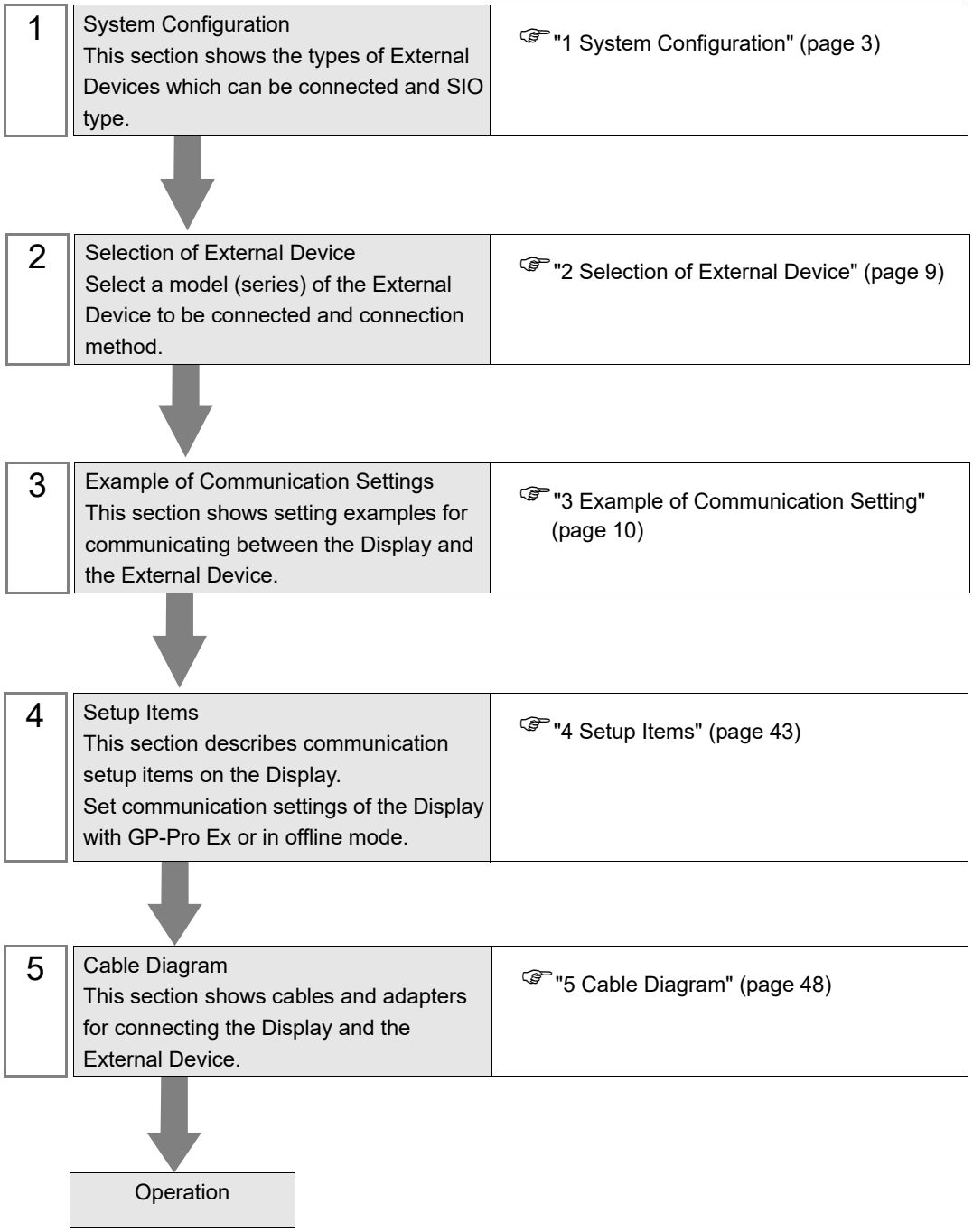
Panasonic Industrial Devices SUNX Co., Ltd.
MAT_MEWS_29
3/2024

FP Series Computer Link SIO Driver

Introduction

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

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



1 System Configuration

The system configuration in the case when the External Device of Panasonic Industrial Devices SUNX Co., Ltd. and the Display are connected is shown.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FP	FPΣ	Tool port of the control unit	RS232C	Setting Example 1 (page 10)	Cable Diagram 8 (page 85)
		AFPG801			Cable Diagram 1 (page 48)
		AFPG802			Cable Diagram 2 (page 50)
		AFPG806			Cable Diagram 4 (page 66)
		AFPG803	RS422/485 (2wire)	Setting Example 2 (page 12)	Cable Diagram 3 (page 53)
		AFPG806			Cable Diagram 5 (page 68)
	FP0	Tool port of the control unit	RS232C	Setting Example 3 (page 14)	Cable Diagram 8 (page 85)
		RS232C port of the control unit*1	RS232C		Cable Diagram 6 (page 81)
	FP1	Tool port of the control unit	RS232C	Setting Example 4 (page 16)	Cable Diagram 9 (page 86)
		RS232C port of the control unit*2	RS232C		Cable Diagram 7 (page 83)
	FP-M	Tool port of the control unit	RS232C	Setting Example 5 (page 18)	Cable Diagram 8 (page 85)
		RS232C port of the control unit*3	RS232C		Cable Diagram 7 (page 83)

Series	CPU	Link I/F		SIO Type	Setting Example	Cable Diagram
FP	FP2 FP2SH	Tool port of the control unit		RS232C	Setting Example 6 (page 20)	Cable Diagram 8 (page 85)
		RS232C port of the control unit		RS232C		Cable Diagram 7 (page 83)
		AFP2462		RS232C		Cable Diagram 7 (page 83)
		AFP2465*4	AFP2803	RS232C	Setting Example 6 (page 20)	Cable Diagram 7 (page 83)
			AFP2804	RS422/485 (4wire)	Setting Example 7 (page 23)	Cable Diagram 11 (page 88)
			AFP2805	RS422/485 (2wire)	Setting Example 8 (page 25)	Cable Diagram 3 (page 53)
	FP3	Tool port of the control unit		RS232C	Setting Example 9 (page 27)	Cable Diagram 10 (page 87)
		AFP3462		RS232C		Cable Diagram 7 (page 83)
	FP-e	Tool port of the control unit		RS232C	Setting Example 10 (page 29)	Cable Diagram 8 (page 85)
		AFPE224300		RS232C		Cable Diagram 12 (page 93)
		AFPE224305				
		AFPE214325				
		AFPE224302		RS422/485 (2wire)	Setting Example 11 (page 31)	Cable Diagram 13 (page 95)
		AFPE214322				
	FP10S	RS232C port of the control unit		RS232C	Setting Example 12 (page 33)	Cable Diagram 7 (page 83)
		AFP3462		RS232C		Cable Diagram 7 (page 83)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FP	FP10SH	Tool port of the control unit	RS232C	Setting Example 12 (page 33)	Cable Diagram 14 (page 108)
		RS232C port of the control unit	RS232C		Cable Diagram 7 (page 83)
		AFP3462	RS232C		Cable Diagram 7 (page 83)
	AFP7CPS41E*5 AFP7CPS31E*5 AFP7CPS31*5 AFP7CPS41ES*5 AFP7CPS31ES*5 AFP7CPS31S*5 AFP7CPS21*5	COM0 port	RS232C	Setting Example 13 (page 37)	Cable Diagram 15 (page 109)
		AFP7CCS1			
		AFP7CCS2 (3wire setting)			
		AFP7CCS1M1			
		AFP7CCS2 (5wire setting)	RS232C		Cable Diagram 16 (page 111)
		AFP7CCM1	RS422/485 (4wire)	Setting Example 14 (page 39)	Cable Diagram 17 (page 113)
		AFP7CCM2			
		AFP7CCM1	RS422/485 (2wire)	Setting Example 15 (page 41)	Cable Diagram 18 (page 118)
		AFP7CCM2			
		AFP7CCS1M1			

*1 Only FP0 (C10CRM/C10CRS/C14CRM/C14CRS/C16CT/C16CP/C32CT/C32CP) is equipped with the RS232C port. Other models are not.

*2 Only FP1 (C24/C40/C56/C72) is equipped with the RS232C port. Other models are not.

*3 Only FP-M (C20R/C20T/C32T) is equipped with the RS232C port. Other models are not.

*4 AFP2465 is the multicommunication unit of FP2/FP2SH.
AFP2803, AFP2084 and AFP2085 are the communication blocks attached to AFP2465.

*5 Using FP7, including the CPU's COM port, the number of channels you can connect with the display unit is up to 3 channels.

NOTE

- When the time of GP4000 series is automatically updated in [Clock Update Settings] of GP-Pro EX, there are some restrictions as shown below.
  For details on [Clock Update Settings], refer to GP-Pro EX Reference Manual.
  - FP0 and FP-e does not support automatic update of the time. Specify [Customize] in [Clock Update Settings].
  - When the time is automatically updated in FP2, any of the extension memory unit FP2-EM1, FP2-EM2 or FP2-EM3 is required.
  - When the time is automatically updated in FP3, any of the AFP3210C-F, AFP3211C-F, AFP3212C-F or AFP3220C-F is required.

■ 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
PE-4000B Atom N270	COM1, COM2	-	-
PE-4000B Atom N2600	COM1, COM2	COM3*4 , COM4*4, COM5*4, COM6*4	COM3*4, COM4*4, COM5*4, COM6*4
PS5000 (Slim Panel Type Core i3 Model) *5 *6	COM1, COM2*4	COM2*4	COM2*4
PS5000 (Slim Panel Type Atom Model) *5 *6	COM1, COM2*7	COM2*7	COM2*7
PS5000 (Enclosed Panel Type)*8	COM1	-	-
PS5000 (Modular Type PFXPU/PFXPP)*5 *6 PS5000 (Modular Type PFXPL2B5-6)	COM1*7	COM1*7	COM1*7
PS5000 (Modular Type PFXPL2B1-4)	COM1, COM2*7	COM2*7	COM2*7
PS6000 (Advanced Box) PS6000 (Standard Box)	COM1*9	*10	*10
PS6000 (Basic Box)	COM1*9	COM1*9	COM1*9

*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.

*4 Set up the SIO type with the BIOS. Please refer to the IPC manual for details of BIOS.

*5 When setting up communication between an External Device and the RS-232C/422/485 interface module, use the IPC (RS-232C) or PS5000 (RS-422/485) cable diagrams. However, when using PFXZPBMPR42P2 in a RS-422/485 (4-wire) configuration with no flow control, connect 7.RTS+ and 8.CTS+, and connect 6.RTS- and 9.CTS-.
When using RS-422/485 communication with External Devices, you may need to reduce the transmission speed and increase the TX Wait time.

*6 To use RS-422/485 communication on the RS-232C/422/485 interface module, the DIP Switch setting is required. Please refer to "Knowledge Base" (FAQs) on the support site. (http://www.pro-face.com/trans/en/manual/1001.html)

Settings	FAQ ID
PFXZPBMPR42P2, RS422/485 change method	FA263858
PFXZPBMPR42P2 termination resistor setting	FA263974
PFXZPBMPR44P2, RS422/485 change method	FA264087
PFXZPBMPR44P2 termination resistor setting	FA264088

*7 Set up the SIO type with the DIP Switch. Please refer to the IPC manual for details of DIP Switch. The BOX Atom has not a switch to set the RS-232C, RS-422/485 mode. Use the BIOS for the setting.

*8 For the connection with the External Device, on the user-created cable read as if the connector on the Display-side is a M12 A-coding 8 pin socket. The pin assignment is the same as described in the cable diagram. For the M12 A-coding connector, use PFXZPSCNM122.

*9 In addition to COM1, you can also use the COM port on the optional interface.

*10 Install the optional interface in the expansion slot.

DIP Switch settings (PL3000 / PS3000 Series)

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.

RS-422/485 (4 wire)

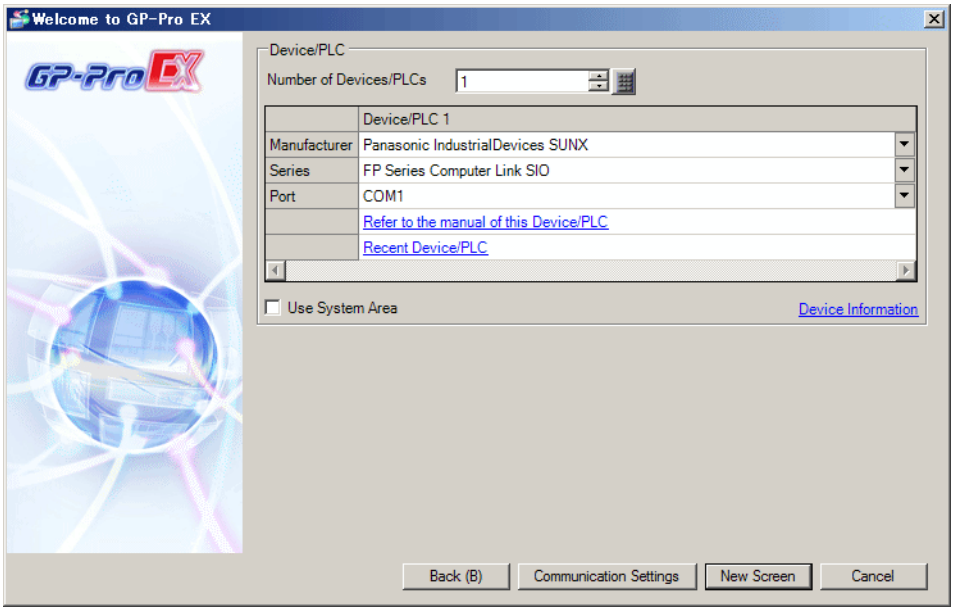
DIP Switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (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	

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 maker of the External Device to be connected. Select "Panasonic IndustrialDevices SUNX".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "FP Series Computer Link SIO". Check the External Device which can be connected in " FP Series Computer Link SIO" in system configuration. ☞"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 Pro-face, are shown.

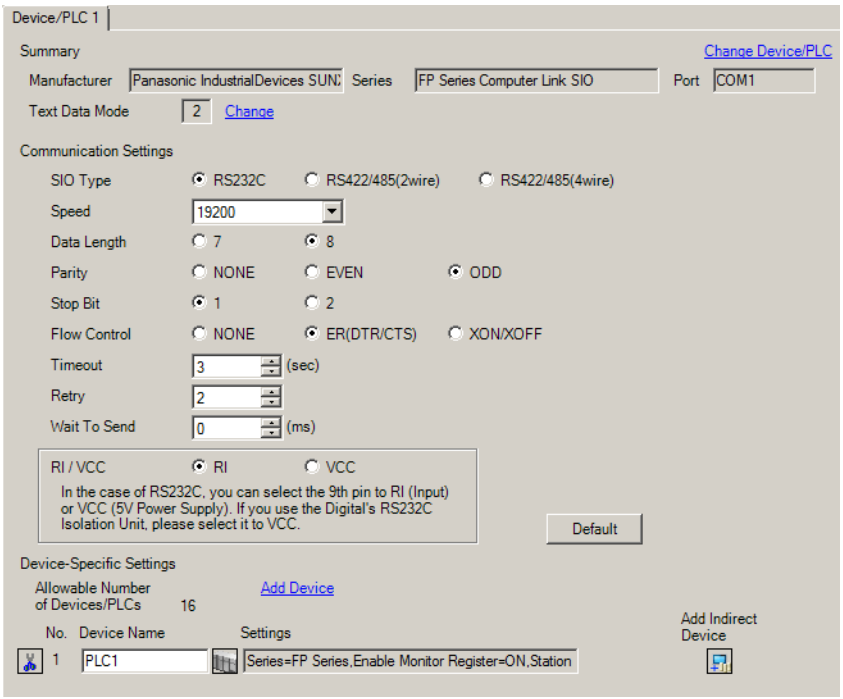
When you use the FP Series, use GP-Pro EX and the ladder software to set as below.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

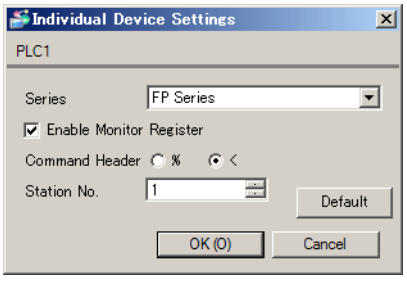
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the tool port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Modem Connection	Disable
Unit No.	1

◆ When using the communication cassette

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM1(2) Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Communication Mode	Computer link
Modem Connection	OFF
Unit No.	1

* For COM1 of AFPG806, you need to set the built-in switch on the rear of the cassette.

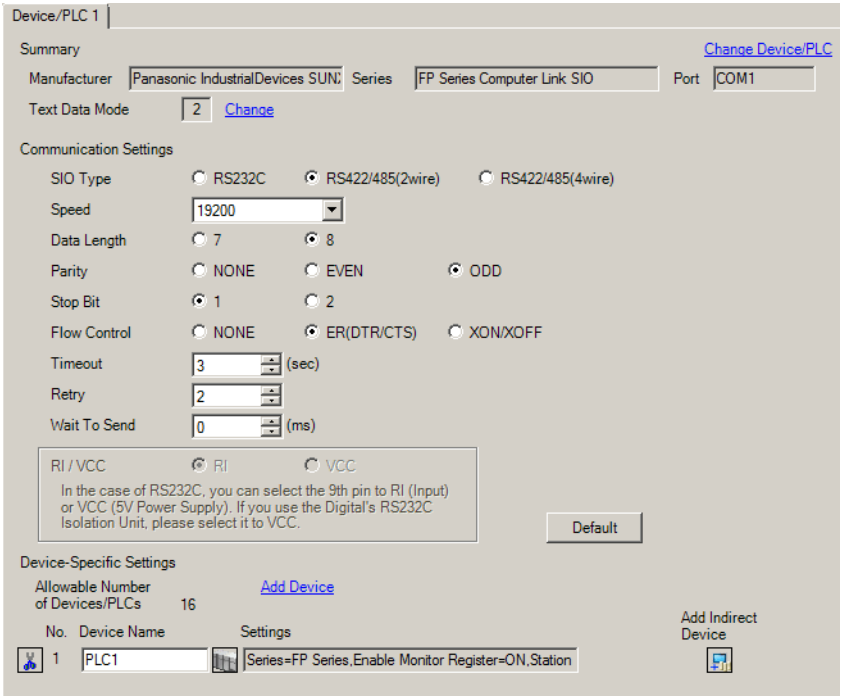
DIP Switch	Settings	Setup Description
SW1-2	OFF	Line Speed

3.2 Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

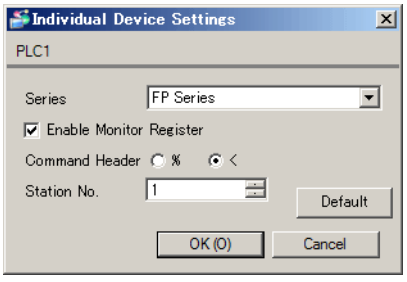
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM1(2) Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Communication Mode	Computer link
Modem Connection	OFF
Unit No.	1

* For COM1 of AFPG806, you need to set the built-in switch on the rear of the cassette.

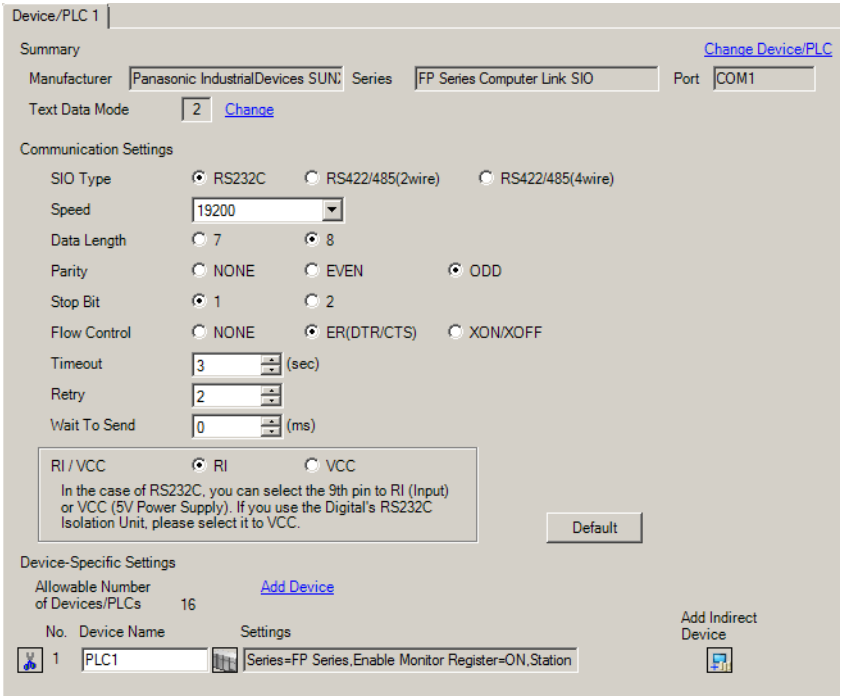
DIP Switch	Settings	Setup Description
SW1-2	OFF	Line Speed

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

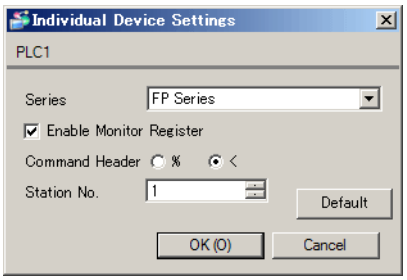
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the tool port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Modem Connection	Disable
Unit No.	1

◆ When using the RS232C port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

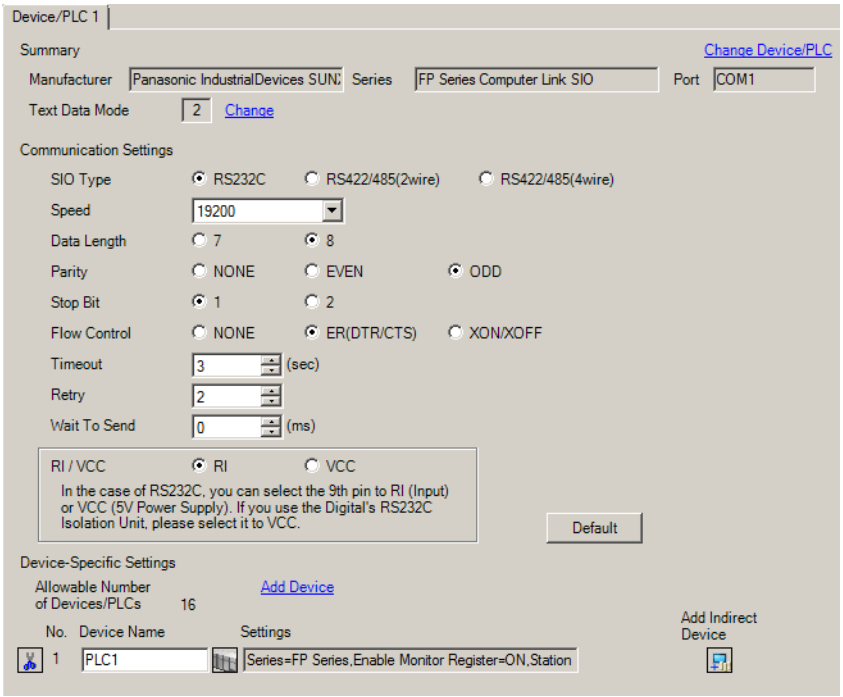
Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Operation Selection	Computer link
Modem Connection	OFF
Unit No.	1

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].



