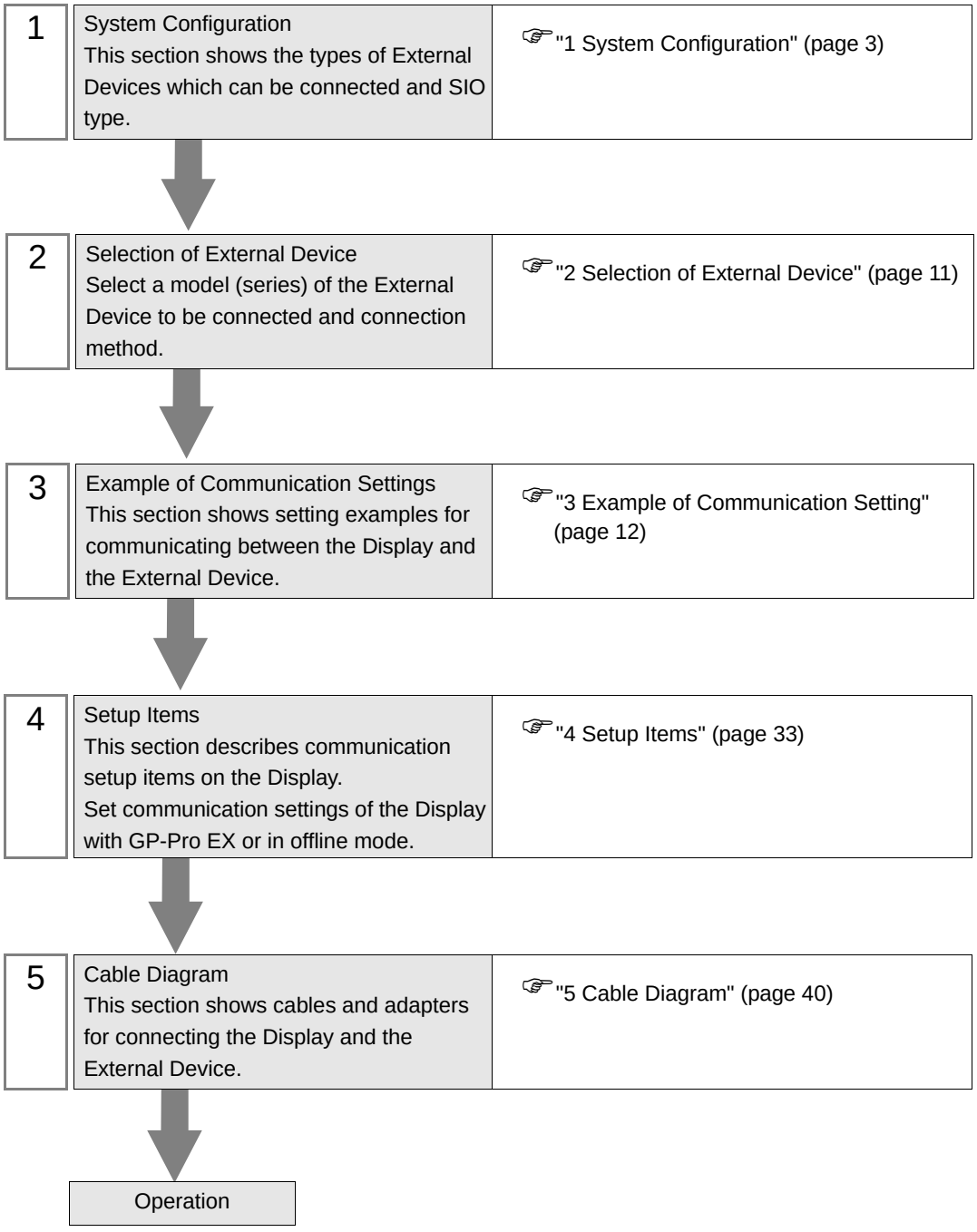
Mitsubishi Electric Corporation

# Q/QnA Serial Communication Driver

## Introduction

This manual describes how to connect the Display and the External Device (target PLC).

In this manual, the connection procedure will be described by following the below sections:



# 1 System Configuration

The system configuration in the case when the External Device of Mitsubishi Electric Corporation and the Display are connected is shown.

| Series | CPU | Link I/F | SIO Type | Example of Communication Settings | Cable Diagram |
|---|---|---|---|---|---|
| MELSEC Q | Q02CPU<br>Q02HCPU<br>Q06HCPU<br>Q12HCPU<br>Q25HCPU<br>Q00JCPU<br>Q00CPU<br>Q01CPU<br>Q02UCPU<br>Q03UDCPU<br>Q04UDHCPU<br>Q06UDHCPU | QJ71C24<br>QJ71C24-R2<br>QJ71C24N<br>QJ71C24N-R2 | RS232C | Setting Example 3 (page 18) | Cable Diagram 1 (page 40) |
| | | QJ71C24<br>QJ71C24N<br>QJ71C24N-R4 | RS422/485 (4wire) | Setting Example 4 (page 21) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) Multilink | Setting Example 6 (page 27) | Cable Diagram 6 (page 58) |
| | Q00UJCPU<br>Q00UCPU<br>Q01UCPU<br>Q10UDHCPU<br>Q13UDHCPU<br>Q20UDHCPU<br>Q26UDHCPU | QJ71C24N<br>QJ71C24N-R2 | RS232C | Setting Example 3 (page 18) | Cable Diagram 1 (page 40) |
| | | QJ71C24N<br>QJ71C24N-R4 | RS422/485 (4wire) | Setting Example 4 (page 21) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) Multilink | Setting Example 6 (page 27) | Cable Diagram 6 (page 58) |
| | Q03UDECPU<br>Q04UDEHCPU<br>Q06UDEHCPU<br>Q10UDEHCPU<br>Q13UDEHCPU<br>Q20UDEHCPU<br>Q26UDEHCPU | QJ71C24N[*1]<br>QJ71C24N-R2[*1] | RS232C | Setting Example 3 (page 18) | Cable Diagram 1 (page 40) |
| | | QJ71C24N[*1]<br>QJ71C24N-R4[*1] | RS422/485 (4wire) | Setting Example 4 (page 21) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) Multilink | Setting Example 6 (page 27) | Cable Diagram 6 (page 58) |
| | Q00CPU<br>Q01CPU<br>Q00UJCPU<br>Q00UCPU<br>Q01UCPU<br>Q02UCPU[*2] | RS232C connector on CPU | RS232C | Setting Example 5 (page 24) | Cable Diagram 3 (page 49) |

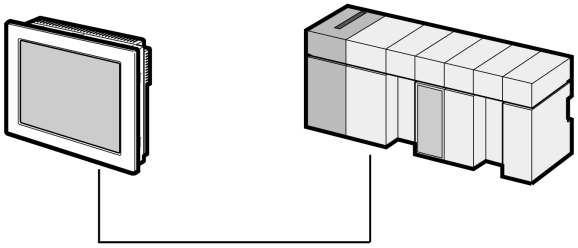
| Series | CPU | Link I/F | SIO Type | Example of Communication Settings | Cable Diagram |
|---|---|---|---|---|---|
| MELSEC QnA | Q2ASCPU<br>Q2ASCPU-S1<br>Q2ASHCPU<br>Q2ASHCPU-S1 | A1SJ71QC24<br>A1SJ71QC24N<br>A1SJ71QC24-R2<br>A1SJ71QC24N-R2 | RS232C | Setting Example 1 (page 12) | Cable Diagram 1 (page 40) |
| | | A1SJ71QC24<br>A1SJ71QC24N | RS422/485 (4wire) | Setting Example 2 (page 15) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) Multilink | Setting Example 7 (page 30) | Cable Diagram 6 (page 58) |
| | Q2ACPU<br>Q2ACPU-S1<br>Q3ACPU<br>Q4ACPU<br>Q4ARCPU | AJ71QC24<br>AJ71QC24N<br>AJ71QC24-R2<br>AJ71QC24N-R2 | RS232C | Setting Example 1 (page 12) | Cable Diagram 4 (page 50) |
| | | AJ71QC24<br>AJ71QC24N | RS422/485 (4wire) | Setting Example 2 (page 15) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) Multilink | Setting Example 7 (page 30) | Cable Diagram 6 (page 58) |
| | | AJ71QC24-R4<br>AJ71QC24N-R4 | RS422/485 (4wire) (when using CH1) | Setting Example 2 (page 15) | Cable Diagram 5 (page 52) |
| | | | RS422/485 (4wire) (when using CH2) | Setting Example 2 (page 15) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) (when using CH2) Multilink | Setting Example 7 (page 30) | Cable Diagram 6 (page 58) |
| MELSEC L | L02CPU<br>L26CPU-BT | LJ71C24<br>LJ71C24-R2 | RS232C | Setting Example 3 (page 18) | Cable Diagram 1 (page 40) |
| | | LJ71C24 | RS422/485 (4wire) (when using CH2) | Setting Example 4 (page 21) | Cable Diagram 2 (page 42) |
| | | | RS422/485 (4wire) (when using CH2) Multilink | Setting Example 6 (page 27) | Cable Diagram 6 (page 58) |

*1 The unit whose first 5 digits of the serial No. is less than "10042" cannot be connected with the universal model built-in Ethernet port QCPU.

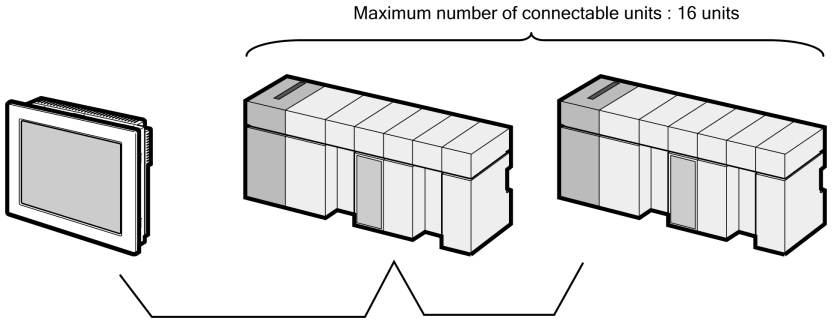
*2 Available when using the unit whose first 5 digits of the serial No. is "10102" or later, and GX Developer version 8.76E or later.

## ■ Connection Configuration

- 1:1 Connection

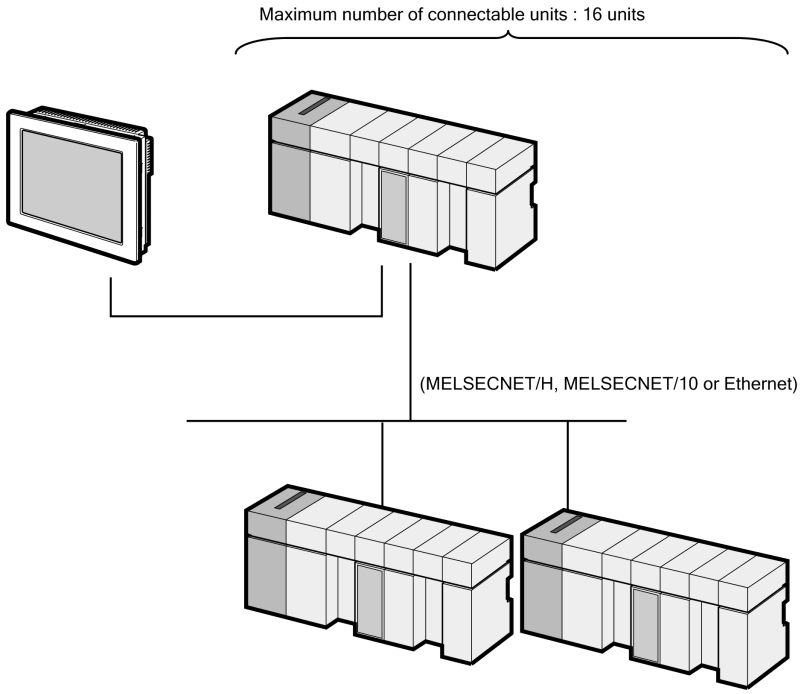


- 1:n Connection



- 1:n Connection (when communicating via network)

You can access other stations via MELSECNET/H, MELSECNET/10, Ethernet or Q Series C24 unit. Note that you can access only the source station when using the RS232C connector on Q00CPU or Q01CPU.

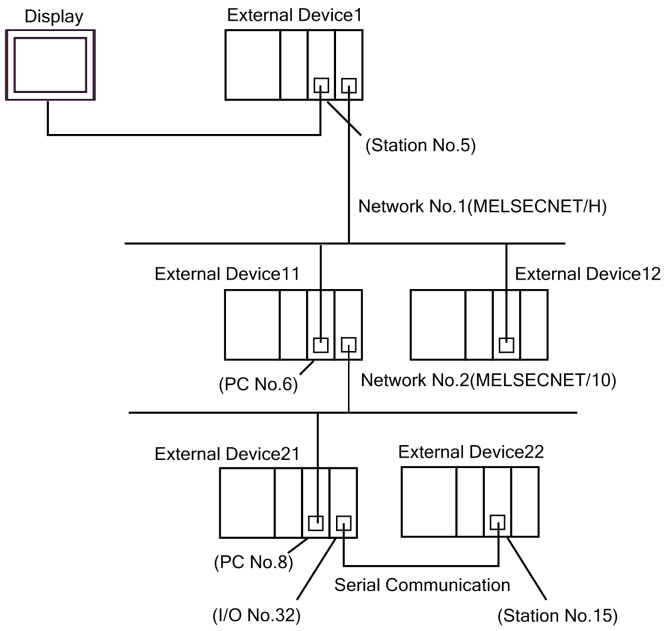



**NOTE**

- In case of communication via network, please set larger value than the response monitoring time of the relay station for timeout setteings.

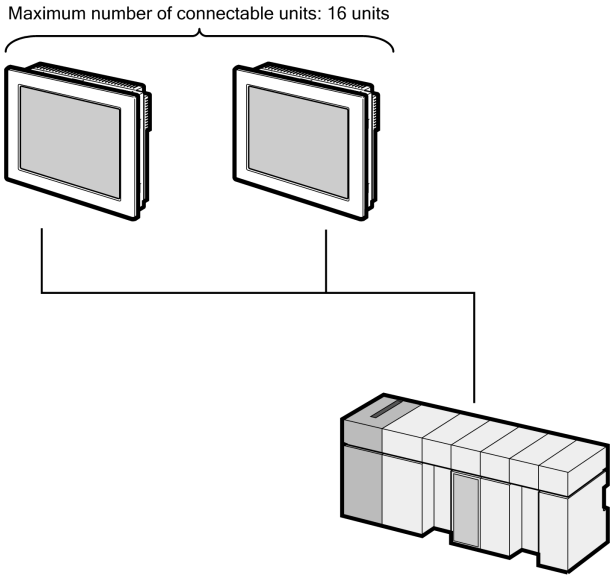
Setting examples for access beyond the network are shown below. Check the details of the setup items in "Setup Item."

