Sharp Manufacturing Systems Corporation

# JW Series Computer Link SIO Driver


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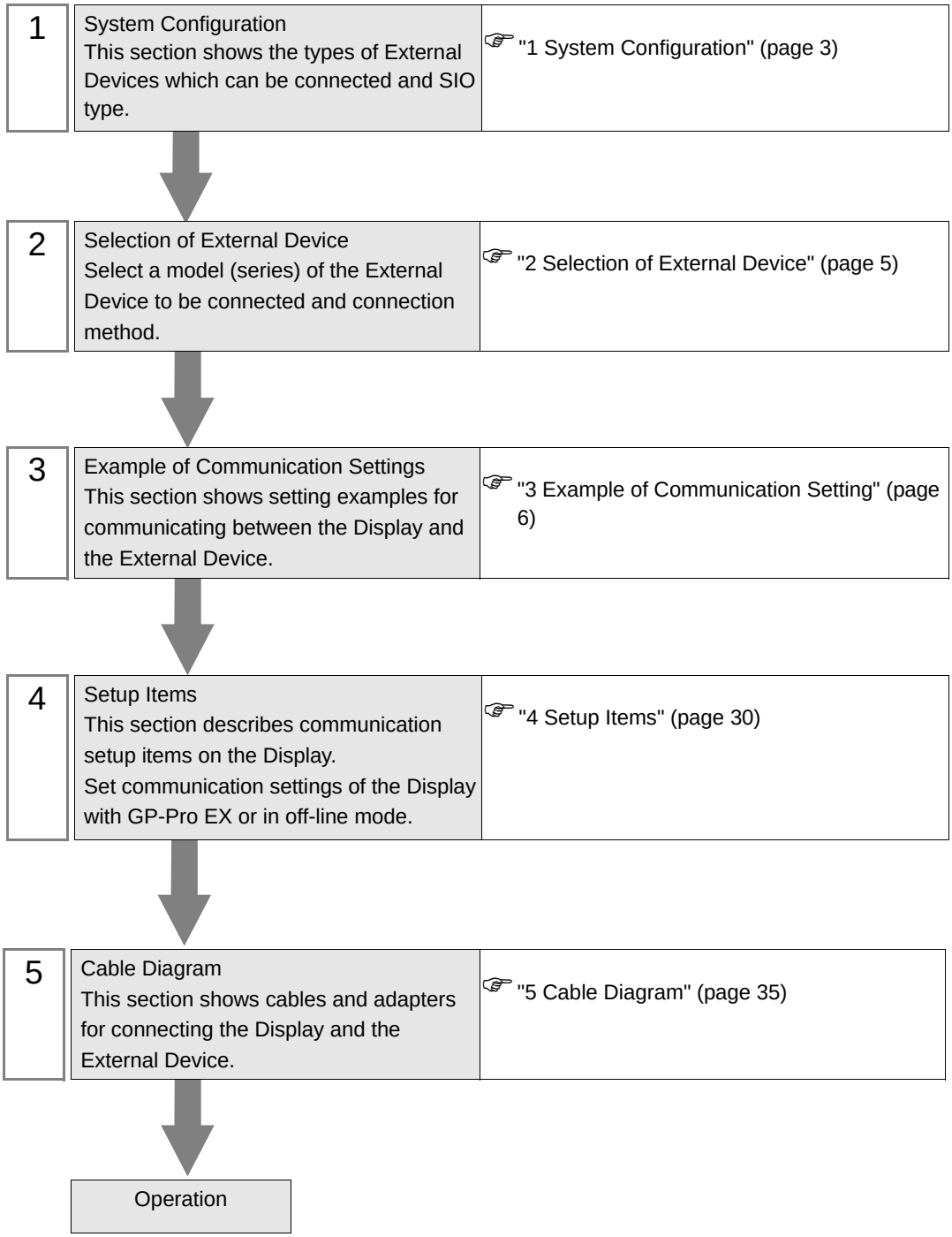
## Introduction

This manual describes how to connect the Display (GP3000 series) and the External Device.

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 Sharp Manufacturing Systems Corporation and the Display are connected is shown.

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|---|---|---|---|---|---|
| JW20H | JW-21CUH | JW-21CM[*1] | RS422/485 (4wire) | Setting Example 1 (page 6) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 2 (page 8) | Cable Diagram 2 (page 39) |
| | JW-22CUH | Communication port on the CPU unit | RS232C | Setting Example 3 (page 10) | Cable Diagram 3 (page 43) |
| | | | RS422/485 (4wire) | Setting Example 4 (page 12) | Cable Diagram 4 (page 44) |
| | | JW-21CM[*1] | RS422/485 (4wire) | Setting Example 1 (page 6) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 2 (page 8) | Cable Diagram 2 (page 39) |
| JW30H | JW-31CUH1 | JW-21CM[*1] | RS422/485 (4wire) | Setting Example 1 (page 6) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 2 (page 8) | Cable Diagram 2 (page 39) |
| | JW-32CUH1<br>JW-32CUM1<br>JW-32CUM2<br>JW-33CUH1<br>JW-33CUH2<br>JW-33CUH3 | PG/COMM1 on the CPU unit | RS422/485 (4wire) | Setting Example 5 (page 14) | Cable Diagram 5 (page 48) |
| | | PG/COMM2 on the CPU unit | RS232C | Setting Example 6 (page 16) | Cable Diagram 6 (page 52) |
| | | | RS422/485 (4wire) | Setting Example 7 (page 18) | Cable Diagram 5 (page 48) |
| | | JW-21CM[*1] | RS422/485 (4wire) | Setting Example 1 (page 6) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 2 (page 8) | Cable Diagram 2 (page 39) |

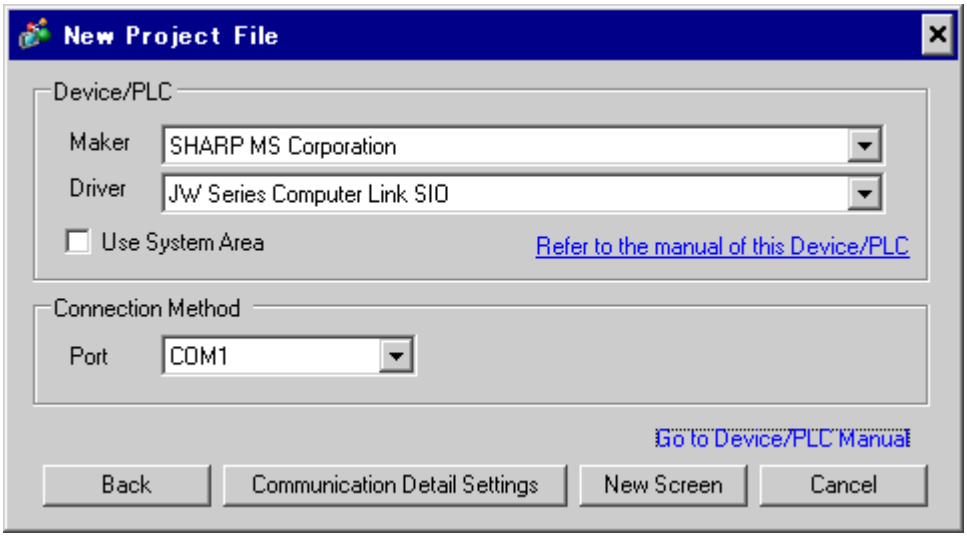
| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|---|---|---|---|---|---|
| JW50H<br>JW70H<br>JW100 | JW-50CUH | JW-10CM | RS422/485 (4wire) | Setting Example 8 (page 20) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 9 (page 22) | Cable Diagram 2 (page 39) |
| | JW-70CUH<br>JW-100CUH | Communication port on the CPU unit | RS232C | Setting Example 10 (page 24) | Cable Diagram 3 (page 43) |
| | | | RS422/485 (4wire) | Setting Example 11 (page 26) | Cable Diagram 7 (page 53) |
| | | JW-10CM | RS422/485 (4wire) | Setting Example 8 (page 20) | Cable Diagram 1 (page 35) |
| | | | RS422/485 (2wire) | Setting Example 9 (page 22) | Cable Diagram 2 (page 39) |
| JW10 | JW-1324K<br>JW-1424K<br>JW-1624K<br>JW-1342K<br>JW-1442K<br>JW-1642K | Communication port on the base module | RS422/485 (2wire) | Setting Example 12 (page 28) | Cable Diagram 8 (page 57) |

*1 Note that some of them cannot be used or the range of use is restricted depending on the version of the link unit JW-21CM.

| Version sticker on the front of the unit | Restriction of use |
|---|---|
| 30Hn | Available to use without restriction |
| 30H | Unable to read or write the file register 10 to 2C<br>Unable to read or write the file register address 100000 to 176777 |
| Without sticker | Unable to use in the JW30H Series |

# 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 "Sharp MS Corporation". |
| Series | Select a model (series) of the External Device to be connected and connection method. Select "JW Series Computer Link SIO".<br>Check the External Device which can be connected in "JW Series Computer Link SIO" in system configuration.<br>☞"1 System Configuration" (page 3) |
| Use System Area | Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display.<br>Cf. GP-Pro EXReference 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 the Display.<br>Cf. GP-Pro EX Reference Manual "6.13.6[ Setting Guide of [System Setting Window], Setting Guide of [Main Unit Settings], System Area Setting"<br>Cf. GP3000 Series User's Manual "4.3.6 System Area Setting" |
| Port | Select the Display port to be connected to the External Device. |

# 3 Example of Communication Setting

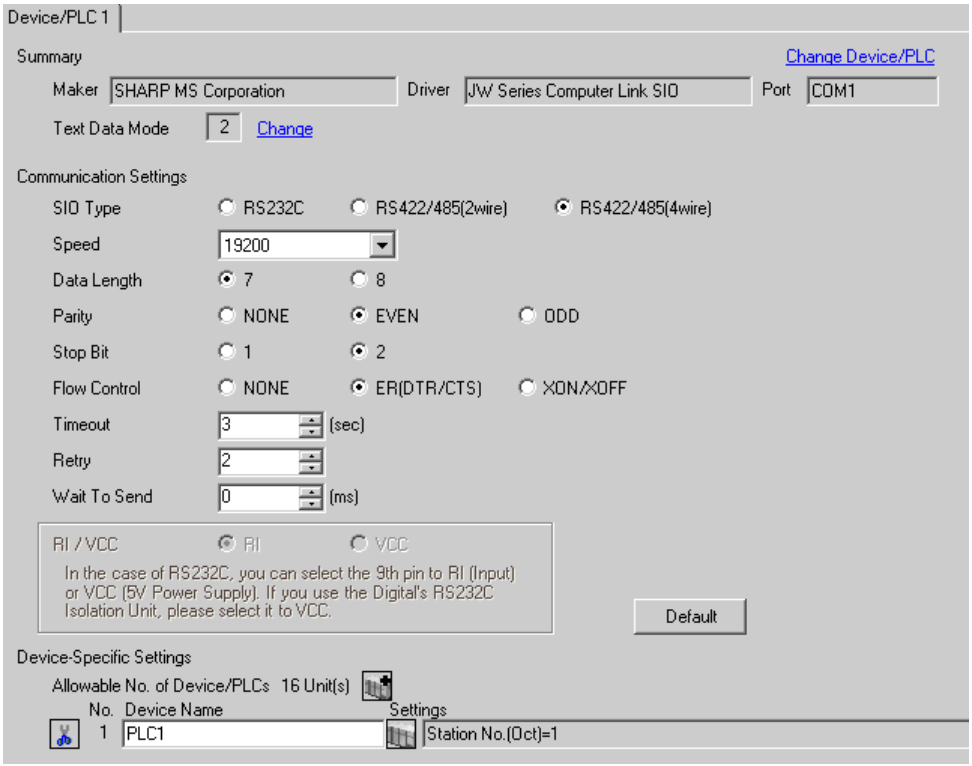
Examples of communication settings of the Display and the External Device, recommended by Digital Electronics Corp., are shown.

## 3.1 Setting Example 1

### ■ Settings of GP-Pro EX

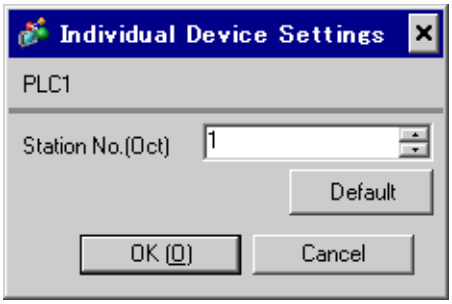
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Use the rotary switch on Link I/F for setting. Please refer to the manual of the External Device for more details.
Restart the power of the External Device after setting the switch to enable the setting.

◆ Function Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW0 | 4 | SIO Type: Computer link |

◆ Station Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW2 (x10) | 0 | Station No. setting: Set the upper station number. |
| SW1 (x1) | 1 | Station No. setting: Set the lower station number. |

**NOTE** • Set the station No. between 01 and 37 (o) with SW2 and SW1.

◆ Operation ModeSetting Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW3-1 | OFF | Reserved |
| SW3-2 | ON | Number of communication wire: 4 wire |
| SW3-3 | OFF | Reserved |
| SW3-4 | ON | Parity: Even |

◆ Transfer Speed Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW4 | 0 | Transmission speed: 19200bps |

◆ Termination Resistance Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW7 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

◆ Unit No. Switch

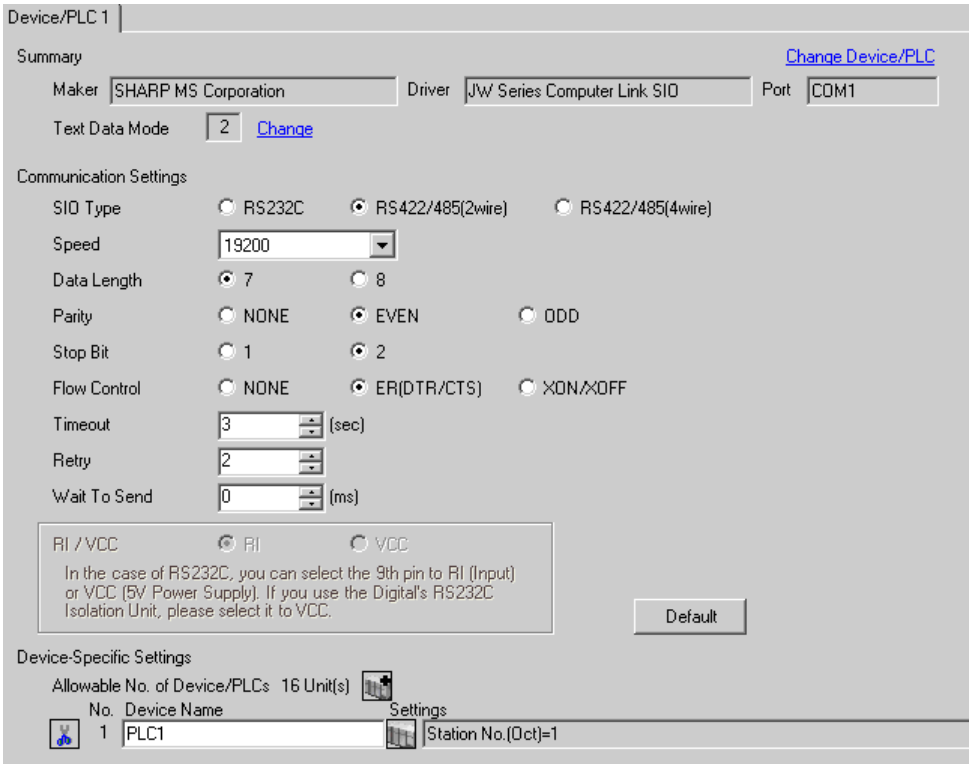
| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW8 | 0 | Set the data memory address for sub station 01 to 04. |

## 3.2 Setting Example 2

### ■ Settings of GP-Pro EX

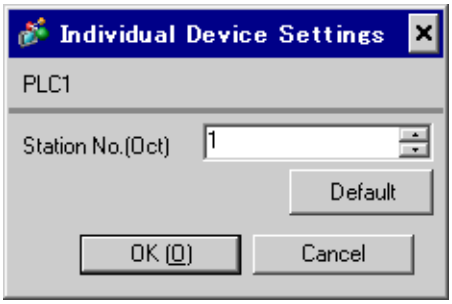
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Use the rotary switch on Link I/F for setting. Please refer to the manual of the External Device for more details. Restart the power of the External Device after setting the switch to enable the setting.