◆ Device Setting

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

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

■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the programming tool connection port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Use the [Baud Rate Toggle Switch] on the side of the programming tool connection port on the CPU to set the speed. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Modem Connection	Disable
Not automatically change to 2400bps when connecting the modem	OFF
Unit No.	1

◆ When using the RS232C port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

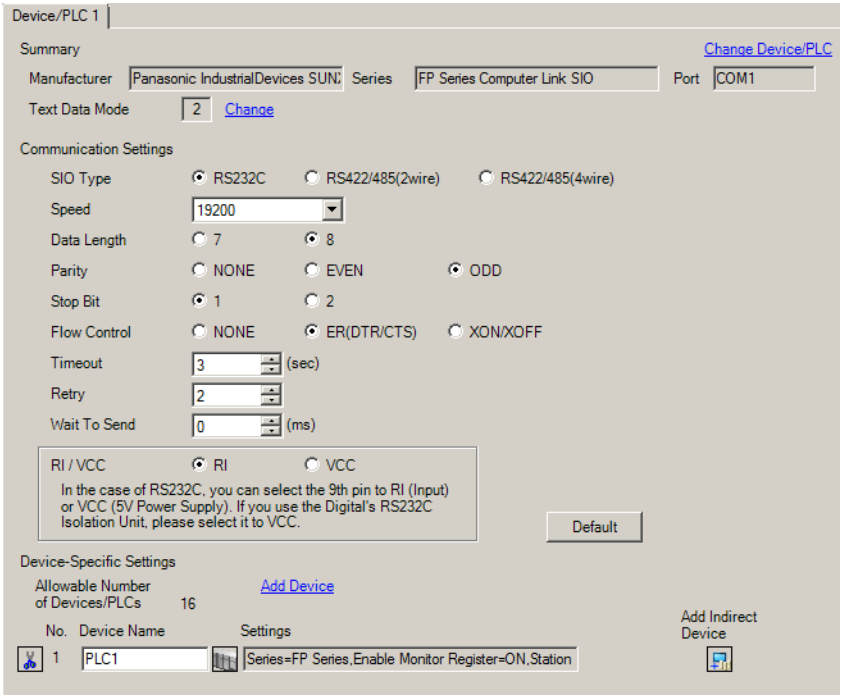
Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Operation Selection	Computer link
Modem Connection	OFF
Not automatically change to 2400bps	OFF
Unit No.	1

3.5 Setting Example 5

■ Settings of GP-Pro EX

◆ Communication Settings

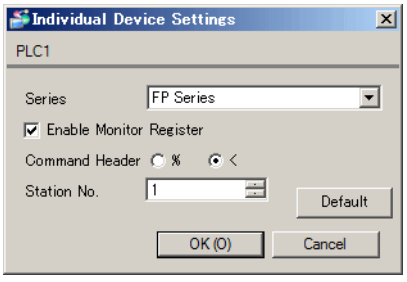
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the programmer connector on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Modem Connection	Disable
Not automatically change to 2400bps when connecting the modem	OFF
Unit No.	1

◆ When using the serial port connector on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

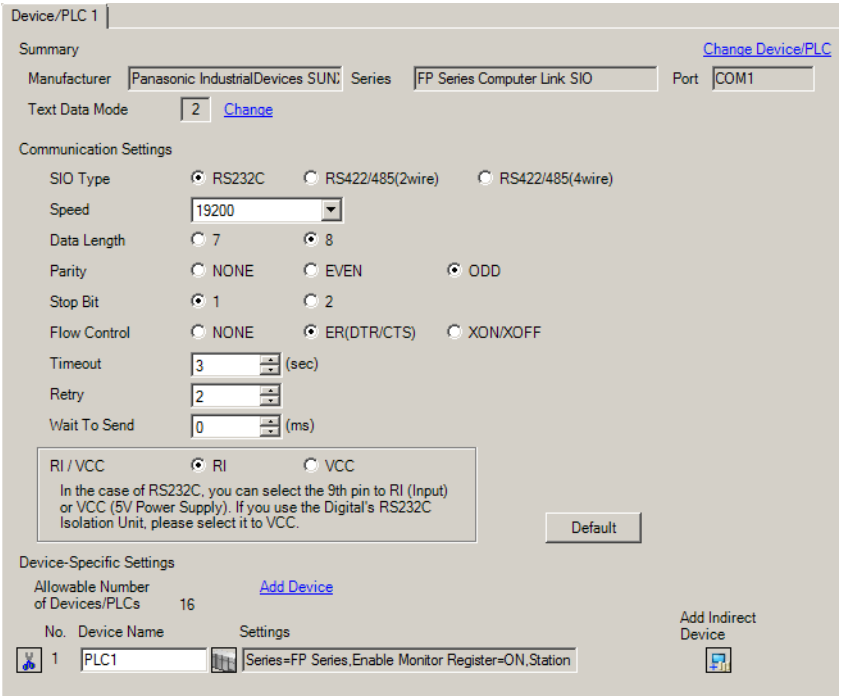
Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Operation Selection	Computer link
Modem Connection	OFF
Not automatically change to 2400bps	OFF
Unit No.	1

3.6 Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

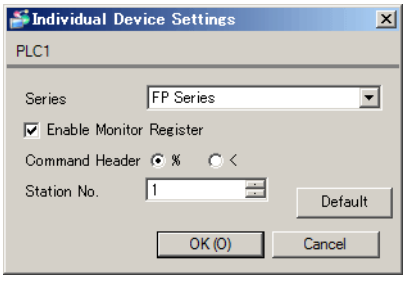
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the tool port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
Speed	19200
Data Length	8
Modem Connection	Disable
Operation Mode Setting Switch	SW1: OFF
Unit No.	1

- Operation Mode Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF	Transmission speed: 19200bps

◆ When using the RS232C port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Parity	Odd
Stop Bit	1
Communication Mode	Computer link
Modem Connection	OFF
Unit No.	1

◆ When using the computer communication unit AFP2462

Set the transmission format setting switch on the rear of the unit as below.

DIP Switch	Settings	Setup Description
SW1	ON	System reservation
SW2	ON	Transmission speed on the COM1 19200bps
SW3	OFF	
SW4	ON	Data length on the COM1: 8 bits
SW5	ON	System reservation
SW6	ON	Transmission speed on the COM2 19200bps
SW7	OFF	
SW8	ON	Data length on the COM2: 8 bits

◆ When using the multicommunication unit AFP2465 combined with the communication block AFP2803

Set the station setting switch to [1] and set the transmission format setting switch as below.

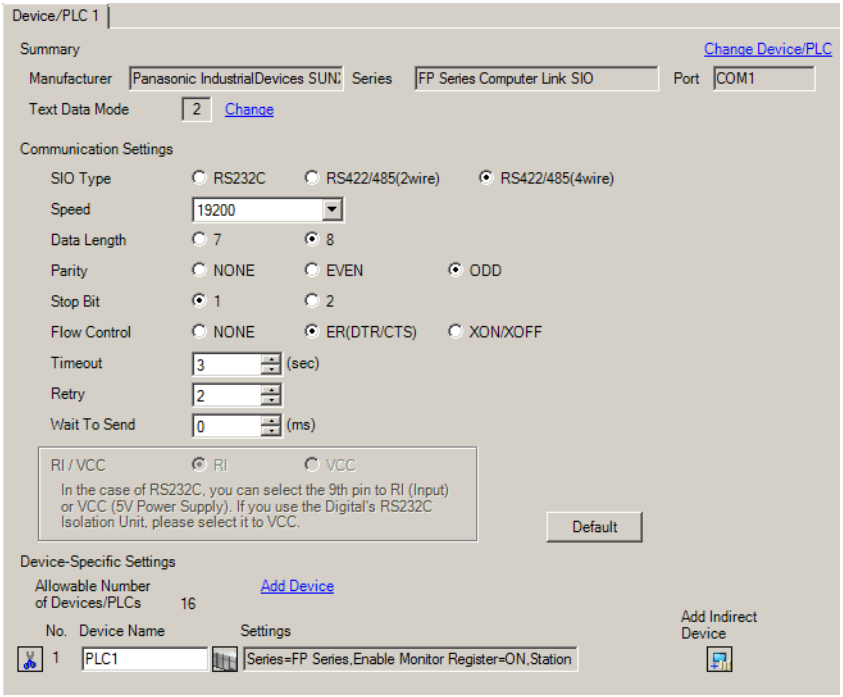
DIP Switch	Settings	Setup Description
SW1	ON	Operation mode on the COM1 Computer link
SW2	ON	
SW3	ON	Transmission speed on the COM1 19200bps
SW4	OFF	
SW5	ON	Operation mode on the COM2 Computer link
SW6	ON	
SW7	ON	Transmission speed on the COM2 19200bps
SW8	OFF	

3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

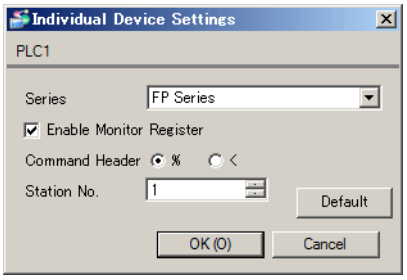
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

◆ When using the multicommunication unit AFP2465 combined with the communication block AFP2804

Set the station setting switch to [1] and set the transmission format setting switch as below.

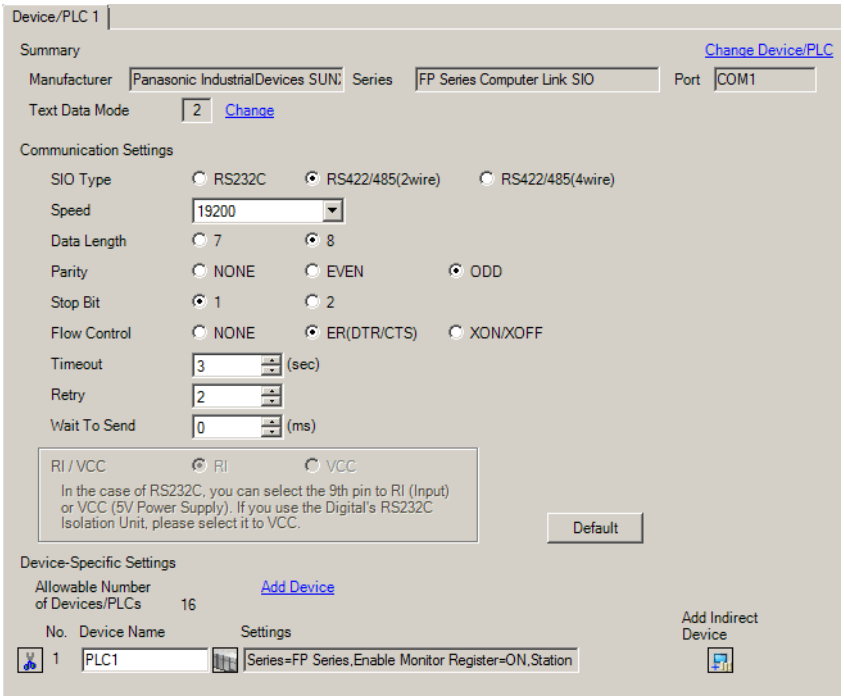
DIP Switch	Settings	Setup Description
SW1	ON	Operation mode on the COM1 Computer link
SW2	ON	
SW3	ON	Transmission speed on the COM1 19200bps
SW4	OFF	
SW5	ON	Operation mode on the COM2 Computer link
SW6	ON	
SW7	ON	Transmission speed on the COM2 19200bps
SW8	OFF	

3.8 Setting Example 8

■ Settings of GP-Pro EX

◆ Communication Settings

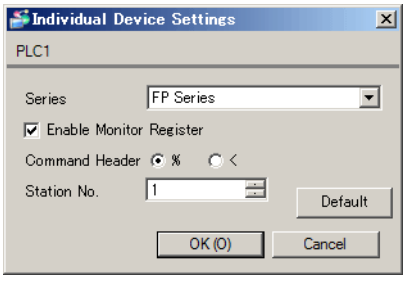
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

◆ When using the multicommunication unit AFP2465 combined with the communication block AFP2805

Set the station setting switch to [1] and set the transmission format setting switch as below.

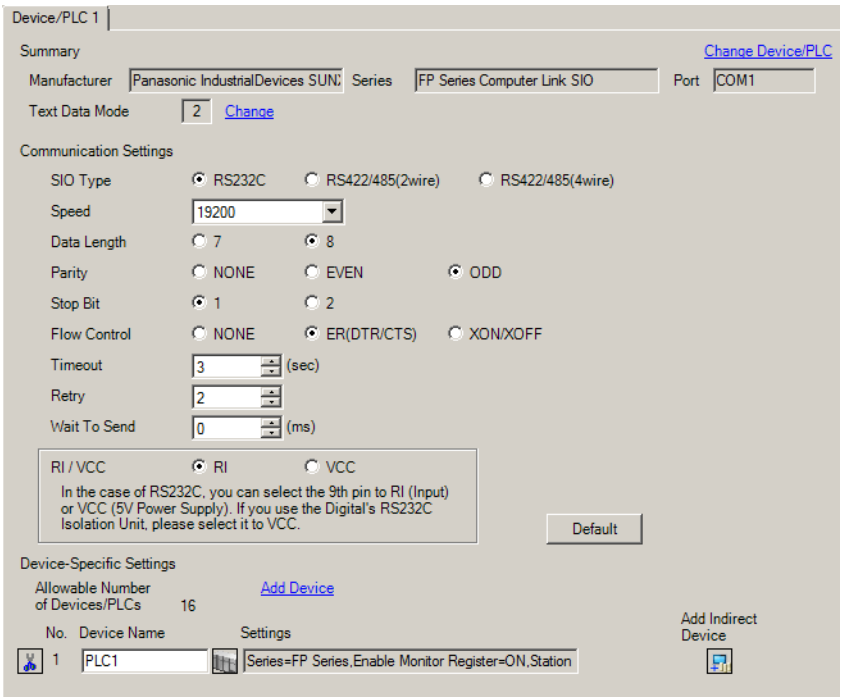
DIP Switch	Settings	Setup Description
SW1	ON	Operation mode on the COM1 Computer link
SW2	ON	
SW3	ON	Transmission speed on the COM1 19200bps
SW4	OFF	
SW5	ON	Operation mode on the COM2 Computer link
SW6	ON	
SW7	ON	Transmission speed on the COM2 19200bps
SW8	OFF	

3.9 Setting Example 9

■ Settings of GP-Pro EX

◆ Communication Settings

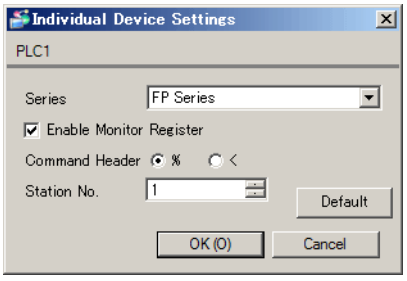
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the tool port on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Use the [Operation Mode Setting Switch] inside the CPU unit for setting the baud rate. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
Data Length	8
Modem Connection	Disable
Unit No.	1

- Operation Mode Setting Switch

DIP Switch	Settings	Setup Description
SW2	OFF	Baud rate: 19200bps

◆ When using the computer communication unit AFP3462

Set the DIP switch on the rear of the unit as below.

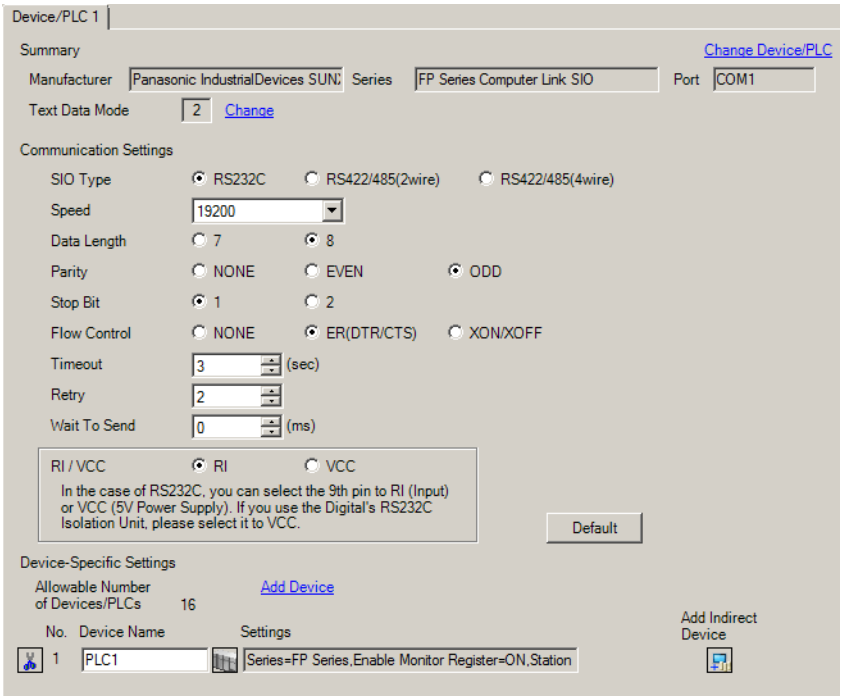
DIP Switch	Settings	Setup Description
SW1	ON	Transmission speed: 19200bps
SW2	OFF	
SW3	OFF	
SW4	ON	Data Length: 8 bits
SW5	ON	Parity check: Enable
SW6	OFF	Parity setting = Odd parity
SW7	OFF	Stop bit: 1 bit
SW8	OFF	Disable CS, CD

3.10 Setting Example 10

■ Settings of GP-Pro EX

◆ Communication Settings

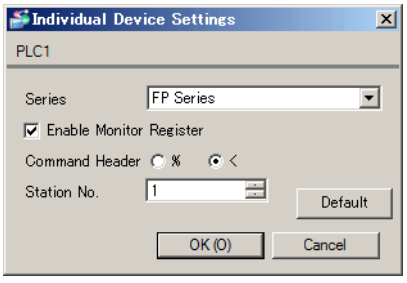
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the programmer connector on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Tool Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

Setup Items	Setting Value
Speed	19200
Data Length	8
Modem Connection	Disable
Unit No.	1

◆ When using the computer communication unit AFPE224300/AFPE224305/AFPE214325

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. Please refer to the manual of the External Device for more details.

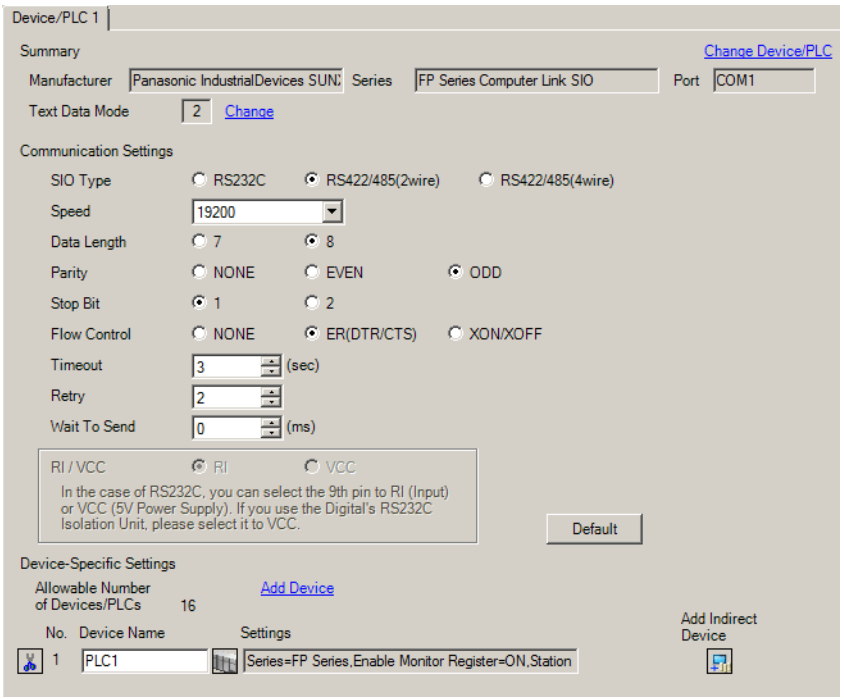
Setup Items	Setting Value
Speed	19200
Data Length	8
Parity Setting	Odd
Stop Bit	1
Operation Selection	Computer link
Modem Connection	OFF
Not automatically change to 2400bps	OFF
Unit No.	1

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].



◆ Device Setting

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

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

■ Setting of External Device

◆ When using the computer communication unit AFPE224300/AFPE224305/AFPE214325

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [COM Port Setting] tab to set as below. In addition, you need to set the internal switch in the main unit. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
Data Length	8
Parity	Odd
Stop Bit	1
Operation Selection	Computer link
Modem Connection	OFF
Not automatically change to 2400bps	OFF
Unit No.	1

- Internal Switch in the Main Unit

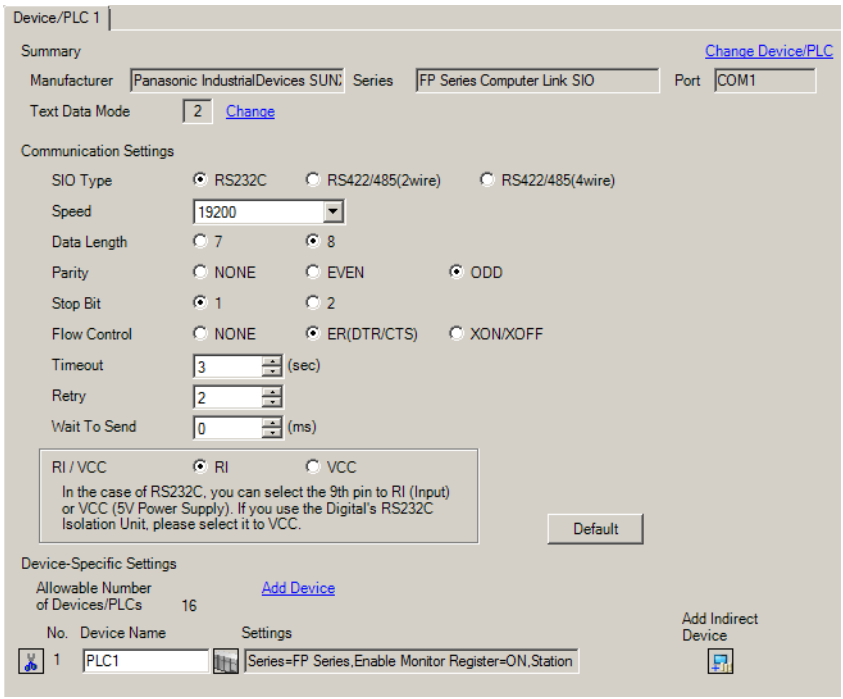
Settings	Setup Description
19200	Line Speed

3.12 Setting Example 12

■ Settings of GP-Pro EX

◆ Communication Settings

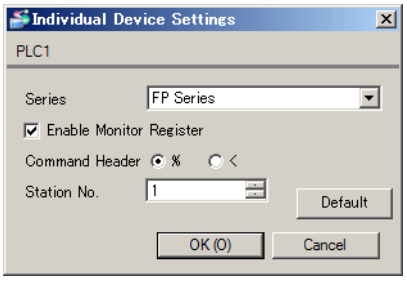
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Settings of the External Device vary depending on the connecting port.

◆ When using the tool connector on CPU

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Port Setting] tab to set as below. In addition, you need to perform the same settings in the [Operation Mode Setting Switch] and the station setting switch inside the CPU unit. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
Speed	19200

- Operation Mode Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF (19200)	Line Speed
SW2	OFF (8)	Data Length
SW3	OFF (Disable)	Modem control

- Station Setting Switch

Settings	Setup Description
1	Unit No.

◆ When using the COM port of FP10S

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Port Setting] tab to set as below. In addition, you need to perform the same settings in the [Operation Mode Setting Switch] and the station setting switch inside the CPU unit. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
RS232C port Connect Modem	OFF

- Operation Mode Setting Switch

DIP Switch	Settings	Setup Description
SW4	OFF (19200)	Baud Rate
SW5	ON (8)	Data Length
SW6	ON (Enable)	Parity Check
SW7	OFF (Odd)	Parity
SW8	OFF (1)	Stop Bit

- Station Setting Switch

Settings	Setup Description
1	Unit No.

◆ When using the COM port of FP10SH

Select [PLC System Register Setting] from [Option] of the tool bar in the ladder software to display the [PLC System Register Setting] dialog box. Select the [Port Setting] tab to set as below. In addition, you need to perform the same settings in the [Operation Mode Setting Switch] and the station setting switch inside the CPU unit. Please refer to the manual of the External Device for more details.

- Ladder Software Setting

Setup Items	Setting Value
COM port Operation Selection	Computer link
Baud Rate	19200

- Operation Mode Setting Switch

DIP Switch		Settings	Setup Description
DIP SW2	SW6	ON	Baud Rate
	SW7	ON	
	SW8	OFF (19200)	
DIP SW1	SW8	ON (8)	Data Length
	SW6	ON (Odd)	Parity Check
	SW7	ON (Odd)	
	SW5	ON (1)	Stop Bit
	SW2	ON STX(02h) disabled	Data Length
	SW3	OFF	Termination code
	SW4	ON CR(0Dh) code	

- Station Setting Switch

Settings	Setup Description
1	Unit No.

◆ When using the computer communication unit AFP3462

Set the DIP switch on the rear of the unit as below.

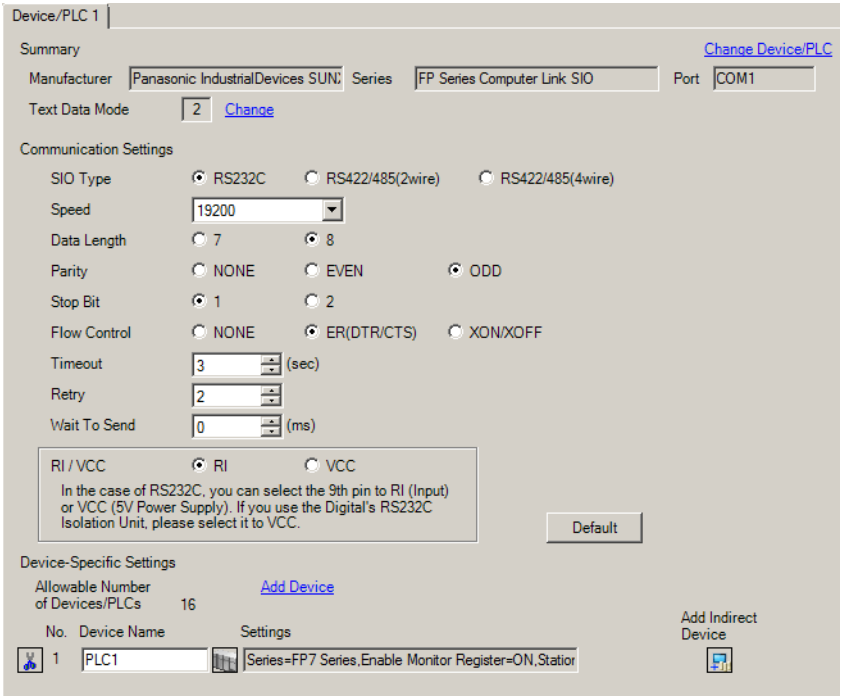
DIP Switch	Settings	Setup Description
SW1	ON	Transmission speed: 19200bps
SW2	OFF	
SW3	OFF	
SW4	ON	Data Length: 8 bits
SW5	ON	Parity check: Enable
SW6	OFF	Parity setting = Odd parity
SW7	OFF	Stop bit: 1 bit
SW8	OFF	Disable CS, CD

3.13 Setting Example 13

■ Settings of GP-Pro EX

◆ Communication Settings

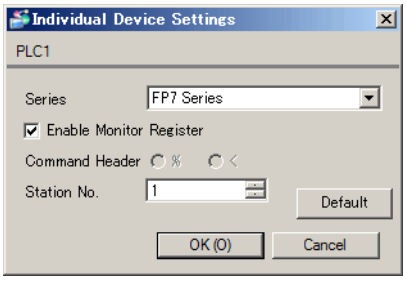
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Use the programming software (FPWIN GR7S v2.7.0.0) to set up communication settings on the External Device.
For details on communication settings, please refer to the manual of the External Device.

1 Start up the programming software.
2 Select the series for the External Device.
3 Click [OK] to display a new project.
4 From the menu bar, select [Option].
5 Select [FP7 Configuration]-[Built-in SCU].
6 Click the port you want to use (COM0, COM1 or COM2).
7 Set the each item as follows, and click [OK].