☞"4 Setup Items" (page 33)




| External Device to be Accessed | Port No. | Station No. | Network No. | PC No. | Request destination module I/O No. | Request destination module Station No. |
|---|---|---|---|---|---|---|
| External Device 1 | 1025 | 5 | 0 | 255 | 1023 | 0 |
| External Device 11 | 1026 | 5 | 1 | 6 | 1023 | 0 |
| External Device 22 | 1027 | 5 | 2 | 8 | 32 | 15 |

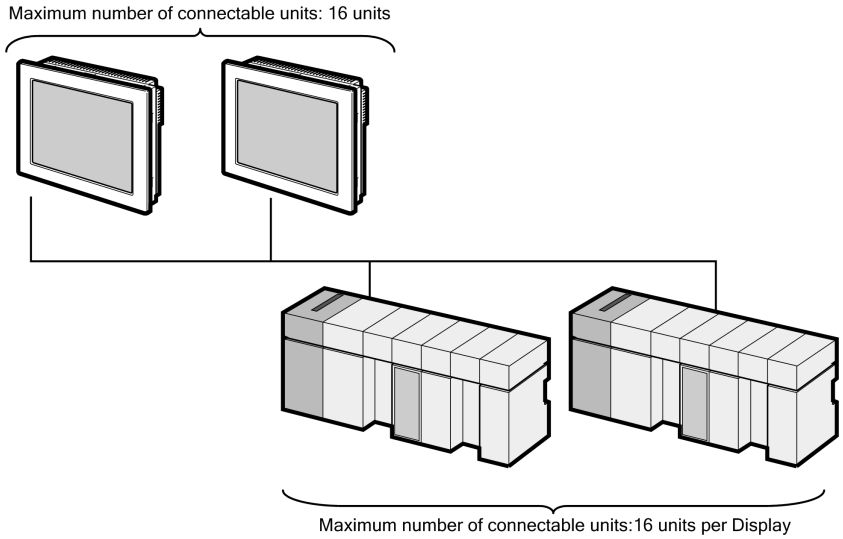
- n:1 Connection (Multilink connection)




**NOTE**

- The maximum number of connectable Displays is 16 units. However, keeping performance in consideration, the number of Displays that can be substantially used is up to 4.

- n:m Connection (Multilink connection)




**NOTE**

- The maximum number of connectable Displays is 16 units. However, keeping performance in consideration, the number of Displays that can be substantially used is up to 4.

## ■ IPC COM Port

When connecting IPC with an External Device, the COM port used depends on the series and SIO type. Please refer to the IPC manual for details.

Usable port

| Series | Usable Port | | |
|---|---|---|---|
| | RS-232C | RS-422/485(4 wire) | RS-422/485(2 wire) |
| PS-2000B | COM1[*1] , COM2, COM3[*1], COM4 | - | - |
| PS-3450A, PS-3451A, PS3000-BA, PS3001-BD | COM1, COM2[*1*2] | COM2[*1*2] | COM2[*1*2] |
| PS-3650A (T41 model), PS-3651A (T41 model) | COM1[*1] | - | - |
| PS-3650A (T42 model), PS-3651A (T42 model) | COM1[*1*2], COM2 | COM1[*1*2] | COM1[*1*2] |
| PS-3700A (Pentium®4-M) PS-3710A | COM1[*1], COM2[*1], COM3[*2] , COM4 | COM3[*2] | COM3[*2] |
| PS-3711A | COM1[*1], COM2[*2] | COM2[*2] | COM2[*2] |
| PS4000[*3] | COM1, COM2 | - | - |
| PL3000 | COM1[*1*2], COM2[*1], COM3, COM4 | COM1[*1*2] | COM1[*1*2] |

*1 The RI/5V can be switched. Use the IPC's switch to change if necessary.

*2 Set up the SIO type with the DIP Switch. Please set up as follows according to SIO type to be used.

*3 When making communication between an External Device and COM port on the Expansion slot, only RS-232C is supported. However, ER (DTR/CTS) control cannot be executed because of the specification of COM port.
For connection with External Device, use user-created cables and disable Pin Nos. 1, 4, 6 and 9.
Please refer to the IPC manual for details of pin layout.

DIP switch setting: RS-232C

| DIP switch | Setting | Description |
|---|---|---|
| 1 | OFF[*1] | Reserved (always OFF) |
| 2 | OFF | SIO type: RS-232C |
| 3 | OFF | |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220Ω) insertion to RD (RXD): None |
| 7 | OFF | Short-circuit of SDA (TXA) and RDA (RXA): Not available |
| 8 | OFF | Short-circuit of SDB (TXB) and RDB (RXB): Not available |
| 9 | OFF | RS (RTS) Auto control mode: Disabled |
| 10 | OFF | |

*1 When using PS-3450A, PS-3451A, PS3000-BA and PS3001-BD, turn ON the set value.

DIP switch setting: RS-422/485 (4 wire)

| DIP switch | Setting | Description |
|---|---|---|
| 1 | OFF | Reserved (always OFF) |
| 2 | ON | SIO type: RS-422/485 |
| 3 | ON | |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220Ω) insertion to RD (RXD): None |
| 7 | OFF | Short-circuit of SDA (TXA) and RDA (RXA): Not available |
| 8 | OFF | Short-circuit of SDB (TXB) and RDB (RXB): Not available |
| 9 | OFF*1 | RS (RTS) Auto control mode: Disabled |
| 10 | OFF*1 | |

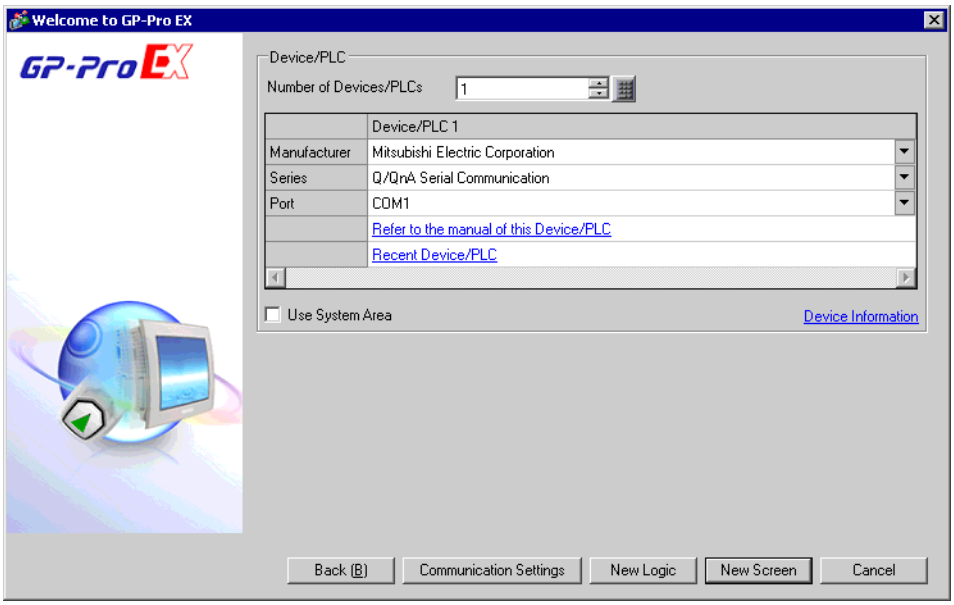
*1 When the connection configuration are the n:1 and n:m connections (both Multilink connections), turn ON the set value.

DIP switch setting: RS-422/485 (2 wire)

| DIP switch | Setting | Description |
|---|---|---|
| 1 | OFF | Reserved (always OFF) |
| 2 | ON | SIO type: RS-422/485 |
| 3 | ON | |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220Ω) insertion to RD (RXD): None |
| 7 | ON | Short-circuit of SDA (TXA) and RDA (RXA): Available |
| 8 | ON | Short-circuit of SDB (TXB) and RDB (RXB): Available |
| 9 | ON | RS (RTS) Auto control mode: Enabled |
| 10 | ON | |

# 2 Selection of External Device

Select the External Device to be connected to the Display.




| Setup Items | Setup Description |
|---|---|
| Number of Devices/ PLCs | Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display. |
| Manufacturer | Select the manufacturer of the External Device to connect. Select "Mitsubishi Electric Corporation". |
| Series | Select the External Device model (series) and the connection method. Select "Q/QnA Serial Communication".<br>In System configuration, make sure the External Device you are connecting is supported by "Q/QnA Serial Communication".<br>☞"1 System Configuration" (page 3) |
| Port | Select the Display port to connect to the External Device. |
| Use System Area | Check this option to synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the External Device's ladder program to switch the display or display the window on the Display.<br>Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"<br>This feature can also be set in GP-Pro EX or in the Display's offline mode.<br>Cf. GP-Pro EX Reference Manual "System Settings [Display Unit] - [System Area] Settings Guide"<br>Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings" |

# 3 Example of Communication Setting

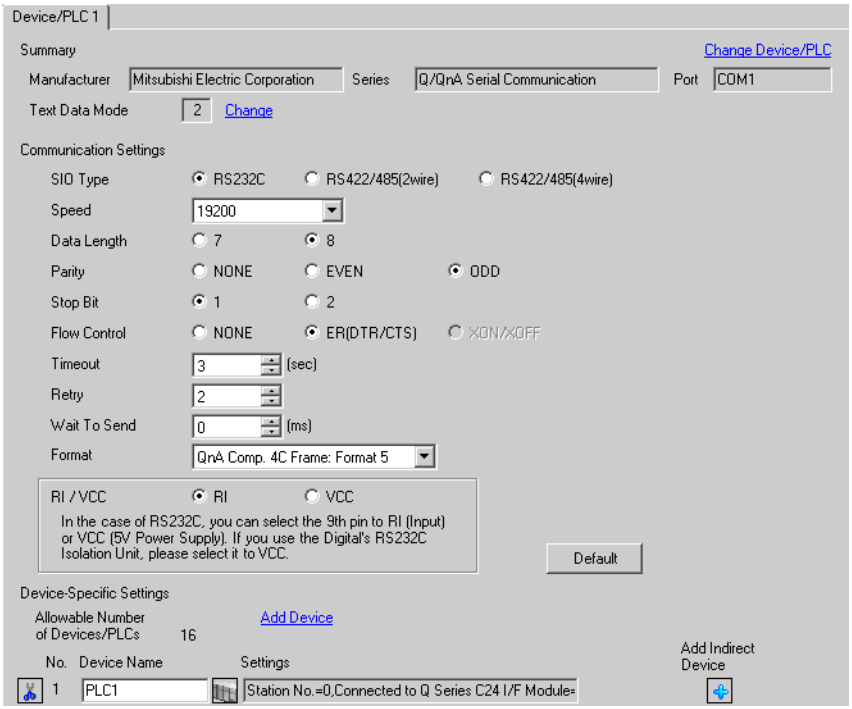
Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

## 3.1 Setting Example 1

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



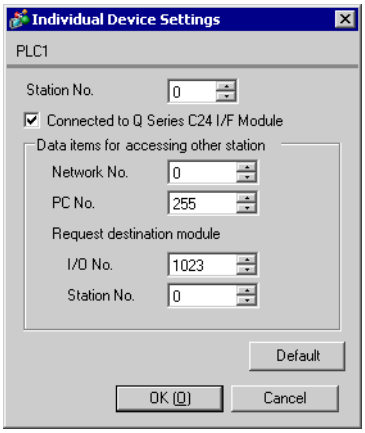

**NOTE**

- When using A1SJ71QC24N, A1SJ71QC24N-R2, AJ71QC24N or AJ71QC24N-R2, you can set the "Speed" up to 115200.

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in A1SJ71QC24N, A1SJ71QC24N-R2, AJ71QC24N or AJ71QC24N-R2, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the front switch of the computer link unit to set the communication settings as below.

| DIP Switch | Settings | Setup Description |
|---|---|---|
| SW1 | OFF | Operation Setting = Independent Operation |
| SW2 | ON | Data Length = 8 bits |
| SW3 | ON | With/Without Parity = With |
| SW4 | OFF | Parity = Odd parity |
| SW5 | OFF | Stop Bit = 1 bit |
| SW6 | ON | Sum Check = Enable |
| SW7 | ON | Write during RUN = Enable |
| SW8 | ON | Setting change Enable/Disable = Enable |
| SW9 | OFF | Transmission Speed = 19200 |
| SW10 | ON | |
| SW11 | ON | |
| SW12 | OFF | |

**NOTE**

- When using A1SJ71QC24N, A1SJ71QC24N-R2, AJ71QC24N or AJ71QC24N-R2, you can set the "Speed" up to 115200.

- Station Setting Switch

| Setting Switch | Settings |
|---|---|
| x 10 | 0 |
| x 1 | 0 |

- Mode Setting Switch

| Setting Switch | Settings |
|---|---|
| MODE (CH1) | 5*1 |
| MODE (CH2) | 5*1 |

*1 Set the value according to [Format] to be used.

◆ Important Item

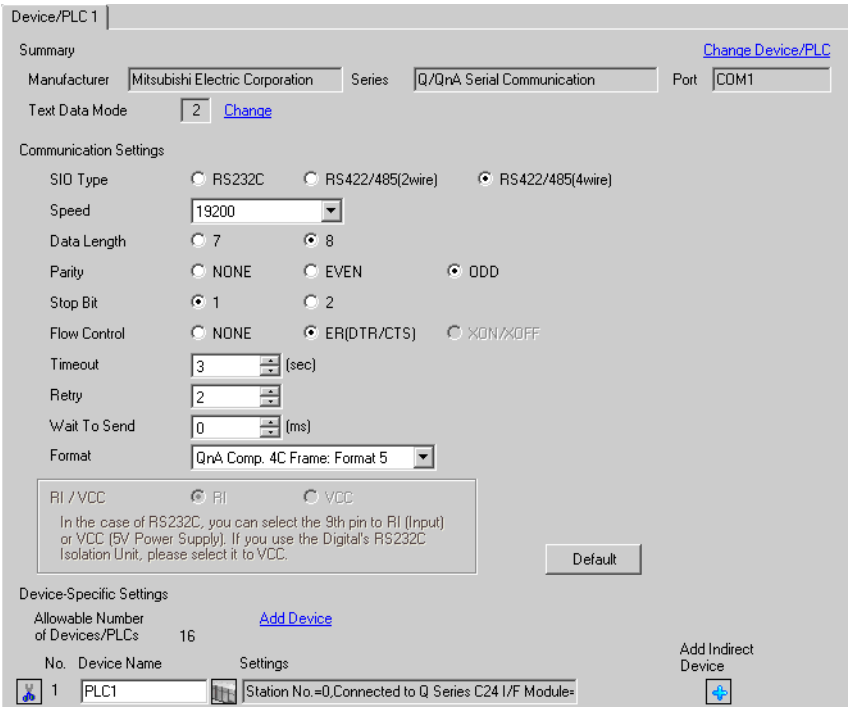
When you use 2 types of interface in A1SJ71QC24N, A1SJ71QC24N-R2, AJ71QC24N or AJ71QC24N-R2, please set the total speed of CH1 and CH2 to 115200 or less.

## 3.2 Setting Example 2

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



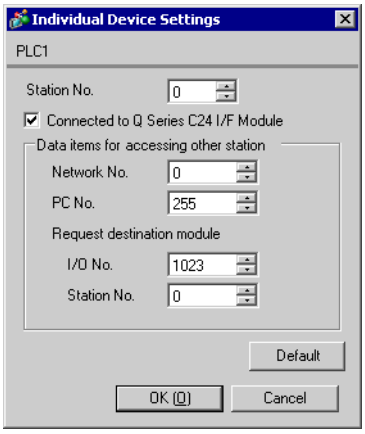

**NOTE**

- When using A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, you can set the "Speed" up to 115200.