◆ Function Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW0 | 4 | SIO Type: Computer link |

◆ Station Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW2 (x10) | 0 | Station No. setting: Set the upper station number. |
| SW1 (x1) | 1 | Station No. setting: Set the lower station number. |

**NOTE** • Set the station No. between 01 and 37 (o) with SW2 and SW1.

◆ Operation ModeSetting Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW3-1 | OFF | Reserved |
| SW3-2 | OFF | Number of communication wire: 2 wire |
| SW3-3 | OFF | Reserved |
| SW3-4 | ON | Parity: Even |

◆ Transfer Speed Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW4 | 0 | Transfer Speed: 19200 bps |

◆ Termination Resistance Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW7 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

◆ Unit No. Switch

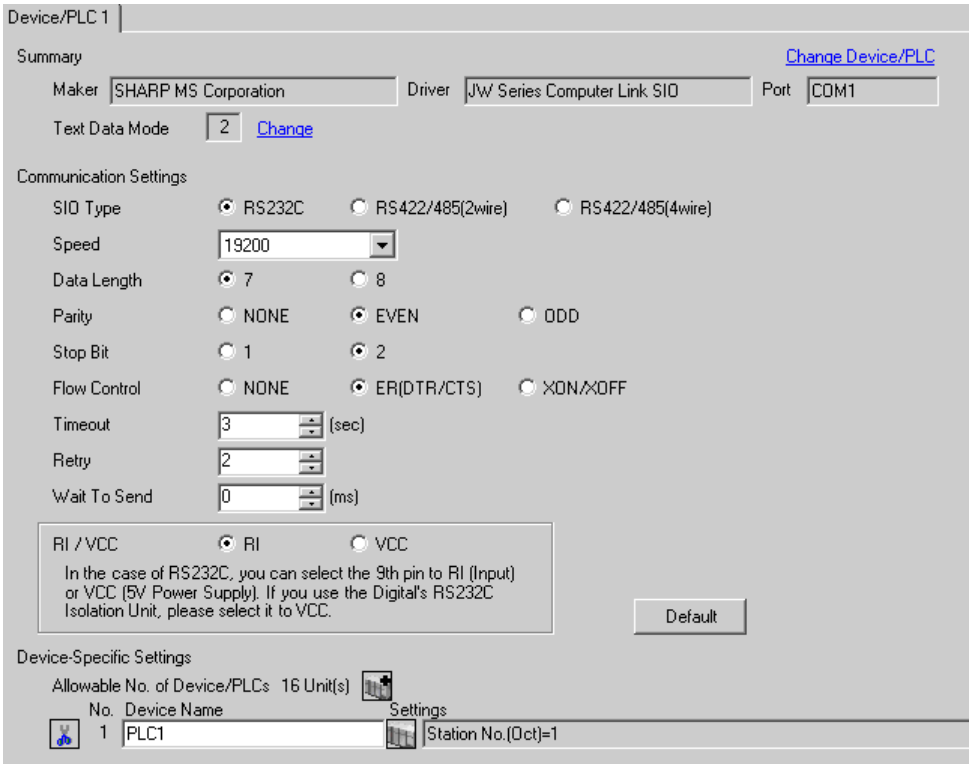
| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW8 | 0 | Set the data memory address for sub station 01 to 04. |

## 3.3 Setting Example 3

### ■ Settings of GP-Pro EX

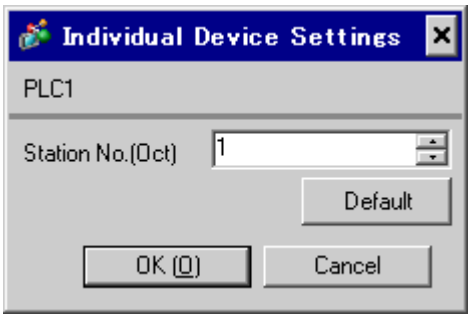
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #237

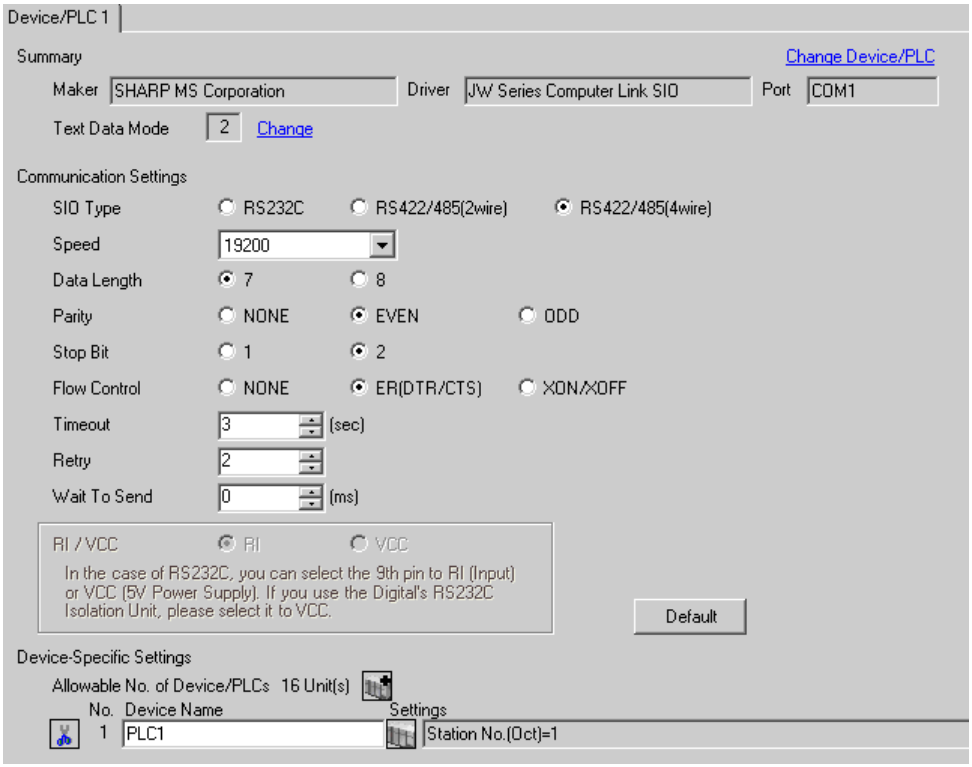
| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #237 | 1(o) | Station No. setting. Enter in octal number. |

## 3.4 Setting Example 4

### ■ Settings of GP-Pro EX

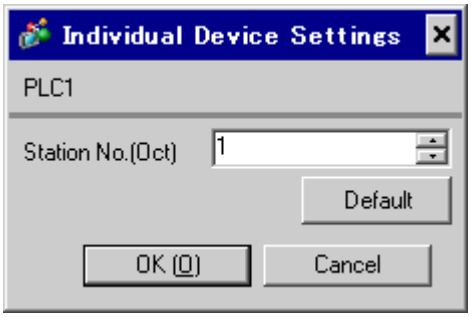
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #237

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #237 | 1(o) | Station No. setting. Enter in octal number. |

◆ Termination Resistance Switch

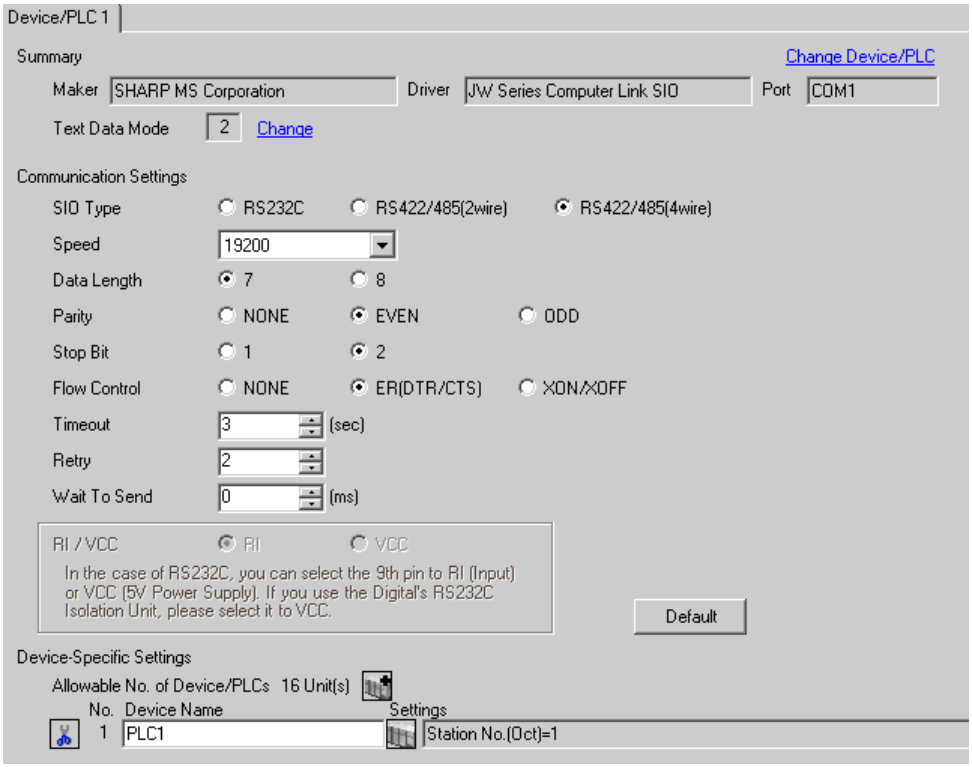
| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW1 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

## 3.5 Setting Example 5

### ■ Settings of GP-Pro EX

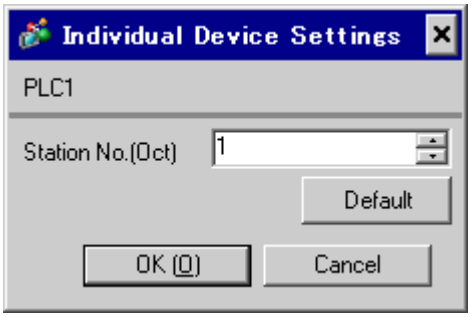
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #234

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #234 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #235

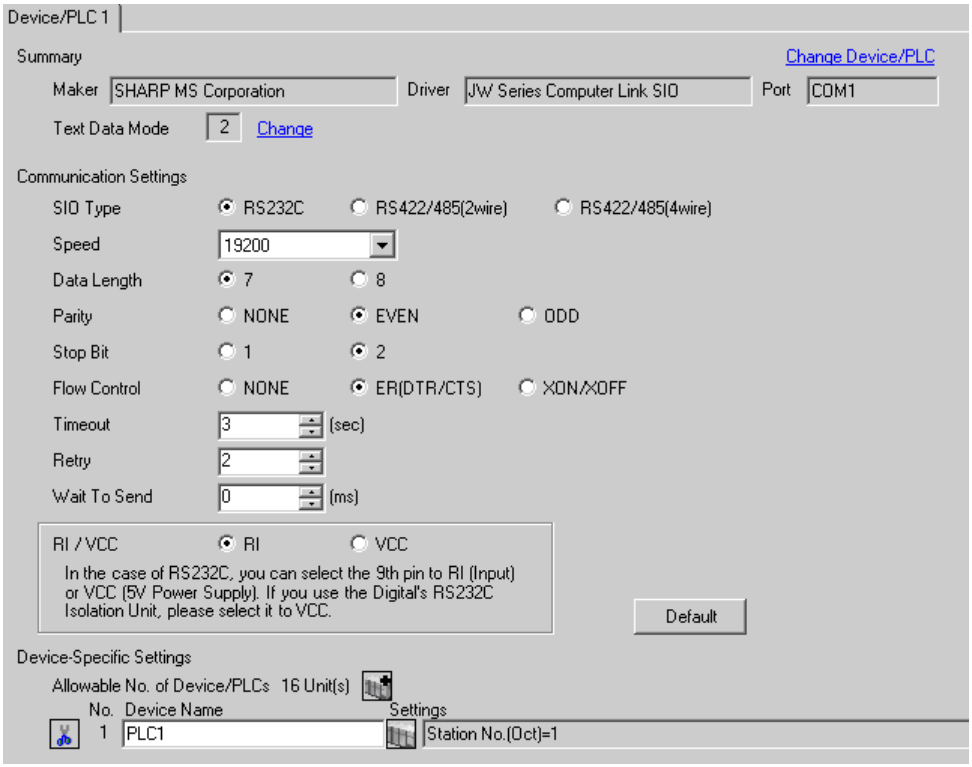
| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #235 | 1(o) | Station No. setting. Enter in octal number. |

## 3.6 Setting Example 6

### ■ Settings of GP-Pro EX

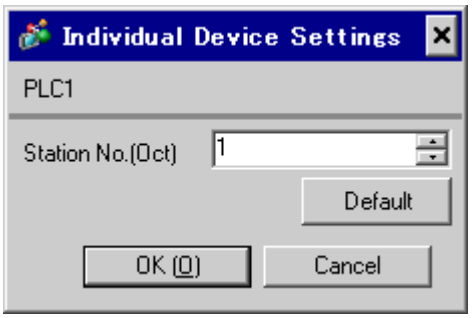
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #237

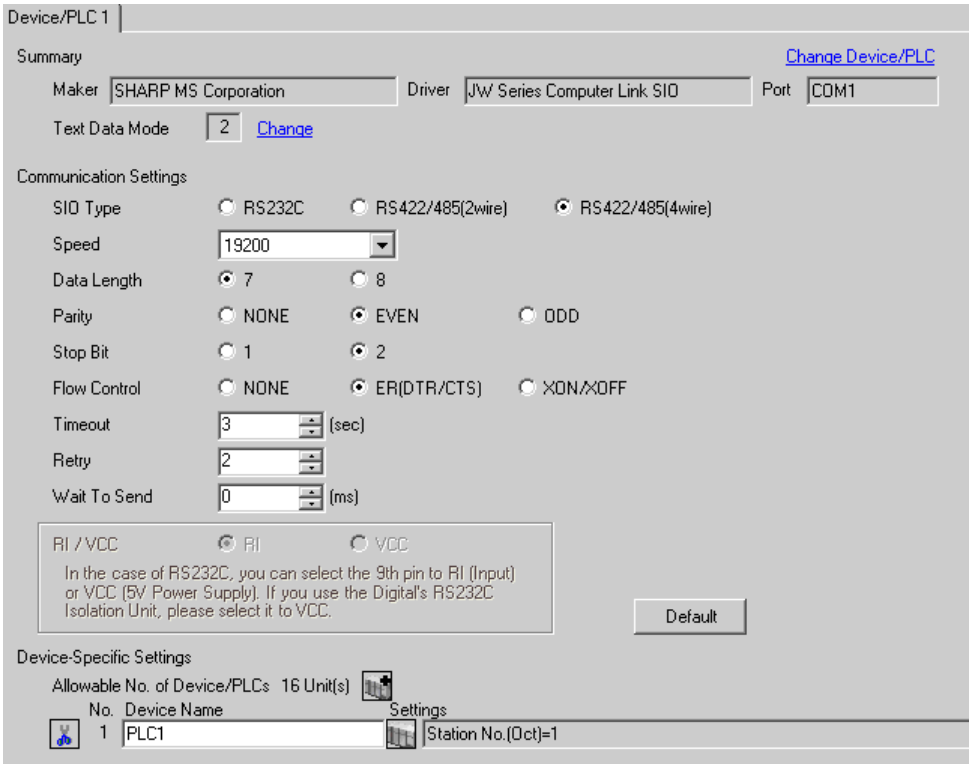
| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #237 | 1(o) | Station No. setting. Enter in octal number. |

## 3.7 Setting Example 7

### ■ Settings of GP-Pro EX

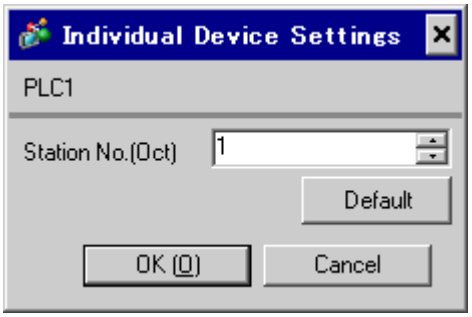
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #237

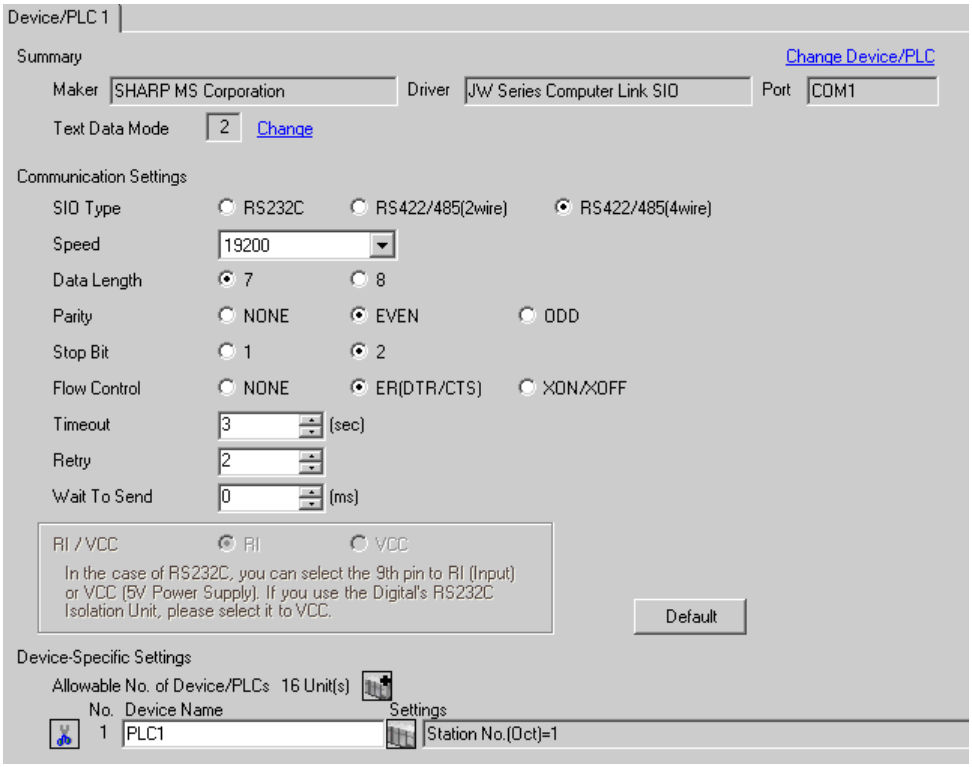
| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #237 | 1(o) | Station No. setting. Enter in octal number. |

## 3.8 Setting Example 8

### ■ Settings of GP-Pro EX

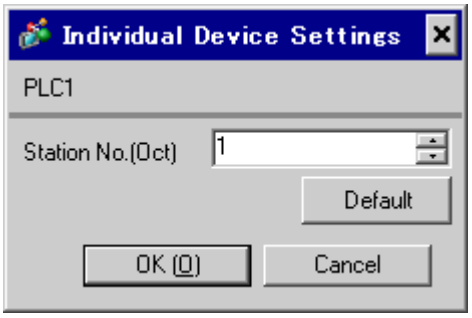
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Use the rotary switch on Link I/F for setting. Please refer to the manual of the External Device for more details. Restart the power of the External Device after setting the switch to enable the setting.

