



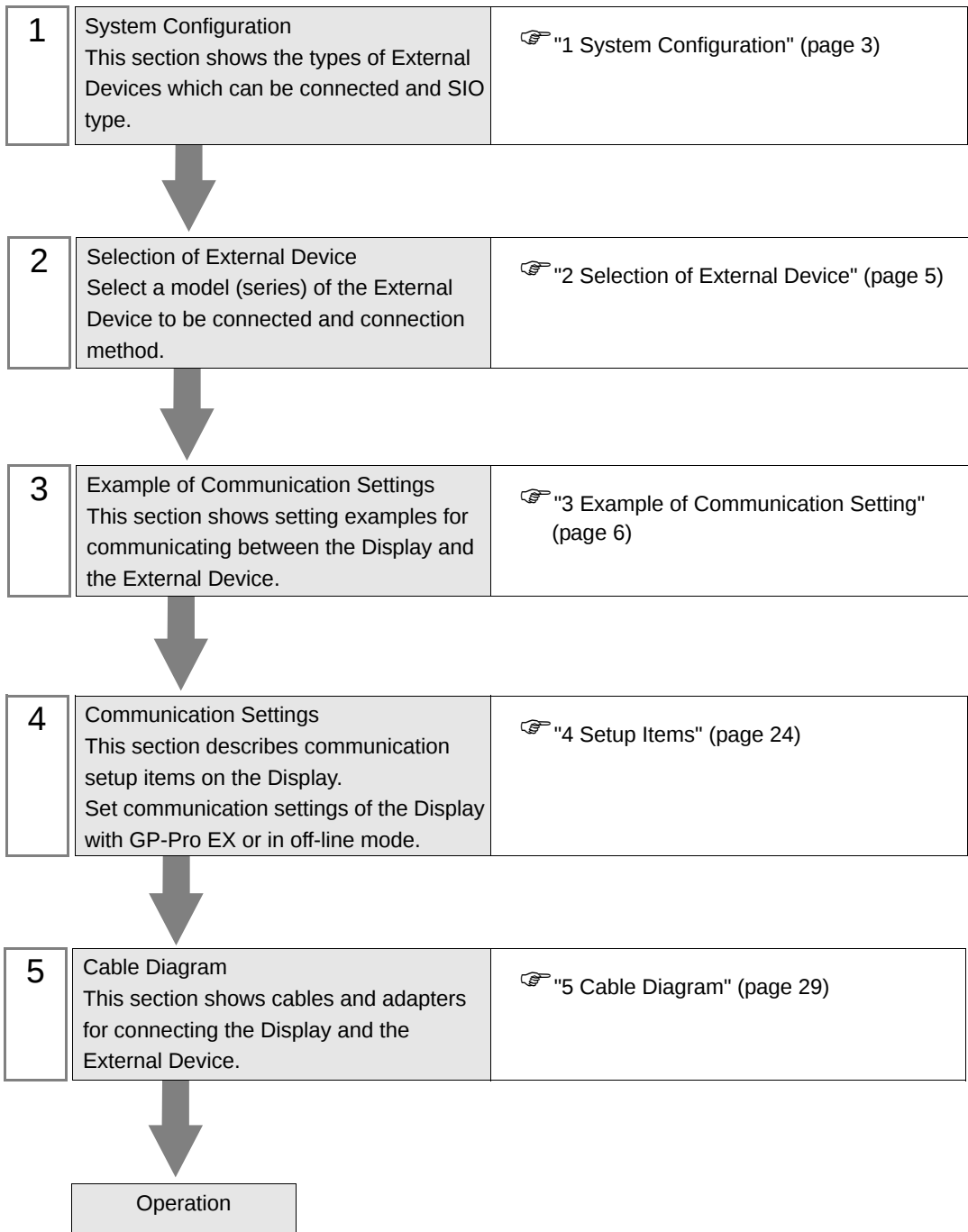
# CS/CJ Series HOST Link Driver

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## 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

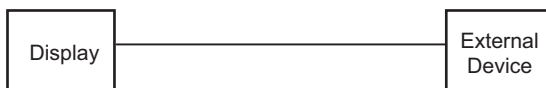
The system configuration in the case when the External Device of OMRON Corporation and the Display are connected is shown.

| Series        | CPU           | Connection Port                               | SIO Type                    | Communication Settings      | Cable Diagram               |
|---------------|---------------|-----------------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| CS1           | CS1G-CPU45    | RS232C port on the CPU unit                   | RS232C                      | Setting Example 1 (page 6)  | Cable Diagram 1 (page 31)   |
|               | CS1G-CPU44    |                                               | Setting Example 2 (page 9)  | Cable Diagram 2 (page 32)   |                             |
|               | CS1G-CPU43    | Peripheral port on the CPU unit <sup>*1</sup> |                             |                             | RS232C                      |
|               | CS1G-CPU42    |                                               | Setting Example 5 (page 18) | Cable Diagram 1 (page 31)   |                             |
|               | CS1G-CPU45H   | CS1W-SCU21                                    |                             |                             | RS232C                      |
|               | CS1G-CPU44H   |                                               | Setting Example 3 (page 12) |                             |                             |
|               | CS1G-CPU43H   | CS1W-SCB21                                    |                             |                             | RS232C                      |
|               | CS1G-CPU42H   |                                               | Setting Example 3 (page 12) |                             |                             |
|               | CS1G-CPU45-V1 | CS1W-SCB41                                    |                             |                             | RS232C                      |
|               | CS1G-CPU44-V1 |                                               | RS422/485 (4wire)           | Setting Example 4 (page 15) |                             |
|               | CS1G-CPU43-V1 |                                               |                             |                             |                             |
|               | CS1G-CPU42-V1 |                                               |                             |                             |                             |
|               | CS1H-CPU67    |                                               |                             |                             |                             |
|               | CS1H-CPU66    |                                               |                             |                             |                             |
|               | CS1H-CPU65    |                                               |                             |                             |                             |
|               | CS1H-CPU64    |                                               |                             |                             |                             |
|               | CS1H-CPU63    |                                               |                             |                             |                             |
|               | CS1H-CPU67H   |                                               |                             |                             |                             |
|               | CS1H-CPU66H   |                                               |                             |                             |                             |
|               | CS1H-CPU65H   |                                               |                             |                             |                             |
| CS1H-CPU64H   |               |                                               |                             |                             |                             |
| CS1H-CPU63H   |               |                                               |                             |                             |                             |
| CS1H-CPU67-V1 |               |                                               |                             |                             |                             |
| CS1H-CPU66-V1 |               |                                               |                             |                             |                             |
| CS1H-CPU65-V1 |               |                                               |                             |                             |                             |
| CS1H-CPU64-V1 |               |                                               |                             |                             |                             |
| CS1H-CPU63-V1 |               |                                               |                             |                             |                             |
| CJ            | CJ1G-CPU45    | RS232C port on the CPU unit                   | RS232C                      | Setting Example 1 (page 6)  | Cable Diagram 1 (page 31)   |
|               | CJ1G-CPU44    |                                               | Setting Example 2 (page 9)  | Cable Diagram 2 (page 32)   |                             |
|               | CJ1M-CPU23    | Peripheral port on the CPU unit <sup>*1</sup> |                             |                             | RS232C                      |
|               | CJ1M-CPU22    |                                               | Setting Example 5 (page 18) | Cable Diagram 1 (page 31)   |                             |
|               | CJ1M-CPU21    | RS232C                                        |                             |                             |                             |
|               | CJ1M-CPU13    |                                               | CS1W-SCU41                  | RS422/485 (4wire)           | Setting Example 6 (page 21) |
|               | CJ1M-CPU12    |                                               |                             |                             |                             |
|               | CJ1M-CPU11    |                                               |                             |                             |                             |
|               | CJ1H-CPU66H   |                                               |                             |                             |                             |
|               | CJ1H-CPU65H   |                                               |                             |                             |                             |
|               | CJ1G-CPU45H   |                                               |                             |                             |                             |
|               | CJ1G-CPU44H   |                                               |                             |                             |                             |
|               | CJ1G-CPU43H   |                                               |                             |                             |                             |
|               | CJ1G-CPU42H   |                                               |                             |                             |                             |