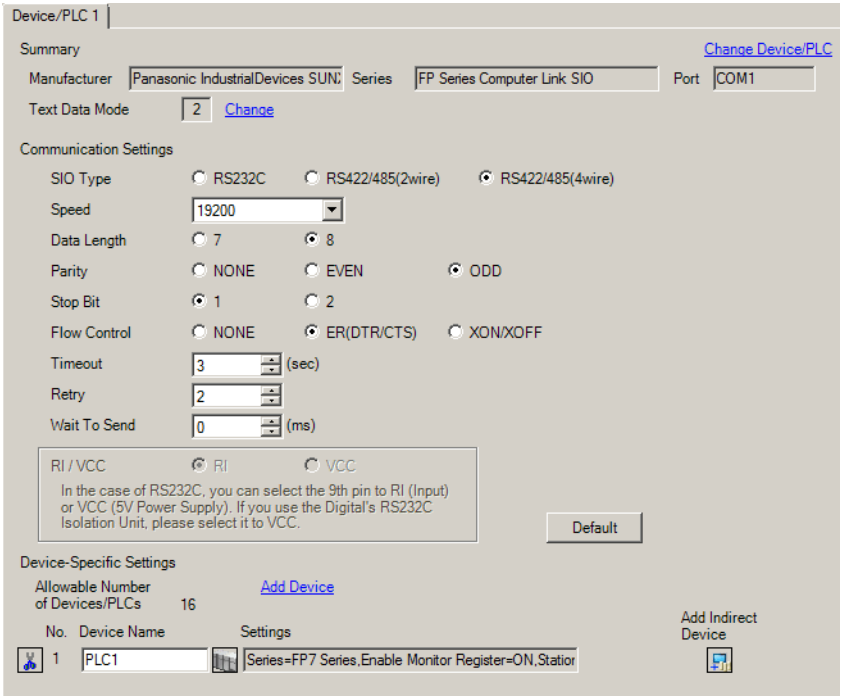
Setup Items	Setting Value
Communication mode	MEWTOCOL-7
Station No.	1
Baud rate	19200bps
Data length	8 bits
Parity	Odd
Stop bit	1 bit
RS/CS	Disable
Send wating time	0
Header STX	Disable
Terminator setting	CR
Modem initialization	Not initialize

3.14 Setting Example 14

■ Settings of GP-Pro EX

◆ Communication Settings

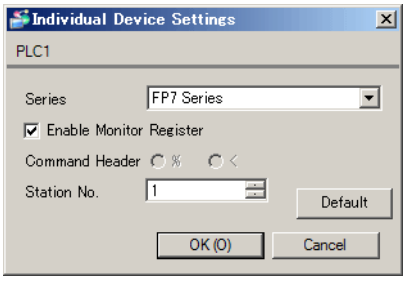
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Use the programming software (FPWIN GR7S v2.7.0.0) to set up communication settings on the External Device.
For details on communication settings, please refer to the manual of the External Device.

1 Start up the programming software.
2 Select the series for the External Device.
3 Click [OK] to display a new project.
4 From the menu bar, select [Option].
5 Select [FP7 Configuration]-[Built-in SCU].
6 Click the port you want to use (COM0, COM1 or COM2).
7 Set the each item as follows, and click [OK].

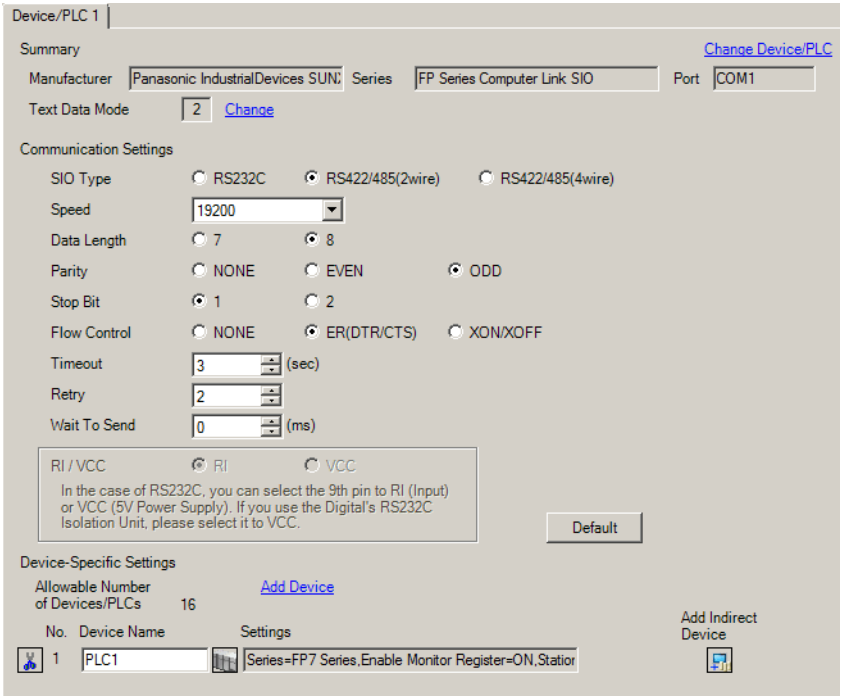
Setup Items	Setting Value
Communication mode	MEWTOCOL-7
Station No.	1
Baud rate	19200bps
Data length	8 bits
Parity	Odd
Stop bit	1 bit
RS/CS	Disable
Send wating time	0
Header STX	Disable
Terminator setting	CR
Modem initialization	Not initialize

3.15 Setting Example 15

■ Settings of GP-Pro EX

◆ Communication Settings

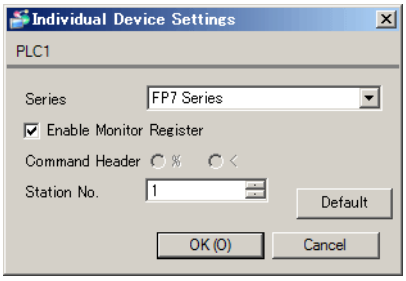
To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].



◆ Device Setting

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

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



■ Setting of External Device

Use the programming software (FPWIN GR7S v2.7.0.0) to set up communication settings on the External Device.
For details on communication settings, please refer to the manual of the External Device.

1 Start up the programming software.
2 Select the series for the External Device.
3 Click [OK] to display a new project.
4 From the menu bar, select [Option].
5 Select [FP7 Configuration]-[Built-in SCU].
6 Click the port you want to use (COM0, COM1 or COM2).
7 Set the each item as follows, and click [OK].

Setup Items	Setting Value
Communication mode	MEWTOCOL-7
Station No.	1
Baud rate	19200bps
Data length	8 bits
Parity	Odd
Stop bit	1 bit
RS/CS	Disable
Send wating time	0
Header STX	Disable
Terminator setting	CR
Modem initialization	Not initialize

4 Setup Items

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

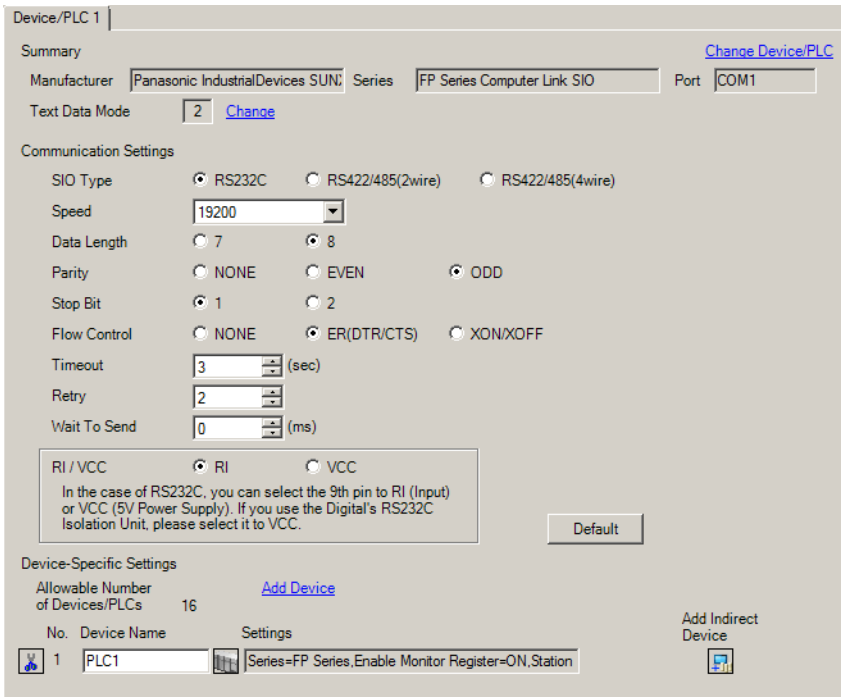
The setting of each parameter must be identical to that of External Device.

☞"3 Example of Communication Setting" (page 10)

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.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

Setup Items	Setup Description
RI/VCC	Switch the 9th pin setting when you select RS232C for SIO type. 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

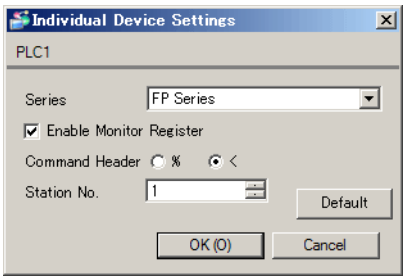
- Refer to the GP-Pro EX Reference Manual for Indirect Device.

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 the using series.
Enable Monitor Register	Setting of communication optimization. Check this option when you connect the Display to one communication unit. Not check when you connect the Display to more than two communication units attached to one CPU unit respectively. **IMPORTANT** • Monitor register option is effective in the default setting. Check the setting according to your system configuration. • When you connect the GP to FP-e Series, Please configure the setting not to use Monitor Registration.
Command Header	Setting of communication format. Select "%" when the External Device to communicate is FP2, FP2SH, FP3, FP10S, FP10SH, and select "<" for other models. [Command Header] option is available only when the [Series] is set to [FP Series].
Station No.	Use an integer 1 to 32 to enter the station number of the External Device to communicate.

4.2 When setting in Offline mode

NOTE

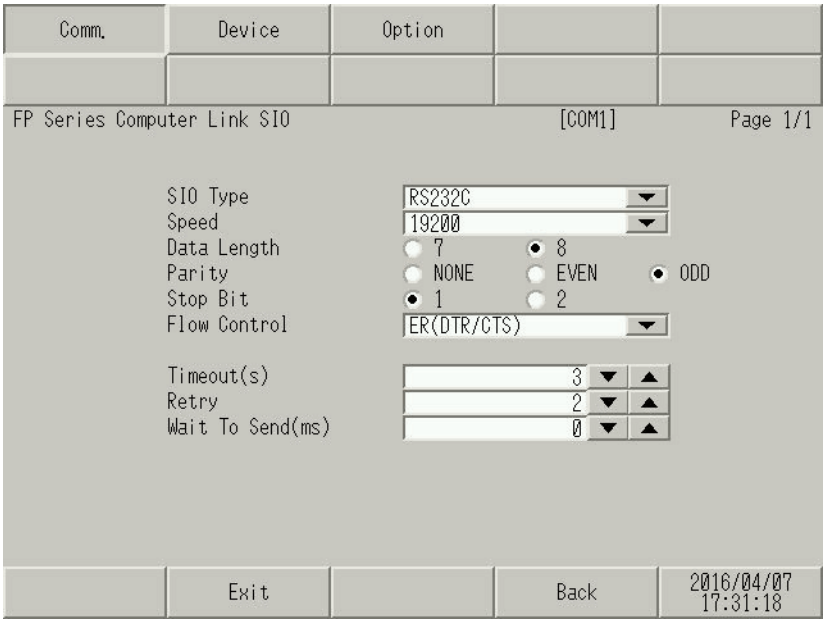
- Refer to the Maintenance/Troubleshooting guide for information on how to enter offline mode or about the operation.

  Cf. Maintenance/Troubleshooting Guide "Offline Mode"

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

■ Communication Settings

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

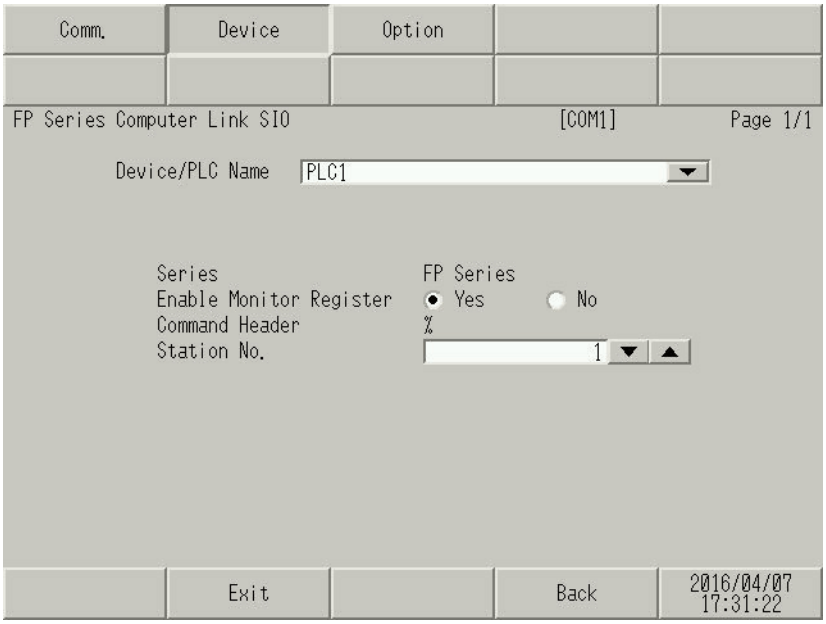


Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. **IMPORTANT** To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the 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.
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 (s)	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.

Setup Items	Setup Description
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send (ms)	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

■ Device Setting

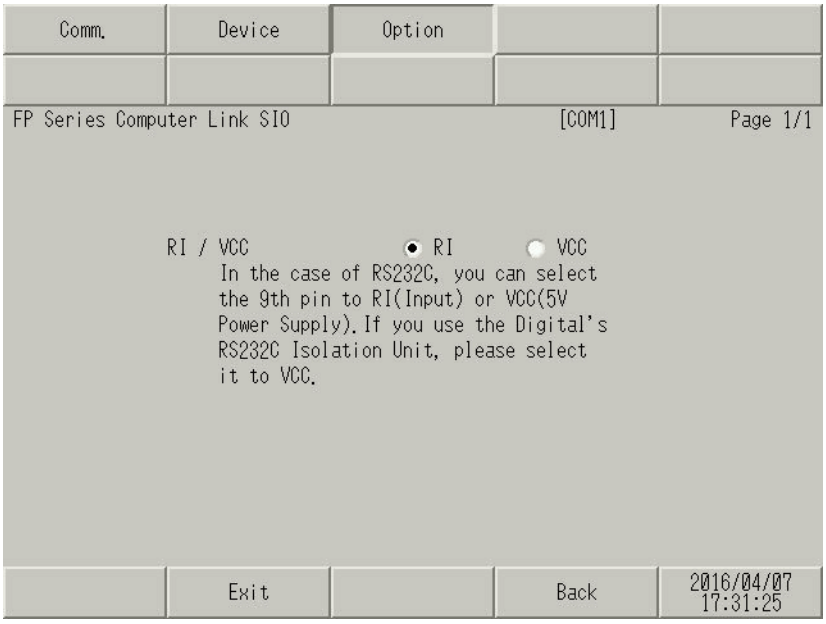
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].



Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Series	Display the using series.
Enable Monitor Register	Setting of communication optimization. Select [Valid] when you connect the Display to one communication unit. Select [Invalid] when you connect the Display to more than two communication units attached to one CPU unit respectively. IMPORTANT • Monitor register option is valid in the default setting. Check the setting according to your system configuration.
Command Header	Displays the setting for the communication format.
Station No.	Use an integer 1 to 32 to enter the station number of the External Device to communicate.

■ Option

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



Setup Items	Setup Description
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. 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-4100 series, GP-4*01TM, GP-Rear Module, 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 Panasonic Industrial Devices SUNX Co., Ltd. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

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

Cable Diagram 1

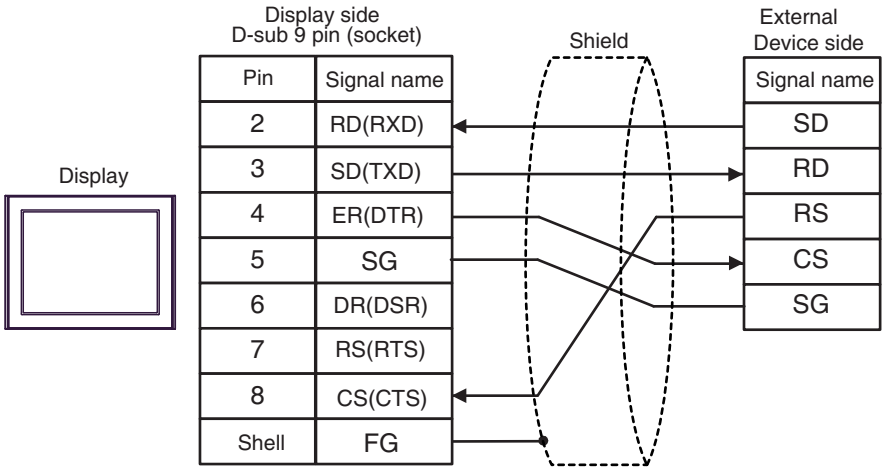
Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	1A	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	1B	User-created cable	The cable length must be 15m or less.

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

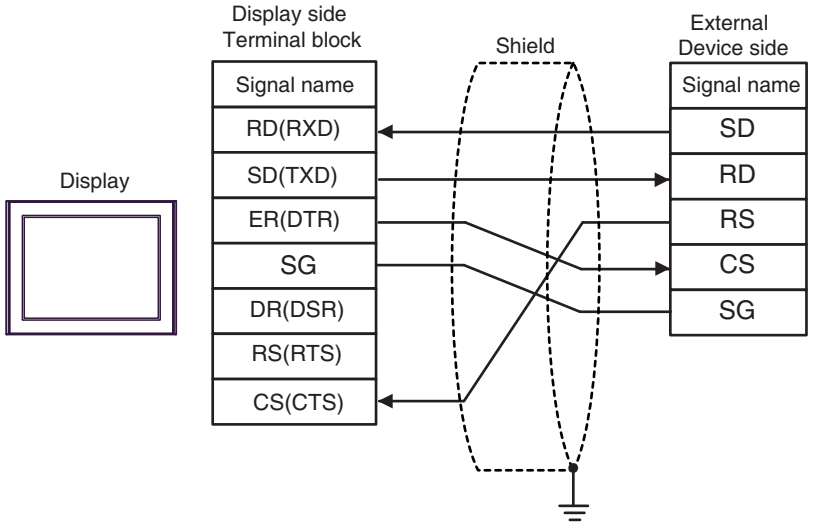
*2 Except SP-5B00

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

1A)


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

1B)


Display side
Terminal block
Shield
External
Device side
Display
Signal name
RD(RXD)
SD(TXD)
ER(DTR)
SG
DR(DSR)
RS(RTS)
CS(CTS)
Signal name
SD
RD
RS
CS
SG

Cable Diagram 2

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	2A	User-created cable (When using the COM.1 port)	The cable length must be 15m or less.
	2B	User-created cable (When using the COM.2 port)	
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	2C	User-created cable (When using the COM.1 port)	The cable length must be 15m or less.
	2D	User-created cable (When using the COM.2 port)	
LT-4*01TM (COM1) LT-Rear Module (COM1)	2E	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21 (When using the COM.1 port)	The cable length must be 5m or less.
	2F	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21 (When using the COM.2 port)	

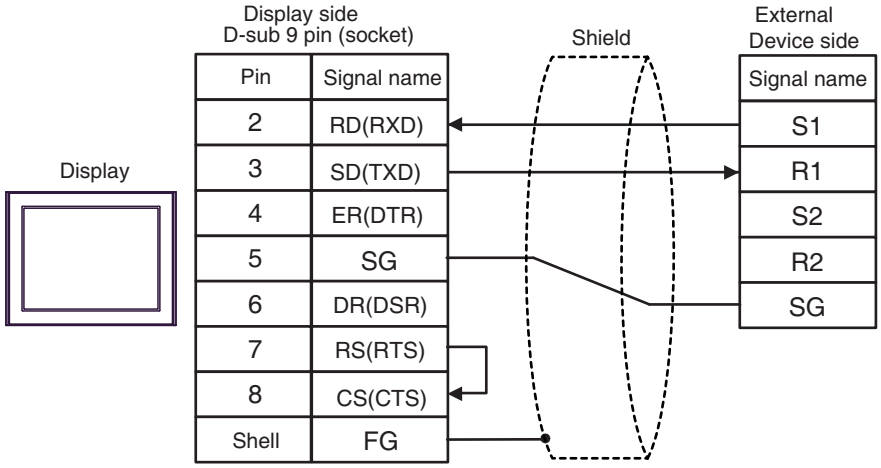
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

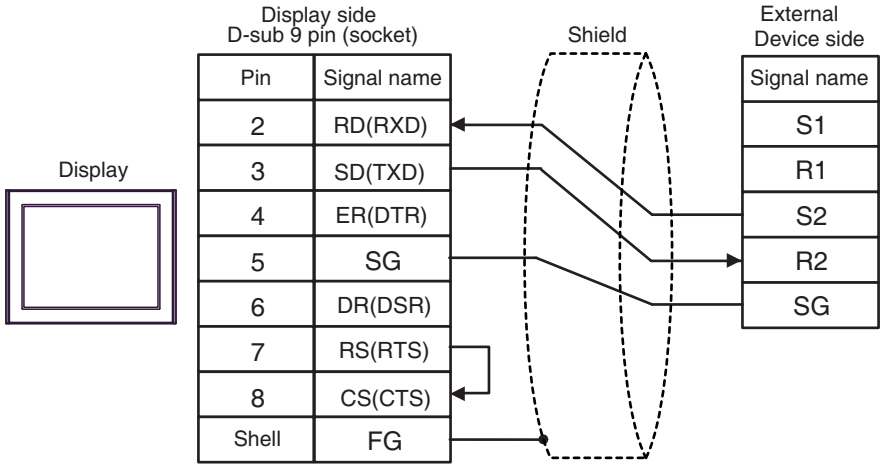
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

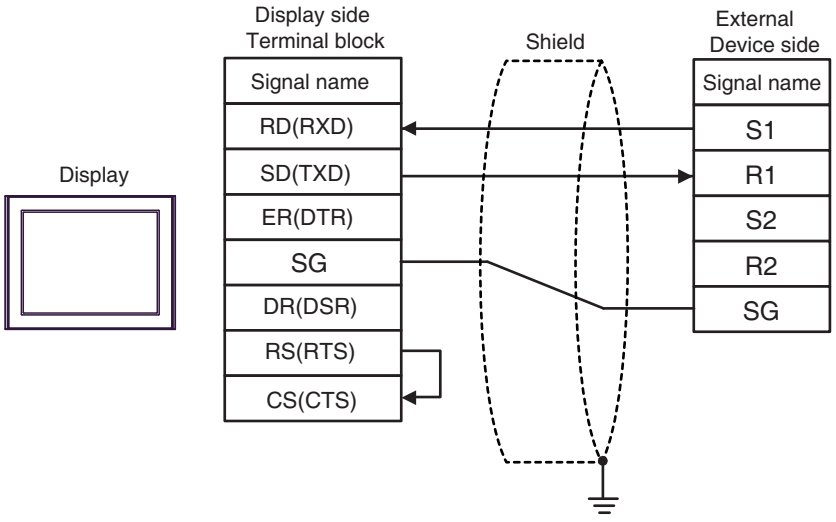
2A)


Display side
D-sub 9 pin (socket)
Shield
External
Device side
Display
Pin
Signal name
2
RD(RXD)
3
SD(TXD)
4
ER(DTR)
5
SG
6
DR(DSR)
7
RS(RTS)
8
CS(CTS)
Shell
FG
Signal name
S1
R1
S2
R2
SG

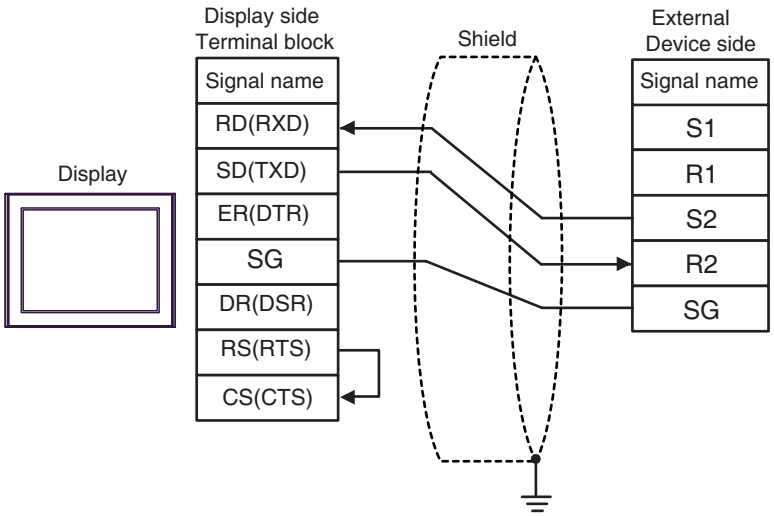
2B)


Display side
D-sub 9 pin (socket)
Shield
External
Device side
Display
Pin
Signal name
2
RD(RXD)
3
SD(TXD)
4
ER(DTR)
5
SG
6
DR(DSR)
7
RS(RTS)
8
CS(CTS)
Shell
FG
Signal name
S1
R1
S2
R2
SG

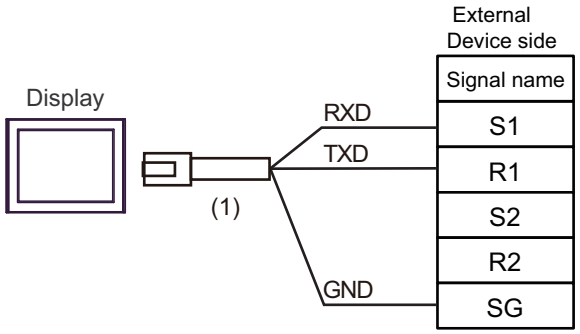
2C)


Display side
Terminal block
Shield
External
Device side
Display
Signal name
RD(RXD)
SD(TXD)
ER(DTR)
SG
DR(DSR)
RS(RTS)
CS(CTS)
Signal name
S1
R1
S2
R2
SG

2D)

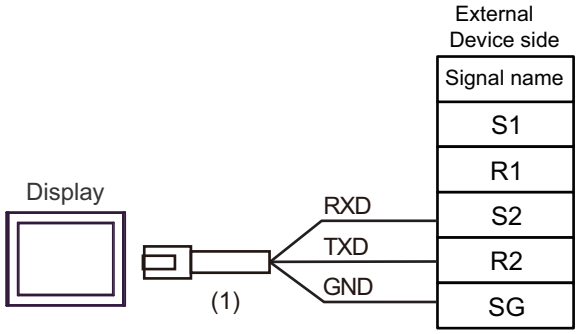


2E)



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

2F)



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

Cable Diagram 3

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1)	3A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	3B	User-created cable	
GP3000[*3] (COM2)	3C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	3D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	3E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	3F	User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	3G	User-created cable	The cable length must be 1200m or less.
GP-4107 (COM1) GP-4*03T[*5] (COM2) GP-4203T (COM1)	3H	User-created cable	The cable length must be 1200m or less.
GP4000[*6] (COM2) GP-4201T (COM1) SP5000[*7] (COM1/2) SP-5B00 (COM2) ST6000[*8] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*9] (COM2) PS6000 (Basic Box) (COM1/2)	3I	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*10] + User-created cable	The cable length must be 1200m or less.
	3B	User-created cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	3J	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	The cable length must be 200m or less.
PE-4000B[*11] PS5000[*11] PS6000 (Optional Interface)[*11]	3K	User-created cable	The cable length must be 1200m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 All GP3000 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. (Except PE-4000B, PS5000, and PS6000)
☞■ IPC COM Port (page 6)

*5 Except GP-4203T

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

*7 Except SP-5B00

*8 Except ST-6200

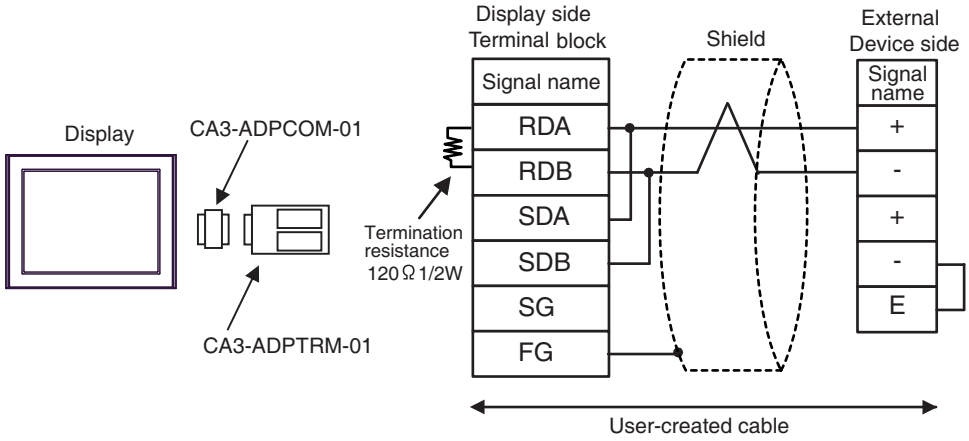
*9 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

*10 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 3A.