◆ Function Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW0 | 4 | SIO Type: Computer link |

◆ Station Address Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW2 | 0 | Station No. setting: Set the upper station number. |
| SW1 | 1 | Station No. setting: Set the lower station number. |

**NOTE**
- Set the station No. between 01 and 37 (o) with SW2 and SW1.

◆ Operation ModeSetting Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW3-1 | OFF | Reserved |
| SW3-2 | ON | Number of communication wire: 4 wire |
| SW3-3 | OFF | Reserved |
| SW3-4 | ON | Parity: Even |

◆ Transfer SpeedSetting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW4 | 0 | Transfer Speed: 19200 bps |

◆ Termination Resistance Switch

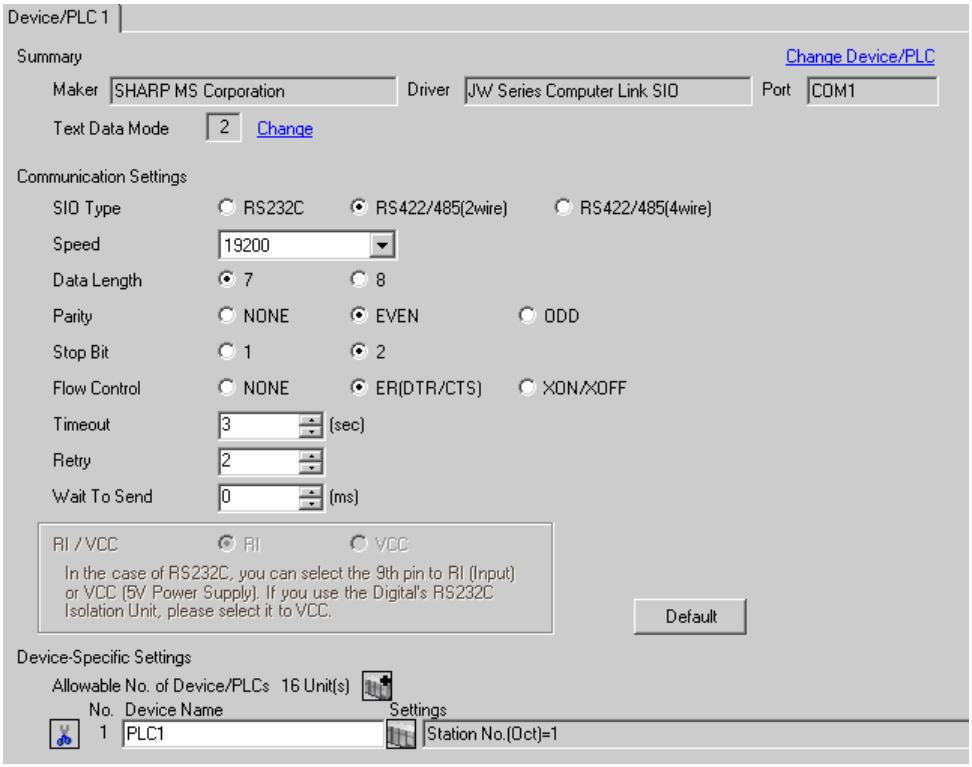
| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW7 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

## 3.9 Setting Example 9

### ■ Settings of GP-Pro EX

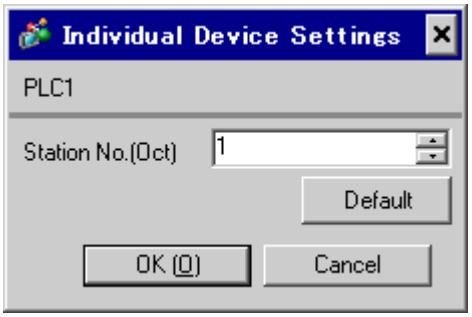
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Use the rotary switch on Link I/F for setting. Please refer to the manual of the External Device for more details. Restart the power of the External Device after setting the switch to enable the setting.

◆ Function Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW0 | 4 | SIO Type: Computer link |

◆ Station Address Setting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW2 | 0 | Station No. setting: Set the upper station number. |
| SW1 | 1 | Station No. setting: Set the lower station number. |

**NOTE**
- Set the station No. between 01 and 37 (o) with SW2 and SW1.

◆ Operation ModeSetting Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW3-1 | OFF | Reserved |
| SW3-2 | OFF | Number of communication wire: 2 wire |
| SW3-3 | OFF | Reserved |
| SW3-4 | ON | Parity: Even |

◆ Transfer SpeedSetting Switch

| Rotary Switch | Setting Value | Setup Description |
|---|---|---|
| SW4 | 0 | Transfer Speed: 19200 bps |

◆ Termination Resistance Switch

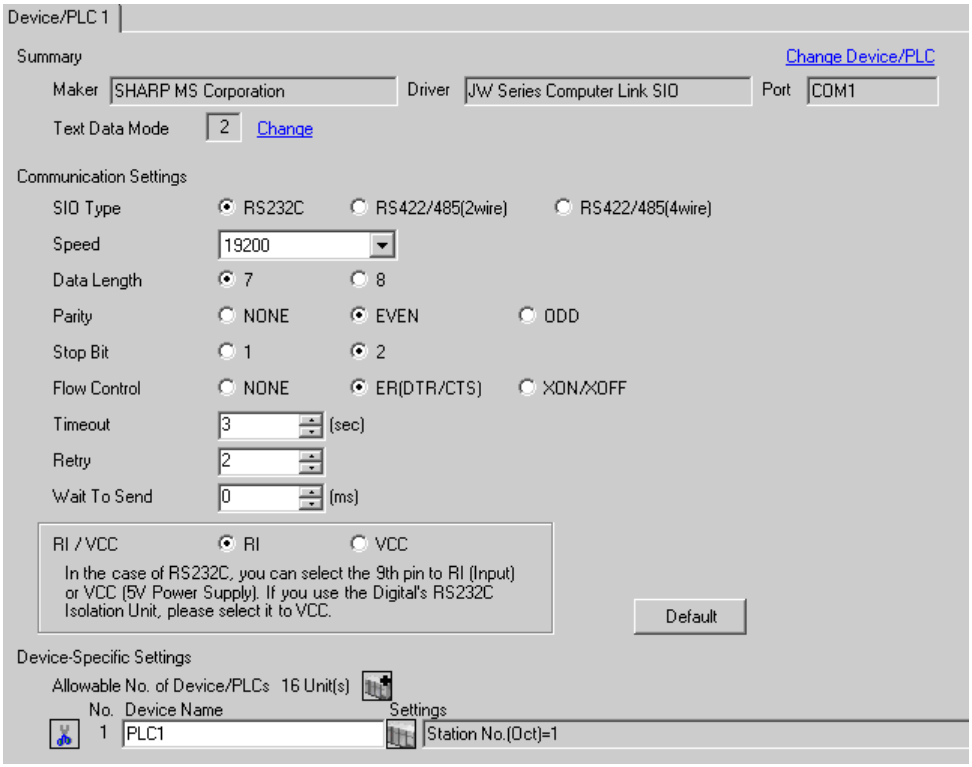
| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW7 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

## 3.10 Setting Example 10

### ■ Settings of GP-Pro EX

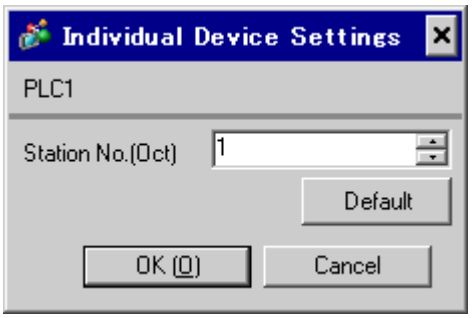
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #0236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #0236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #0237

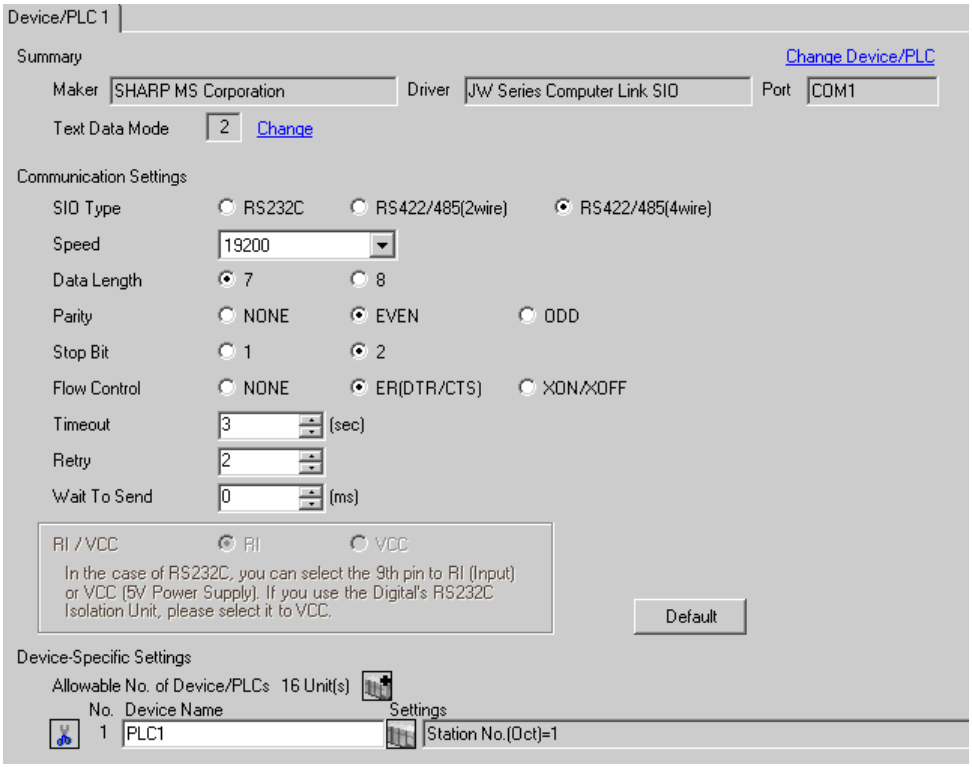
| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #0237 | 1(o) | Station No. setting. Enter in octal number. |

## 3.11 Setting Example 11

### ■ Settings of GP-Pro EX

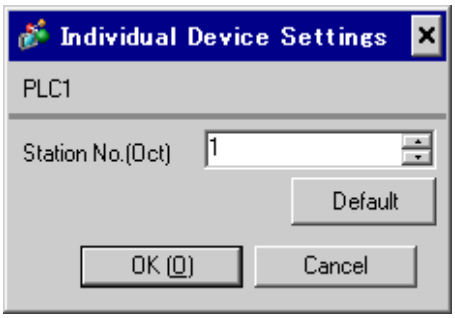
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #0236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #0236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Always OFF |

◆ Setting for #0237

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #0237 | 1(o) | Station No. setting. Enter in octal number. |

◆ Termination Resistance Switch

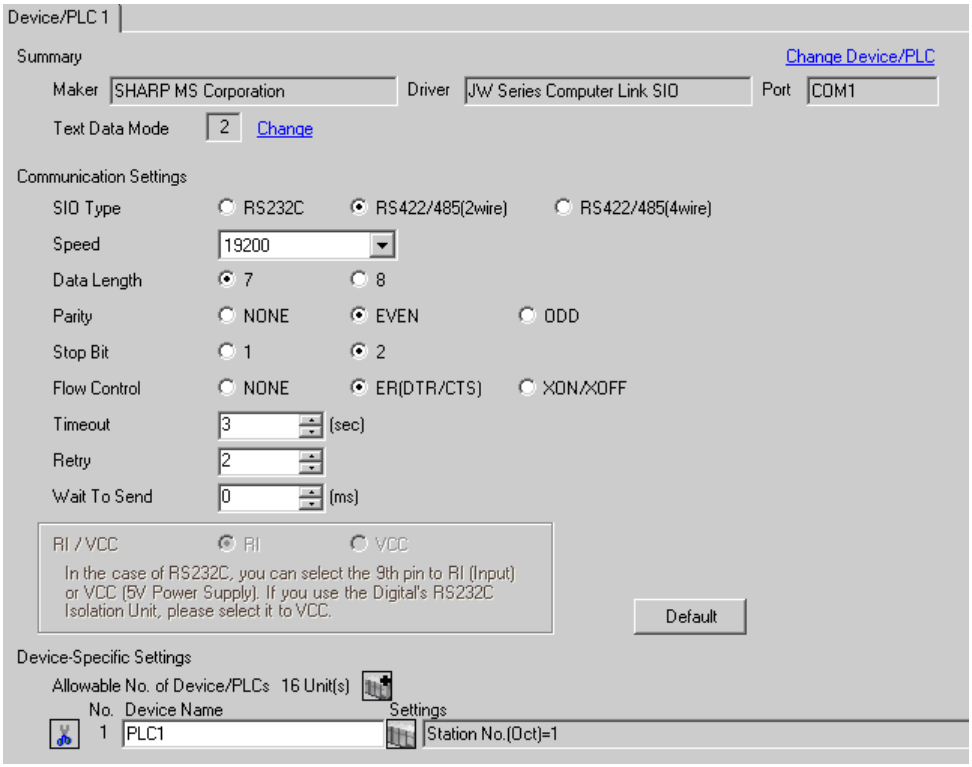
Insert the termination resistance at the end. Connecting the 6th and 13th pins in the port on the External Device allows the termination resistance to be inserted.

## 3.12 Setting Example 12

### ■ Settings of GP-Pro EX

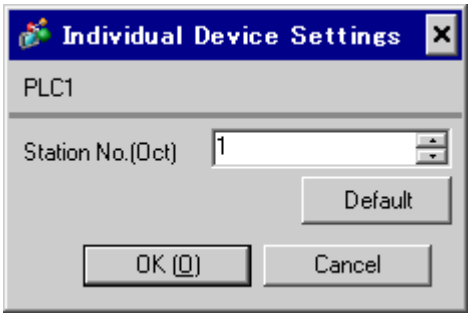
#### ◆ Communication Settings

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



◆ Device Setting

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




## ■ Settings of External Device

Set the bit of system memory in the External Device to ON or OFF. Please refer to the manual of the External Device for more details.

Restart the power of the External Device after setting to enable the setting.