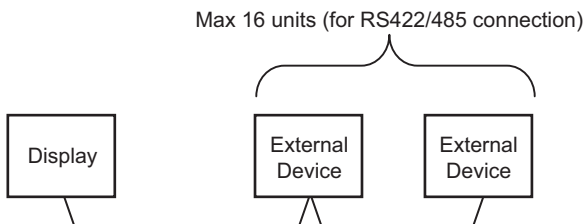
\*1 Turn ON the DIP switch 4 on the CPU unit.

## ■ Connection Configuration

- 1:1 Connection

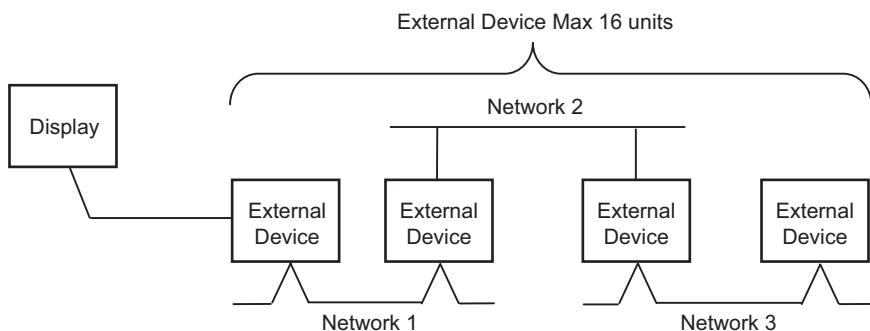


- 1:n Connection



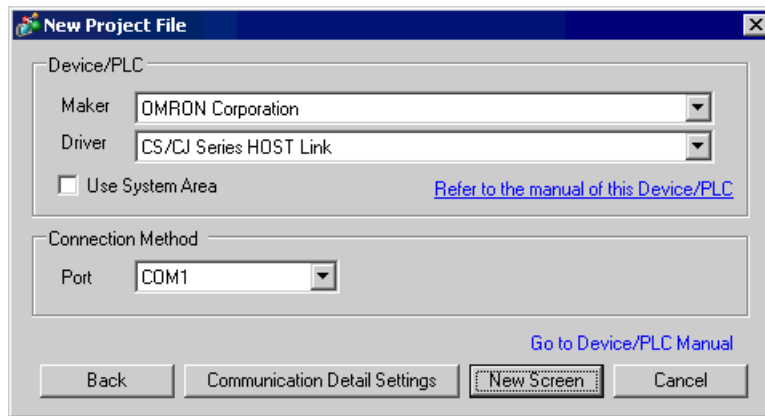
- Access beyond network

You can access beyond maximum 3 levels of network.



## 2 Selection of External Device

Select the External Device to be connected to the Display.



| Setup Items     | Setup Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maker           | Select the maker of the External Device to be connected. Select "OMRON Corporation".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Driver          | Select a model (series) of the External Device to be connected and connection method. Select "CS/CJ Series HOST Link".<br>Check the External Device which can be connected in "CS/CJ Series HOST Link" in system configuration.<br>☞ "1 System Configuration" (page 3)                                                                                                                                                                                                                                                                                                                                                                                                  |
| Use System Area | Check this option when you synchronize the system data area of Display and the device (memory) of External Device. When synchronized, you can use the ladder program of External Device to switch the display or display the window on the display.<br>Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"<br>This can be also set with GP-Pro EX or in off-line mode of Display.<br>Cf. GP-Pro EX Reference Manual " 5.14.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting"<br>Cf. Maintenance/Troubleshooting "2.14.1 Settings common to all Display models◆System Area Settings" |
| Port            | Select the Display port to be connected to the External Device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### 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 setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☒ 7 ☐ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☐ 1 ☒ 2

Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

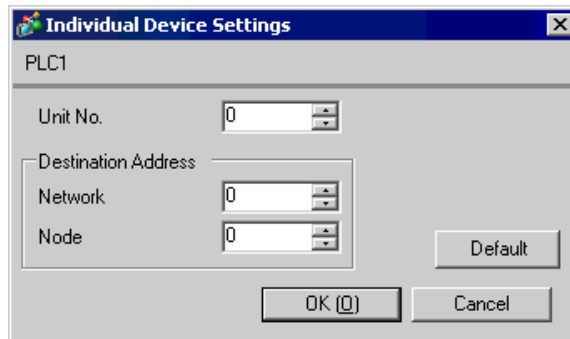
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

Click the [HOST Link Port] tab from the [PC System Settings] of the ladder software for the communication settings of the HOST link port (RS232C port on CPU) and set as below.

| Setup Items                                      | Settings                                     |
|--------------------------------------------------|----------------------------------------------|
| Speed                                            | 19200                                        |
| Parameter                                        | 7,2,E                                        |
| Mode                                             | HOST link                                    |
| DIP Switch <sup>*1</sup>                         | SW1: OFF<br>SW5: OFF<br>SW7: OFF<br>SW8: OFF |
| Unit No.                                         | Option                                       |
| Source Network Address <sup>*2</sup>             | Option                                       |
| Node Address Setting Rotary Switch <sup>*3</sup> | Option                                       |

- \*1 Use the DIP switch on the front of the unit for setting.
- \*2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.
- \*3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

### ◆ Notes

- Do not set the duplicate node address in the same network address group.

