8</sup>                                                                                                                              | RW0 to RW4095                     |                           |
|             | Special relay (SW) <sup>*8</sup>                                                                                                                                 | SW0 to SW511                      |                           |
|             | Link relay (LW)                                                                                                                                                  | LW0 to LW255                      |                           |
|             | Timer (Current value) (T) <sup>*1</sup>                                                                                                                          | T0 to T999                        |                           |
|             | Counter (Current value) (C) <sup>*1</sup>                                                                                                                        | C0 to C511                        |                           |
|             | Data register (D) <sup>*3*6*8</sup>                                                                                                                              | D0 to D8191                       |                           |
|             | Link register (W)                                                                                                                                                | W0 to W2047                       |                           |
|             | File register (F) <sup>*4</sup>                                                                                                                                  | F0 to F32767                      |                           |

### PROSEC T Series

- \*1 The writing of the timer (contact)/(current value) and counter (contact)/(current value) are executed after being read by the GOT. Therefore, do not edit it in the sequence program during this period.
- \*2 As bit specification of a word device is performed after the GOT reads the value, do not change the value in the sequence program during this period.
- \*3 When the mode switch on the CPU module is set to "P-RUN", writing to D0000 through D4095 is disabled.
- \*4 Extension file register is not supported.

### PROSEC V Series

- \*5 As bit specification of a word device is performed after the GOT reads the value, do not change the value in the sequence program during this period.
- \*6 RW0000 and D0000 indicate the data register in the same region although they are shown in different notations.
- \*7 For bit data, the conversion from the address notation for the TOSHIBA PLC to that for the GOT is shown as follows.  
Address notation for TOSHIBA PLC ÷ 16 = Word address (Quotient)...Bit address (Remainder)

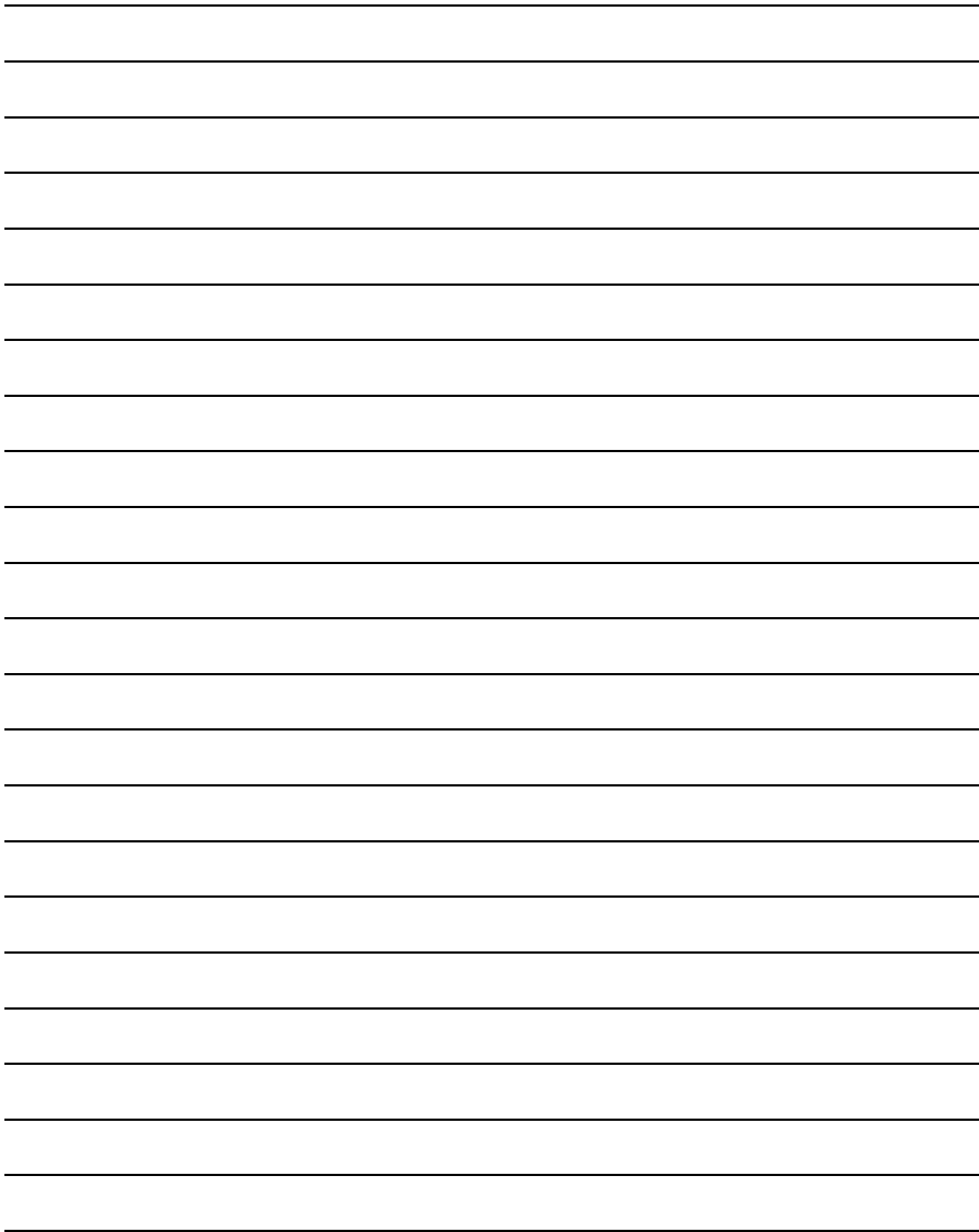
| Address notation for TOSHIBA PLC | Address notation for GOT             | Conversion             |
|----------------------------------|--------------------------------------|------------------------|
| S8191                            | S511F<br>(Decimal)<br>(Hexadecimal)  | 8191 ÷ 16 = 511...15   |
| R65535                           | R4095F<br>(Decimal)<br>(Hexadecimal) | 65535 ÷ 16 = 4095...15 |

\*8 For word data, the conversion from the address notation for the TOSHIBA PLC to that for the GOT is shown as follows.

| Communication format | Address notation for TOSHIBA PLC                                   | Address notation for GOT |
|----------------------|--------------------------------------------------------------------|--------------------------|
| 16bit data           | DW10                                                               | D10                      |
| 32bit data           | (Integer)<br>DD10<br>(Calculate the device No. in 32-bit unit)     | D20                      |
|                      | (Real number)<br>DF10<br>(Calculate the device No. in 32-bit unit) | D20                      |

## TOSHIBA PLC (Unified Controller nv Series)

|             | Device name          | Setting range      | Device No. representation |
|-------------|----------------------|--------------------|---------------------------|
| Bit device  | External input (X)   | X000000 to X16383F | Decimal +Hexadecimal      |
|             | External input (X)   | Y000000 to Y16383F |                           |
|             | Internal relay (R)   | R000000 to R8191F  |                           |
|             | Input variable (I)   | I000000 to I16383F |                           |
|             | Output variable (Q)  | Q000000 to Q16383F |                           |
|             | Special relay (S)    | S000000 to S1023F  |                           |
| Word device | External input (XW)  | XW0 to XW16383     | Decimal                   |
|             | External output (YW) | YW0 to YW16383     |                           |
|             | Internal relay (RW)  | RW0 to RW8191      |                           |
|             | Special relay (SW)   | SW0 to SW1023      |                           |
|             | Data register (D)    | D0 to D8191        | Decimal                   |
|             | File register (F)    | F0 to F32767       |                           |
|             | Input variable (IW)  | IW0 to IW16383     |                           |
|             | Output variable (QW) | QW0 to QW16383     |                           |
|             | User global (UG)     | UG0 to UG262143    |                           |





# 13

## CONNECTION TO TOSHIBA MACHINE PLC

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|                                             |        |
|---------------------------------------------|--------|
| 13.1 Connectable Model List . . . . .       | 13 - 2 |
| 13.2 System Configuration . . . . .         | 13 - 3 |
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| 13.6 Device Range that Can Be Set . . . . . | 13 - 8 |

# 13. CONNECTION TO TOSHIBA MACHINE PLC

## 13.1 Connectable Model List

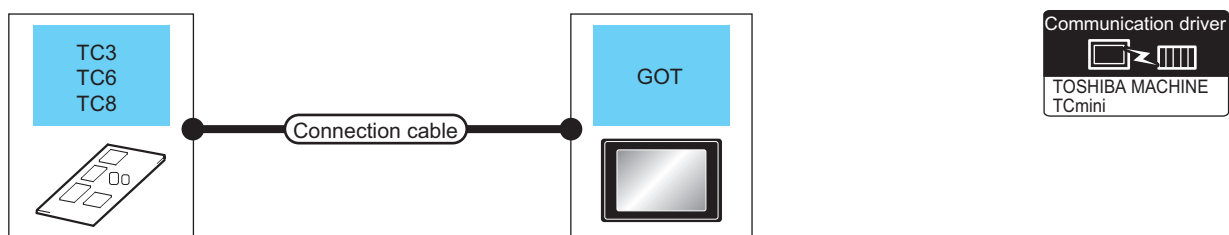
The following table shows the connectable models.

| Series                      | Model name | Clock | Communi-<br>cation<br>Type | Connectable GOT                                                                    | Refer to                                                                                   |
|-----------------------------|------------|-------|----------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| TCmini Series* <sup>1</sup> | TC3-01     | ○     | RS-232                     |  |  13.2.1 |
|                             | TC3-02     | ○     |                            |                                                                                    |                                                                                            |
|                             | TC6-00     | ○     |                            |                                                                                    |                                                                                            |
|                             | TC8-00     | ○     |                            |                                                                                    |                                                                                            |
| Robot controller            | TS2000     | ×     | RS-232                     |  |  13.2.2 |
|                             | TS2100     | ×     |                            |                                                                                    |                                                                                            |

\*1 Connectable to the products only, which have RS-232 communication function.

## 13.2 System Configuration

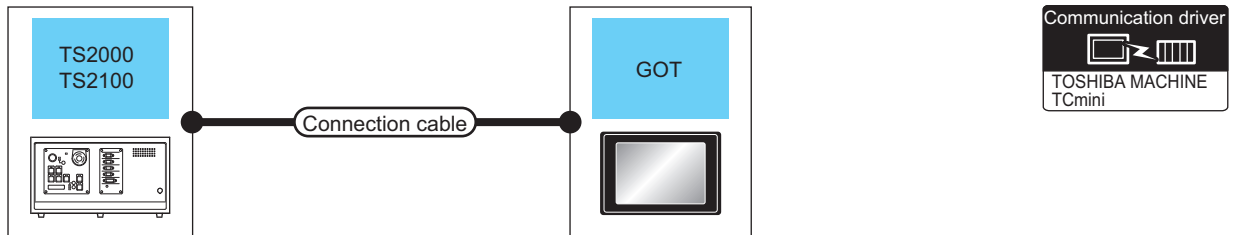
### 13.2.1 Connecting to TC3, TC6, TC8



| PLC                 |                    | Connection cable                                                                                                |               | GOT                           |                                                                                       | Number of connectable equipment |
|---------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| Model name          | Communication Type | Cable model<br>Connection diagram number                                                                        | Max. distance | Option device                 | Model                                                                                 |                                 |
| TC3,<br>TC6,<br>TC8 | RS-232             |  RS232 connection diagram 1)   | 15m           | - (Built into GOT)            |    | 1 GOT for 1 PLC                 |
|                     |                    |                                                                                                                 |               | GT15-RS2-9P                   |    |                                 |
|                     |                    |                                                                                                                 |               | GT10-C02H-6PT9P <sup>*1</sup> |   |                                 |
|                     |                    |  RS232 connection diagram 3) | 15m           | - (Built into GOT)            |  |                                 |

<sup>\*1</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 13.2.2 Connecting to TS2000, TS2100



| Robot controller               |                    | Connection cable                                                 |                  | GOT                           |                                 | Number of connectable equipment |
|--------------------------------|--------------------|------------------------------------------------------------------|------------------|-------------------------------|---------------------------------|---------------------------------|
| Model name                     | Communication Type | Cable model<br>Connection diagram<br>number                      | Max.<br>distance | Option device                 | Model                           |                                 |
| TS2000<br>TS2100<br>(POD port) | RS-232             | <small>User<br/>reporting</small> RS232 connection<br>diagram 2) | 15m              | - (Built into GOT)            | GT 27 GT 25<br>GT 23<br>GS      | 1 GOT for<br>1 robot controller |
|                                |                    |                                                                  |                  | GT15-RS2-9P                   | GT 27 GT 25                     |                                 |
|                                |                    |                                                                  |                  | GT10-C02H-6PT9P* <sup>1</sup> | GT 03P GT 03P<br>21 21<br>R4 R2 |                                 |
|                                |                    | <small>User<br/>reporting</small> RS232 connection<br>diagram 4) | 15m              | - (Built into GOT)            | GT 04R GT 03P<br>21 21<br>R2    |                                 |

\*<sup>1</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

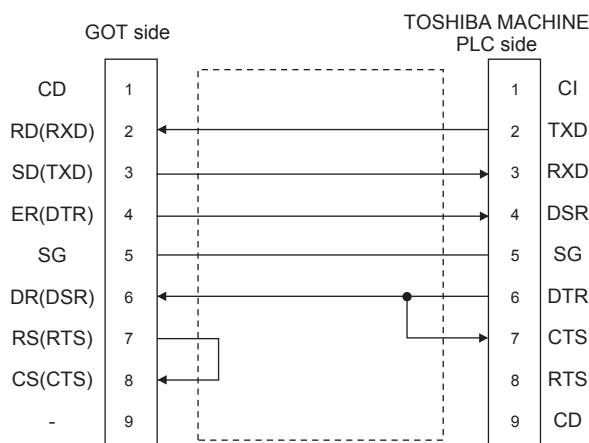
## 13.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

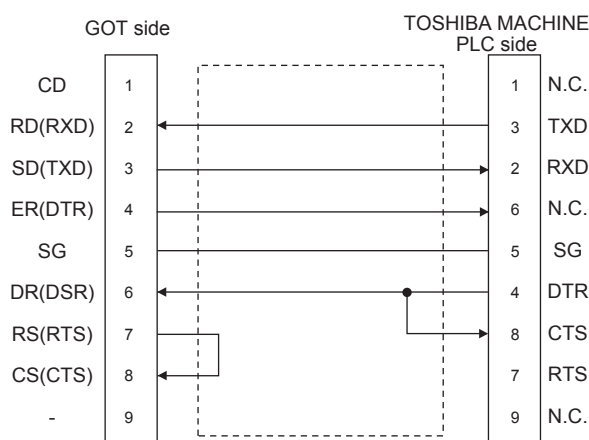
### 13.3.1 RS-232 cable

#### ■ Connection diagram

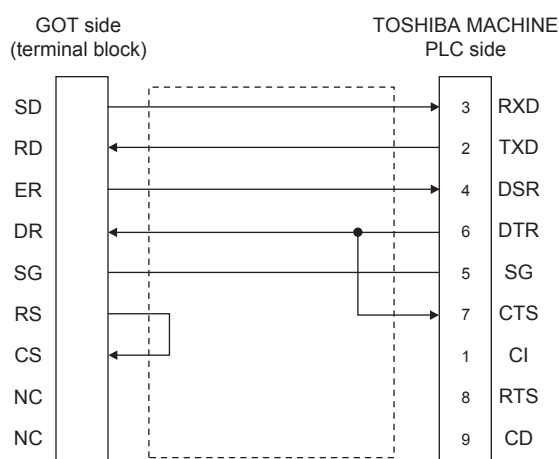
##### (1) RS232 connection diagram 1)



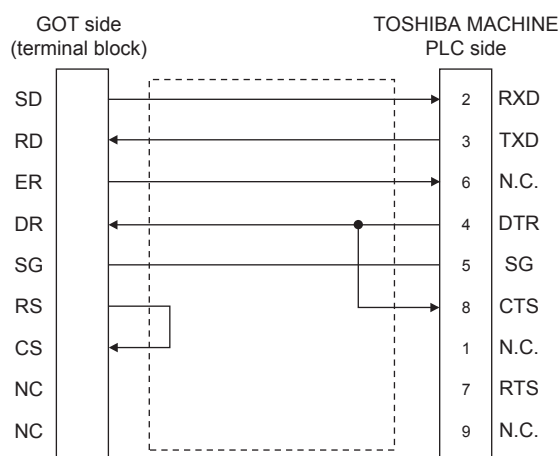
##### (2) RS232 connection diagram 2)



##### (3) RS232 connection diagram 3)



##### (4) RS232 connection diagram 4)



#### ■ Precautions when preparing a cable

##### (5) Cable length

The length of the RS-232 cable must be 15m or less.

##### (6) GOT side connector

For the GOT side connector, refer to the following.

➡ 1.4.1 GOT connector specifications

##### (7) TOSHIBA MACHINE PLC side connector

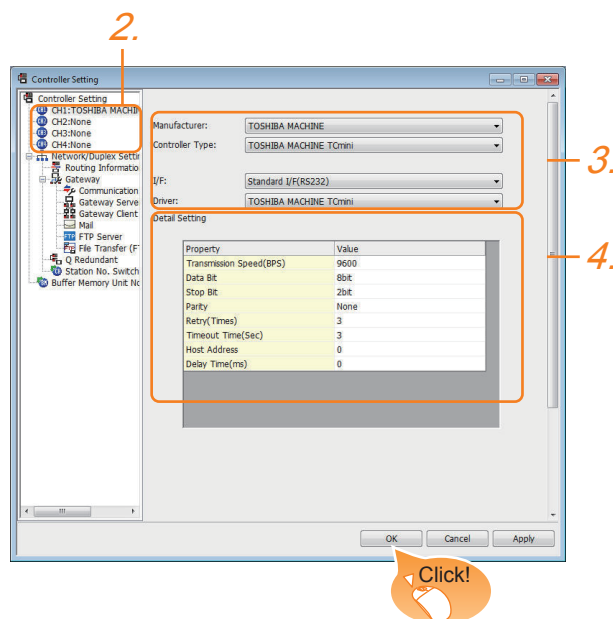
Use the connector compatible with the TOSHIBA MACHINE PLC side module.

For details, refer to the TOSHIBA MACHINE PLC user's manual.

## 13.4 GOT Side Settings

### 13.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: TOSHIBA MACHINE
  - Controller Type: TOSHIBA MACHINE TCmini
  - I/F: Interface to be used
  - Driver: TOSHIBA MACHINE TCmini
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 13.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 13.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 2 bit |
| Parity                  | None  |
| Retry(Times)            | 3     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                              | Range                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps) | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 8bit)           | 7bits/8bits                                      |
| Stop Bit           | Specify the stop bit length for communications. (Default: 2bits)                                                         | 1bit/2bits                                       |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: None)          | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 3times)                           | 0 to 5times                                      |
| Timeout Time       | Set the time period for a communication to time out. (Default: 3sec)                                                     | 1 to 30sec                                       |
| Host Address       | Specify the host address (station No. of the GOT to which the PLC is connected) in the connected network. (Default: 0)   | 0 to 63                                          |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                | 0 to 300 (ms)                                    |

#### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data. For details on the Utility, refer to the following manual.

➡ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 13.5 PLC Side Setting

### POINT

#### TOSHIBA MACHINE PLC

For details of the TOSHIBA MACHINE PLC, refer to the following manual.

 TOSHIBA MACHINE PLC user's Manual

| Model name       |                | Refer to |
|------------------|----------------|----------|
| PLC CPU          | TC3, TC8       | 13.5.1   |
|                  | TC6            | 13.5.2   |
| Robot controller | TS2000, TS2100 | 13.5.3   |

### 13.5.1 Connecting to TC3, TC8 series

No communication settings.

Communication is available using default value of the PLC.

### 13.5.2 Connecting to TC6 series

The setting of transmission speed is changeable.