◆ Setting for #234

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #234 | 00(H) | Communication mode setting: Computer link |

◆ Setting for #236

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #236 | 30(H) | Communication setting. Enter in hex number.<br>Description for each bit is shown below. |

- Description for Bit

| Bit in System Area | Setting Value | Setup Description |
|---|---|---|
| D0 | OFF | Transfer Speed: 19200 bps |
| D1 | OFF | |
| D2 | OFF | |
| D3 | OFF | Parity: Even |
| D4 | ON | |
| D5 | ON | Stop Bit: 2 bits |
| D6 | OFF | Always OFF |
| D7 | OFF | Data Length: 7 bits |

◆ Setting for #237

| Setting Area | Setting Value | Setup Description |
|---|---|---|
| #237 | 1(o) | Station No. setting. Enter in octal number. |

◆ Termination Resistance Switch

| DIP Switch | Setting Value | Setup Description |
|---|---|---|
| SW7 | ON | Insert the termination resistance: Set it to ON to insert the termination resistance.<br>Set only the External Device which terminates the connection to ON. |

# 4 Setup Items

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

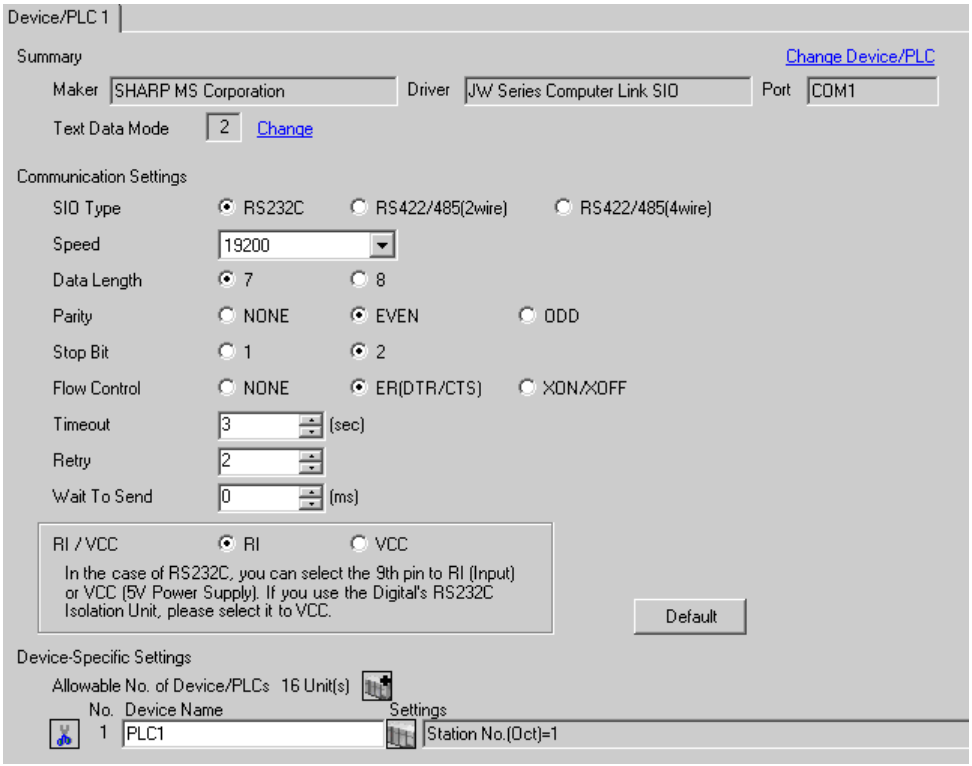
The setting of each parameter must be identical to that of External Device.

☞"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.




| 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. |

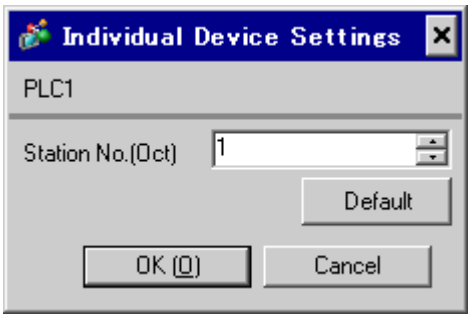
Continued to next page.

| 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. |
| RI/VCC | Switches RI/VCC of the 9th pin. |

## ■ Device Setting

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

When connecting multiple External Devices, you can click  from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.




| Setup Items | Setup Description |
|---|---|
| UnitNo. | Enter the unit No. of the External Device with "01 to 37" (octal).<br>**NOTE**<br>• When connecting the JW10 Series, enter with "0 to 77" (octal). |

## 4.2 Settings in Off-Line Mode

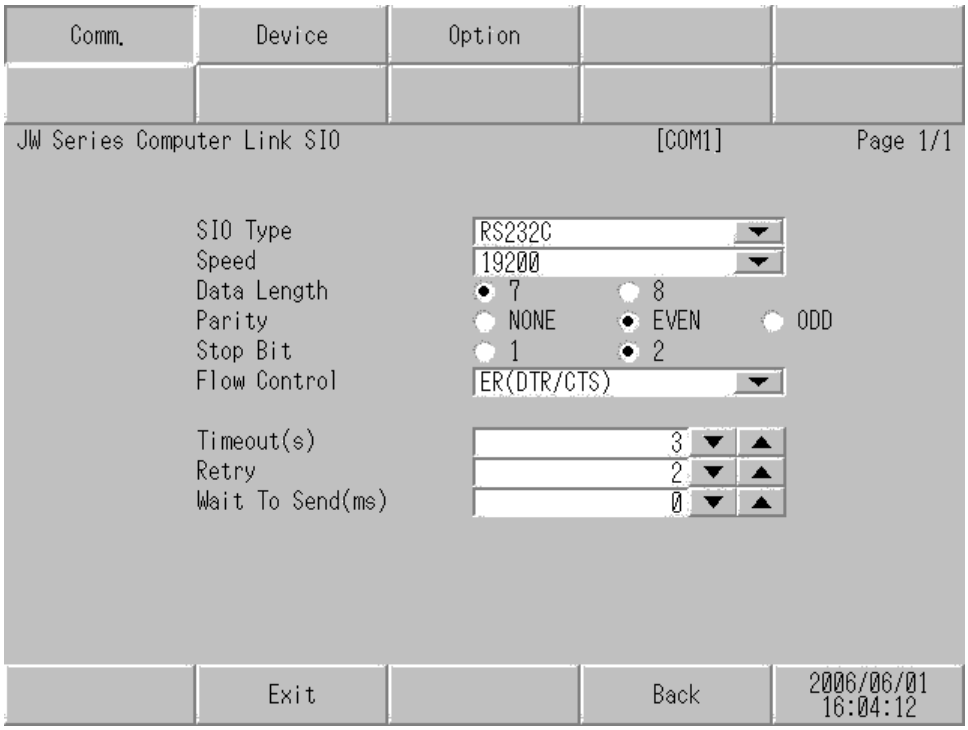
**NOTE**

- Please refer to GP3000 Series User's Manual for more information on how to enter off-line mode or about operation.

  Cf. GP3000 Series User's Manual "Chapter 4 Setting"

### ■ Communication Settings

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

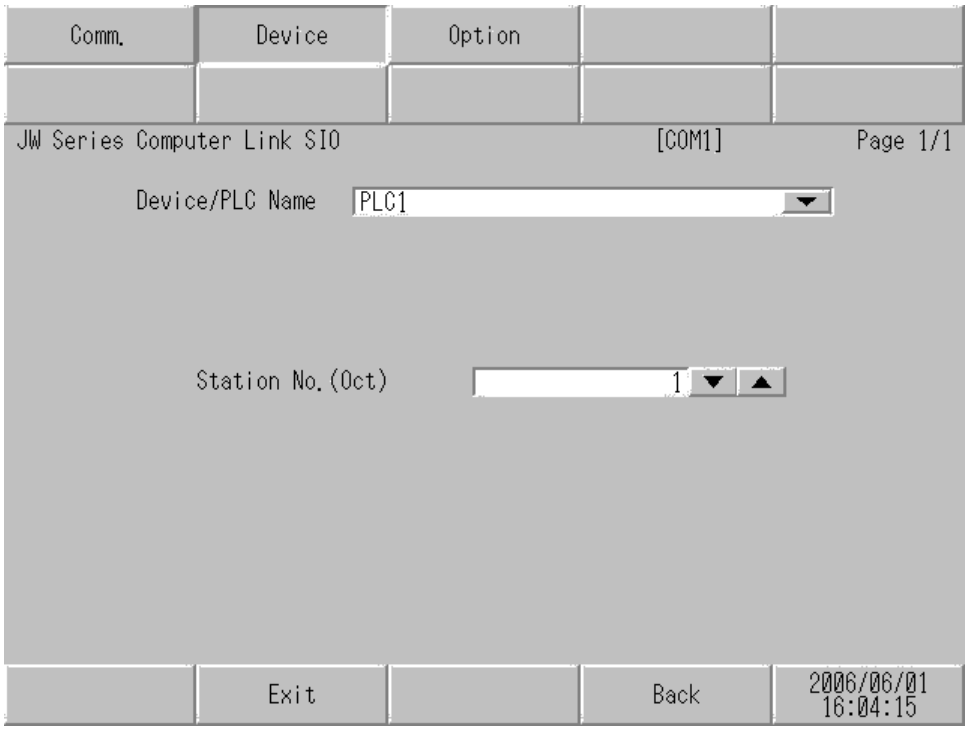



| Setup Items | Setup Description |
|---|---|
| SIO Type | Select the SIO type to communicate with the External Device. |
| Speed | Select speed between the External Device and the Display. |
| Data Length | Select data length. |
| Parity | Select how to check parity. |
| Stop Bit | Select stop bit length. |
| 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. |

| Setup Items | Setup Description |
|---|---|
| RI/VCC | Switches RI/VCC of the 9th pin. |

## ■ Device Setting

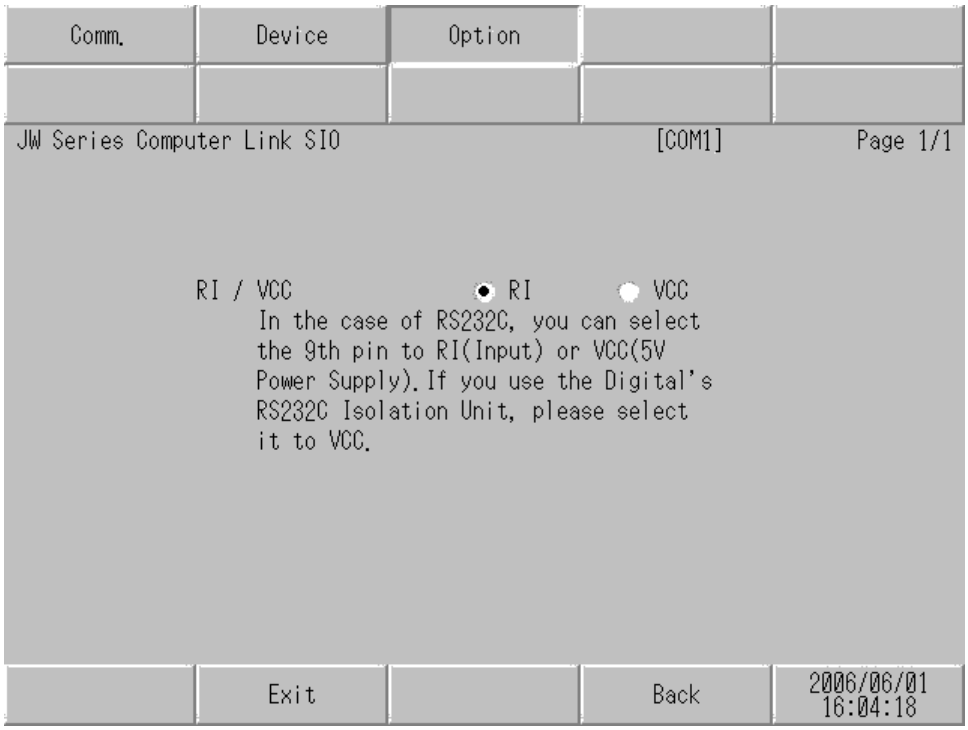
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].




| Setup Items | Setup Description |
|---|---|
| Device name | Select the External Device to set. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1]) |
| UnitNo. | Enter the unit No. of the External Device with "01 to 37" (octal).<br>**NOTE**<br>• When connecting the JW10 Series, enter with "0 to 77" (octal). |

## ■ Option

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




| Setup Items | Setup Description |
|---|---|
| RI/VCC | Switches RI/VCC of the 9th pin. |

# 5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Sharp Manufacturing Systems 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.

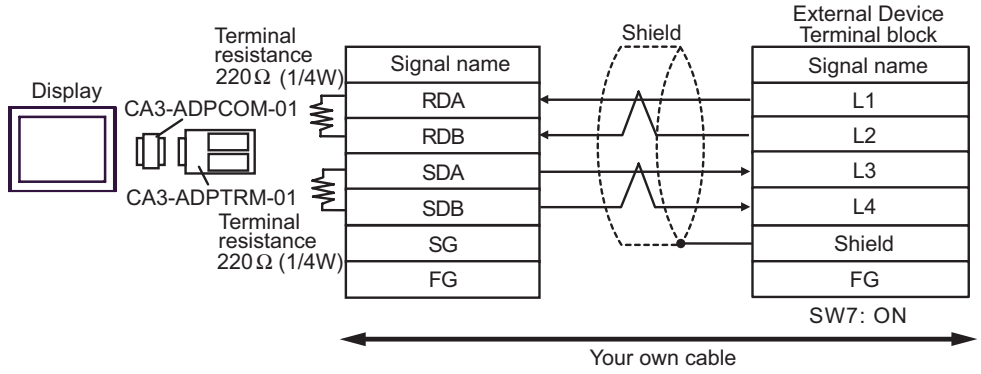
Cable Diagram 1

| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1<br>AGP-3302<br>(COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length:<br>1000m or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