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the front switch of the computer link unit to set the communication settings as below.

| DIP Switch | Settings | Setup Description |
|---|---|---|
| SW1 | OFF | Operation Setting = Independent Operation |
| SW2 | ON | Data Length = 8 bits |
| SW3 | ON | With/Without Parity = With |
| SW4 | OFF | Parity = Odd parity |
| SW5 | OFF | Stop Bit = 1 bit |
| SW6 | ON | Sum Check = Enable |
| SW7 | ON | Write during RUN = Enable |
| SW8 | ON | Setting change Enable/Disable = Enable |
| SW9 | OFF | Transmission Speed = 19200 |
| SW10 | ON | |
| SW11 | ON | |
| SW12 | OFF | |

**NOTE** • When using A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, you can set the "Speed" up to 115200.

• Station Setting Switch

| Setting Switch | Settings |
|---|---|
| x 10 | 0 |
| x 1 | 0 |

• Mode Setting Switch

| Setting Switch | Settings |
|---|---|
| MODE (CH1) | 5*1 |
| MODE (CH2) | 5*1 |

*1 Set the value according to [Format] to be used.

◆ Important Item

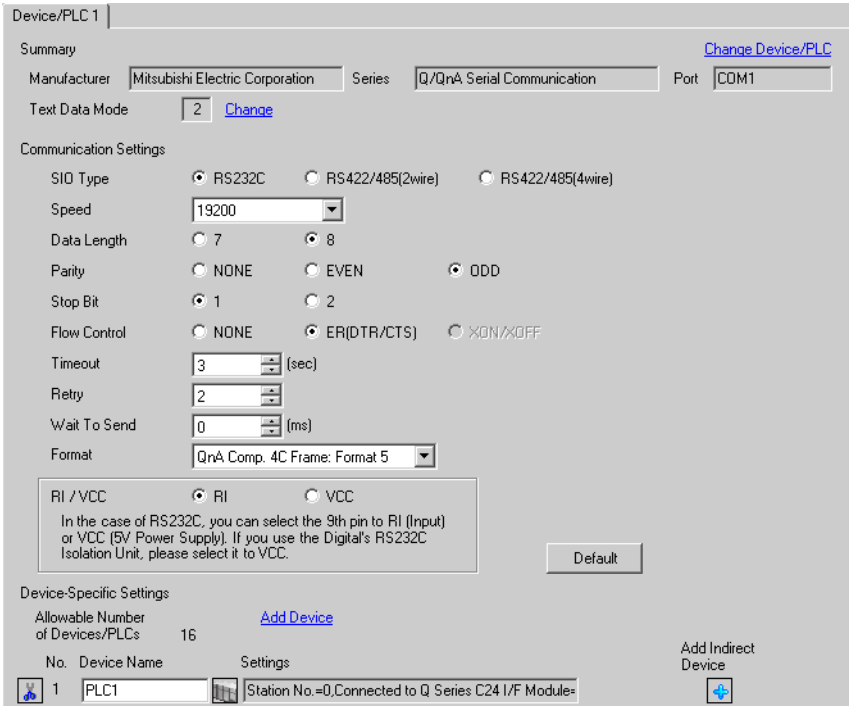
When you use 2 types of interface in A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, please set the total speed of CH1 and CH2 to 115200 or less.

## 3.3 Setting Example 3

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

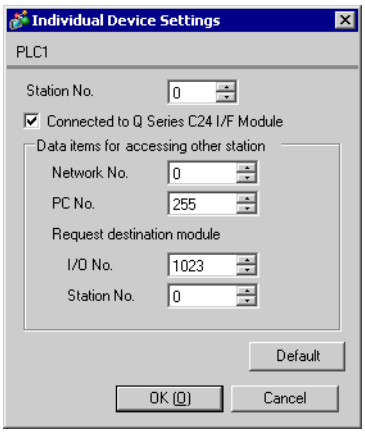
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in QJ71C24 or QJ71C24-R2, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the GPP function software by Mitsubishi Electric Corporation to perform the communication settings as below.

(1) Double-click [PC Parameter] from [Parameter] to select the [I/O Assign Setting] tab.

(2) Click [Type] to select [Intelligent].

(3) Click [Switch Settings] and set as below.

| Setting Switch | Setting Value | Setup Description |
|---|---|---|
| Switch 1 | 07E6 | Transmission Speed = 19200<br>Data Length = 8<br>With/Without Parity = With<br>Parity = Odd parity<br>Stop Bit = 1<br>Sum Check = Enable |
| Switch 2 | 0005*1 | Mode = Form 5 |
| Switch 5 | 0000 | Station No. = 0 |

*1 Set the value according to [Format] to be used.

NOTE • Please refer to the manual of the External Device for more detail on setting description.

### ◆ Important Item

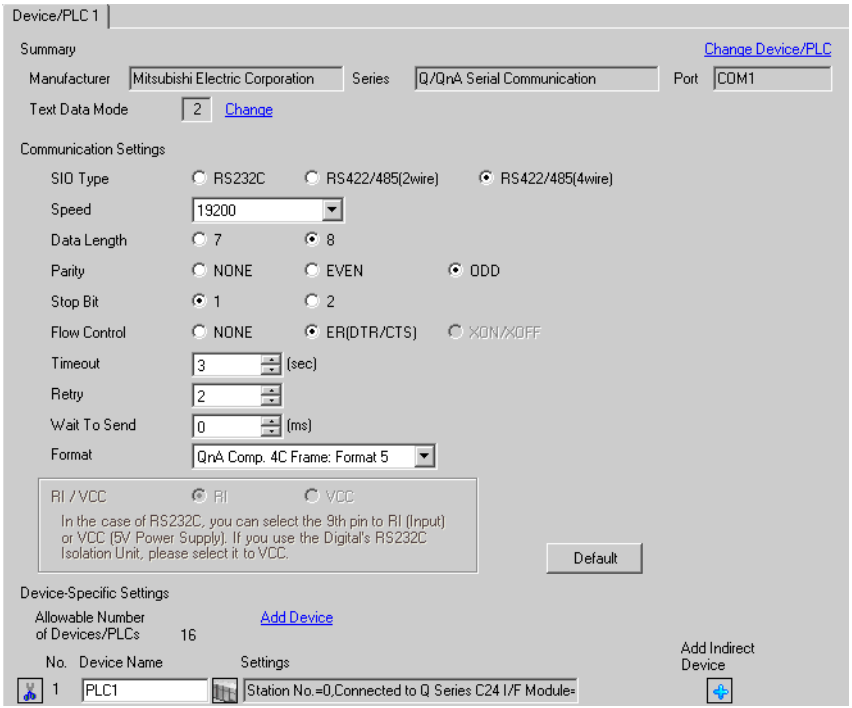
When you use 2 types of interface in QJ71C24 or QJ71C24-R2, please set the total speed of CH1 and CH2 to 115200 or less.

## 3.4 Setting Example 4

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

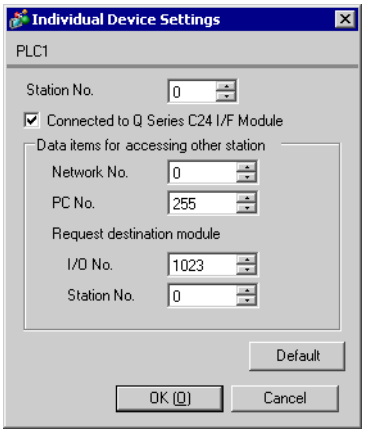
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in QJ71C24, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the GPP function software by Mitsubishi Electric Corporation to perform the communication settings as below.

(1) Double-click [PC Parameter] from [Parameter] to select the [I/O Assign Setting] tab.

(2) Click [Type] to select [Intelligent].

(3) Click [Switch Settings] and set as below.

| Setting Switch | Setting Value | Setup Description |
|---|---|---|
| Switch 3 | 07E6 | Transmission Speed = 19200<br>Data Length = 8<br>With/Without Parity = With<br>Parity = Odd parity<br>Stop Bit = 1<br>Sum Check = Enable |
| Switch 4 | 0005*1 | Mode = Form 5 |
| Switch 5 | 0000 | Station No. = 0 |

*1 Set the value according to [Format] to be used.

**NOTE** • Please refer to the manual of the External Device for more detail on setting description.

### ◆ Important Item

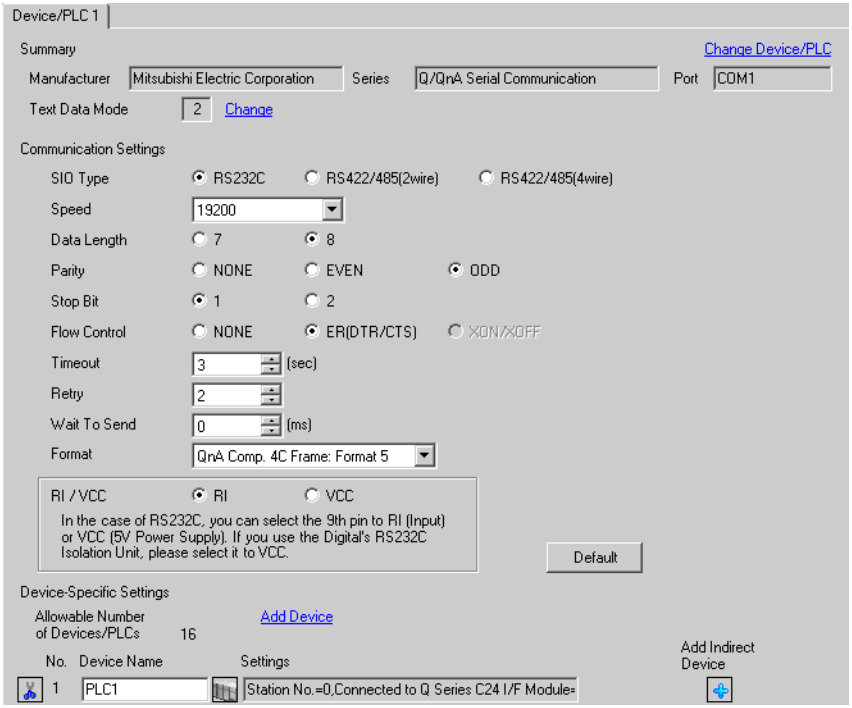
When you use 2 types of interface in QJ71C24, please set the total speed of CH1 and CH2 to 115200 or less.

## 3.5 Setting Example 5

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

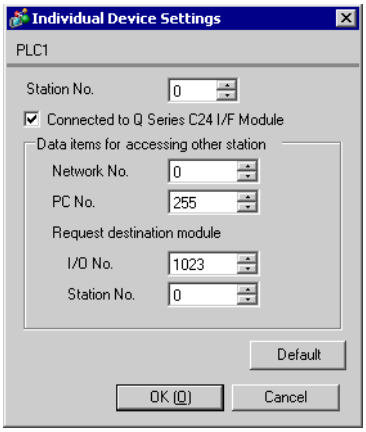
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.



## ■ Setting of External Device

Use the GPP function software by Mitsubishi Electric Corporation to perform the communication settings as below.

(1) Double-click [PC Parameter] from [Parameter] to select [Serial Communication Settings].

(2) Set as below.

| Setup Items | Settings |
|---|---|
| Use Serial Communication Function*1 | Use |
| Baud Rate | 19.2Kbps |
| Sum Check | Enable |
| Transmission Wait Time | No Wait |
| Write Setting during RUN | Enable |

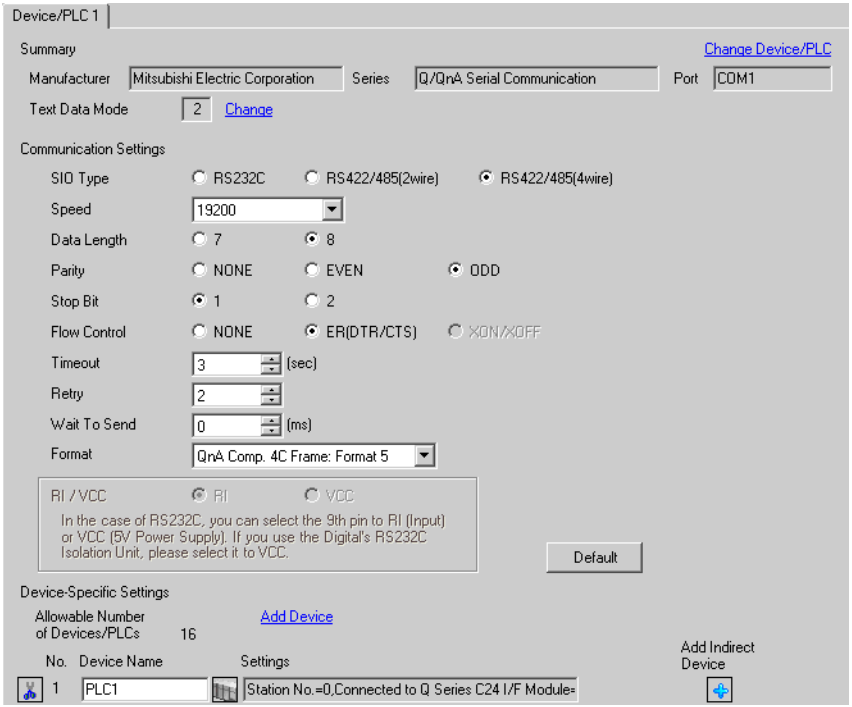
*1 Check the checkbox to make other setting items become available to set.

## 3.6 Setting Example 6

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



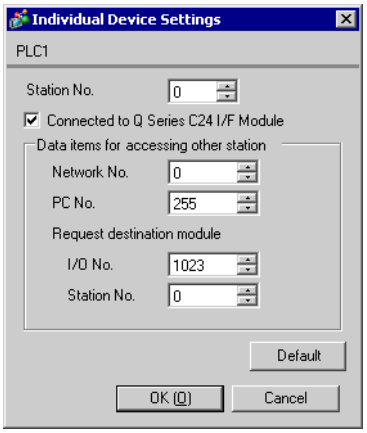

**NOTE**

- When simultaneously using GP2000 Series during multilink connection, select "QnA Comp. 3C Frame: Format 4" from the "Format".

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in QJ71C24, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the GPP function software by Mitsubishi Electric Corporation to perform the communication settings as below.

(1) Double-click [PC Parameter] from [Parameter] to select the [I/O Assign Setting] tab.

(2) Click [Type] to select [Intelligent].

(3) Click [Switch Settings] and set as below.

| Setting Switch | Setting Value | Setup Description |
|---|---|---|
| Switch 3 | 07E6 | Transmission Speed = 19200<br>Data Length = 8<br>With/Without Parity = With<br>Parity = Odd parity<br>Stop Bit = 1<br>Sum Check = Enable |
| Switch 4 | 0005*1 | Mode = Form 5 |
| Switch 5 | 0000 | Station No. = 0 |

*1 Set the value according to [Format] to be used.

