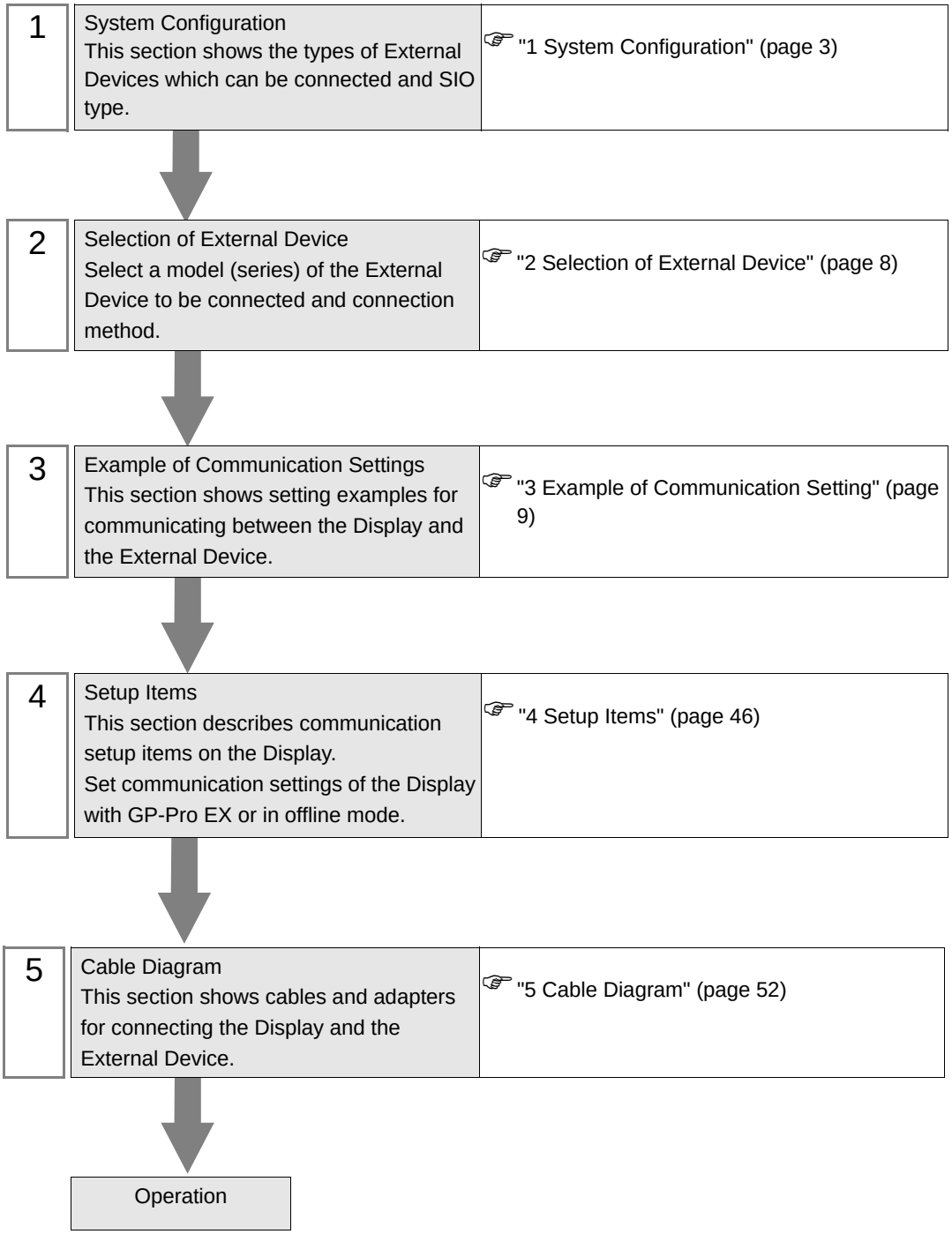
Sharp Manufacturing Systems Corporation

JW Series Computer Link SIO Driver

Introduction

This manual describes how to connect the Display 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-21CU	JW-21CM*1	RS422/485 (4wire)	Setting Example 1 (page 9)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 2 (page 12)	Cable Diagram 2 (page 58)
	JW-22CU	Communication port on the CPU unit	RS232C	Setting Example 3 (page 14)	Cable Diagram 3 (page 68)
			RS422/485 (4wire)	Setting Example 4 (page 16)	Cable Diagram 4 (page 69)
		JW-21CM*1	RS422/485 (4wire)	Setting Example 1 (page 9)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 2 (page 12)	Cable Diagram 2 (page 58)
JW30H	JW-31CUH1	JW-21CM*1	RS422/485 (4wire)	Setting Example 1 (page 9)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 2 (page 12)	Cable Diagram 2 (page 58)
	JW-32CUH1 JW-32CUM1 JW-32CUM2 JW-33CUH1 JW-33CUH2 JW-33CUH3	PG/COMM1 on the CPU unit	RS422/485 (4wire)	Setting Example 5 (page 18)	Cable Diagram 5 (page 75)
		PG/COMM2 on the CPU unit	RS232C	Setting Example 6 (page 20)	Cable Diagram 6 (page 81)
			RS422/485 (4wire)	Setting Example 7 (page 22)	Cable Diagram 5 (page 75)
		JW-21CM*1	RS422/485 (4wire)	Setting Example 1 (page 9)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 2 (page 12)	Cable Diagram 2 (page 58)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
JW50H JW70H JW100H	JW-50CUH	JW-10CM	RS422/485 (4wire)	Setting Example 8 (page 24)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 9 (page 26)	Cable Diagram 2 (page 58)
	JW-70CUH JW-100CUH	Communication port on the CPU unit	RS232C	Setting Example 10 (page 28)	Cable Diagram 3 (page 68)
			RS422/485 (4wire)	Setting Example 11 (page 30)	Cable Diagram 7 (page 82)
		JW-10CM	RS422/485 (4wire)	Setting Example 8 (page 24)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 9 (page 26)	Cable Diagram 2 (page 58)
JW10	JW-1324K JW-1424K JW-1624K JW-1342K JW-1442K JW-1642K	Communication port on the base module	RS422/485 (2wire)	Setting Example 12 (page 32)	Cable Diagram 8 (page 88)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
JW300	JW-311CU JW-312CU	PG/COMM1 on the CPU unit	RS232C	Setting Example 13 (page 34)	Cable Diagram 9 (page 98)
			RS422/485 (4wire)	Setting Example 14 (page 36)	Cable Diagram 5 (page 75)
		JW-21CM*2	RS422/485 (4wire)	Setting Example 17 (page 42)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 18 (page 44)	Cable Diagram 2 (page 58)
	JW-321CU JW-322CU JW-331CU JW-332CU JW-341CU JW-342CU JW-352CU JW-362CU	PG/COMM1 on the CPU unit	RS232C	Setting Example 13 (page 34)	Cable Diagram 9 (page 98)
			RS422/485 (4wire)	Setting Example 14 (page 36)	Cable Diagram 5 (page 75)
		PG/COMM2 on the CPU unit	RS232C	Setting Example 15 (page 38)	Cable Diagram 6 (page 81)
			RS422/485 (4wire)	Setting Example 16 (page 40)	Cable Diagram 5 (page 75)
		JW-21CM*2	RS422/485 (4wire)	Setting Example 17 (page 42)	Cable Diagram 1 (page 52)
			RS422/485 (2wire)	Setting Example 18 (page 44)	Cable Diagram 2 (page 58)

*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 Unable to read or write the file register address 100000 to 176777
Without sticker	Unable to use in the JW30H Series

*2 Available with the Ethernet units compatible with JW300. "300" is labeled on the front of JW300-compatible units. For more information, contact the manufacturer of the External Device.

■ IPC COM Port

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

Usable port

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

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

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

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

DIP Switch setting: RS-232C

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

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

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

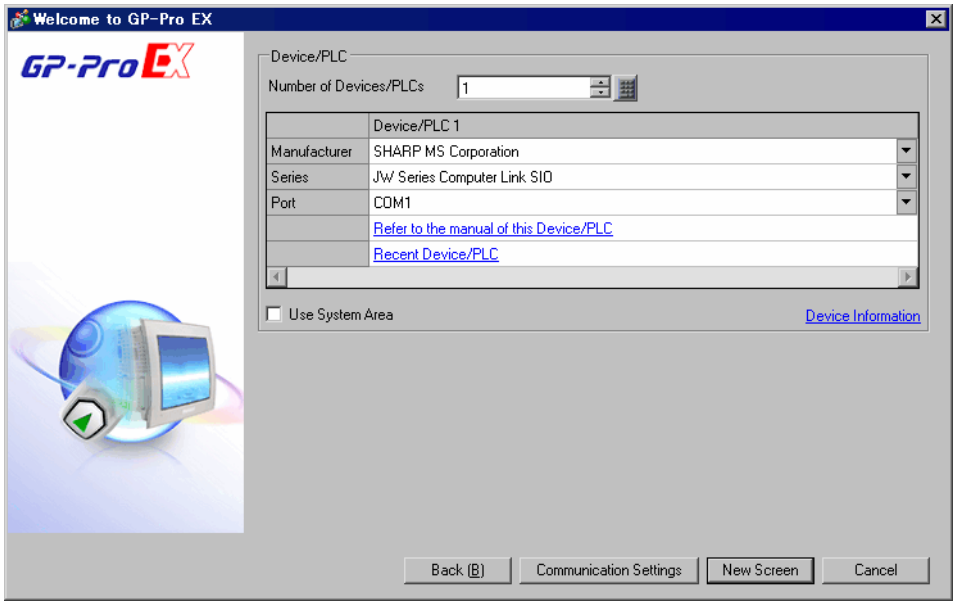
DIP Switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA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

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

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

2 Selection of External Device

Select the External Device to be connected to the Display.



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

3 Example of Communication Setting

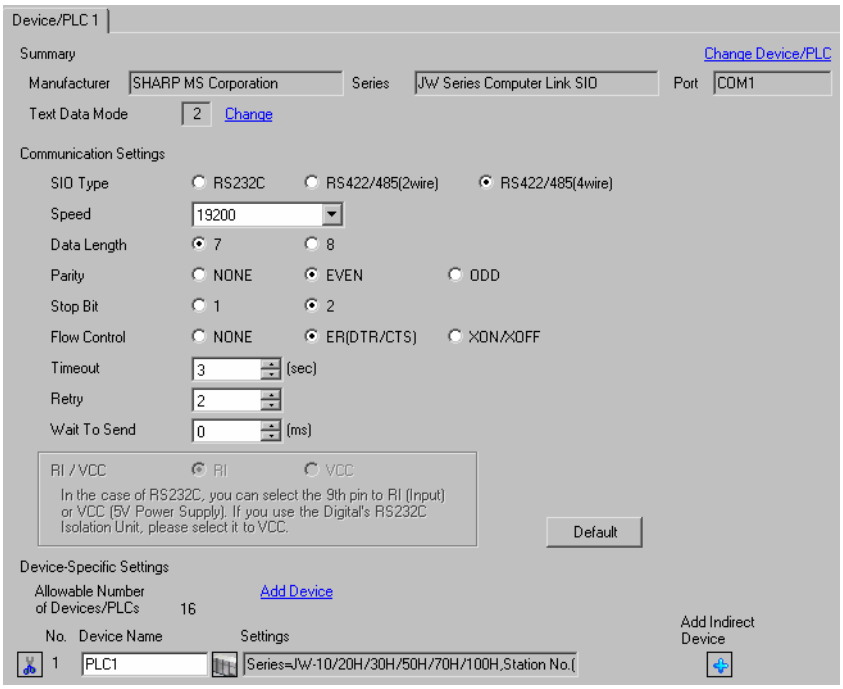
Examples of communication settings of the Display and the External Device, recommended by Digital Electronics Corp., are shown.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE	• Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. Set only the External Device which terminates the connection to ON.

◆ Unit No. Switch

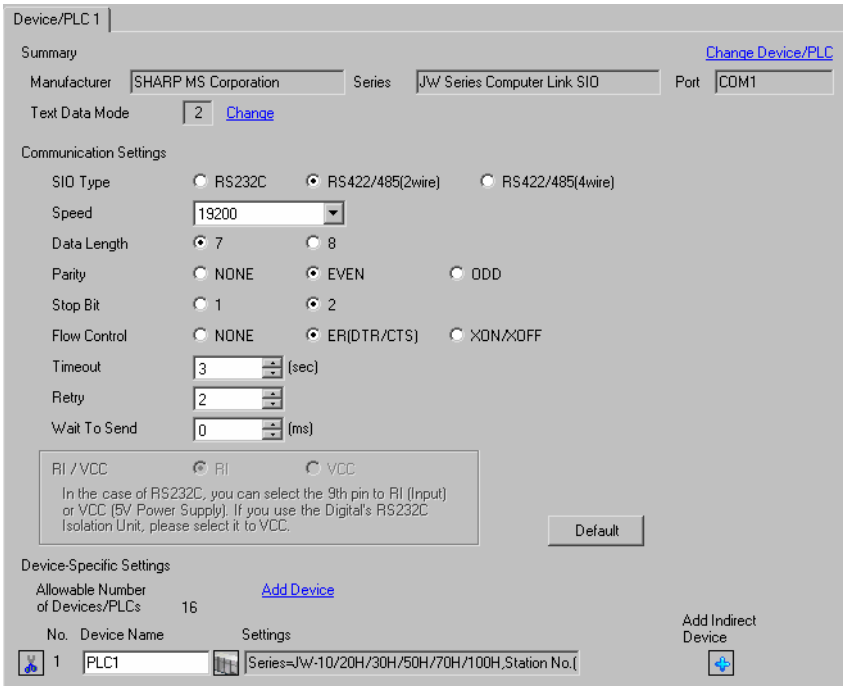
Rotary Switch	Setting Value	Setup Description
SW8	0	Set the data memory address for sub station 01 to 04.

3.2 Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

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



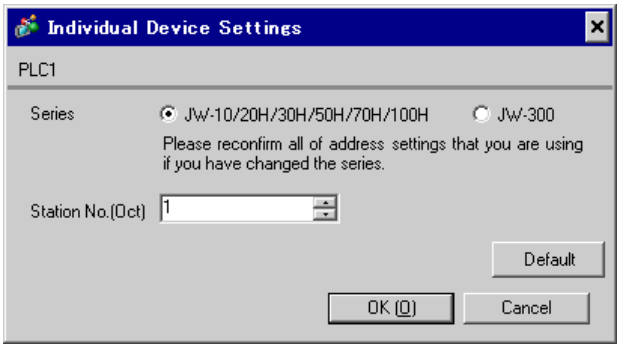
NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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. Set only the External Device which terminates the connection to ON.

◆ Unit No. Switch

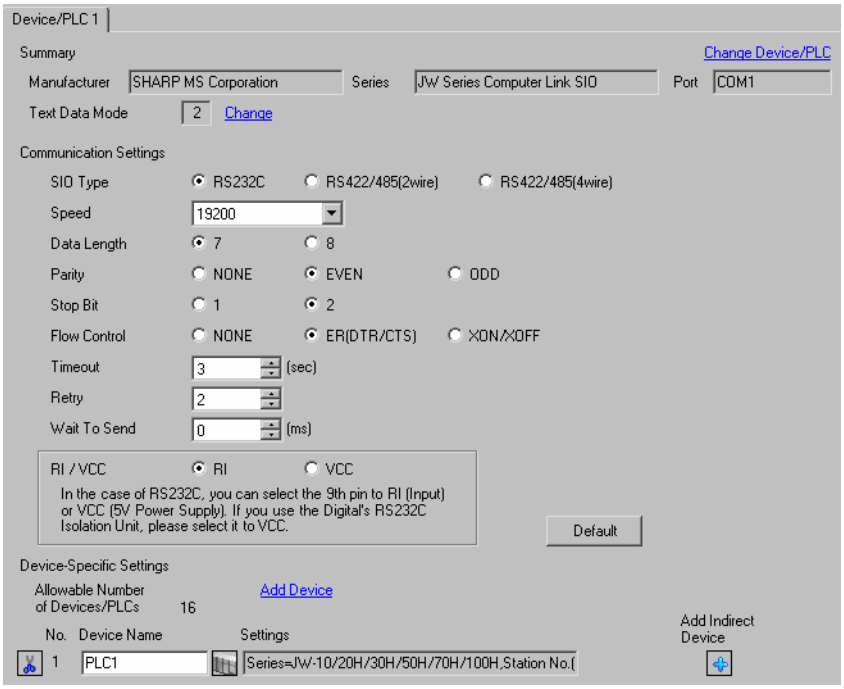
Rotary Switch	Setting Value	Setup Description
SW8	0	Set the data memory address for sub station 01 to 04.

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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

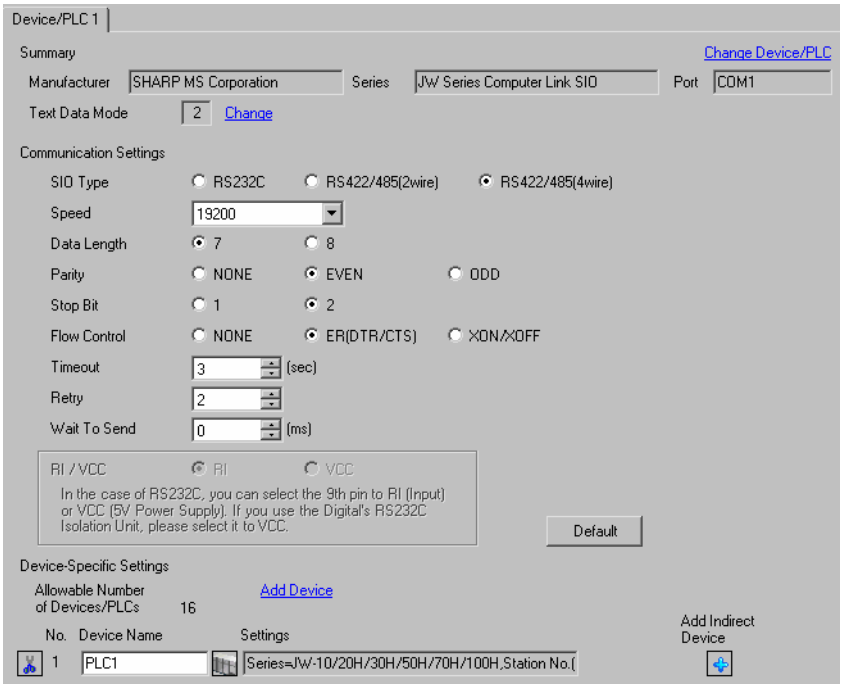
Setting Area	Setting Value	Setup Description
#237	1(o)	Station No. setting. Enter in octal number.

3.4 Setting Example 4

■ Settings of GP-Pro EX

◆ Communication Settings

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



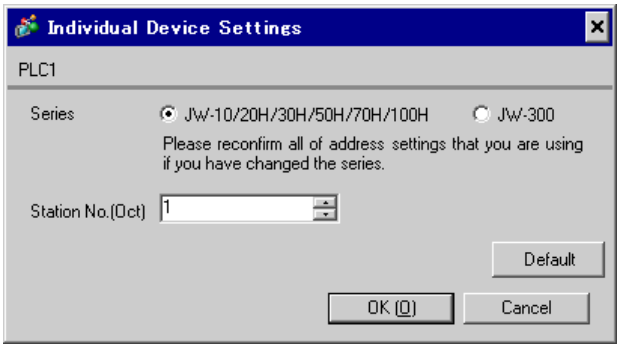
NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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. 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

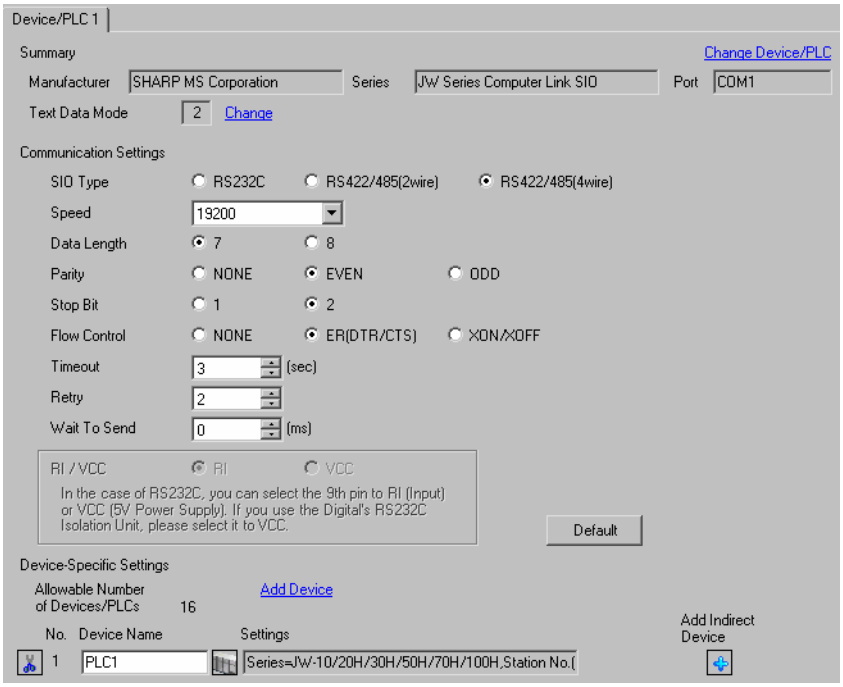
DIP Switch	Setting Value	Setup Description
SW1	ON	Insert the termination resistance: Set it to ON to insert the termination resistance. Set only the External Device which terminates the connection to ON.