Set the following Special AUX Relay(A) using engineering tool.

The communication may not work properly if the settings are made using the GOT.

| Transmission speed*1 | Special AUX Relay |      |      |
|----------------------|-------------------|------|------|
|                      | A158              | A159 | A15A |
| 9600bps              | OFF               | OFF  | OFF  |
| 19200bps             | ON                | OFF  | OFF  |
| 38400bps             | -                 | ON   | OFF  |
| 57600bps             | -                 | OFF  | ON   |
| 115200bps            | -                 | ON   | ON   |

\*1 The transmission speed setting must be consistent with that of the GOT side.  
For the transmission speed setting on the GOT side, refer to the following.

 13.4.1 Setting communication interface  
(Communication settings)

### 13.5.3 Connecting to TS2000, TS2100

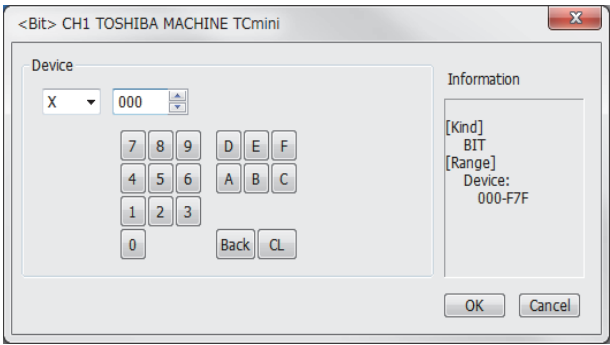
No communication settings.

Communication is available using the default value of the robot controller.

# 13.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.  
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.  
The device specifications of controllers may differ depending on the models, even though belonging to the same series.  
Please make the setting according to the specifications of the controller actually used.  
When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

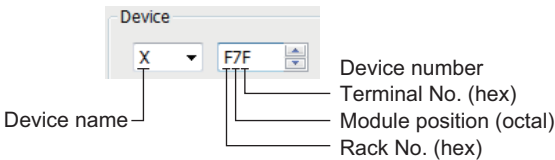
■ Setting item



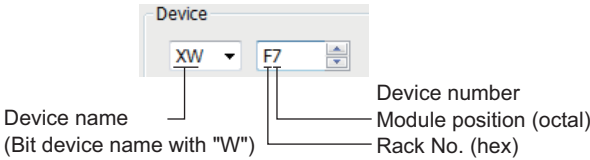
| Item        | Description                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |

POINT

- (1) Device settings for TOSHIBA MACHINE PLC
  - (a) When setting relay address or word register address as bit device  
Set the device No. with the rack No. (Hex), module position (Octal), and terminal No. (Hex), in that order.



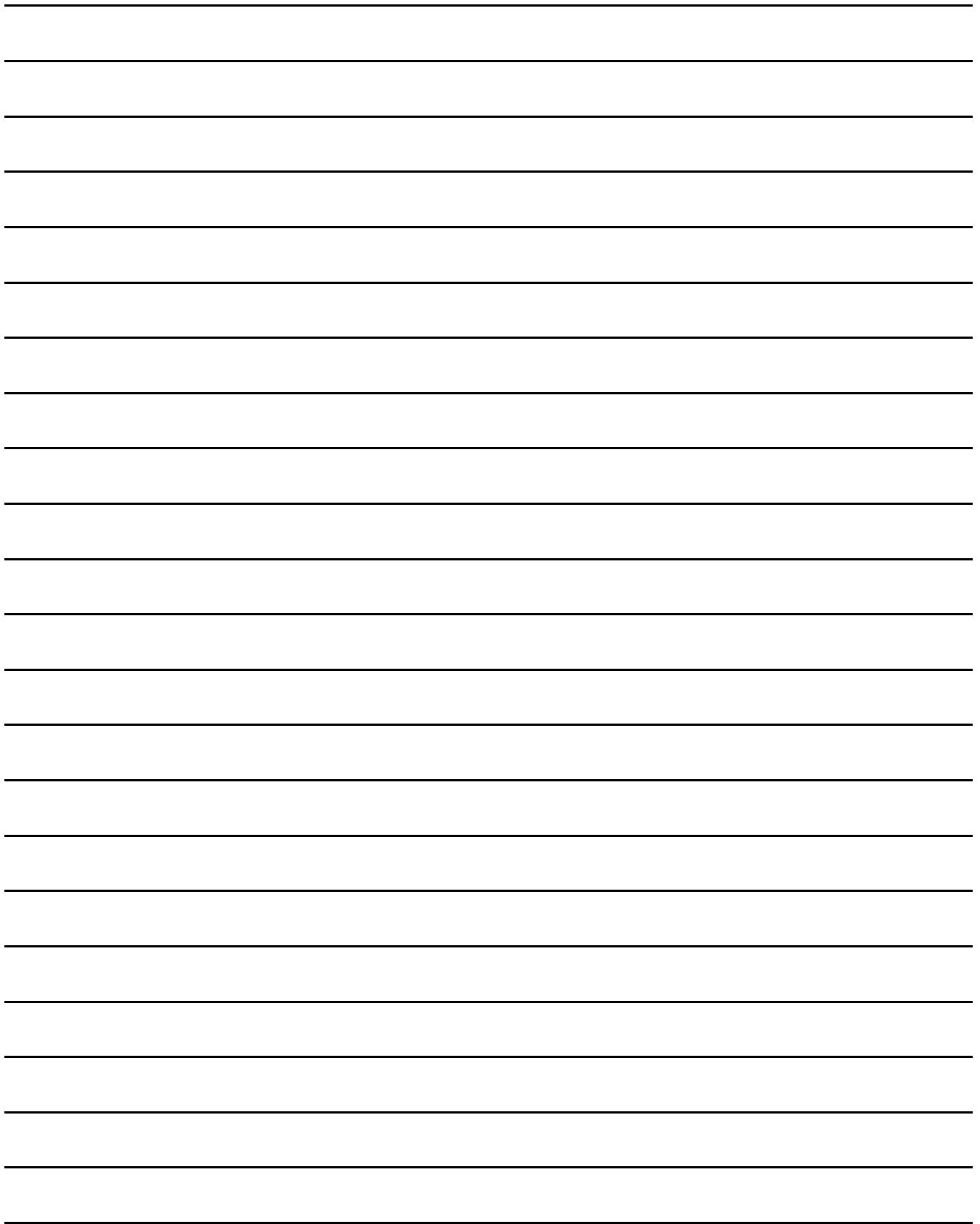
- (b) When setting a relay address as a word device  
Set the device No. with the rack No. (Hex) and module position (Octal), in that order.  
For the device name setting, enter "w" before the bit device name.





### 13.6.1 TOSHIBA MACHINE PLC (TOSHIBA MACHINE TCmini)

| Device name |                                   | Setting range |          | Device No.<br>representation         |
|-------------|-----------------------------------|---------------|----------|--------------------------------------|
| Bit device  | Input relay 1 (X)                 | X000          | to XF7F  | Hexadecimal + Octal<br>+ Hexadecimal |
|             | Input relay 2 (I)                 | I000          | to IF7F  |                                      |
|             | Output relay 1 (Y)                | Y000          | to YF7F  |                                      |
|             | Output relay 1 (O)                | O000          | to OF7F  |                                      |
|             | Internal relay (R)                | R000          | to R77F  |                                      |
|             | Extended internal relay 1 (GR)    | GR000         | to GRF7F |                                      |
|             | Extended internal relay 2 (H)     | H000          | to HF7F  |                                      |
|             | Extended internal relay 3 (J)     | J000          | to JF7F  |                                      |
|             | Extended internal relay 4 (K)     | K000          | to KF7F  |                                      |
|             | Timer (Contact) (T)               | T000          | to T77F  |                                      |
|             | Counter (Contact) (C)             | C000          | to C77F  |                                      |
|             | Shift relay (S)                   | S000          | to S07F  |                                      |
|             | Latch relay (L)                   | L000          | to L07F  |                                      |
|             | Edge relay (E)                    | E000          | to E77F  |                                      |
|             | Special auxiliary relay (A)       | A000          | to A16F  |                                      |
| Word device | Input register 1 (XW)             | XW00          | to XWF7  | Hexadecimal + Octal                  |
|             | Input register 2 (IW)             | IW00          | to IWF7  |                                      |
|             | Output register 1 (YW)            | YW00          | to YWF7  |                                      |
|             | Output register 2 (OW)            | OW00          | to OWF7  |                                      |
|             | Internal register (RW)            | RW00          | to RW77  |                                      |
|             | Extended internal register 1 (GW) | GW00          | to GWF7  |                                      |
|             | Extended internal register 2 (HW) | HW00          | to HWF7  |                                      |
|             | Extended internal register 3 (JW) | JW00          | to JWF7  |                                      |
|             | Extended internal register 4 (KW) | KW00          | to KWF7  |                                      |
|             | Timer (Contact) register (TW)     | TW00          | to TW77  |                                      |
|             | Counter (Contact) register (CW)   | CW00          | to CW77  |                                      |
|             | Shift register (SW)               | SW00          | to SW07  |                                      |
|             | Latch register (LW)               | LW00          | to LW07  |                                      |
|             | Edge register (EW)                | EW00          | to EW77  |                                      |
|             | Special auxiliary register (AW)   | AW00          | to AW16  |                                      |
|             | Generic register 1 (D)            | D000          | to DF7F  | Hexadecimal + Octal<br>+ Hexadecimal |
|             | Generic register 2 (B)            | B000          | to BF7F  |                                      |
|             | Generic register 3 (U)            | U000          | to UF7F  |                                      |
|             | Generic register 4 (M)            | M000          | to MF7F  |                                      |
|             | Generic register 5 (Q)            | Q000          | to QF7F  |                                      |
|             | Timer/Counter current value (P)   | P000          | to P77F  |                                      |
|             | Timer/Counter set value (V)       | V000          | to V77F+ |                                      |



# 14

## CONNECTION TO PANASONIC SERVO AMPLIFIER

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|                                             |         |
|---------------------------------------------|---------|
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| 14.2 System Configuration . . . . .         | 14 - 3  |
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# 14. CONNECTION TO PANASONIC SERVO AMPLIFIER

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## 14.1 Connectable Model List

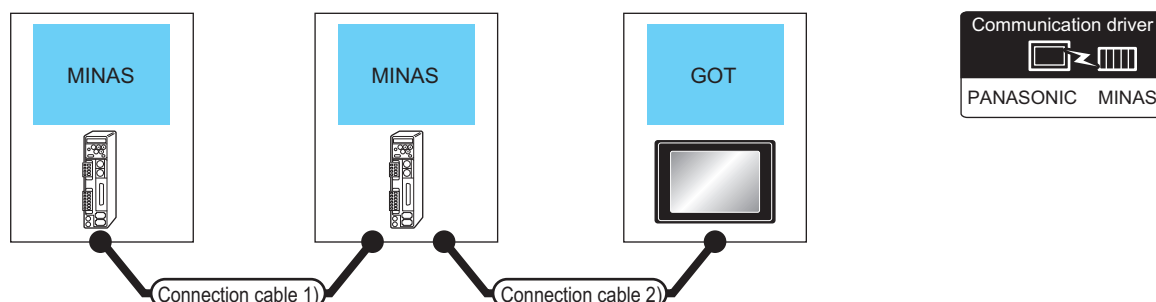
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The following table shows the connectable models.

| Model name | Clock | Communication Type | Connectable GOT                                    | Refer to                                                                                   |
|------------|-------|--------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------|
| MINAS A4   | ×     | RS-232<br>RS-485   | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |  14.2.1 |
| MINAS A4F  | ×     |                    |                                                    |                                                                                            |
| MINAS A4L  | ×     |                    |                                                    |                                                                                            |
| MINAS A5   |       |                    |                                                    |  14.2.2 |

## 14.2 System Configuration

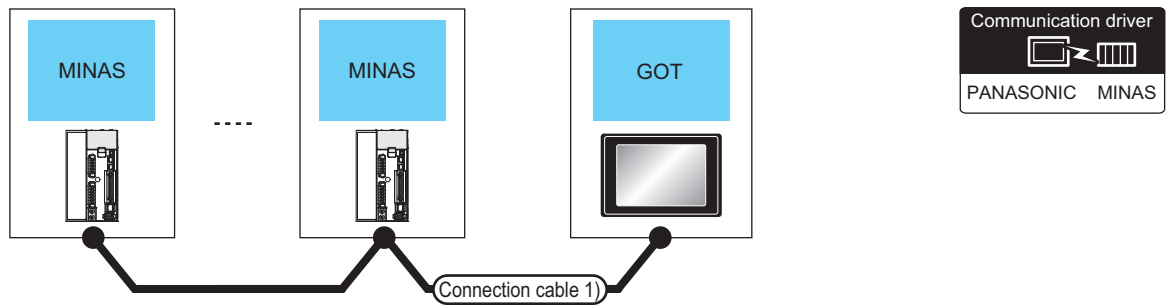
### 14.2.1 Connecting to MINAS A4, MINAS A4F, MINAS A4L series



| Servo amplifier                    |                    | Connection cable 1)                              | Servo amplifier                    |                    | Connection cable 2)                              |               | GOT                                                                       |       | Max. total distance | Number of connectable equipment |
|------------------------------------|--------------------|--------------------------------------------------|------------------------------------|--------------------|--------------------------------------------------|---------------|---------------------------------------------------------------------------|-------|---------------------|---------------------------------|
| Model name                         | Communication Type | Cable model *1                                   | Model name                         | Communication Type | Cable model<br>Connection diagram number         | Max. distance | Option device                                                             | Model |                     |                                 |
| MINAS A4<br>MINAS A4F<br>MINAS A4L | RS-485             | DVOP1970(0.2m)<br>DVOP1971(0.5m)<br>DVOP1972(1m) | MINAS A4<br>MINAS A4F<br>MINAS A4L | RS-232             | DVOP1960*1<br>or<br>RS-232 connection diagram 1) | 2m            | - (Built into GOT)                                                        | <br>  | 17m                 | 16 servo amplifiers for 1 GOT   |
|                                    |                    |                                                  |                                    |                    |                                                  |               | GT15-RS2-9P                                                               | <br>  |                     |                                 |
|                                    | RS-485             | DVOP1970(0.2m)<br>DVOP1971(0.5m)<br>DVOP1972(1m) | MINAS A4<br>MINAS A4F<br>MINAS A4L | RS-485             | RS-485 connection diagram 2)                     | 1m            | GT15-RS4-TE                                                               | <br>  | 16m                 | 15 servo amplifiers for 1 GOT   |
|                                    |                    |                                                  |                                    |                    | RS-422 connection diagram 3)                     | 1m            | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) | <br>  |                     |                                 |
|                                    |                    |                                                  |                                    |                    | RS-422 connection diagram 4)                     | 1m            | - (Built into GOT)                                                        | <br>  |                     |                                 |
|                                    |                    |                                                  |                                    |                    |                                                  |               | GT15-RS4-9S                                                               | <br>  |                     |                                 |

\*1 The link unit is a product manufactured by PANASONIC Corporation.  
For details of this product, contact PANASONIC Corporation.

## 14.2.2 Connecting to MINAS A5 series



| Servo amplifier |                                                                                                                        | Connection cable 1)                                              |               | GOT                                                                       |                                                    | Max. total distance | Number of connectable equipment |
|-----------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------|---------------------------------------------------------------------------|----------------------------------------------------|---------------------|---------------------------------|
| Model name      | Communication Type                                                                                                     | Cable model<br>Connection diagram number                         | Max. distance | Option device                                                             | Model                                              |                     |                                 |
| MINAS A5        | <ul style="list-style-type: none"> <li>Between MINAS and GOT:RS-232</li> <li>Between MINAS and MINAS:RS-485</li> </ul> | <small>(User preparing)</small> RS-232/485 connection diagram 1) | *2            | - (Built into GOT)                                                        | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> | 33m                 | 32 servo amplifiers for 1 GOT   |
|                 |                                                                                                                        |                                                                  |               | GT15-RS2-9P                                                               | <div>GT 27</div> <div>GT 25</div>                  |                     |                                 |
|                 | RS-485                                                                                                                 | <small>(User preparing)</small> RS-485 connection diagram 6)     | *3            | GT15-RS4-TE                                                               | <div>GT 27</div> <div>GT 25</div>                  | 32m                 | 31 servo amplifiers for 1 GOT   |
|                 |                                                                                                                        | <small>(User preparing)</small> RS485 connection diagram 7)      | *3            | FA-LTBGT2R4CBL05 (0.5m)<br>FA-LTBGT2R4CBL10 (1m)<br>FA-LTBGT2R4CBL20 (2m) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |                     |                                 |
|                 |                                                                                                                        | <small>(User preparing)</small> RS-485 connection diagram 8)     | *3            | - (Built into GOT)                                                        | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> |                     |                                 |
|                 |                                                                                                                        |                                                                  |               | GT15-RS4-9S                                                               | <div>GT 27</div> <div>GT 25</div>                  |                     |                                 |

\*1 Product manufactured by Panasonic Corporation. For details of this product, contact Panasonic Corporation.

\*2 The following shows the maximum distance.

- Between MINAS and GOT : 2m
- Between MINAS and MINAS : 1m

\*3 The following shows the maximum distance.

- Between MINAS and GOT : 1m
- Between MINAS and MINAS : 1m

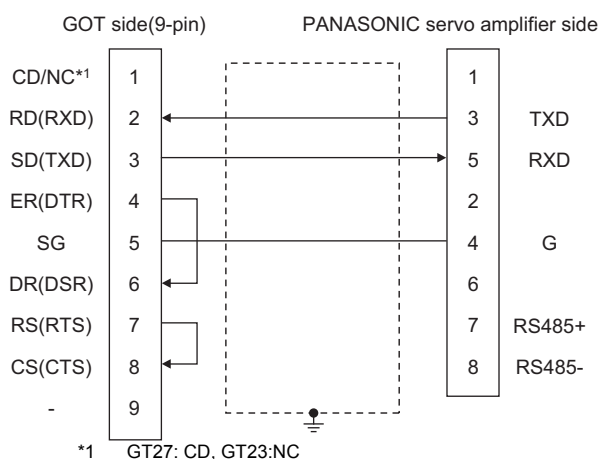
## 14.3 Connection Diagram

The following diagram shows the connection between the GOT and the Servo amplifier.

### 14.3.1 RS-232 cable

#### ■ Connection diagram

RS-232 connection diagram 1)



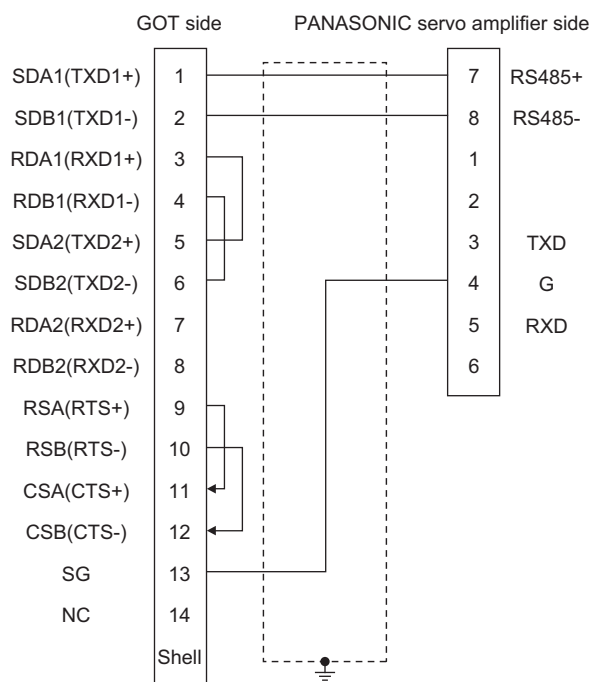
#### ■ Precautions when preparing a cable

- (1) Cable length  
The length of the RS-232 cable must be 2m or less.
- (2) GOT side connector  
For the GOT side connector, refer to the following.  
➡ 1.4.1 GOT connector specifications
- (3) PANASONIC servo amplifier side connector  
Use the connector compatible with the PANASONIC servo amplifier.  
For details, refer to the user's manual of the PANASONIC servo amplifier.