**NOTE** • Please refer to the manual of the External Device for more detail on setting description.

### ◆ Important Item

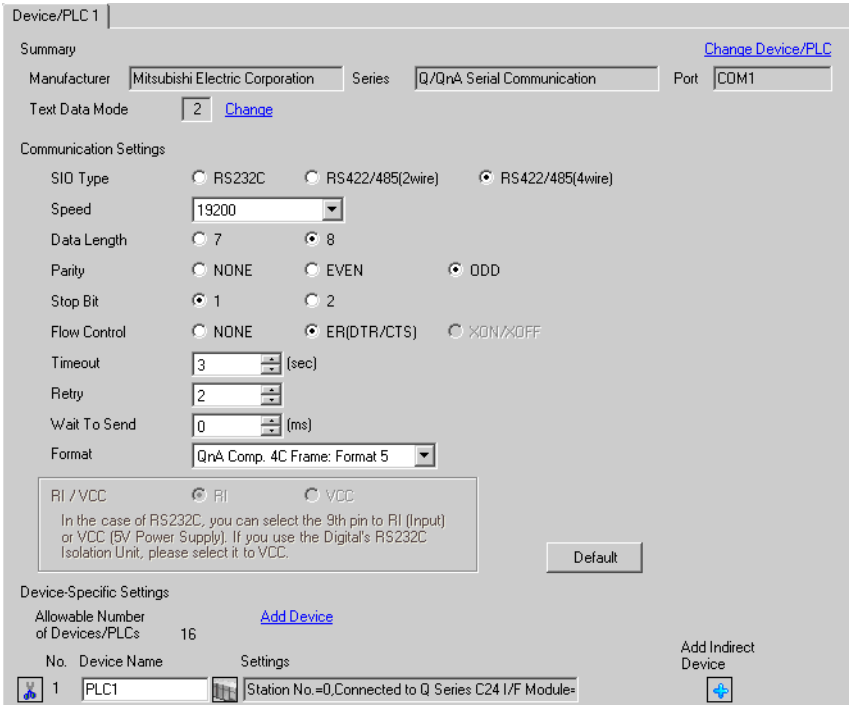
When you use 2 types of interface in QJ71C24, please set the total speed of CH1 and CH2 to 115200 or less.

## 3.7 Setting Example 7

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



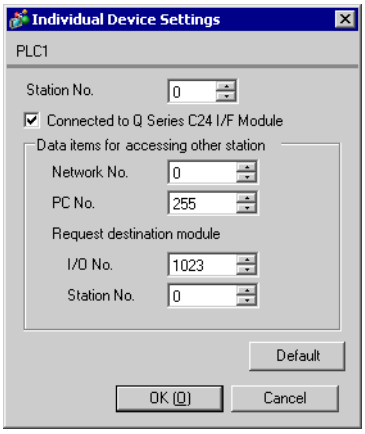

**NOTE**

- When using A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, you can set the "Speed" up to 115200.
- When simultaneously using GP2000 Series during multilink connection, select "QnA Comp. 3C Frame: Format 4" from the "Format".

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




◆ Important Item

When you use 2 types of interface in A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, please set the total speed of CH1 and CH2 to 115200 or less.

## ■ Setting of External Device

Use the front switch of the computer link unit to set the communication settings as below.

| DIP Switch | Settings | Setup Description |
|---|---|---|
| SW1 | OFF | Operation Setting = Independent Operation |
| SW2 | ON | Data Length = 8 bits |
| SW3 | ON | With/Without Parity = With |
| SW4 | OFF | Parity = Odd parity |
| SW5 | OFF | Stop Bit = 1 bit |
| SW6 | ON | Sum Check = Enable |
| SW7 | ON | Write during RUN = Enable |
| SW8 | ON | Setting change Enable/Disable = Enable |
| SW9 | OFF | Transmission Speed = 19200 |
| SW10 | ON | |
| SW11 | ON | |
| SW12 | OFF | |

**NOTE** • When using A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, you can set the "Speed" up to 115200.

• Station Setting Switch

| Setting Switch | Settings |
|---|---|
| x 10 | 0 |
| x 1 | 0 |

• Mode Setting Switch

| Setting Switch | Settings |
|---|---|
| MODE (CH1) | 5*1 |
| MODE (CH2) | 5*1 |

*1 Set the value according to [Format] to be used.

◆ Important Item

When you use 2 types of interface in A1SJ71QC24N, AJ71QC24N or AJ71QC24N-R4, please set the total speed of CH1 and CH2 to 115200 or less.

# 4 Setup Items

Set communication settings of the Display with GP-Pro EX or in offline mode of the Display.

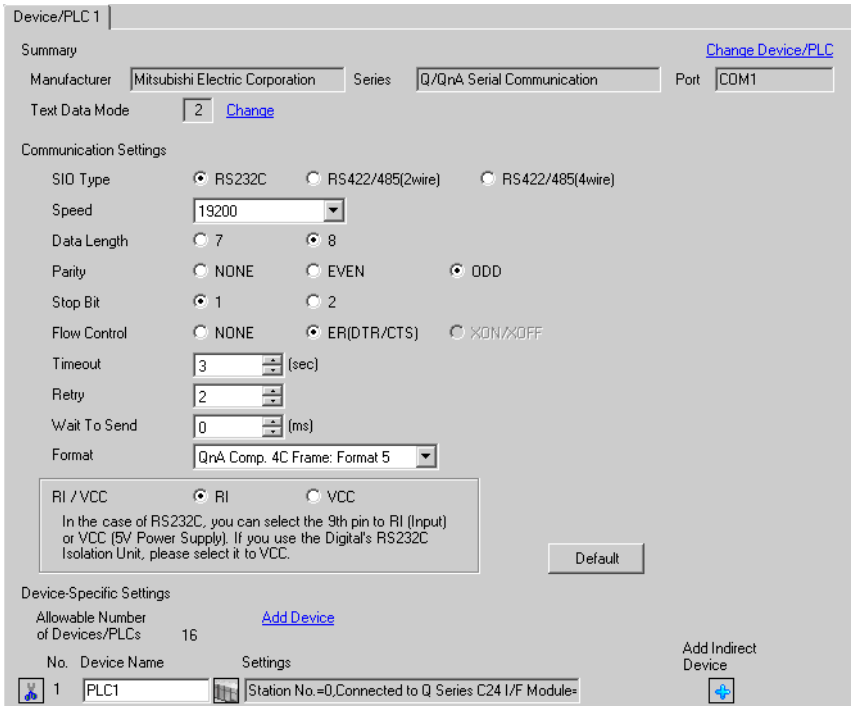
The setting of each parameter must be identical to that of External Device.

☞"3 Example of Communication Setting" (page 12)

## 4.1 Setup Items in GP-Pro EX

### ■ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].




| Setup Items | Setup Description |
|---|---|
| SIO Type | Select the SIO type to communicate with the External Device. |
| Speed | Select speed between the External Device and the Display. |
| Data Length | Select data length. |
| Parity | Select how to check parity. |
| Stop Bit | Select stop bit length. |
| Flow Control | Select the communication control method to prevent overflow of transmission and reception data. |
| Timeout | Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.<br>**NOTE**<br>In case of communicating via network,please set larger value than the response monitoring time of the relay station for timeout settings. |

| Setup Items | Setup Description |
|---|---|
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands. |
| Format | Select the communication frame for the use of MELSEC communication protocol, from "QnA Comp. 3C Frame: Format 4" or "QnA Comp. 4C Frame: Format 5".<br>**NOTE**<br>When simultaneously using GP2000 Series during multilink connection, select "QnA Comp. 3C Frame: Format 4" |
| RI/VCC | You can switch RI/VCC of the 9th pin when you select RS232C for SIO type.<br>It is necessary to change RI/5V by changeover switch of IPC when connect with IPC.<br>Please refer to the manual of the IPC for more detail. |

**NOTE**

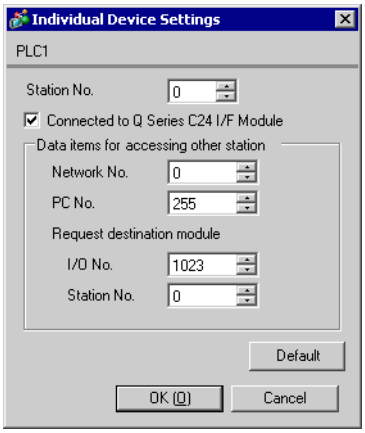
- Refer to the GP-Pro EX Reference Manual for Indirect Device.

  Cf. GP-Pro EX Reference Manual "Changing the Device/PLC at Runtime (Indirect Device)"

## ■ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.




| Setup Items | Setup Description |
|---|---|
| Station No. | Use an integer from 0 to 31 to enter the station number of the External Device directly connected to the Display. |
| Connected to Q Series C24 I/F Module | Check this checkbox only when the Q Series C24 I/F unit is used.<br>If this is checked when the Q Series C24 I/F unit is not used, the error may be displayed on the External Device. |
| Network No. | Set when you communicate via network. Use an integer from 0 to 239 to enter network No. of the External Device to communicate. If you do not communicate via network, enter 0. |
| PC No. | Set when you communicate via network. Use an integer from 0 to 64 or 125 to 126 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255. |
| Request destination module I/O No. | Set when you communicate via network. Use an integer from 0 to 511 to enter I/O No. of the External Device to communicate. If you do not communicate via network, enter 1023. |
| Request destination module Station No. | Set when you communicate via network. Use an integer from 0 to 31 to enter station No. of the External Device to communicate. If you do not communicate via network, enter 0. |

## 4.2 Setup Items in Offline Mode

**NOTE**

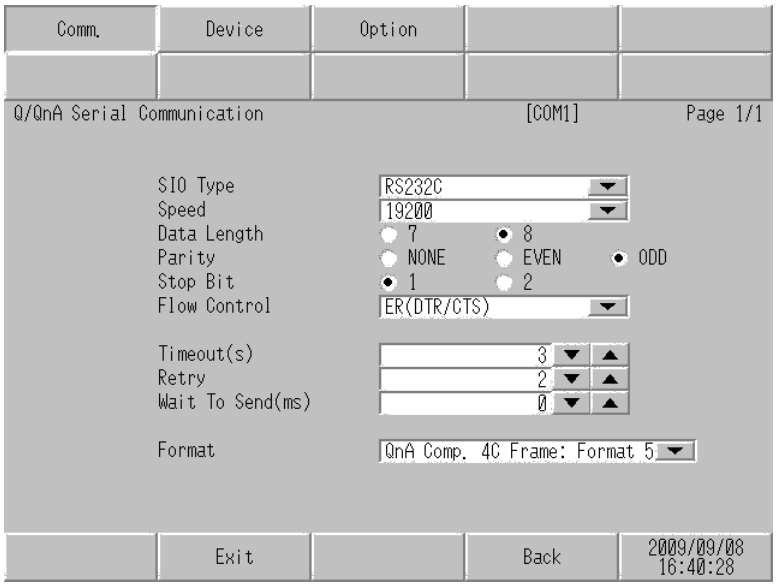
- Refer to the Maintenance/Troubleshooting guide for information on how to enter offline mode or about the operation.

  Cf. Maintenance/Troubleshooting Guide "Offline Mode"

- The number of the setup items to be displayed for 1 page in the offline mode depends on the Display in use. Please refer to the Reference manual for details.

### ■ Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings] in offline mode. Touch the External Device you want to set from the displayed list.

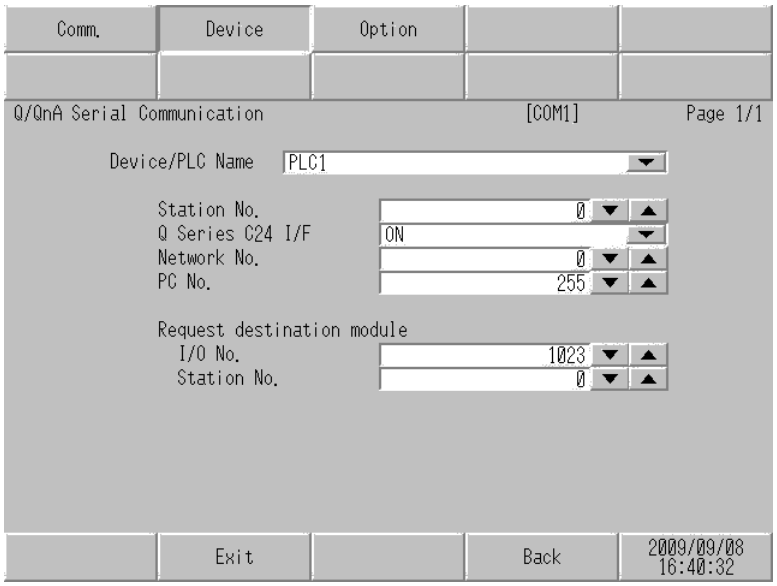



| Setup Items | Setup Description |
|---|---|
| SIO Type | Select the SIO type to communicate with the External Device.<br>**IMPORTANT**<br>To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type].<br>We cannot guarantee the operation if a communication type that the serial interface does not support is specified.<br>For details concerning the serial interface specifications, refer to the manual for Display unit. |
| Speed | Select speed between the External Device and the Display. |
| Data Length | Select data length. |
| Parity | Select how to check parity. |
| Stop Bit | Select stop bit length. |
| Flow Control | Select the communication control method to prevent overflow of transmission and reception data. |

| Setup Items | Setup Description |
|---|---|
| Timeout | Use an integer from 1 to 127 to enter the time (sec) for which the Display waits for the response from the External Device.<br>**NOTE**<br>In case of communicating via network,please set larger value than the response monitoring time of the relay station for timeout settings. |
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands. |
| Format | Select the communication frame for the use of MELSEC communication protocol, from "QnA Comp. 3C Frame: Format 4" or "QnA Comp. 4C Frame: Format 5".<br>**NOTE**<br>When simultaneously using GP2000 Series during multilink connection, select "QnA Comp. 3C Frame: Format 4" |

## ■ Device Setting

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].

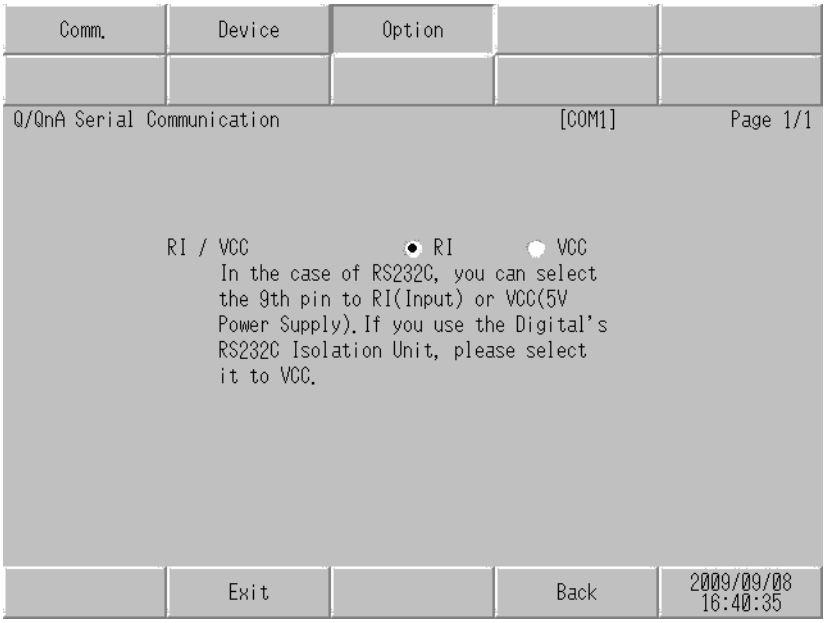



| Setup Items | Setup Description |
|---|---|
| Device/PLC Name | Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1]) |
| Station No. | Use an integer from 0 to 31 to enter the station number of the External Device directly connected to the Display. |
| Q Series C24 I/F | Select “ON” and “OFF” respectively when the Q Series C24 I/F unit is used and when the Q Series C24 I/F unit is not used.<br>If “ON” is selected when the Q Series C24 I/F unit is not used, the error may be displayed on the External Device. |
| Network No. | Set when you communicate via network. Use an integer from 0 to 239 to enter network No. of the External Device to communicate. If you do not communicate via network, enter 0. |
| PC No. | Set when you communicate via network. Use an integer from 0 to 64 or 125 to 126 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255. |
| Request destination module I/O No. | Set when you communicate via network. Use an integer from 0 to 511 to enter I/O No. of the External Device to communicate. If you do not communicate via network, enter 1023. |
| Request destination module Station No. | Set when you communicate via network. Use an integer from 0 to 31 to enter station No. of the External Device to communicate. If you do not communicate via network, enter 0. |

IMPORTANT
- Do not set the duplicate device settings in multiple devices. Illegal address may be read.