3.5 Setting Example 5

■ Settings of GP-Pro EX

◆ Communication Settings

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

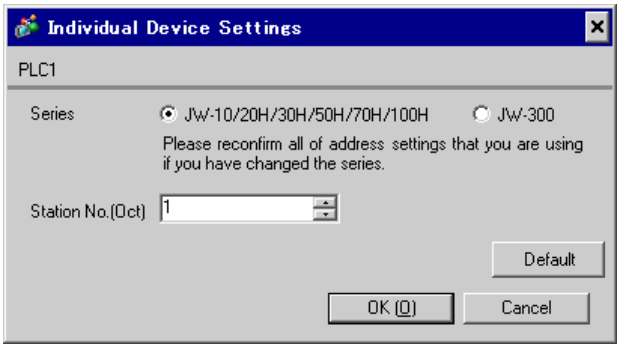


NOTE	• Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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. 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

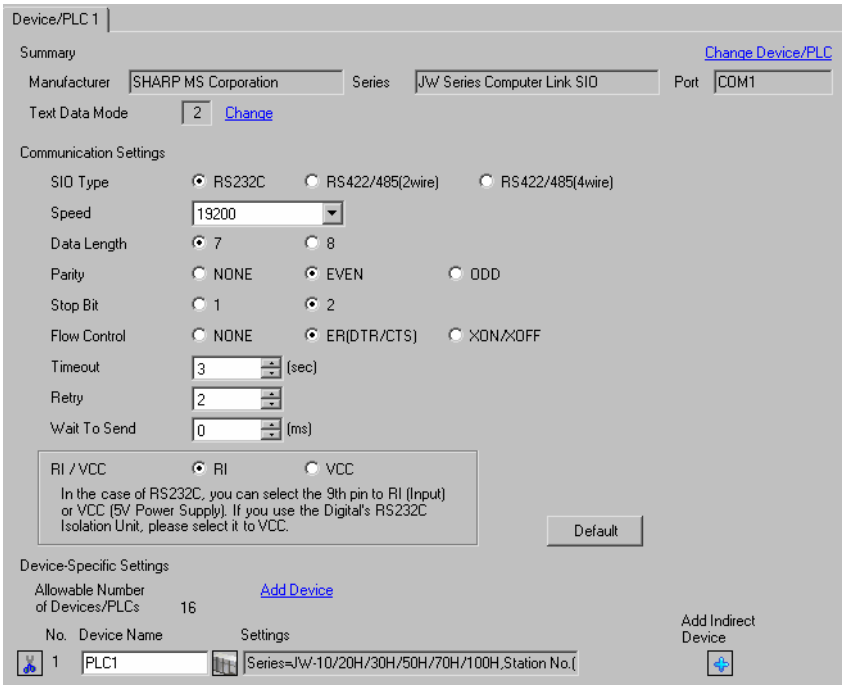
Setting Area	Setting Value	Setup Description
#235	1(o)	Station No. setting. Enter in octal number.

3.6 Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

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



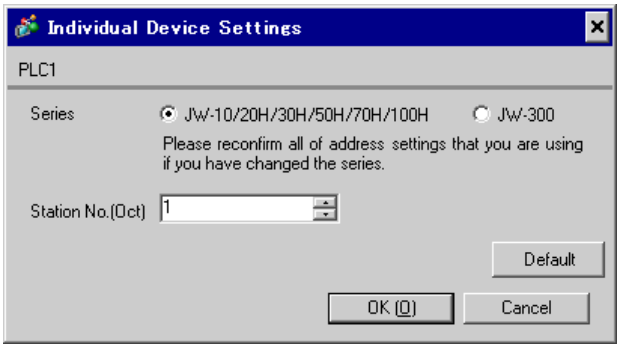
NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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 #222

Setting Area	Setting Value	Setup Description
#222	0(H)	RS232C connection

◆ Setting for #236

Setting Area	Setting Value	Setup Description
#236	30(H)	Communication setting. Enter in hex number. 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

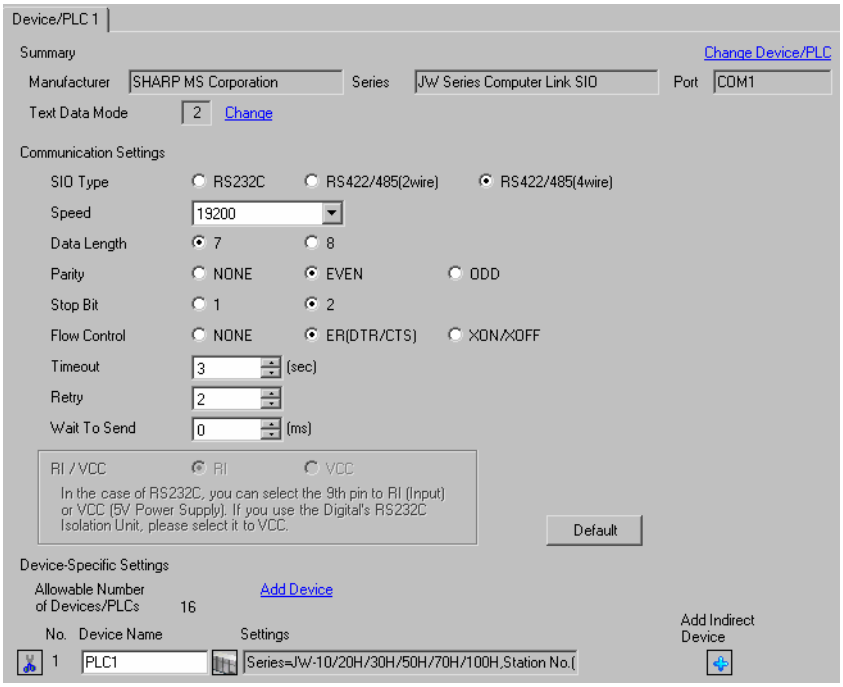
Setting Area	Setting Value	Setup Description
#237	1(o)	Station No. setting. Enter in octal number.

3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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 #222

1:1 Connection

Setting Area	Setting Value	Setup Description
#222	00(H)	RS-422A connection

1:n Connection

Setting Area	Setting Value	Setup Description
#222	04(H)	RS-422A connection

IMPORTANT

- "1:n Connection" is enabled by using JW-32CUH1/33CUH1/33CUH2/33CUH3 (with software version 3.5 or later) or JW-32CUM1/32CUM2.

◆ Setting for #236

Setting Area	Setting Value	Setup Description
#236	30(H)	Communication setting. Enter in hex number. 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

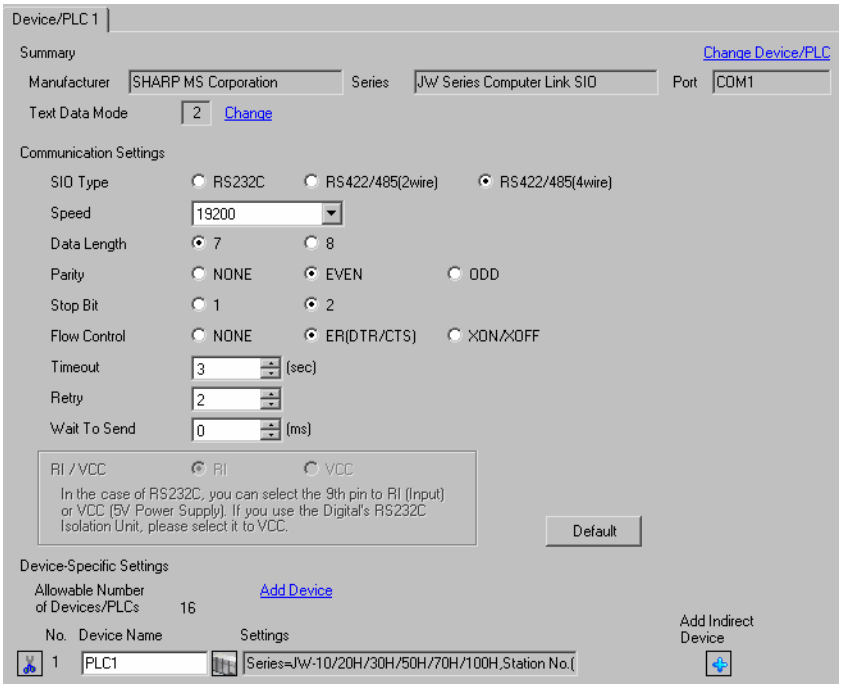
Setting Area	Setting Value	Setup Description
#237	1(o)	Station No. setting. Enter in octal number.

3.8 Setting Example 8

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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

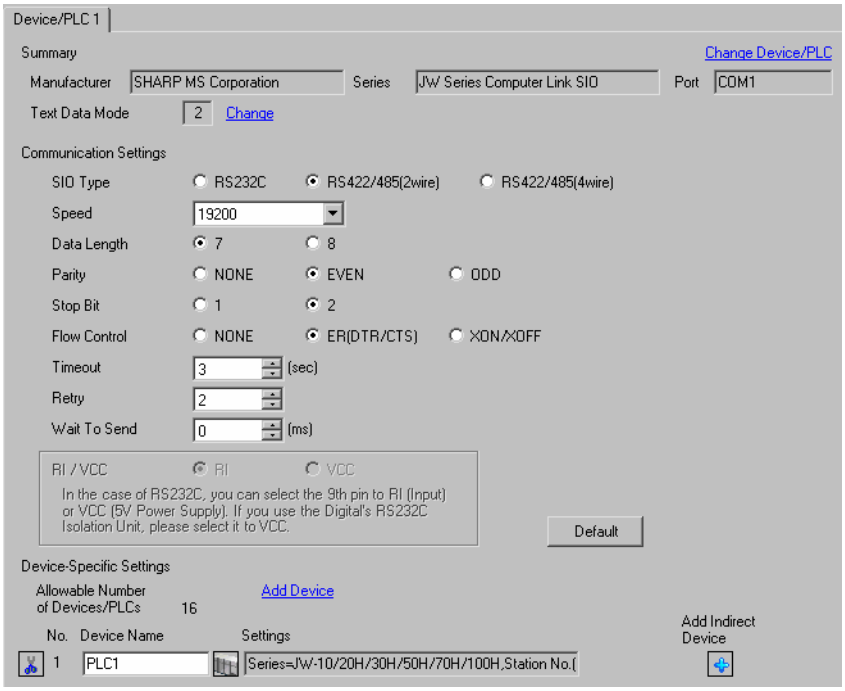
DIP Switch	Setting Value	Setup Description
SW7	ON	Insert the termination resistance: Set it to ON to insert the termination resistance. Set only the External Device which terminates the connection to ON.

3.9 Setting Example 9

■ Settings of GP-Pro EX

◆ Communication Settings

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

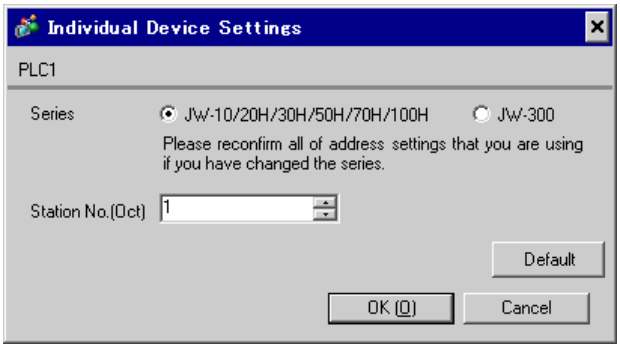


NOTE	• Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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

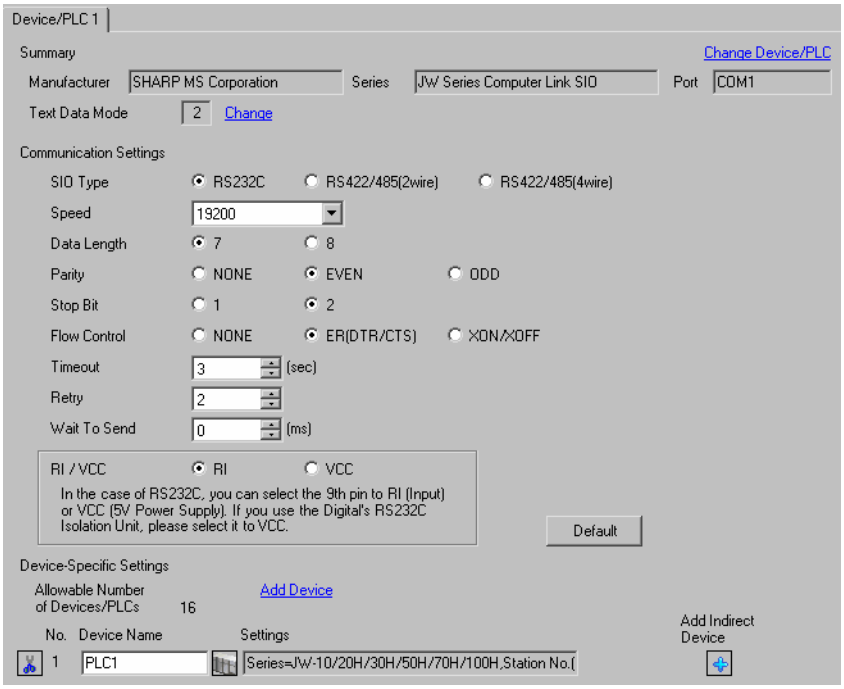
DIP Switch	Setting Value	Setup Description
SW7	ON	Insert the termination resistance: Set it to ON to insert the termination resistance. Set only the External Device which terminates the connection to ON.

3.10 Setting Example 10

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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

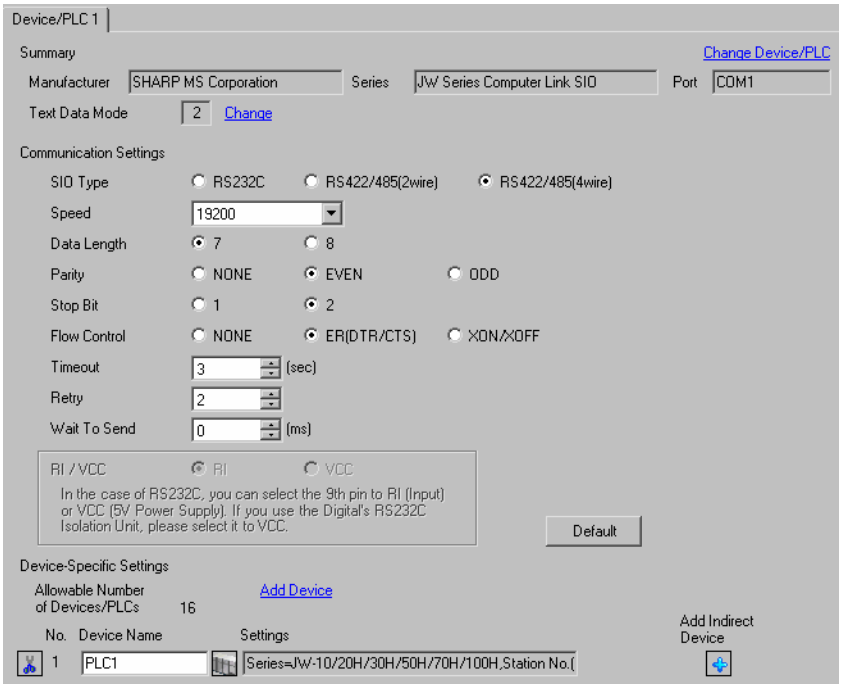
Setting Area	Setting Value	Setup Description
#0237	1(o)	Station No. setting. Enter in octal number.

3.11 Setting Example 11

■ Settings of GP-Pro EX

◆ Communication Settings

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



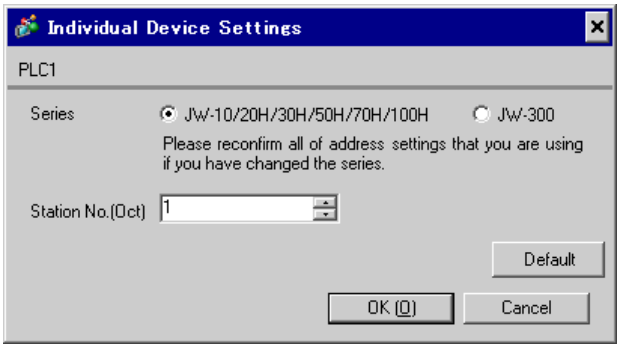
NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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



■ 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. 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

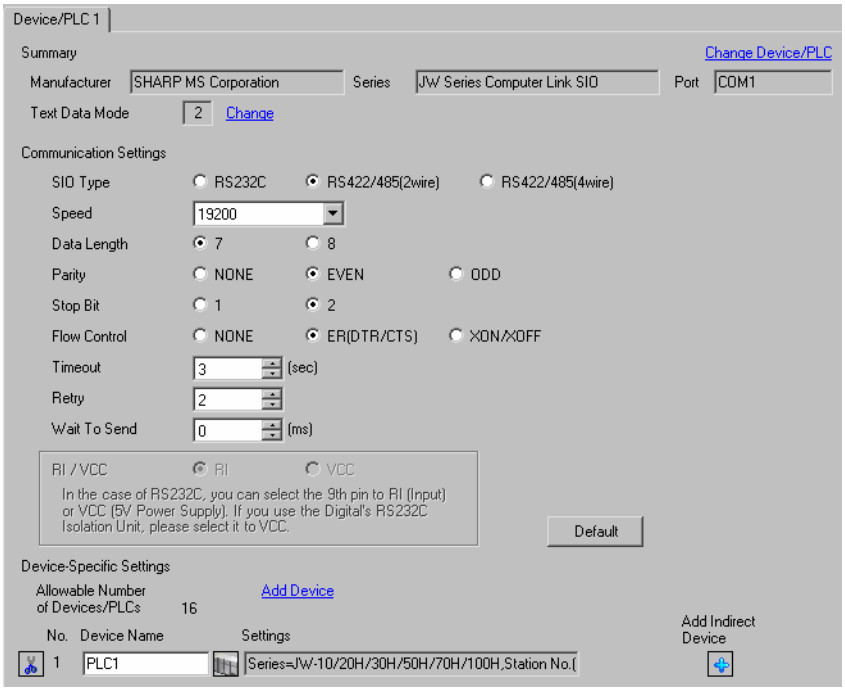
Insert the termination resistance at the end. Connecting the 6th and 13th pins in the port on the External Device allows the termination resistance to be inserted.

3.12 Setting Example 12

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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

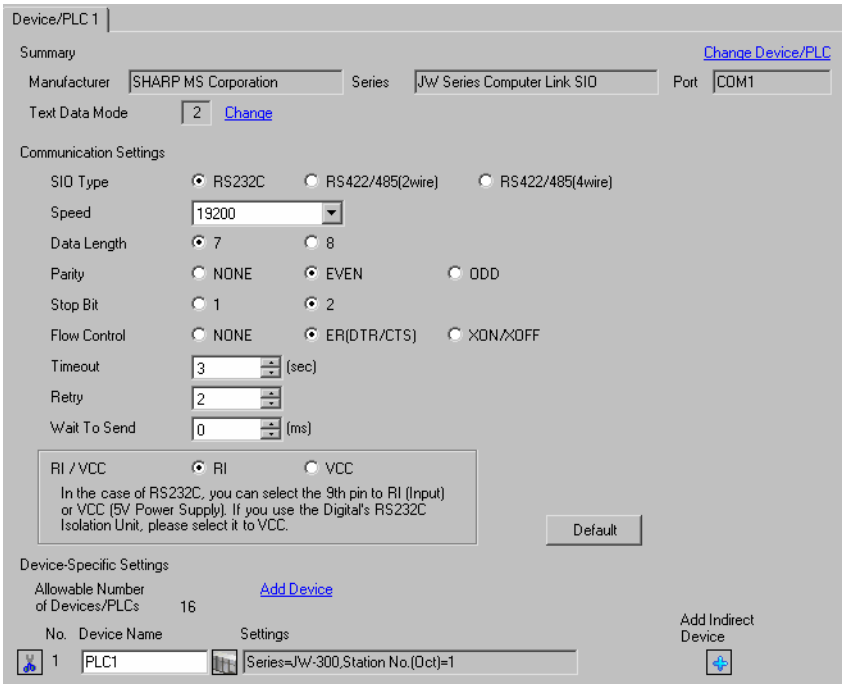
DIP Switch	Setting Value	Setup Description
SW7	ON	Insert the termination resistance: Set it to ON to insert the termination resistance. Set only the External Device which terminates the connection to ON.

3.13 Setting Example 13

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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 #0234

Setting Area	Setting Value	Setup Description
#0234	30(H)	Communication setting. Enter in hex number. 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	Data Length: 7 bits
D7	OFF	Always OFF

◆ Setting for #0235

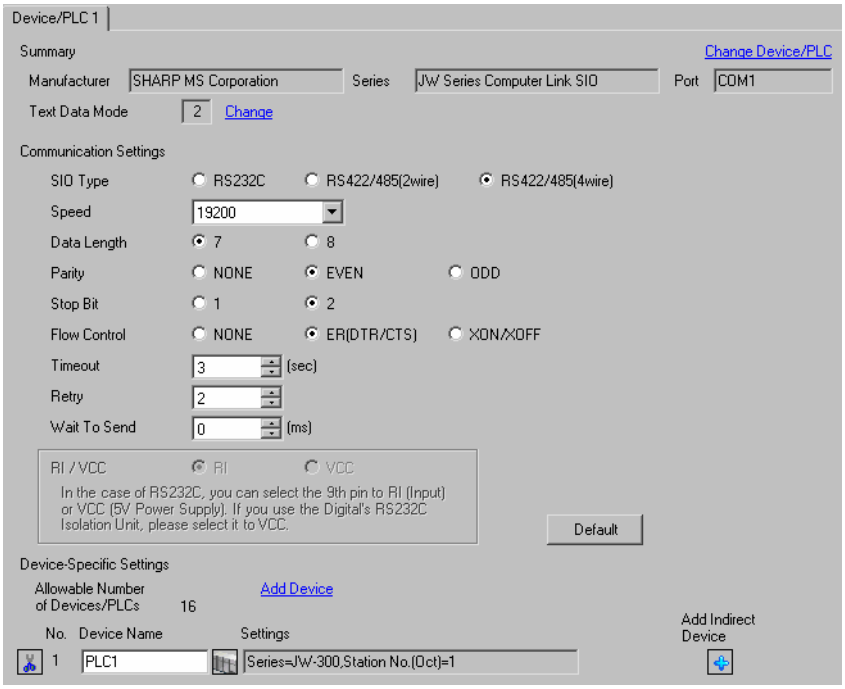
Setting Area	Setting Value	Setup Description
#0235	1(o)	Station No. setting. Enter in octal number.