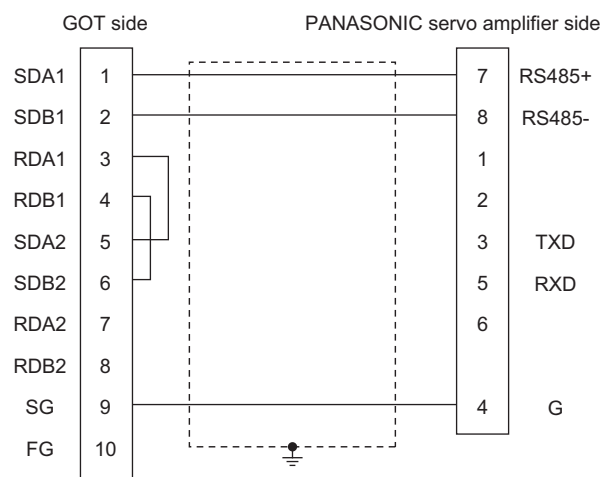
### 14.3.2 RS-485 cable

#### ■ Connection diagram

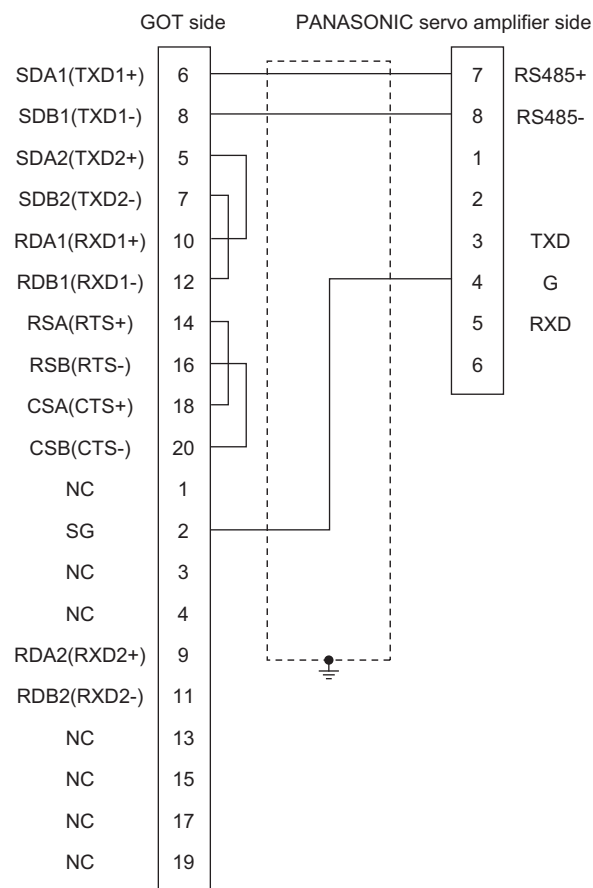
RS-485 connection diagram 1)



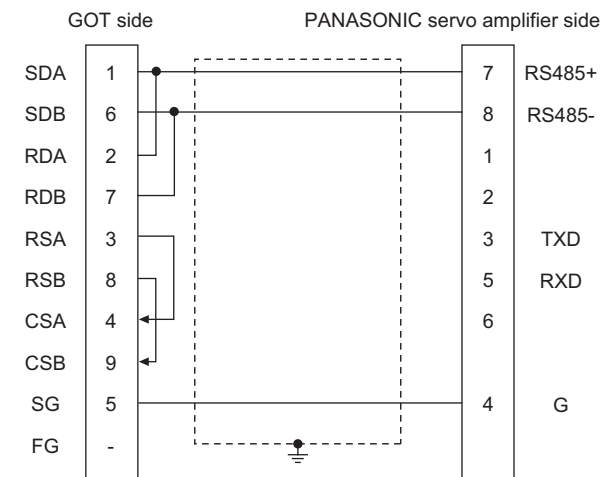
RS-485 connection diagram 2)



RS-422 connection diagram 3)

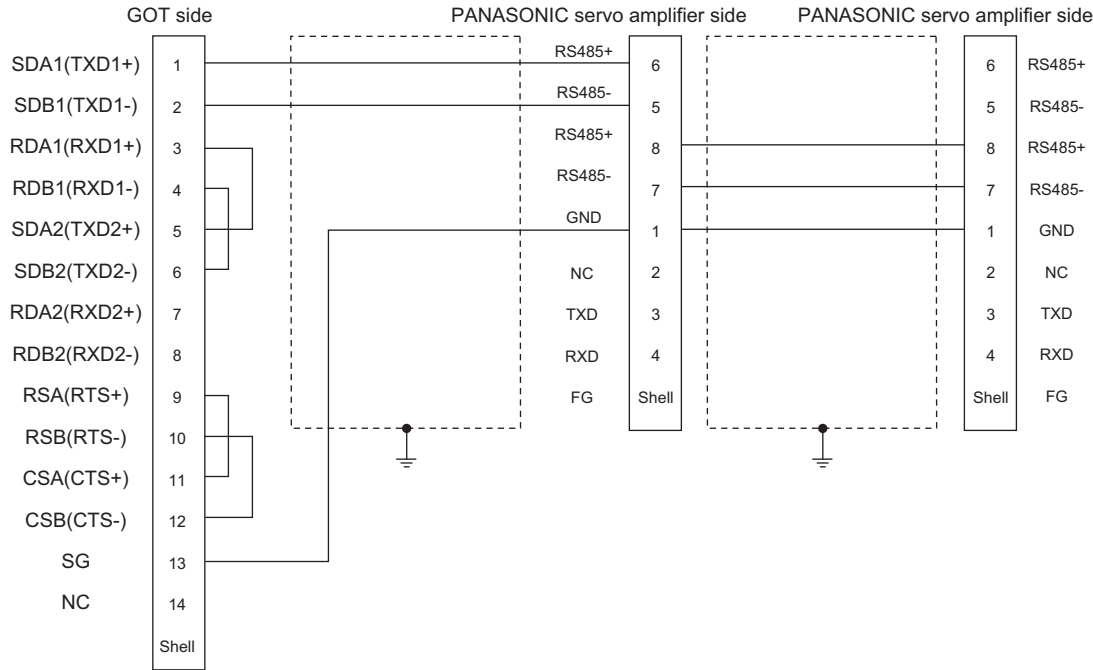


RS-422 connection diagram 4)

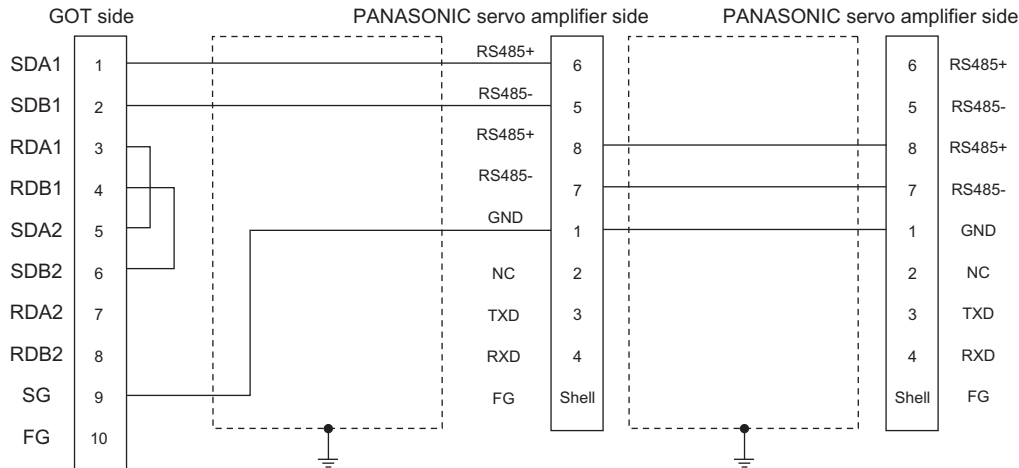




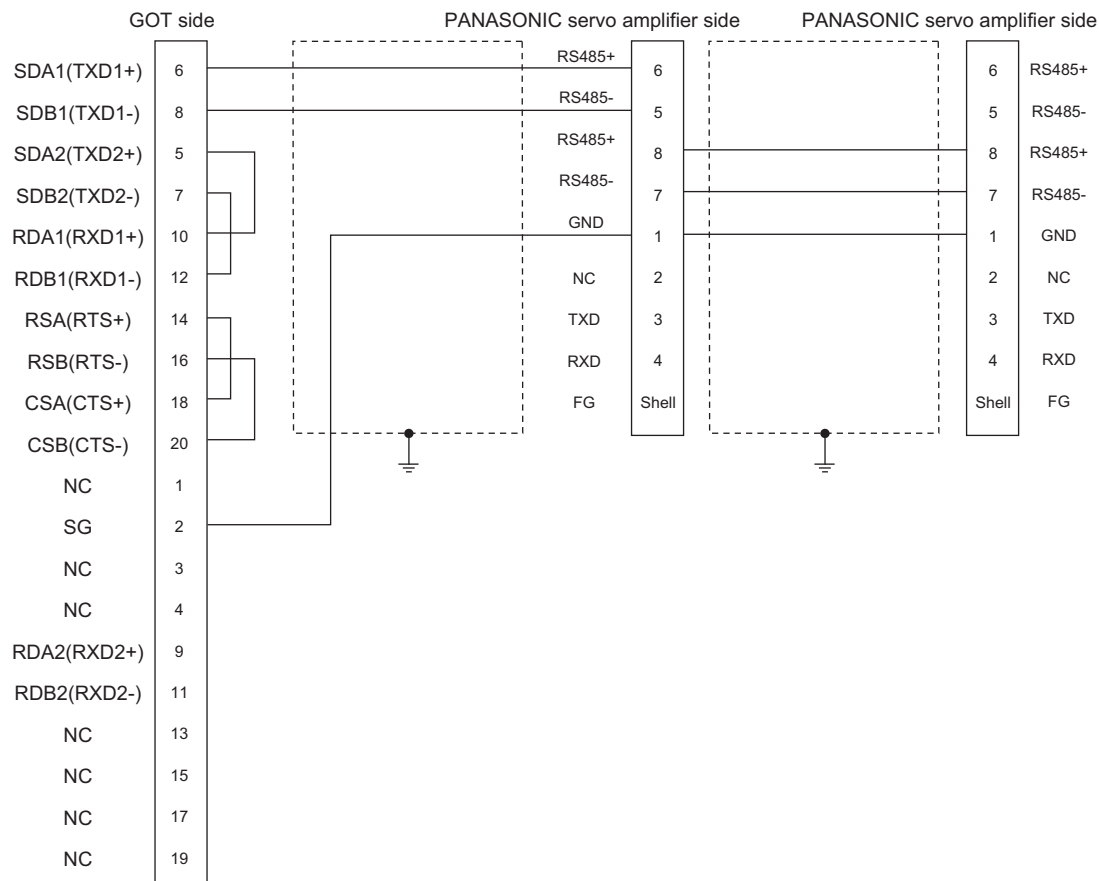
RS-485 connection diagram 5) (For GT16)



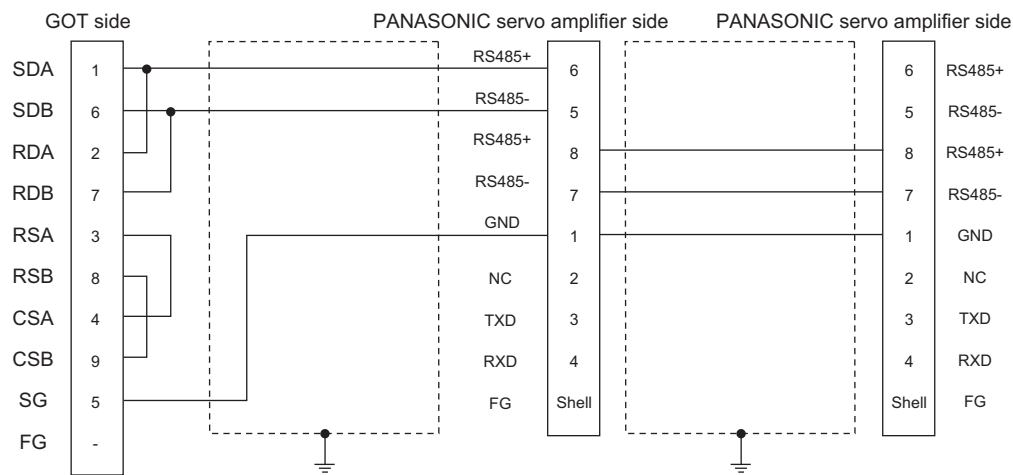
RS-485 connection diagram 6)



RS-485 connection diagram 7) (For GT16)



RS-485 connection diagram 8)



## ■ Precautions when preparing a cable

- (1) Cable length  
The length of the RS-485 cable must be 1m or less.
- (2) GOT side connector  
For the GOT side connector, refer to the following.  
☞ 1.4.1 GOT connector specifications
- (3) PANASONIC servo amplifier side connector  
Use the connector compatible with the PANASONIC servo amplifier.

For details, refer to the user's manual of the PANASONIC servo amplifier.

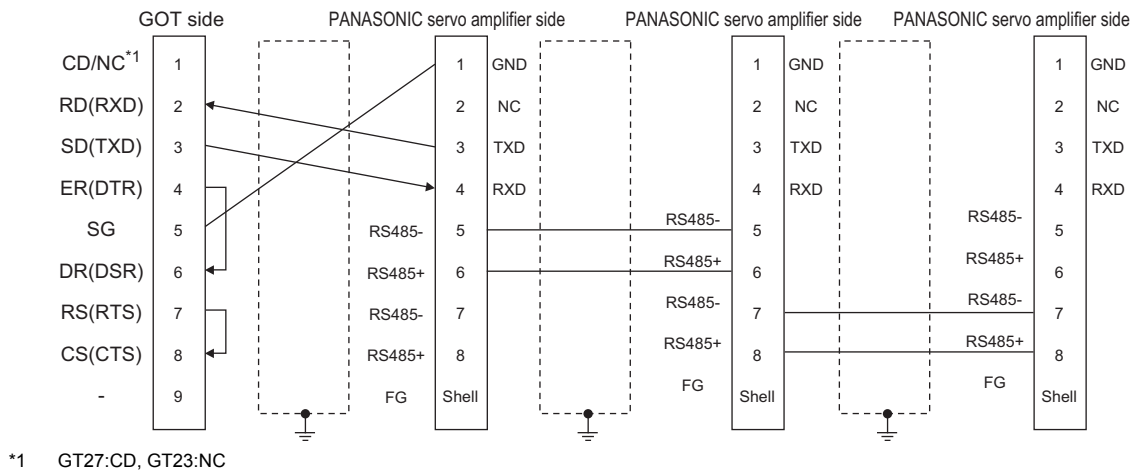
## ■ Connecting terminating resistors

- (1) GOT side  
Set the terminating resistor setting switch of the GOT main unit to "Disable".  
For details of terminating resistor settings, refer to the following.  
☞ 1.4.3 Terminating resistors of GOT

### 14.3.3 RS-232/RS-485 cable

## ■ Connection diagram

RS-232/485 connection diagram 1)



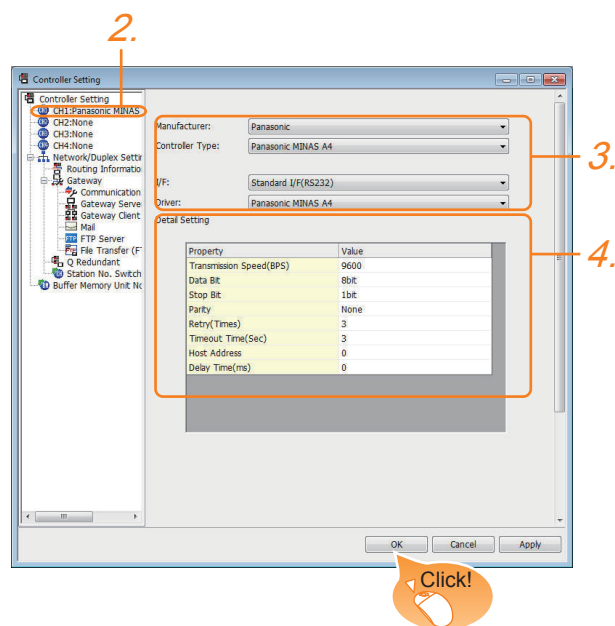
## ■ Precautions when preparing a cable

- (1) Cable length
  - The length of the cable between GOT and MINAS must be 2m or less.
  - The length of the cable between MINAS and MINAS must be 1m or less.
- (2) GOT side connector  
For the GOT side connector, refer to the following.  
☞ 1.4.1 GOT connector specifications
- (3) PANASONIC servo amplifier side connector  
Use the connector compatible with the PANASONIC servo amplifier.  
For details, refer to the user's manual of the PANASONIC servo amplifier.

## 14.4 GOT Side Settings

### 14.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: PANASONIC
  - Controller Type: Set the option according to the Controller Type to be connected.
    - PANASONIC MINAS-A4 series
    - PANASONIC MINAS-A5 series
  - I/F: Interface to be used
  - Driver: Depends on the model to be used.
    - PANASONIC MINAS-A4
    - PANASONIC MINAS-A5
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 14.4.2 Communication detail settings

Click the [OK] button when settings are completed.

### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 14.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | None  |
| Retry(Times)            | 3     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 0     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                              | Range                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment. (Default: 9600bps) | 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment. (Default: 8bits)          | 7bit/8bit                                        |
| Stop Bit           | Specify the stop bit length for communications. (Default: 1bit)                                                          | 1bit/2bit                                        |
| Parity             | Specify whether or not to perform a parity check, and how it is performed during communication. (Default: None)          | None<br>Even<br>Odd                              |
| Retry              | Set the number of retries to be performed when a communication error occurs. (Default: 3times)                           | 0 to 5times                                      |
| Timeout Time*1     | Set the time period for a communication to time out. (Default: 3sec)                                                     | 1 to 30sec                                       |
| Host Address       | Specify the station No. of the servo amplifier to connect the GOT. (Default: 0)                                          | 0 to 31                                          |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT. (Default: 0ms)                | 0 to 300ms                                       |

## POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.  
 GOT2000 Series User's Manual (Utility)
- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 14.5 Servo Amplifier Side Setting

### POINT

PANASONIC Servo Amplifier

For details of the PANASONIC Servo Amplifier, refer to the following manual.



PANASONIC Servo Amplifier user's Manual

### 14.5.1 Connecting to MINAS A4/A4F/A4L

#### ■ MINAS A4/A4F/A4L communication settings

Set them from the main unit front panel of MINAS A4/A4F/A4L or using the setup support software.

| Pr No.                                                      | Set value                                     |
|-------------------------------------------------------------|-----------------------------------------------|
| Address of axis<br>(Parameter No.00)                        | 0 to 15                                       |
| Baud rate setup of RS232 <sup>*1</sup><br>(Parameter No.0C) | 2:9600bps 3:19200bps<br>4:38400bps 5:57600bps |
| Baud rate setup of RS485 <sup>*1</sup><br>(Parameter No.0D) | 2:9600bps 3:19200bps<br>4:38400bps 5:57600bps |

<sup>\*1</sup> Only transmission speeds available on the GOT side are shown. Adjust the settings with GOT settings.

### POINT

Axis name setting

- The axis name is determined according to the rotary switch ID set value when the power supply to the servo amplifier is turned on. This value will be the station number (axis number) during communication.
- The axis name setting can be changed only with the rotary switch ID.