## ■ Option

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Option].




| Setup Items | Setup Description |
|---|---|
| RI/VCC | You can switch RI/VCC of the 9th pin when you select RS232C for SIO type.<br>It is necessary to change RI/5V by changeover switch of IPC when connect with IPC.<br>Please refer to the manual of the IPC for more detail. |

**NOTE**

- GP-4100 series and GP-4*01TM do not have the [Option] setting in the offline mode.

# 5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Mitsubishi Electric Corporation. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the External Device body must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc..

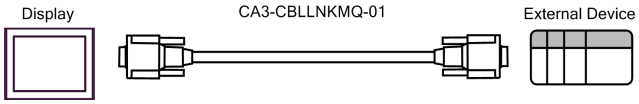
Cable Diagram 1

| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000 (COM1)<br>GP4000*1 (COM1)<br>ST (COM1)<br>LT3000 (COM1)<br>IPC*2<br>PC/AT | 1A | Mitsubishi Q link cable by Pro-face<br>CA3-CBLLNKMQ-01 | |
| | 1B | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 1C | User-created cable | |

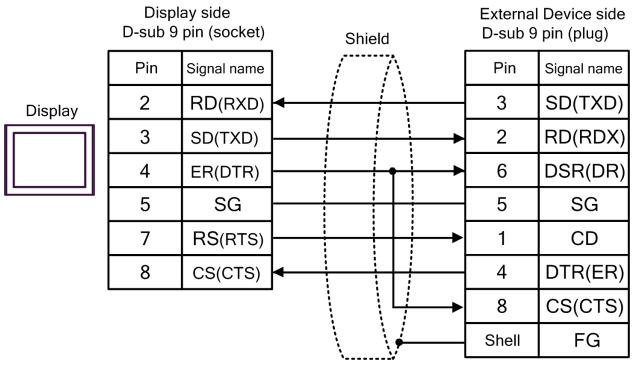
*1 All GP4000 models except GP-4100 series and GP-4203T

*2 Only the COM port which can communicate by RS-232C can be used.
☞■ IPC COM Port (page 9)

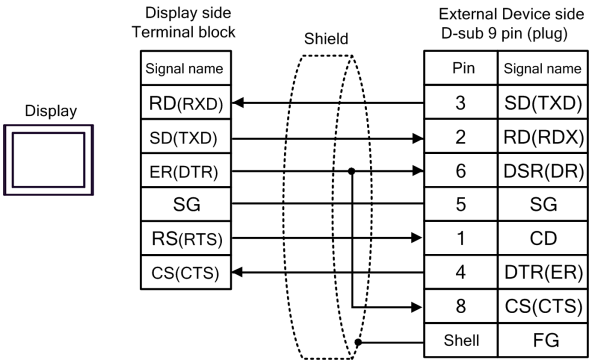
1A)



1B)


Display side
D-sub 9 pin (socket)
Shield
External Device side
D-sub 9 pin (plug)
Display
Pin
Signal name
2
RD(RXD)
3
SD(TXD)
4
ER(DTR)
5
SG
7
RS(RTS)
8
CS(CTS)
Pin
Signal name
3
SD(TXD)
2
RD(RDX)
6
DSR(DR)
5
SG
1
CD
4
DTR(ER)
8
CS(CTS)
Shell
FG

1C)


Display side
Terminal block
Shield
External Device side
D-sub 9 pin (plug)
Display
Signal name
RD(RXD)
SD(TXD)
ER(DTR)
SG
RS(RTS)
CS(CTS)
Pin
Signal name
3
SD(TXD)
2
RD(RDX)
6
DSR(DR)
5
SG
1
CD
4
DTR(ER)
8
CS(CTS)
Shell
FG

Cable Diagram 2

| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000[*1] (COM1)<br>AGP-3302B (COM2)<br>GP-4*01TM (COM1)<br>ST[*2] (COM2)<br>LT3000 (COM1)<br>IPC[*3] | 2A | COM port conversion adapter<br>by Pro-face<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | The cable length must be 500m or less. |
| | 2B | User-created cable | |
| GP3000[*4] (COM2) | 2C | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | |
| | 2D | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>User-created cable | |
| GP-4106 (COM1) | 2E | User-created cable | |
| GP4000[*5] (COM2)<br>GP-4201T (COM1) | 2F | RS-422 terminal block conversion adapter by Pro-face<br>PFXZCBADTM1[*6]<br>+<br>User-created cable | |
| | 2B | User-created cable | |

*1 All GP3000 models except AGP-3302B

*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 9)

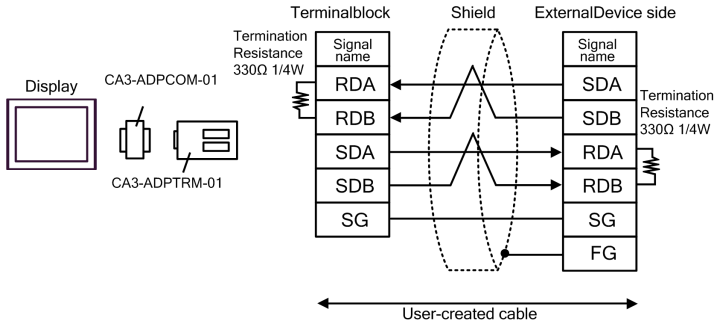
*4 All GP3000 models except GP-3200 series and AGP-3302B

*5 All GP4000 models except GP-4100 series, GP-4*01TM, GP-4201T and GP-4*03T

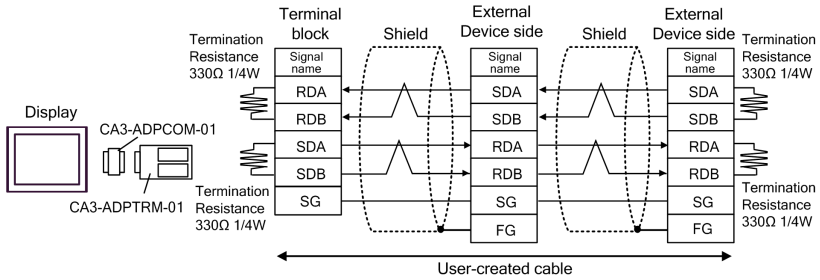
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 2A.

2A)

- 1:1 Connection

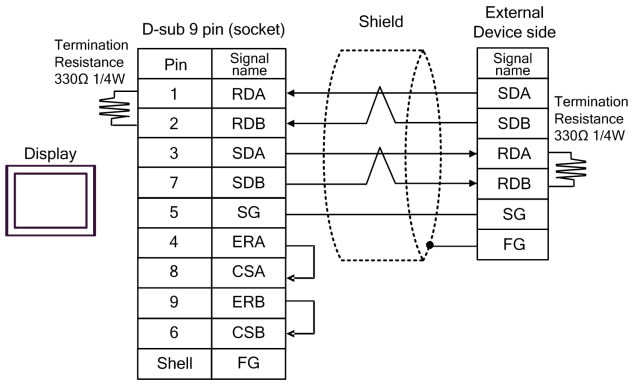



- 1:n Connection

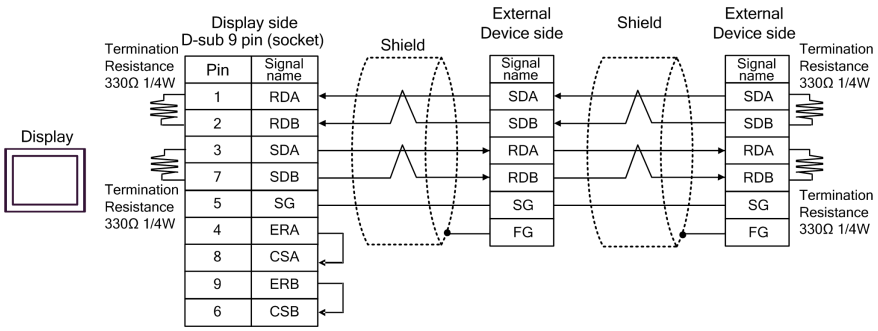


2B)

- 1:1 Connection

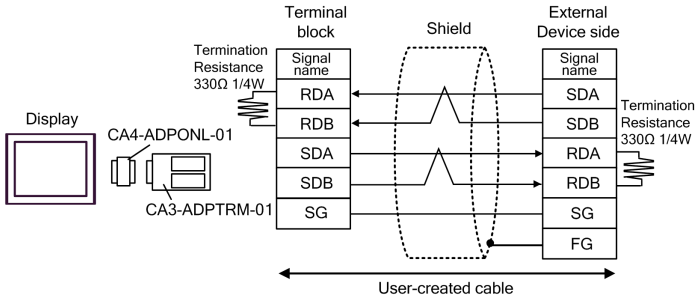



- 1:n Connection

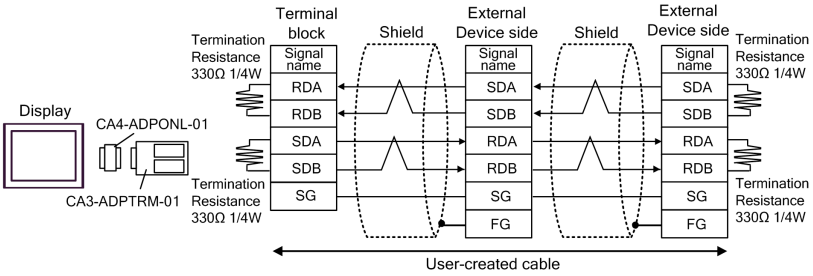


2C)

- 1:1 Connection

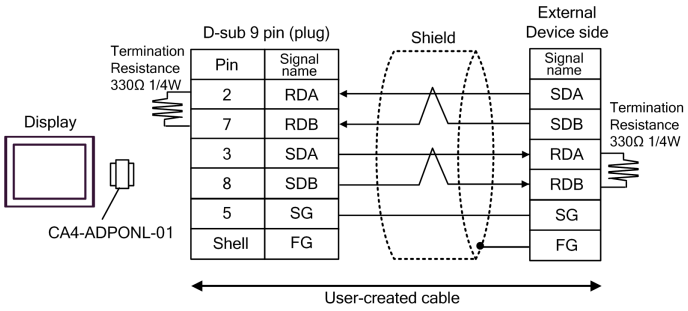



- 1:n Connection

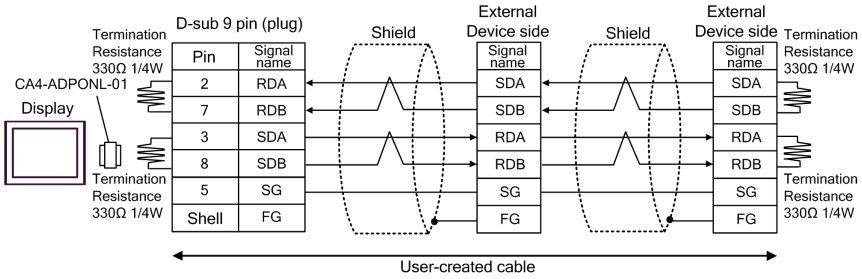


2D)

- 1:1 Connection

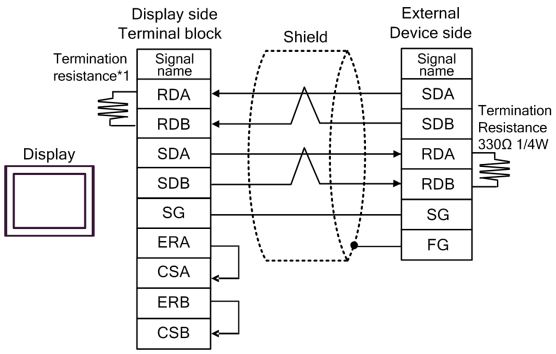



- 1:n Connection



2E)

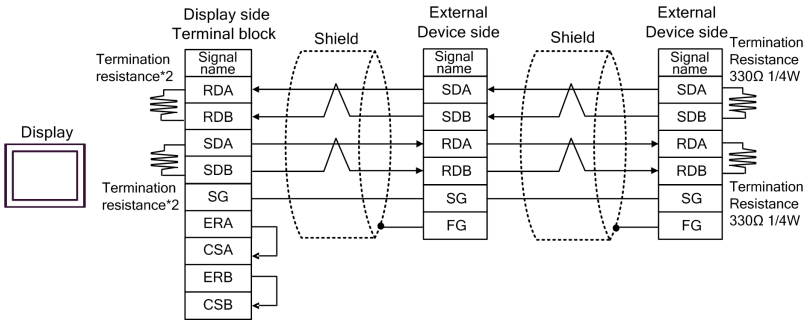
- 1:1 Connection




*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

| DIP Switch No. | Set Value |
|---|---|
| 1 | OFF |
| 2 | OFF |
| 3 | ON |
| 4 | OFF |

- 1:n Connection

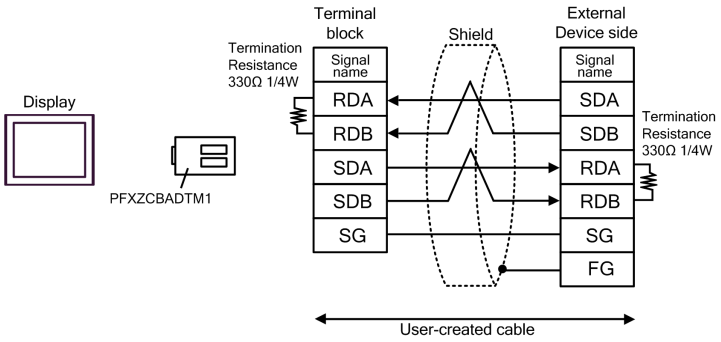



*2 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

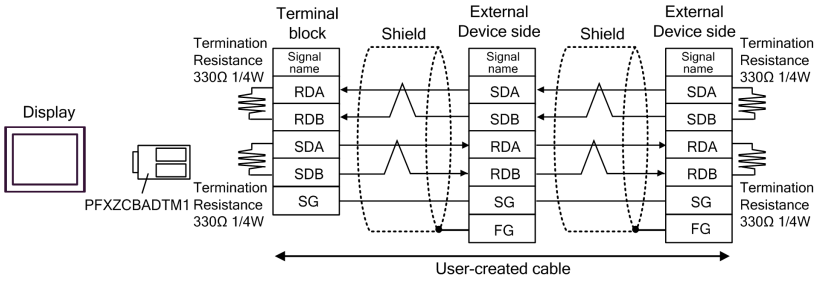
| DIP Switch No. | Set Value |
|---|---|
| 1 | ON |
| 2 | OFF |
| 3 | ON |
| 4 | OFF |

2F)