3.14 Setting Example 14

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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 #0234

Setting Area	Setting Value	Setup Description
#0234	30(H)	Communication setting. Enter in hex number. 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	Data Length: 7 bits
D7	OFF	Always OFF

◆ Setting for #0235

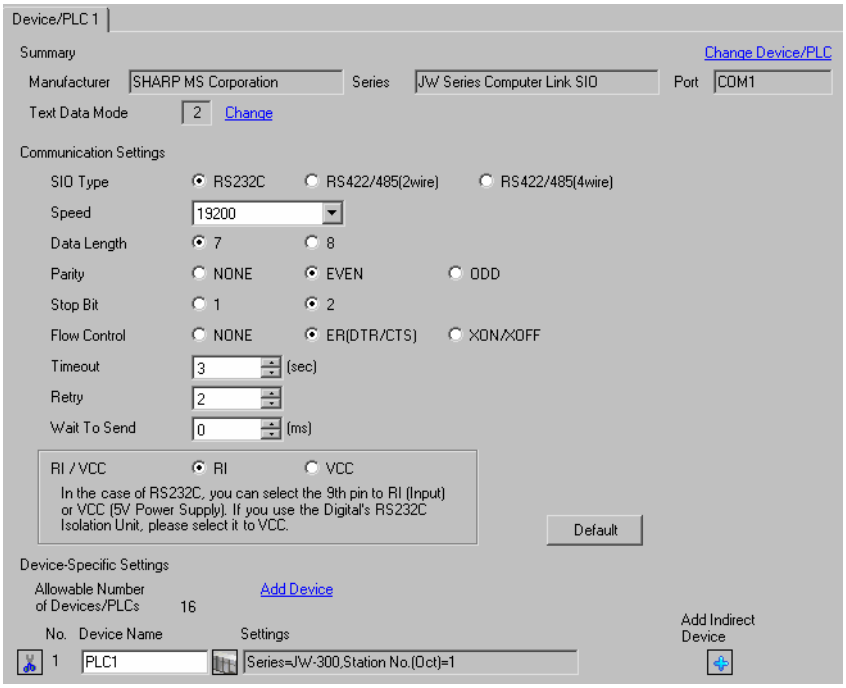
Setting Area	Setting Value	Setup Description
#0235	1(o)	Station No. setting. Enter in octal number.

3.15 Setting Example 15

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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	Data Length: 7 bits
D7	OFF	Always OFF

◆ Setting for #0237

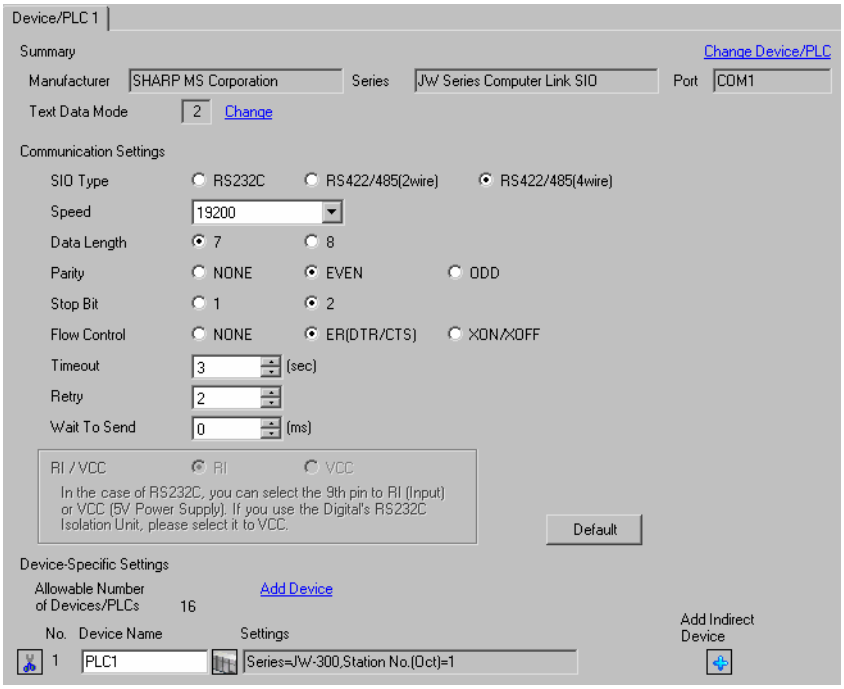
Setting Area	Setting Value	Setup Description
#0237	1(o)	Station No. setting. Enter in octal number.

3.16 Setting Example 16

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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	Data Length: 7 bits
D7	OFF	Always OFF

◆ Setting for #0237

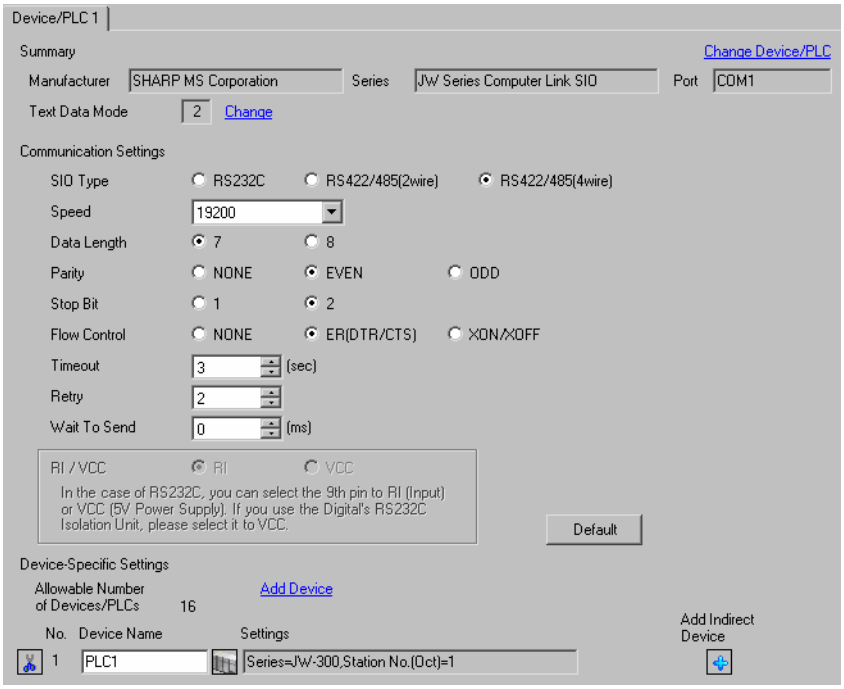
Setting Area	Setting Value	Setup Description
#0237	1(o)	Station No. setting. Enter in octal number.

3.17 Setting Example 17

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. Set only the External Device which terminates the connection to ON.

◆ Unit No. Switch

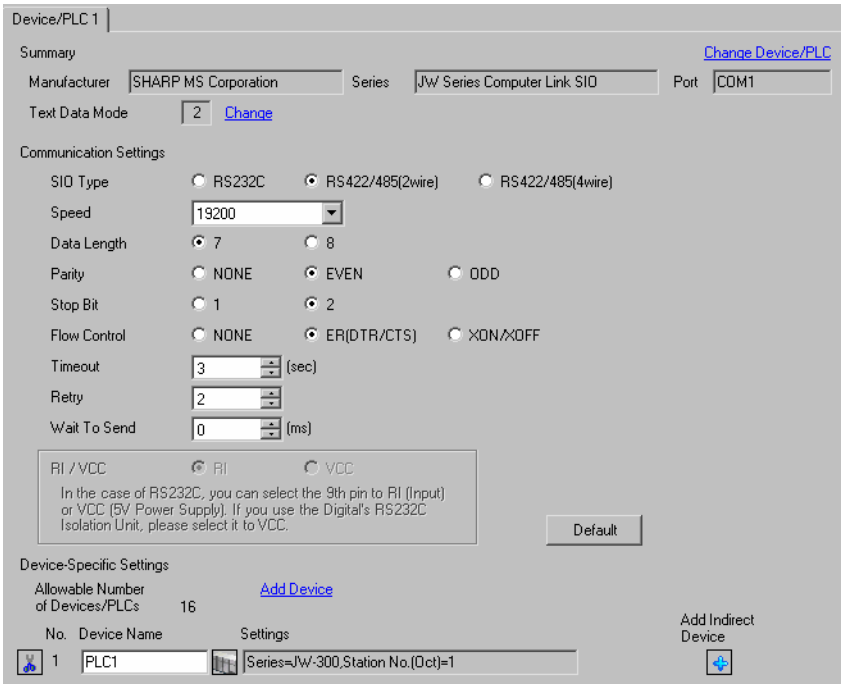
Rotary Switch	Setting Value	Setup Description
SW8	0	Set the data memory address for sub station 01 to 04.

3.18 Setting Example 18

■ Settings of GP-Pro EX

◆ Communication Settings

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



NOTE

- Setting value for Wait To Send differs depending on the External Device. Please refer to the manual of the External Device for more details.

◆ Device Setting

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

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

■ 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. 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.

4 Setup Items

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

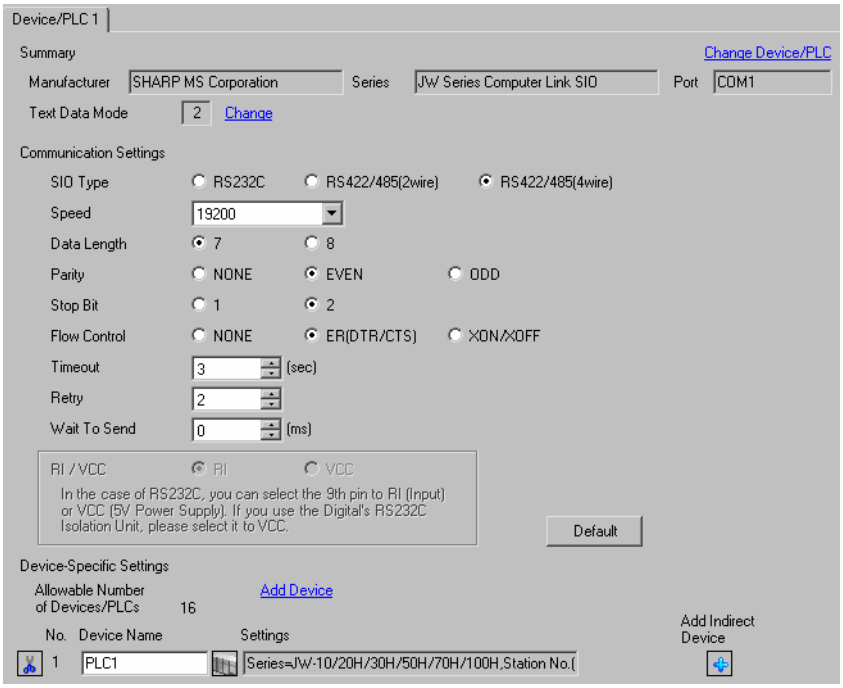
The setting of each parameter must be identical to that of External Device.

☞"3 Example of Communication Setting" (page 9)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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



Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
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.

Continues to the 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	Switches RI/VCC of the 9th pin. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

NOTE

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

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

■ Device Setting

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

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

Setup Items	Setup Description
Series	Select a series of the External Device
Station No. (Oct)	Enter the unit No. of the External Device with "01 to 77" (octal). **NOTE** • When connecting the JW10 Series, enter with "0 to 77" (octal).

4.2 Settings in Offline Mode

NOTE

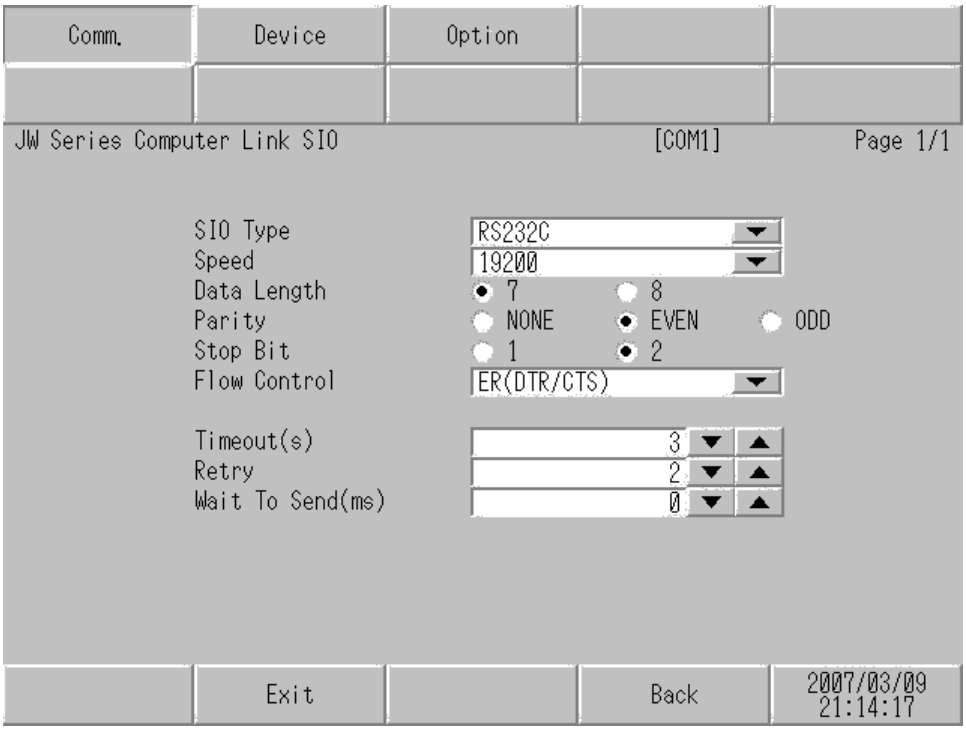
- Refer to the Maintenance/Troubleshooting guide for information on how to enter offline mode or about the operation.

  Cf. Maintenance/Troubleshooting Guide "Offline Mode"]

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

■ Communication Settings

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



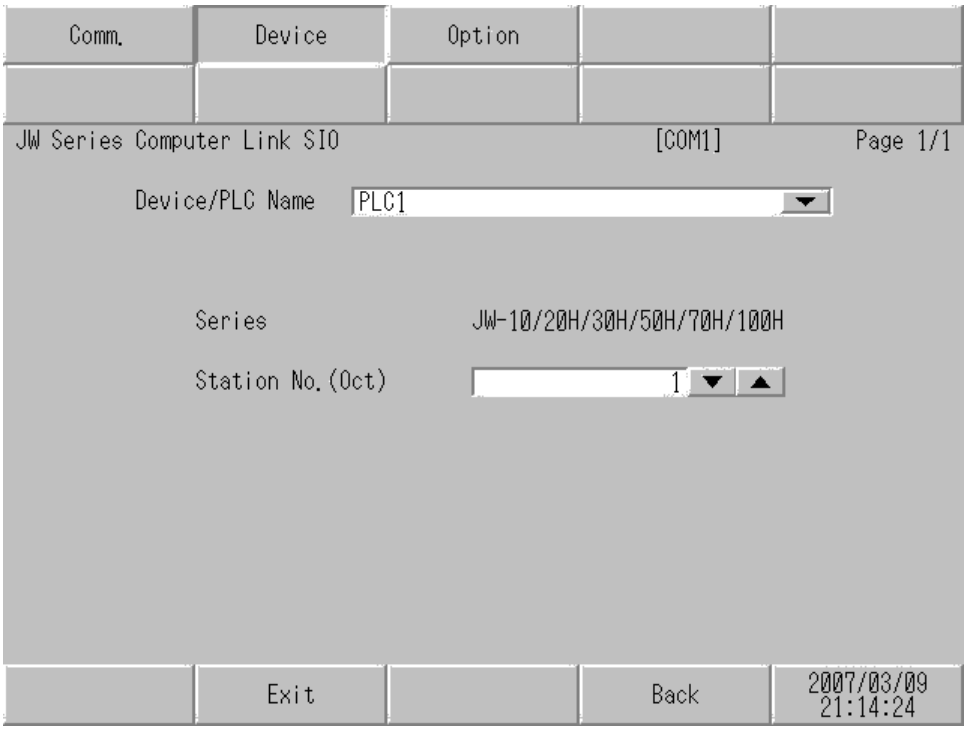
Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. **IMPORTANT** To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.

Continued to next page.

Setup Items	Setup Description
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

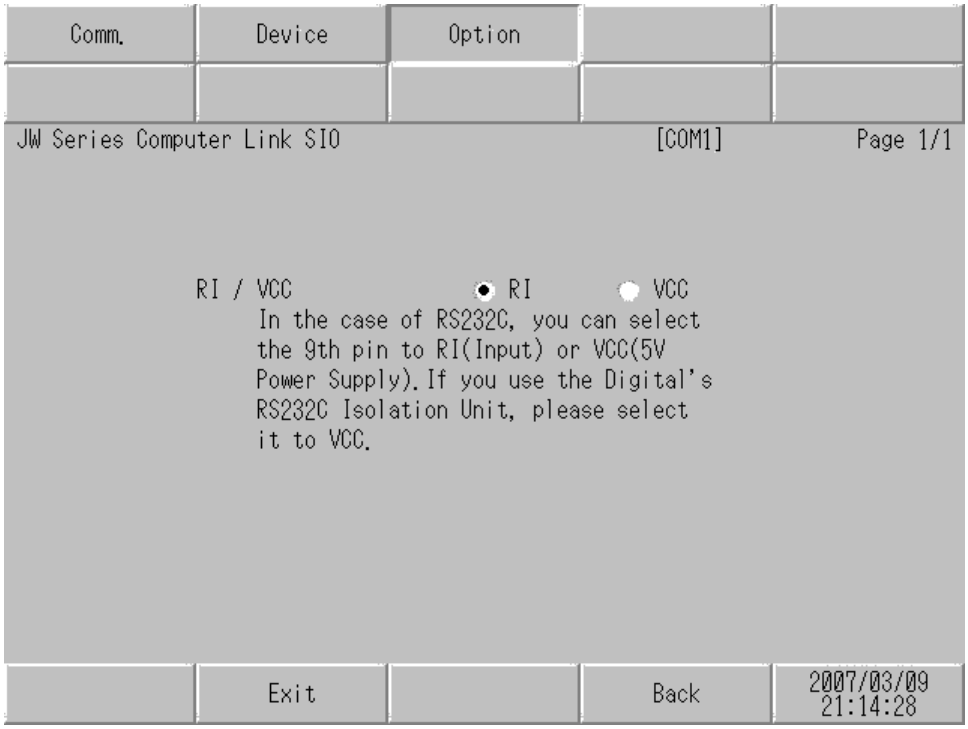
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].



Setup Items	Setup Description
Device/PLC Name	Select the External Device to set. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Series	Display a series of the External Device
Station No. (Oct)	Enter the unit No. of the External Device with "01 to 77" (octal). **NOTE** • 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. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

NOTE

- GP-4*01TM, LT-4*01TM and LT-Rear Module do not have the [Option] setting in the offline mode.

5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by 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.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc..

Cable Diagram 1

Display (Connection Port)	Cable		Remarks
GP3000*1 (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST*2 (COM2) LT3000 (COM1) IPC*3	1A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	1B	Your own cable	
GP3000*4 (COM2)	1C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	1D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
GP4000*5 (COM2) GP-4201T (COM1) SP5000 (COM1/2)	1E	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1*6 + Your own cable	Cable length: 1000m or less
	1B	Your own cable	

*1 All GP models except AGP-3302B

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

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 6)

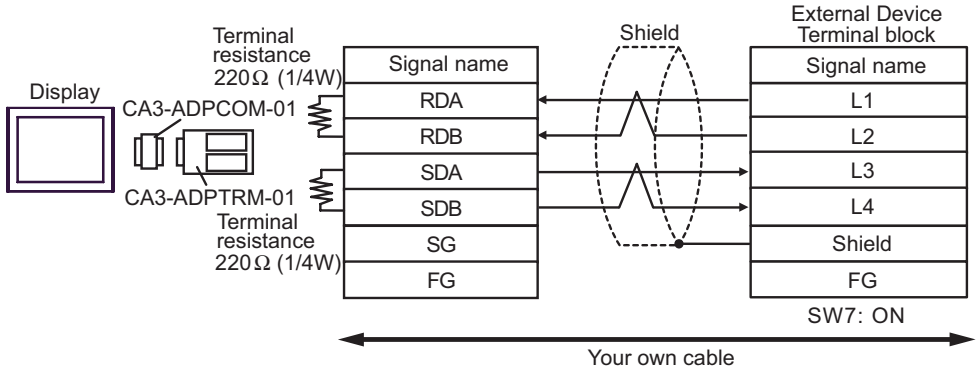
*4 All GP models except GP-3200 series and AGP-3302B

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

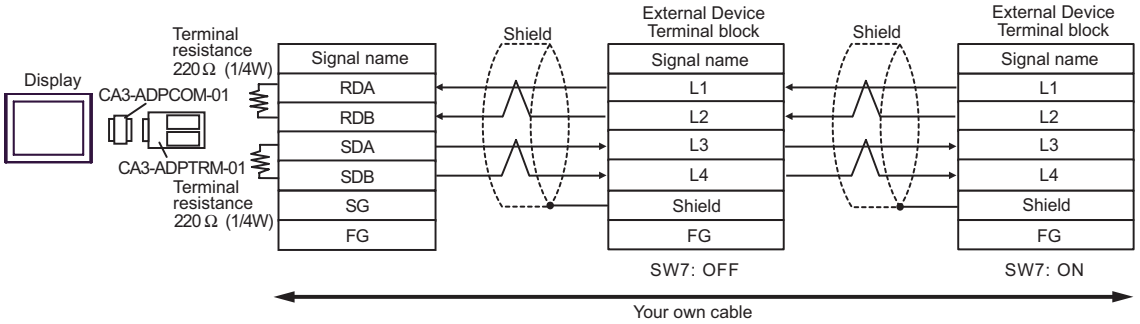
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 1A.