## 3.2 Setting Example 2

### ■ Setting of GP-Pro EX

#### ◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)  
 Speed   
 Data Length ☒ 7 ☐ 8  
 Parity ☐ NONE ☒ EVEN ☐ ODD  
 Stop Bit ☐ 1 ☒ 2  
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF  
 Timeout  (sec)  
 Retry   
 Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC  
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

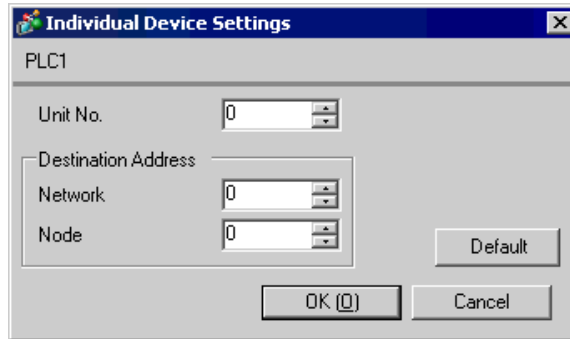
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



#### NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

Click the [Peripheral Port] tab from the [PC System Settings] of the ladder software for the communication settings of the peripheral port and set as below.

| Setup Items                                      | Settings                                    |
|--------------------------------------------------|---------------------------------------------|
| Speed                                            | 19200                                       |
| Parameter                                        | 7,2,E                                       |
| Mode                                             | HOST link                                   |
| DIP Switch <sup>*1</sup>                         | SW1: OFF<br>SW4: ON<br>SW7: OFF<br>SW8: OFF |
| Unit No.                                         | Option                                      |
| Source Network Address <sup>*2</sup>             | Option                                      |
| Node Address Setting Rotary Switch <sup>*3</sup> | Option                                      |

- \*1 Use the DIP switch on the front of the unit for setting.
- \*2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.
- \*3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

### ◆ Notes

- Do not set the duplicate node address in the same network address group.

### 3.3 Setting Example 3

#### ■ Setting of GP-Pro EX

##### ◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)  
 Speed   
 Data Length ☒ 7 ☐ 8  
 Parity ☐ NONE ☒ EVEN ☐ ODD  
 Stop Bit ☐ 1 ☒ 2  
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF  
 Timeout  (sec)  
 Retry   
 Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC  
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

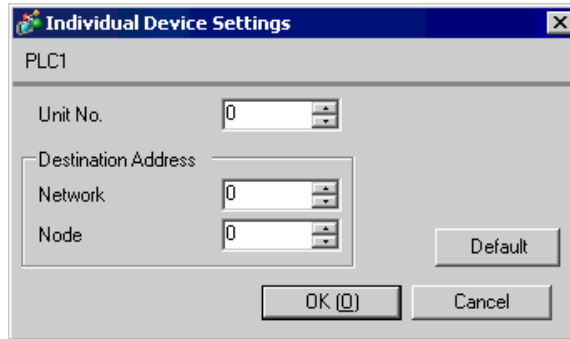
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

For communication settings of INNER board, open [I/O Table] of the ladder software first. Then, select [INNER Board Soft Switch] from the menu displayed by right-clicking [CS\*\*-CPU\*\*] (CPU of the External Device to set) and set as below.

| Setup Items                                      | Settings            |
|--------------------------------------------------|---------------------|
| Line Speed                                       | 19200               |
| Parameter                                        | 1,7,2,E             |
| Mode                                             | Default (HOST Link) |
| Send Delay Time                                  | 0                   |
| CS Control                                       | None                |
| Unit No.                                         | Option              |
| Source Network Address <sup>*1</sup>             | Option              |
| Node Address Setting Rotary Switch <sup>*2</sup> | Option              |

\*1 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

\*2 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

### ◆ Notes

- Do not set the duplicate node address in the same network address group.

### 3.4 Setting Example 4

#### ■ Setting of GP-Pro EX

##### ◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

**Summary**

Maker  Series  Port

Text Data Mode  [Change](#)

**Communication Settings**

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)  
 Speed   
 Data Length ☒ 7 ☐ 8  
 Parity ☐ NONE ☒ EVEN ☐ ODD  
 Stop Bit ☐ 1 ☒ 2  
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF  
 Timeout  (sec)  
 Retry   
 Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

**Device-Specific Settings**

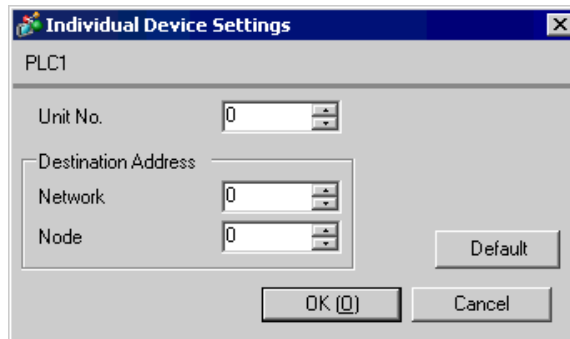
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



#### NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

For communication settings of INNER board, open [I/O Table] of the ladder software first. Then, select [INNER Board Soft Switch] from the menu displayed by right-clicking [CS\*\*-CPU\*\*] (CPU of the External Device to set) and set as below.

| Setup Items                                        | Settings            |
|----------------------------------------------------|---------------------|
| WIRE (2wire/4wire switch)* <sup>1</sup>            | 4wire               |
| TERM (Termination resistance switch)* <sup>2</sup> | ON                  |
| Line Speed                                         | 19200               |
| Parameter                                          | 1,7,2,E             |
| Mode                                               | Default (HOST Link) |
| Send Delay Time                                    | 0                   |
| CS Control                                         | None                |
| Unit No.                                           | Option              |
| Source Network Address* <sup>3</sup>               | Option              |
| Node Address Setting Rotary Switch* <sup>4</sup>   | Option              |

\*1 Use the WIRE switch on the front of the INNER board to set.

\*2 Use the TERM switch on the front of the INNER board to set. For 1:n connection, set only the station that serves as termination resistance to ON.

\*3 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

\*4 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

## ◆ Notes

- Do not set the duplicate node address in the same network address group.

### 3.5 Setting Example 5

#### ■ Setting of GP-Pro EX

##### ◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)  
 Speed   
 Data Length ☒ 7 ☐ 8  
 Parity ☐ NONE ☒ EVEN ☐ ODD  
 Stop Bit ☐ 1 ☒ 2  
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF  
 Timeout  (sec)  
 Retry   
 Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC  
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

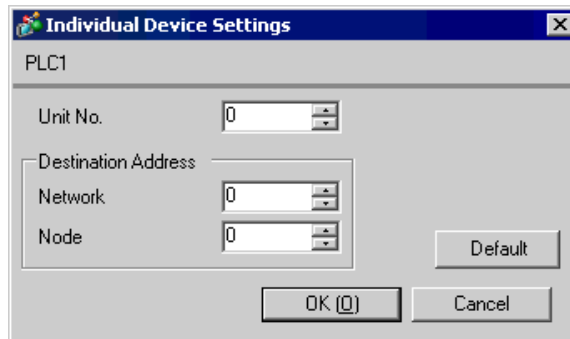
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



#### NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

For communication settings of the communication unit, you need to register the serial communication unit to be used by the ladder software in advance.