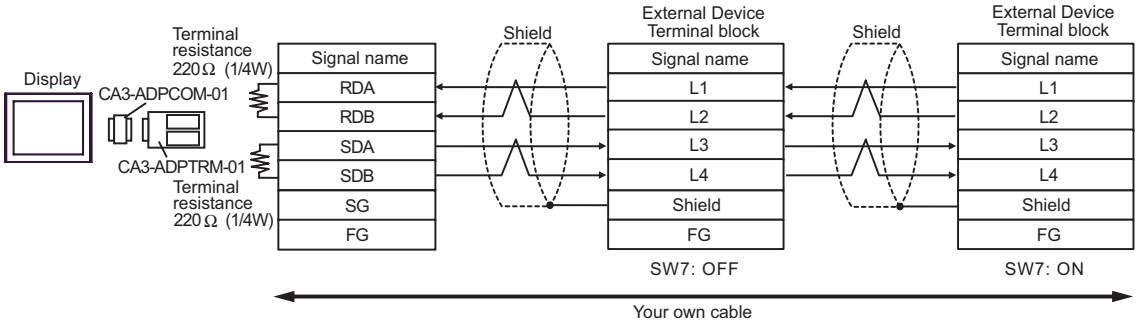
*1 Except AGP-3302 Series

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

• 1:1 Connection

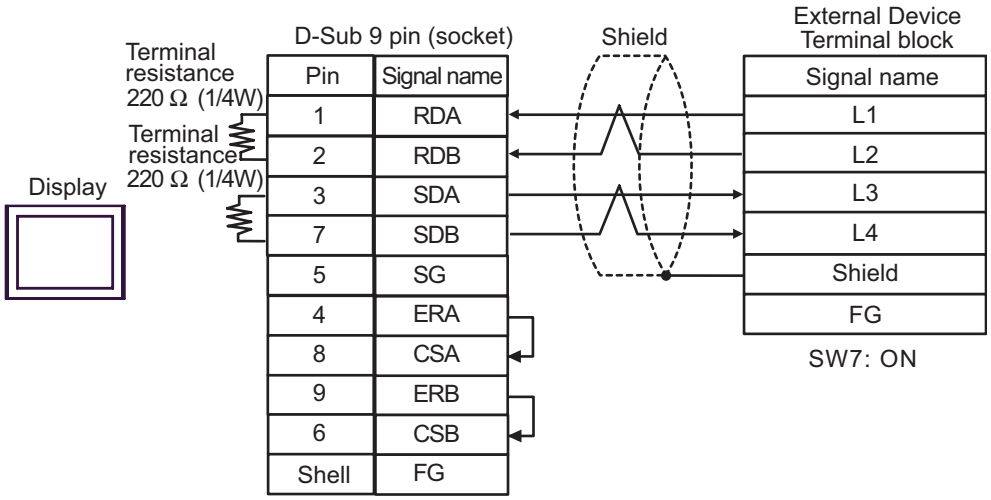



• 1:n Connection

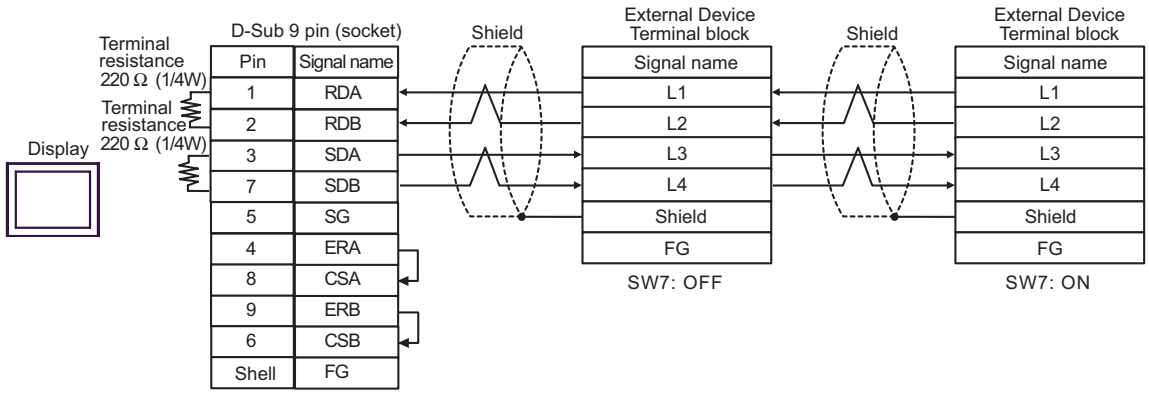



B. When your own cable is used

• 1:1 Connection

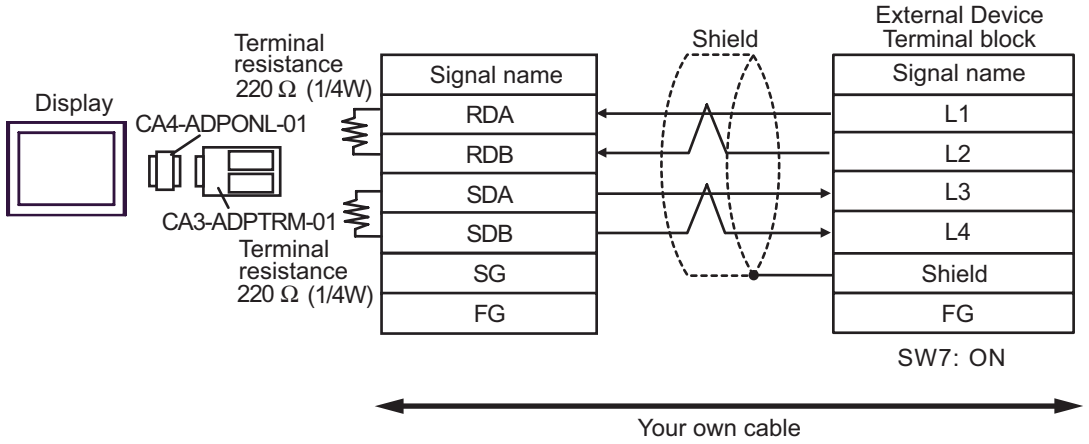


- 1:n Connection

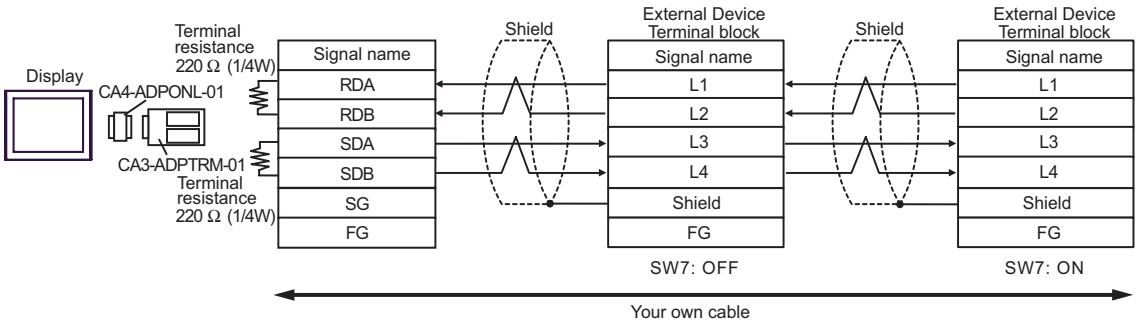



C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

- 1:1 Connection

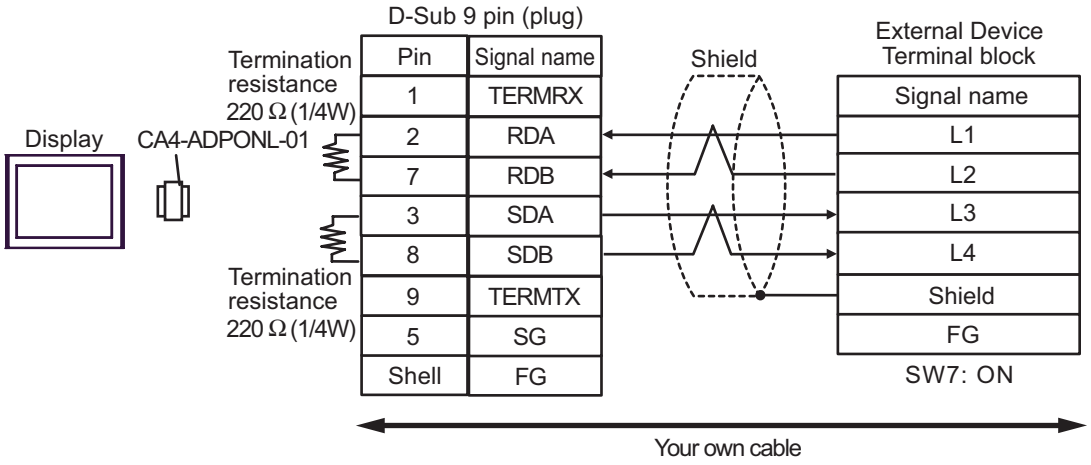



- 1:n Connection

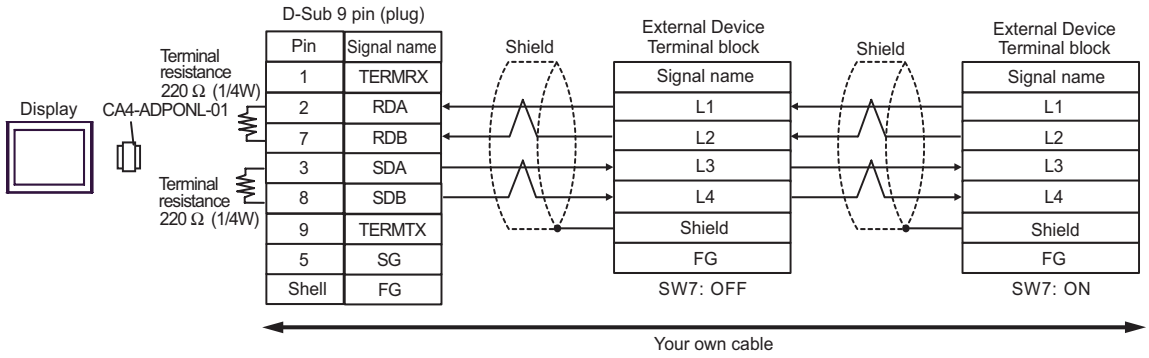


D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

- 1:1 Connection




- 1:n Connection



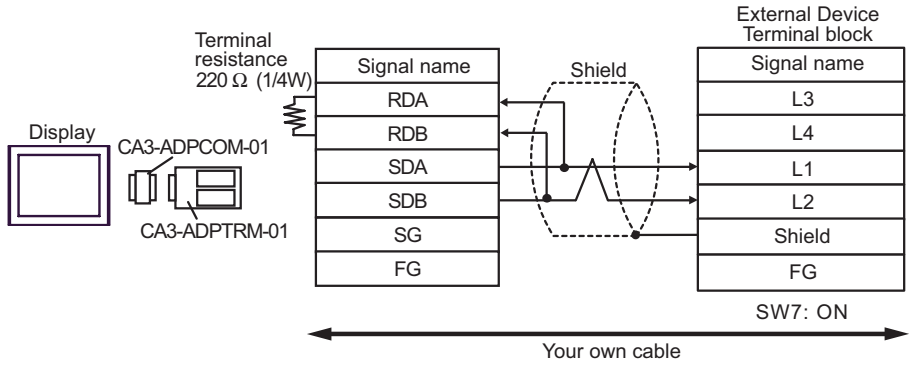
Cable Diagram 2

| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1 AGP-3302 (COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length: 1000m or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

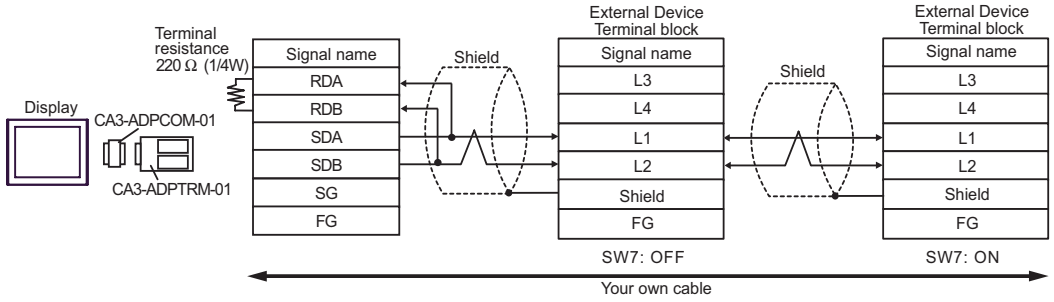
*1 Except AGP-3302 Series

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

- 1:1 Connection

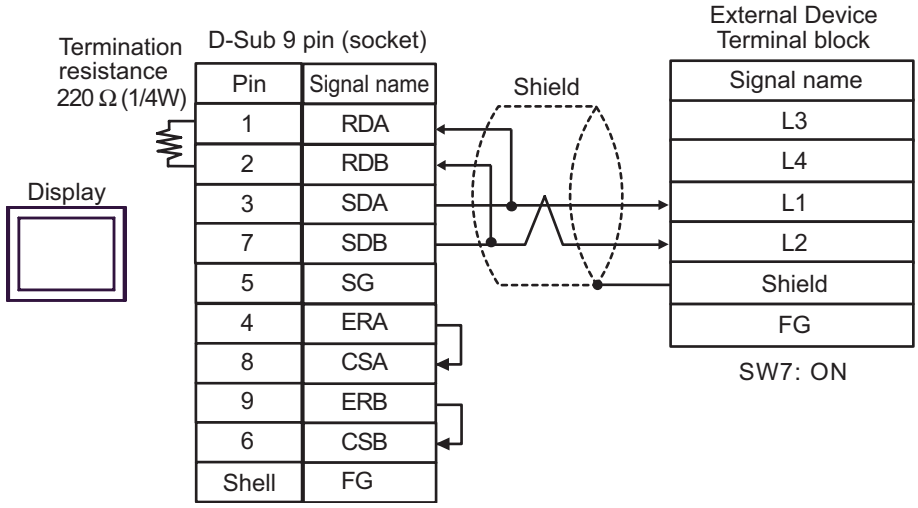


- 1:n Connection

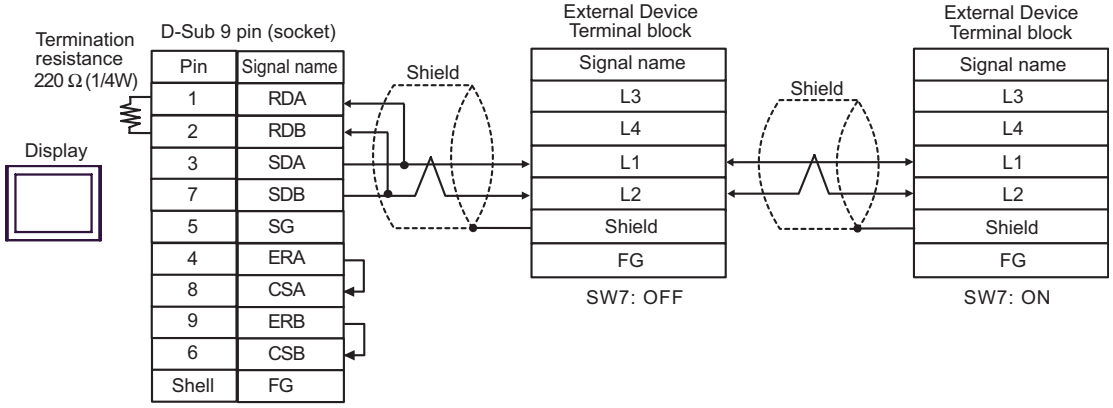



B. When your own cable is used

- 1:1 Connection

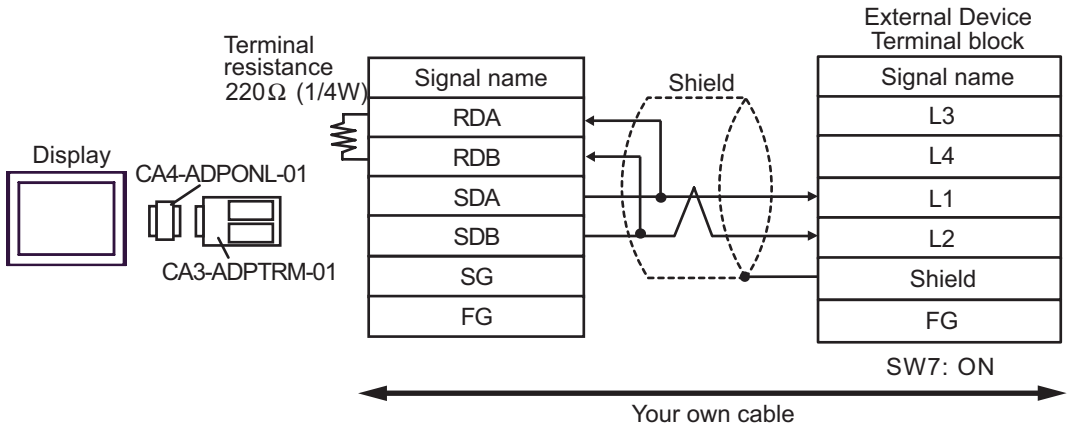



- 1:n Connection

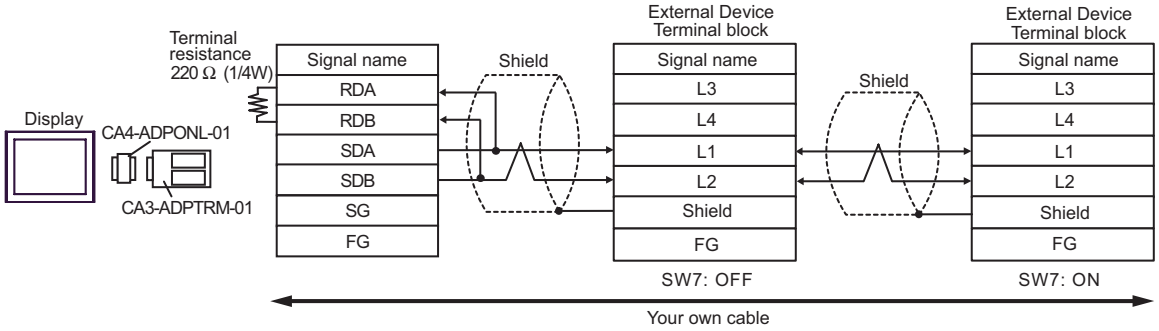


C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

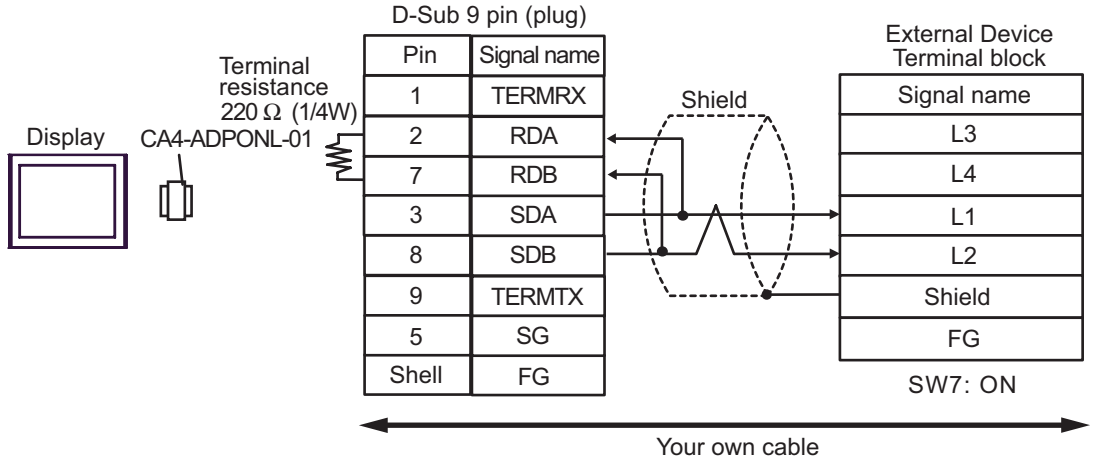



• 1:n Connection

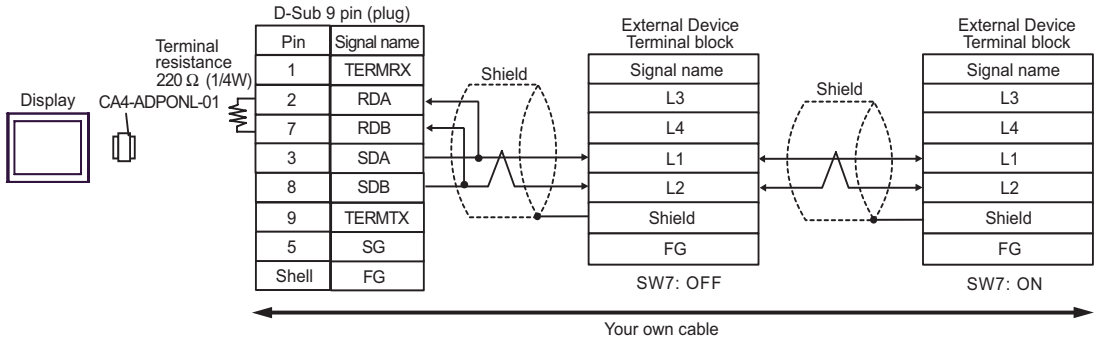



D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

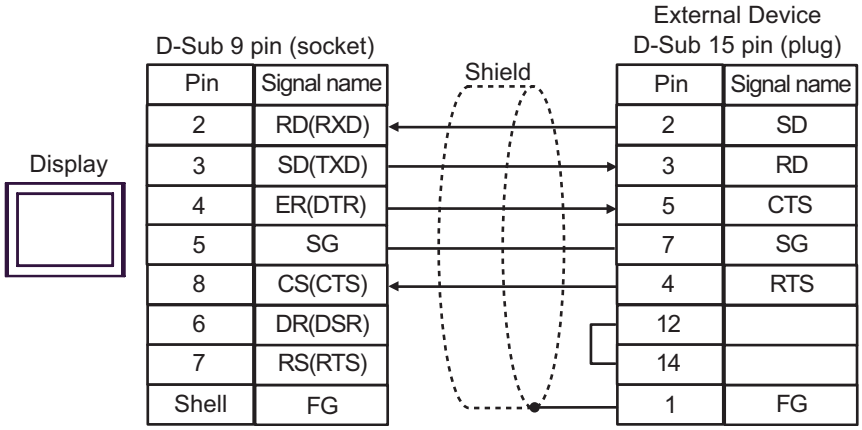


- 1:n Connection



Cable Diagram 3

| Display (Connection Port) | Cable | Remarks |
|---|---|---|
| GP(COM1) | Your own cable | Cable length: 15m or less |