1A)

- 1:1 Connection



- 1:n Connection

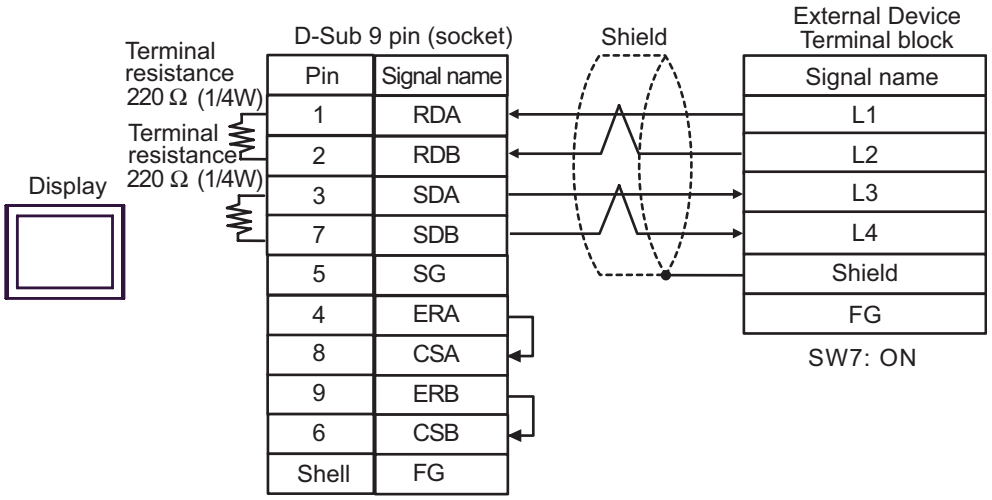


NOTE

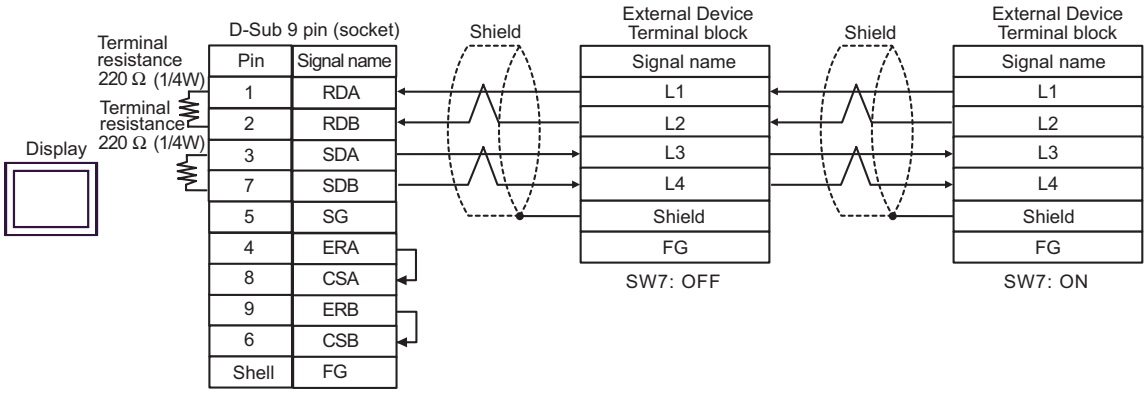
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 5, 6 of IPC is turned to ON.

1B)

- 1:1 Connection



- 1:n Connection

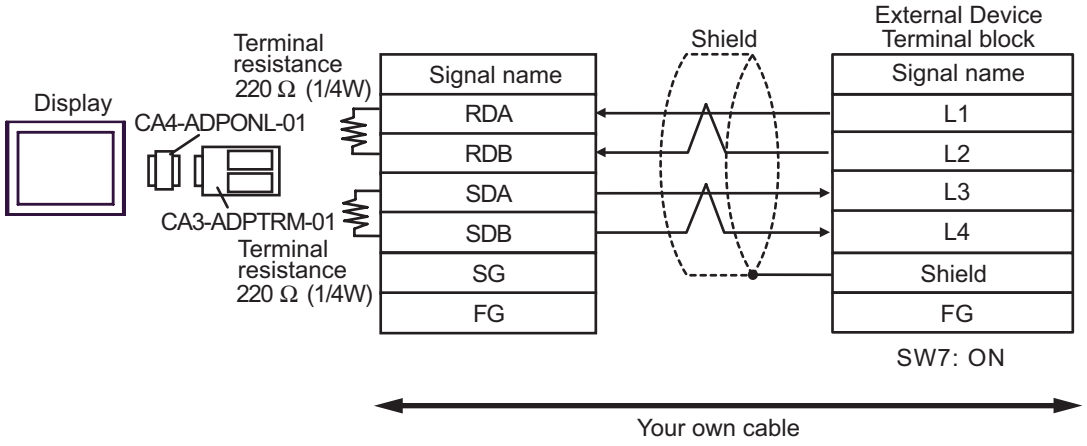


NOTE

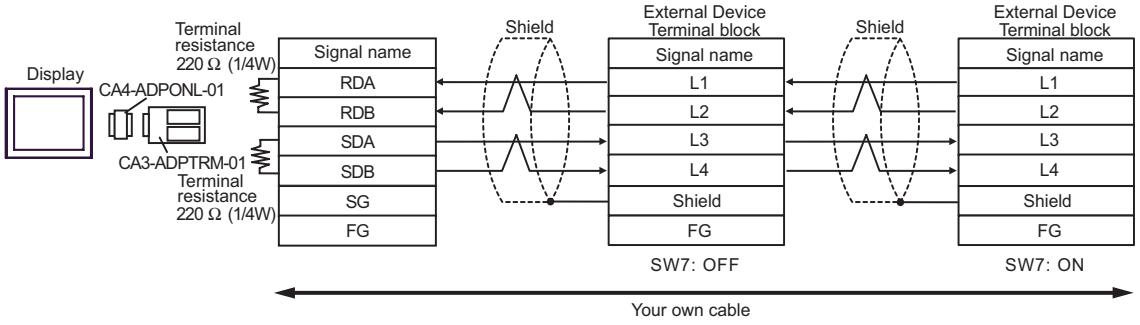
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 5, 6 of IPC is turned to ON.

1C)

- 1:1 Connection

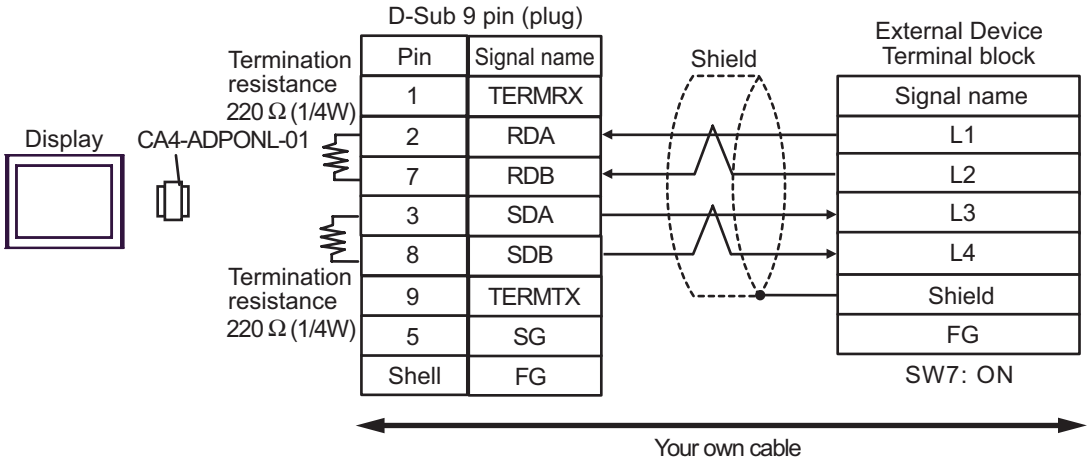


- 1:n Connection

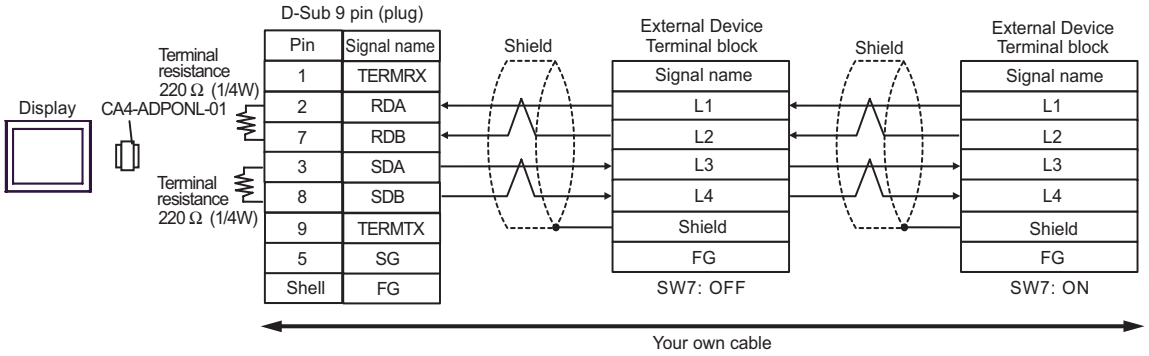


1D)

- 1:1 Connection

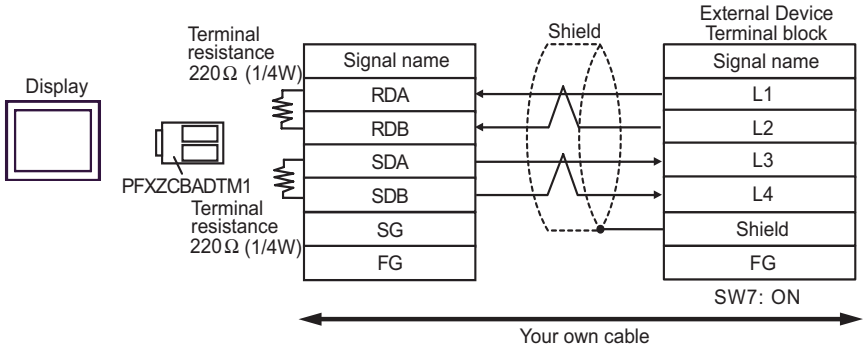


- 1:n Connection

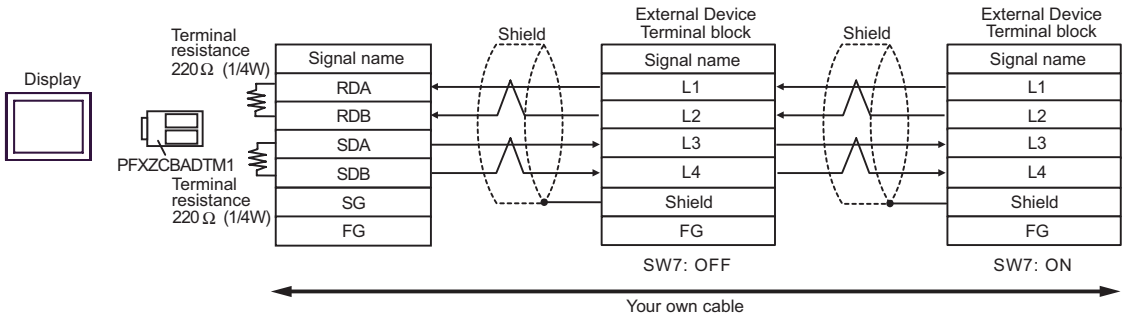


1E)

- 1:1 Connection



- 1:n Connection



Cable Diagram 2

Display (Connection Port)	Cable		Remarks
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST[*2] (COM2) LT3000 (COM1)	2A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	2B	Your own cable	
GP3000[*3] (COM2)	2C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	2D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*4]	2E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	2F	Your own cable	
GP-4*03T[*5] (COM2) GP-4203T (COM1)	2G	Your own cable	Cable length: 1000m or less
GP4000[*6] (COM2) GP-4201T (COM1 SP5000 (COM1/2)	2H	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1[*7] + Your own cable	Cable length: 1000m or less
	2B	Your own cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	2I	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	Cable length: 200m or less

*1 All GP models except AGP-3302B

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

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

*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
☞ ■ IPC COM Port (page 6)

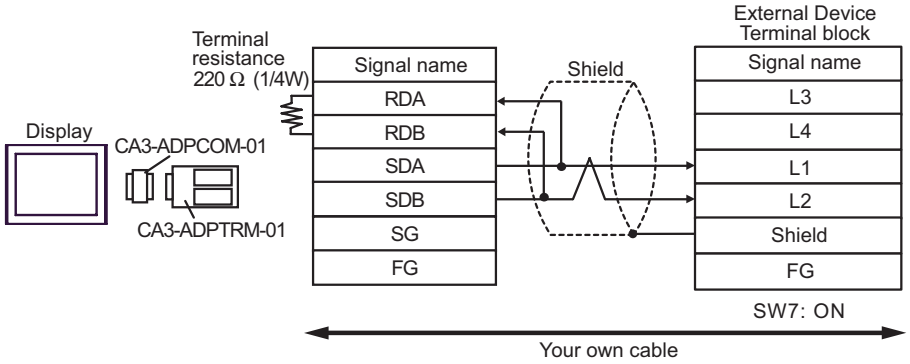
*5 Except GP-4203T

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

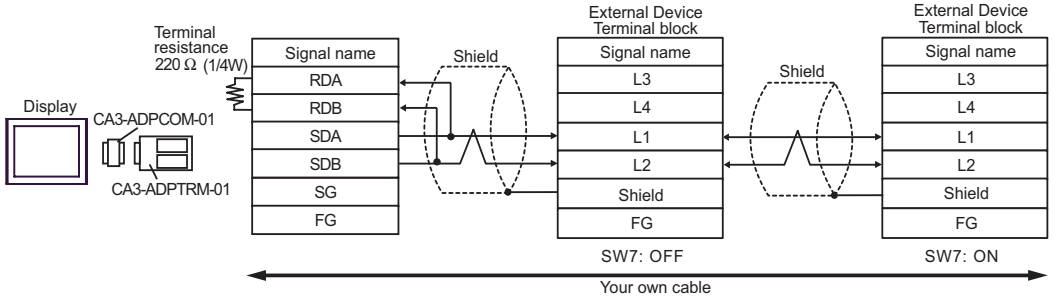
*7 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 2A.

2A)

- 1:1 Connection

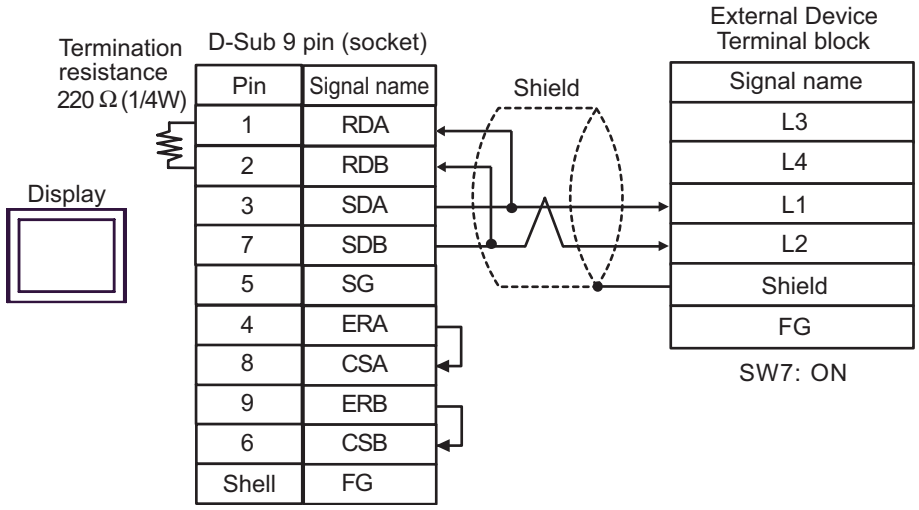


- 1:n Connection

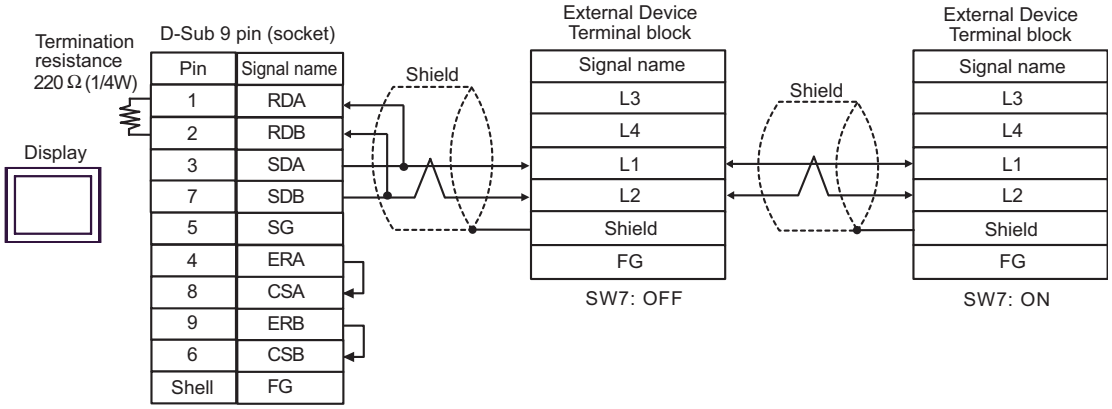


2B)

- 1:1 Connection

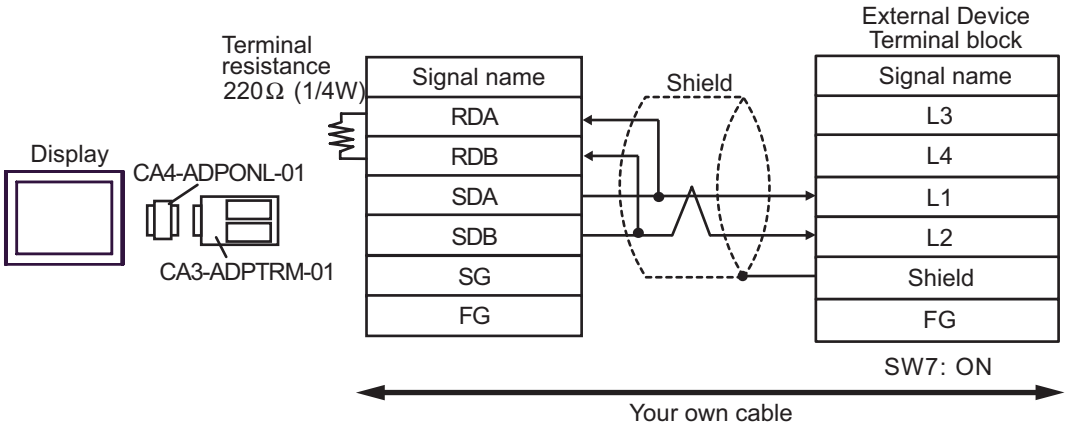


- 1:n Connection

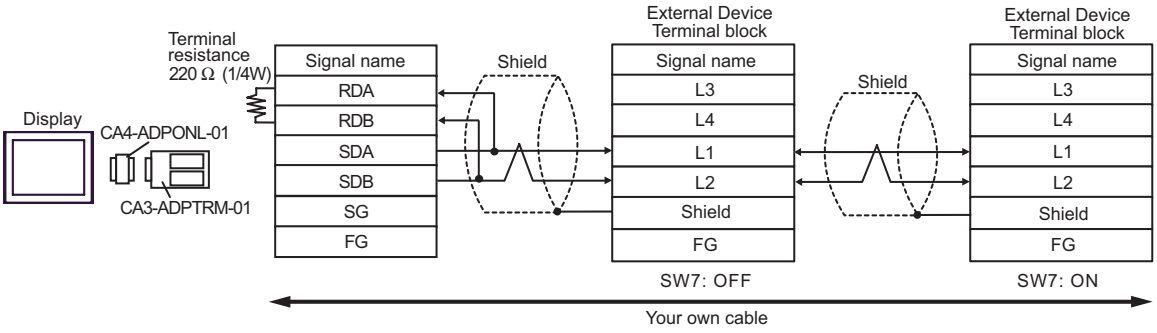


2C)

- 1:1 Connection

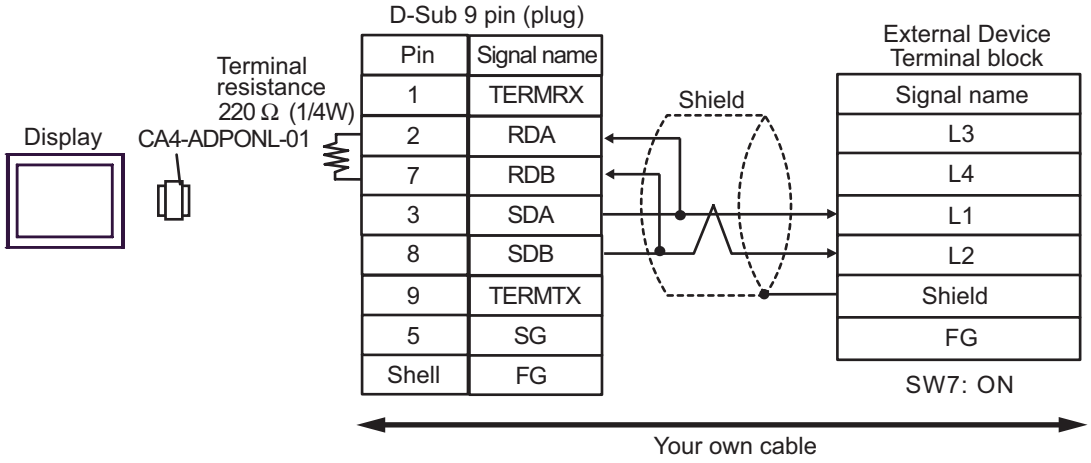


- 1:n Connection

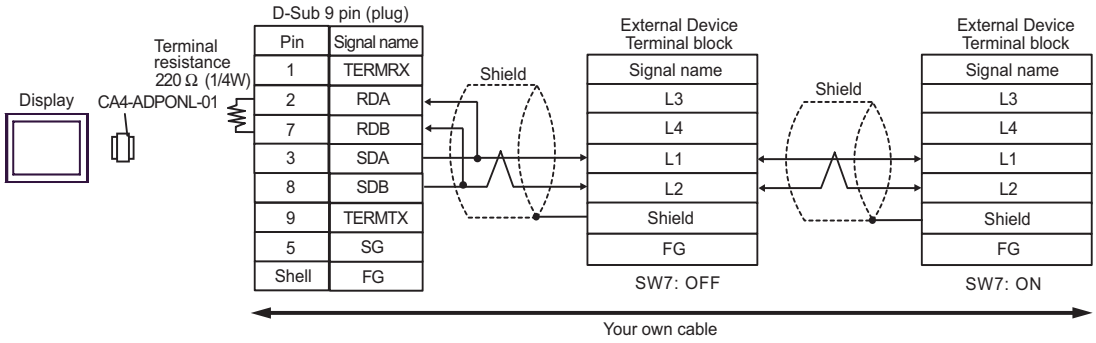


2D)