After registration, open [I/O Table] of the ladder software. Click [Switch] from the menu displayed by right-clicking [Serial Communication Unit] and set as below.

| Setup Items                                      | Settings                                   |
|--------------------------------------------------|--------------------------------------------|
| Line Speed                                       | 19200                                      |
| Parameter                                        | 1,7,2,E                                    |
| Mode                                             | Default (HOST Link)                        |
| Send Delay Time                                  | 0                                          |
| CS Control                                       | None                                       |
| Unit No. Setting Rotary Switch <sup>*1</sup>     | Same value as "CPU High Function Unit No." |
| Unit No.                                         | Option                                     |
| Source Network Address <sup>*2</sup>             | Option                                     |
| Node Address Setting Rotary Switch <sup>*3</sup> | Option                                     |

\*1 You need to set this switch to the same value as "CPU High Function Unit No." of the serial communication unit in the I/O table assigned by the ladder tool.

\*2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

\*3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

### ◆ Notes

- Do not set the duplicate node address in the same network address group.

### 3.6 Setting Example 6

#### ■ Setting of GP-Pro EX

##### ◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)  
 Speed   
 Data Length ☒ 7 ☐ 8  
 Parity ☐ NONE ☒ EVEN ☐ ODD  
 Stop Bit ☐ 1 ☒ 2  
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF  
 Timeout  (sec)  
 Retry   
 Wait To Send  (ms)

RI / VCC ☒ RI ☐ VCC  
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

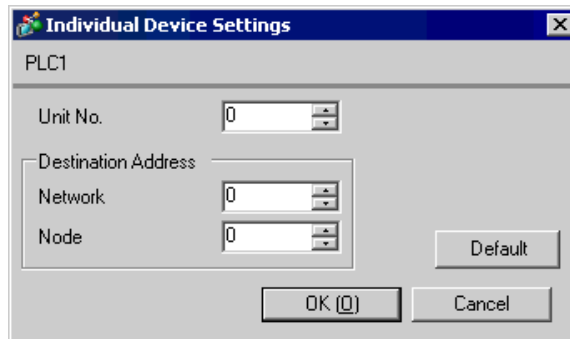
Allowable No. of Device/PLCs 16 Unit(s)

| No. | Device Name | Settings                    |
|-----|-------------|-----------------------------|
| 1   | PLC1        | Unit No.=0,Network=0,Node=0 |

### ◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

## ■ Setting of External Device

For communication settings of the communication unit, you need to register the serial communication unit to be used by the ladder software in advance.

After registration, open [I/O Table] of the ladder software. Click [Switch] from the menu displayed by right-clicking [Serial Communication Unit] and set as below.

| Setup Items                                        | Settings                                   |
|----------------------------------------------------|--------------------------------------------|
| WIRE (2wire/4wire switch)* <sup>1</sup>            | 4wire                                      |
| TERM (Termination resistance switch)* <sup>2</sup> | ON                                         |
| Line Speed                                         | 19200                                      |
| Parameter                                          | 1,7,2,E                                    |
| Mode                                               | Default (HOST Link)                        |
| Send Delay Time                                    | 0                                          |
| CS Control                                         | None                                       |
| Unit No. Setting Rotary Switch* <sup>3</sup>       | Same value as "CPU High Function Unit No." |
| Unit No.                                           | Option                                     |
| Source Network Address* <sup>4</sup>               | Option                                     |
| Node Address Setting Rotary Switch* <sup>5</sup>   | Option                                     |

\*1 Use the WIRE switch on the front of the Controller Link unit to set.

\*2 Use the TERM switch on the front of the Controller Link unit to set. For 1:n connection, set only the station that serves as termination resistance to ON.

\*3 You need to set this switch to the same value as "CPU High Function Unit No." of the serial communication unit in the I/O table assigned by the ladder tool.

\*4 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

\*5 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

### ◆ Notes

- Do not set the duplicate node address in the same network address group.

## 4 Setup Items

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

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

☞ "3 Example of Communication Setting" (page 6)

### 4.1 Setup Items in GP-Pro EX

#### ■ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: OMRON Corporation Series: CS/CJ Series HOST Link Port: COM1

Text Data Mode: 3 Change

Communication Settings

SIO Type: ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed: 19200

Data Length: ☒ 7 ☐ 8

Parity: ☐ NONE ☒ EVEN ☐ ODD

Stop Bit: ☐ 1 ☒ 2

Flow Control: ☒ NONE ☐ ER(DTR/DS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

RI / VCC: ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)

| No. | Device Name | Settings                      |
|-----|-------------|-------------------------------|
| 1   | PLC1        | Unit No.=0, Network=0, Node=0 |

| 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 (sec) for which the Display waits for the response from the External Device.                |
| 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. |

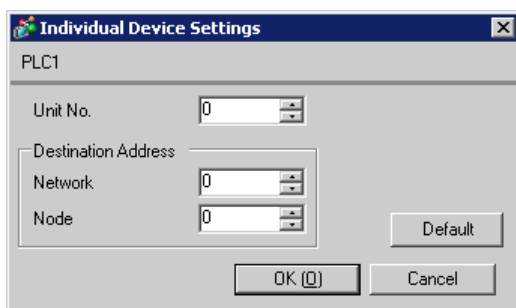
continued to next page

| Setup Items  | Setup Description                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------|
| 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. |
| RI/VCC       | You can switch RI/VCC of the 9th pin when you select RS232C for SIO type.                                                     |

## ■ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



| Setup Items | Setup Description                      |
|-------------|----------------------------------------|
| Unit No.    | Enter the unit No. for HOST link.      |
| Network     | Enter the destination network address. |
| Node        | Enter the destination node address.    |

## 4.2 Setup Items in Off-line Mode

**NOTE**

- Please refer to Maintenance/Troubleshooting for more information on how to enter off-line mode or about operation.

Cf. Maintenance/Troubleshooting "2.2 Offline Mode"

### ■ Communication Settings

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

| Comm.                                  | Device                                                                                     | Option |  |                     |
|----------------------------------------|--------------------------------------------------------------------------------------------|--------|--|---------------------|
| CS/CJ Series HOST Link [COM1] Page 1/1 |                                                                                            |        |  |                     |
| SIO Type                               | RS232C                                                                                     |        |  |                     |
| Speed                                  | 19200                                                                                      |        |  |                     |
| Data Length                            | <input checked="" type="radio"/> 7 <input type="radio"/> 8                                 |        |  |                     |
| Parity                                 | <input type="radio"/> NONE <input checked="" type="radio"/> EVEN <input type="radio"/> ODD |        |  |                     |
| Stop Bit                               | <input type="radio"/> 1 <input checked="" type="radio"/> 2                                 |        |  |                     |
| Flow Control                           | NONE                                                                                       |        |  |                     |
| Timeout(s)                             | 3                                                                                          |        |  |                     |
| Retry                                  | 2                                                                                          |        |  |                     |
| Wait To Send(ms)                       | 0                                                                                          |        |  |                     |
| Exit                                   |                                                                                            | Back   |  | 2005/09/02 12:47:53 |

| 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.                  |
| 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.              |