### 14.5.2 Connecting to MINAS A5

#### ■ MINAS A5 communication settings

Set them from the main unit front panel of MINAS A5 or using the setup support software.

| Pr No.                                                        | Set value                                     |
|---------------------------------------------------------------|-----------------------------------------------|
| Address of axis<br>(Parameter No.00)                          | 0 to 31                                       |
| Baud rate setup of RS232 <sup>*1</sup><br>(Parameter No.5.29) | 2:9600bps 3:19200bps<br>4:38400bps 5:57600bps |
| Baud rate setup of RS485 <sup>*1</sup><br>(Parameter No.5.30) | 2:9600bps 3:19200bps<br>4:38400bps 5:57600bps |

<sup>\*1</sup> Only transmission speeds available on the GOT side are shown. Adjust the settings with GOT settings.

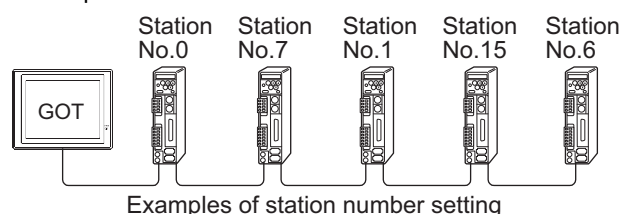
### 14.5.3 Station number setting

Set each station number so that no station number overlaps.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.

- When connecting the GOT and servo amplifier with RS-232 Set the station number (axis number) of the servo amplifier connected to the GOT to 0. Set the station numbers (axis numbers) of other servo amplifiers connected to the GOT to other than 0.
- When connecting the GOT and servo amplifier with RS-485 The GOT will be the station number (axis number) 0. Set the station numbers (axis numbers) of other connected servo amplifiers to other than 0.

Example of RS-232 connection between GOT-servo amplifier



#### (1) Direct specification

When setting the device, specify the station number of the servo amplifier of which data is to be changed.

| Model name                     | Specification range |
|--------------------------------|---------------------|
| MINAS A4, MINAS A4F, MINAS A4L | 0 to 15             |
| MINAS A5                       | 0 to 31             |

#### (2) Indirect specification

When setting the device, indirectly specify the station number of the inverter of which data is to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station No. from 100 to 115 on drawing software, the value of GD10 to GD25 compatible to the station No. specification will be the station No. of the servo amplifier.

| Specification Station No. | Compatible device | Setting range                                                                                                                                                                                             |
|---------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100                       | GD10              | <ul style="list-style-type: none"> <li>MINAS A4, MINAS A4F, MINAS A4L 0 to 15</li> <li>MINAS A5 0 to 31</li> </ul> <p>For the setting other than the above, a communication timeout error will occur.</p> |
| 101                       | GD11              |                                                                                                                                                                                                           |
| 102                       | GD12              |                                                                                                                                                                                                           |
| 103                       | GD13              |                                                                                                                                                                                                           |
| 104                       | GD14              |                                                                                                                                                                                                           |
| 105                       | GD15              |                                                                                                                                                                                                           |
| 106                       | GD16              |                                                                                                                                                                                                           |
| 107                       | GD17              |                                                                                                                                                                                                           |
| 108                       | GD18              |                                                                                                                                                                                                           |
| 109                       | GD19              |                                                                                                                                                                                                           |
| 110                       | GD20              |                                                                                                                                                                                                           |
| 111                       | GD21              |                                                                                                                                                                                                           |
| 112                       | GD22              |                                                                                                                                                                                                           |
| 113                       | GD23              |                                                                                                                                                                                                           |
| 114                       | GD24              |                                                                                                                                                                                                           |
| 115                       | GD25              |                                                                                                                                                                                                           |

## 14.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.

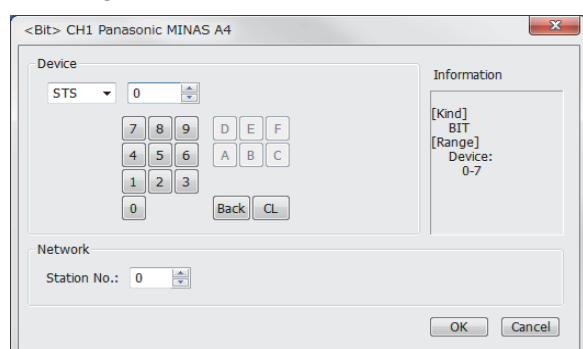
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.

The device specifications of controllers may differ depending on the models, even though belonging to the same series.

Please make the setting according to the specifications of the controller actually used.

When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

### Setting item



| Item        | Description                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number. The bit number can be set only when specifying the bit of word device. |
| Information | Displays the device type and setting range which are selected in [Device].                                                 |
| Network     | Set the monitor target of the set device.                                                                                  |
| Station No. | Set this item when monitoring the Servo amplifier of the specified station No.                                             |

### 14.6.1 PANASONIC servo amplifier (PANASONIC MINAS-A4 Series)

|                    | Device name*1                                            | Setting range        | Device No. representation |
|--------------------|----------------------------------------------------------|----------------------|---------------------------|
| Bit device         | Status (STS)*2                                           | STS0 to STS7         | Decimal                   |
|                    | Input signal (INP)*2                                     | INP0 to INP31        |                           |
|                    | Output signal (OTP)*2                                    | OTP0 to OTP47        |                           |
|                    | Absolute encoder (Status)(AEST)*2                        | AEST0 to AEST15      |                           |
|                    | Writing of parameter to EEPROM (EPRW)*3                  | EPRW0                |                           |
|                    | Clear of user alarm history (in EEPROM as well) (ALHC)*3 | ALHC0                |                           |
|                    | Alarm clear (ALMC)*3                                     | ALMC0                |                           |
| Word device        | Absolute clear (ABSC)*3                                  | ABSC0                | Decimal                   |
|                    | Status (Control modes) (STCM)*2                          | STCM0                |                           |
|                    | Present speed (SPD)*2                                    | SPD0                 |                           |
|                    | Present torque output (TRQ)*2                            | TRQ0                 |                           |
|                    | Absolute encoder (Encoder ID)(AEID)*2                    | AEID0                |                           |
|                    | Absolute encoder (Multi-turn data)(AEMD)*2               | AEMD0                |                           |
|                    | Parameter (PRM)                                          | PRM0000 to PRM007F   |                           |
|                    | Present alarm data (ALM)*2                               | ALM0                 |                           |
|                    | user alarm history (ALHI)*2                              | ALHI1 to ALHI14      |                           |
|                    | User parameter (MIN. value) (PRMN)*2                     | PRMN0000 to PRMN007F | Hexa-decimal              |
| Double word device | User parameter (MAX. value) (PRMX)*2                     | PRMX0000 to PRMX007F |                           |
|                    | User parameter (Property)(PRPR)*2                        | PRPR0000 to PRPR007F |                           |
|                    | Feedback pulse counter (FBPC)*2                          | FBPC0                | Decimal                   |
|                    | Present deviation counter (DVC)*2                        | DVC0                 |                           |
|                    | Absolute encoder (Single turn data)(AESD)*2              | AESD0                |                           |
|                    | External scale deviation and sum of pulses (ESA)*2       | ESA0 to ESA1         |                           |

\*1 The GOT cannot read or write data from/to consecutive devices.

\*2 Only reading is possible.

\*3 Only writing is possible.

## 14.6.2 PANASONIC servo amplifier (PANASONIC MINAS-A5 Series)

| Device name*1 |                                                                | Setting range     | Device No.<br>represent-<br>ation |
|---------------|----------------------------------------------------------------|-------------------|-----------------------------------|
| Bit device    | Status (STS)*2                                                 | STS0 to STS7      | Decimal                           |
|               | Input signal (INP)*2                                           | INP0 to INP31     |                                   |
|               | Output signal (OTP)*2                                          | OTP0 to OTP47     |                                   |
|               | Absolute encoder<br>(Status)(AEST)*2                           | AEST0 to AEST15   |                                   |
|               | Writing of parameter to<br>EEPROM (EPRW)*3                     | EPRW0             |                                   |
|               | Clear of user alarm history (in<br>EEPROM as well)<br>(ALHC)*3 | ALHC0             |                                   |
|               | Alarm clear (ALMC)*3                                           | ALMC0             |                                   |
|               | Absolute clear (ABSC)*3                                        | ABSC0             |                                   |
|               |                                                                |                   |                                   |
| Word device   | Status (Control modes)<br>(STCM)*2                             | STCM0             | Decimal                           |
|               | Present speed (SPD)*2                                          | SPD0              |                                   |
|               | Present torque output (TRQ)*2                                  | TRQ0              |                                   |
|               | Absolute encoder (Encoder<br>ID)(AEID)*2                       | AEID0             |                                   |
|               | Absolute encoder (Multi-turn<br>data)(AEMD)*2                  | AEMD0             |                                   |
|               | Parameter (Class 0)(PRM0)                                      | PRM00 to PRM017   |                                   |
|               | Parameter (Class 1)(PRM1)                                      | PRM10 to PRM127   |                                   |
|               | Parameter (Class 2)(PRM2)                                      | PRM20 to PRM223   |                                   |
|               | Parameter (Class 3)(PRM3)                                      | PRM30 to PRM329   |                                   |
|               | Parameter (Class 4)(PRM4)                                      | PRM40 to PRM442   |                                   |
|               | Parameter (Class 5)(PRM5)                                      | PRM50 to PRM535   |                                   |
|               | Parameter (Class 6)(PRM6)                                      | PRM60 to PRM639   |                                   |
|               | Present alarm data (ALM)*2                                     | ALM0              |                                   |
|               | Present alarm data (Sub)<br>(ALMS)*2                           | ALMS0             |                                   |
|               | user alarm history (ALHI)*2                                    | ALHI1 to ALHI14   |                                   |
|               | user alarm history<br>(Sub)(ALHI)*2                            | ALHS1 to ALHS14   |                                   |
|               | User parameter (Class 0, MIN.<br>value)(PRMN0)*2               | PRMN00 to PRMN017 |                                   |
|               | User parameter (Class 1, MIN.<br>value)(PRMN1)*2               | PRMN10 to PRMN127 |                                   |
|               | User parameter (Class 2, MIN.<br>value)(PRMN2)*2               | PRMN20 to PRMN223 |                                   |
|               | User parameter (Class 3, MIN.<br>value)(PRMN3)*2               | PRMN30 to PRMN329 |                                   |
|               | User parameter (Class 4, MIN.<br>value)(PRMN4)*2               | PRMN40 to PRMN442 |                                   |
|               | User parameter (Class 5, MIN.<br>value)(PRMN5)*2               | PRMN50 to PRMN535 |                                   |
|               | User parameter (Class 6, MIN.<br>value)(PRMN6)*2               | PRMN60 to PRMN639 |                                   |

| Device name*1 |                                                       | Setting range     | Device No.<br>represent-<br>ation |
|---------------|-------------------------------------------------------|-------------------|-----------------------------------|
| Word device   | User parameter (Class 0,<br>MAX. value)(PRMX0)*2      | PRMX00 to PRMX017 | Decimal                           |
|               | User parameter (Class 1,<br>MAX. value)(PRMX1)*2      | PRMX10 to PRMX127 |                                   |
|               | User parameter (Class 2,<br>MAX. value)(PRMX2)*2      | PRMX20 to PRMX223 |                                   |
|               | User parameter (Class 3,<br>MAX. value)(PRMX3)*2      | PRMX30 to PRMX329 |                                   |
|               | User parameter (Class 4,<br>MAX. value)(PRMX4)*2      | PRMX40 to PRMX442 |                                   |
|               | User parameter (Class 5,<br>MAX. value)(PRMX5)*2      | PRMX50 to PRMX535 |                                   |
|               | User parameter (Class 6,<br>MAX. value)(PRMX6)*2      | PRMX60 to PRMX639 |                                   |
|               | User parameter (Class 0,<br>Property)(PRPR0)*3        | PRPR00 to PRPR017 |                                   |
|               | User parameter (Class 1,<br>Property)(PRPR1)*3        | PRPR10 to PRPR127 |                                   |
|               | User parameter (Class 2,<br>Property)(PRPR2)*3        | PRPR20 to PRPR223 |                                   |
|               | User parameter (Class 3,<br>Property)(PRPR3)*3        | PRPR30 to PRPR329 |                                   |
|               | User parameter (Class 4,<br>Property)(PRPR4)*3        | PRPR40 to PRPR442 |                                   |
|               | User parameter (Class 5,<br>Property)(PRPR5)*3        | PRPR50 to PRPR535 |                                   |
|               | User parameter (Class 6,<br>Property)(PRPR6)*3        | PRPR60 to PRPR639 |                                   |
|               | Feedback pulse counter<br>(FBPC)*2                    | FBPC0             |                                   |
|               | Present deviation counter<br>(DVC)*2                  | DVC0              |                                   |
|               | Absolute encoder (Single turn<br>data)(AESD)*2        | AESD0             |                                   |
|               | External scale deviation and<br>sum of pulses (ESA)*2 | ESA0 to ESA1      |                                   |

\*1 The GOT cannot read or write data from/to consecutive devices.

\*2 Only reading is possible.

\*3 Only writing is possible.



## 14.7 Precautions

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### ■ Station number setting in the servo system

Configure the servo system so that there is a servo amplifier with a station number set with a host address. For details of host address setting, refer to the following manual.

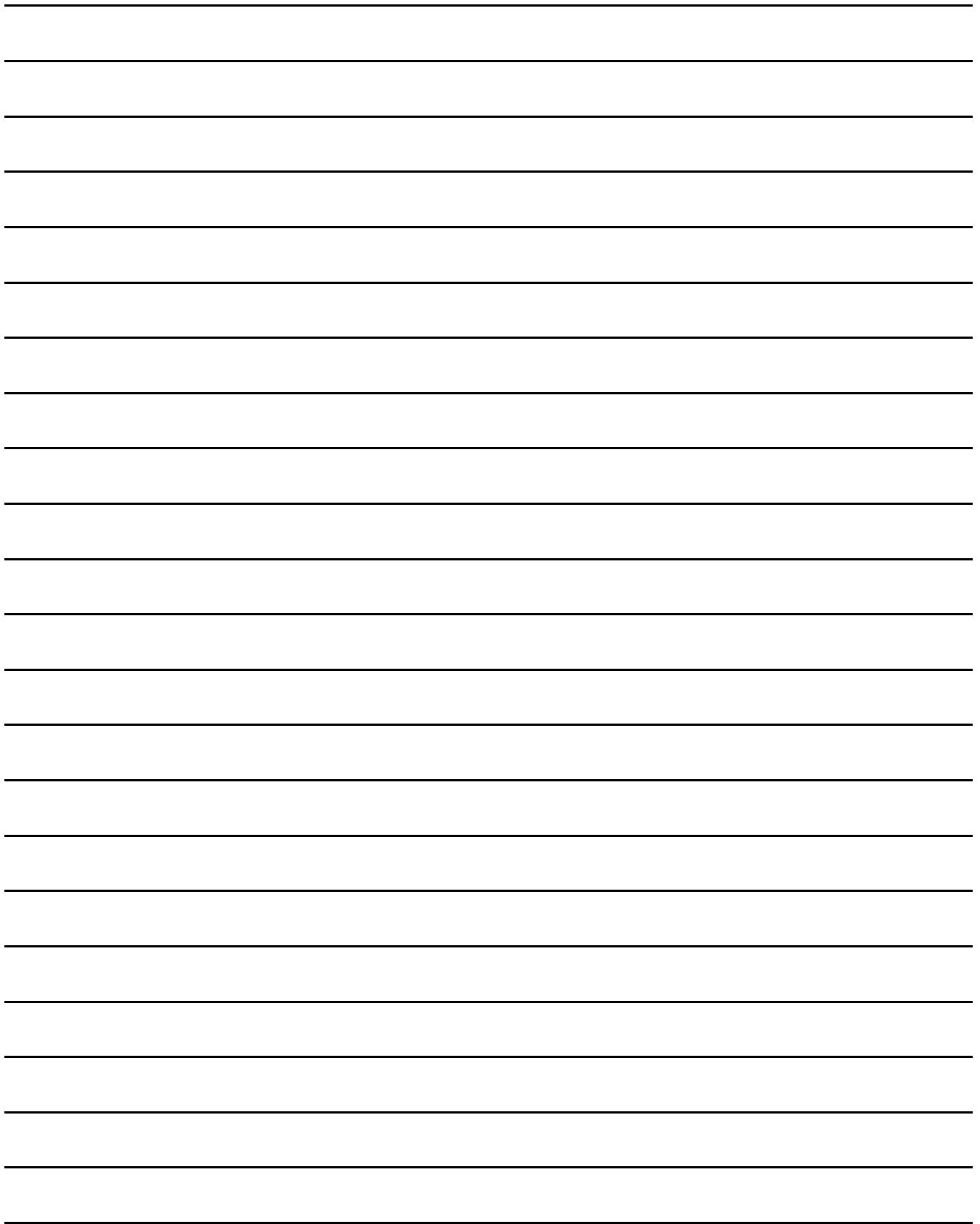
 14.4.2 Communication detail settings

### ■ Monitor speed

When monitoring multiple station devices placed on the same GOT screen, the monitor speed is slow. Even when monitoring a single station, the monitor speed is slow if the device points is large.

### ■ Mixing of MINAS A4 series and MINAS A5 series

MINAS A4 series and MINAS A5 series cannot be mixed. The multiple MINAS A4 series can be used together.



# 15

## CONNECTION TO PANASONIC INDUSTRIAL DEVICES SUNX PLC

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|                                             |         |
|---------------------------------------------|---------|
| 15.1 Connectable Model List . . . . .       | 15 - 2  |
| 15.2 System Configuration . . . . .         | 15 - 3  |
| 15.3 Connection Diagram . . . . .           | 15 - 21 |
| 15.4 GOT Side Settings . . . . .            | 15 - 26 |
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# 15. CONNECTION TO PANASONIC INDUSTRIAL DEVICES SUNX PLC

## 15.1 Connectable Model List

The following table shows the connectable models.

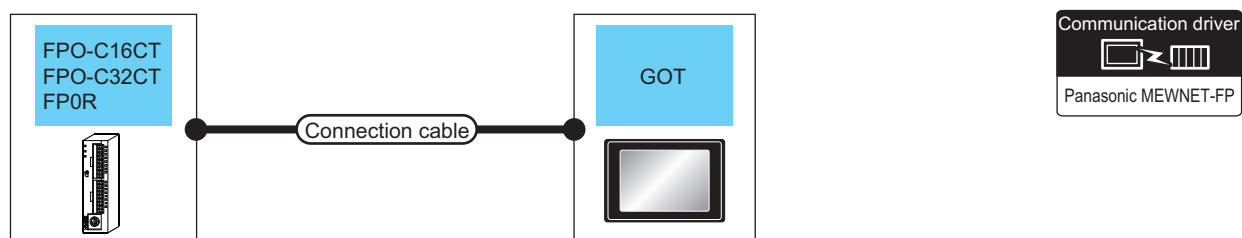
| Model name  | Clock           | Communication Type | Connectable GOT                                                                                                                                                                                                                                                                                                                                                                                                                     | Refer to                                                                                     |
|-------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| FP0-C16CT   | ×               | RS-232             |                |  15.2.1   |
| FP0-C32CT   |                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP0R        |                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP1-C24C    | ○               | RS-232             |                |  15.2.2   |
| FP1-C40C    |                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP2         | ○ <sup>*1</sup> | RS-232             |                |  15.2.3   |
| FP2SH       | ○               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP3         | ○ <sup>*2</sup> | RS-232             |                |  15.2.4   |
| FP5         | ○               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP10(S)     | ○               | RS-232             |      |  15.2.5 |
| FP10SH      | ○               | RS-232             |      |  15.2.6 |
| FP-M(C20TC) | ○               | RS-232             |      |  15.2.7 |
| FP-M(C32TC) | ○               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                              |
| FP-Σ        | ○               | RS-232             |      |  15.2.8 |
| FP-X        | ○               | RS-232<br>RS-422   |      |  15.2.9 |

\*1 Any of the extension memory unit FP2-EM1, FP2-EM2 or FP2-EM3 is required.