- 1:1 Connection

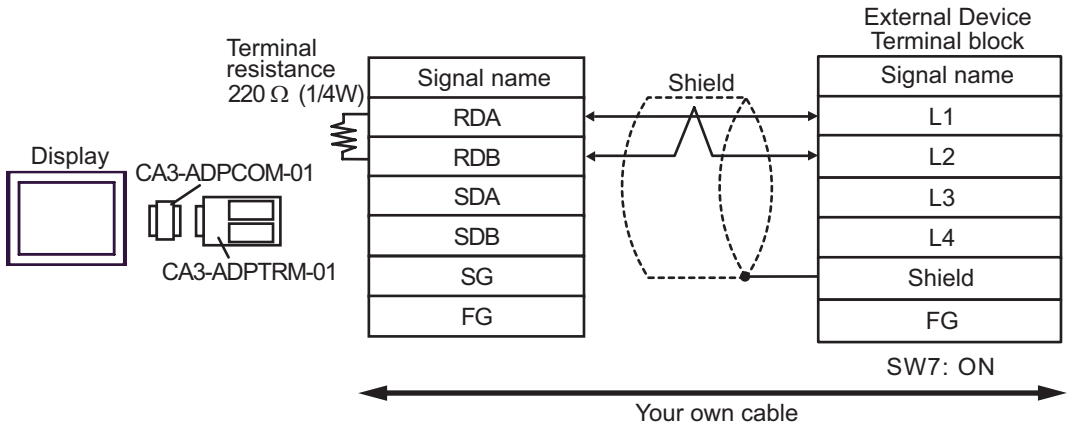


- 1:n Connection

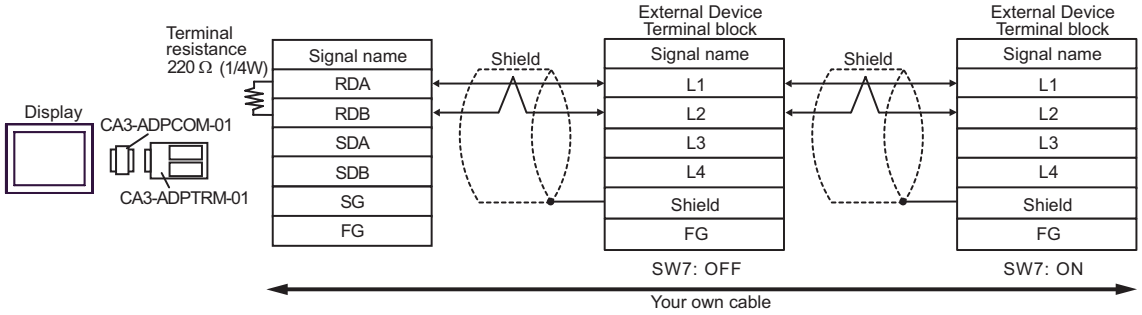


2E)

- 1:1 Connection



- 1:n Connection

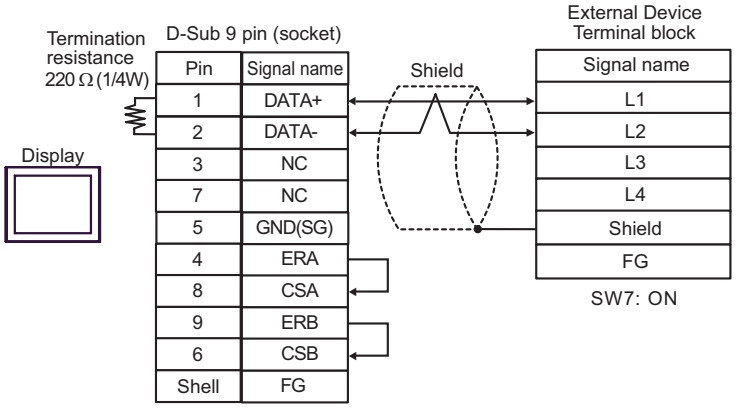


NOTE

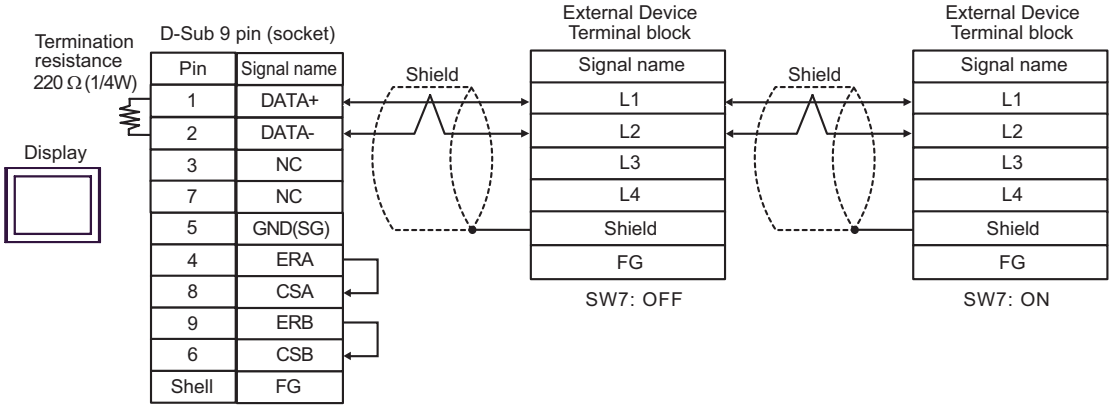
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 6 of IPC is turned to ON.

2F)

- 1:1 Connection



- 1:n Connection

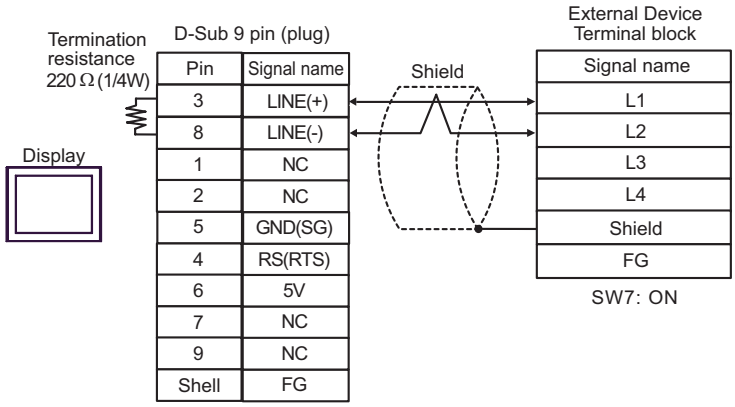


NOTE

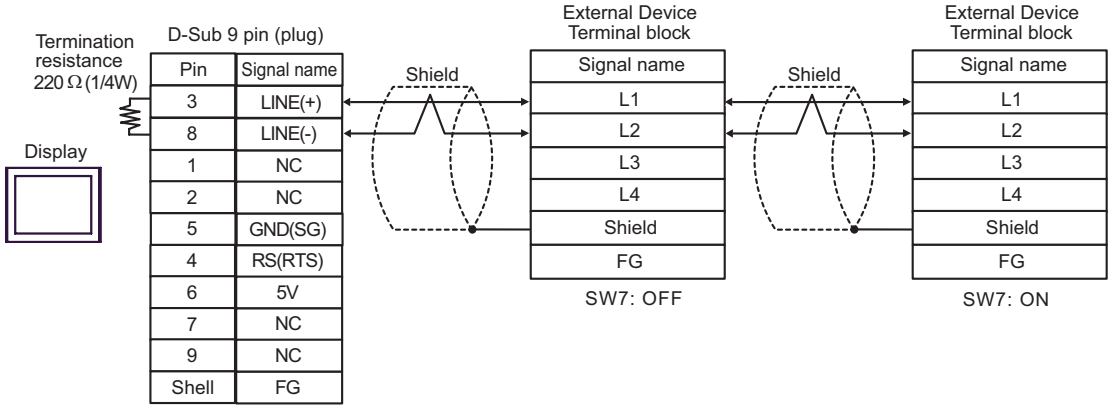
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 6 of IPC is turned to ON.

2G)

- 1:1 Connection



- 1:n Connection

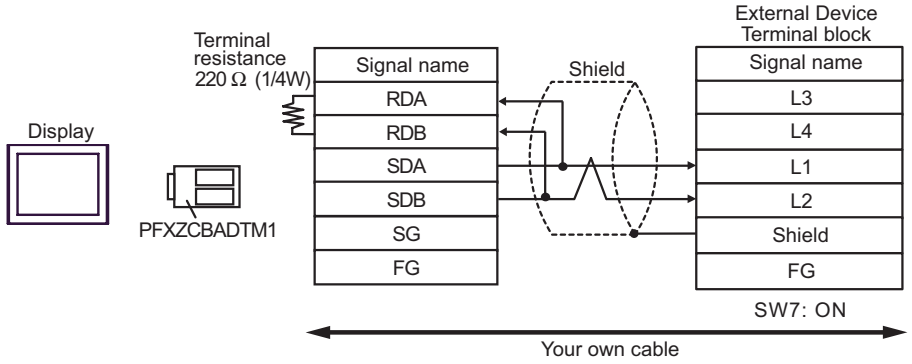


IMPORTANT

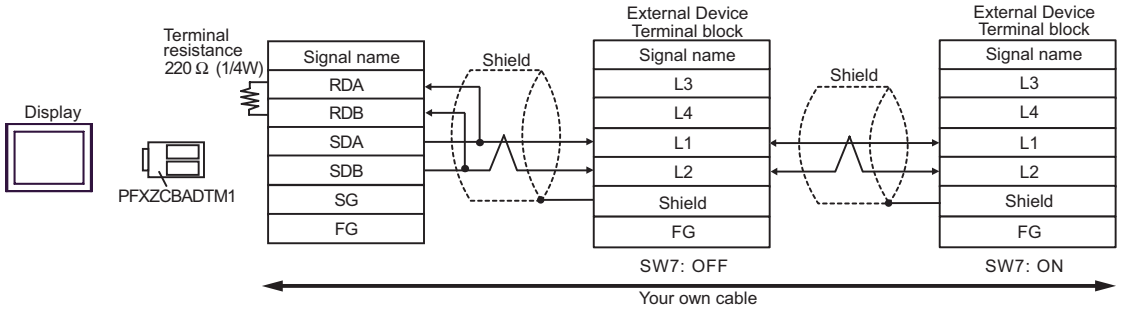
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

2H)

- 1:1 Connection

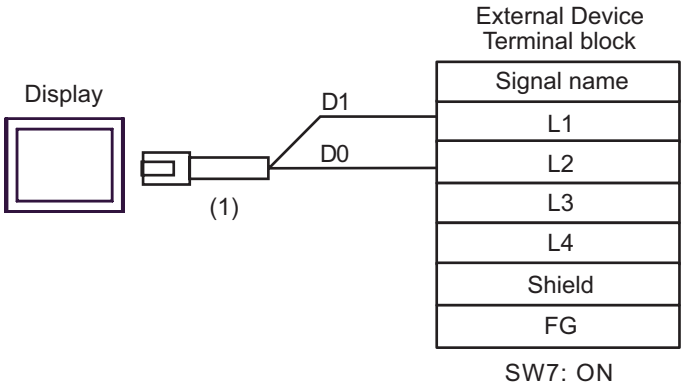


- 1:n Connection

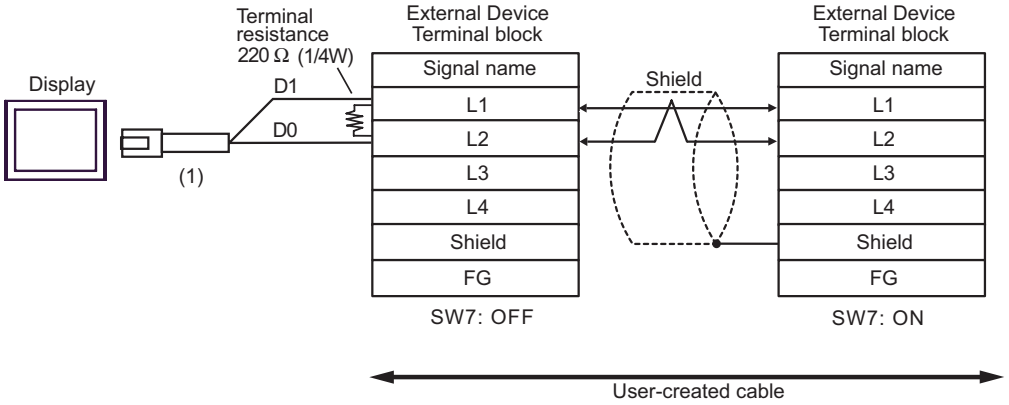


2I)

- 1:1 Connection



- 1:n Connection



Legend	Name	Notes
(1)	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	

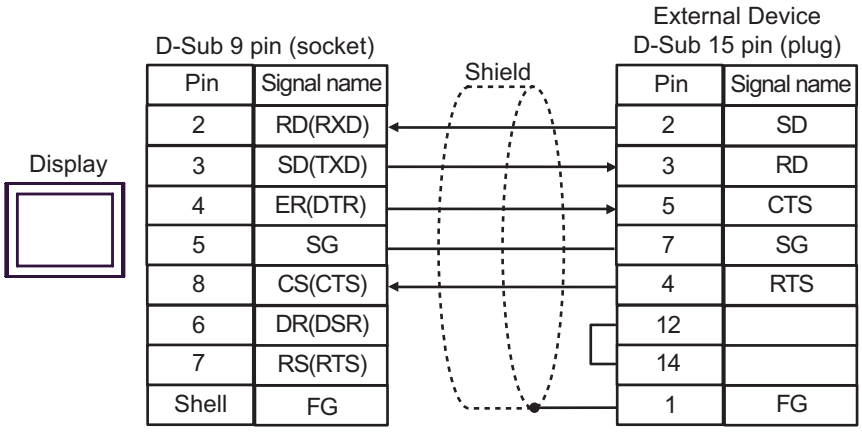
Cable Diagram 3

Display (Connection Port)	Cable		Remarks
GP3000 (COM1) GP4000*1 (COM1) SP5000 (COM1/2) ST (COM1) LT3000 (COM1) IPC*2 PC/AT	3A	Your own cable	Cable length: 15m or less

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

*2 Only the COM port which can communicate by RS-232C can be used.
☞ ■ IPC COM Port (page 6)

3A)



Cable Diagram 4

Display (Connection Port)	Cable		Remarks
GP3000*1 (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST*2 (COM2) LT3000 (COM1) IPC*3	4A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	4B	Your own cable	
GP3000*4 (COM2)	4C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	4D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
GP4000*5 (COM2) GP-4201T (COM1) SP5000 (COM1/2)	4E	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1*6 + Your own cable	Cable length: 1000m or less
	4B	Your own cable	

*1 All GP models except AGP-3302B

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

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 6)

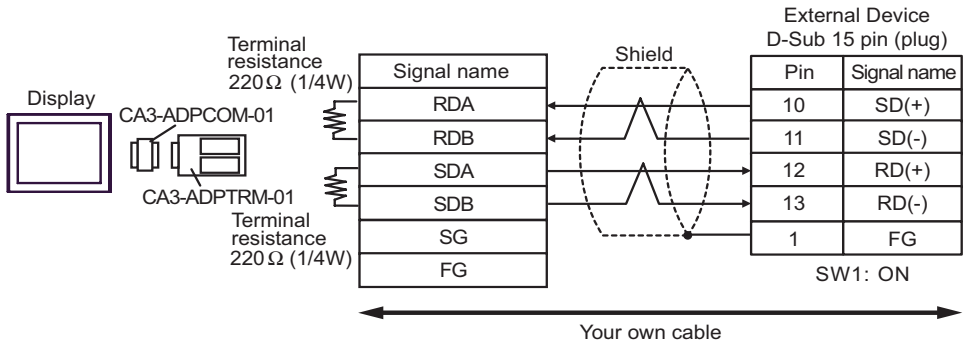
*4 All GP models except GP-3200 series and AGP-3302B

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

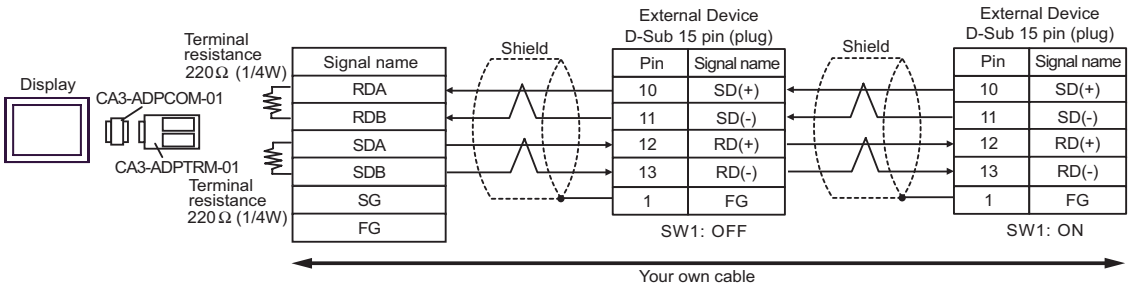
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 4A.

4A)

- 1:1 Connection



- 1:n Connection

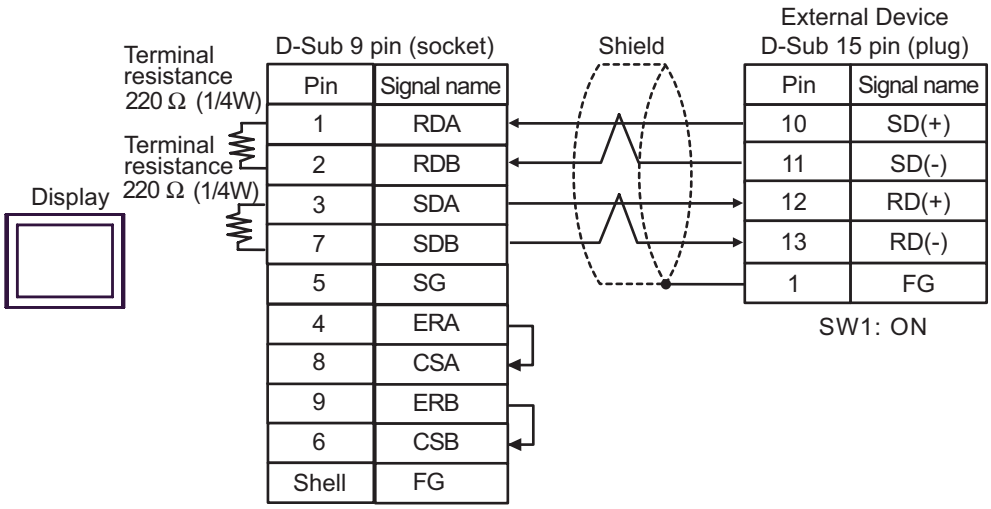


NOTE

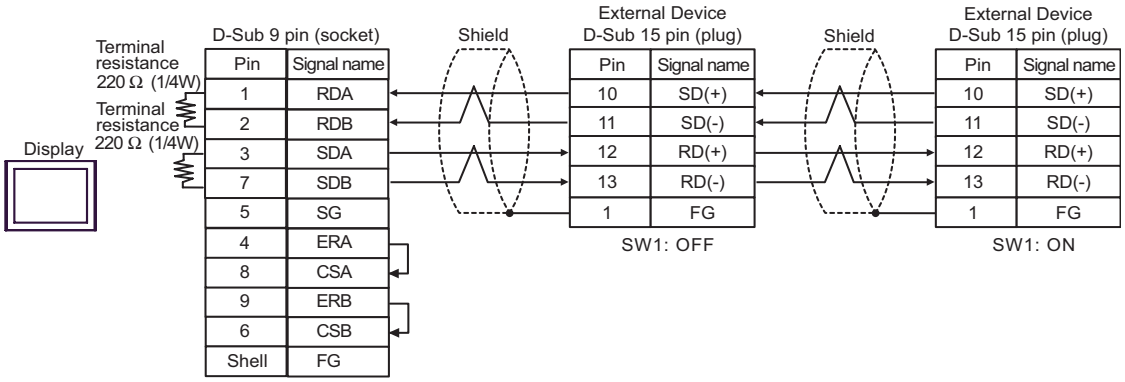
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 5, 6 of IPC is turned to ON.

4B)

- 1:1 Connection



- 1:n Connection

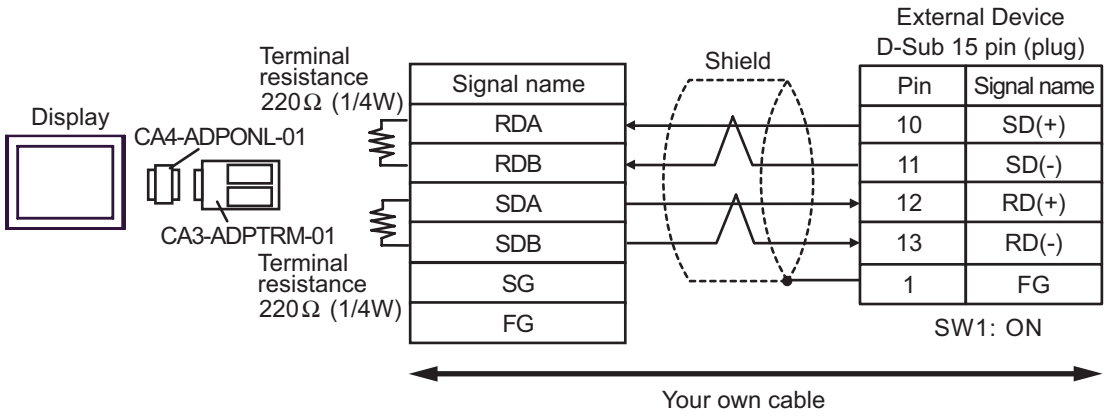


NOTE

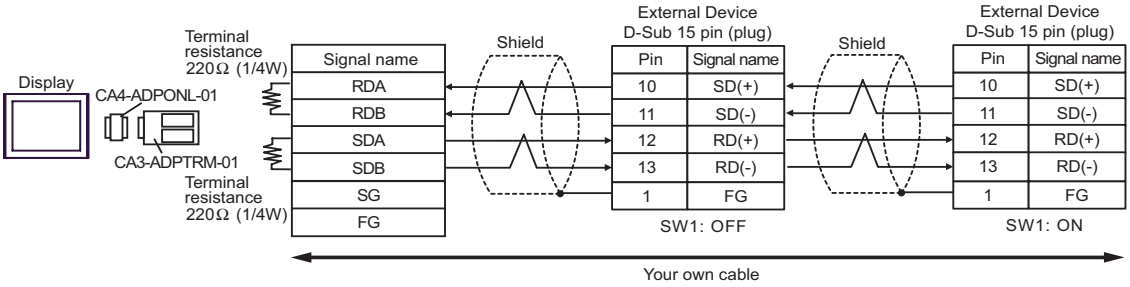
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 5, 6 of IPC is turned to ON.