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

3A)

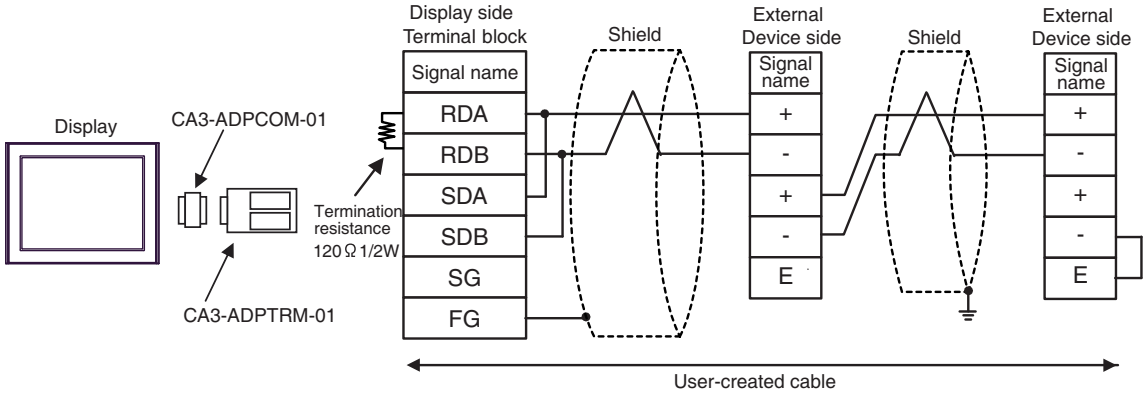
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

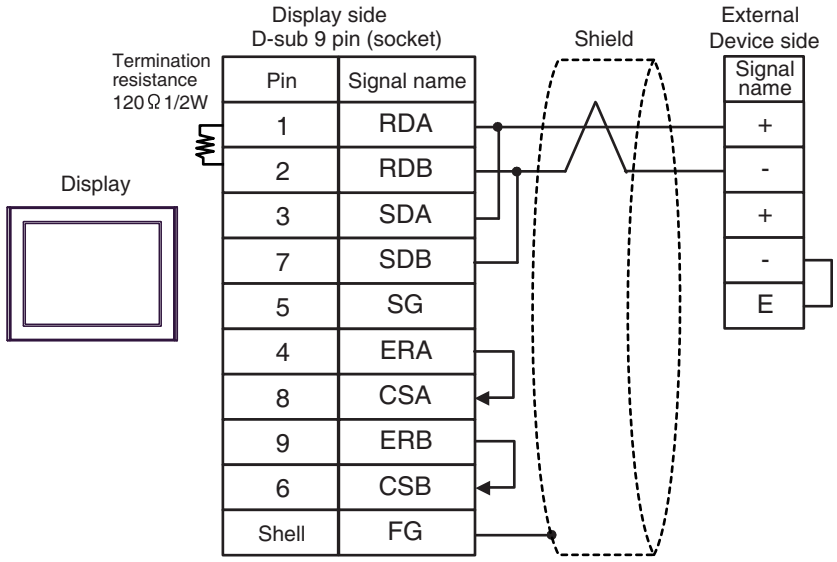


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3B)

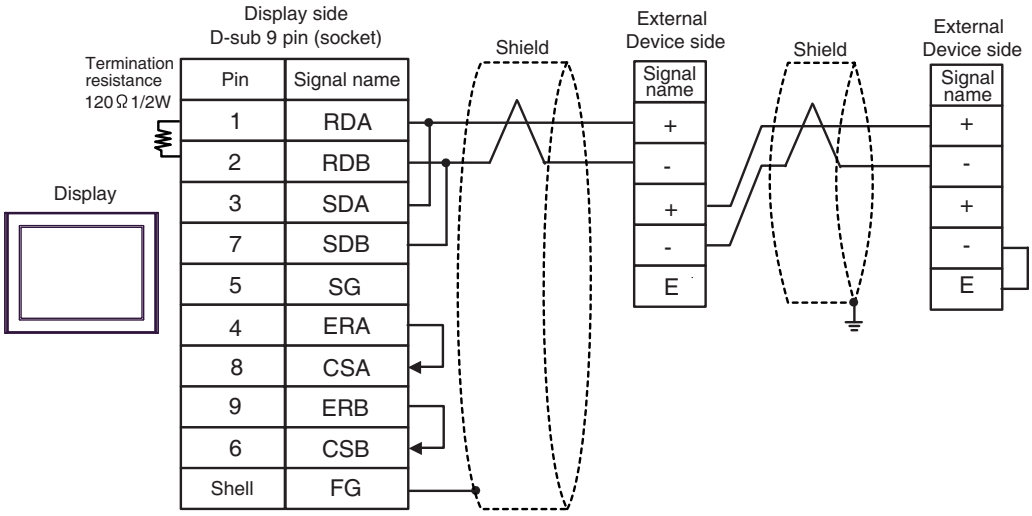
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

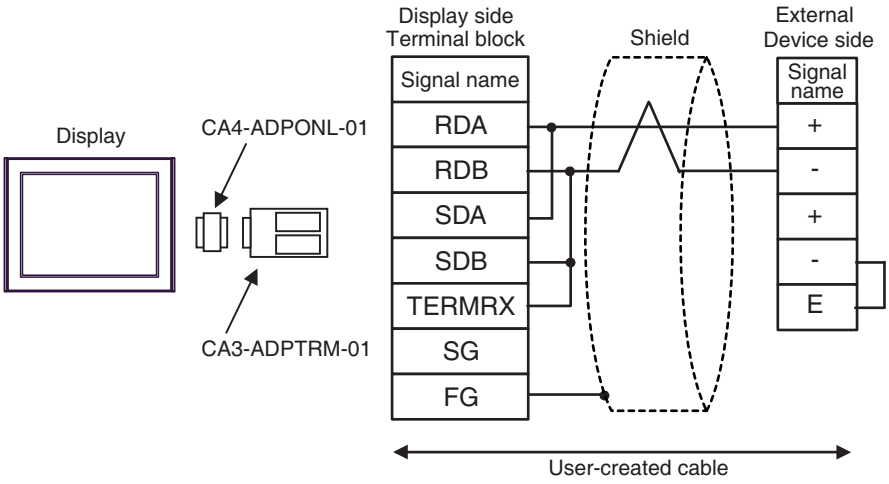


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3C)

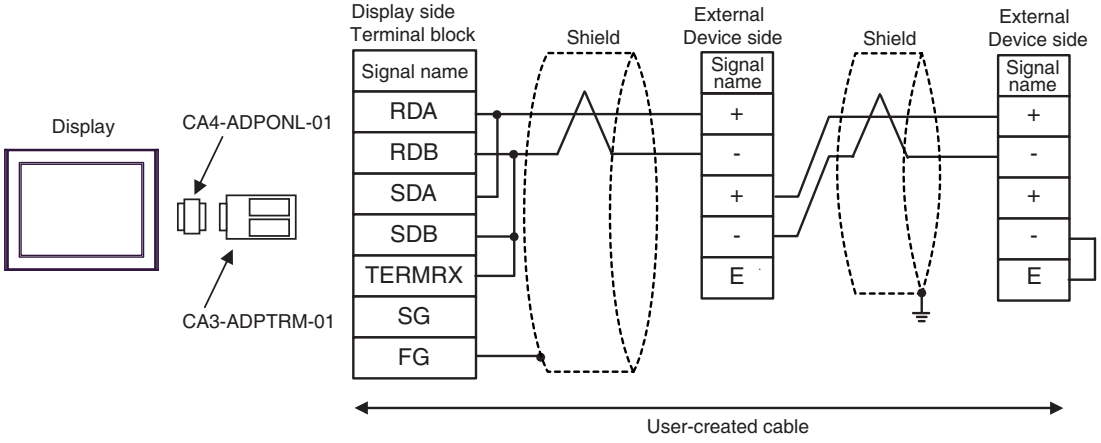
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

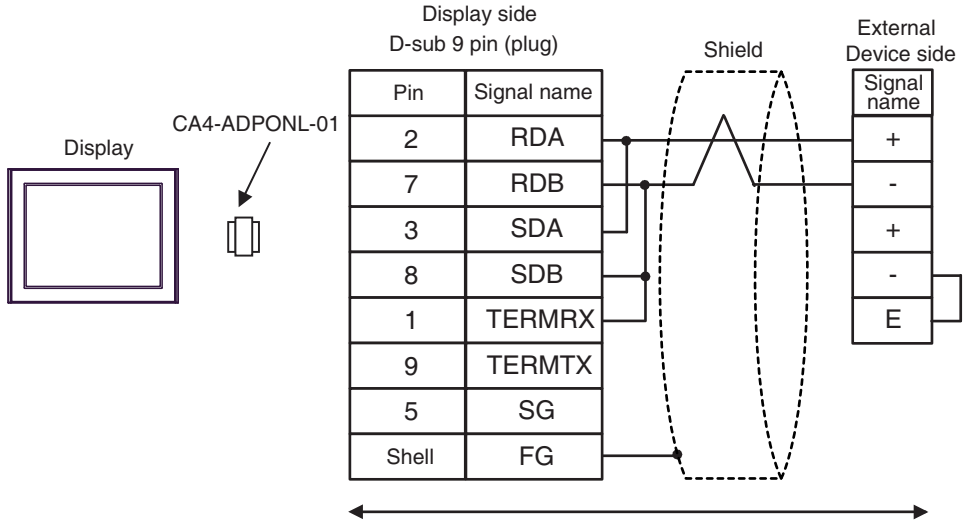


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3D)

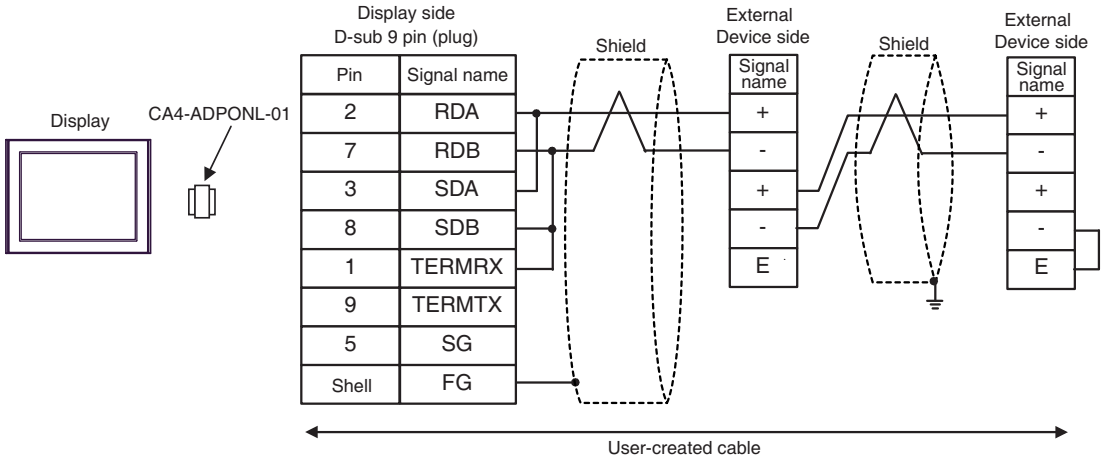
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

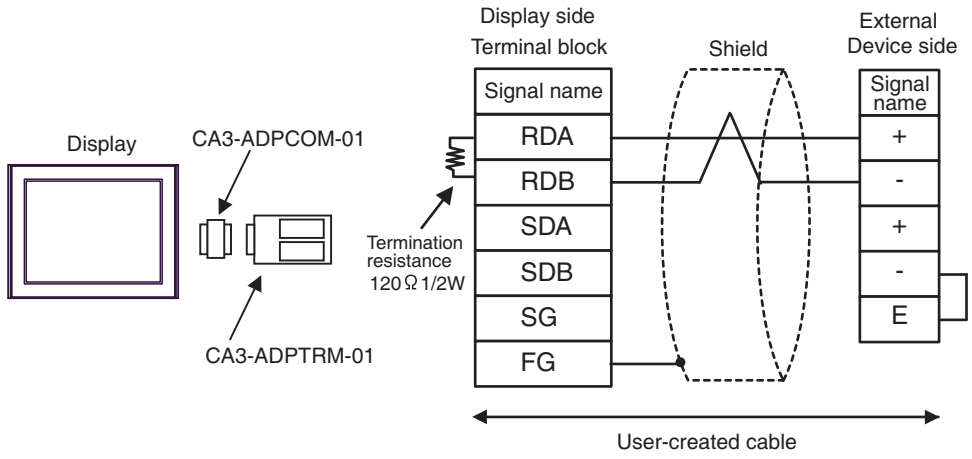


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3E)

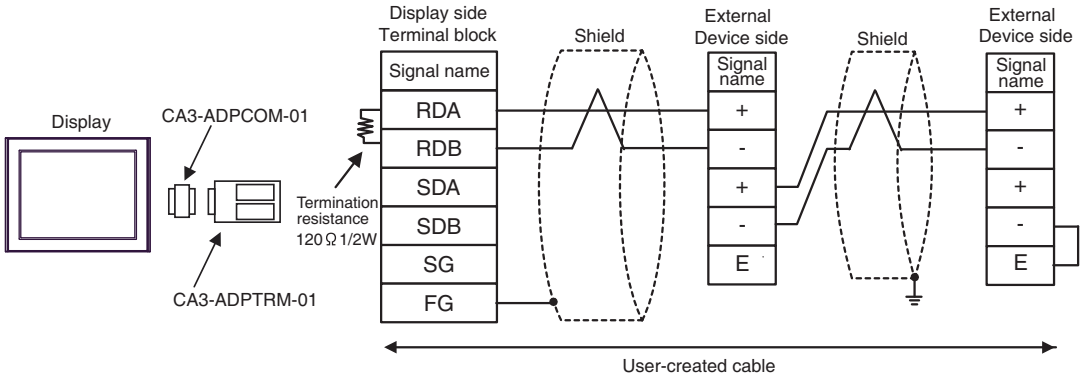
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

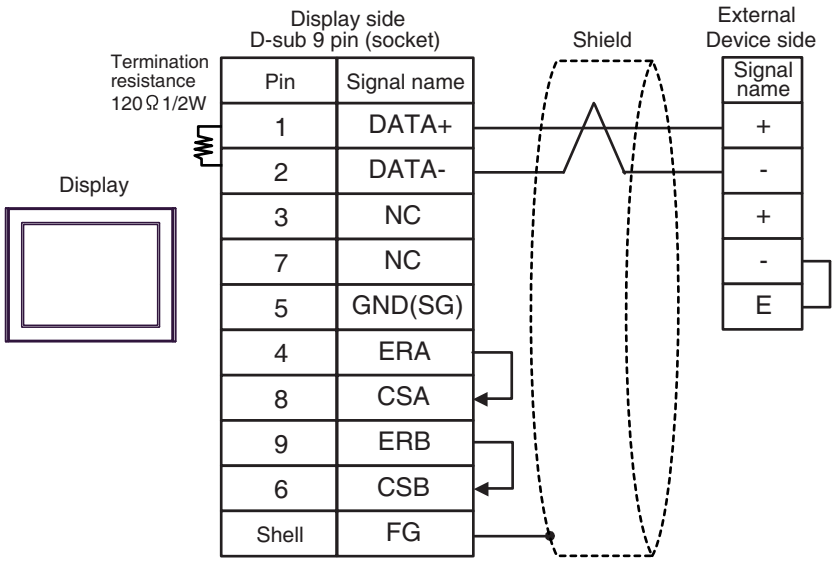


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3F)

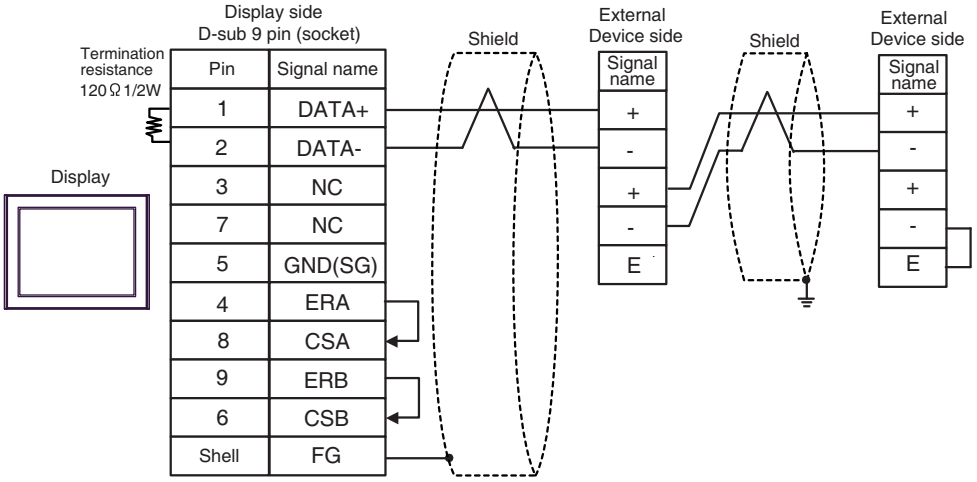
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

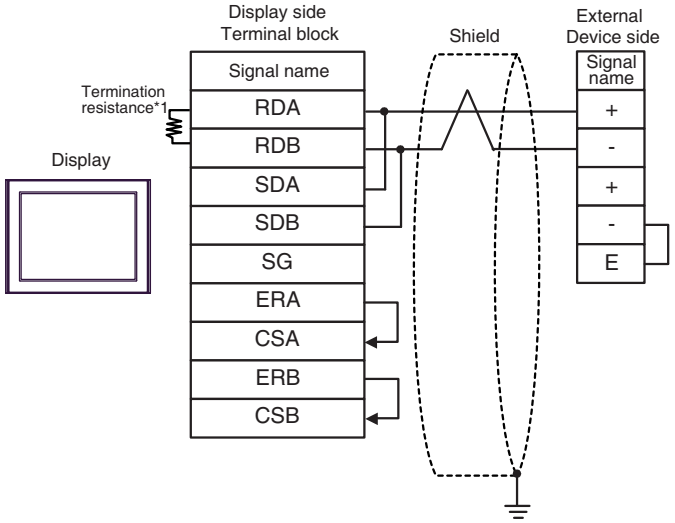


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3G)

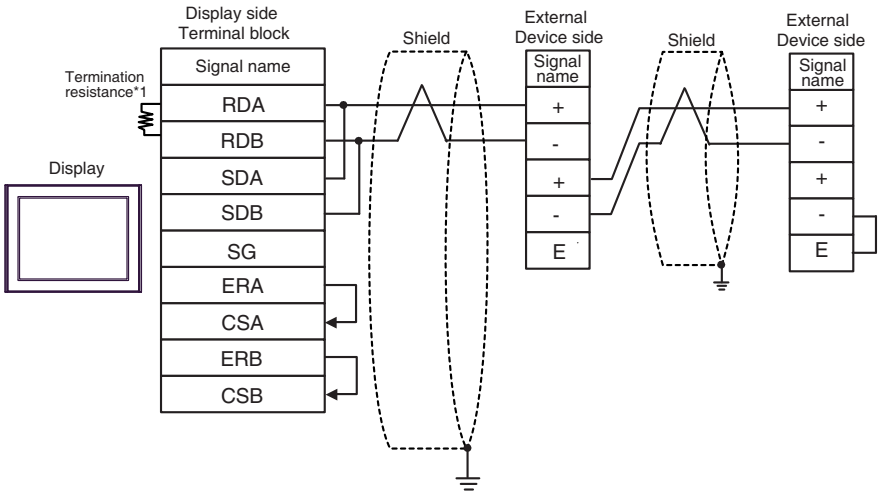
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection



IMPORTANT

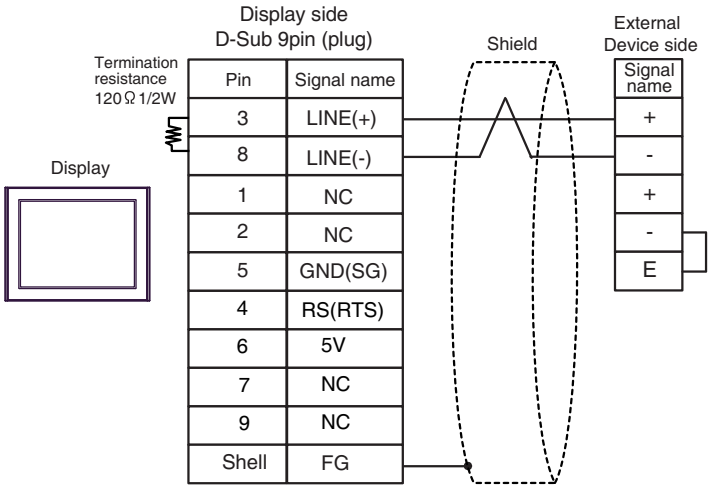
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

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

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

3H)

- 1:1 Connection



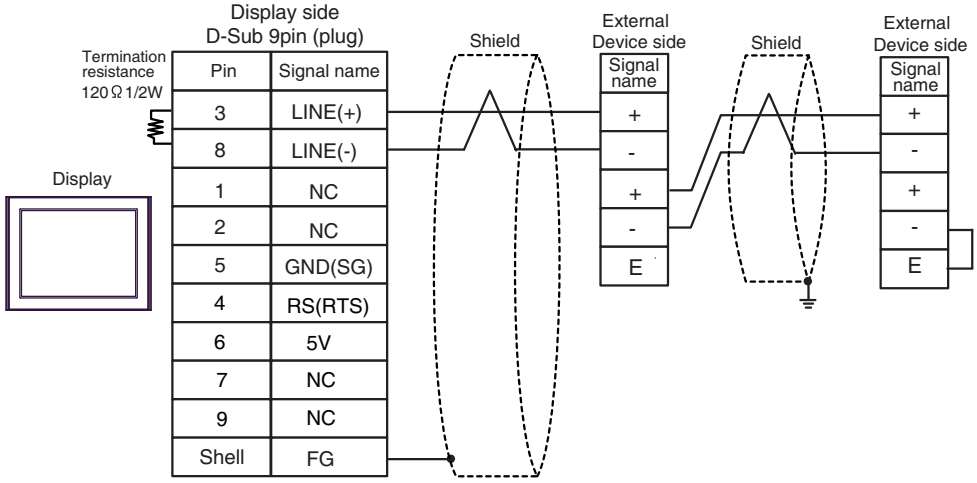
IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.
- 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.

NOTE

- In COM on the GP-4107, the SG and FG terminals are isolated.

- 1:n Connection



IMPORTANT

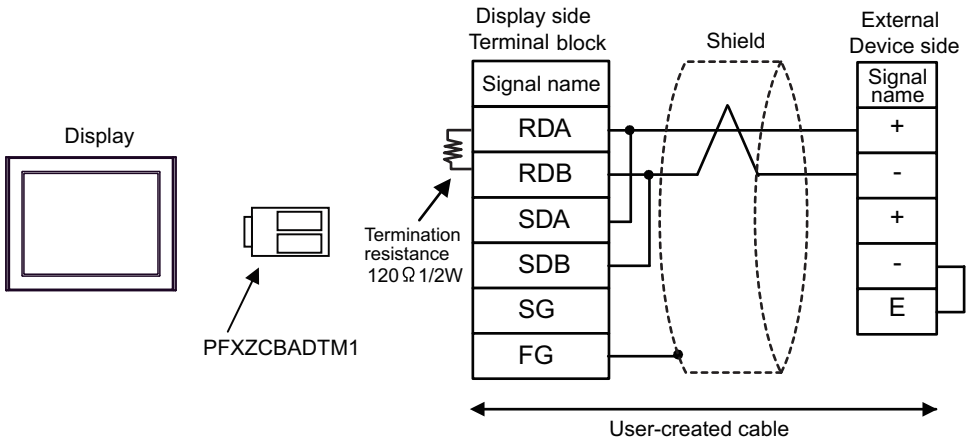
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

NOTE

- In COM on the GP-4107, the SG and FG terminals are isolated.