\*2 The clock function is available for the AFP3210C-F, AFP3211C-F, AFP3212C-F and AFP3220C-F.

## 15.2 System Configuration

### 15.2.1 Connecting to FP0-C16CT, FP0-C32CT, or FP0R

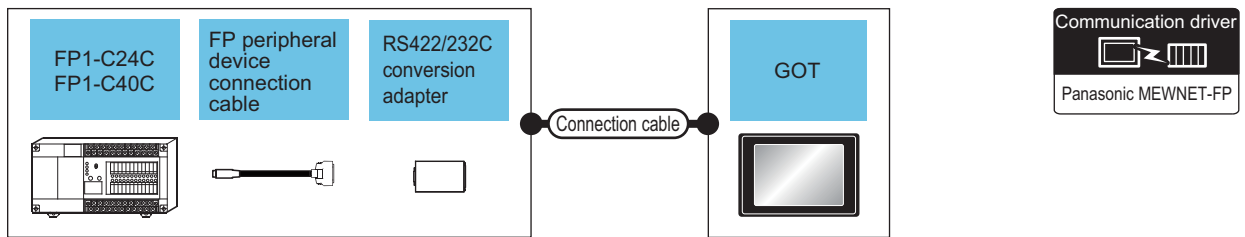


| PLC                                             |                    | Connection cable                                               |               | GOT                           |       | Number of connectable equipment |
|-------------------------------------------------|--------------------|----------------------------------------------------------------|---------------|-------------------------------|-------|---------------------------------|
| Model name                                      | Communication Type | Cable model<br>Connection diagram number                       | Max. distance | Option device                 | Model |                                 |
| FP0-C16CT<br>FP0-C32CT<br>FP0R<br>(Tool port)   | RS-232             | AFC8503(3m)* <sup>1</sup>                                      | 3m            | - (Built into GOT)            |       | 1 GOT for 1 PLC                 |
|                                                 |                    |                                                                |               | GT15-RS2-9P                   |       |                                 |
|                                                 |                    |                                                                |               | GT10-C02H-6PT9P* <sup>2</sup> |       |                                 |
|                                                 |                    | AFC8503(3m)* <sup>1</sup><br>+<br>RS-232 connection diagram 9) | 3.5m          | - (Built into GOT)            |       |                                 |
| FP0-C16CT<br>FP0-C32CT<br>FP0R<br>(RS232C port) | RS-232             | GT09-C30R20904-3C(3m)<br>or<br>RS-232 connection diagram 4)    | 15m           | - (Built into GOT)            |       | 1 GOT for 1 PLC                 |
|                                                 |                    |                                                                |               | GT15-RS2-9P                   |       |                                 |
|                                                 |                    |                                                                |               | GT10-C02H-6PT9P* <sup>2</sup> |       |                                 |
|                                                 |                    | RS-232 connection diagram 12)                                  | 15m           | - (Built into GOT)            |       |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.2 Connecting to FP1-C24C or FP1-C40C



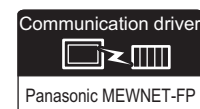
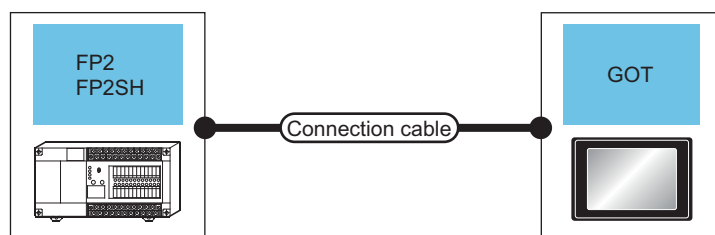
| PLC                                   |                    | FP peripheral device connection cable*1  | RS422/232 conversion adapter*1 | Connection cable                                                              | Max. distance | GOT                |                                                                                 | Number of connectable equipment |
|---------------------------------------|--------------------|------------------------------------------|--------------------------------|-------------------------------------------------------------------------------|---------------|--------------------|---------------------------------------------------------------------------------|---------------------------------|
| Model name                            | Communication Type | Cable model<br>Connection diagram number |                                | Cable model<br>Connection diagram number                                      |               | Option device      | Model                                                                           |                                 |
| FP1-C24C<br>FP1-C40C<br>(Tool port)   | RS-232             | AFP15205<br>(0.5m)                       | AFP8550                        | GT09-C30R20901-25P(3m)<br>or<br>(User preparing) RS-232 connection diagram 1) | 15.5m         | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div>                | 1 GOT for 1 PLC                 |
|                                       |                    |                                          |                                |                                                                               |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                               |                                 |
|                                       |                    |                                          |                                |                                                                               |               | GT10-C02H-6PT9P*2  | <div>GT 27 3P</div> <div>GT 25 4P</div> <div>GT 21 3P</div> <div>GT 21 4P</div> |                                 |
|                                       |                    |                                          |                                | (User preparing) RS-232 connection diagram 8)                                 | 15.5m         | - (Built into GOT) | <div>GT 27 4P</div> <div>GT 25 3P</div> <div>GT 21 4P</div> <div>GT 21 3P</div> |                                 |
| FP1-C24C<br>FP1-C40C<br>(RS232C port) | RS-232             | -                                        | -                              | GT09-C30R20903-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 3)  | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div>                | 1 GOT for 1 PLC                 |
|                                       |                    |                                          |                                |                                                                               |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                               |                                 |
|                                       |                    |                                          |                                |                                                                               |               | GT10-C02H-6PT9P*2  | <div>GT 27 3P</div> <div>GT 25 4P</div> <div>GT 21 3P</div> <div>GT 21 4P</div> |                                 |
|                                       |                    |                                          |                                | (User preparing) RS-232 connection diagram 13)                                | 15m           | - (Built into GOT) | <div>GT 27 4P</div> <div>GT 25 3P</div> <div>GT 21 4P</div> <div>GT 21 3P</div> |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.3 Connecting to FP2 or FP2SH

### ■ When connecting to tool port or RS232C port

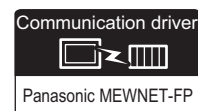
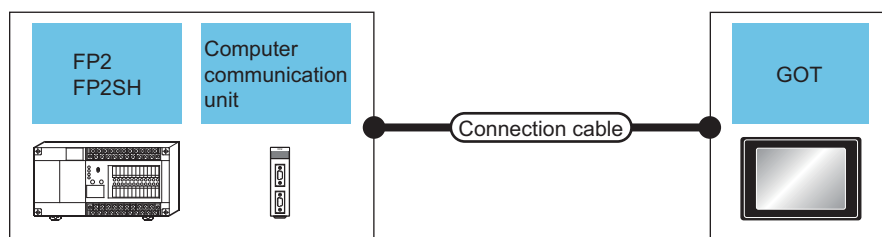


| PLC                           |                    | Connection cable                                                                                                                          |               | GOT                           |                                                                  | Number of connectable equipment |
|-------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|------------------------------------------------------------------|---------------------------------|
| Model name                    | Communication Type | Cable model<br>Connection diagram number                                                                                                  | Max. distance | Option device                 | Model                                                            |                                 |
| FP2<br>FP2SH<br>(Tool port)   | RS-232             | AFC8503(3m) <sup>*1</sup>                                                                                                                 | 3m            | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 PLC                 |
|                               |                    |                                                                                                                                           |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|                               |                    |                                                                                                                                           |               | GT10-C02H-6PT9P <sup>*2</sup> | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
|                               |                    | AFC8503(3m) <sup>*1</sup><br>+<br>User RS-232 connection diagram 9)                                                                       | 3.5m          | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
| FP2<br>FP2SH<br>(RS232C port) | RS-232             | AFB85853(3m) <sup>*1</sup><br>GT09-C30R20902-9P(3m)<br>or<br>User RS-232 connection diagram 2)                                            | 15m           | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
|                               |                    |                                                                                                                                           |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|                               |                    |                                                                                                                                           |               | GT10-C02H-6PT9P <sup>*2</sup> | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
|                               |                    | AFB85853(3m) <sup>*1</sup><br>GT09-C30R20902-9P(3m)<br>or<br>User RS-232 connection diagram 2)<br>+<br>User RS-232 connection diagram 11) | 15m           | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |
|                               |                    | User RS-232 connection diagram 10)                                                                                                        | 15m           | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> |                                 |

<sup>\*1</sup> Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

<sup>\*2</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to computer communication unit



| PLC          |                    | Computer communication unit*1 | Connection cable                                                                               | Max. distance | GOT                |                                                    | Number of connectable equipment         |
|--------------|--------------------|-------------------------------|------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------------------------------------|-----------------------------------------|
| Model name   | Communication Type |                               | Cable model<br>Connection diagram number                                                       |               | Option device      | Model                                              |                                         |
| FP2<br>FP2SH | RS-232             | AFP2462                       | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 2) | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 23</div> <div>GS 25</div> | 1 GOT for 1 computer communication unit |
|              |                    |                               |                                                                                                |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                  |                                         |
|              |                    |                               |                                                                                                |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21R2</div> <div>GT 03P 21R2</div>      |                                         |
|              |                    |                               | (User preparing) RS-232 connection diagram 10)                                                 | 15m           | - (Built into GOT) | <div>GT 04R 21R2</div> <div>GT 03P 21R2</div>      |                                         |

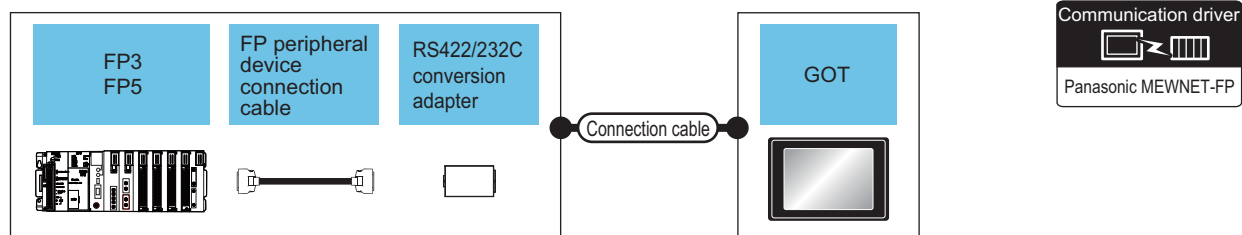
\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.



## 15.2.4 Connecting to FP3 or FP5

### ■ When connecting to tool port

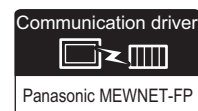
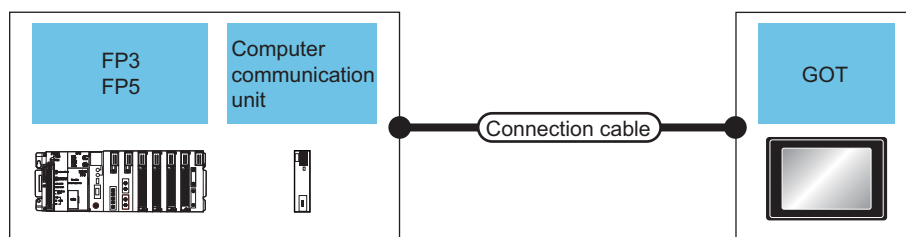


| PLC        |                    | FP peripheral device connection cable<br>*1 | RS422/232C conversion adapter<br>*1 | Connection cable                                             | Max. distance | GOT                |       | Number of connectable equipment                   |
|------------|--------------------|---------------------------------------------|-------------------------------------|--------------------------------------------------------------|---------------|--------------------|-------|---------------------------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number    |                                     | Cable model<br>Connection diagram number                     |               | Option device      | Model |                                                   |
| FP3<br>FP5 | RS-232             | AFP5520<br>(0.5m)                           | AFP8550                             | GT09-C30R20901-25P(3m)<br>or<br>RS-232 connection diagram 1) | 15.5m         | - (Built into GOT) | <br>  | 1 GOT for 1<br>RS422/232<br>conversion<br>adapter |
|            |                    |                                             |                                     |                                                              |               | GT15-RS2-9P        |       |                                                   |
|            |                    |                                             |                                     |                                                              |               | GT10-C02H-6PT9P*2  |       |                                                   |
|            |                    |                                             |                                     | RS-232 connection diagram 8)                                 | 15.5m         | - (Built into GOT) |       |                                                   |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to computer communication unit



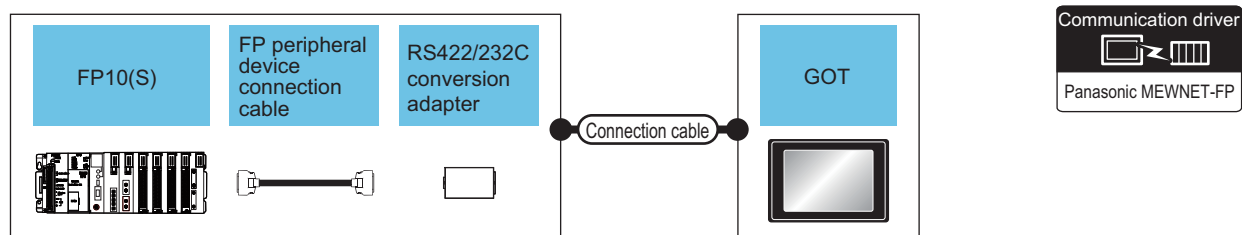
| PLC        |                    | Computer communication unit*1 | Connection cable                                                              | Max. distance | GOT                |       | Number of connectable equipment         |
|------------|--------------------|-------------------------------|-------------------------------------------------------------------------------|---------------|--------------------|-------|-----------------------------------------|
| Model name | Communication Type |                               | Cable model<br>Connection diagram number                                      |               | Option device      | Model |                                         |
| FP3        | RS-232             | AFP3462                       | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) | <br>  | 1 GOT for 1 computer communication unit |
|            |                    |                               |                                                                               |               | GT15-RS2-9P        |       |                                         |
|            |                    |                               |                                                                               |               | GT10-C02H-6PT9P*2  |       |                                         |
|            |                    |                               | RS-232 connection diagram 10)                                                 | 15m           | - (Built into GOT) |       |                                         |
| FP5        | RS-232             | AFP5462                       | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) | <br>  | 1 GOT for 1 computer communication unit |
|            |                    |                               |                                                                               |               | GT15-RS2-9P        |       |                                         |
|            |                    |                               |                                                                               |               | GT10-C02H-6PT9P*2  |       |                                         |
|            |                    |                               | RS-232 connection diagram 10)                                                 | 15m           | - (Built into GOT) |       |                                         |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.5 Connecting to FP10(S)

### ■ When connecting to tool port

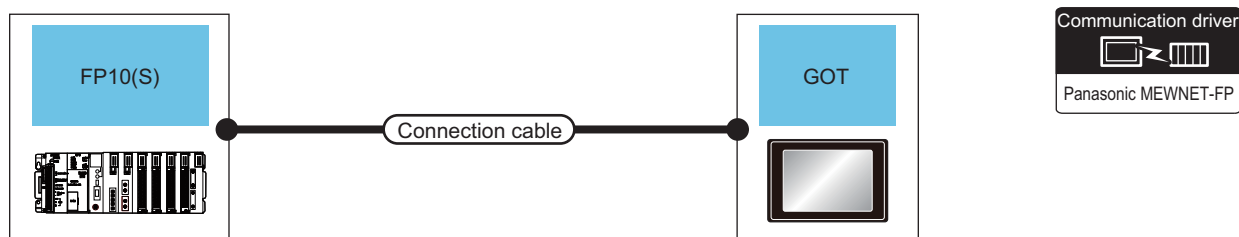


| PLC        |                    | FP peripheral device connection cable*1  | RS422/232 conversion adapter*1 | Connection cable                                                          | Max. distance | GOT                |                                                                  | Number of connectable equipment          |
|------------|--------------------|------------------------------------------|--------------------------------|---------------------------------------------------------------------------|---------------|--------------------|------------------------------------------------------------------|------------------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number |                                | Cable model<br>Connection diagram number                                  |               | Option device      | Model                                                            |                                          |
| FP10(S)    | RS-232             | AFP5520(0.5m)                            | AFP8550                        | GT09-C30R20901-25P<br>or<br>(User preparing) RS-232 connection diagram 1) | 15.5m         | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 RS422/232 conversion adapter |
|            |                    |                                          |                                |                                                                           |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                          |
|            |                    |                                          |                                |                                                                           |               | GT10-C02H-6PT9P*2  | <div>GT 03P 21 04P R4</div> <div>GT 03P 21 03P R2</div>          |                                          |
|            |                    |                                          |                                | (User preparing) RS-232 connection diagram 8)                             | 15.5m         | - (Built into GOT) | <div>GT 04P 21 04P R4</div> <div>GT 03P 21 03P R2</div>          |                                          |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to RS232C port

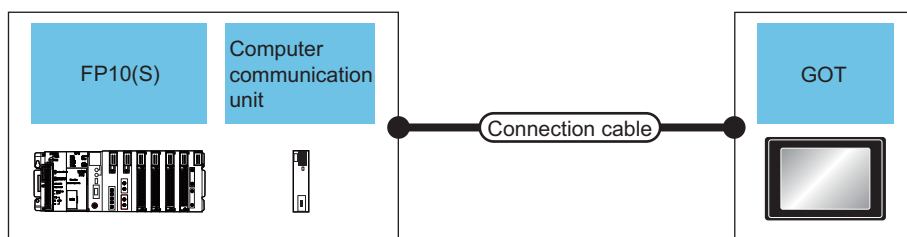


| PLC        |                    | Connection cable                                                                                                                |               | GOT                           |       | Number of connectable equipment |
|------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|-------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                        | Max. distance | Option device                 | Model |                                 |
| FP10(S)    | RS-232             | AFB85853(3m) <sup>*1</sup><br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2)                                       | 15m           | - (Built into GOT)            |       | 1 GOT<br>for 1 PLC              |
|            |                    |                                                                                                                                 |               | GT15-RS2-9P                   |       |                                 |
|            |                    |                                                                                                                                 |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                 |
|            |                    | AFB85853(3m) <sup>*1</sup><br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2)<br>+<br>RS-232 connection diagram 11) | 15m           | - (Built into GOT)            |       |                                 |
|            |                    | RS-232 connection diagram 10)                                                                                                   | 15m           | - (Built into GOT)            |       |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to computer communication unit



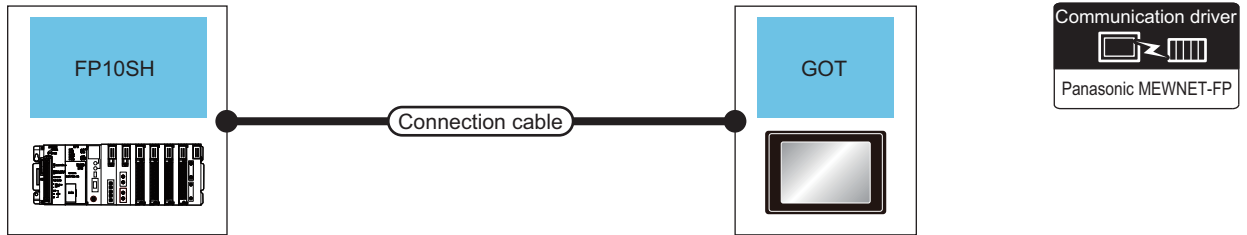
| PLC        |                    | Computer communication unit*1 | Connection cable                                                              |               | GOT                |       | Number of connectable equipment         |
|------------|--------------------|-------------------------------|-------------------------------------------------------------------------------|---------------|--------------------|-------|-----------------------------------------|
| Model name | Communication Type |                               | Cable model<br>Connection diagram number                                      | Max. distance | Option device      | Model |                                         |
| FP10(S)    | RS-232             | AFP3462                       | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT) |       | 1 GOT for 1 computer communication unit |
|            |                    |                               |                                                                               |               | GT15-RS2-9P        |       |                                         |
|            |                    |                               |                                                                               |               | GT10-C02H-6PT9P*2  |       |                                         |
|            |                    |                               | RS-232 connection diagram 10)                                                 | 15m           | - (Built into GOT) |       |                                         |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.6 Connecting to FP10SH