## ■ 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].

| Comm.                                              | Device | Option |  |                        |
|----------------------------------------------------|--------|--------|--|------------------------|
| CS/CJ Series HOST Link [COM1] Page 1/1             |        |        |  |                        |
| Device/PLC Name <input type="text" value="PLC1"/>  |        |        |  |                        |
| Unit No. <input type="text" value="0"/> ▼ ▲        |        |        |  |                        |
| Network Address <input type="text" value="0"/> ▼ ▲ |        |        |  |                        |
| Node Address <input type="text" value="0"/> ▼ ▲    |        |        |  |                        |
| Exit                                               |        | Back   |  | 2005/09/02<br>12:47:55 |

| 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]) |
| Unit No.        | Enter the unit No. for HOST link.                                                                                                  |
| Network         | Enter the destination network address.                                                                                             |
| Node            | Enter the destination node address.                                                                                                |

## ■ 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].

| Comm.                                                                                                                                                                                                                                                                                           | Device | Option |        |                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|------------------------|
| CS/CJ Series HOST Link                                                                                                                                                                                                                                                                          |        |        | [COM1] | Page 1/1               |
| <p>RI / VCC                      <input checked="" type="radio"/> RI                      <input type="radio"/> VCC</p> <p>In the case of RS232C, you can select the 9th pin to RI(Input) or VCC(5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.</p> |        |        |        |                        |
| Exit                                                                                                                                                                                                                                                                                            |        | Back   |        | 2005/09/02<br>12:47:57 |

| Setup Items | Setup Description                                                         |
|-------------|---------------------------------------------------------------------------|
| RI/VCC      | You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. |

## 5 Cable Diagram

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

- The FG pin of the main body of the External Device 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.
- When connecting IPC with External Device by RS-232C, the COM port which can be used changes with series. Please refer to the manual of IPC for details.

Usable port

| Series                 | Usable port                                                         |
|------------------------|---------------------------------------------------------------------|
| PS-2000B               | COM1 <sup>*1</sup> , COM2, COM3 <sup>*1</sup> , COM4                |
| PS-3650A, PS-3651A     | COM1 <sup>*1</sup>                                                  |
| PS-3700A (Pentium®4-M) | COM1 <sup>*1</sup> , COM2 <sup>*1</sup> , COM3 <sup>*2</sup> , COM4 |

\*1 The RI/5V can be switched. Please switch with the change switch of IPC.

\*2 It is necessary to set up the SIO type with the Dip switch.

- When connecting to the COM3 of PS-3700A (Pentium®4-M) with External Device, it is necessary to set up the SIO type of COM3 with a Dip switch. Please refer to the manual of PS-3700A (Pentium®4-M) for details.

Dip switch setting: RS-232C

| Dip switch | Setting | Description                                      |
|------------|---------|--------------------------------------------------|
| 1          | OFF     | Reserve (always OFF)                             |
| 2          | OFF     | SIO type of COM3: RS-232C                        |
| 3          | OFF     |                                                  |
| 4          | OFF     | Output mode of TX data: Always output            |
| 5          | OFF     | Terminal resistance insertion to TX (220Ω): None |
| 6          | OFF     | Terminal resistance insertion to RX (220Ω): None |
| 7          | OFF     | Short-circuit of TXA and RXA: Does not Exist     |
| 8          | OFF     | Short-circuit of TXB and RXB: Does not Exist     |
| 9          | OFF     | Auto Detection: Disable                          |
| 10         | OFF     |                                                  |

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

| Dip switch | Setting | Description                                      |
|------------|---------|--------------------------------------------------|
| 1          | OFF     | Reserve (always OFF)                             |
| 2          | ON      | SIO type of COM3: RS-422/485                     |
| 3          | ON      |                                                  |
| 4          | OFF     | Output mode of TX data: Always output            |
| 5          | OFF     | Terminal resistance insertion to TX (220Ω): None |
| 6          | OFF     | Terminal resistance insertion to RX (220Ω): None |
| 7          | OFF     | Short-circuit of TXA and RXA: Does not Exist     |
| 8          | OFF     | Short-circuit of TXB and RXB: Does not Exist     |
| 9          | OFF     | Auto Detection: Disable                          |
| 10         | OFF     |                                                  |

Cable Diagram 1

| Display<br>(Connection Port) | Cable |                                                              | Notes                                    |
|------------------------------|-------|--------------------------------------------------------------|------------------------------------------|
| GP (COM1)<br>IPC*1*2         | A     | OMRON SYSMAC link cable by Pro-face<br>CA3-CBLSYS-01 (5m)    | The cable length must be<br>15m or less. |
|                              | B     | XW2Z-200S-V (2m) or XW2Z-500S-V (5m)<br>by OMRON Corporation |                                          |
|                              | C     | Your own cable                                               |                                          |

\*1 Usable ports are different by the series.

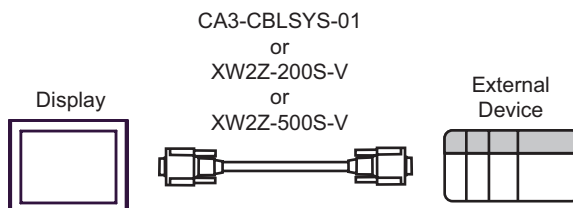
☞ Usable port (page 29)

\*2 When use the COM3 of PS -3700A (Pentium®4-M) , set the SIO type of COM3 with Dip switch.

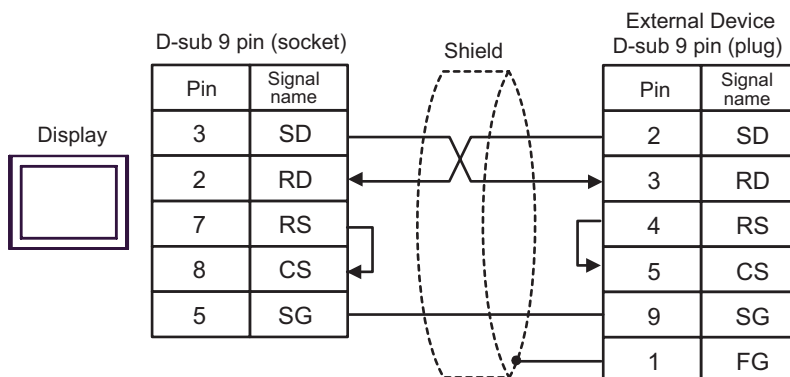
☞ Dip switch setting: RS-232C (page 29)

A) When using OMRON SYSMAC link cable (CA3-CBLSYS-01) by Pro-face

B) When using XW2Z-200S-V or XW2Z-500S-V by OMRON Corporation



C) When using your own cable



Cable Diagram 2

| Display<br>(Connection Port)     | Cable |                                                                                   | Notes                                    |
|----------------------------------|-------|-----------------------------------------------------------------------------------|------------------------------------------|
| GP (COM1)<br>IPC <sup>*1*2</sup> | A     | CS1W-CN225 (2m) or CS1W-CN625 (6m)<br>by OMRON Corporation<br>+<br>Your own cable | The cable length must be<br>15m or less. |
|                                  | B     | CS1W-CN226 (2m) or CS1W-CN626 (6m)<br>by OMRON Corporation<br>+<br>Your own cable |                                          |