4C)

- 1:1 Connection

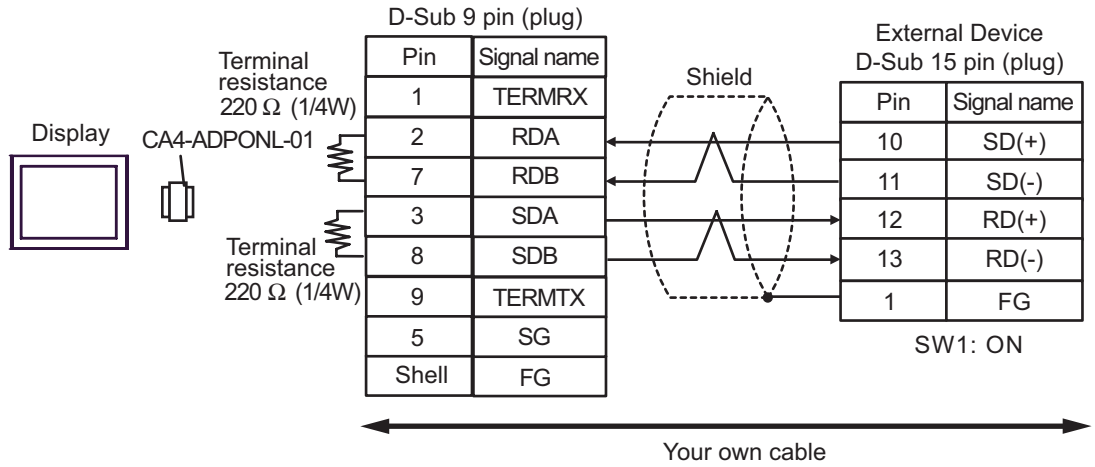


- 1:n connection

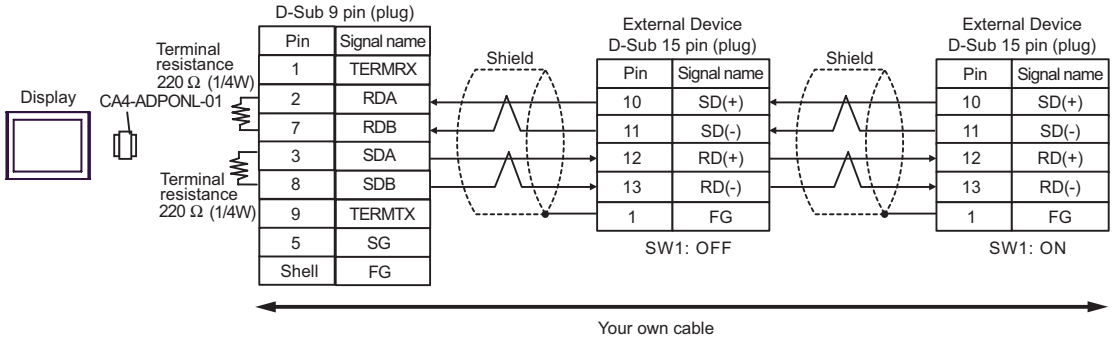


4D)

- 1:1 Connection

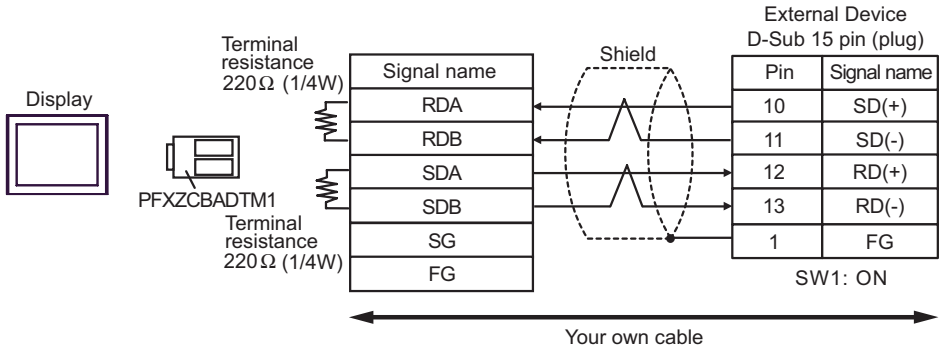


- 1:n Connection

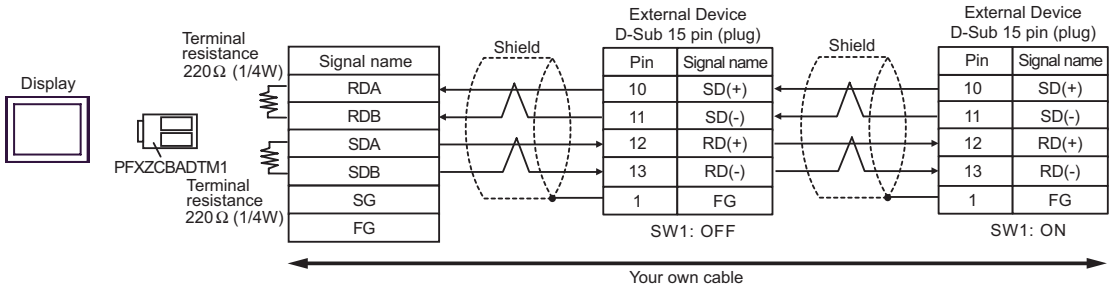


4E)

- 1:1 Connection



- 1:n Connection



Cable Diagram 5

Display (Connection Port)	Cable		Remarks
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST[*2] (COM2) LT3000 (COM1) IPC[*3]	5A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	5B	Your own cable	
GP3000[*4] (COM2)	5C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	5D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
GP4000[*5] (COM2) GP-4201T (COM1) SP5000 (COM1/2)	5E	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1[*6] + Your own cable	Cable length: 1000m or less
	5B	Your own cable	

*1 All GP models except AGP-3302B

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

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 6)

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

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

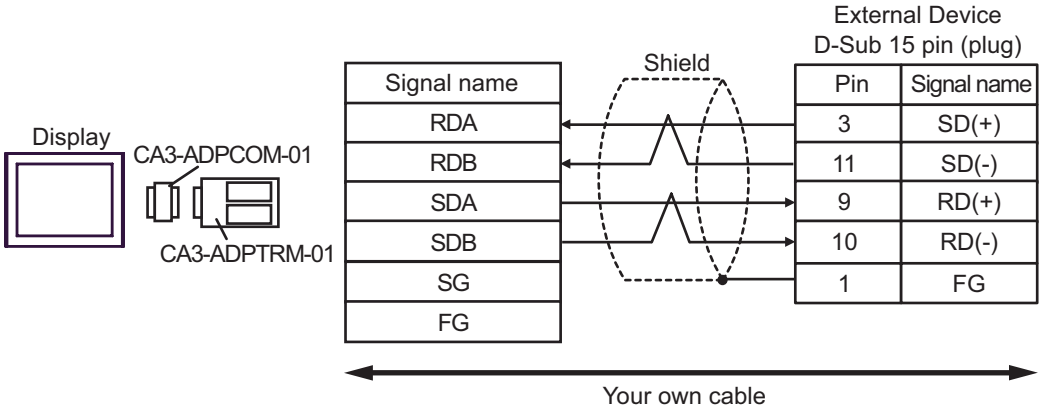
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 5A.

NOTE

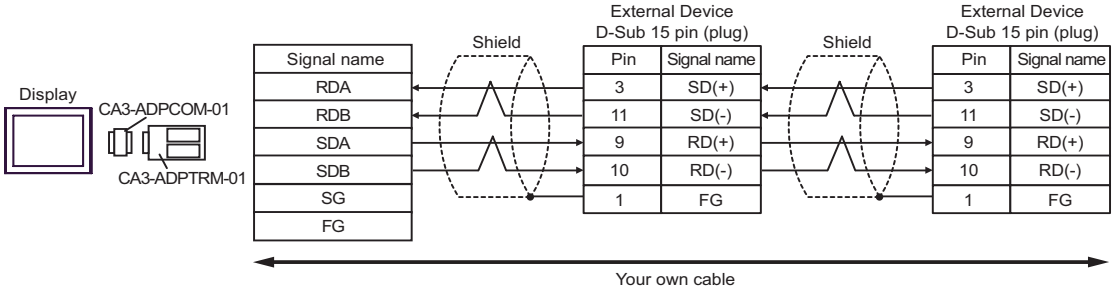
- Do not connect anything to Pins No. 2, 4, 8 and 12 on the External Device.
- Do not connect to Pins No. 14 and 15 on the External Device since voltage is +5V.

5A)

- 1:1 Connection

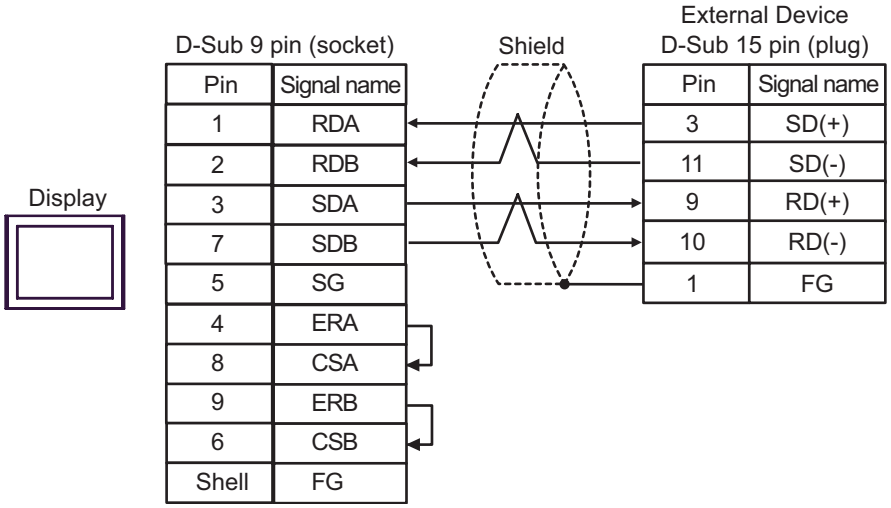


- 1:n Connection

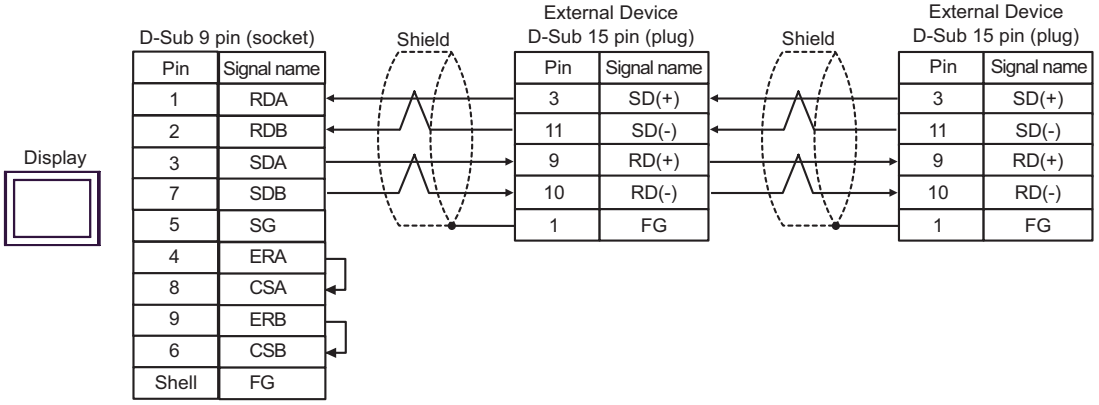


5B)

- 1:1 Connection

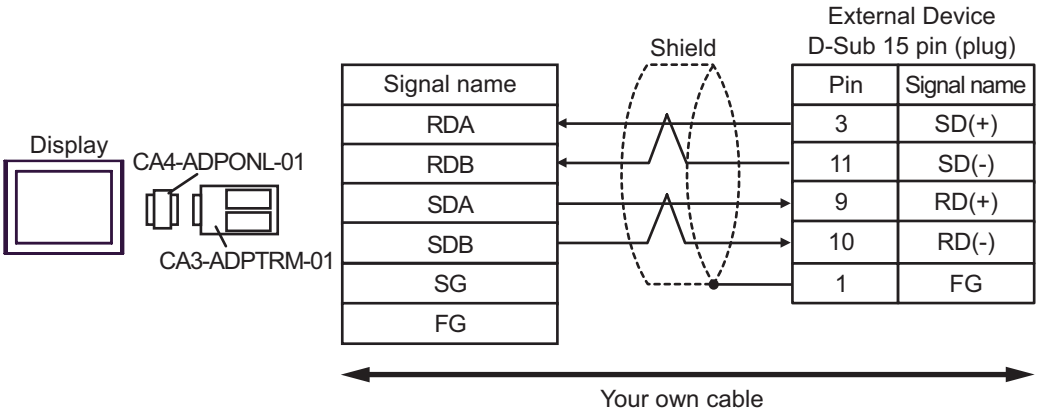


- 1:n Connection

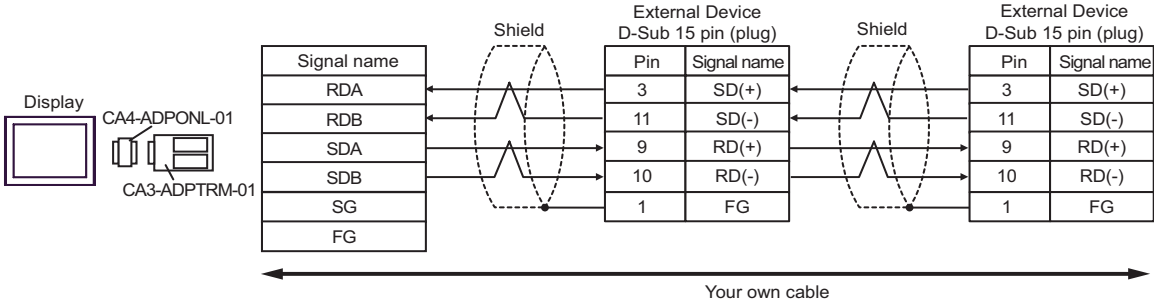


5C)

- 1:1 Connection

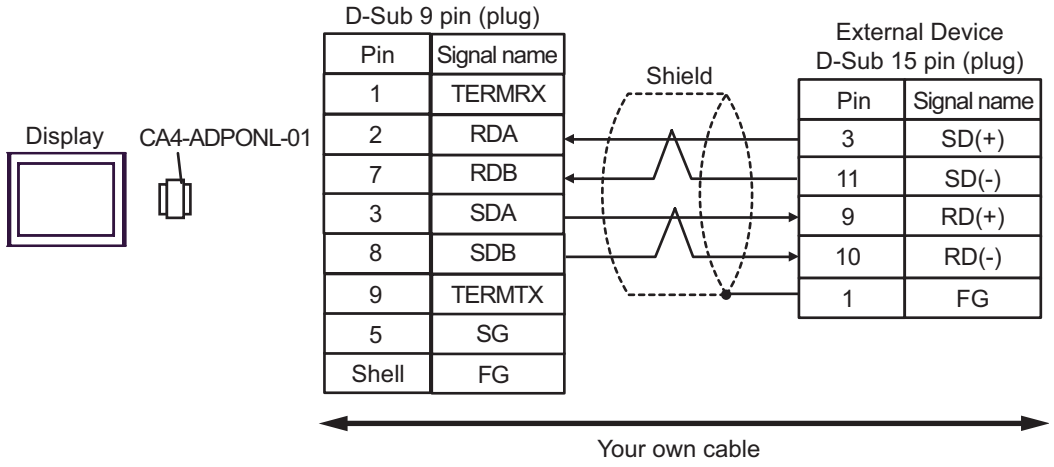


- 1:n Connection

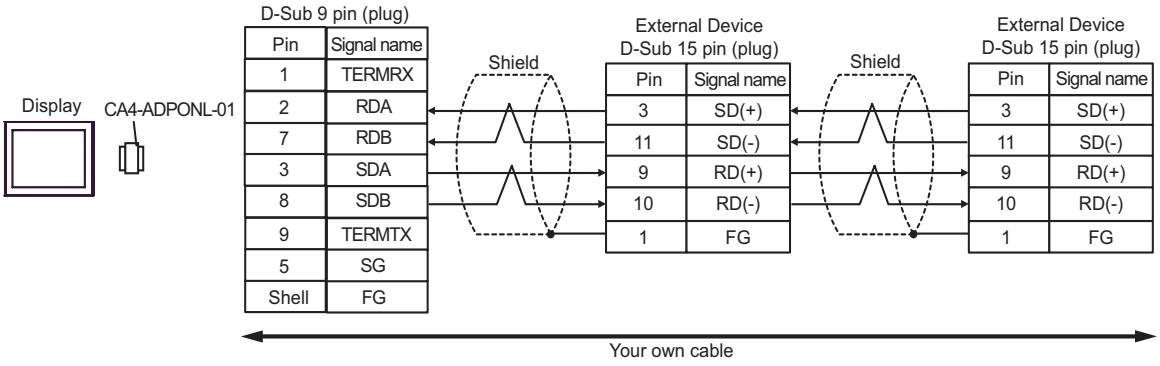


5D)

- 1:1 Connection

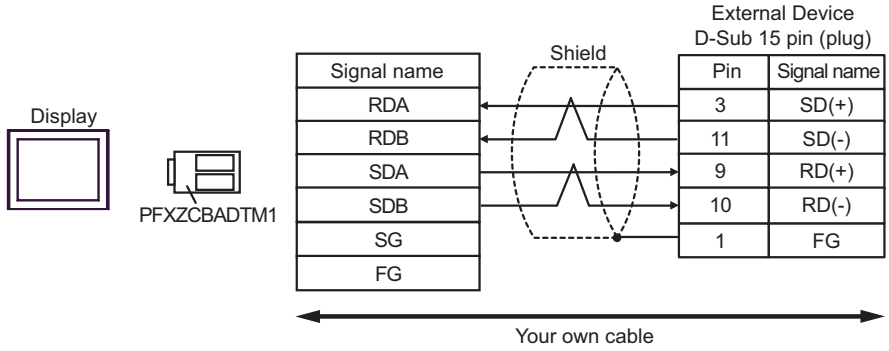


- 1:n Connection

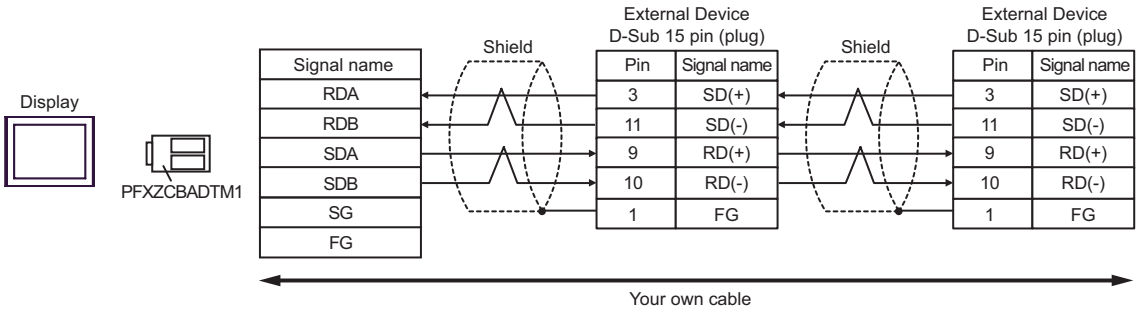


5E)

- 1:1 Connection



- 1:n Connection



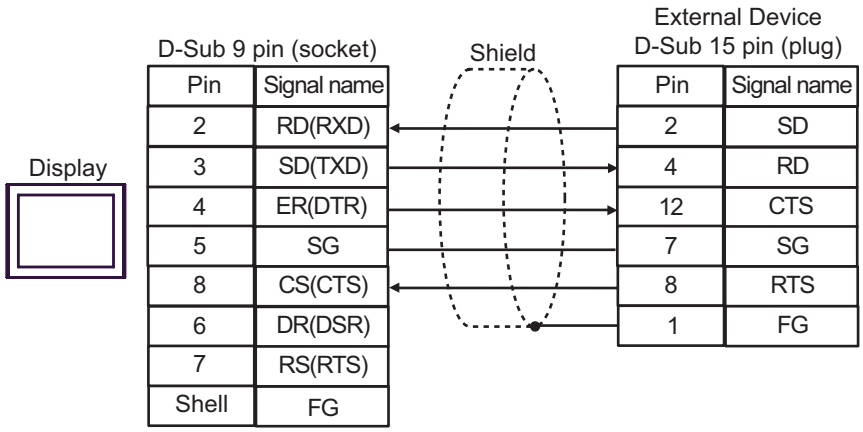
Cable Diagram 6

Display (Connection Port)	Cable		Remarks
GP3000 (COM1) GP4000*1 (COM1) SP5000 (COM1/2) ST (COM1) LT3000 (COM1) IPC*2 PC/AT	6A	Your own cable	Cable length: 15m or less

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

*2 Only the COM port which can communicate by RS-232C can be used.
☞ ■ IPC COM Port (page 6)

6A)



Cable Diagram 7

Display (Connection Port)	Cable		Remarks
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST[*2] (COM2) LT3000 (COM1) IPC[*3]	7A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	7B	Your own cable	
GP3000[*4] (COM2)	7C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	7D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
GP4000[*5] (COM2) GP-4201T (COM1) SP5000 (COM1/2)	7E	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1[*6] + Your own cable	Cable length: 1000m or less
	7B	Your own cable	

*1 All GP models except AGP-3302B

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

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞■ IPC COM Port (page 6)

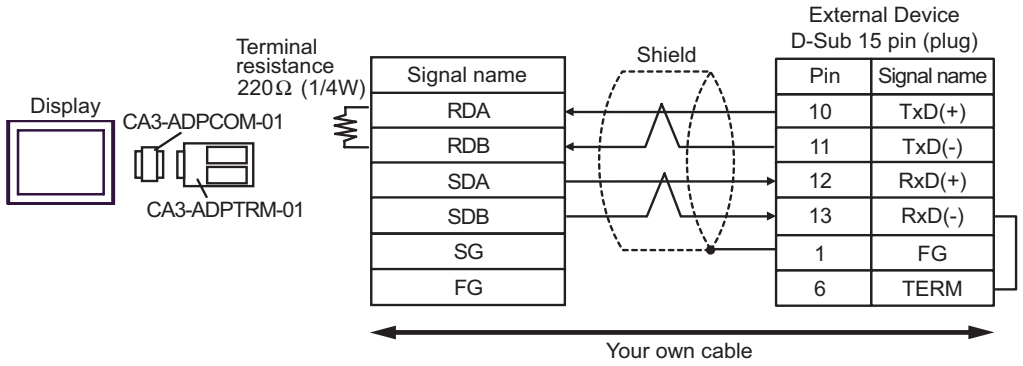
*4 All GP models except GP-3200 series and AGP-3302B

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

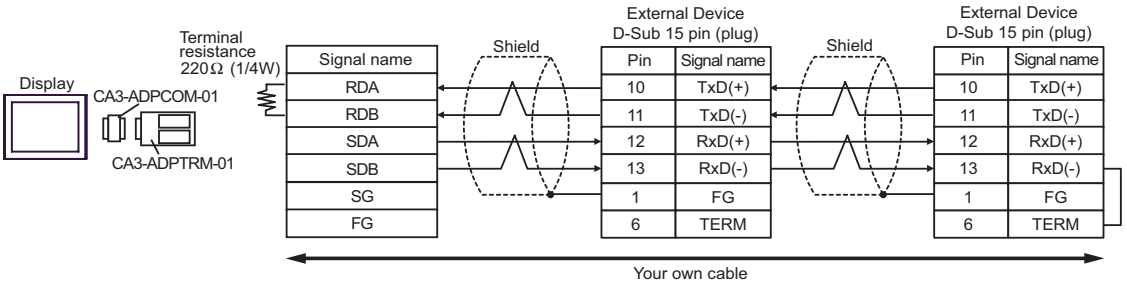
*6 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 7A.