### ■ When connecting to tool port or RS232C port

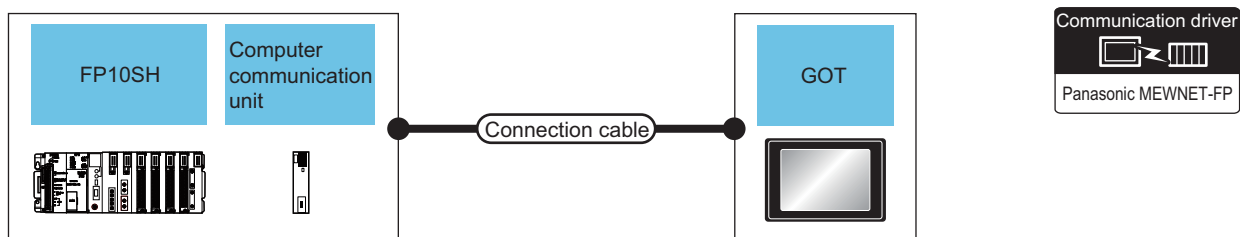


| PLC        |                    | Connection cable                                                                                                                                      | Max. distance | GOT                |                                                                  | Number of connectable equipment |
|------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                                              |               | Option device      | Model                                                            |                                 |
| FP10SH     | RS-232             | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 2)                                                        | 15m           | - (Built into GOT) | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div> | 1 GOT for 1 PLC                 |
|            |                    |                                                                                                                                                       |               | GT15-RS2-9P        | <div>GT 27</div> <div>GT 25</div>                                |                                 |
|            |                    |                                                                                                                                                       |               | GT10-C02H-6PT9P*2  | <div>GT 03B 21 04B R2</div> <div>GT 03P 21 R2</div>              |                                 |
|            |                    | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br>(User preparing) RS-232 connection diagram 2)<br>+<br>(User preparing) RS-232 connection diagram 11) | 15m           | - (Built into GOT) | <div>GT 04B 21 04B R2</div> <div>GT 03P 21 R2</div>              |                                 |
|            |                    | (User preparing) RS-232 connection diagram 10)                                                                                                        | 15m           | - (Built into GOT) | <div>GT 04B 21 04B R2</div> <div>GT 03P 21 R2</div>              |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to computer communication unit



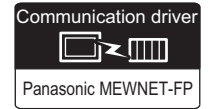
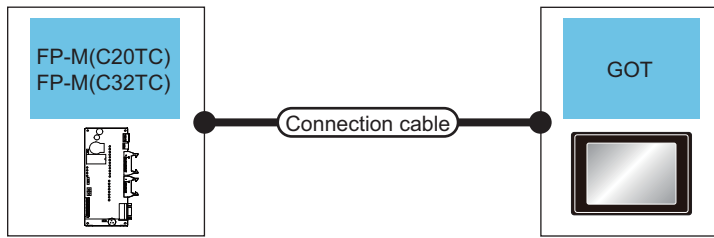
| PLC        |                    | Computer communication unit <sup>*1</sup> | Connection cable                                                                          | Max. distance | GOT                           |       | Number of connectable equipment         |
|------------|--------------------|-------------------------------------------|-------------------------------------------------------------------------------------------|---------------|-------------------------------|-------|-----------------------------------------|
| Model name | Communication Type |                                           | Cable model<br>Connection diagram number                                                  |               | Option device                 | Model |                                         |
| FP10SH     | RS-232             | AFP3462                                   | AFB85853(3m) <sup>*1</sup><br>GT09-C30R20902-9P(3m)<br>or<br>RS-232 connection diagram 2) | 15m           | - (Built into GOT)            |       | 1 GOT for 1 computer communication unit |
|            |                    |                                           |                                                                                           |               | GT15-RS2-9P                   |       |                                         |
|            |                    |                                           |                                                                                           |               | GT10-C02H-6PT9P <sup>*2</sup> |       |                                         |
|            |                    |                                           | RS-232 connection diagram 10)                                                             | 15m           | - (Built into GOT)            |       |                                         |

<sup>\*1</sup> Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

<sup>\*2</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.7 Connecting to FP-M(C20TC) or FP-M(C32TC)

### ■ When connecting to tool port or RS232C port



| PLC                                        |                    | Connection cable                                                                         |               | GOT                           |                                                    | Number of connectable equipment |
|--------------------------------------------|--------------------|------------------------------------------------------------------------------------------|---------------|-------------------------------|----------------------------------------------------|---------------------------------|
| Model name                                 | Communication Type | Cable model<br>Connection diagram number                                                 | Max. distance | Option device                 | Model                                              |                                 |
| FP-M(C20TC),<br>FP-M(C32TC)<br>(Tool port) | RS-232             | AFC8503(3m)* <sup>1</sup>                                                                | 3m            | - (Built into GOT)            | <div>GT 27</div> <div>GT 23</div> <div>GS 25</div> | 1 GOT for 1 PLC                 |
|                                            |                    |                                                                                          |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                  |                                 |
|                                            |                    |                                                                                          |               | GT10-C02H-6PT9P* <sup>2</sup> | <div>GT 27 03P R4</div> <div>GT 25 03P R2</div>    |                                 |
|                                            |                    | AFC8503(3m)* <sup>1</sup><br>+<br><div>User preparing</div> RS-232 connection diagram 9) | 3.5m          | - (Built into GOT)            | <div>GT 27 04R 21</div> <div>GT 25 03P 21 R2</div> |                                 |
|                                            |                    | <div>User preparing</div> RS-232 connection diagram 10)                                  | 15m           | - (Built into GOT)            | <div>GT 27 04R 21</div> <div>GT 25 03P 21 R2</div> |                                 |



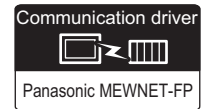
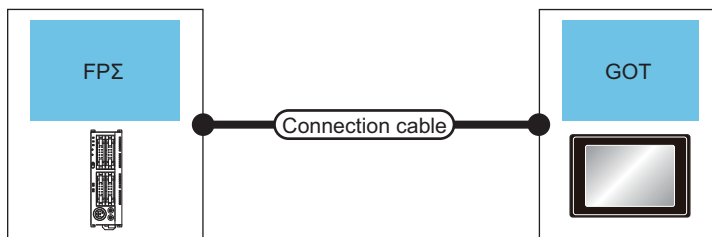
| PLC                                          |                    | Connection cable                                                                                                                                                                                                                                                                        |               | GOT                |                                                                                     | Number of connectable equipment |
|----------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------------------------------------------------------------------------------------|---------------------------------|
| Model name                                   | Communication Type | Cable model<br>Connection diagram number                                                                                                                                                                                                                                                | Max. distance | Option device      | Model                                                                               |                                 |
| FP-M(C20TC),<br>FP-M(C32TC)<br>(RS232C port) | RS-232             | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br> RS-232 connection diagram 2)                                                                                                                         | 15m           | - (Built into GOT) |  | 1 GOT for 1 PLC                 |
|                                              |                    |                                                                                                                                                                                                                                                                                         |               | GT15-RS2-9P        |  |                                 |
|                                              |                    |                                                                                                                                                                                                                                                                                         |               | GT10-C02H-6PT9P*2  |  |                                 |
|                                              |                    | AFB85853(3m)*1<br>GT09-C30R20902-9P(3m)<br>or<br> RS-232 connection diagram 2)<br>+<br> RS-232 connection diagram 11) | 15m           | - (Built into GOT) |  |                                 |
|                                              |                    |  RS-232 connection diagram 10)                                                                                                                                                                         | 15m           | - (Built into GOT) |  |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

## 15.2.8 Connecting to FPΣ

### ■ When connecting to tool port

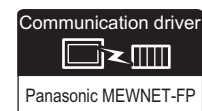
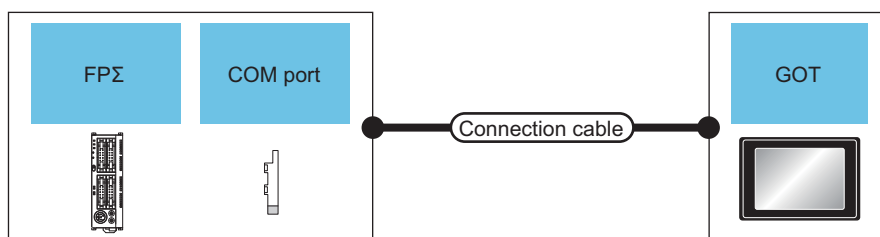


| PLC        |                    | Connection cable                                                               |               | GOT                           |                                                                                     | Number of connectable equipment |
|------------|--------------------|--------------------------------------------------------------------------------|---------------|-------------------------------|-------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                       | Max. distance | Option device                 | Model                                                                               |                                 |
| FPΣ        | RS-232             | AFC8503(3m) <sup>*1</sup>                                                      | 3m            | - (Built into GOT)            | <div>GT 27</div> <div>GT 25</div> <div>GT 23</div> <div>GS</div>                    | 1 GOT for 1 PLC                 |
|            |                    |                                                                                |               | GT15-RS2-9P                   | <div>GT 27</div> <div>GT 25</div>                                                   |                                 |
|            |                    |                                                                                |               | GT10-C02H-6PT9P <sup>*2</sup> | <div>GT 03P 27</div> <div>GT 03P 25</div> <div>GT 03P 23</div> <div>GT 03P 21</div> |                                 |
|            |                    | AFC8503(3m) <sup>*1</sup><br>+<br>(User preparing RS-232 connection diagram 9) | 3.5m          | - (Built into GOT)            | <div>GT 04R 27</div> <div>GT 03P 25</div> <div>GT 03P 21</div>                      |                                 |

<sup>\*1</sup> Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

<sup>\*2</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to COM port



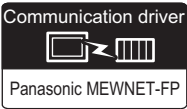
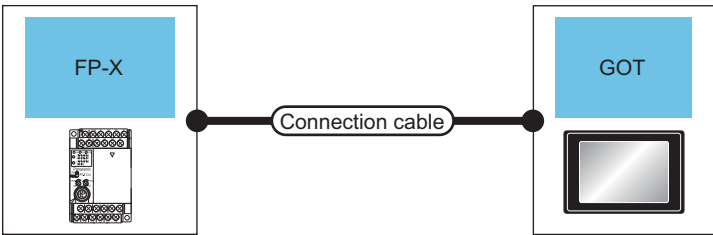
| PLC        |            |                    | Connection cable                         |               | GOT                |       | Number of connectable equipment |
|------------|------------|--------------------|------------------------------------------|---------------|--------------------|-------|---------------------------------|
| Model name | COM port*1 | Communication Type | Cable model<br>Connection diagram number | Max. distance | Option device      | Model |                                 |
| FPΣ        | AFPG801    | RS-232             | RS-232 connection diagram 5)             | 15m           | - (Built into GOT) |       | 1 GOT for 1 PLC                 |
|            |            |                    |                                          |               | GT15-RS2-9P        |       |                                 |
|            |            |                    |                                          |               | GT10-C02H-6PT9P*2  |       |                                 |
|            |            |                    | RS-232 connection diagram 14)            | 15m           | - (Built into GOT) |       |                                 |
|            | AFPG802    | RS-232             | RS-232 connection diagram 6)             | 15m           | - (Built into GOT) |       |                                 |
|            |            |                    |                                          |               | GT15-RS2-9P        |       |                                 |
|            |            |                    |                                          |               | GT10-C02H-6PT9P*2  |       |                                 |
|            |            |                    | RS-232 connection diagram 15)            | 15m           | - (Built into GOT) |       |                                 |

\*1 Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

\*2 When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

### 15.2.9 Connecting to FP-X

■ When connecting to tool port

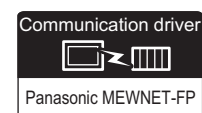
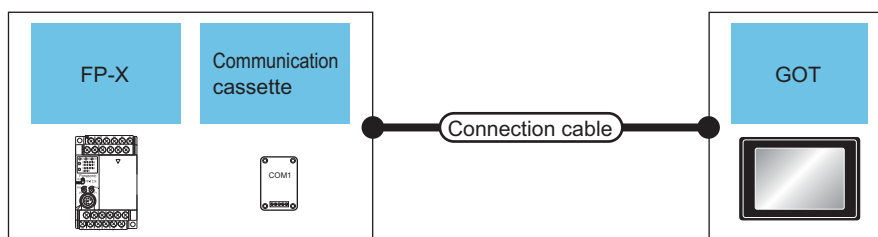


| PLC        |                    | Connection cable                                                                                                                                   |               | GOT                           |                                                                                                                                                                                                                                                                   | Number of connectable equipment |
|------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type | Cable model<br>Connection diagram number                                                                                                           | Max. distance | Option device                 | Model                                                                                                                                                                                                                                                             |                                 |
| FP-X       | RS-232             | AFC8503(3m) <sup>*1</sup>                                                                                                                          | 3m            | - (Built into GOT)            | <br><br> | 1 GOT for 1 PLC                 |
|            |                    |                                                                                                                                                    |               | GT15-RS2-9P                   |                                                                                                                                                                                |                                 |
|            |                    |                                                                                                                                                    |               | GT10-C02H-6PT9P <sup>*2</sup> |                                                                                                                                                                               |                                 |
|            |                    | AFC8503(3m) <sup>*1</sup><br>+<br> RS-232 connection diagram 9) | 3.5m          | - (Built into GOT)            |                                                                                                                                                                              |                                 |

<sup>\*1</sup> Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.

<sup>\*2</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

■ When connecting to communication cassette



| PLC        |                    | Communication cassette*1                 | Connection cable                         | Max. distance | GOT               |       | Number of connectable equipment |
|------------|--------------------|------------------------------------------|------------------------------------------|---------------|-------------------|-------|---------------------------------|
| Model name | Communication Type |                                          | Cable model<br>Connection diagram number |               | Option device     | Model |                                 |
| FP-X       | RS-232             | AFPX-COM1<br>(RS232C one channel type)   | RS-232 connection diagram 5)             | 15m           | -(Built into GOT) |       | 1 GOT for 1 PLC                 |
|            |                    |                                          |                                          |               | GT15-RS2-9P       |       |                                 |
|            |                    |                                          |                                          |               | GT10-C02H-6PT9P*3 |       |                                 |
|            |                    |                                          | RS-232 connection diagram 14)            | 15m           | -(Built into GOT) |       |                                 |
|            |                    | AFPX-COM2*2<br>(RS232C two channel type) | RS-232 connection diagram 6)             | 15m           | -(Built into GOT) |       |                                 |
|            |                    |                                          |                                          |               | GT15-RS2-9P       |       |                                 |
|            |                    |                                          |                                          |               | GT10-C02H-6PT9P*3 |       |                                 |
|            |                    |                                          | RS-232 connection diagram 15)            | 15m           | -(Built into GOT) |       |                                 |

| PLC        |                    | Communication cassette <sup>*1</sup>                                             | Connection cable                                                                                                     | Max. distance | GOT                           |                                                                                       | Number of connectable equipment |
|------------|--------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| Model name | Communication Type |                                                                                  | Cable model<br>Connection diagram number                                                                             |               | Option device                 | Model                                                                                 |                                 |
| FP-X       | RS-422             | AFPX-COM3<br>(RS485/RS422 one channel type)                                      |  RS-422<br>connection diagram 1)    | 1200m         | - (Built into GOT)            |    | 1 GOT for 1 PLC                 |
|            |                    |                                                                                  |                                                                                                                      |               | GT15-RS4-9S                   |    |                                 |
|            |                    |                                                                                  |                                                                                                                      |               | GT10-C02H-9SC                 |    |                                 |
|            |                    |                                                                                  |  RS-422<br>connection diagram 2)    | 1200m         | - (Built into GOT)            |    |                                 |
|            | RS-232             | AFPX-COM4 <sup>*2</sup><br>(RS485 one channel and RS232C one channel mixed type) |  RS-232<br>connection diagram 7)  | 15m           | - (Built into GOT)            |    |                                 |
|            |                    |                                                                                  |                                                                                                                      |               | GT15-RS2-9P                   |   |                                 |
|            |                    |                                                                                  |                                                                                                                      |               | GT10-C02H-6PT9P <sup>*3</sup> |  |                                 |
|            |                    |                                                                                  |  RS-232<br>connection diagram 16) | 15m           | - (Built into GOT)            |  |                                 |

- <sup>\*1</sup> Product manufactured by Panasonic Industrial Devices SUNX Co., Ltd. For details of this product, contact Panasonic Industrial Devices SUNX Co., Ltd.
- <sup>\*2</sup> To connect C30 and C60, USB port may set at the COM2 port on AFPX-COM2 and AFPX-COM4. In this case, set the COM2 port to RS232C.
- <sup>\*3</sup> When a GT10-C02H-6PT9P unit of the sub version A or B is used, do not ground the case of the D-sub (9-pin) connector.

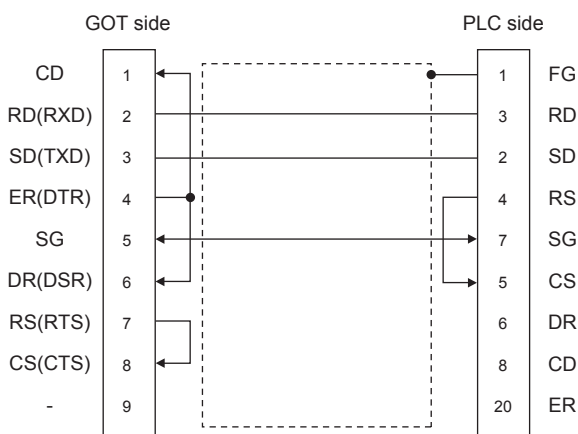
## 15.3 Connection Diagram

The following diagram shows the connection between the GOT and the PLC.