3I)

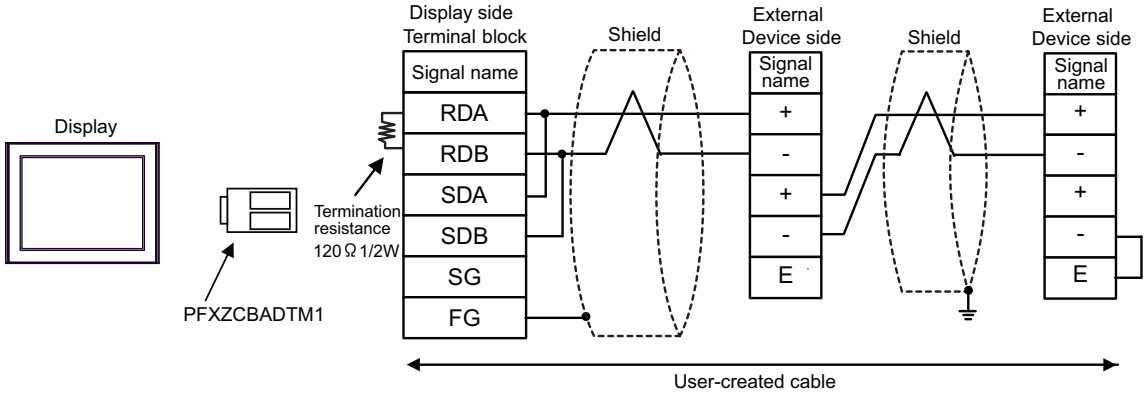
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection

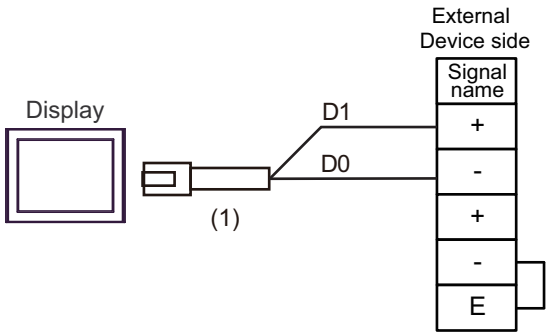


IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

3J)

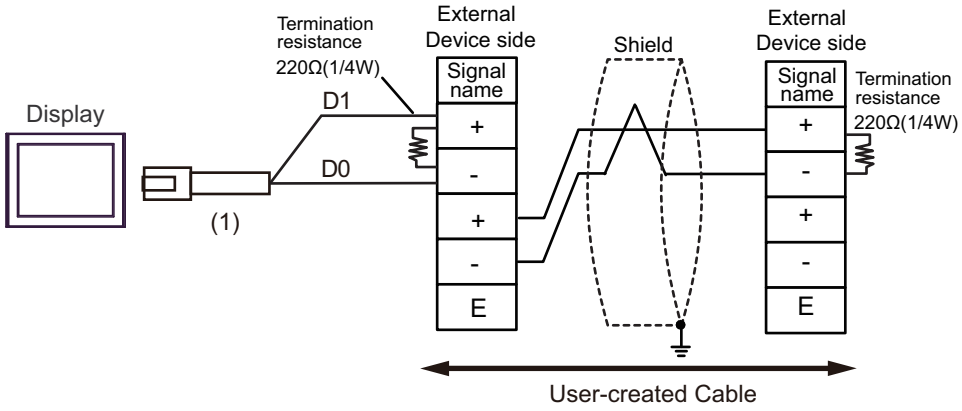
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

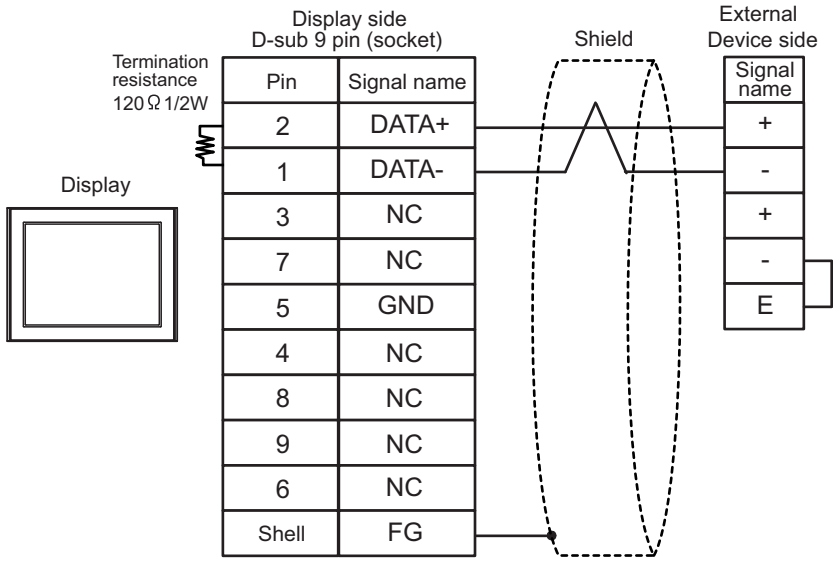
- 1:n Connection



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

3K)

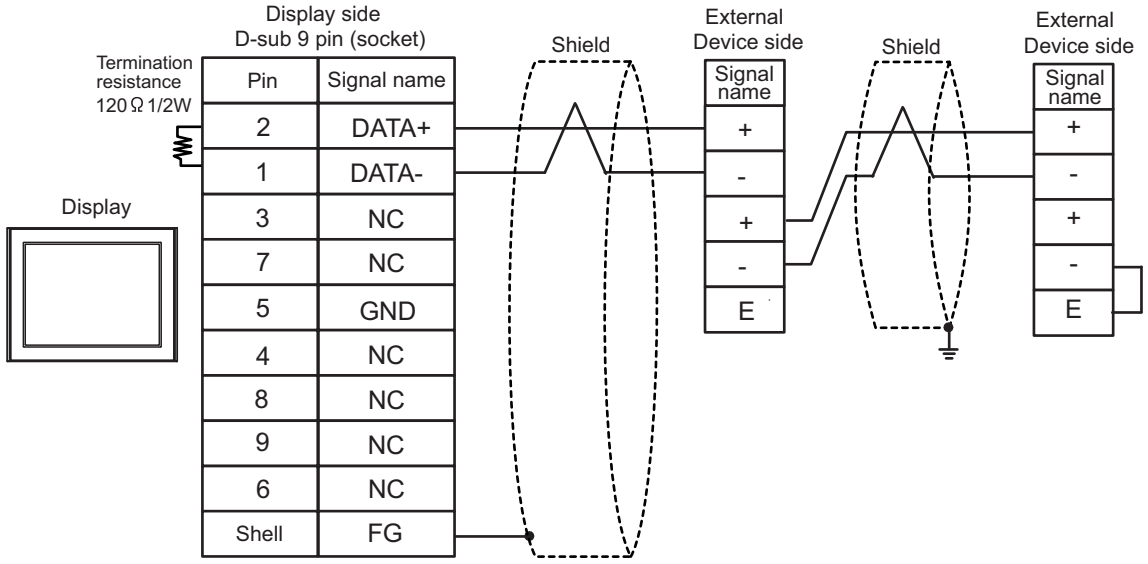
- 1:1 Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

- 1:n Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

Cable Diagram 4

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	4A	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	4B	User-created cable	The cable length must be 15m or less.
LT-4*01TM (COM1) LT-Rear Module (COM1)	4C	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	The cable length must be 5m or less.

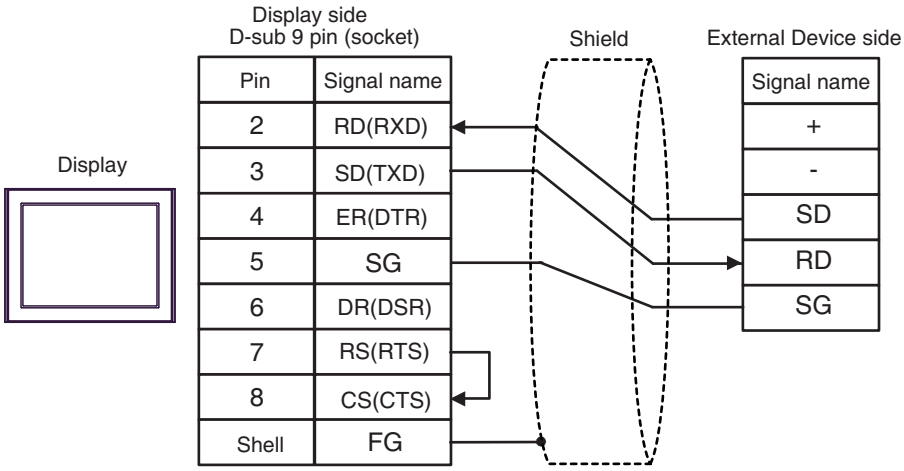
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

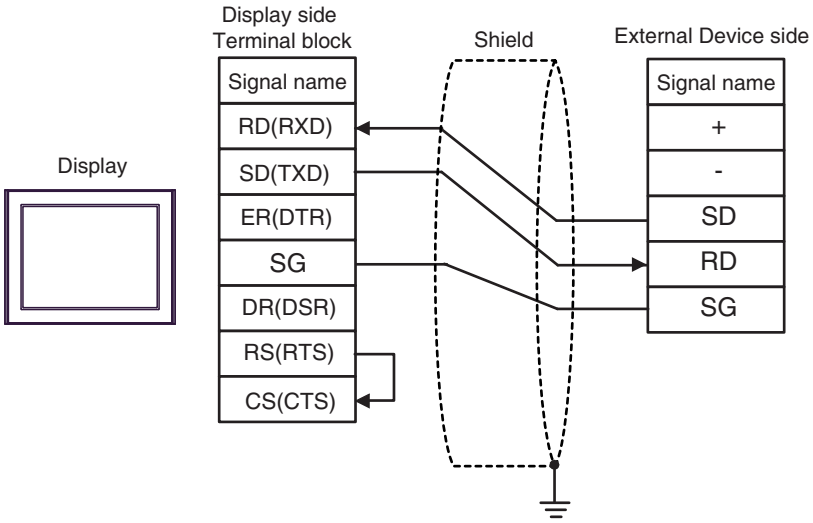
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

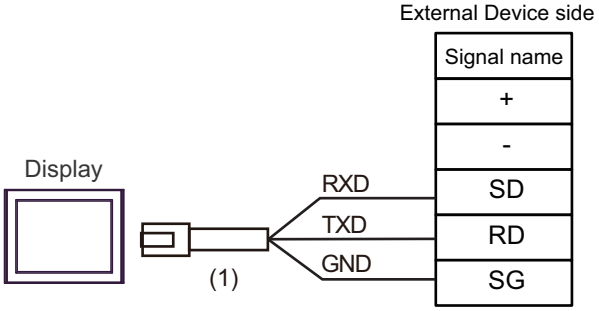
4A)



4B)



4C)



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

Cable Diagram 5

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1)	5A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	5B	User-created cable	
GP3000[*3] (COM2)	5C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	5D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	5E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	5F	User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	5G	User-created cable	The cable length must be 1200m or less.
GP-4107 (COM1) GP-4*03T[*5] (COM2) GP-4203T (COM1)	5H	User-created cable	The cable length must be 1200m or less.
GP4000[*6] (COM2) GP-4201T (COM1) SP5000[*7] (COM1/2) SP-5B00 (COM2) ST6000[*8] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*9] (COM2) PS6000 (Basic Box) (COM1/2)	5I	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*10] + User-created cable	The cable length must be 1200m or less.
	5B	User-created cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	5J	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	The cable length must be 200m or less.
PE-4000B[*11] PS5000[*11] PS6000 (Optional Interface)[*11]	5K	User-created cable	The cable length must be 1200m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 All GP3000 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. (Except PE-4000B, PS5000, and PS6000)
☞■ IPC COM Port (page 6)

*5 Except GP-4203T

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

*7 Except SP-5B00

*8 Except ST-6200

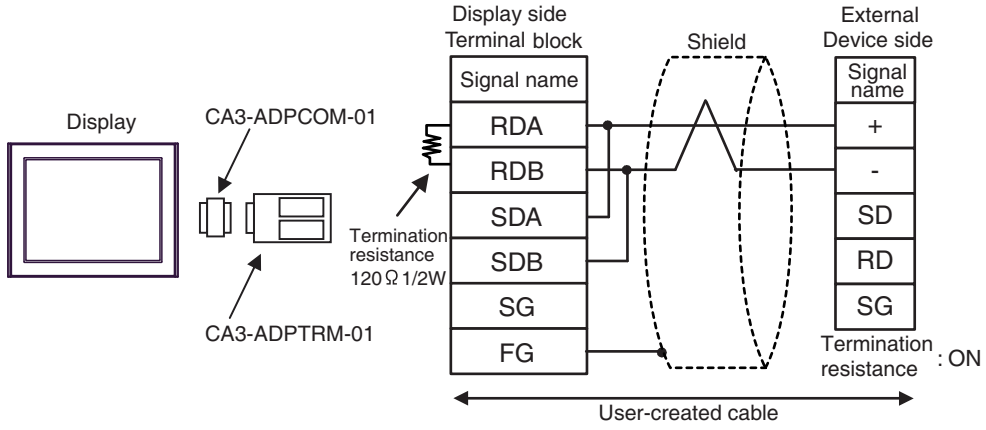
*9 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

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

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

5A)

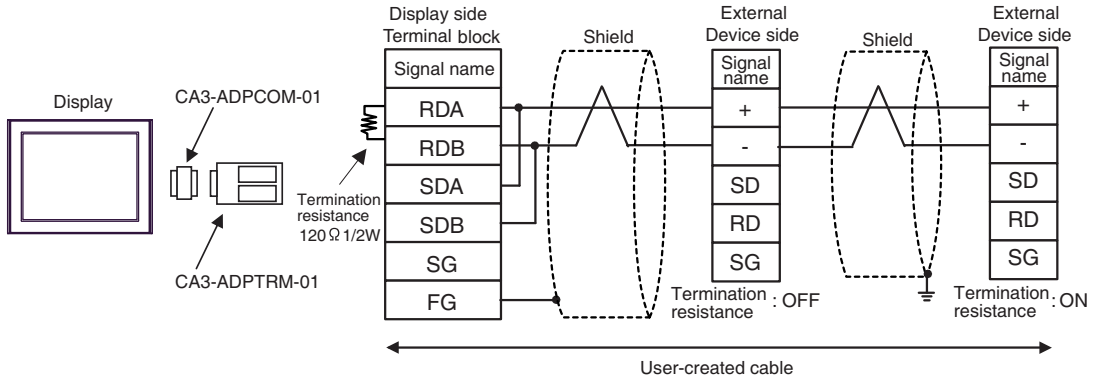
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

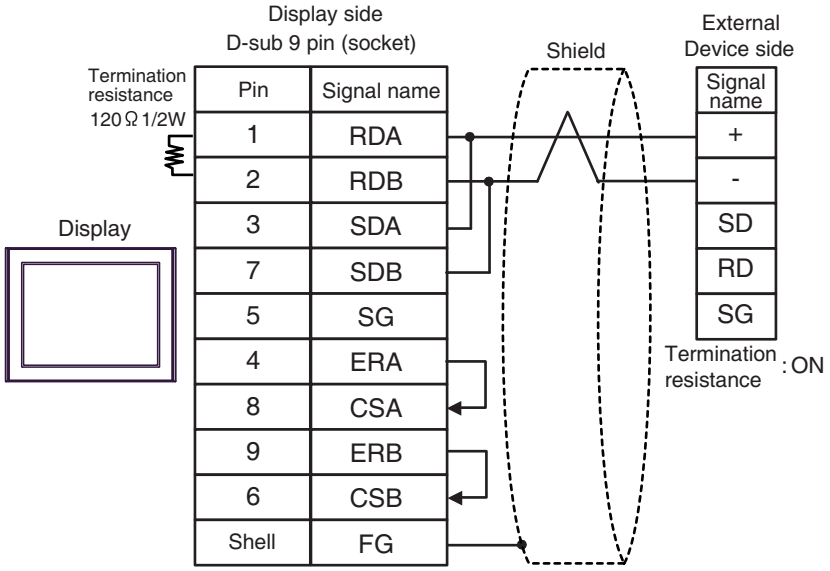


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5B)

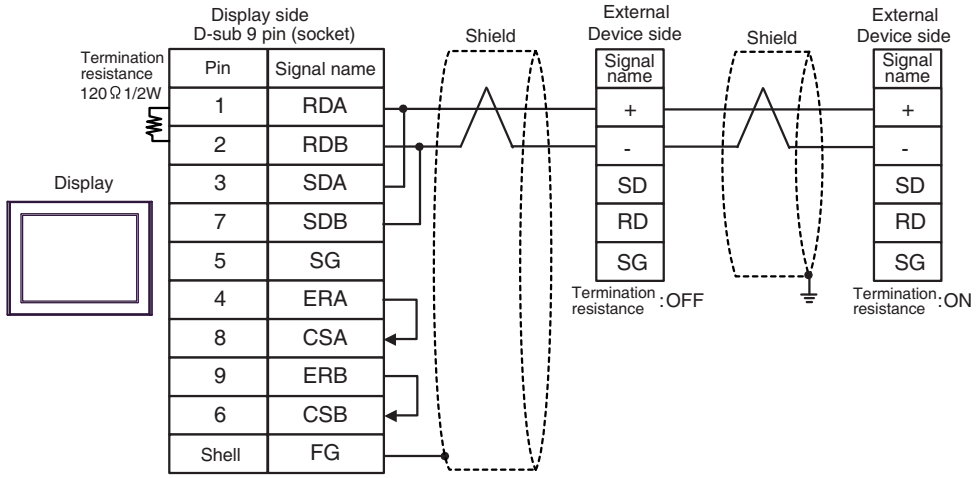
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

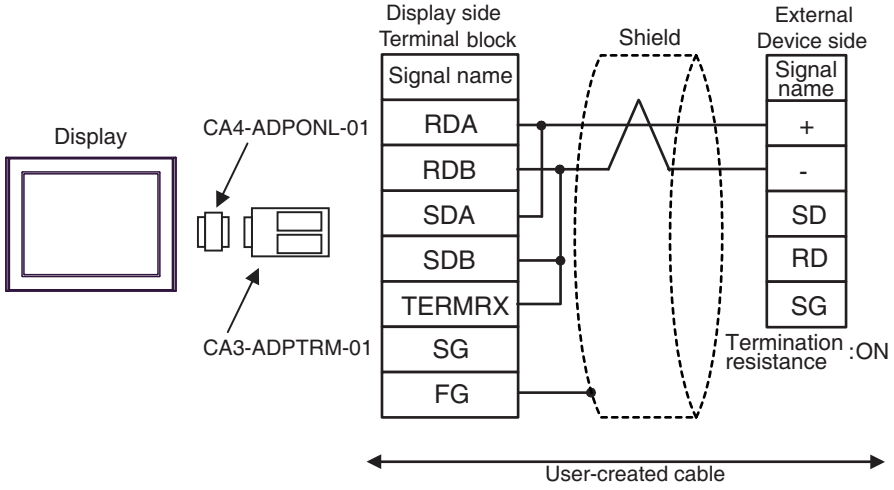


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5C)

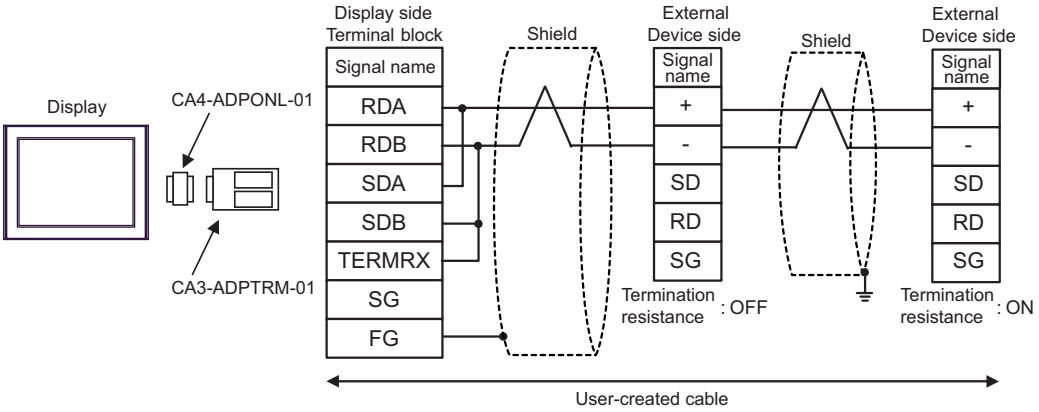
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

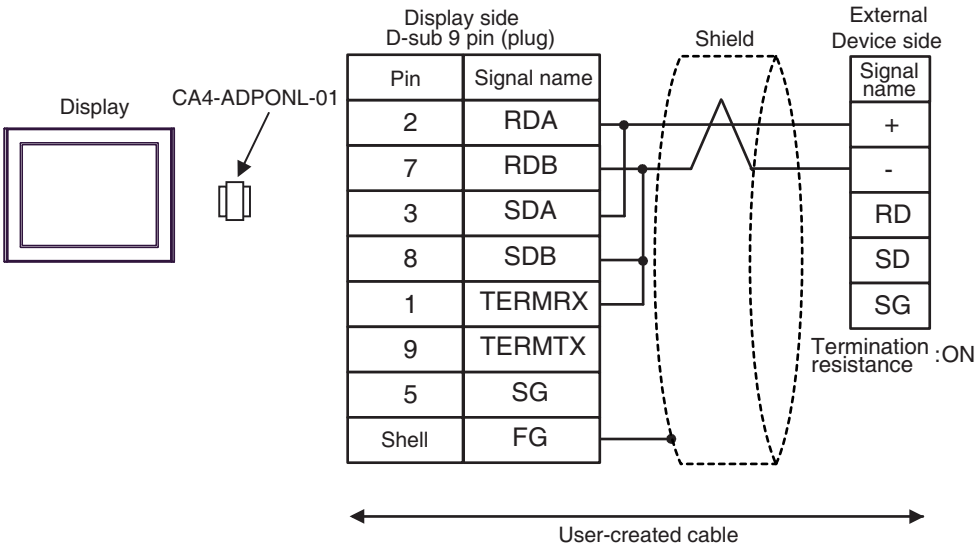


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5D)

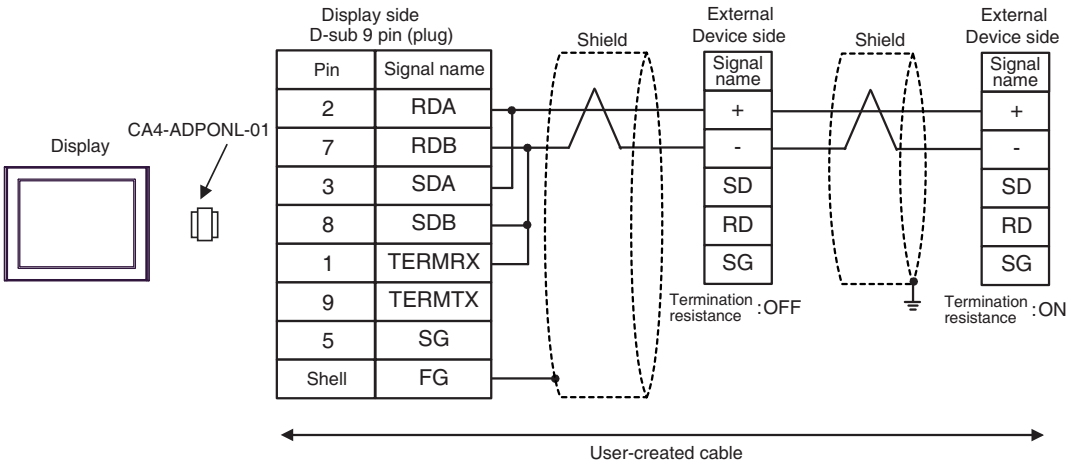
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

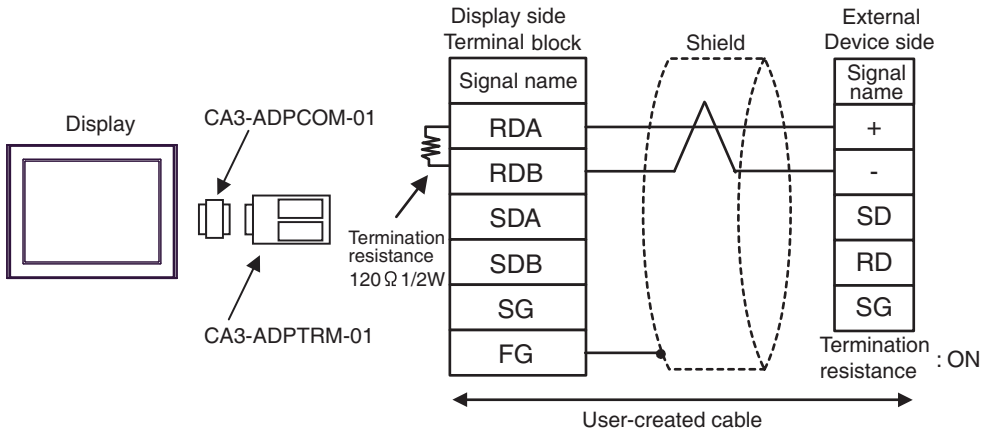


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5E)

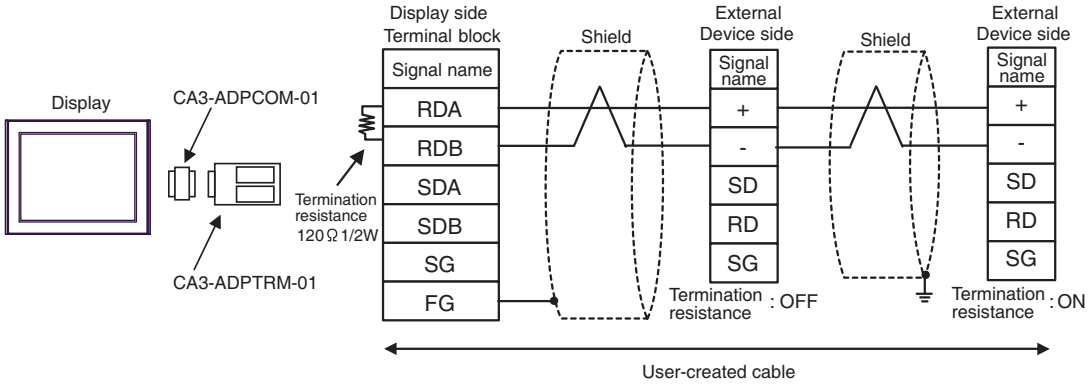
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