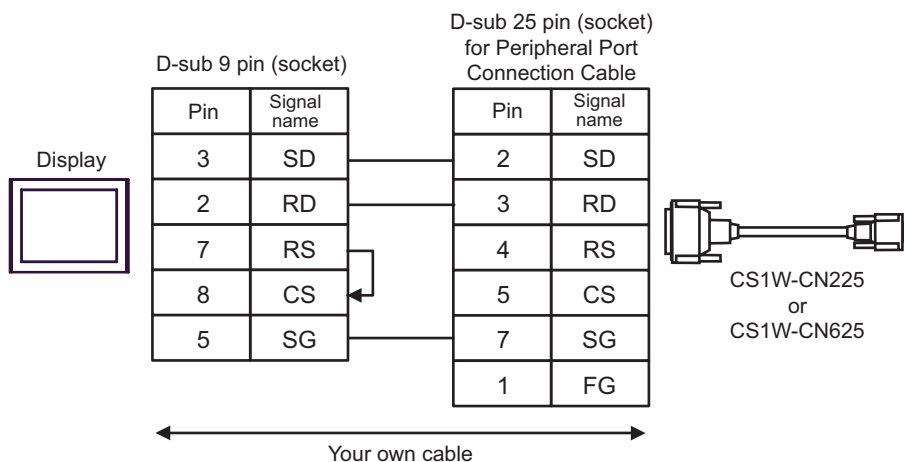
\*1 Usable ports are different by the series.

☞ Usable port (page 29)

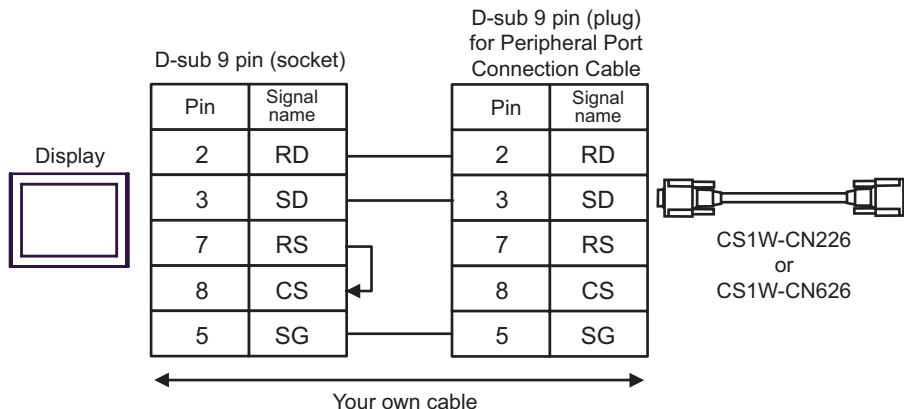
\*2 When use the COM3 of PS -3700A (Pentium®4-M) , set the SIO type of COM3 with Dip switch.

☞ Dip switch setting: RS-232C (page 29)

A) When using CS1W-CN225 or CS1W-CN625 by OMRON Corporation or your own cable



B) When using CS1W-CN226 or CS1W-CN626 by OMRON Corporation or your own cable



Cable Diagram 3

| Display<br>(Connection Port)                                            | Cable |                                                                                                                                                                     | Notes                                     |
|-------------------------------------------------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| GP <sup>*1</sup> (COM1)<br>AGP-3302B (COM2)<br>IPC <sup>*2</sup> (COM3) | A     | COM port conversion adapter by Pro-face<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-01<br>+<br>Your own cable | The cable length must<br>be 500m or less. |
|                                                                         | B     | Your own cable                                                                                                                                                      |                                           |
| GP <sup>*3</sup> (COM2)                                                 | C     | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter<br>by Pro-face<br>CA3-ADPTRM-0<br>+<br>Your own cable               |                                           |
|                                                                         | D     | Online adapter by Pro-face<br>CA4-ADPONL-01<br>+<br>Your own cable                                                                                                  |                                           |

\*1 All GP models except AGP-3302B

\*2 Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.

 Dip switch setting: RS-422/485 (4 wire) (page 30)

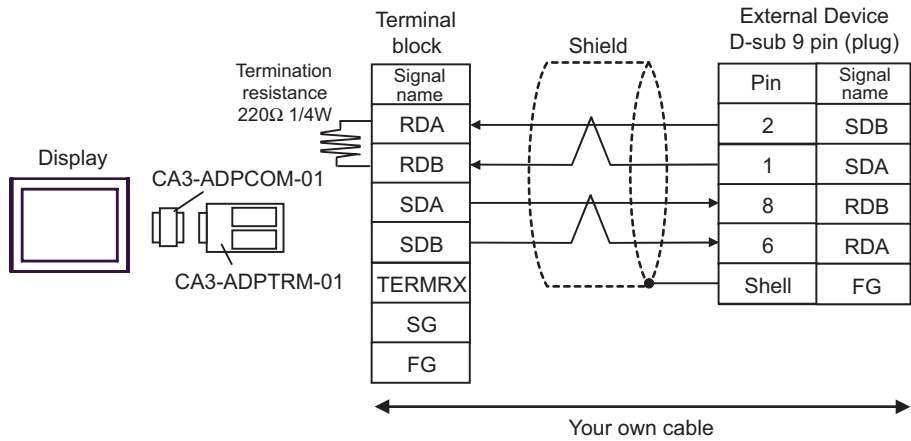
\*3 All GP models except GP-3200 series and AGP-3302B

**IMPORTANT**

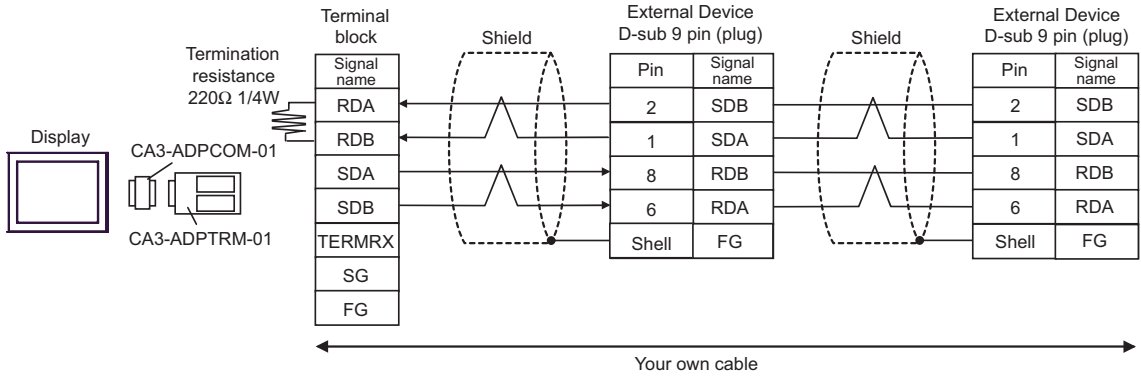
- Please turn ON the termination resistance switch on the PLC.
- Set the 2wire/4wire toggle switch to 4wire.
- Note that pole A and pole B are reversely named for the Display and the External Device.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