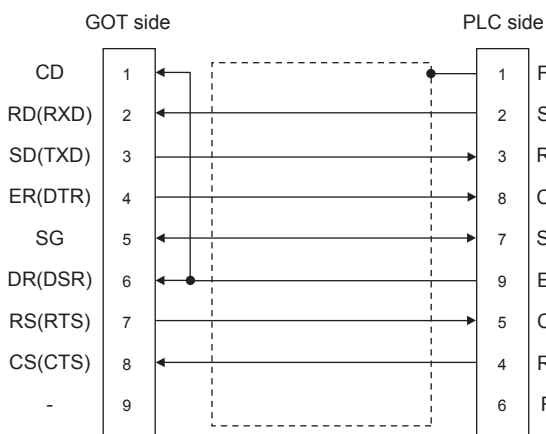
### 15.3.1 RS-232 cable

#### ■ Connection diagram

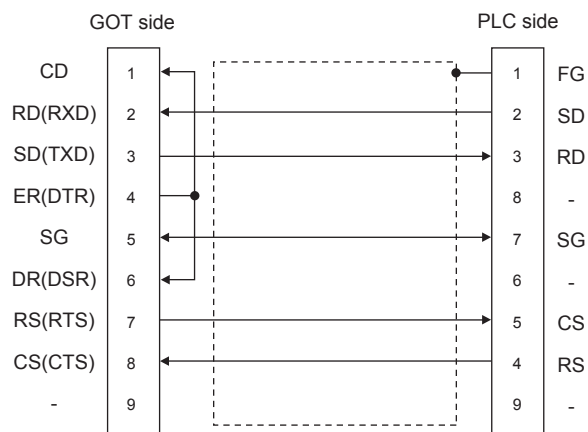
(1) RS-232 connection diagram 1)



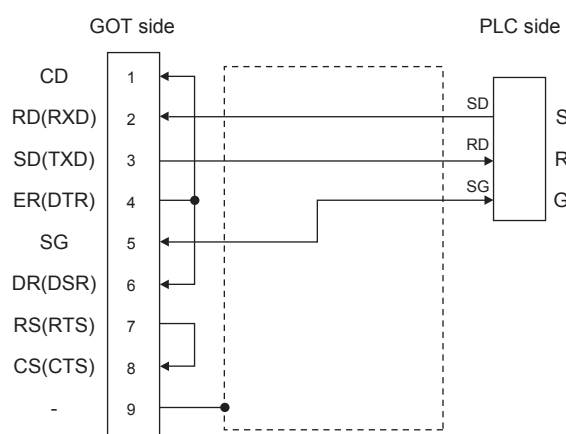
(2) RS-232 connection diagram 2)



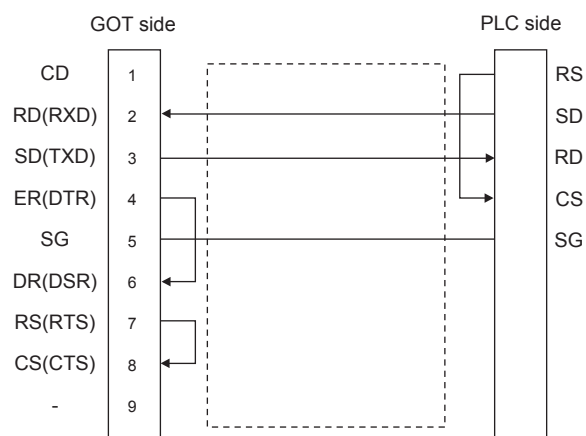
(3) RS-232 connection diagram 3)



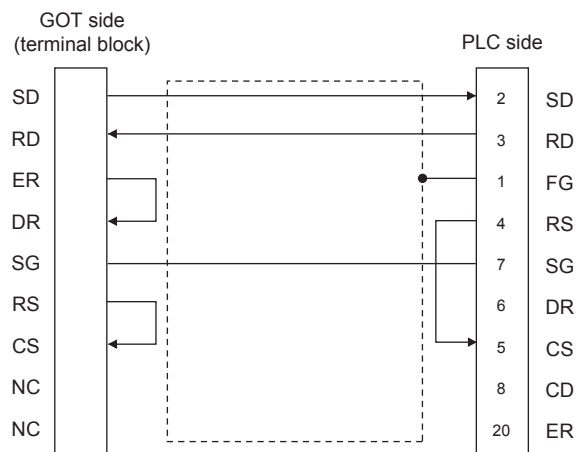
(4) RS-232 connection diagram 4)



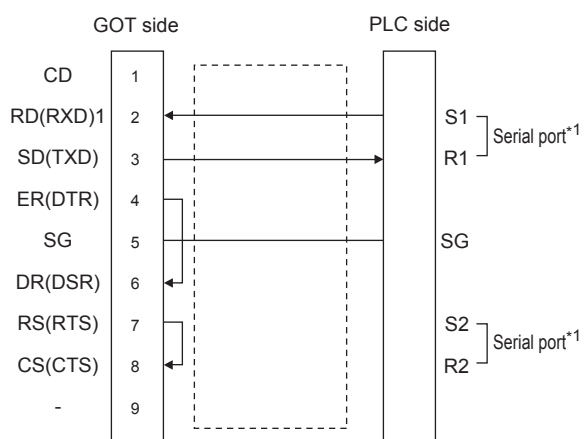
(5) RS-232 connection diagram 5)



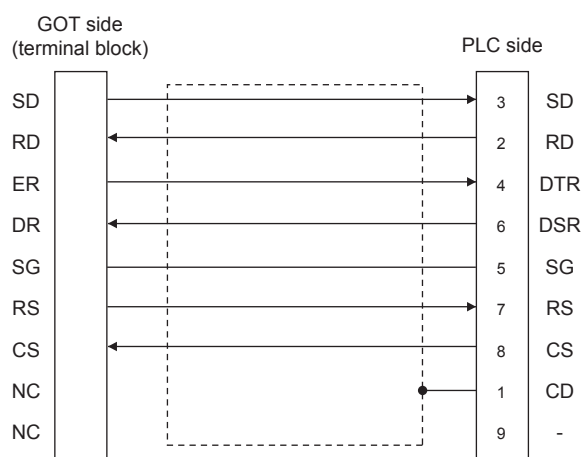
(8) RS-232 connection diagram 8)



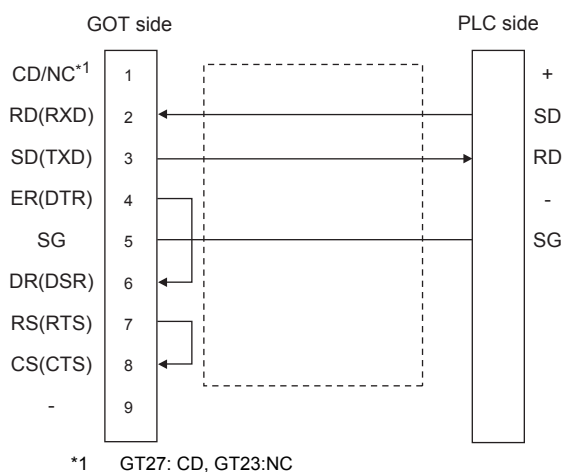
(6) RS-232 connection diagram 6)



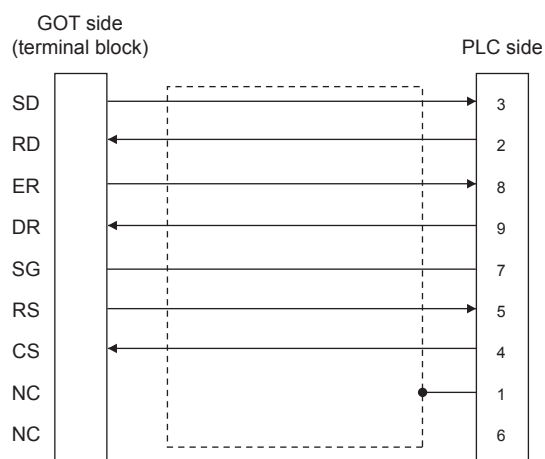
(9) RS-232 connection diagram 9)



(7) RS-232 connection diagram 7)

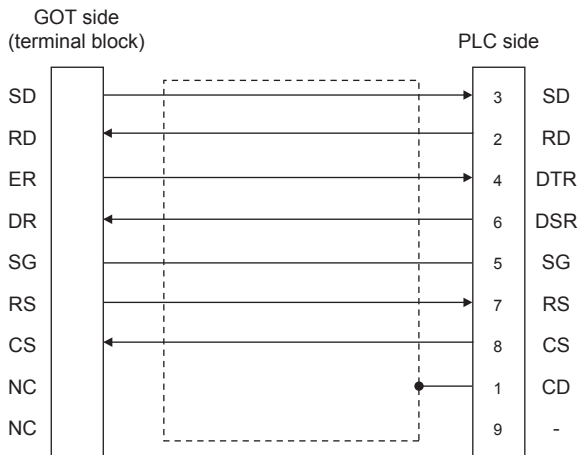


(10)RS-232 connection diagram 10)

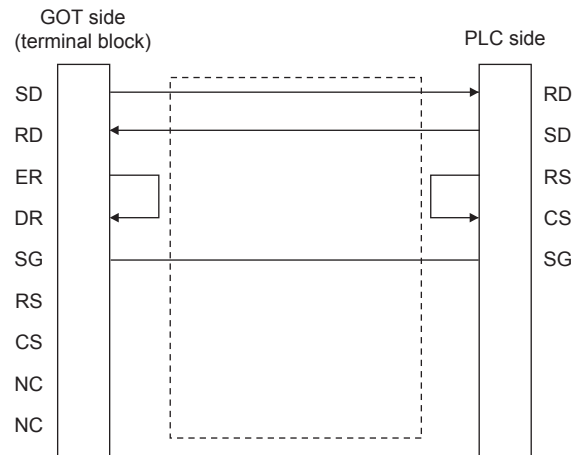




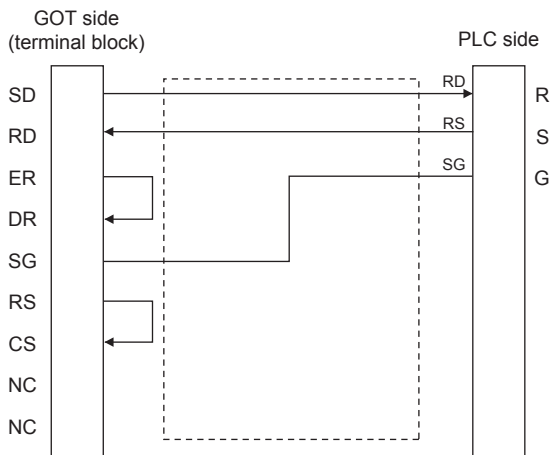
(11)RS-232 connection diagram 11)



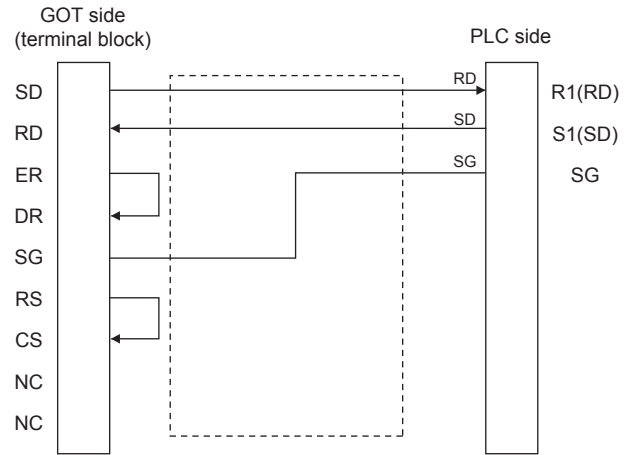
(14)RS-232 connection diagram 14)



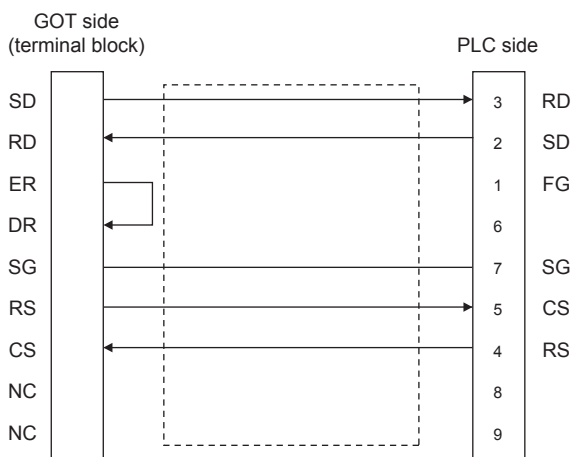
(12)RS-232 connection diagram 12)



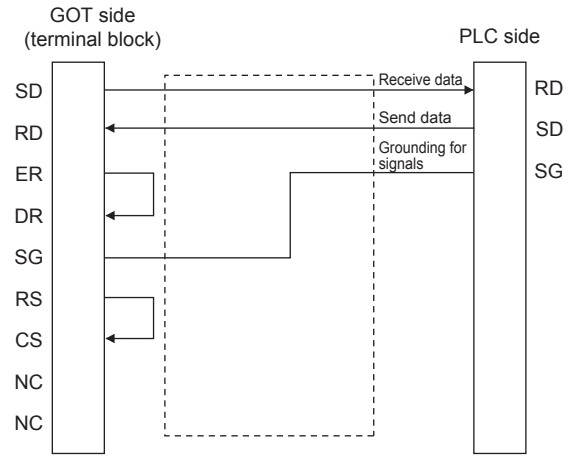
(15)RS-232 connection diagram 15)



(13)RS-232 connection diagram 13)



(16)RS-232 connection diagram 16)



## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-232 cable must be 15m or less. The length of the cable must be 3m or less with a transmission speed of 38400bps.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) Connector for Panasonic Industrial Devices SUNX PLC

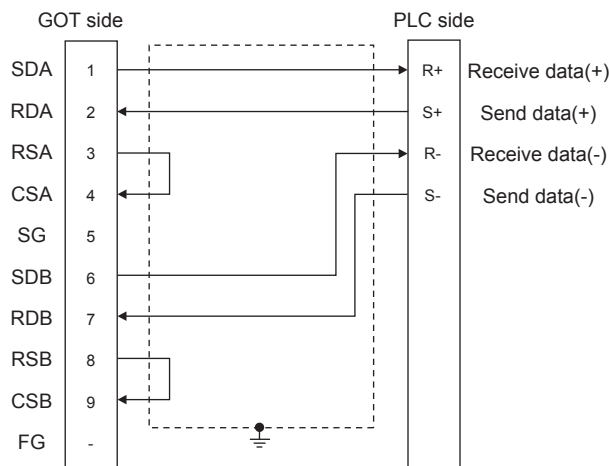
Use the connector applicable to the Panasonic Industrial Devices SUNX PLC.

For details, refer to the Panasonic Industrial Devices SUNX PLC user's manual.

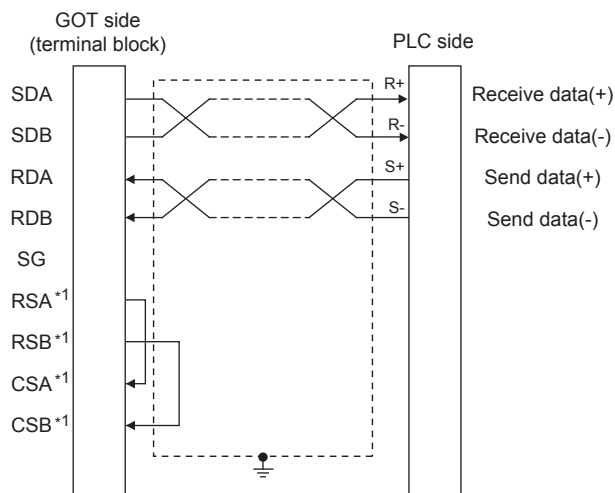
## 15.3.2 RS-422 cable

## ■ Connection diagram

### (1) RS-422 connection diagram 1)



### (2) RS-422 connection diagram 2)



\*1 The signals RSA, RSB, CSA, and CSB are not provided for



Return connection is not required.

## ■ Precautions when preparing a cable

### (1) Cable length

The length of the RS-422 cable must be 1200m or less.

### (2) GOT side connector

For the GOT side connector, refer to the following.

 1.4.1 GOT connector specifications

### (3) Connector for Panasonic Industrial Devices SUNX PLC

Use the connector applicable to the Panasonic Industrial Devices SUNX PLC.

For details, refer to the Panasonic Industrial Devices SUNX PLC user's manual.

## ■ Connecting terminating resistors

### (1) GOT side

Set the terminating resistor setting switch of the GOT main unit to "Disable".

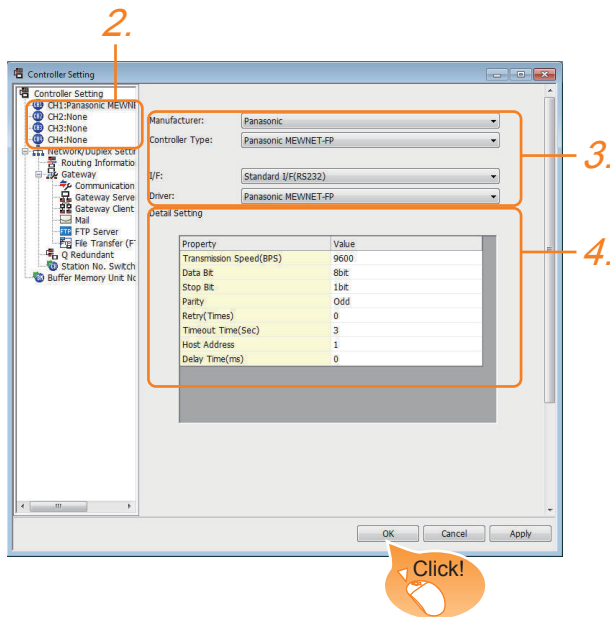
For details of terminating resistor settings, refer to the following.

 1.4.3 Terminating resistors of GOT

## 15.4 GOT Side Settings

### 15.4.1 Setting communication interface (Communication settings)

Set the channel of the equipment to be connected to the GOT.



1. Select [Common] → [Controller Setting] from the menu.
2. The Controller Setting window is displayed. Select the channel to be used from the list menu.
3. Set the following items.
  - Manufacturer: Panasonic
  - Controller Type: Panasonic MEWNET-FP
  - I/F: Interface to be used
  - Driver: Panasonic MEWNET-FP
4. The detailed setting is displayed after Manufacturer, Controller Type, I/F, and Driver are set. Make the settings according to the usage environment.

➡ 15.4.2 Communication detail settings

Click the [OK] button when settings are completed.

#### POINT

The settings of connecting equipment can be confirmed in [I/F Communication Setting]. For details, refer to the following.

➡ 1.1.2 I/F communication setting

### 15.4.2 Communication detail settings

Make the settings according to the usage environment.

| Property                | Value |
|-------------------------|-------|
| Transmission Speed(BPS) | 9600  |
| Data Bit                | 8 bit |
| Stop Bit                | 1 bit |
| Parity                  | Odd   |
| Retry( Times)           | 0     |
| Timeout Time(Sec)       | 3     |
| Host Address            | 1     |
| Delay Time(ms)          | 0     |

| Item               | Description                                                                                                                                                                  | Range                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Transmission Speed | Set this item when change the transmission speed used for communication with the connected equipment.<br>(Default: 9600bps)                                                  | 4800bps,<br>9600bps,<br>19200bps,<br>38400bps,<br>57600bps,<br>115200bps |
| Data Bit           | Set this item when change the data length used for communication with the connected equipment.<br>(Default: 8bits)                                                           | 7bits/8bits                                                              |
| Retry              | Set the number of retries to be performed when a communication timeout occurs.<br>When receiving no response after retries, the communication times out.<br>(Default: 0time) | 0 to 5times                                                              |
| Timeout Time       | Set the time period for a communication to time out.<br>(Default: 3sec)                                                                                                      | 1 to 30sec                                                               |
| Host Address       | Specify the host address (station No. of the PLC to which the GOT is connected) in the network of the GOT.<br>(Default: 1)                                                   | 1 to 31                                                                  |
| Delay Time         | Set this item to adjust the transmission timing of the communication request from the GOT.<br>(Default: 0ms)                                                                 | 0 to 300 (ms)                                                            |

#### POINT

- (1) Communication interface setting by the Utility  
The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Communication Settings] of project data.  
For details on the Utility, refer to the following manual.

➡ GOT2000 Series User's Manual (Utility)

- (2) Precedence in communication settings  
When settings are made by GT Designer3 or the Utility, the latest setting is effective.

## 15.5 PLC Side Setting

### POINT

Panasonic Industrial Devices SUNX PLC  
For details of the Panasonic Industrial Devices SUNX PLC, refer to the following manual.

 Panasonic Industrial Devices SUNX PLC user's Manual

### ■ Connecting to the tool port of the PLC CPU

| Item                 | Set value                                                 |
|----------------------|-----------------------------------------------------------|
| Transmission speed*1 | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data bit             | 7bit, 8bit                                                |
| Stop bit             | 1bit                                                      |
| Parity bit           | Odd                                                       |
| Modem connection     | No                                                        |
| Module No.           | 1                                                         |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 15.4.1 Setting communication interface (Communication settings)

The setting range varies with the connected PLC.