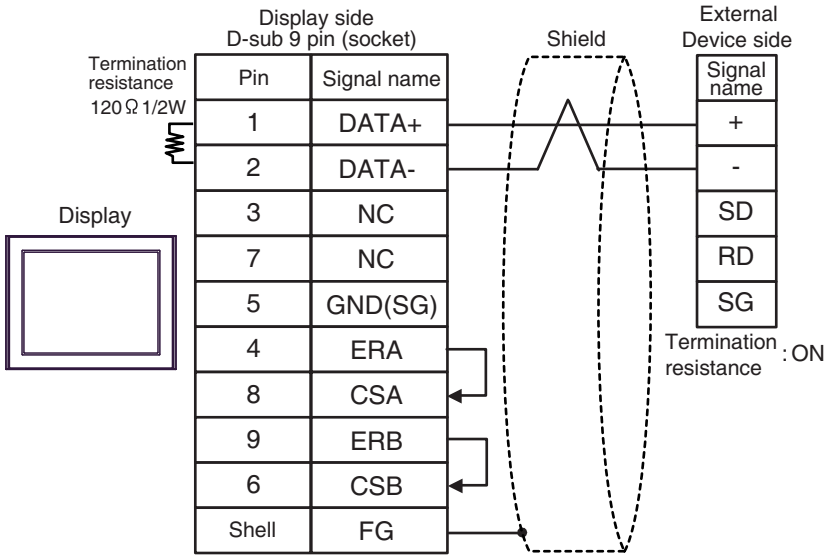


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5F)

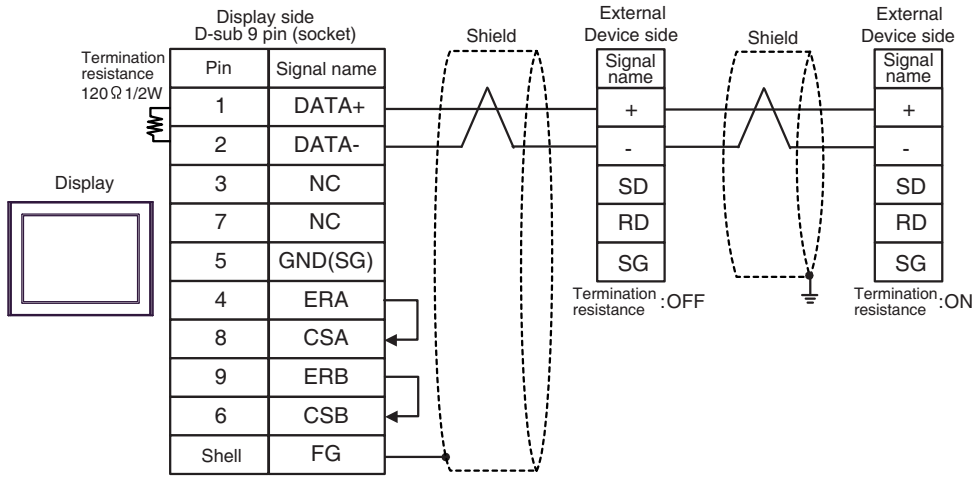
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

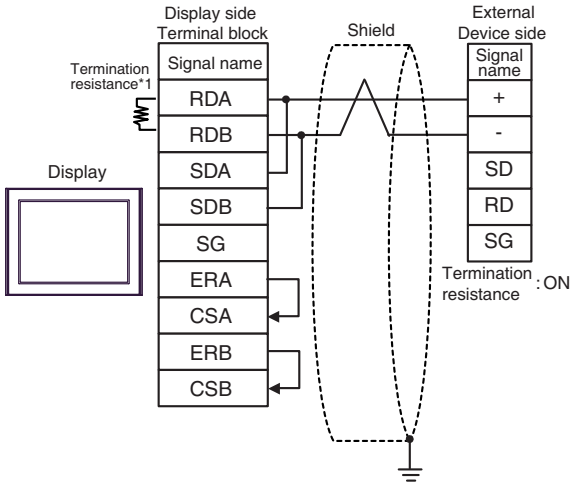


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5G)

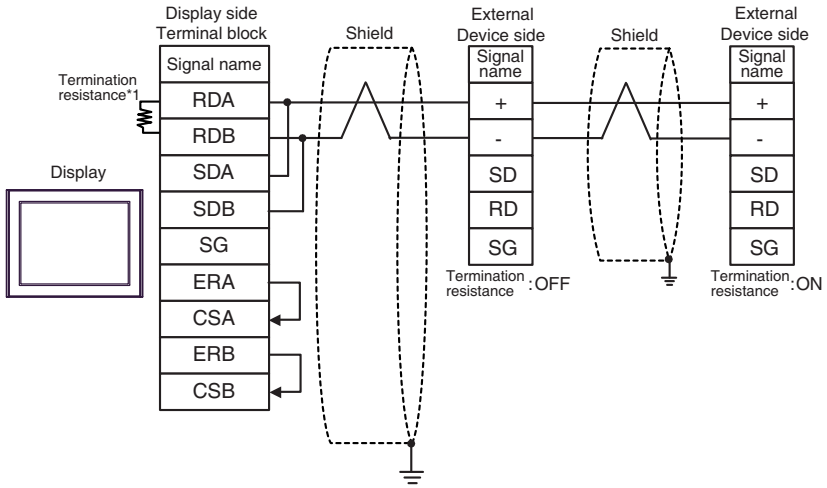
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection



NOTE

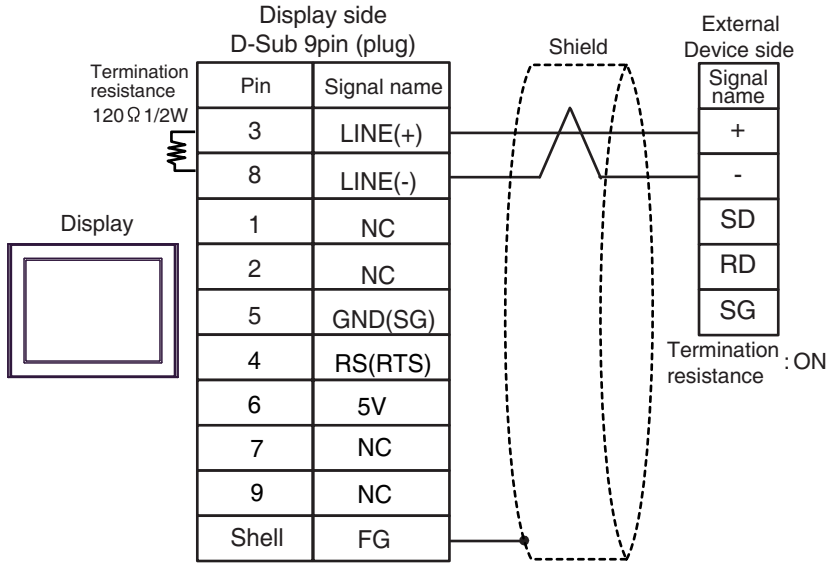
- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

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

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

5H)

- 1:1 Connection



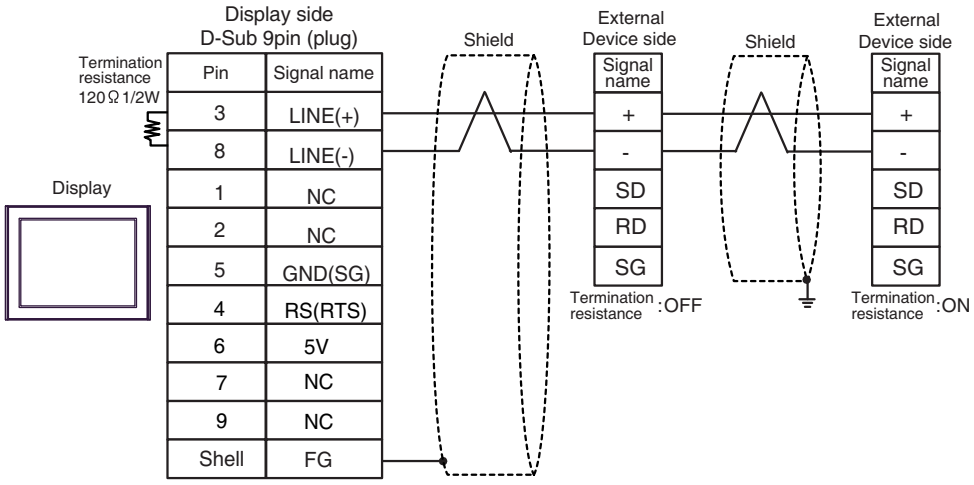
IMPORTANT

- 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.

NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.
- In COM on the GP-4107, the SG and FG terminals are isolated.

- 1:n Connection



IMPORTANT

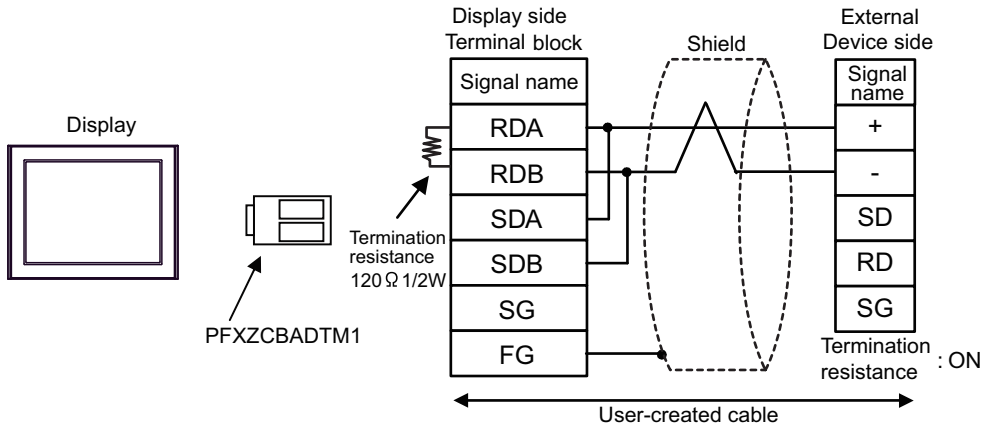
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.
- In COM on the GP-4107, the SG and FG terminals are isolated.

5I)

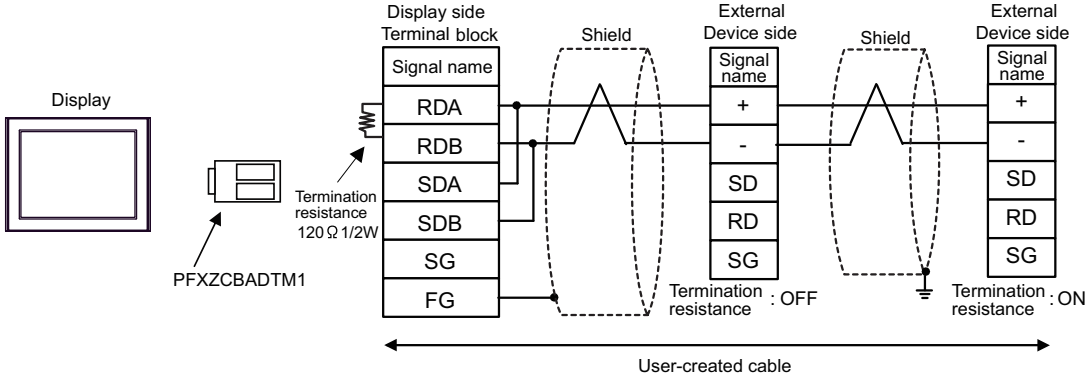
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection

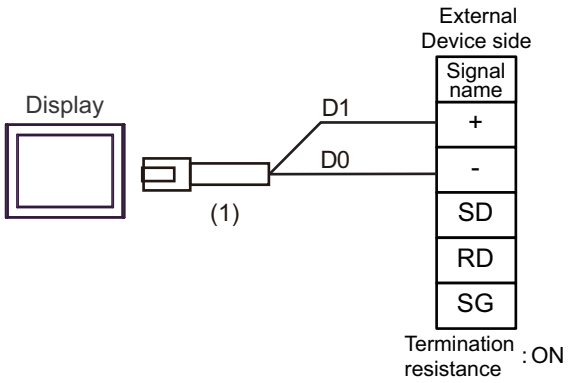


NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

5J)

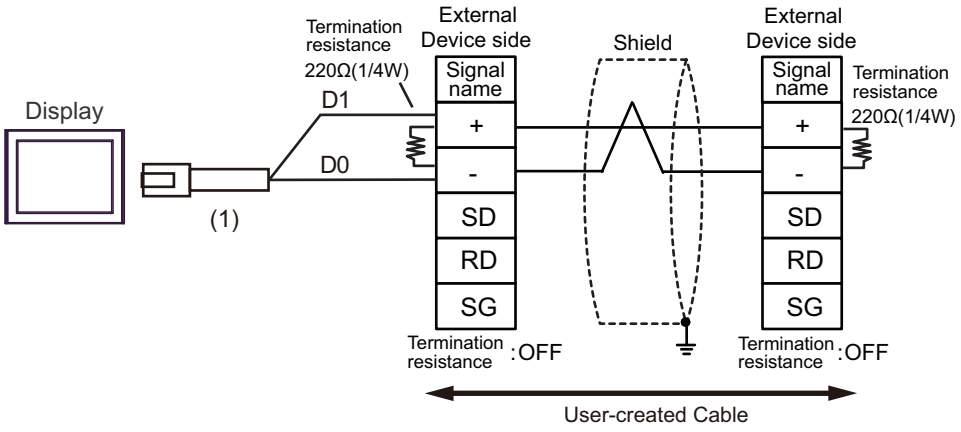
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

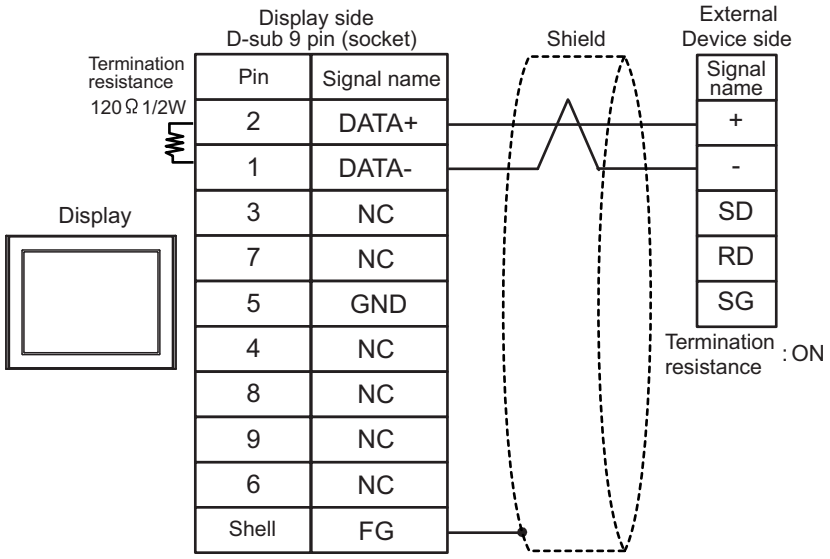
- 1:n Connection



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

5K)

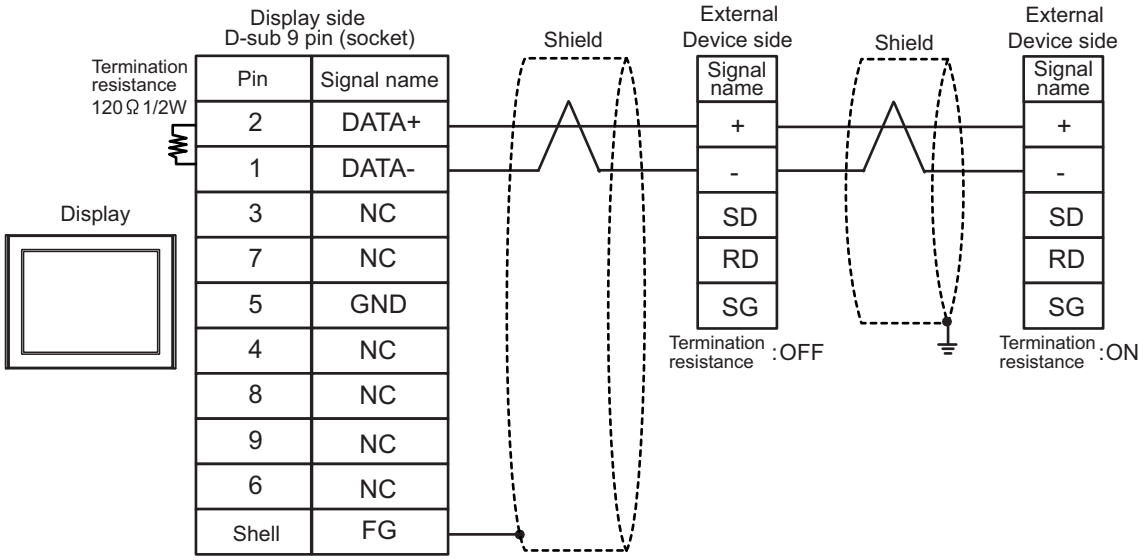
- 1:1 Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device to ON.

- 1:n Connection



NOTE

- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

Cable Diagram 6

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	6A	User-created cable	The cable length must be 3m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	6B	User-created cable	The cable length must be 3m or less.
LT-4*01TM (COM1) LT-Rear Module (COM1)	6C	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	The cable length must be 3m or less.

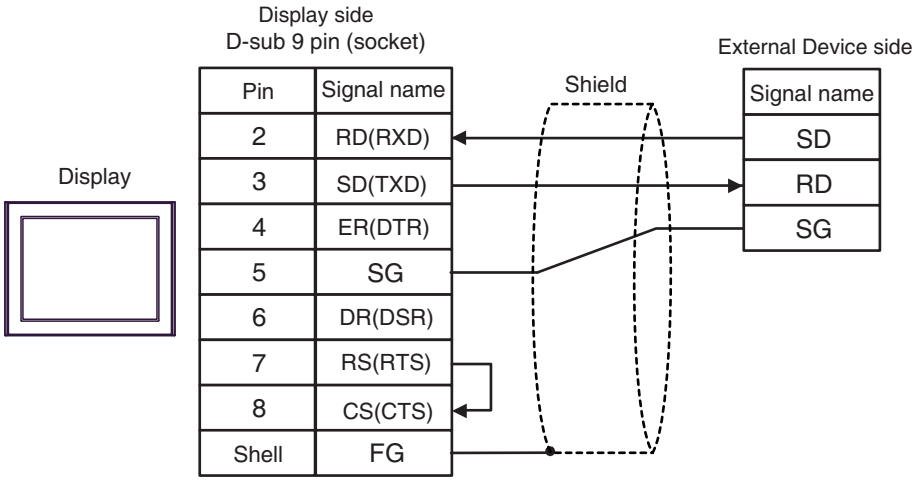
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

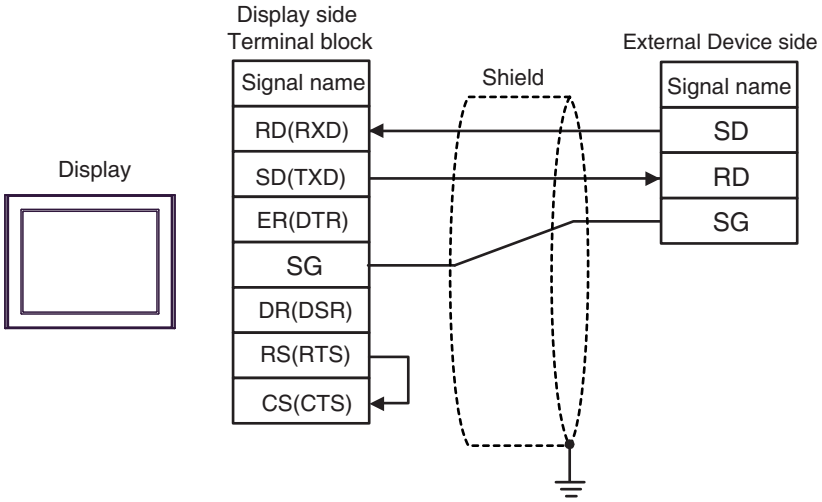
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

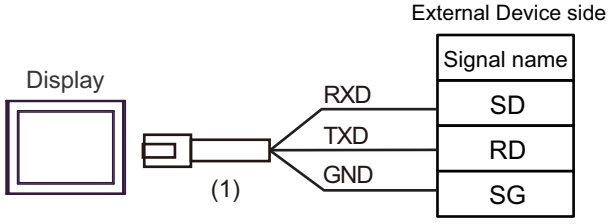
6A)



6B)



6C)



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

Cable Diagram 7

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	7A	User-created cable	The cable length must be 15m or less. When you use the multicommunication unit (AFP2465) in FP2, FP2SH and set the speed to 115200 bps or faster, however, the cable length must be 3m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	7B	User-created cable	The cable length must be 15m or less. When you use the multicommunication unit (AFP2465) in FP2, FP2SH and set the speed to 115200 bps or faster, however, the cable length must be 3m or less.

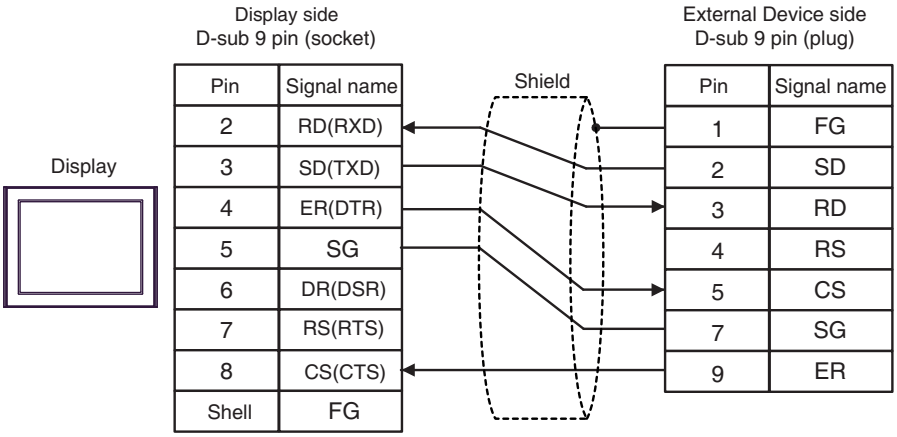
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

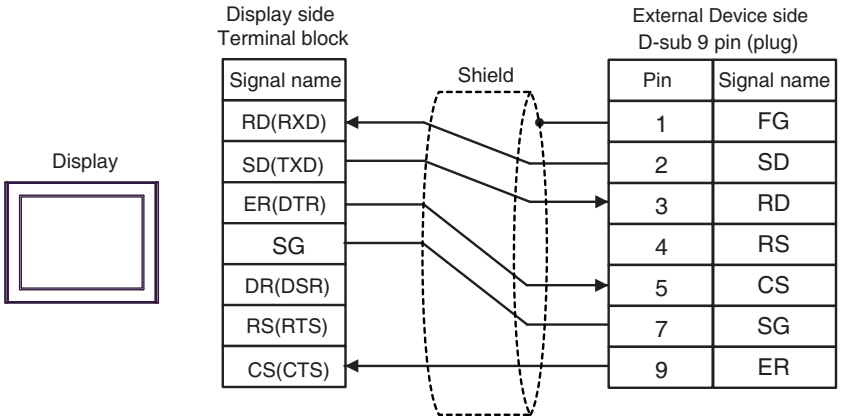
*3 Only the COM port which can communicate by RS-232C can be used.