- 1:1 Connection




- 1:n Connection



Cable Diagram 3

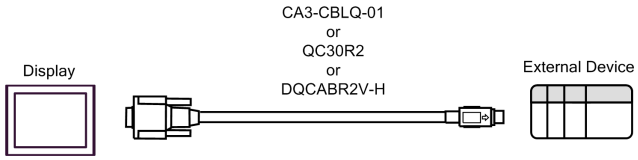
| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000 (COM1)<br>GP4000*1 (COM1)<br>ST (COM1)<br>LT3000 (COM1)<br>IPC*2<br>PC/AT | 3A | Mitsubishi Q connection cable by Pro-face<br>CA3-CBLQ-01 (5m)<br>or<br>RS-232C cable by Mitsubishi Electric Corp.<br>QC30R2 (3m)<br>or<br>RS-232C cable for QCPU connection by Diatrend Corp.<br>DQCABR2V-H | Available to order the length of DQCABR2V-H by Diatrend Corp. up to 15m. |
| GP-4105 (COM1) | 3B | Mitsubishi PLC Q Series CPU I/F Cable by Pro-face<br>ZC9CBQ31(3m) | |

*1 All GP4000 models except GP-4100 series and GP-4203T

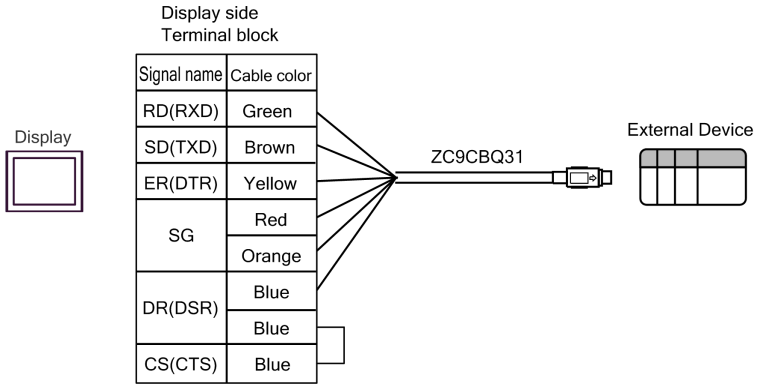
*2 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 9)

3A)




3B)



Cable Diagram 4

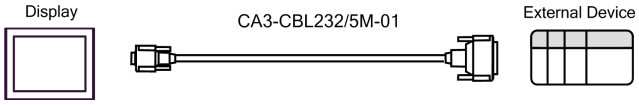
| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000 (COM1)<br>GP4000*1 (COM1)<br>ST (COM1)<br>LT3000 (COM1)<br>IPC*2<br>PC/AT | 4A | RS-232C cable by Pro-face<br>CA3-CBL232/5M-01 (5m) | |
| | 4B | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 4C | User-created cable | |

*1 All GP4000 models except GP-4100 series and GP-4203T

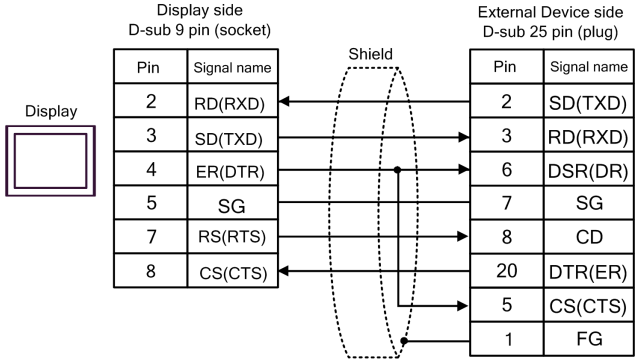
*2 Only the COM port which can communicate by RS-232C can be used.

☞■ IPC COM Port (page 9)

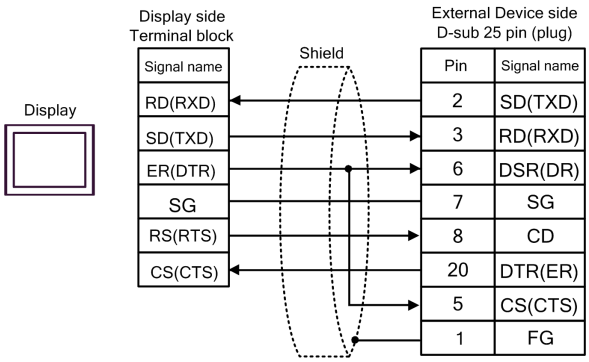
4A)




4B)



4C)


Display side
Terminal block
Signal name
RD(RXD)
SD(TXD)
ER(DTR)
SG
RS(RTS)
CS(CTS)
Shield
External Device side
D-sub 25 pin (plug)
Pin
Signal name
2
SD(TXD)
3
RD(RXD)
6
DSR(DR)
7
SG
8
CD
20
DTR(ER)
5
CS(CTS)
1
FG
Display

Cable Diagram 5

| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000[*1] (COM1)<br>AGP-3302B (COM2)<br>GP-4*01TM (COM1)<br>ST[*2] (COM2)<br>LT3000 (COM1)<br>IPC[*3] | 5A | COM port conversion adapter<br>by Pro-face<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | The cable length must be 500m or less. |
| | 5B | User-created cable | |
| GP3000[*4] (COM2) | 5C | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | |
| | 5D | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>User-created cable | |
| GP-4106 (COM1) | 5E | User-created cable | |
| GP4000[*5] (COM2)<br>GP-4201T (COM1) | 5F | RS-422 terminal block conversion adapter by Pro-face<br>PFXZCBADTM1[*6]<br>+<br>User-created cable | |
| | 5B | User-created cable | |

*1 All GP3000 models except AGP-3302B

*2 All ST models except AST-3211A and AST-3302B

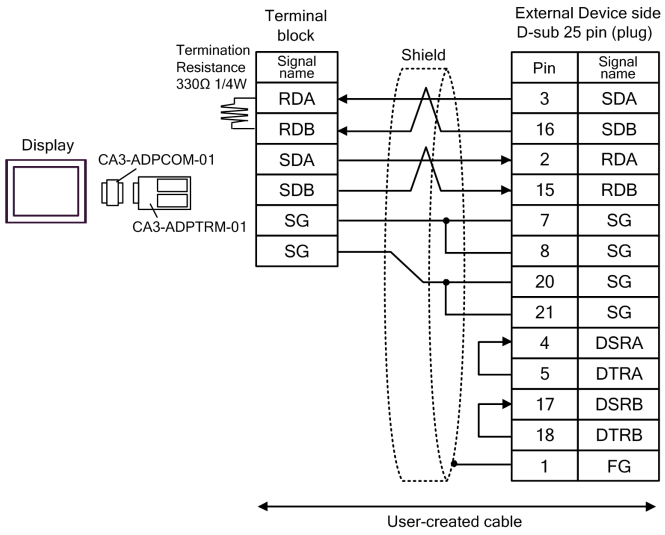
*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 9)

*4 All GP3000 models except GP-3200 series and AGP-3302B

*5 All GP4000 models except GP-4100 series, GP-4*01TM, GP-4201T and GP-4*03T

*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 5A.

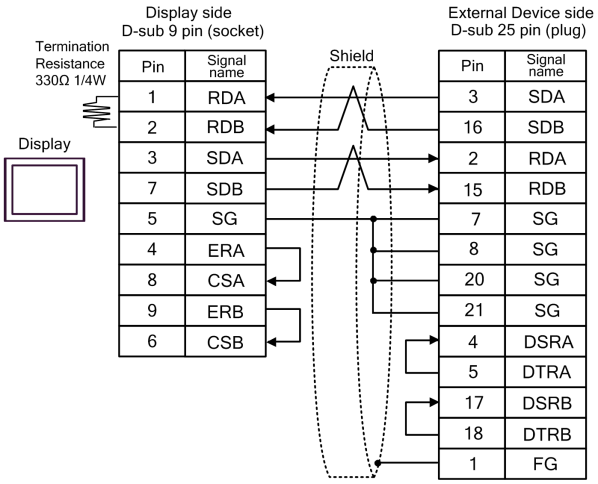
5A)




**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

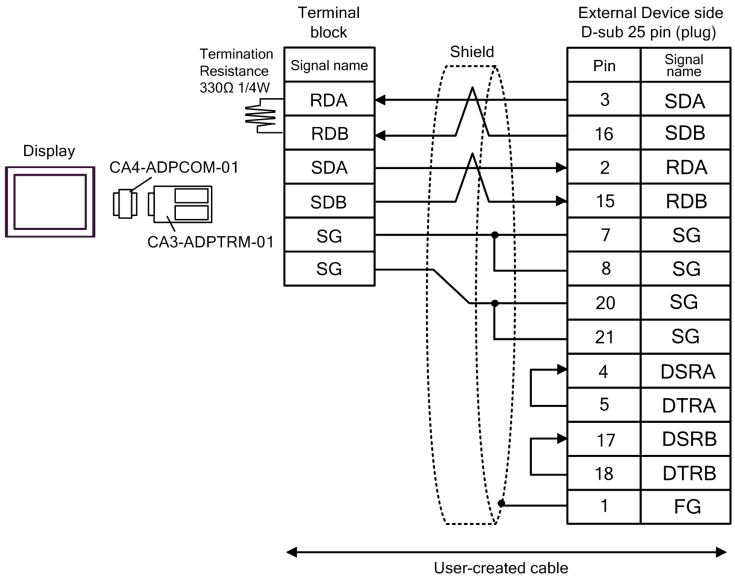
5B)




**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

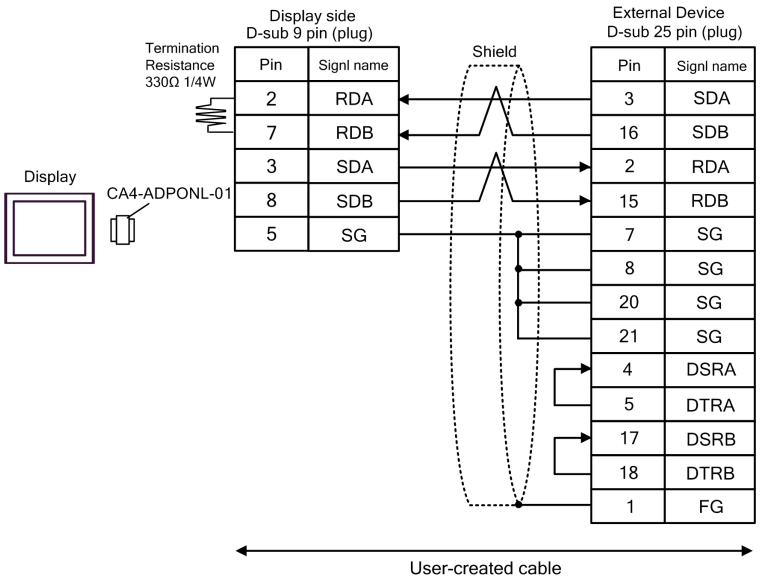
5C)




**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

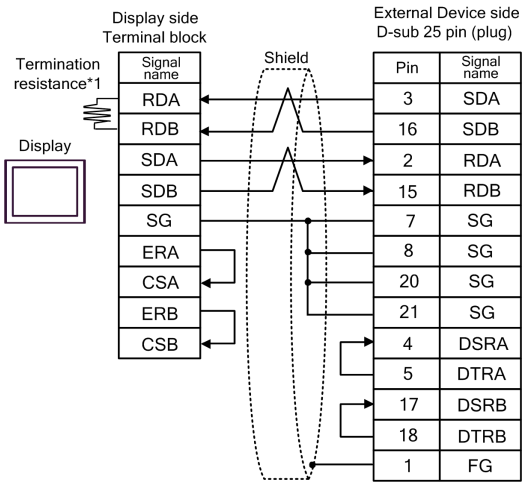
5D)




**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

5E)



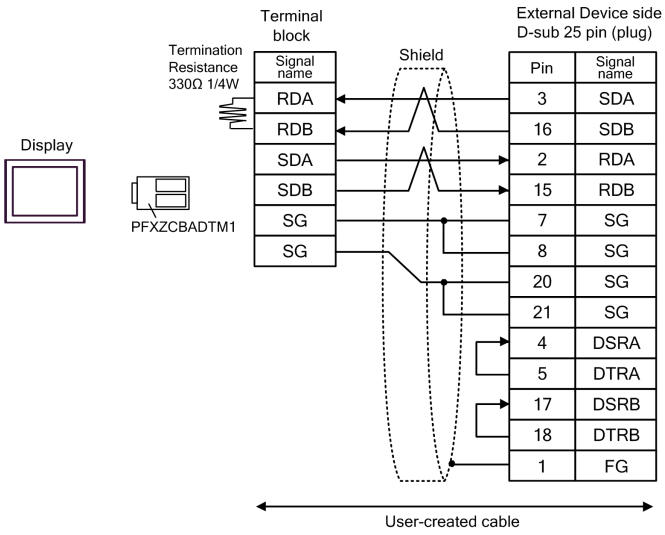

**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

| DIP Switch No. | Set Value |
|---|---|
| 1 | OFF |
| 2 | OFF |
| 3 | ON |
| 4 | OFF |

5F)




**NOTE**

- As the External Device has the termination resistance built-in, you do not need to connect the termination resistance.

Cable Diagram 6

| Display (Connection Port) | Cable | | Notes |
|---|---|---|---|
| GP3000[*1] (COM1)<br>AGP-3302B (COM2)<br>GP-4*01TM (COM1)<br>ST [*2] (COM2)<br>LT3000 (COM1)<br>IPC[*3] | 6A | COM port conversion adapter<br>by Pro-face<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | The cable length must be 1200m or less. |
| | 6B | COM port conversion adapter<br>by Pro-face<br>CA3-ADPCOM-01<br>+<br>Multilink cable by Pro-face<br>CA3-CBLMLT-01<br>+<br>User-created cable | |
| | 6C | User-created cable | |
| GP3000[*4] (COM2) | 6D | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>User-created cable | |
| | 6E | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Multilink cable by Pro-face<br>CA3-CBLMLT-01<br>+<br>User-created cable | |
| | 6F | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>User-created cable | |
| GP-4106 (COM1) | 6G | User-created cable | |
| GP4000[*5] (COM2)<br>GP-4201T (COM1) | 6H | RS-422 terminal block conversion adapter<br>by Pro-face<br>PFXZCBADTM1[*6]<br>+<br>User-created cable | |
| | 6I | Multilink cable by Pro-face<br>PFXZCBCBML1[*7]<br>+<br>User-created cable | |
| | 6C | User-created cable | |

*1 All GP3000 models except AGP-3302B

*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞■ IPC COM Port (page 9)

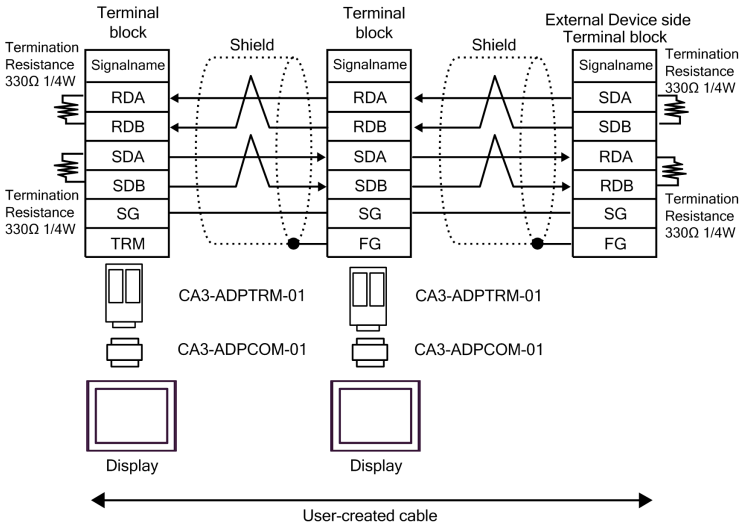
*4 All GP3000 models except GP-3200 series and AGP-3302B

*5 All GP4000 models except GP-4100 series, GP-4*01TM, GP-4201T and GP-4*03T

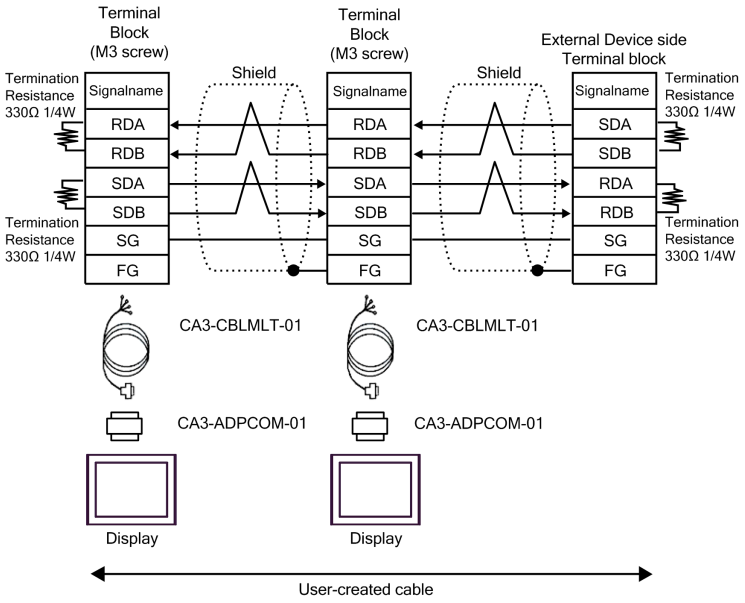
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 6A.