### ■ Connecting to the RS232C and COM port of the PLC CPU

| Item                           | Set value                                                 |
|--------------------------------|-----------------------------------------------------------|
| Transmission speed*1           | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Data bit                       | 7bit, 8bit                                                |
| Stop bit                       | 1bit                                                      |
| Parity bit                     | Odd                                                       |
| Modem connection               | No                                                        |
| Serial port action selection*2 | 1 (Computer link)                                         |
| Module No.                     | 1                                                         |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 15.4.1 Setting communication interface (Communication settings)

The setting range varies with the connected PLC.

\*2 Set when connecting to FP0, FP1, FP2 or FP-M.

### ■ Connecting to the computer communication unit

| Item                 | Set value                  |
|----------------------|----------------------------|
| Transmission speed*1 | 4800bps, 9600bps, 19200bps |
| Data bit             | 7bit, 8bit                 |
| Stop bit             | 1bit                       |
| Parity bit           | Odd                        |
| Parity check         | Yes                        |
| Control signal       | Invalidate CS, CD          |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

 15.4.1 Setting communication interface (Communication settings)

The setting range varies with the connected PLC.

### ■ Connecting to the communication cassette

#### (1) Communication settings

Set the communication settings for the COM 1 port and COM2 port to connect GOT.

| Item                 | Set value                                                 |
|----------------------|-----------------------------------------------------------|
| Communication mode   | Computer link                                             |
| Transmission speed*1 | 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps |
| Modem connection     | No                                                        |
| Data bit             | 7bit, 8bit                                                |
| Parity check         | Odd                                                       |
| Stop bit             | 1bit                                                      |
| Unit No.             | 1                                                         |
| Port selection*2     | Communication cassette                                    |

\*1 Indicates only the transmission speeds that can be set on the GOT side.  
Set the same transmission speed of the GOT.  
For the transmission speed setting on the GOT side, refer to the following.

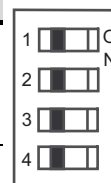
 15.4.1 Setting communication interface (Communication settings)

\*2 Set the COM2 port only.

#### (2) Switch setting on the Communication cassette (AFPX-COM3)

Set the switch on the back.

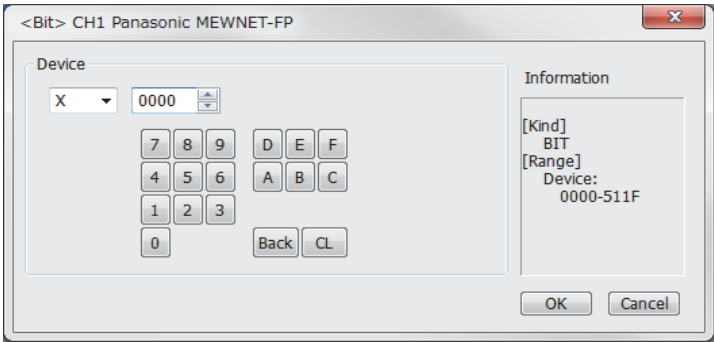
| Switch No. | Setting | Setting details          |
|------------|---------|--------------------------|
| 1          | OFF     | RS422                    |
| 2          | OFF     |                          |
| 3          | OFF     |                          |
| 4          | OFF     | Terminating resistor OFF |



# 15.6 Device Range that Can Be Set

The device ranges of controller that can be used for GOT are as follows.  
Note that the device ranges in the following tables are the maximum values that can be set in GT Designer3.  
The device specifications of controllers may differ depending on the models, even though belonging to the same series.  
Please make the setting according to the specifications of the controller actually used.  
When a non-existent device or a device number outside the range is set, other objects with correct device settings may not be monitored.

■ Setting item

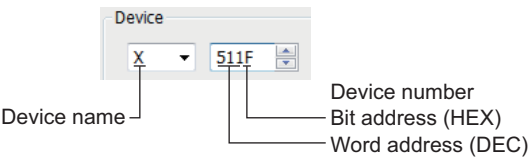


| Item        | Description                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| Device      | Set the device name, device number, and bit number.<br>The bit number can be set only when specifying the bit of word device. |
| Information | Displays the device type and setting range which are selected in [Device].                                                    |

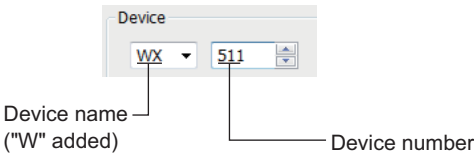
POINT

Device settings of PANASONIC PLC

- (1) When setting a contact as a bit device  
Set the device using the format of word address (DEC) + bit address (HEX).



- (2) When setting a contact as a word device  
Set the device number.  
Enter "W" before the device name, not including the bit address.



## 15.6.1 Panasonic Industrial Devices SUNX PLC (Panasonic MEWNET-FP)\*1

| Device name     |                                                  | Setting range                                                                                                                   |            | Device No. representation |
|-----------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------|
| Bit device      | Input relay (X) <sup>*2,3</sup>                  | X0000                                                                                                                           | to X511F   | Decimal + Hexadecimal     |
|                 | Output relay (Y) <sup>*3</sup>                   | Y0000                                                                                                                           | to Y511F   |                           |
|                 | Internal relay (R)                               | R0000                                                                                                                           | to R886F   |                           |
|                 | Special relay (R) <sup>*2</sup>                  | R9000                                                                                                                           | to R911F   |                           |
|                 | Link relay (L) <sup>*5</sup>                     | L0000                                                                                                                           | to L639F   |                           |
|                 | Timer contact (T) <sup>*2,4</sup>                | T0                                                                                                                              | to T3071   | Decimal                   |
|                 | Counter contact (C) <sup>*2,4</sup>              | C0                                                                                                                              | to C3071   |                           |
| Word device bit |                                                  | Specified bit of the following word devices<br>(except input relay, output relay, internal relay, special relay and link relay) |            | -                         |
| Word device     | Input relay (WX) <sup>*2</sup>                   | WX000                                                                                                                           | to WX511   | Decimal                   |
|                 | Output relay (WY)                                | WY000                                                                                                                           | to WY511   |                           |
|                 | Internal relay (WR)                              | WR000                                                                                                                           | to WR886   |                           |
|                 | Special relay (WR) <sup>*2</sup>                 | WR900                                                                                                                           | to WR911   |                           |
|                 | Link relay (WL)                                  | WL000                                                                                                                           | to WL639   |                           |
|                 | Timer/Counter (Elapsed value) (EV) <sup>*4</sup> | EV0                                                                                                                             | to EV3071  |                           |
|                 | Timer/Counter (Set value) (SV) <sup>*4</sup>     | SV0                                                                                                                             | to SV3071  |                           |
|                 | Data register (DT)                               | DT0                                                                                                                             | to DT10239 |                           |
|                 | Special data register (DT)                       | DT0                                                                                                                             | to DT32764 |                           |
|                 |                                                  | DT90000                                                                                                                         | to DT90511 |                           |
|                 | Link register (LD) <sup>*5</sup>                 | LD0                                                                                                                             | to LD8447  |                           |
|                 | File register (FL) <sup>*5,6</sup>               | FL0                                                                                                                             | to FL32764 |                           |
| Bit device word |                                                  | Converting bit devices into word<br>(Except Timer contact and Counter contact)                                                  |            | -                         |

\*1 The above device range is for the case where FP10SH is used.

For FP0, FP1, FP2, FP3, FP5, FP-10(S), or FP-M, device ranges are different in individual CPUs.

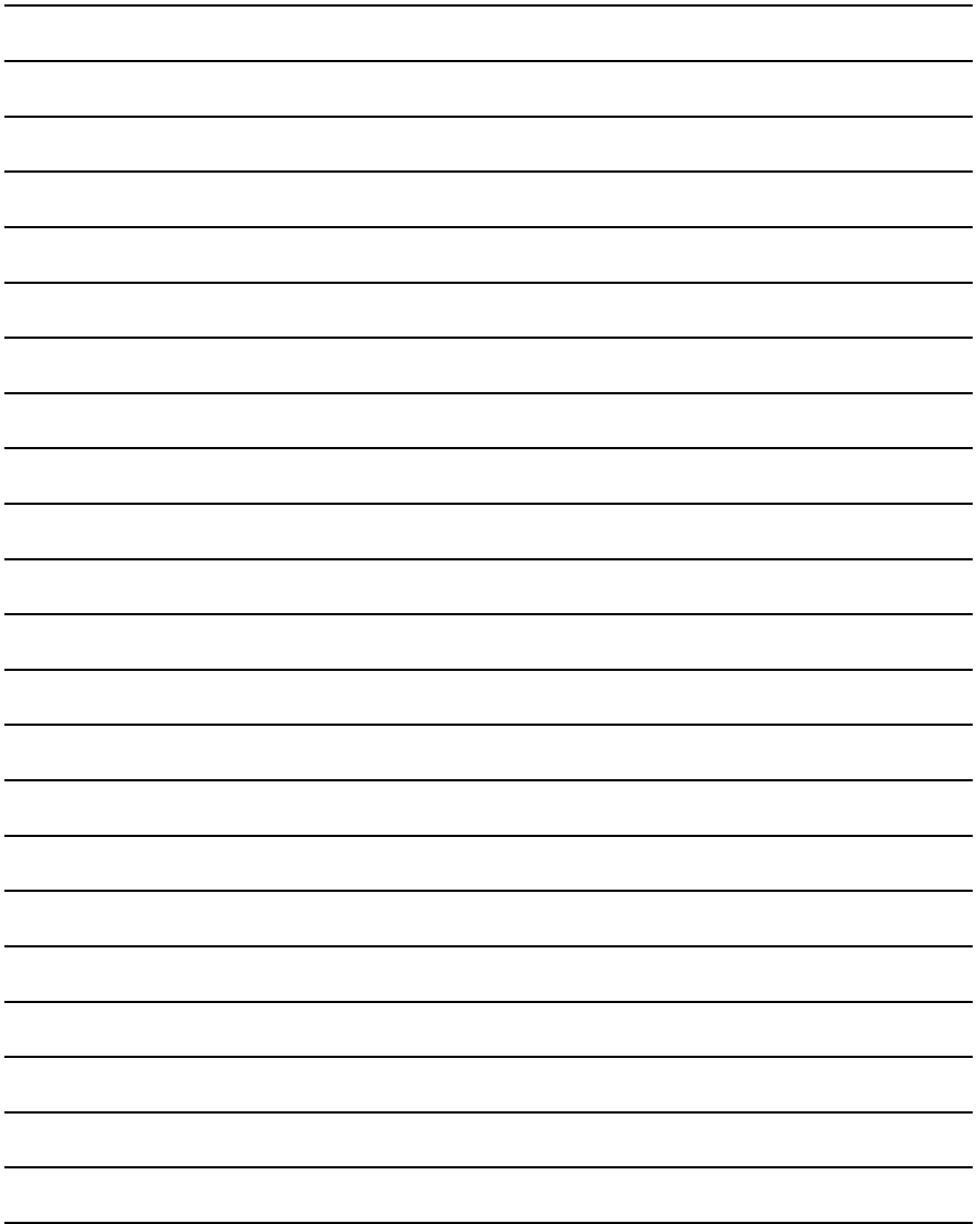
\*2 Writing to device is not allowed.

\*3 Only those devices that have been assigned to I/O contacts by peripheral software can be used.

\*4 The device points of the timer and counter differs depending on the head numbers of the counter set by the value of the system register (No. 5).

\*5 This device does not exist in FP0, FP1, and FP-M.

\*6 When FP2SH is used, one bank of "32765 × 3 banks" can be monitored.



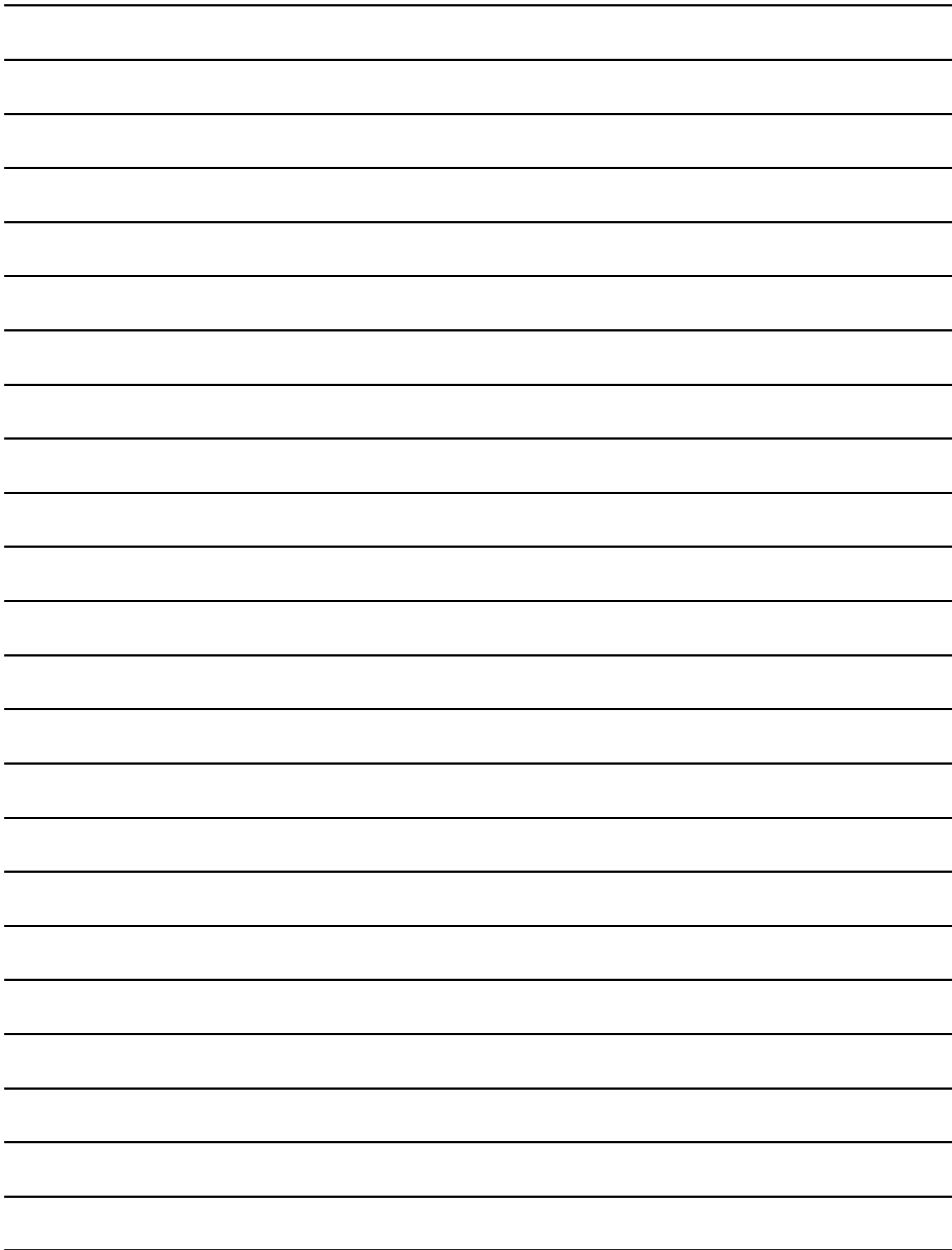


## REVISIONS

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

| Print Date | * Manual Number    | Revision                                                                                                                                                     |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sep., 2013 | SH(NA)-081198ENG-A | Compatible with GT Works3 Version1.100E                                                                                                                      |
| Nov., 2013 | SH(NA)-081198ENG-B | Compatible with GT Works3 Version1.104J<br>• Changing the icons of the supported models                                                                      |
| Jan., 2014 | SH(NA)-081198ENG-C | Compatible with GT Works3 Version1.108N<br>• The AZBIL (formerly Yamatake Corporation) temperature controller (AHC2001) is supported.                        |
| Apr., 2014 | SH(NA)-081198ENG-D | Compatible with GT Works3 Version1.111R<br>• GT25 and GS are added.<br>• The enlargement of the communication setting range of the TOSHIBA PLC is supported. |
| Oct., 2014 | SH(NA)-081198ENG-E | Compatible with GT Works3 Version1.122C<br>• GT21 is added.<br>• IP Filter setting is supported.                                                             |
| Jan., 2015 | SH(NA)-081198ENG-F | Compatible with GT Works3 Version1.126G<br>• GT21 corresponding to IAI robot controller connection.                                                          |
| Apr., 2015 | SH(NA)-081198ENG-G | Compatible with GT Works3 Version1.130L<br>• GT27 is added (GT2705-VTBD).<br>• GT21 is added (GT2104-RTBD, GT2103-PMBDS2, GT2103-PMBLS).                     |
| Jun., 2015 | SH(NA)-081198ENG-H | Compatible with GT Works3 Version1.134Q<br>• TOSHIBA Unified Controller nv                                                                                   |
| Oct., 2015 | SH(NA)-081198ENG-I | Compatible with GT Works3 Version1.144A<br>• GT21 is added (GT2104-PMBD, GT2104-PMBDS).<br>• GT21 corresponding to KEYENCE PLC (Ethernet connection).        |
|            |                    |                                                                                                                                                              |

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# **WARRANTY**

Please check 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.

### **(1) Gratis Warranty Term**

The gratis warranty term of the product shall be for thirty-six (36) months after the date of purchase or delivery to a designated place.

Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be forty-two (42) months.

The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

### **(2) Gratis Warranty Range**

- (a) The customer shall be responsible for the primary failure diagnosis unless otherwise specified.  
If requested by the customer, Mitsubishi Electric Corporation or its representative firm may carry out the primary failure diagnosis at the customer's expense.  
The primary failure diagnosis will, however, be free of charge should the cause of failure be attributable to Mitsubishi Electric Corporation.
- (b) 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.
- (c) Even within the gratis warranty term, repairs shall be charged in the following cases.
  - Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
  - Failure caused by unapproved modifications, etc., to the product by the user.
  - 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.
  - Failure that could have been avoided if consumable parts designated in the instruction manual had been correctly serviced or replaced.
  - Replacing consumable parts such as a battery, backlight, and fuse.
  - 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.
  - Failure caused by reasons that could not be predicted by scientific technology standards at the time of shipment from Mitsubishi.
  - 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) Mitsubishi shall not accept a request for product supply (including spare parts) after production is discontinued.

## **■3. Overseas service**

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center.

Note that the repair conditions at each FA Center may differ.

## **■4. Exclusion of loss in opportunity and secondary loss from warranty liability**

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to:

- (1) Damages caused by any cause found not to be the responsibility of Mitsubishi.
- (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.
- (3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.
- (4) Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

## **■5. Changes in product specifications**

The specifications given in the catalogs, manuals, or technical documents are subject to change without prior notice.

## **■6. Product application**

- (1) In using the Mitsubishi graphic operation terminal, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the graphic operation terminal device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.
- (2) The Mitsubishi graphic operation terminal has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or Public service shall be excluded from the graphic operation terminal applications.  
In addition, applications in which human life or property could be greatly affected, such as in aircraft, medical, railway applications, incineration and fuel devices, manned transportation equipment, recreation and amusement devices, safety devices, shall also be excluded from the graphic operation terminal.  
Even for the above applications, however, Mitsubishi Electric Corporation may consider the possibility of an application, provided that the customer notifies Mitsubishi Electric Corporation of the intention, the application is clearly defined and any special quality is not required, after the user consults the local Mitsubishi representative.

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# GOT2000 Series Connection Manual

## (Non-Mitsubishi Products 1)

For GT Works3 Version1

|                             |                    |
|-----------------------------|--------------------|
| MODEL                       | GOT2000-CON2-SW1-E |
| MODEL CODE                  | _____              |
| SH(NA)-081198ENG-I(1510)MEE |                    |

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