7A)

- 1:1 Connection



- 1:n Connection

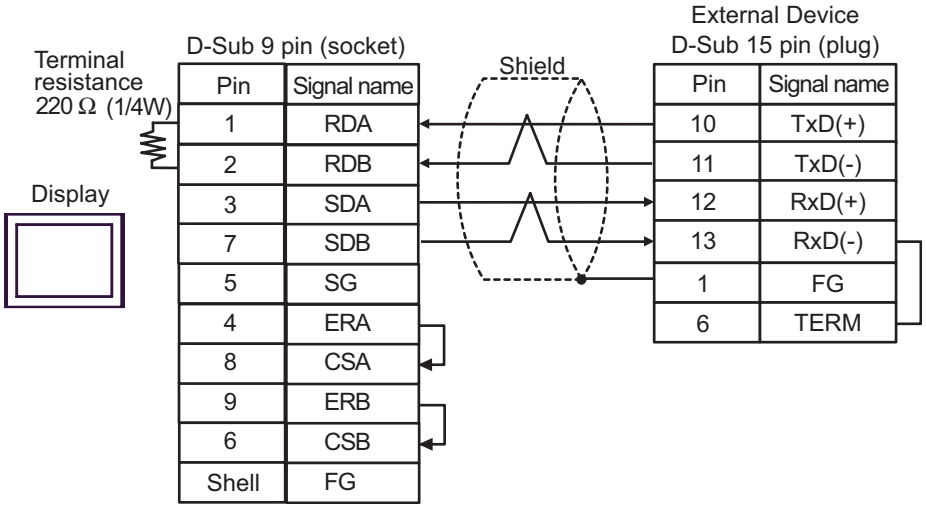


NOTE

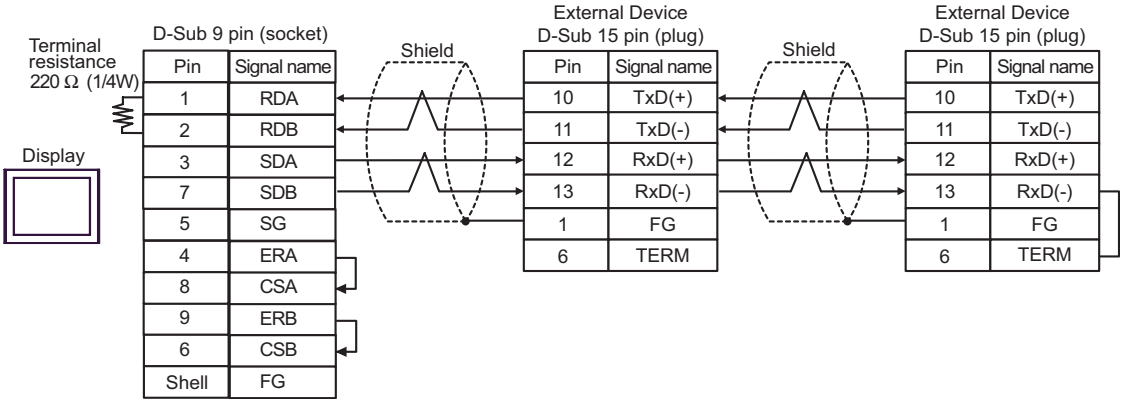
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 6 of IPC is turned to ON.

7B)

- 1:1 Connection



- 1:n Connection

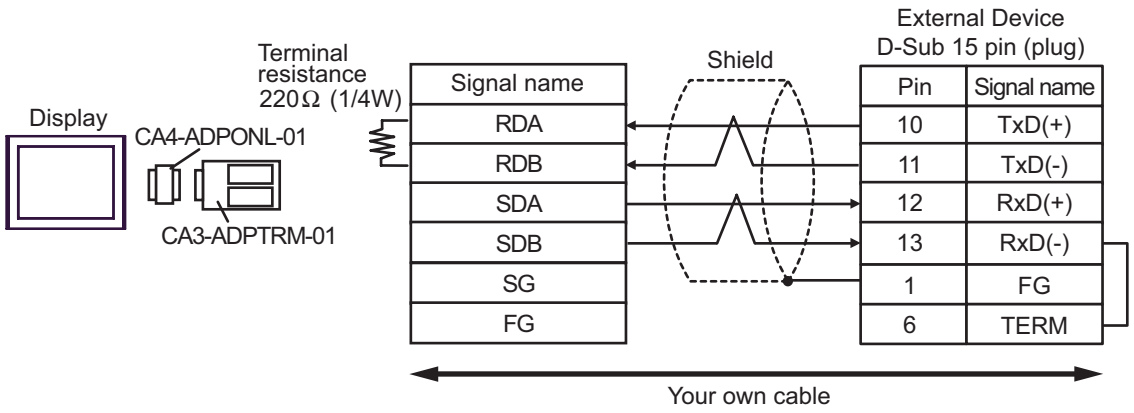


NOTE

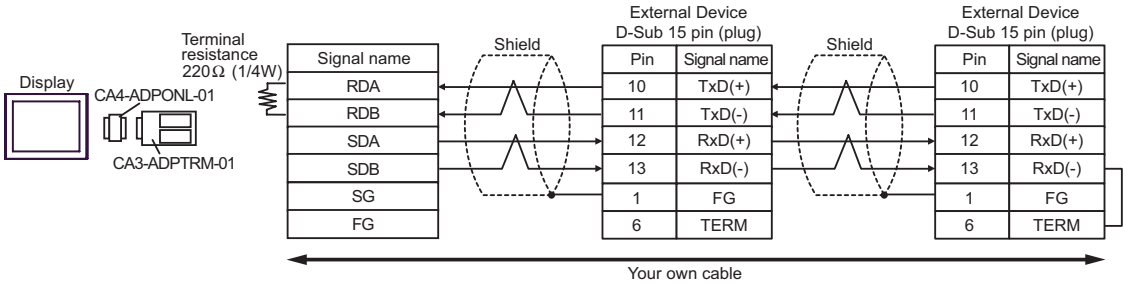
- When IPC is used as the Display, the terminal resistance of 220Ω can be inserted by the fact that the dip switch 6 of IPC is turned to ON.

7C)

- 1:1 Connection

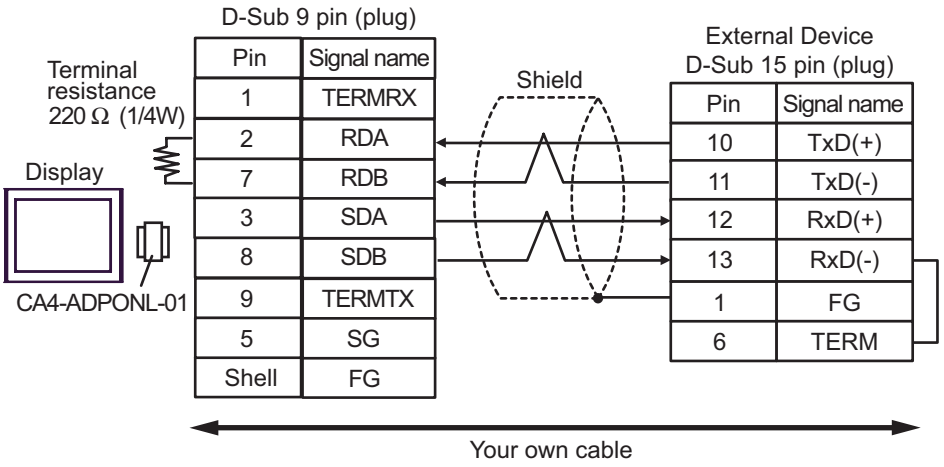


- 1:n Connection

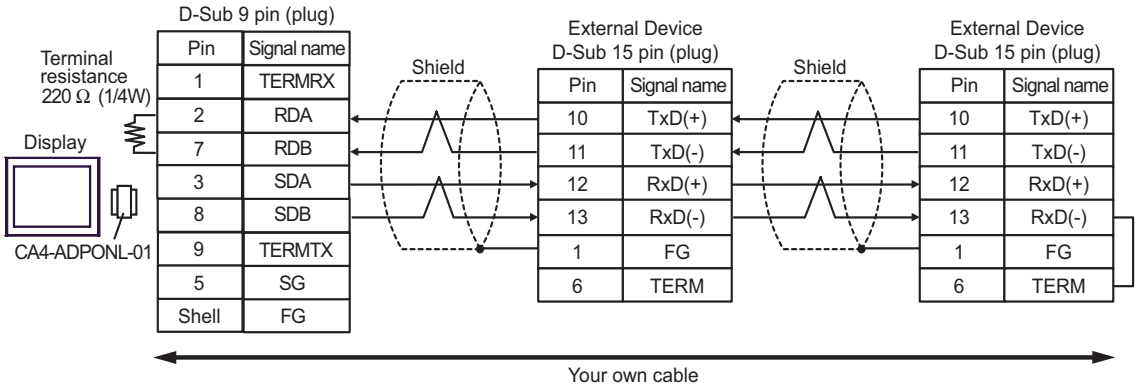


7D)

- 1:1 Connection

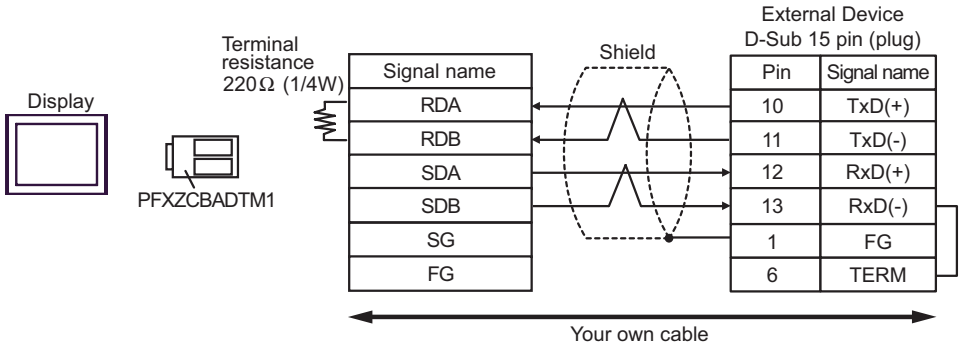


- 1:n Connection

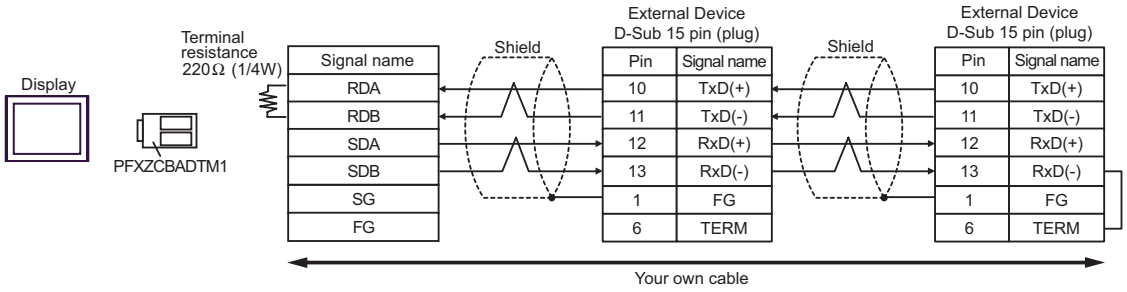


7E)

- 1:1 Connection



- 1:n Connection



Cable Diagram 8

Display (Connection Port)	Cable		Remarks
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST[*2] (COM2) LT3000 (COM1)	8A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	8B	Your own cable	
GP3000[*3] (COM2)	8C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	8D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*4]	8E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 1000m or less
	8F	Your own cable	
GP-4*03T[*5] (COM2) GP-4203T (COM1)	8G	Your own cable	Cable length: 1000m or less
GP4000[*6] (COM2) GP-4201T (COM1 SP5000 (COM1/2)	8H	RS-422 Terminal Block Conversion Adapter by Pro-face PFXZCBADTM1[*7] + Your own cable	Cable length: 1000m or less
	8B	Your own cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	8I	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	Cable length: 200m or less

*1 All GP models except AGP-3302B

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

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

*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
☞ ■ IPC COM Port (page 6)

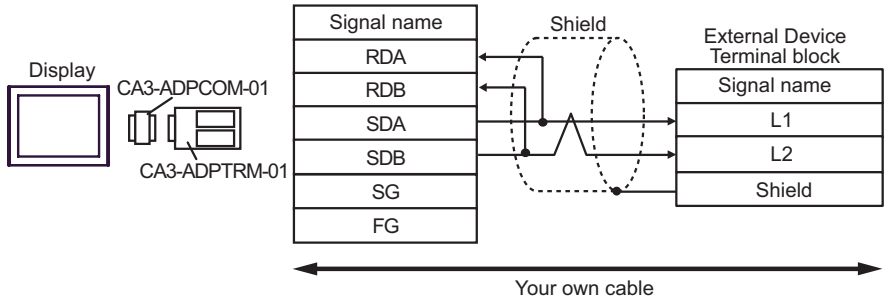
*5 Except GP-4203T

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

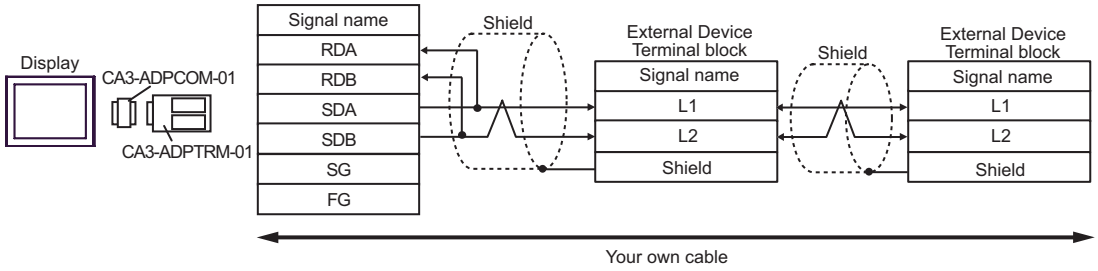
*7 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 8A.

8A)

- 1:1 Connection

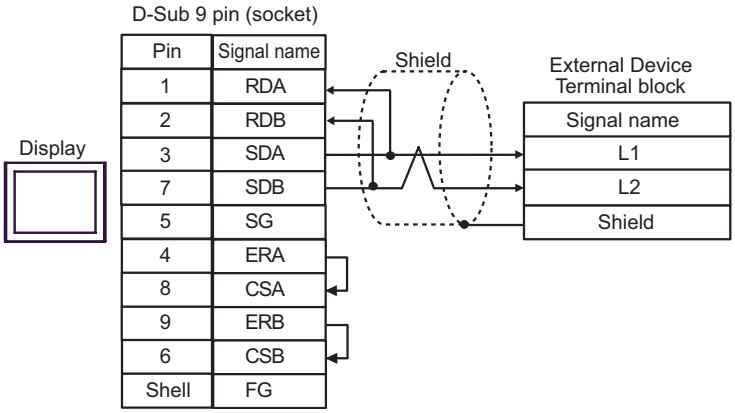


- 1:n Connection

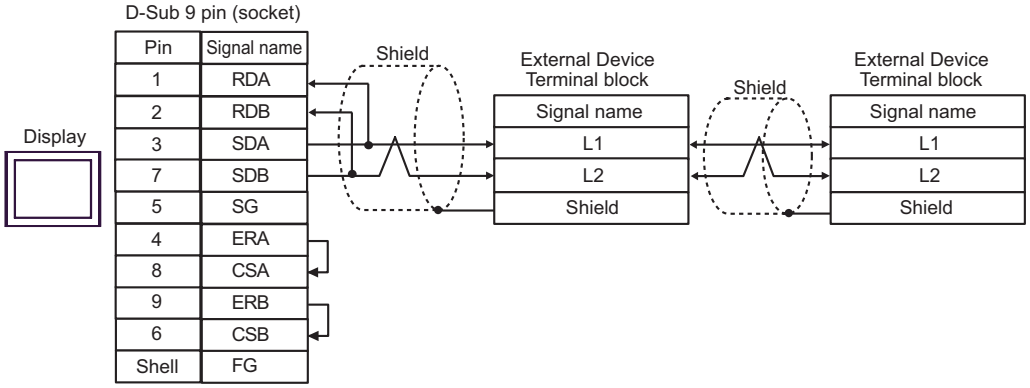


8B)

- 1:1 Connection

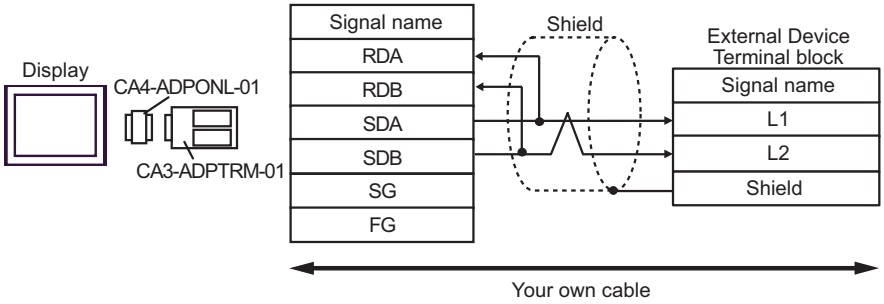


- 1:n Connection

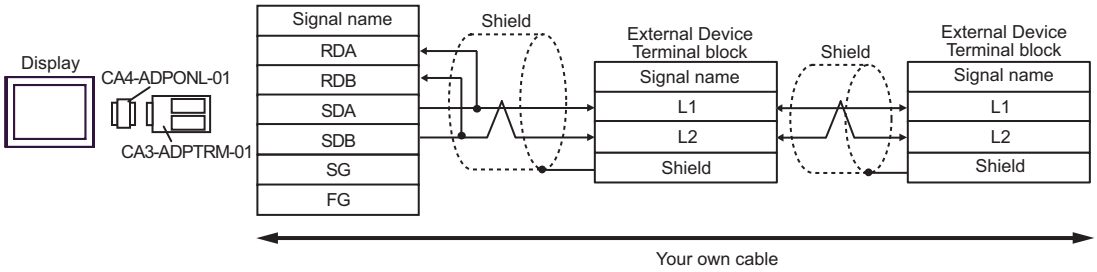


8C)

- 1:1 Connection

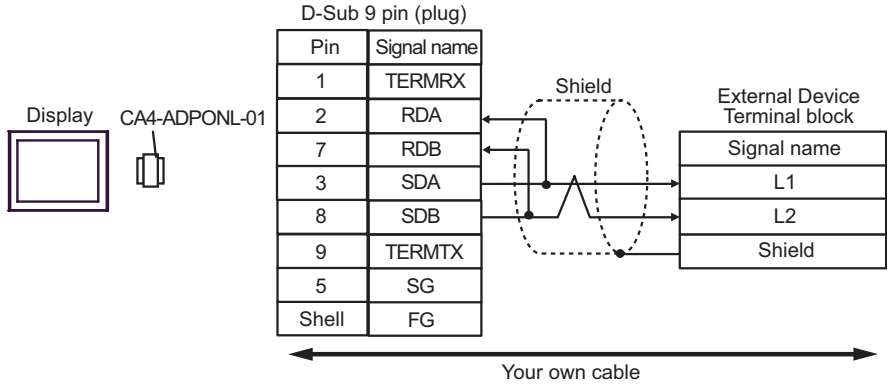


- 1:n Connection

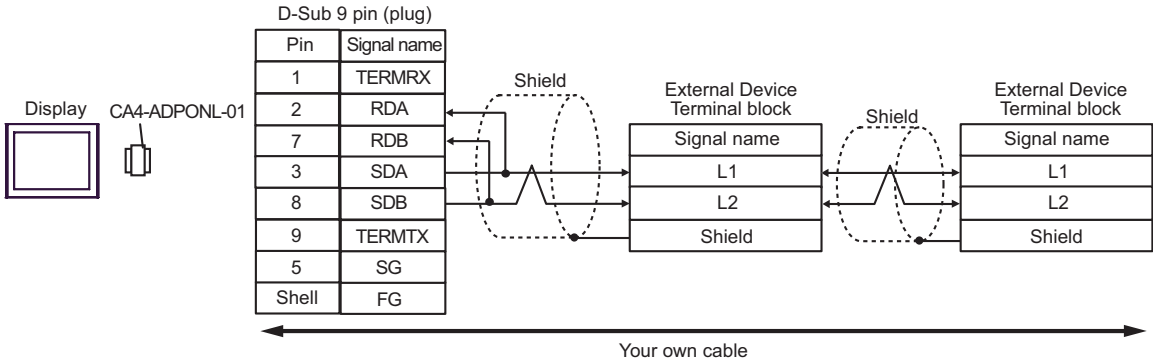


8D)