■ IPC COM Port (page 6)

7A)



7B)


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

Cable Diagram 8

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	8A	FP0/FP2/FP-M ↔ DOS-V PC connection cable by Panasonic Industrial Devices SUNX Co., Ltd. AFC8503 (3m)	
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	8B	Panasonic Electonic Works PLC FP Series CPU Cable by Pro-face ZC9CBFP21(2m)	

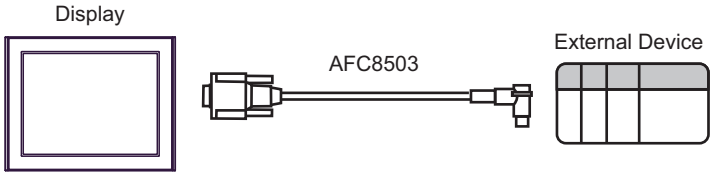
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

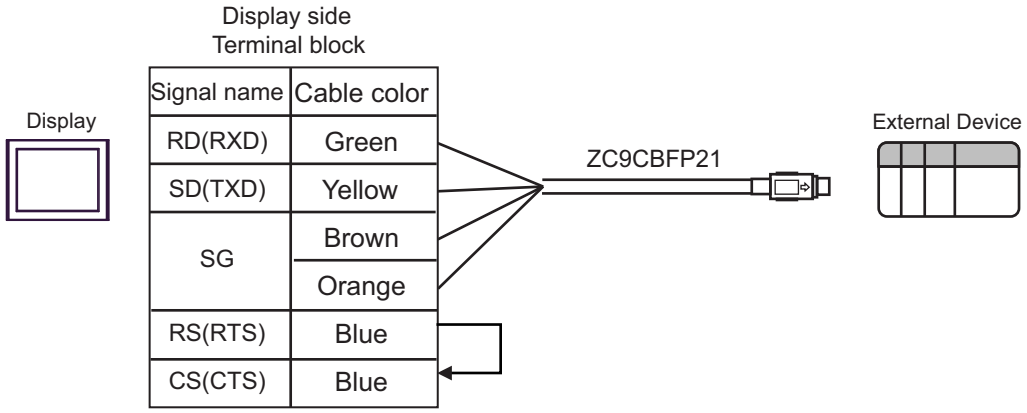
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

8A)



8B)



Cable Diagram 9

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	9A	RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Panasonic Industrial Devices SUNX Co., Ltd. AFP8550 + Programming cable by Panasonic Industrial Devices SUNX Co., Ltd. AFP1523 (3m) or AFP15205 (0.5m)	
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	9B	User-created cable + RS422/232C conversion adapter by Panasonic Industrial Devices SUNX Co., Ltd. AFP8550 + Programming cable by Panasonic Industrial Devices SUNX Co., Ltd. AFP1523 (3m) or AFP15205 (0.5m)	

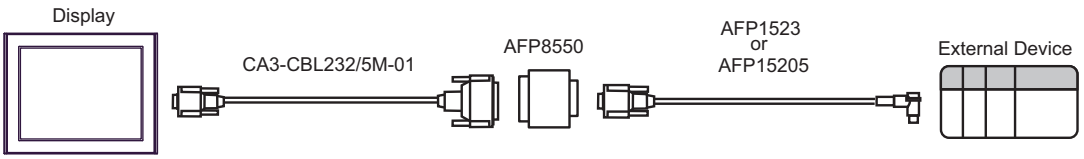
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

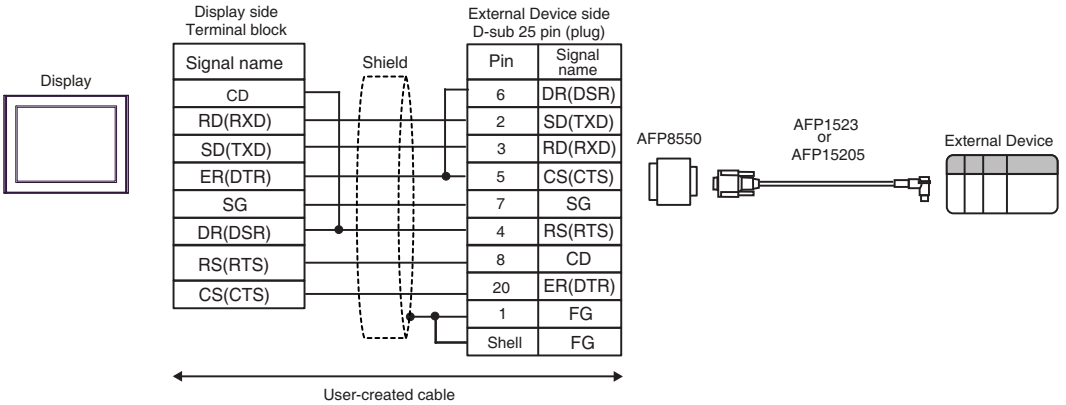
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

9A)



9B)



Cable Diagram 10

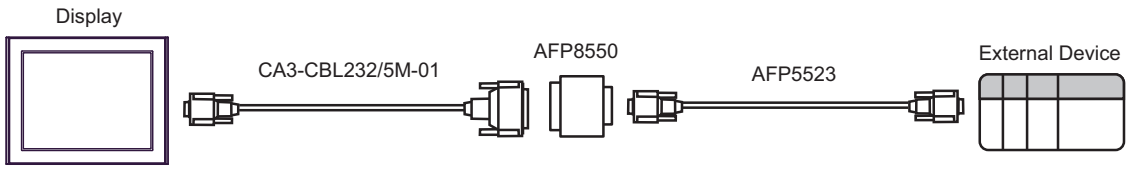
Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	10A	RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Panasonic Industrial Devices SUNX Co., Ltd. AFP8550 + Programming cable by Panasonic Industrial Devices SUNX Co., Ltd. AFP5523 (3m)	
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	10B	User-created cable + RS422/232C conversion adapter by Panasonic Industrial Devices SUNX Co., Ltd. AFP8550 + Programming cable by Panasonic Industrial Devices SUNX Co., Ltd. AFP5523 (3m)	

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

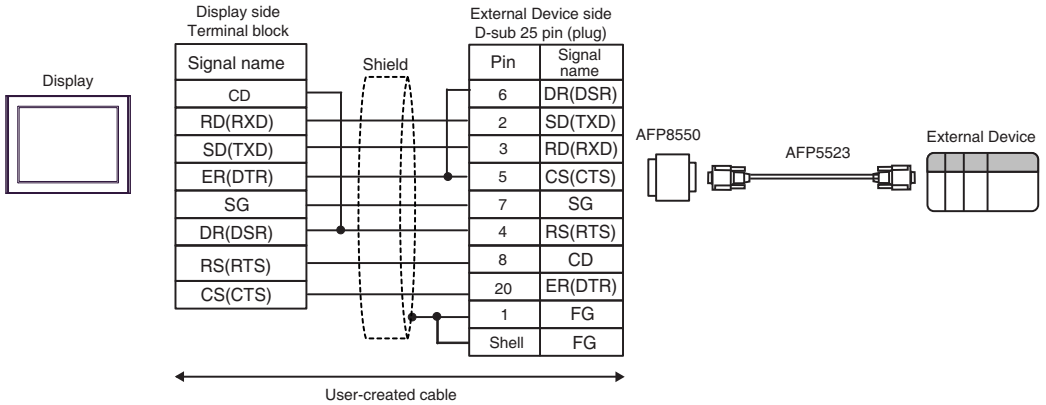
*2 Except SP-5B00

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

10A)



10B)



Cable Diagram 11

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1) IPC[*3]	11A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 400m or less.
	11B	User-created cable	
GP3000[*4] (COM2)	11C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 400m or less.
	11D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	11E	User-created cable	The cable length must be 400m or less.
GP4000[*5] (COM2) GP-4201T (COM1) SP5000[*6] (COM1/2) SP-5B00 (COM2) ST6000[*7] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*8] (COM2) PS6000 (Basic Box) (COM1/2)	11F	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*9] + User-created cable	The cable length must be 400m or less.
	11B	User-created cable	
PE-4000B[*10] PS5000[*10] PS6000 (Optional Interface)[*10]	11G	User-created cable	The cable length must be 400m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. (Except PE-4000B, PS5000, and PS6000)

☞ ■ IPC COM Port (page 6)

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

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

*6 Except SP-5B00

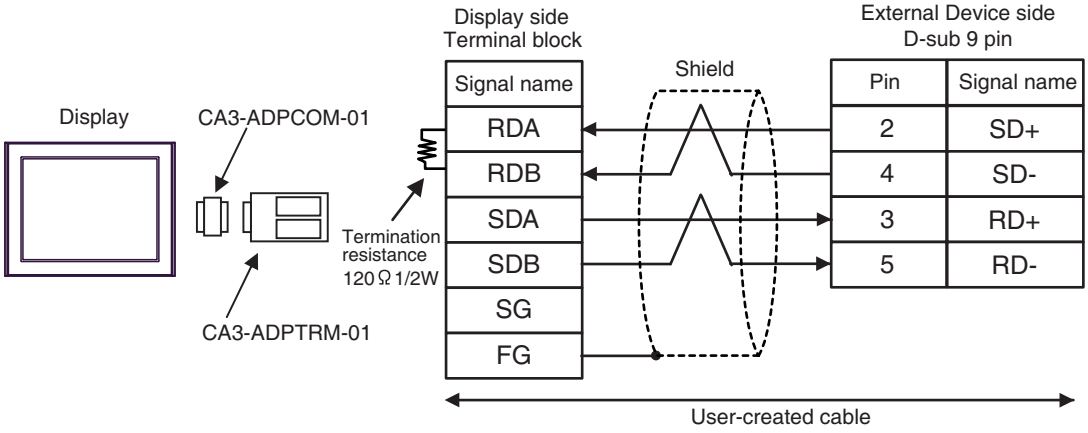
*7 Except ST-6200

*8 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

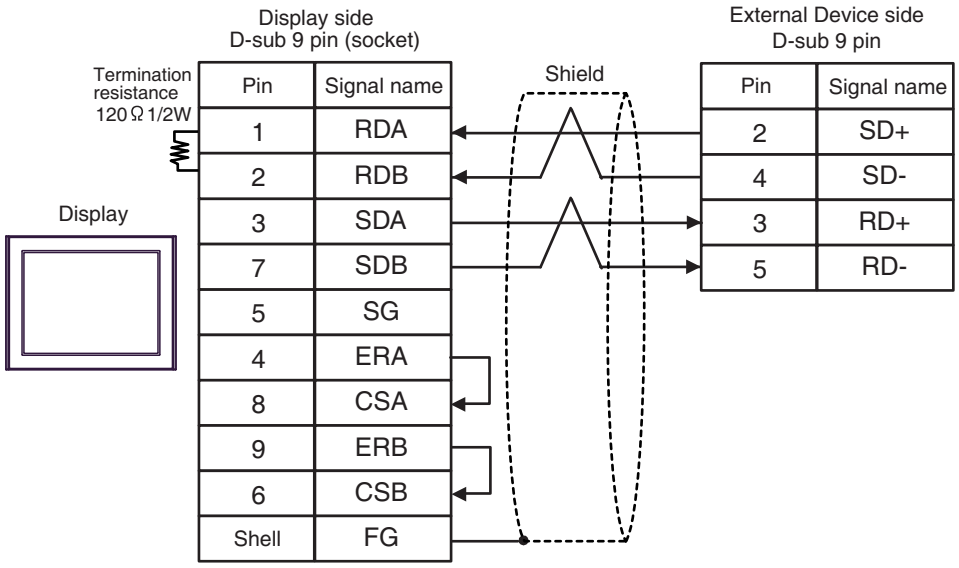
*9 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 2A.

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

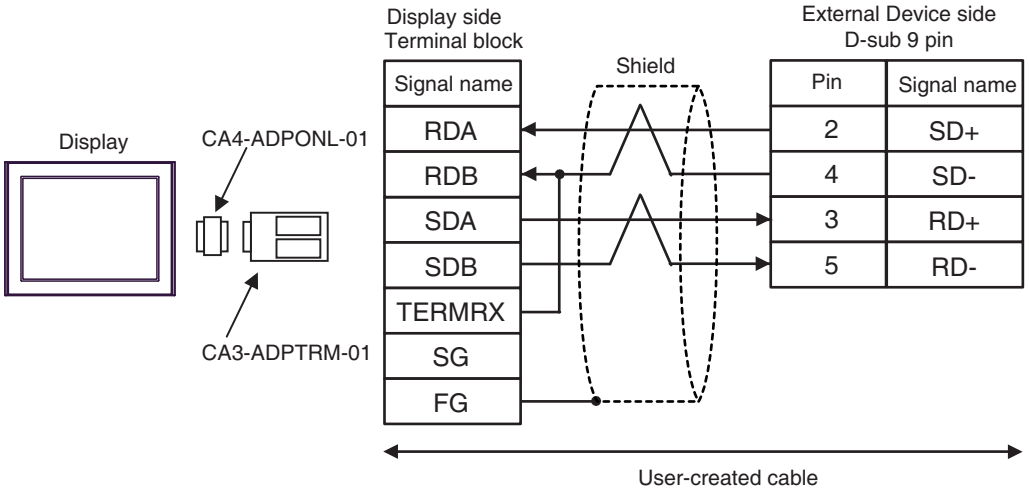
11A)



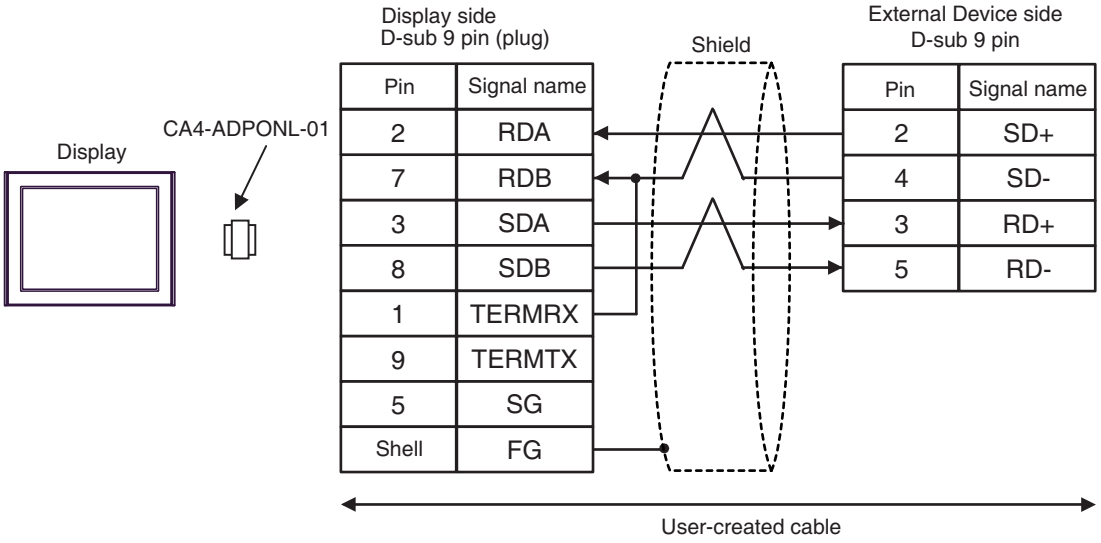
11B)



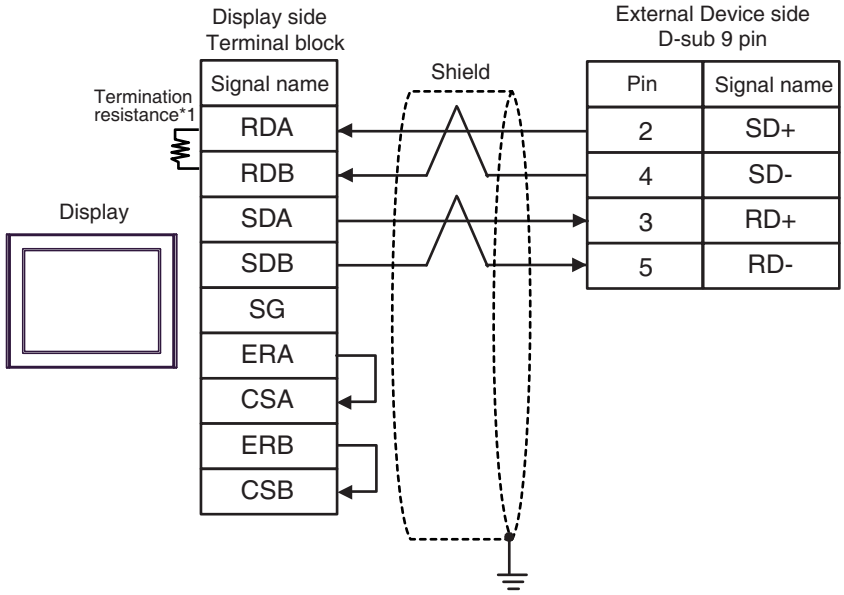
11C)


Display side
Terminal block
External Device side
D-sub 9 pin
Shield
Signal name
RDA
RDB
SDA
SDB
TERMRX
SG
FG
Pin
Signal name
2
SD+
4
SD-
3
RD+
5
RD-
Display
CA4-ADPONL-01
CA3-ADPTRM-01
User-created cable

11D)


Display side
D-sub 9 pin (plug)
External Device side
D-sub 9 pin
Shield
Pin
Signal name
2
RDA
7
RDB
3
SDA
8
SDB
1
TERMRX
9
TERMTX
5
SG
Shell
FG
2
SD+
4
SD-
3
RD+
5
RD-
Display
CA4-ADPONL-01
User-created cable

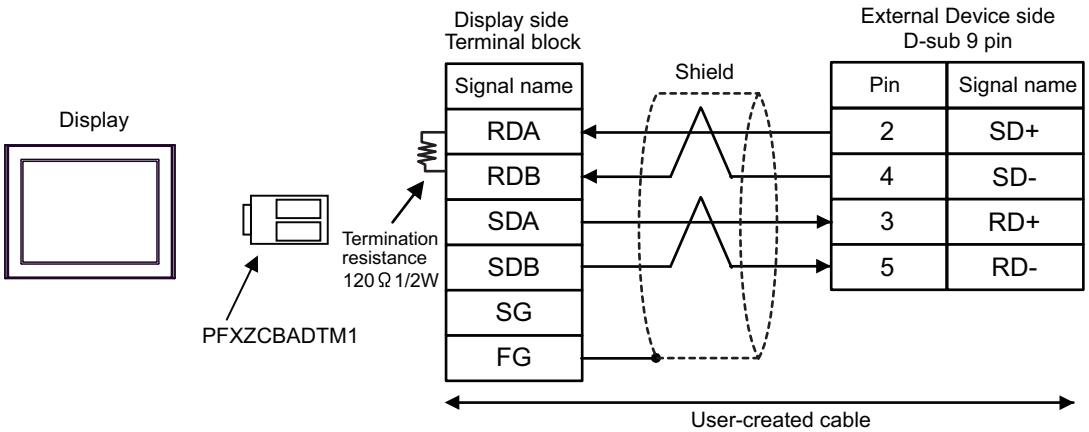
11E)



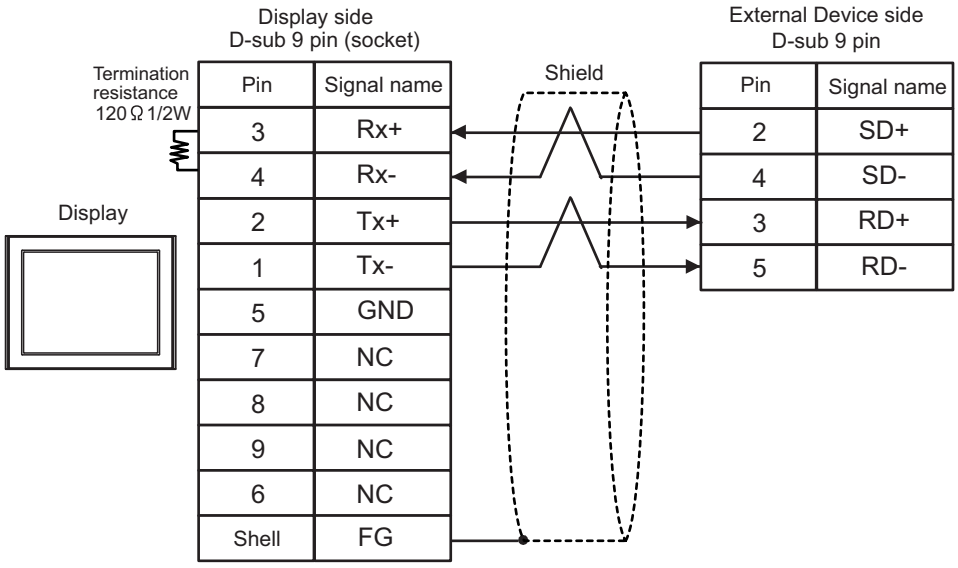
*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

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

11F)



11G)


Display side
D-sub 9 pin (socket)
External Device side
D-sub 9 pin
Termination resistance 120Ω 1/2W
Shield
Display
Pin
Signal name
3
Rx+
4
Rx-
2
Tx+
1
Tx-
5
GND
7
NC
8
NC
9
NC
6
NC
Shell
FG
Pin
Signal name
2
SD+
4
SD-
3
RD+
5
RD-

Cable Diagram 12

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	12A	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	12B	User-created cable	The cable length must be 15m or less.
LT-4*01TM (COM1) LT-Rear Module (COM1)	12C	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	The cable length must be 5m or less.

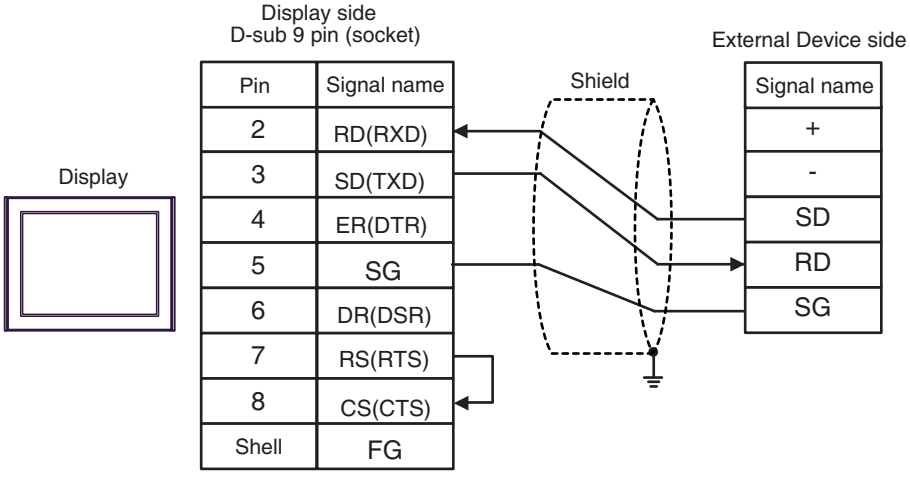
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

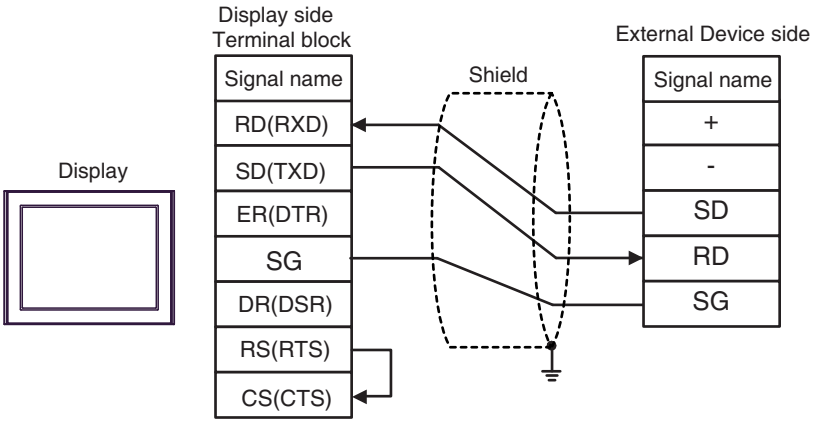
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

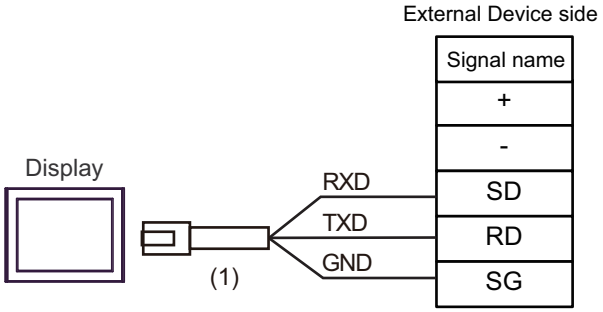
12A)



12B)



12C)



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

Cable Diagram 13

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1)	13A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	13B	User-created cable	
GP3000[*3] (COM2)	13C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	13D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	13E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	13F	User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	13G	User-created cable	The cable length must be 1200m or less.
GP-4107 (COM1) GP-4*03T[*5] (COM2) GP-4203T (COM1)	13H	User-created cable	The cable length must be 1200m or less.
GP4000[*6] (COM2) GP-4201T (COM1) SP5000[*7] (COM1/2) SP-5B00 (COM2) ST6000[*8] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*9] (COM2) PS6000 (Basic Box) (COM1/2)	13I	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*10] + User-created cable	The cable length must be 1200m or less.
	13B	User-created cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	13J	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	The cable length must be 200m or less.
PE-4000B[*11] PS5000[*11] PS6000 (Optional Interface)[*11]	13K	User-created cable	The cable length must be 1200m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 All GP3000 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. (Except PE-4000B, PS5000, and PS6000)
☞ ■ IPC COM Port (page 6)

*5 Except GP-4203T

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

*7 Except SP-5B00

*8 Except ST-6200

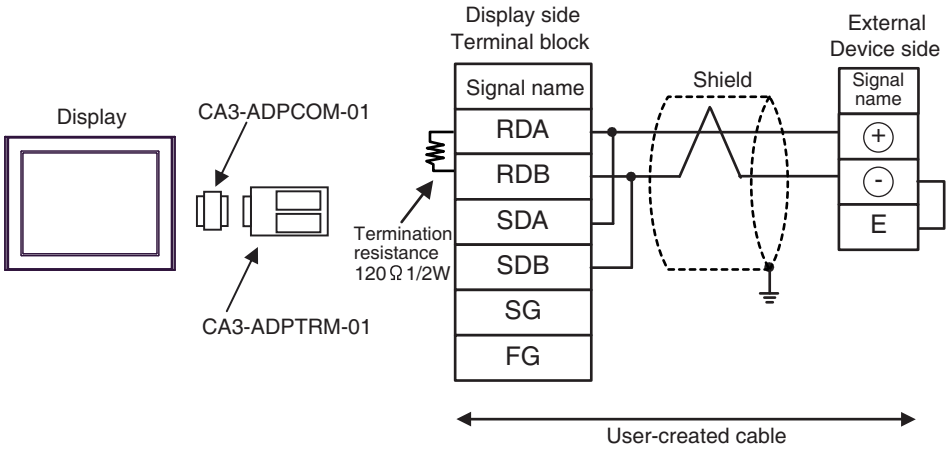
*9 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

*10 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 13A.