*7 When using a Multilink Cable (CA3-CBLMLT-01) instead of the Multilink Cable, refer to Cable Diagram 6B.

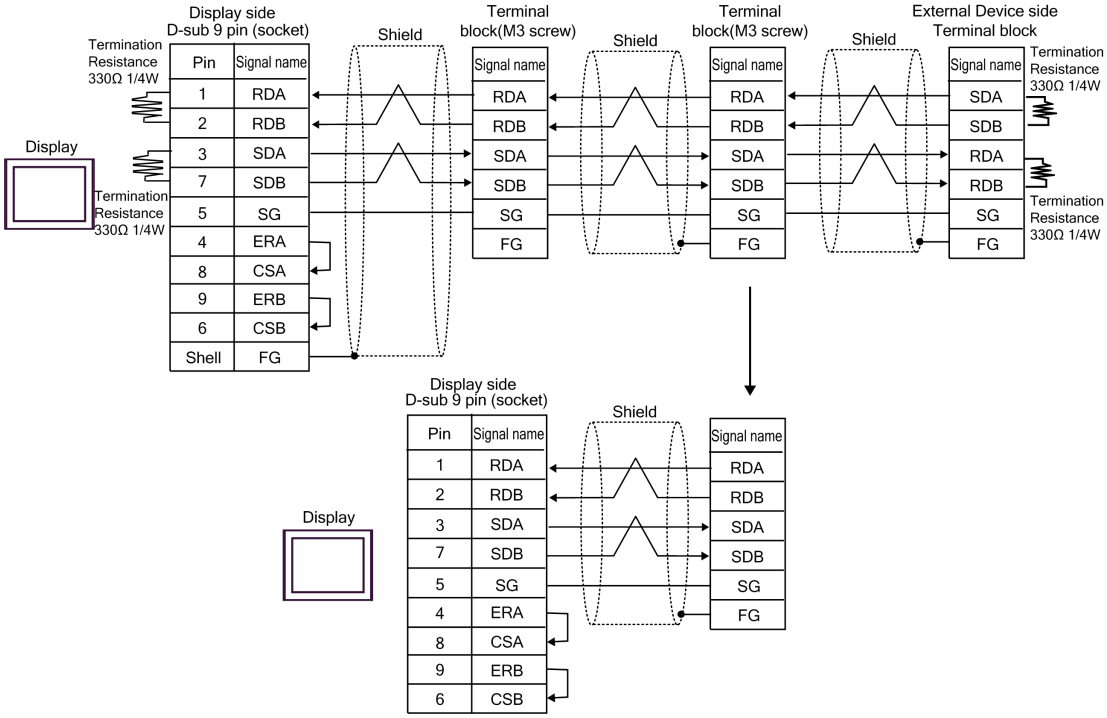
6A)



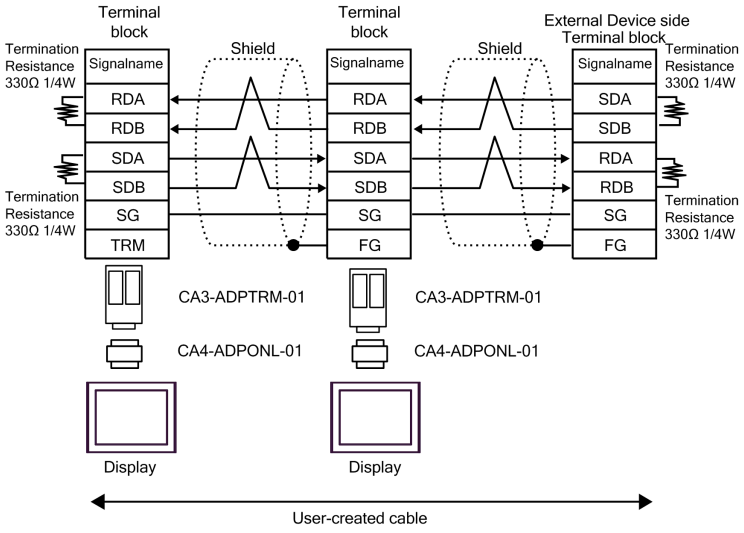
6B)


Terminal Block (M3 screw)
Terminal Block (M3 screw)
External Device side Terminal block
Shield
Shield
Termination Resistance 330Ω 1/4W
Signalname
RDA
RDB
SDA
SDB
SG
FG
CA3-CBLMLT-01
CA3-ADPCOM-01
Display
User-created cable

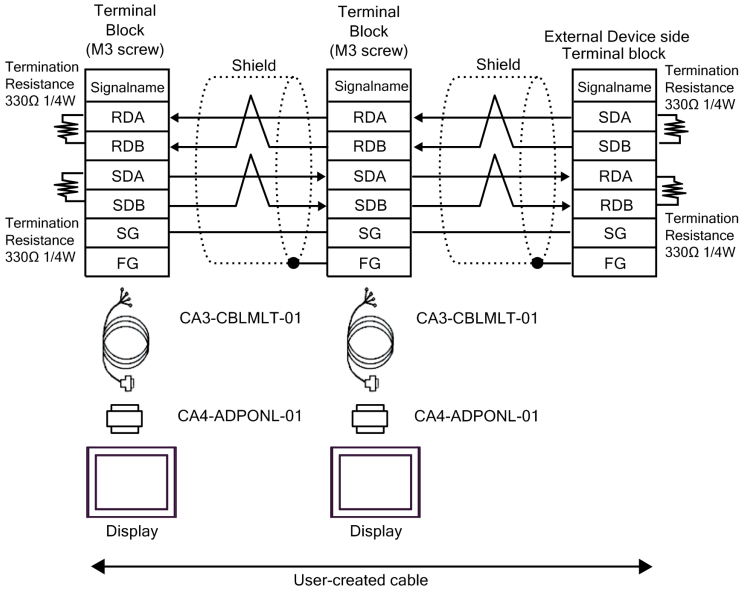
6C)


Display side D-sub 9 pin (socket)
Terminal block(M3 screw)
Terminal block(M3 screw)
External Device side Terminal block
Shield
Termination Resistance 330Ω 1/4W
Display
Pin
Signal name
1 RDA
2 RDB
3 SDA
7 SDB
5 SG
4 ERA
8 CSA
9 ERB
6 CSB
Shell FG

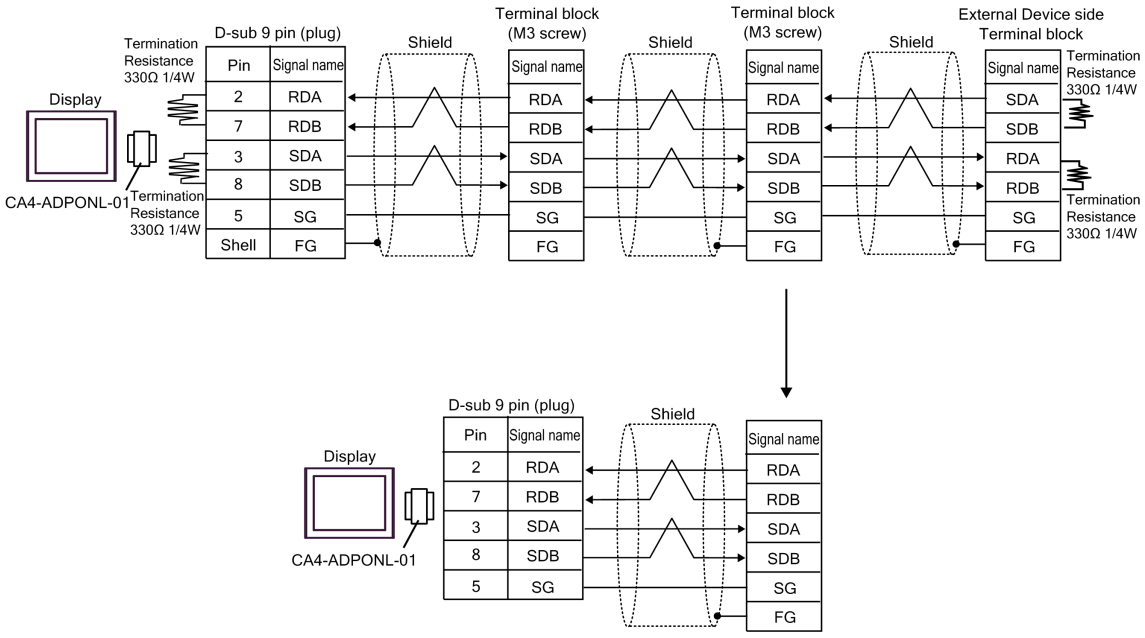
6D)


Terminal block
Terminal block
External Device side Terminal block
Termination Resistance 330Ω 1/4W
Shield
Signalname
RDA
RDB
SDA
SDB
SG
TRM
FG
CA3-ADPTRM-01
CA4-ADPONL-01
Display
User-created cable

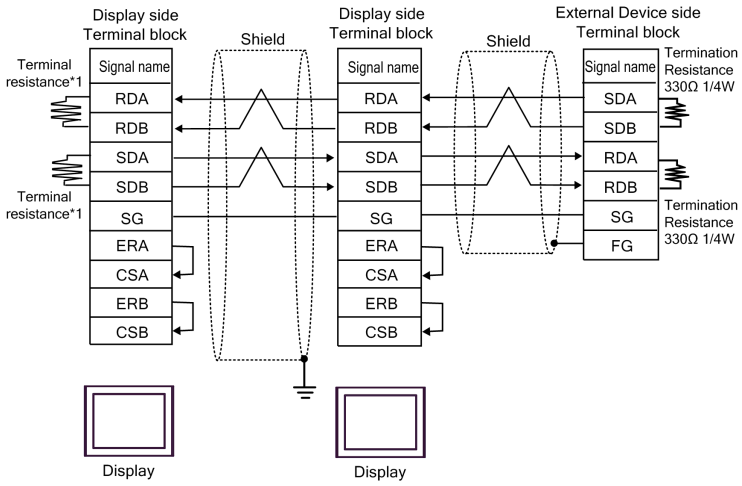
6E)


Terminal Block (M3 screw)
Terminal Block (M3 screw)
External Device side Terminal block
Termination Resistance 330Ω 1/4W
Shield
Signalname
RDA
RDB
SDA
SDB
SG
FG
CA3-CBLMLT-01
CA4-ADPONL-01
Display
User-created cable

6F)


Termination Resistance 330Ω 1/4W
D-sub 9 pin (plug)
Shield
Terminal block (M3 screw)
Shield
Terminal block (M3 screw)
Shield
External Device side Terminal block
Termination Resistance 330Ω 1/4W
Display
CA4-ADPONL-01
Termination Resistance 330Ω 1/4W
Pin
Signal name
2 RDA
7 RDB
3 SDA
8 SDB
5 SG
Shell FG
Signal name
RDA
RDB
SDA
SDB
SG
FG
Signal name
RDA
RDB
SDA
SDB
SG
FG
Signal name
SDA
SDB
RDA
RDB
SG
FG
Termination Resistance 330Ω 1/4W
Termination Resistance 330Ω 1/4W
D-sub 9 pin (plug)
Shield
Display
CA4-ADPONL-01
Pin
Signal name
2 RDA
7 RDB
3 SDA
8 SDB
5 SG
Signal name
RDA
RDB
SDA
SDB
SG
FG

6G)

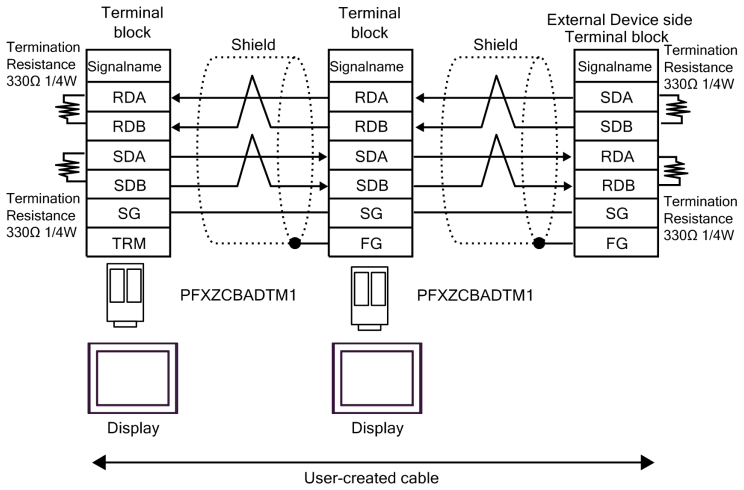



*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

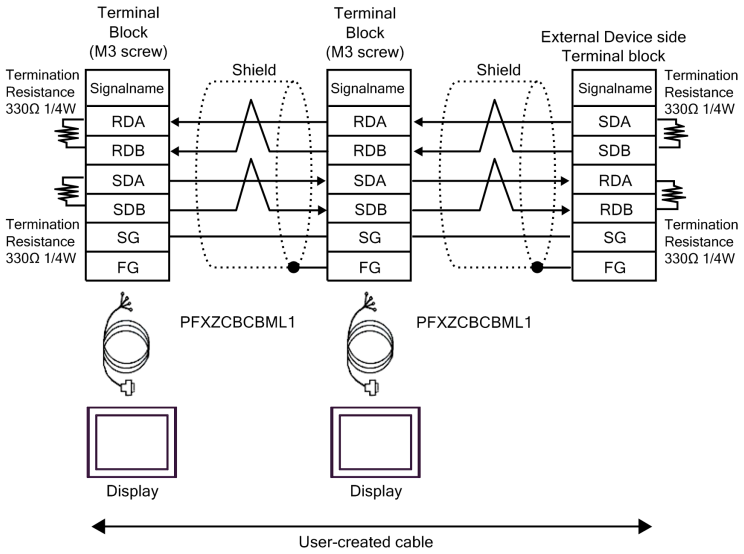
| DIP Switch No. | Set Value |
|---|---|
| 1 | ON |
| 2 | OFF |
| 3 | ON |
| 4 | OFF |

For the Displays other than that used as the terminal, set the DIP Switch 1-4 on the rear of the Display to OFF in the n:1 connection.