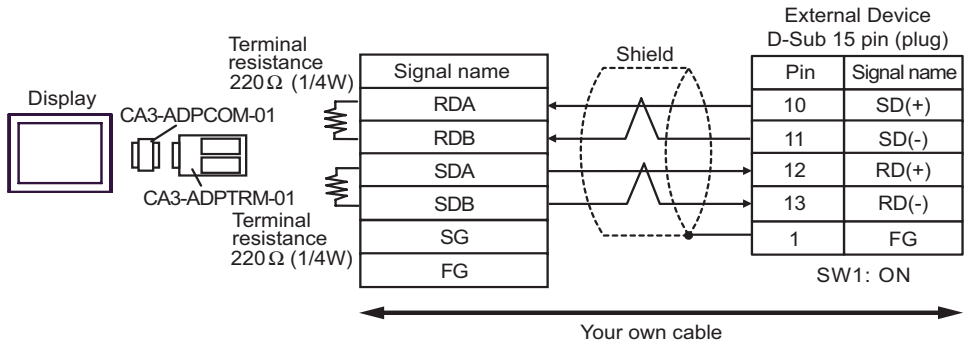
Cable Diagram 4

| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1 AGP-3302 (COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length: or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

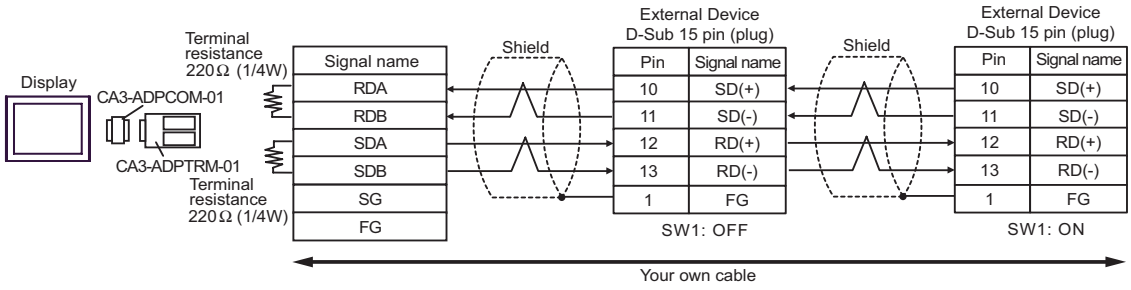
*1 Except AGP-3302 Series

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

- 1:1 Connection

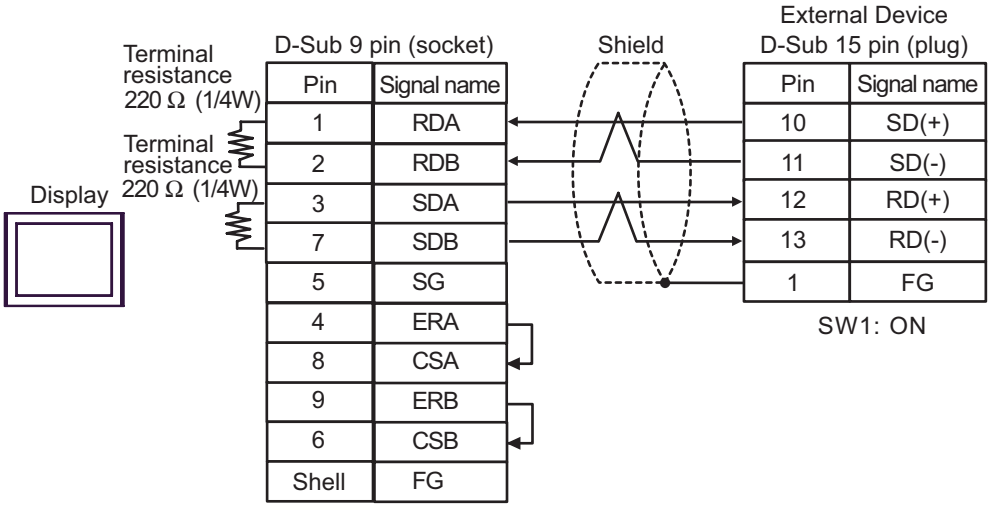


- 1:n Connection

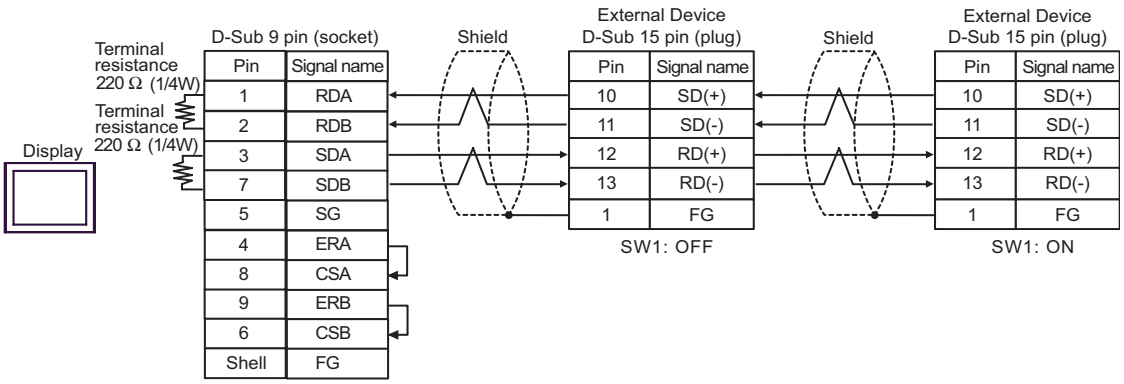



B. When your own cable is used

- 1:1 Connection

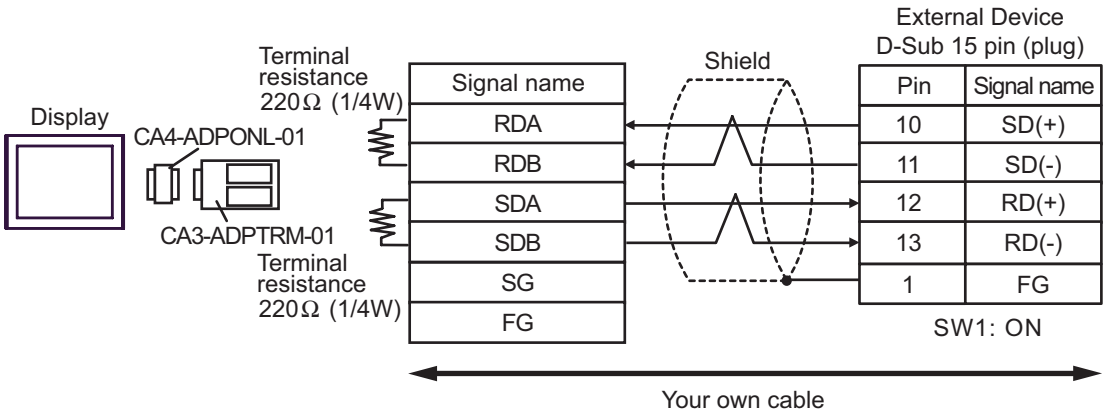



- 1:n Connection

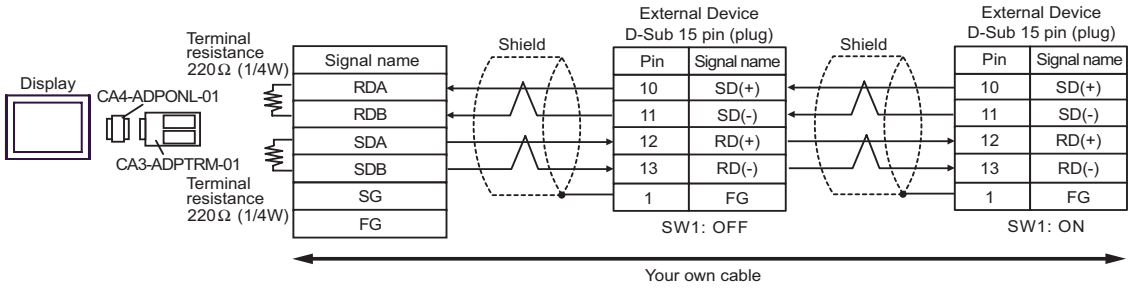


C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

- 1:1 Connection

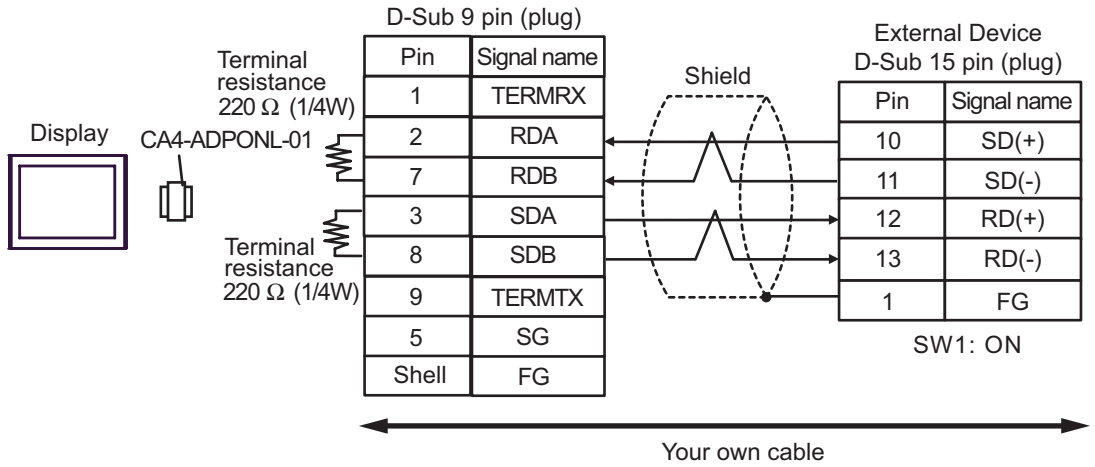



- 1:n connection

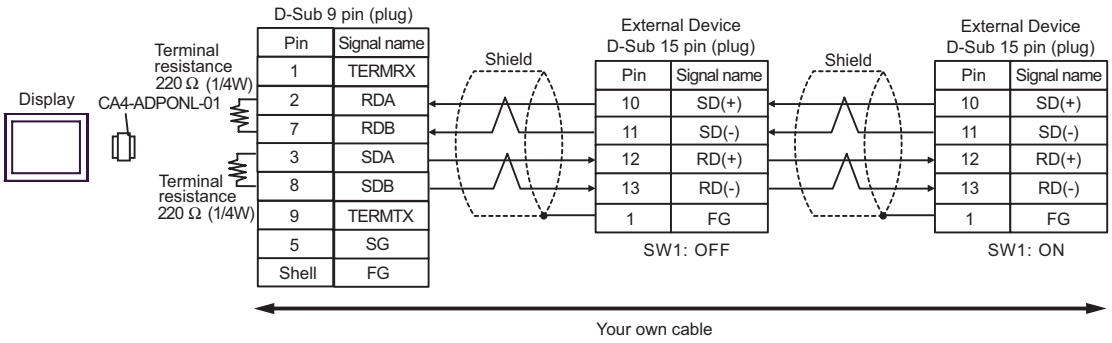



D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

- 1:1 Connection



- 1:n Connection



Cable Diagram 5

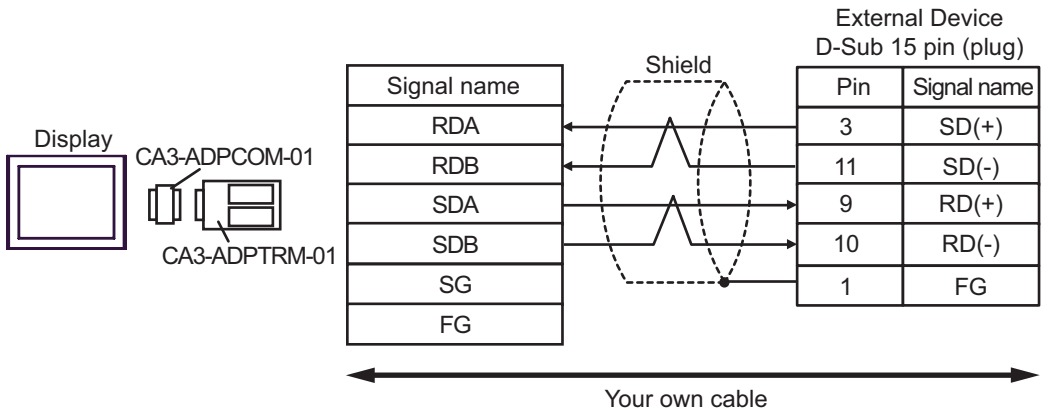
| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1 AGP-3302 (COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length: 1000m or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

*1 Except AGP-3302 Series

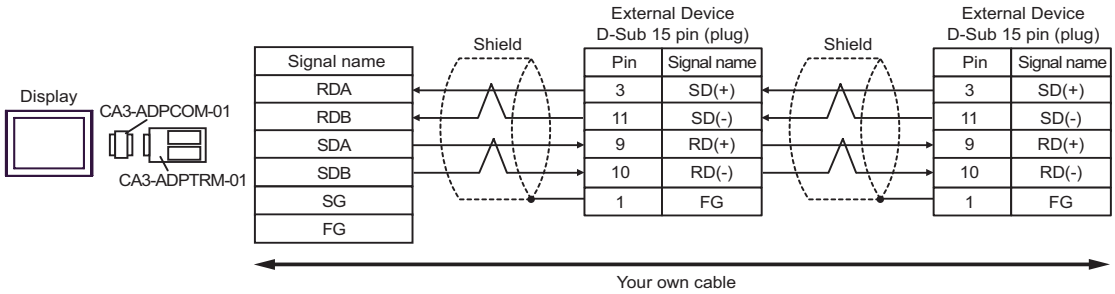
**NOTE**
- Do not connect anything to Pins No. 2, 4, 8 and 12 on the External Device.
- Do not connect to Pins No. 14 and 15 on the External Device since voltage is +5V.