- 1:1 connection



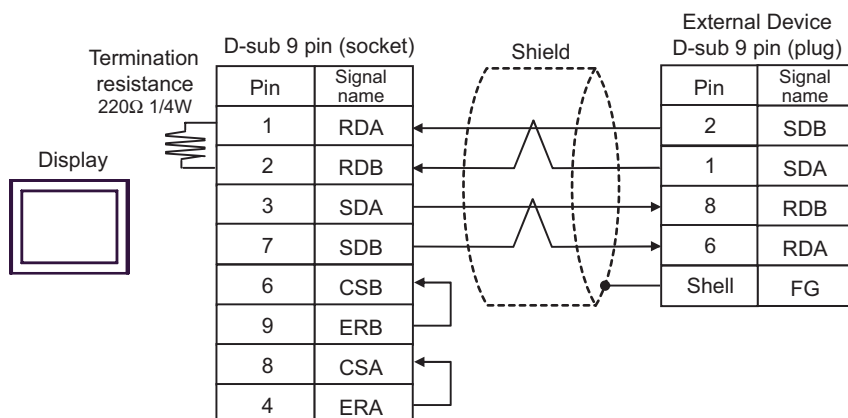
- 1:n connection



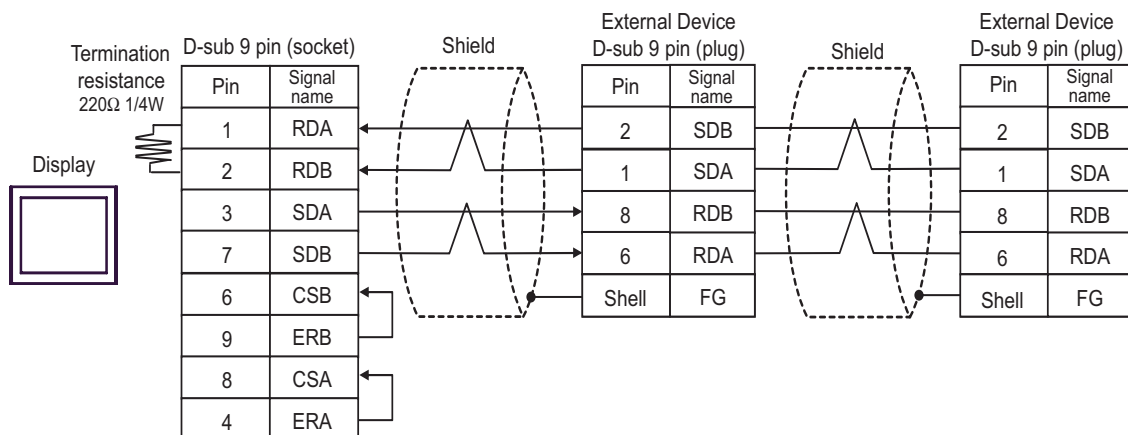
**NOTE** • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

## B) When using your own cable

- 1:1 connection



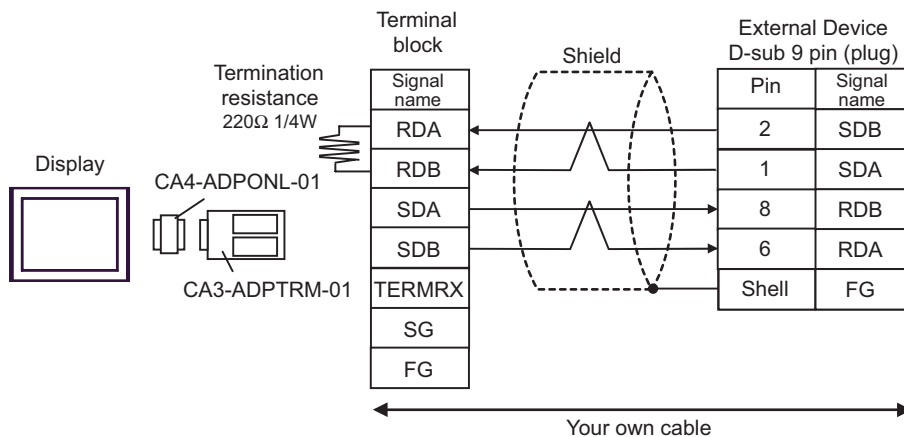
- 1:n connection

**NOTE**

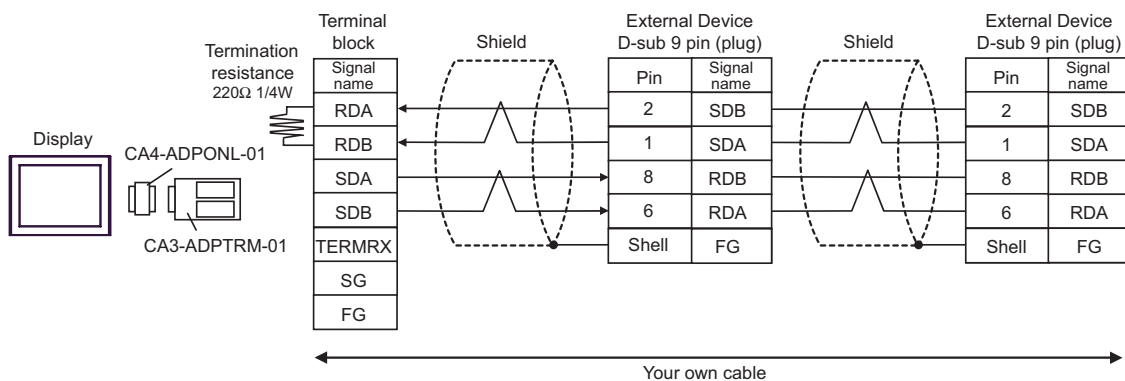
- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