6H)


Terminal block
Terminal block
External Device side Terminal block
Termination Resistance 330Ω 1/4W
Shield
Shield
Signalname
RDA
RDB
SDA
SDB
SG
TRM
FG
Termination Resistance 330Ω 1/4W
PFXZCBADTM1
PFXZCBADTM1
Display
Display
User-created cable

6I)


Terminal Block (M3 screw)
Terminal Block (M3 screw)
External Device side Terminal block
Termination Resistance 330Ω 1/4W
Shield
Shield
Signalname
RDA
RDB
SDA
SDB
SG
FG
Termination Resistance 330Ω 1/4W
PFXZCBCBML1
PFXZCBCBML1
Display
Display
User-created cable

# 6 Range of Supported Device Address

Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

## ■ MELSEC Q (High performance model, Basic model) / MELSEC QnA Series

This address can be specified as system data area.

| Device | Bit Address | Word Address | 32bits | Notes |
|---|---|---|---|---|
| Input Relay | X0000-X1FFF | X0000-X1FF0 | L/H | *0 |
| Output Relay | Y0000-Y1FFF | Y0000-Y1FF0 | | *0 |
| Internal Relay | M00000-M32767 | M00000-M32752 | | ÷16 |
| Special Relay | SM0000-SM2047 | SM0000-SM2032 | | ÷16 |
| Latch Relay | L00000-L32767 | L00000-L32752 | | ÷16 |
| Annunciator | F00000-F32767 | F00000-F32752 | | ÷16 |
| Edge Relay | V00000-V32767 | V00000-V32752 | | ÷16 |
| Step Relay | S0000-S8191 | S0000-S8176 | | ÷16 |
| Link Relay | B0000-B7FFF | B0000-B7FF0 | | *0 |
| Special Link Relay | SB000 - SB7FF | SB000 - SB7F0 | | *0 |
| Timer (Contact) | TS00000-TS23087 | - | | |
| Timer (Coil) | TC00000-TC23087 | - | | |
| Retentive Timer (Contact) | SS00000-SS23087 | - | | |
| Retentive Timer (Coil) | SC00000-SC23087 | - | | |
| Counter (Contact) | CS00000-CS23087 | - | | |
| Counter (Coil) | CC00000-CC23087 | - | | |
| Timer (Current Value) | - | TN00000-TN23087 | | |
| Retentive Timer (Current Value) | - | SN00000-SN23087 | | |
| Counter (Current Value) | - | CN00000-CN23087 | | |
| Data Register | - | D00000-D25983 | | Bit F |
| Special Register | - | SD0000-SD2047 | | Bit F |
| Link Register | - | W0000-W657F | | Bit F |
| Special Link Register | - | SW000-SW7FF | | Bit F |
| File Register (Normal) | - | R00000-R32767 | | Bit F *1 |
| File Register (Block switching is not necessary) | - | ZR0000000-ZR1042431 | | Bit F *1 |

| Device | Bit Address | Word Address | 32bits | Notes |
|---|---|---|---|---|
| File Register (0R - 31R) *2 | - | 0R0000-0R32767 | L/H | Bit F *1 |
| | - | 1R0000-1R32767 | | |
| | - | 2R0000-2R32767 | | |
| | : | : | | |
| | - | 30R0000-30R32767 | | |
| | - | 31R0000-31R26623 | | |

*1 It is different by the memory card which uses the range of file register.

*2 Set the block No. on the head of device name. This is the device name for conversion with GP-Pro/PB III for Windows. When you newly specify the device, we recommend that you should use the file register (Block switching is not necessary).

**NOTE**

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

## ■MELSEC Q (Universal model) Series

This address can be specified as system data area.

| Device | First 5 digits of the serial No. in the CPU unit: Less than 10042 | | First 5 digits of the serial No. in the CPU unit: 10042 or later | | 32bits | Notes |
|---|---|---|---|---|---|---|
| | Bit Address | Word Address | Bit Address | Word Address | | |
| Input Relay | X0000-X1FFF | X0000-X1FF0 | X0000-X1FFF | X0000-X1FF0 | L/H | ***0 |
| Output Relay | Y0000-Y1FFF | Y0000-Y1FF0 | Y0000-Y1FFF | Y0000-Y1FF0 | | ***0 |
| Internal Relay | M00000-M32767 | M00000-M32752 | M00000-M61439 | M00000-M61424 | | ÷16 |
| Special Relay | SM0000-SM2047 | SM0000-SM2032 | SM0000-SM2047 | SM0000-SM2032 | | ÷16 |
| Latch Relay | L00000-L32767 | L00000-L32752 | L00000-L32767 | L00000-L32752 | | ÷16 |
| Annunciator | F00000-F32767 | F00000-F32752 | F00000-F32767 | F00000-F32752 | | ÷16 |
| Edge Relay | V00000-V32767 | V00000-V32752 | V00000-V32767 | V00000-V32752 | | ÷16 |
| Step Relay | S0000-S8191 | S0000-S8176 | S0000-S8191 | S0000-S8176 | | ÷16 |
| Link Relay | B0000-B7FFF | B0000-B7FF0 | B0000-BEFFF | B0000-BEFF0 | | ***0 |
| Special Link Relay | SB0000 - SB7FFF | SB0000 - SB7FF0 | SB0000 - SB7FFF | SB0000 - SB7FF0 | | ***0 |
| Timer (Contact) | TS00000-TS25023 | - | TS00000-TS25471 | - | | |
| Timer (Coil) | TC00000-TC25023 | - | TC00000-TC25471 | - | | |
| Retentive Timer (Contact) | SS00000-SS25023 | - | SS00000-SS25471 | - | | |
| Retentive Timer (Coil) | SC00000-SC25023 | - | SC00000-SC25471 | - | | |
| Counter (Contact) | CS00000-CS25023 | - | CS00000-CS25471 | - | | |
| Counter (Coil) | CC00000-CC25023 | - | CC00000-CC25471 | - | | |
| Timer (Current Value) | - | TN00000-TN25023 | - | TN00000-TN25471 | | |

| Device | First 5 digits of the serial No. in the CPU unit: Less than 10042 | | First 5 digits of the serial No. in the CPU unit: 10042 or later | | 32bits | Notes |
|---|---|---|---|---|---|---|
| | Bit Address | Word Address | Bit Address | Word Address | | |
| Retentive Timer (Current Value) | - | SN00000-SN25023 | - | SN00000-SN25471 | L/H | |
| Counter (Current Value) | - | CN00000-CN25023 | - | CN00000-CN25471 | | |
| Data Register | - | D00000-D28159 | - | D0000000-D0065535 | | Bit F |
| Special Register | - | SD0000-SD2047 | - | SD0000-SD2047 | | Bit F |
| Link Register | - | W0000-W6DEF | - | W000000-W00FFFF | | Bit F |
| Special Link Register | - | SW0000-SW6DFF | - | SW0000-SW6FFF | | Bit F |
| File Register (Normal) | - | R00000-R32767 | - | R00000-R32767 | | Bit F *1 |
| File Register (Block switching is not necessary) | - | ZR0000000-ZR4184063 | - | ZR0000000-ZR4184063 | | Bit F *1 |
| File Register (0R - 31R) *2 | - | 0R0000-0R32767 | - | 0R0000-0R32767 | | Bit F *1 |
| | - | 1R0000-1R32767 | - | 1R0000-1R32767 | | |
| | - | 2R0000-2R32767 | - | 2R0000-2R32767 | | |
| | : | : | : | : | | |
| | - | 30R0000-30R32767 | - | 30R0000-30R32767 | | |
| | - | 31R0000-31R26623 | - | 31R0000-31R26623 | | |

*1 It is different by the memory card which uses the range of file register.

*2 Set the block No. on the head of device name. This is the device name for conversion with GP-Pro/PB III for Windows. When you newly specify the device, we recommend that you should use the file register (Block switching is not necessary).

**NOTE**

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

## ■MELSEC L Series

This address can be specified as system data area.

| Device | Bit Address | Word Address | 32bits | Notes |
|---|---|---|---|---|
| Input Relay | X0000-X1FFF | X0000-X1FF0 | L/H | ***0 |
| Output Relay | Y0000-Y1FFF | Y0000-Y1FF0 | | ***0 |
| Internal Relay | M00000-M61439 | M00000-M61424 | | ÷16 |
| Special Relay | SM0000-SM2047 | SM0000-SM2032 | | ÷16 |
| Latch Relay | L00000-L32767 | L00000-L32752 | | ÷16 |
| Annunciator | F00000-F32767 | F00000-F32752 | | ÷16 |
| Edge Relay | V00000-V32767 | V00000-V32752 | | ÷16 |
| Step Relay | S0000-S8191 | S0000-S8176 | | ÷16 |
| Link Relay | B0000-BEFFF | B0000-BEFF0 | | ***0 |
| Special Link Relay | SB0000 - SB7FFF | SB0000 - SB7FF0 | | ***0 |
| Timer (Contact) | TS00000-TS25471 | - | | |
| Timer (Coil) | TC00000-TC25471 | - | | |
| Retentive Timer (Contact) | SS00000-SS25471 | - | | |
| Retentive Timer (Coil) | SC00000-SC25471 | - | | |
| Counter (Contact) | CS00000-CS25471 | - | | |
| Counter (Coil) | CC00000-CC25471 | - | | |
| Timer (Current Value) | - | TN00000-TN25471 | | |
| Retentive Timer (Current Value) | - | SN00000-SN25471 | | |
| Counter (Current Value) | - | CN00000-CN25471 | | |
| Data Register | - | D000000-D421887 | | Bit F |
| Special Register | - | SD0000-SD2047 | | Bit F |
| Link Register | - | W00000-W66FFF | | Bit F |
| Special Link Register | - | SW0000-SW6FFF | | Bit F |
| File Register (Normal) | - | R00000-R32767 | | Bit F *1 |
| File Register (Block switching is not necessary) | - | ZR000000-ZR393215 | | Bit F *1 |

| Device | Bit Address | Word Address | 32bits | Notes |
|---|---|---|---|---|
| File Register (0R - 11R) *2 | - | 0R0000-0R32767 | L/H | Bit F *1 |
| | - | 1R0000-1R32767 | | |
| | - | 2R0000-2R32767 | | |
| | : | : | | |
| | - | 10R0000-10R32767 | | |
| | - | 11R0000-11R32767 | | |

*1 It is different by the memory card which uses the range of file register.

*2 Set the block No. on the head of device name. This is the device name for conversion with GP-Pro/PB III for Windows. When you newly specify the device, we recommend that you should use the file register (Block switching is not necessary).

**NOTE**

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

# 7 Device Code and Address Code

Use device code and address code when you select "Device Type & Address" for the address type in data displays.

## ■ MELSEC Q/QnA Series

| Device | Device Name | Device Code (HEX) | Address Code |
|---|---|---|---|
| Input Relay | X | 0080 | Value of word address divided by 0x10 |
| Output Relay | Y | 0081 | Value of word address divided by 0x10 |
| Internal Relay | M | 0082 | Value of word address divided by 16 |
| Special Relay | SM | 0083 | Value of word address divided by 16 |
| Latch Relay | L | 0084 | Value of word address divided by 16 |
| Annunciator | F | 0085 | Value of word address divided by 16 |
| Edge Relay | V | 0086 | Value of word address divided by 16 |
| Step Relay | S | 0087 | Value of word address divided by 16 |
| Link Relay | B | 0088 | Value of word address divided by 0x10 |
| Special Link Relay | SB | 0089 | Value of word address divided by 0x10 |
| Timer (Current Value) | TN | 0060 | Word Address |
| Retentive Timer (Current Value) | SN | 0062 | Word Address |
| Counter (Current Value) | CN | 0061 | Word Address |
| Data Register | D | 0000 | Word Address |
| Special Register | SD | 0001 | Word Address |
| Link Register | W | 0002 | Word Address |
| Special Link Register | SW | 0003 | Word Address |
| File Register (Normal) | R | 000F | Word Address |
| File Register (Block switching is not necessary) | ZR | 000E | Word Address |

| Device | Device Name | Device Code (HEX) | Address Code |
|---|---|---|---|
| File Register (0R - 31R) | 0R | 0010 | Word Address |
| | 1R | 0011 | Word Address |
| | 2R | 0012 | Word Address |
| | : | : | : |
| | 30R | 002E | Word Address |
| | 31R | 002F | Word Address |

■ MELSEC L Series

| Device | Device Name | Device Code (HEX) | Address Code |
|---|---|---|---|
| Input Relay | X | 0080 | Value of word address divided by 0x10 |
| Output Relay | Y | 0081 | Value of word address divided by 0x10 |
| Internal Relay | M | 0082 | Value of word address divided by 16 |
| Special Relay | SM | 0083 | Value of word address divided by 16 |
| Latch Relay | L | 0084 | Value of word address divided by 16 |
| Annunciator | F | 0085 | Value of word address divided by 16 |
| Edge Relay | V | 0086 | Value of word address divided by 16 |
| Step Relay | S | 0087 | Value of word address divided by 16 |
| Link Relay | B | 0088 | Value of word address divided by 0x10 |
| Special Link Relay | SB | 0089 | Value of word address divided by 0x10 |
| Timer (Current Value) | TN | 0060 | Word Address |
| Retentive Timer (Current Value) | SN | 0062 | Word Address |
| Counter (Current Value) | CN | 0061 | Word Address |
| Data Register | D | 0000 | Word Address |
| Special Register | SD | 0001 | Word Address |
| Link Register | W | 0002 | Word Address |
| Special Link Register | SW | 0003 | Word Address |
| File Register (Normal) | R | 000F | Word Address |
| File Register (Block switching is not necessary) | ZR | 000E | Word Address |
| File Register (0R - 11R) | 0R | 0010 | Word Address |
| | 1R | 0011 | Word Address |
| | 2R | 0012 | Word Address |
| | : | : | : |
| | 10R | 001A | Word Address |
| | 11R | 001B | Word Address |

# 8 Error Messages

Error messages are displayed on the Display screen as follows: "No.: Device Name: Error Message (Error Occurrence Area)". Each description is shown below.

| Item | Description |
|---|---|
| No. | Error No. |
| Device Name | Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1]) |
| Error Message | Displays messages related to the error which occurs. |
| Error Occurrence Area | Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.<br>**NOTE**<br>• IP address is displayed such as "IP address(Decimal): MAC address( Hex)".<br>• Device address is diplayed such as "Address: Device address".<br>• Received error codes are displayed such as "Decimal[Hex]". |

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2 [02H])"

**NOTE**

- Refer to your External Device manual for details on received error codes.
- Refer to "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.