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

- 1:1 Connection

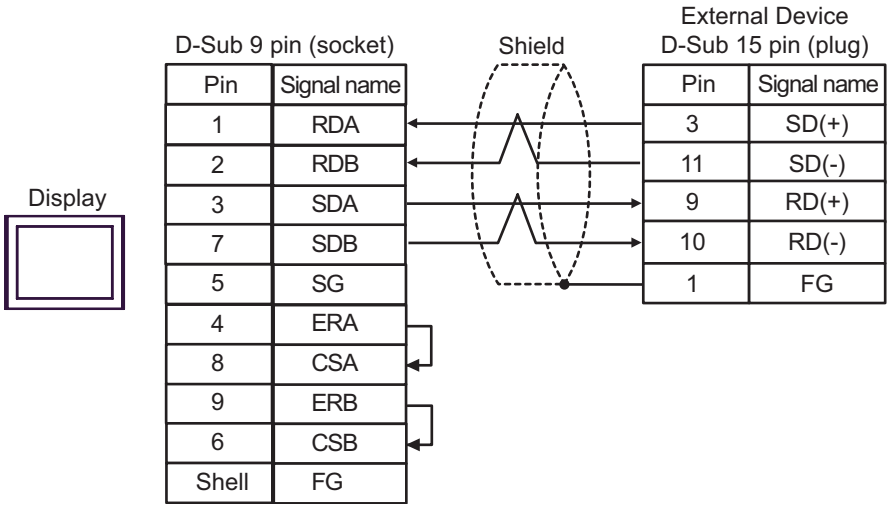


- 1:n Connection

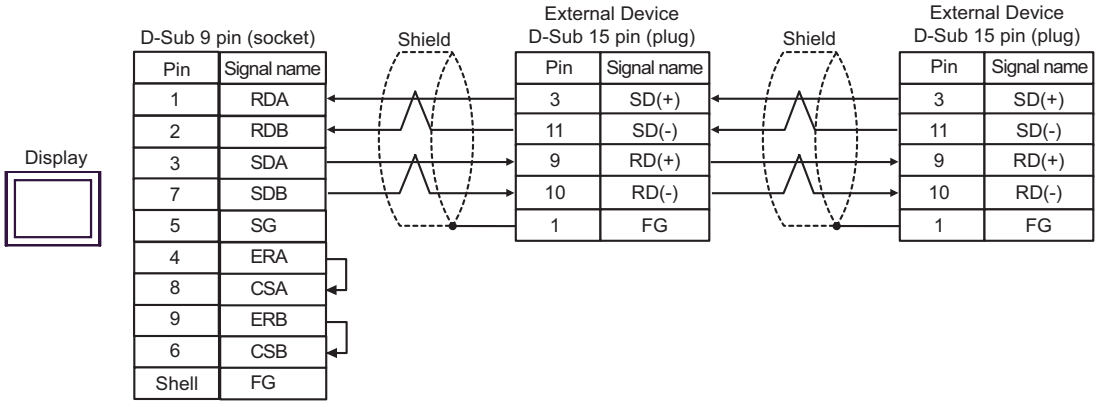



B. When your own cable is used

- 1:1 Connection

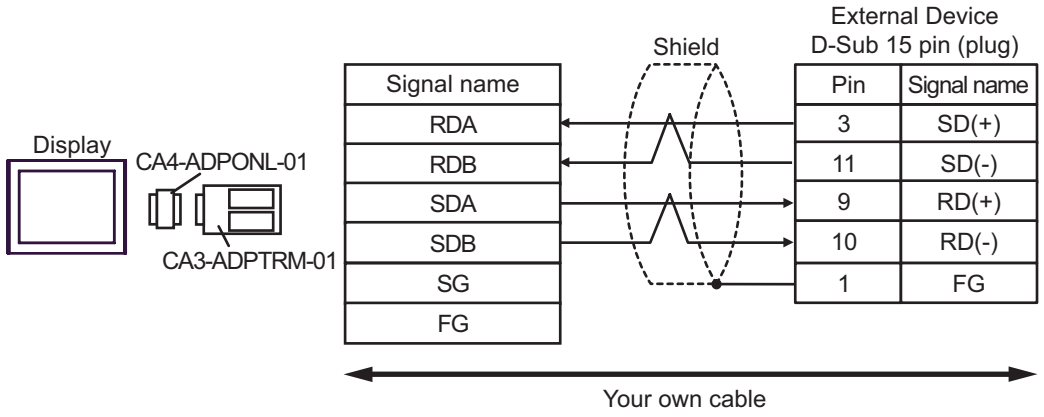



- 1:n Connection

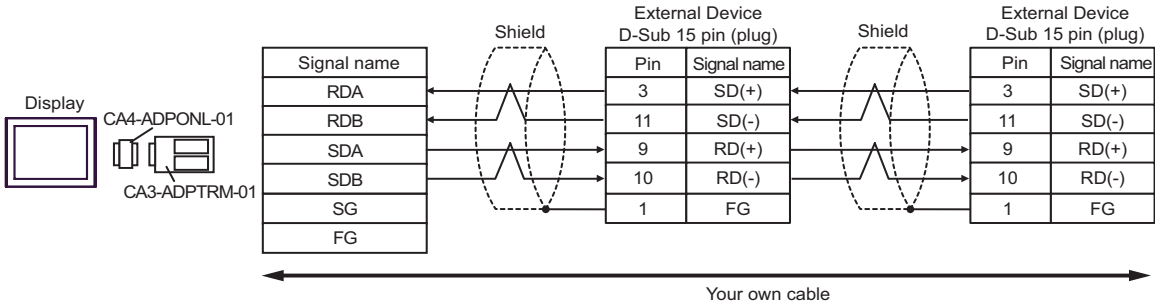


C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

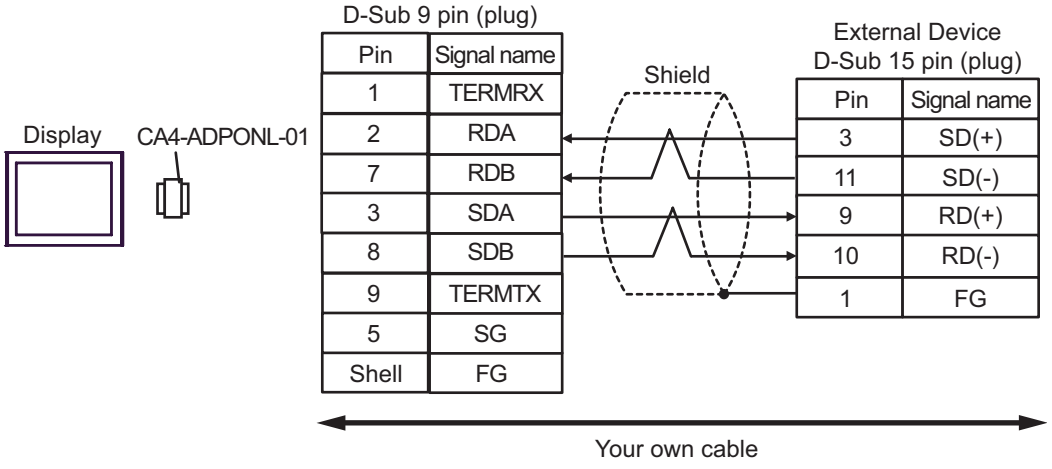



• 1:n Connection

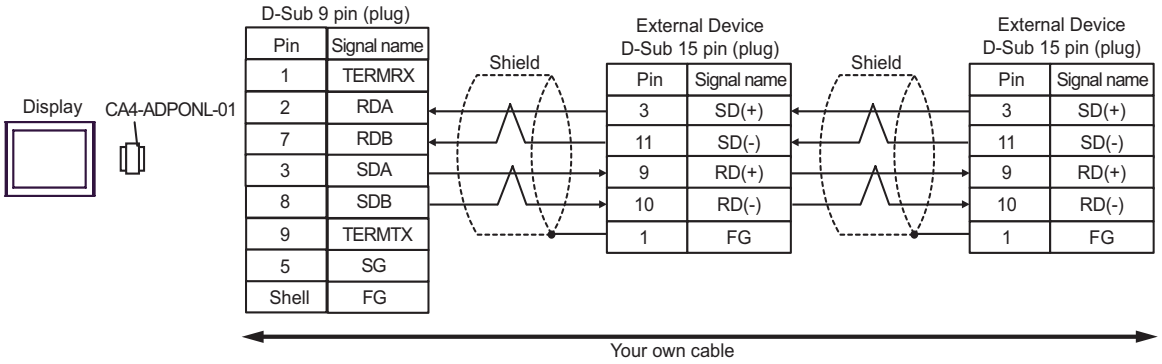



D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

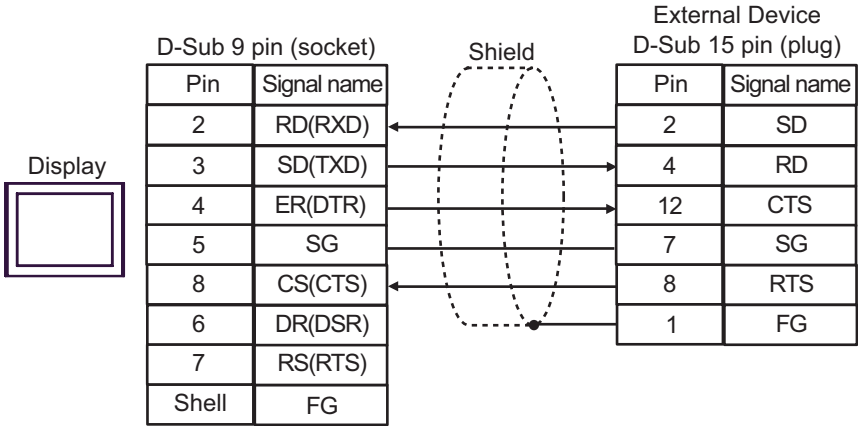


- 1:n Connection



Cable Diagram 6

| Display (Connection Port) | Cable | Remarks |
|---|---|---|
| GP(COM1) | Your own cable | Cable length: 15m or less |



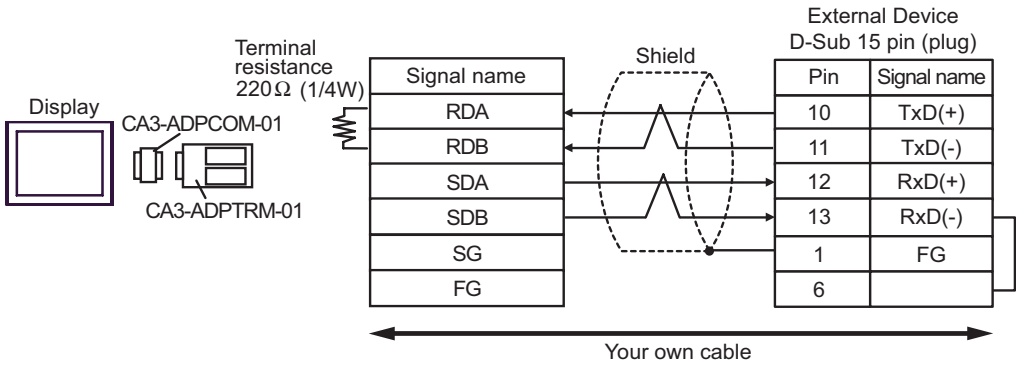
Cable Diagram 7

| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1 AGP-3302 (COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length: 1000m or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