- 1:1 Connection

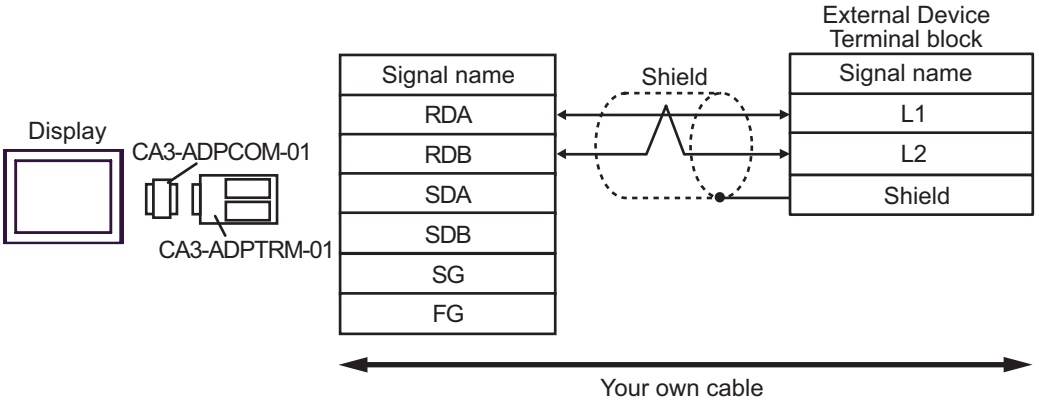


- 1:n Connection

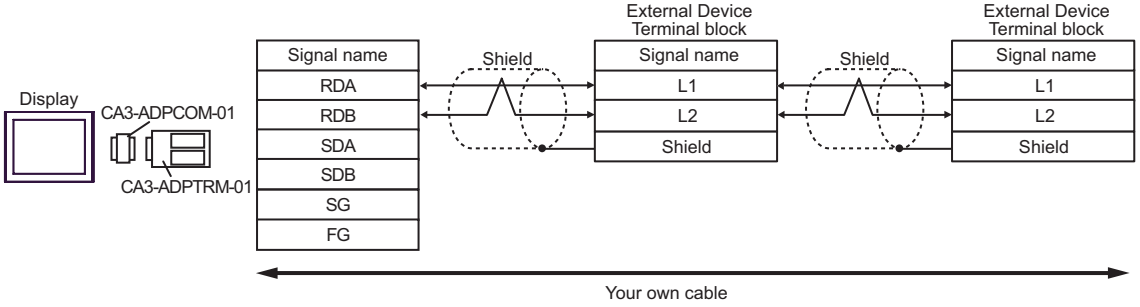


8E)

- 1:1 Connection

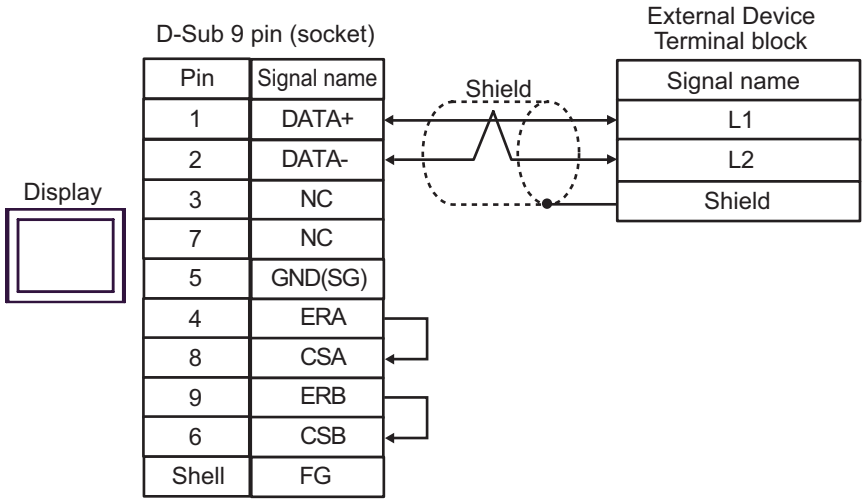


- 1:n Connection

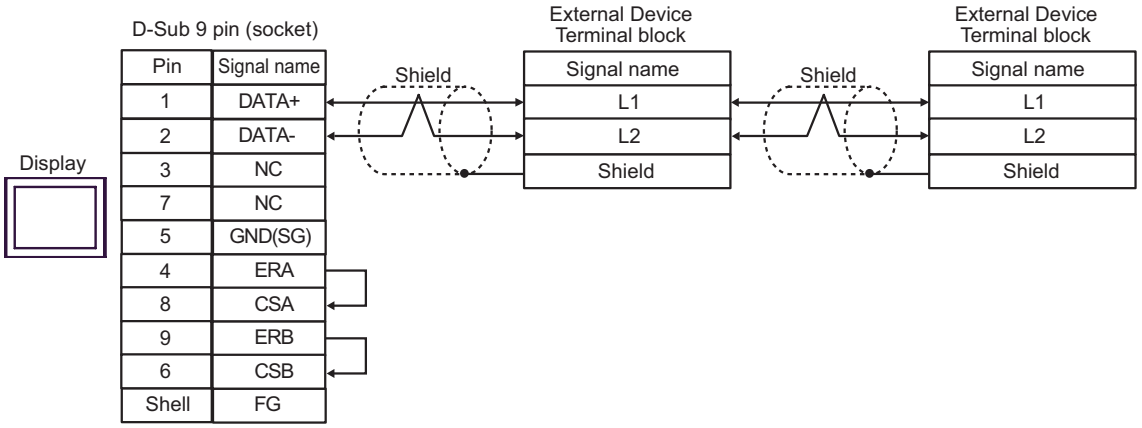


8F)

- 1:1 Connection

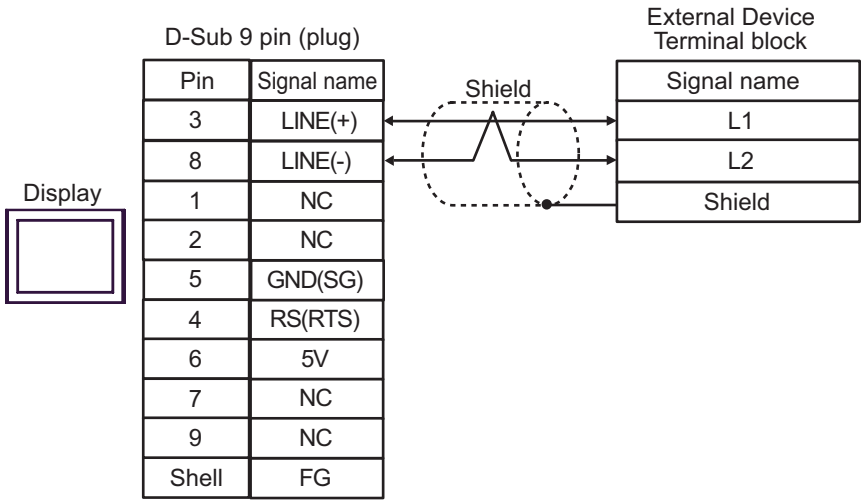


- 1:n Connection

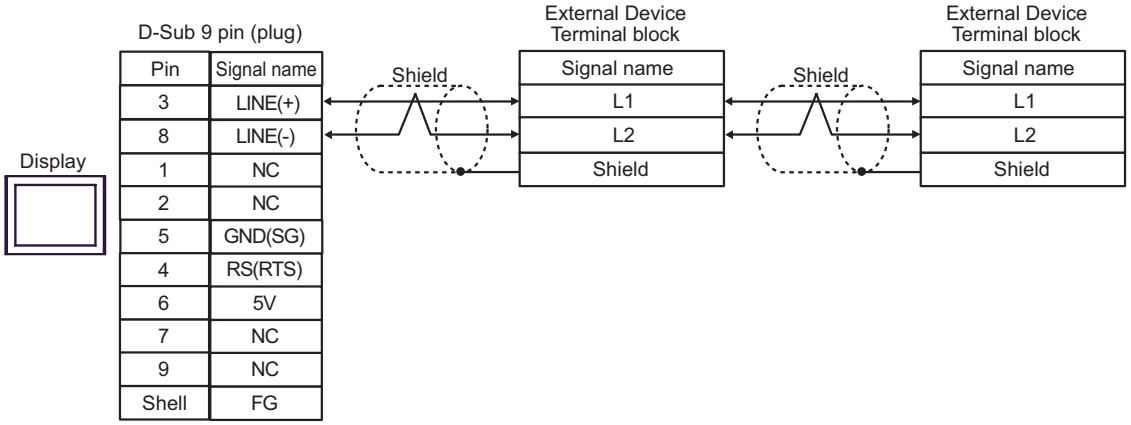


8G)

- 1:1 Connection



- 1:n Connection

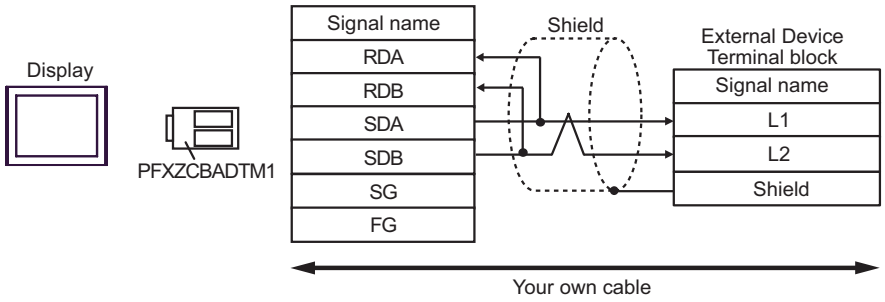


IMPORTANT

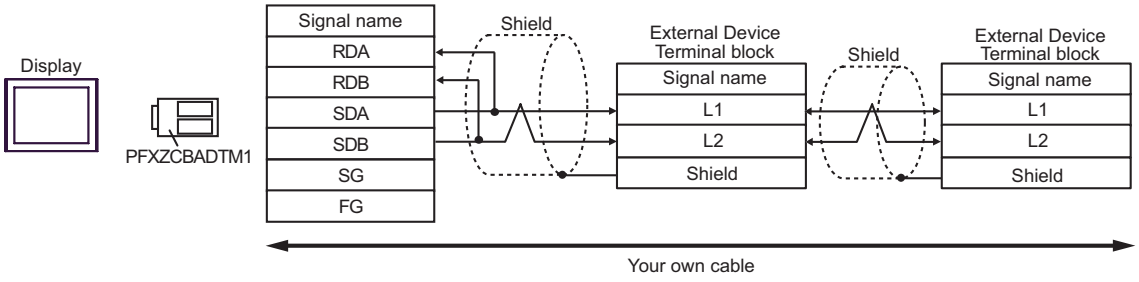
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

8H)

- 1:1 Connection

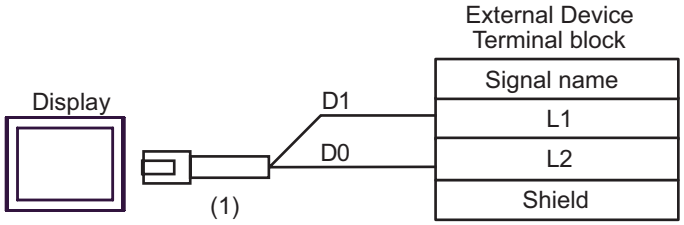


- 1:n Connection

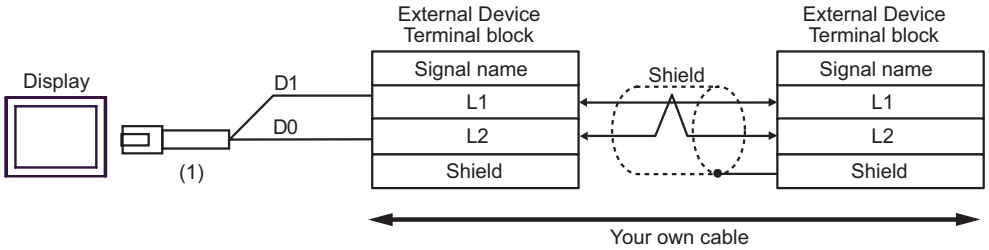


8I)

- 1:1 Connection



- 1:n Connection



Legend	Name	Notes
(1)	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	

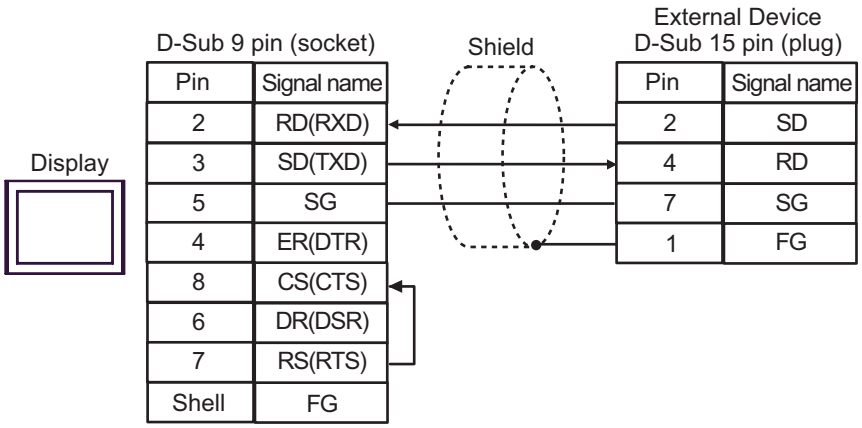
Cable Diagram 9

Display (Connection Port)	Cable		Remarks
GP3000 (COM1) GP4000*1 (COM1) SP5000 (COM1/2) ST (COM1) LT3000 (COM1) IPC*2 PC/AT	9A	Your own cable	Cable length: 15m or less
LT-4*01TM (COM1) LT-Rear Module (COM1)	9B	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	Cable length: 5m or less

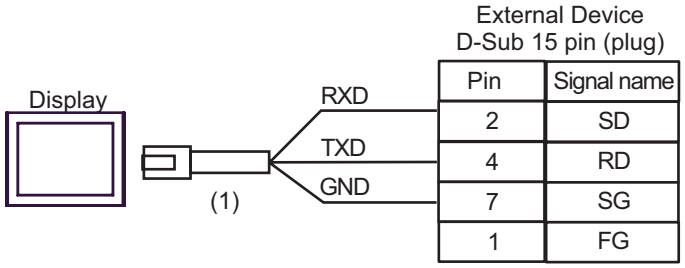
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Only the COM port which can communicate by RS-232C can be used.
☞ ■ IPC COM Port (page 6)

9A)



9B)



Legend	Name	Notes
(1)	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	

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.

■JW-10/20H/30H/50H/70H/100H Series

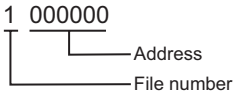
This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Relay*1	0000.0-1577.7	A0000-A1576 (]0000-]1576)		÷2 OCT8
	2000.0-7577.7	A2000-A7576 (]2000-]7576)		
Timer (Contact)	T0000-T1777	-		OCT8
Counter (Contact)	C0000-C1777	-		OCT8
Timer Counter (current value) *1	-	B0000-B3776 (b0000-b3776)		÷2 OCT8
		T0000-T3776		Bit15
Register	-	09000-09776	L/H	÷2 OCT8 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 "LS Area (Direct Access Method Area)"

- Please refer to the precautions on manual notation for icons in the table.

  ☞ "Manual Symbols and Terminology"

■JW-300 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Relay	00000.0-54377.7	A00000-A54376 (]00000-]54376)		÷2
Timer (Contact)	T00000-T17777	-		OCT 8
Counter (Contact)	C00000-C17777	-		OCT 8
Timer Counter (current value)*1	-	B00000-B37776		÷2 Bit 15
		TC00000-TC17777		
Register(09, 19, 29, 39, 49, 59, 69, 79, 89, 99)	-	09000-09776		÷2 Bit 15
	-	19000-19776		
	.....	.....		
	-	89000-89776		
	-	99000-99776		
Register(E0, E1, E2, E3, E4, E5, E6, E7)	-	E0000-E0776	L/H	÷2 Bit 15
	-	E1000-E1776		
	.....	.....		
	-	E6000-E6776		
	-	E7000-E7776		
Register(109-389)	-	109000-109776		÷2 Bit 15
	-	119000-119776		
	.....	.....		
	-	379000-379776		
	-	389000-389776		
Register Z	-	Z000-Z377		Bit 15
File Register	-	1-00000000 - 1-37777776		÷2 Bit 15
System Memory*1	-	SYS0000-SYS2776		÷2 *2

*1 The name of system memory is "#" in the External Device. To use "#" as an internal register in the Display, it can not use. Therefore, it changes "#" to "SYS".

*2 Write disable

NOTE

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

  Cf. GP-Pro EXReference Manual "LS Area (Direct Access Method Area)"

- Please refer to the precautions on manual notation for icons in the table.

  ☞ "Manual Symbols and Terminology"

7 Device Code and Address Code

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

■JW-10/20H/30H/50H/70H/100H Series

Device	Device Name	Device Code (HEX)	Address Code
Relay	A	0080	Value of word address divided by 2
Counter (Current Value)	T	0060	Value of word address divided by 2
	B	0061	Value of word address divided by 2
Register	09	0000	Value of word address divided by 2
	19	0001	Value of word address divided by 2
	29	0002	Value of word address divided by 2
	39	0003	Value of word address divided by 2
	49	0004	Value of word address divided by 2
	59	0005	Value of word address divided by 2
	69	0006	Value of word address divided by 2
	79	0007	Value of word address divided by 2
	89	0008	Value of word address divided by 2
	99	0009	Value of word address divided by 2
	E0	000A	Value of word address divided by 2
	E1	000B	Value of word address divided by 2
	E2	000C	Value of word address divided by 2
	E3	000D	Value of word address divided by 2
	E4	000E	Value of word address divided by 2
	E5	000F	Value of word address divided by 2
	E6	0010	Value of word address divided by 2
	E7	0011	Value of word address divided by 2

Device	Device Name	Device Code (HEX)	Address Code
File Register	1	0012	Value of word address divided by 2
	2	0013	Value of word address divided by 2
	.....	.....	.....
	6	0017	Value of word address divided by 2
	7	0018	Value of word address divided by 2
	F10	0019	Value of word address divided by 2
	F11	001A	Value of word address divided by 2
	.....	.....	.....
	F1E	0027	Value of word address divided by 2
	F1F	0028	Value of word address divided by 2
	F20	0029	Value of word address divided by 2
	F21	002A	Value of word address divided by 2
	.....	.....	.....
	F2B	0034	Value of word address divided by 2
	F2C	0035	Value of word address divided by 2

■JW-300 Series

Device	Device Name	Device Code (HEX)	Address Code
Relay	A	0080	Value of word address divided by 2
Timer/Counter (Current Value)	B	0061	Value of word address divided by 2
	TC	0060	Word Address
Register (09, 19, 29, 39, 59, 69, 79, 89, 99)	09	0000	Value of word address divided by 2
	19	0001	Value of word address divided by 2
	29	0002	Value of word address divided by 2
	39	0003	Value of word address divided by 2
	49	0004	Value of word address divided by 2
	59	0005	Value of word address divided by 2
	69	0006	Value of word address divided by 2
	79	0007	Value of word address divided by 2
	89	0008	Value of word address divided by 2
	99	0009	Value of word address divided by 2
Register (E0, E1, E2, E3, E4, E5, E6, E7)	E0	000A	Value of word address divided by 2
	E1	000B	Value of word address divided by 2
	E2	000C	Value of word address divided by 2
	E3	000D	Value of word address divided by 2
	E4	000E	Value of word address divided by 2
	E5	000F	Value of word address divided by 2
	E6	0010	Value of word address divided by 2
	E7	0011	Value of word address divided by 2

Device	Device Name	Device Code (HEX)	Address Code
Register (109 to 389)	109	0040	Value of word address divided by 2
	119	0041	Value of word address divided by 2
	129	0042	Value of word address divided by 2
	139	0043	Value of word address divided by 2
	149	0044	Value of word address divided by 2
	159	0045	Value of word address divided by 2
	169	0046	Value of word address divided by 2
	179	0047	Value of word address divided by 2
	189	0048	Value of word address divided by 2
	199	0049	Value of word address divided by 2
	209	004A	Value of word address divided by 2
	219	004B	Value of word address divided by 2
	229	004C	Value of word address divided by 2
	239	004D	Value of word address divided by 2
	249	004E	Value of word address divided by 2
	259	004F	Value of word address divided by 2
	269	0050	Value of word address divided by 2
	279	0051	Value of word address divided by 2
	289	0052	Value of word address divided by 2
	299	0053	Value of word address divided by 2
	309	0054	Value of word address divided by 2
	319	0055	Value of word address divided by 2
	329	0056	Value of word address divided by 2
	339	0057	Value of word address divided by 2
	349	0058	Value of word address divided by 2
	359	0059	Value of word address divided by 2
	369	005A	Value of word address divided by 2
	379	005B	Value of word address divided by 2
	389	005C	Value of word address divided by 2
Resister Z	Z	0037	Value of word address divided by 2
File Register	1-	0012	Value of word address divided by 2
System Memory	SYS	0062	Value of word address divided by 2

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. **NOTE** • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is displayed such as "Address: Device address". • 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

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

■ 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.