- 1:1 connection

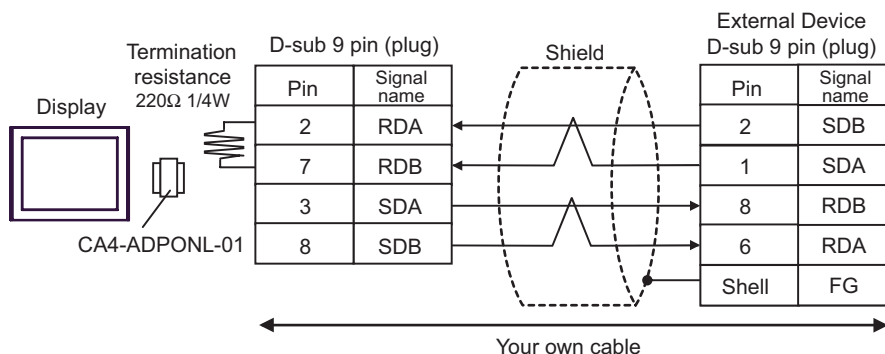


- 1:n connection

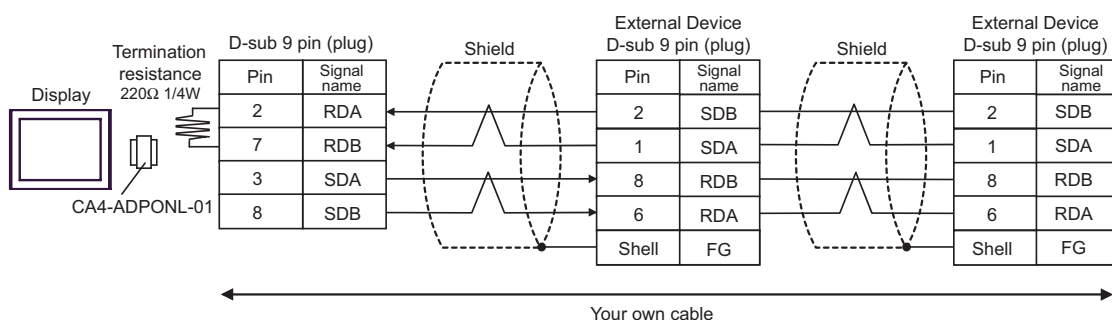


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

- 1:1 connection



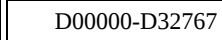
- 1:n connection



## 6 Supported Device

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.

 This address can be specified as system data area.

| Device                                  | Bit Address               | Word Address                                                                                    | 32bits                                                                             | Notes                                                                                         |
|-----------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Channel I/O                             | 0000.00-6143.15           | 0000-6143                                                                                       |  |                                                                                               |
| Internal Auxiliary Relay                | W000.00-W511.15           | W000-W511                                                                                       |                                                                                    |                                                                                               |
| Special Auxiliary Relay                 | A000.00-A959.15           | A000-A959                                                                                       |                                                                                    | *1                                                                                            |
| Latch Relay                             | H000.00-H511.15           | H000-H511                                                                                       |                                                                                    |                                                                                               |
| Timer<br>(Time Up Flag)                 | T0000-T4095               | -                                                                                               |                                                                                    | *2                                                                                            |
| Counter<br>(Count Up Flag)              | C0000-C4095               | -                                                                                               |                                                                                    | *2                                                                                            |
| Timer (Current Value)                   | -                         | T0000-T4095                                                                                     |                                                                                    |                                                                                               |
| Counter (Current Value)                 | -                         | C0000-C4095                                                                                     |                                                                                    |                                                                                               |
| Data Memory                             | D00000.00-D32767.15       |  D00000-D32767 |                                                                                    | *3                                                                                            |
| Extension Data Memory<br>(E0-EC)        | E000000.00-<br>EC32767.15 | E000000-EC32767                                                                                 |                                                                                    | *4*5                                                                                          |
| Extension Data Memory<br>(Current Bank) | -                         | EM00000-EM32767                                                                                 |                                                                                    | <br>*5*6 |
| Task Flag<br>(Bit)                      | TKB00-TKB31               | -                                                                                               |                                                                                    | *2                                                                                            |
| Task Flag<br>(Status)                   | TK00.00-TK31.07           | TK00-TK30                                                                                       |                                                                                    | <br>*2   |
| Index Register                          | -                         | IR00-IR15                                                                                       |                                                                                    | <br>*7   |
| Data Register                           | -                         | DR00-DR15                                                                                       |                                                                                    | <br>*7   |

\*1 Write disable in A000 to A447.

\*2 Write disable

\*3 When using the communication unit (CS1W-SCU21), do not use the address of D30000 to D31599. When using the communication board (CS1W-SCU21/41), do not use the address of D32000 to D32767. These addresses may be used as the system setting area on the External Device.

\*4 Max 13 banks (E0 to EC) can be used. 1 bank can contain 32768 words. Available bank number is different depending on the CPU unit.

\*5 CJM1 Series does not include the extension data memory (E0 to EC, current bank EM).

\*6 CJ Series does not include the extension data memory (current bank EM).

\*7 You cannot write during RUN.

**NOTE**

- Please refer to the GP-Pro EX Reference Manual for system data area.  
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"
  - 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 & Address" for the address type in data displays.

| Device                                  | Device Name | Device Code (HEX) | Address Code |
|-----------------------------------------|-------------|-------------------|--------------|
| Channel I/O                             | -           | 0080              | Word Address |
| Internal Auxiliary Relay                | W           | 0082              | Word Address |
| Special Auxiliary Relay                 | A           | 0085              | Word Address |
| Latch Relay                             | H           | 0084              | Word Address |
| Timer (Current Value)                   | T           | 0060              | Word Address |
| Counter (Current Value)                 | C           | 0061              | Word Address |
| Data Memory                             | D           | 0000              | Word Address |
| Extension Data Memory<br>(E0-EC)        | E0          | 0010              | Word Address |
|                                         | E1          | 0011              | Word Address |
|                                         | E2          | 0012              | Word Address |
|                                         | E3          | 0013              | Word Address |
|                                         | E4          | 0014              | Word Address |
|                                         | E5          | 0015              | Word Address |
|                                         | E6          | 0016              | Word Address |
|                                         | E7          | 0017              | Word Address |
|                                         | E8          | 0018              | Word Address |
|                                         | E9          | 0019              | Word Address |
|                                         | EA          | 001A              | Word Address |
|                                         | EB          | 001B              | Word Address |
|                                         | EC          | 001C              | Word Address |
| Extension Data Memory<br>(Current Bank) | EM          | 0001              | Word Address |
| Task Flag<br>(Status)                   | TK          | 0002              | Word Address |
| Index Register                          | IR          | 0003              | Word Address |
| Data Register                           | DR          | 0004              | Word Address |

## 8 Error Messages

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

| Item                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No.                   | Error No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Device Name           | Name of External Device where error occurs. Name of External Device is a title of External Device set with GP-Pro EX. (Initial value [PLC1])                                                                                                                                                                                                                                                                                                                                                        |
| Error Message         | Displays messages related to the error which occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Error Occurrence Area | <p>Displays IP address or device address of External Device where error occurs, or error codes received from External Device.</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"><b>NOTE</b></div> <ul style="list-style-type: none"> <li>IP address is displayed such as "IP address(Decimal): MAC address( Hex)".</li> <li>Device address is displayed such as "Address: Device address".</li> <li>Received error codes are displayed such as "Decimal[Hex]".</li> </ul> |

Display Examples of Error Messages

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

**NOTE**

- Please refer to the manual of External Device for more detail of received error codes.
- Please refer to "When an error message is displayed (Error code list)" of "Maintenance/Troubleshooting" for a common error message to the driver.