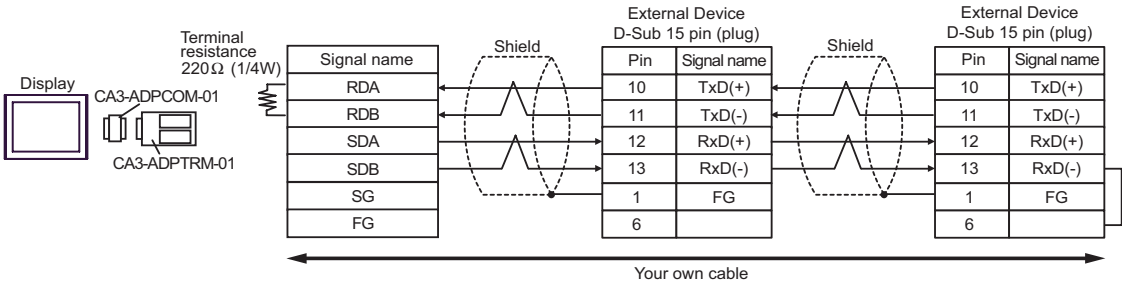
*1 Except AGP-3302 Series

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

- 1:1 Connection

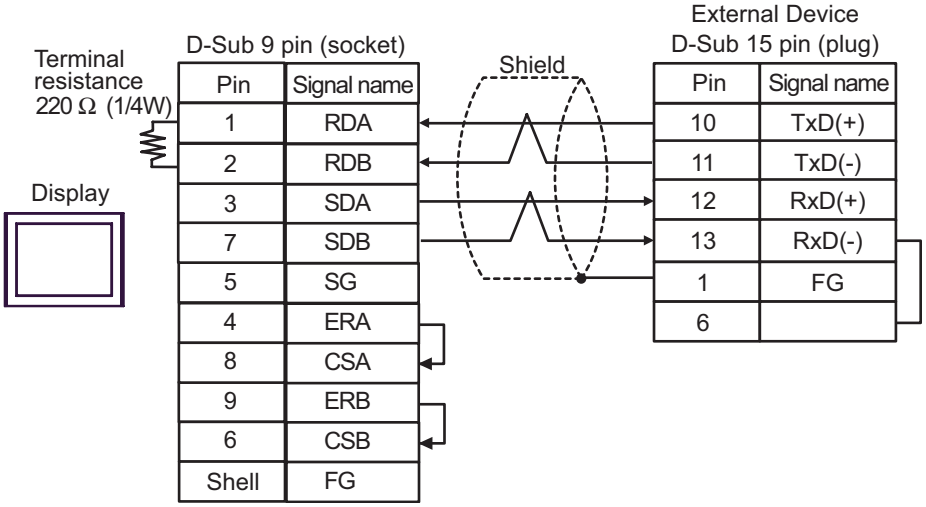


- 1:n Connection

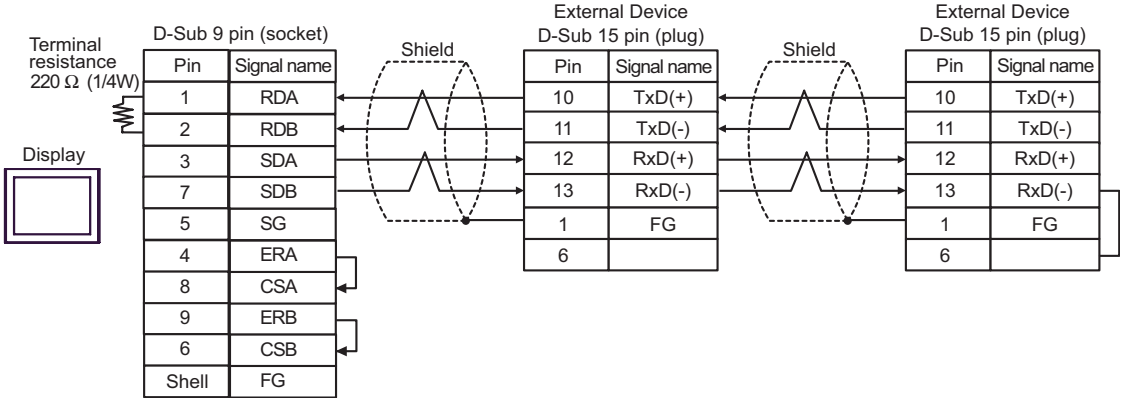



B. When your own cable is used

- 1:1 Connection

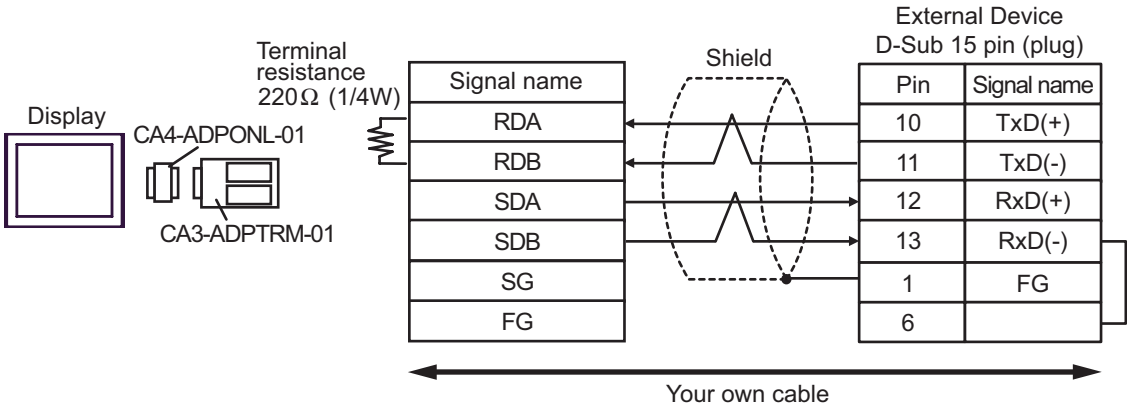



- 1:n Connection

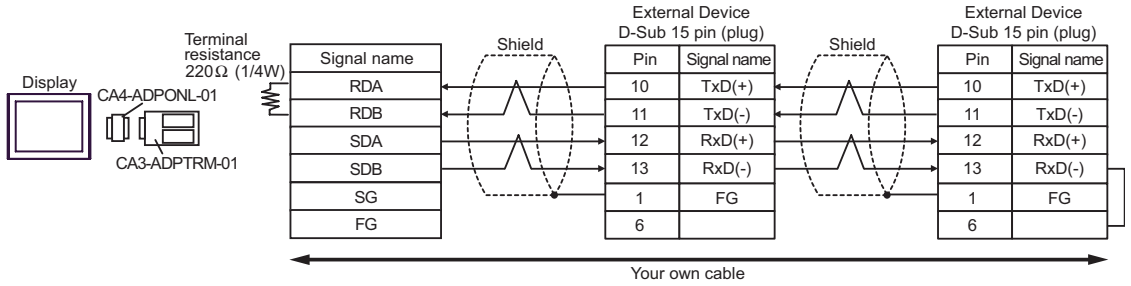


C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

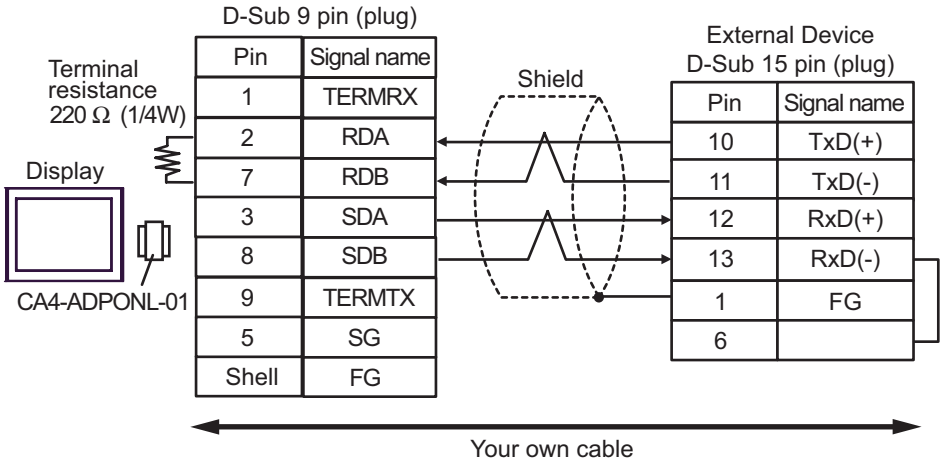



• 1:n Connection

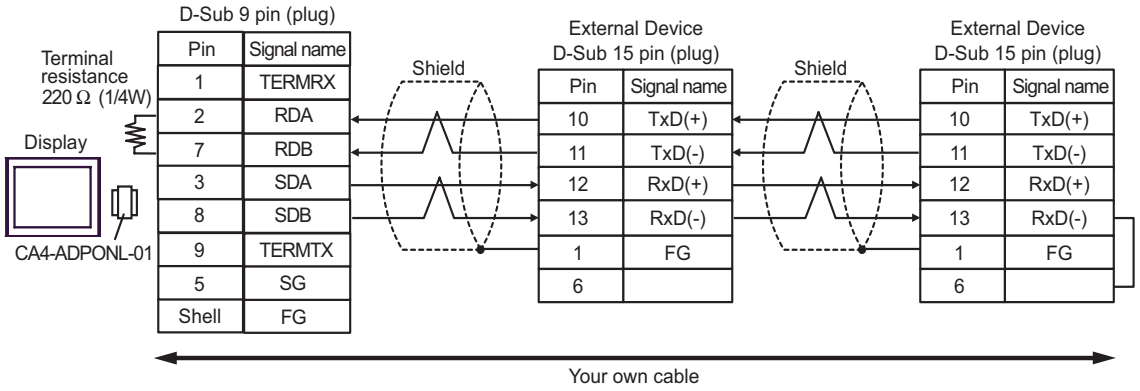



D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection



- 1:n Connection



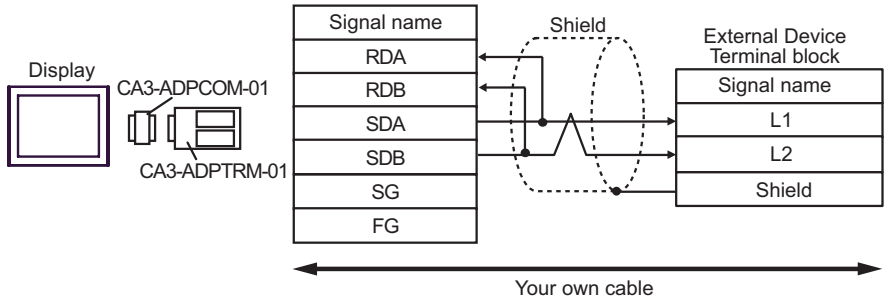
Cable Diagram 8

| Display (Connection Port) | Cable | | Remarks |
|---|---|---|---|
| GP(COM1)*1 AGP-3302 (COM2) | A | COM port conversion adapter by Digital Electronics Corp.<br>CA3-ADPCOM-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | Cable length: 1000m or less |
| | B | Your own cable | |
| GP(COM2)*1 | C | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Connector terminal block conversion adapter by Digital Electronics Corp.<br>CA3-ADPTRM-01<br>+<br>Your own cable | |
| | D | Online adapter by Digital Electronics Corp.<br>CA4-ADPONL-01<br>+<br>Your own cable | |

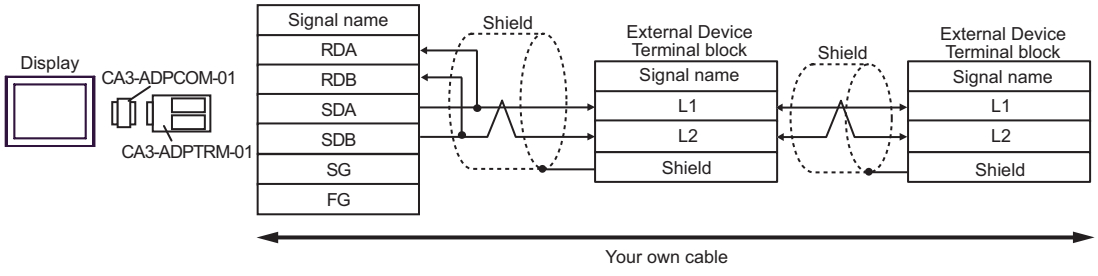
*1 Except AGP-3302 Series

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

- 1:1 Connection

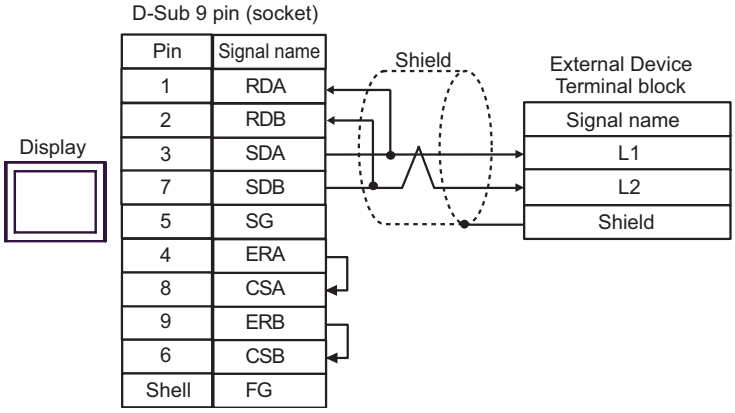



- 1:n Connection

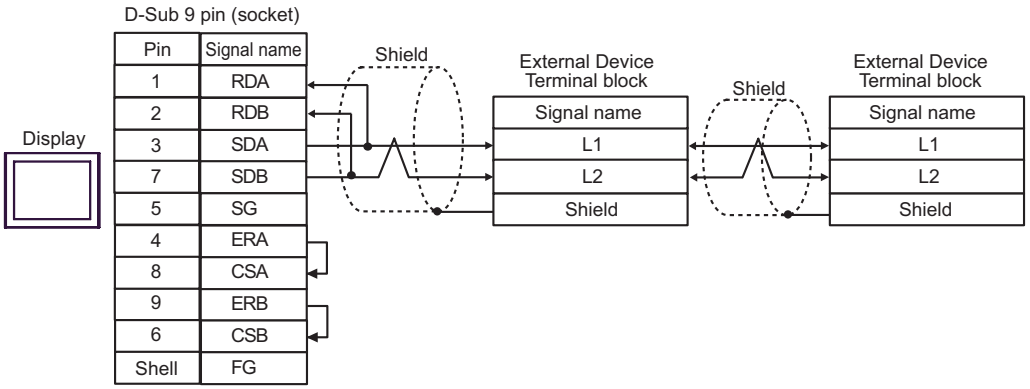


B. When your own cable is used

• 1:1 Connection

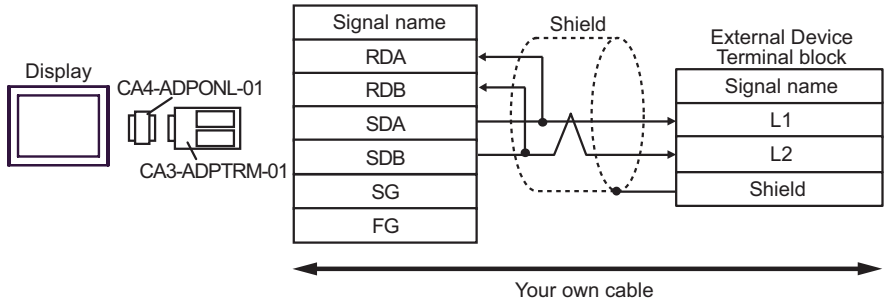



• 1:n Connection

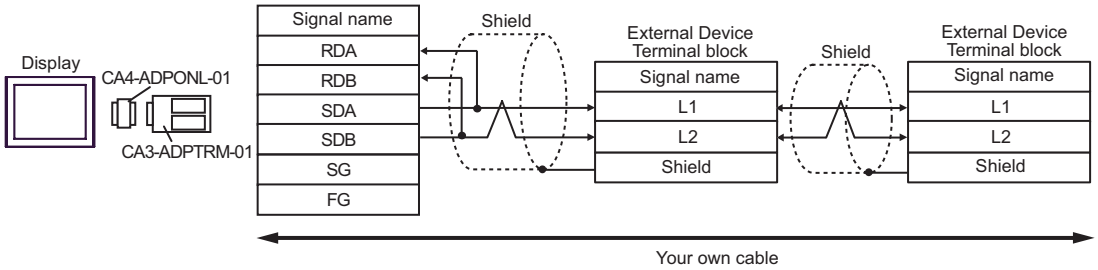



C. When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Digital Electronics Corp. and your own cable

• 1:1 Connection

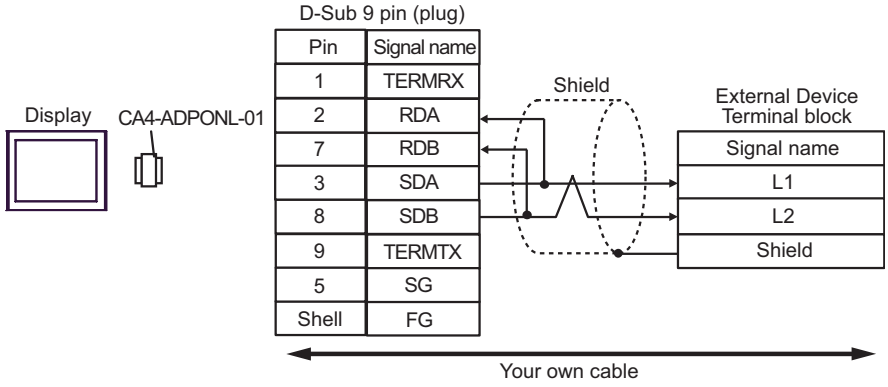


- 1:n Connection

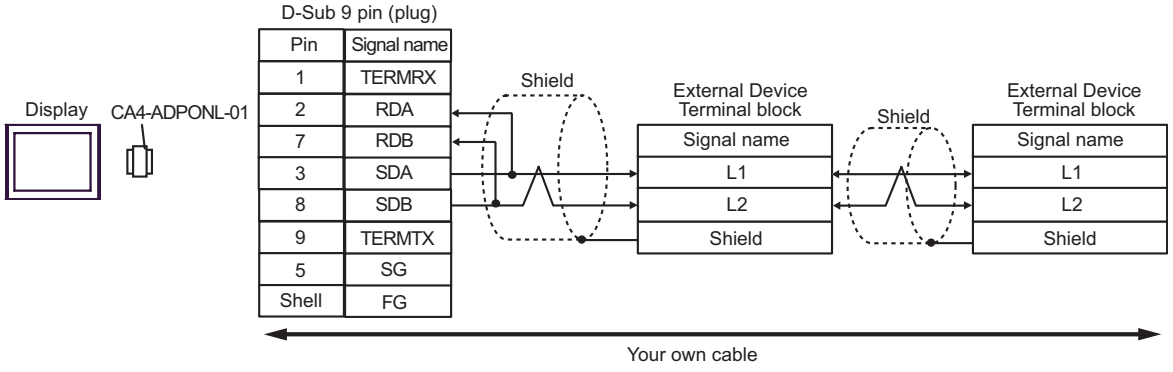



D. When using the online adapter (CA4-ADPONL-01) by Digital Electronics Corp. and your own cable

- 1:1 Connection




- 1:n Connection



# 6 Supported Device

Range of supported device address is shown in the table below. Available type and range of device vary depending on CPU. Be sure to check them in each CPU manual before using.

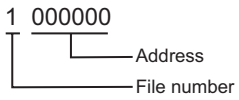
This address can be specified as system data area.

| Device | Bit Address | Word Address | 32 bits | Remarks |
|---|---|---|---|---|
| Relay *1 | 0000.0-1577.7 | A0000-A1576<br>(]0000-]1576) | | ÷2 OCT8 |
| | 2000.0-7577.7 | A2000-A7576<br>(]2000-]7576) | | |
| Timer (Contact) | T0000-T1777 | - | | OCT8 |
| Counter (Contact) | C0000-C1777 | - | | OCT8 |
| Timer Counter (current value) *1 | - | B0000-B3776<br>(b0000-b3776) | | ÷2 OCT8 |
| | | T0000-T3776 | | Bit15 |
| Register | - | 09000-09776 | L/H | ÷2 OCT8<br>Bit15 |
| | - | 19000-19776 | | |
| | - | 29000-29776 | | |
| | - | 39000-39776 | | |
| | - | 49000-49776 | | |
| | - | 59000-59776 | | |
| | - | 69000-69776 | | |
| | - | 79000-79776 | | |
| | - | 89000-89776 | | |
| | - | 99000-99776 | | |
| | - | E0000-E0776 | | |
| | - | E1000-E1776 | | |
| | - | E2000-E2776 | | |
| | - | E3000-E3776 | | |
| | - | E4000-E4776 | | |
| | - | E5000-E5776 | | |
| | - | E6000-E6776 | | |
| | - | E7000-E7776 | | |

| Device | Bit Address | Word Address | 32 bits | Remarks |
|---|---|---|---|---|
| File Register*2 | - | 1000000-1177776 | L/H | ÷2 OCT 8 Bit 15 |
| | - | 2000000-2177776 | | |
| | ..... | ..... | | |
| | - | 6000000-6177776 | | |
| | - | 7000000-7177776 | | |
| | - | F10000000-F10177776 | | |
| | - | F11000000-F11177776 | | |
| | ..... | ..... | | |
| | - | F1E000000-F1E177776 | | |
| | - | F1F000000-F1F177776 | | |
| | - | F20000000-F20177776 | | |
| | - | F21000000-F21177776 | | |
| | ..... | ..... | | |
| | - | F2B000000-F2B177776 | | |
| | - | F2C000000-F2C177776 | | |

*1 Values in parentheses are used for the word address of the relay and the timer counter (current value) (B) in the manual of the External Device. For entry, use AXXXX or BXXXX.

*2 File Register consists of the file number and the address.




**NOTE**

- Please refer to the GP-Pro EX Reference Manual for system data area.

  Cf. GP-Pro EXReference 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 Type & Address" for the address type in data displays.

| Device | Device Name | Device Code (HEX) | Address Code |
|---|---|---|---|
| Relay | A | 0080 | Word Address |
| Counter (Current Value) | T | 0060 | Word Address |
| | B | 0061 | Word Address |
| Register | 09 | 0000 | Word Address |
| | 19 | 0001 | Word Address |
| | 29 | 0002 | Word Address |
| | 39 | 0003 | Word Address |
| | 49 | 0004 | Word Address |
| | 59 | 0005 | Word Address |
| | 69 | 0006 | Word Address |
| | 79 | 0007 | Word Address |
| | 89 | 0008 | Word Address |
| | 99 | 0009 | Word Address |
| | E0 | 000A | Word Address |
| | E1 | 000B | Word Address |
| | E2 | 000C | Word Address |
| | E3 | 000D | Word Address |
| | E4 | 000E | Word Address |
| | E5 | 000F | Word Address |
| | E6 | 0010 | Word Address |
| | E7 | 0011 | Word Address |

| Device | Device Name | Device Code (HEX) | Address Code |
|---|---|---|---|
| File Register | 1 | 0012 | Word Address |
| | 2 | 0013 | Word Address |
| | ..... | ..... | ..... |
| | 6 | 0017 | Word Address |
| | 7 | 0018 | Word Address |
| | F10 | 0019 | Word Address |
| | F11 | 001A | Word Address |
| | ..... | ..... | ..... |
| | F1E | 0027 | Word Address |
| | F1F | 0028 | Word Address |
| | F20 | 0029 | Word Address |
| | F21 | 002A | Word Address |
| | ..... | ..... | ..... |
| | F2B | 0034 | Word Address |
| | F2C | 0035 | Word Address |

# 8 Error Messages

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

| Item | Requirements |
|---|---|
| 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 displayed 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: 1[01H])"

**NOTE** • Please refer to the manual of the External Device for more detail of received error codes.

## ■ Error Codes Specific to the External Device

Error codes specific to the External Device are shown below.

| Error Code | Description |
|---|---|
| 0x01 | Format error. |
| 0x07 | Writing to PLC memory is not executed correctly. |
| 0x0A | Parity error. |
| 0x0B | Framing error. |
| 0x0C | Overrun error. |
| 0x0D | Sum check error. |
| 0x0F | Other CPU is accessing memory. |
| 0x1B | System memory error. |