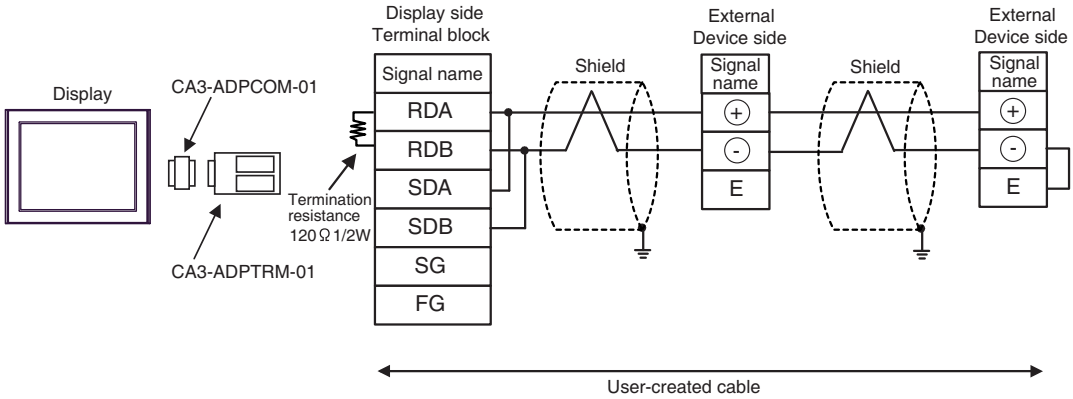
*11 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
☞ ■ IPC COM Port (page 6)

13A)

- 1:1 Connection



- 1:n Connection

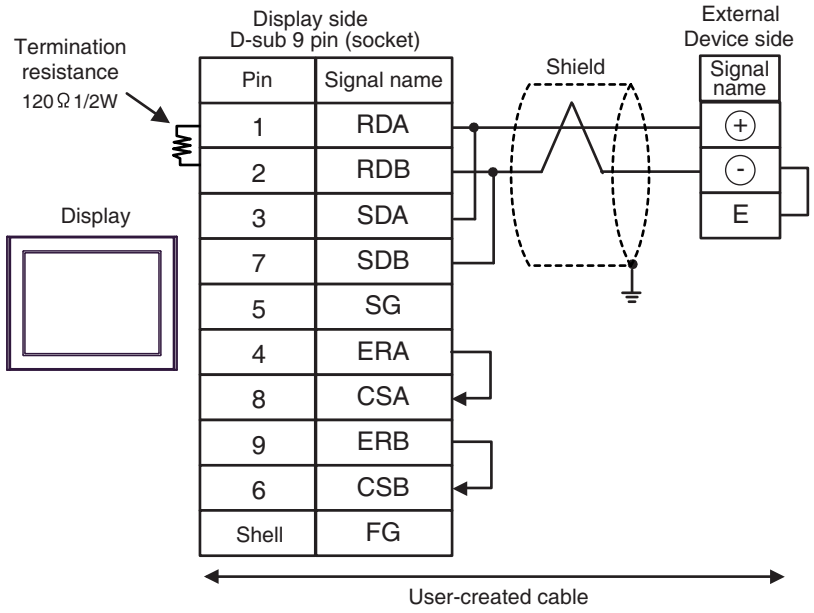


IMPORTANT

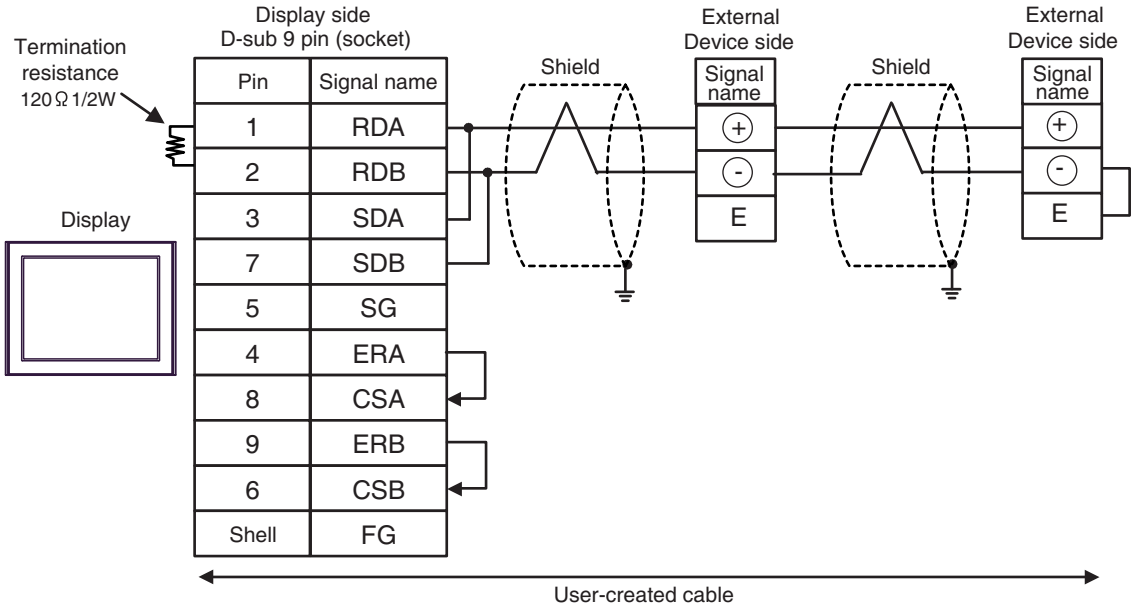
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13B)

- 1:1 Connection



- 1:n Connection

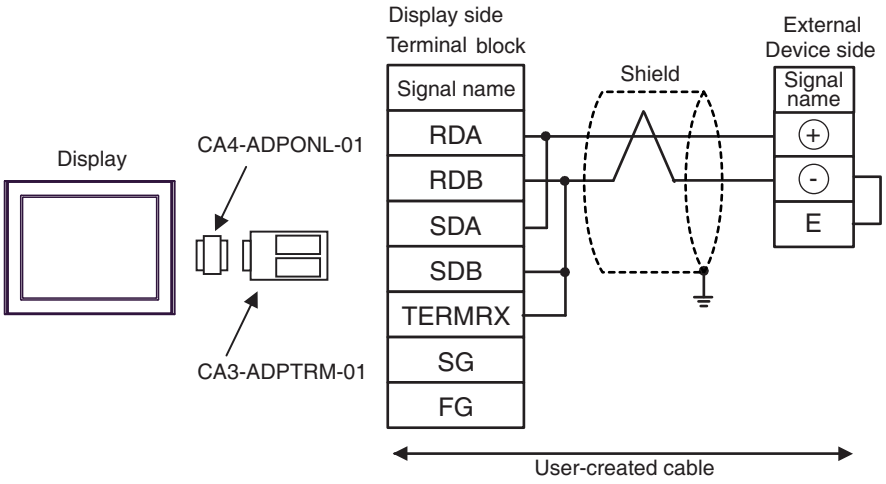


IMPORTANT

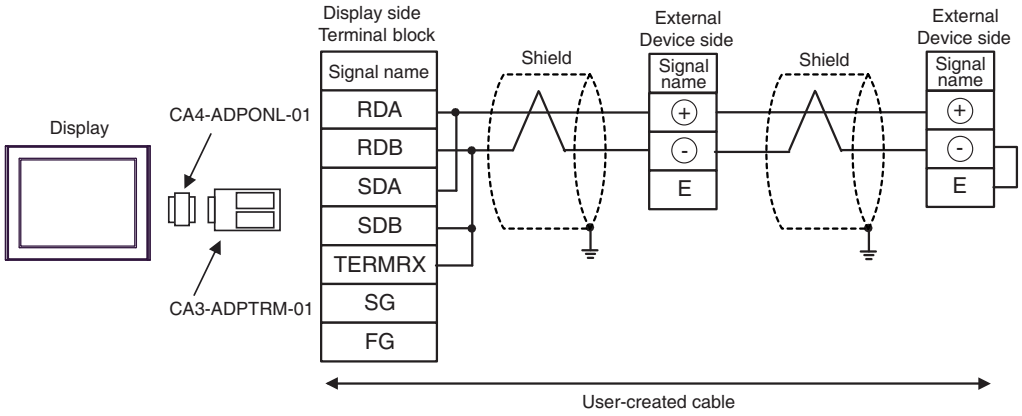
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13C)

- 1:1 Connection



- 1:n Connection

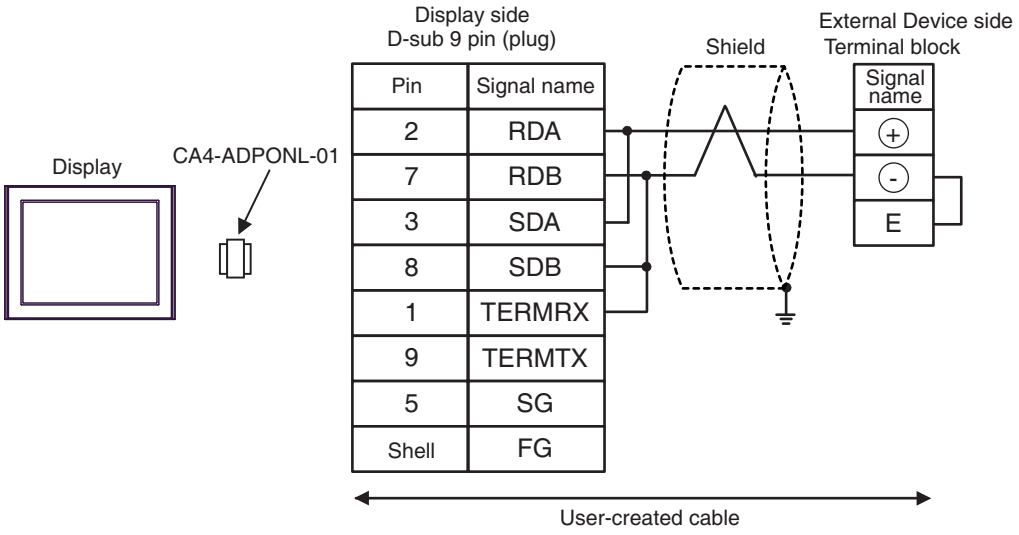


IMPORTANT

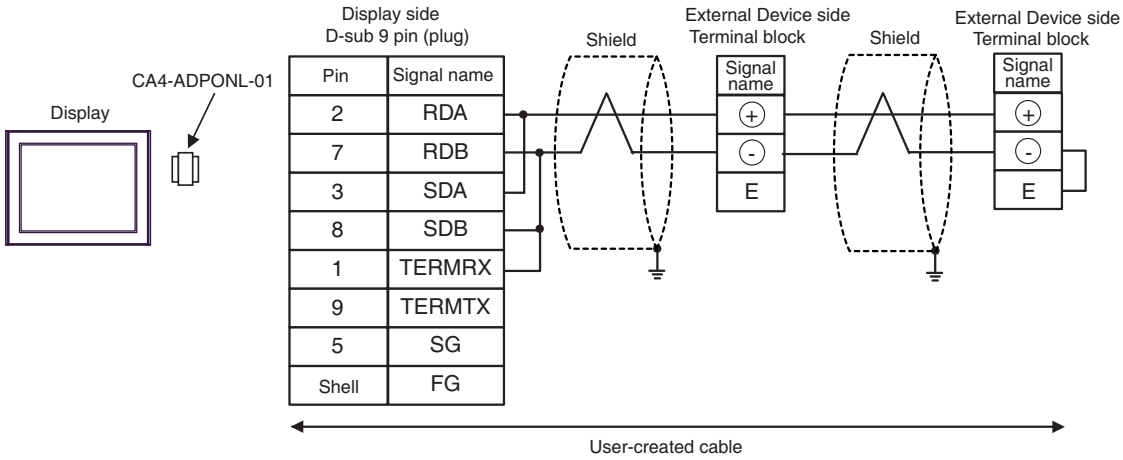
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13D)

- 1:1 Connection



1:n Connection

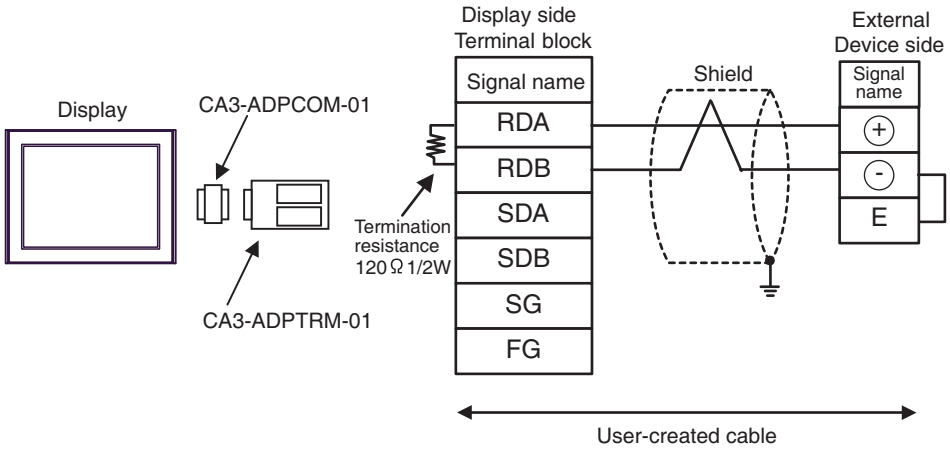


IMPORTANT

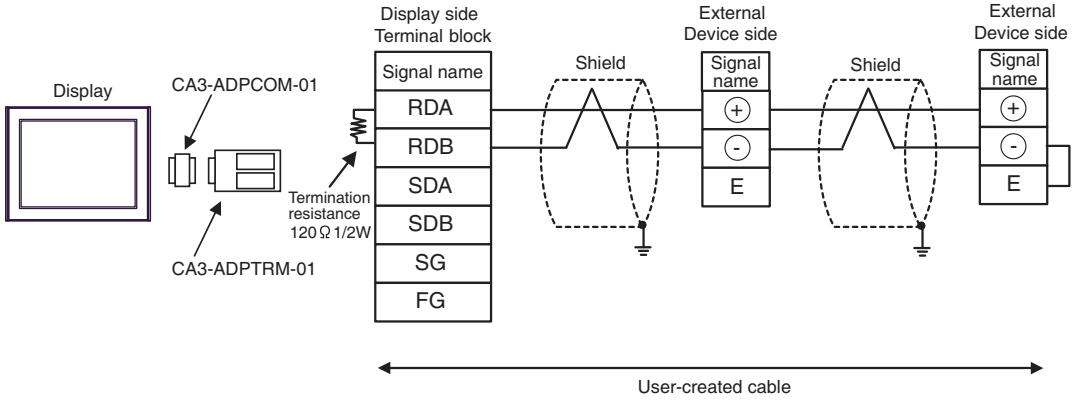
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13E)

- 1:1 Connection



- 1:n Connection

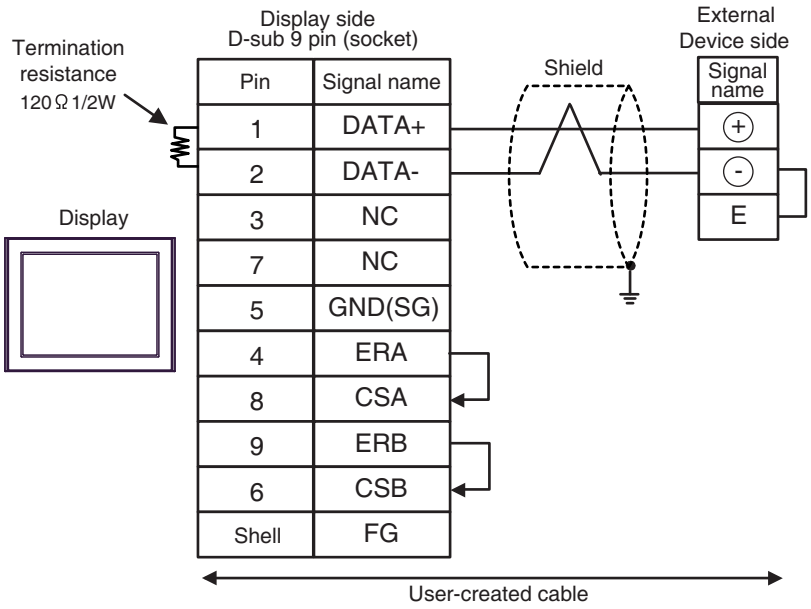


IMPORTANT

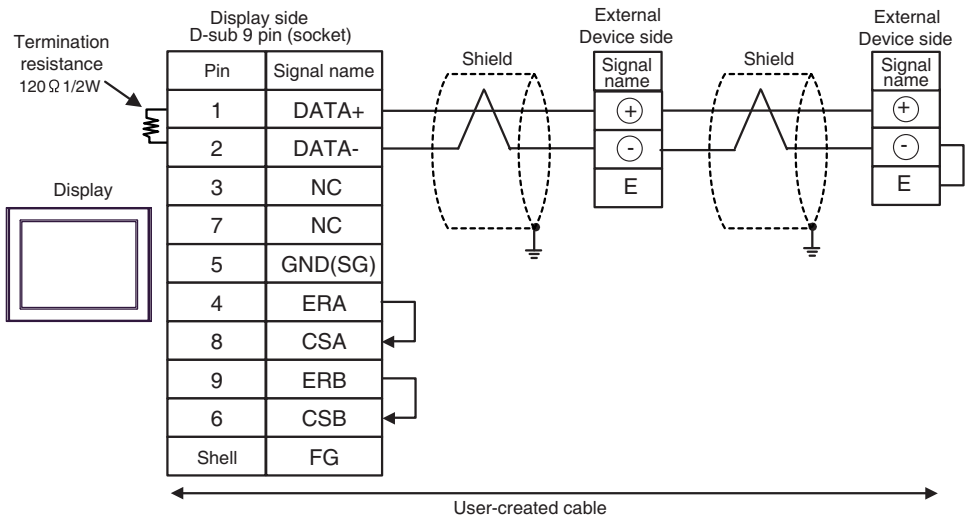
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13F)

- 1:1 Connection



- 1:n Connection

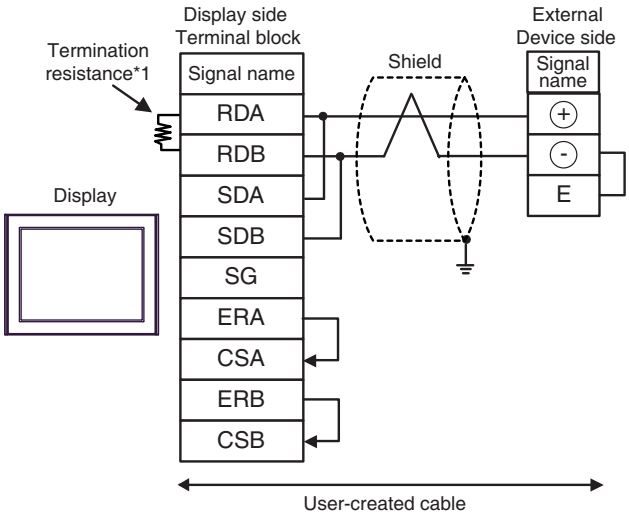


IMPORTANT

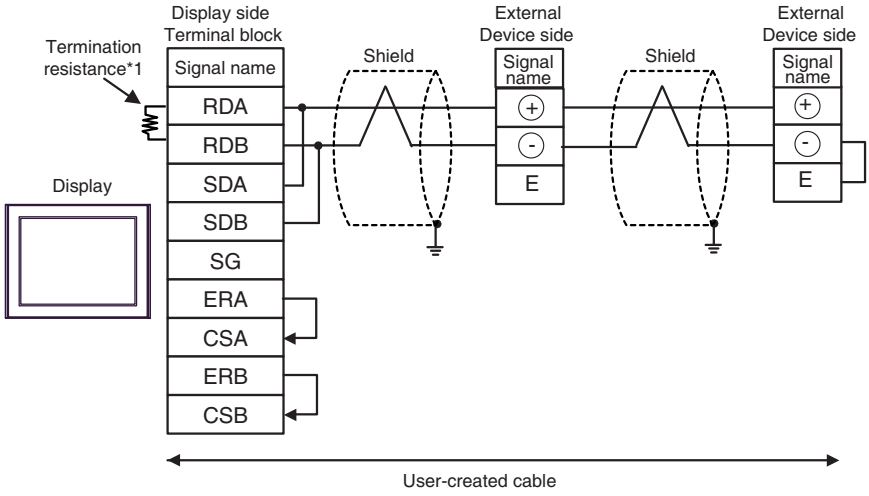
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13G)

- 1:1 Connection



- 1:n Connection



IMPORTANT

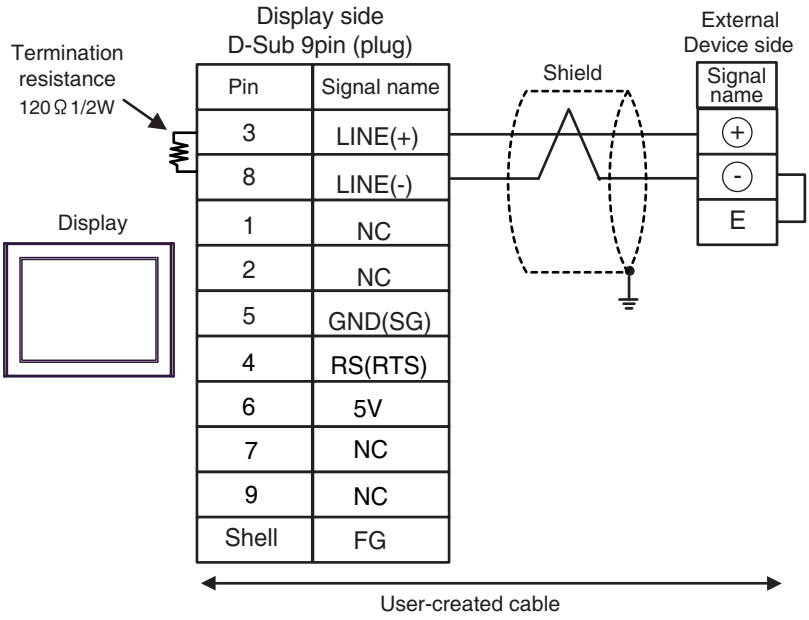
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

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

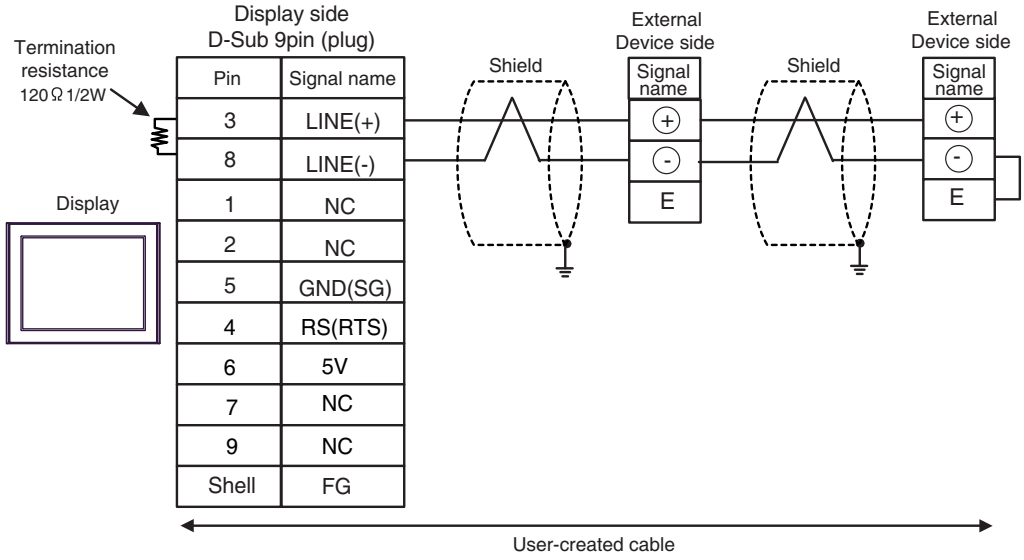
DIP Switch No.	Set Value
1	OFF
2	OFF
3	ON
4	ON

13H)

- 1:1 Connection



- 1:n Connection



IMPORTANT

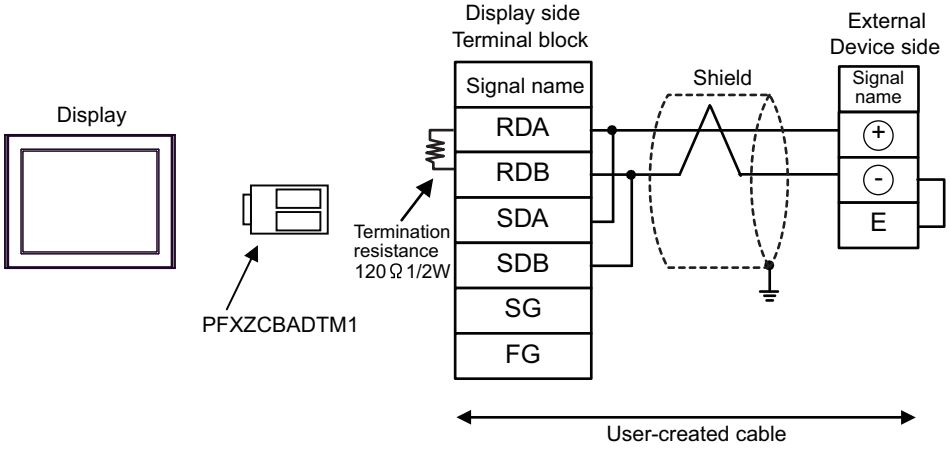
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

NOTE

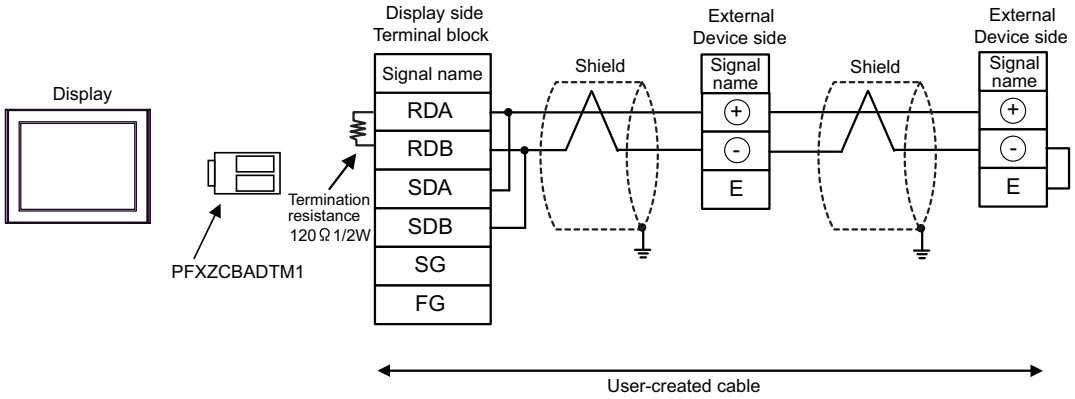
- In COM on the GP-4107, the SG and FG terminals are isolated.

13I)

- 1:1 Connection



- 1:n Connection

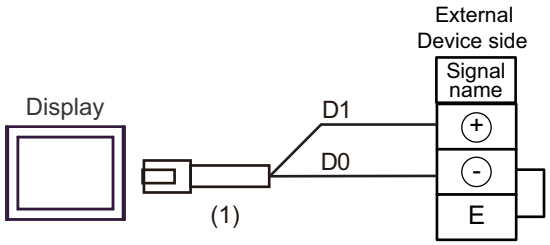


IMPORTANT

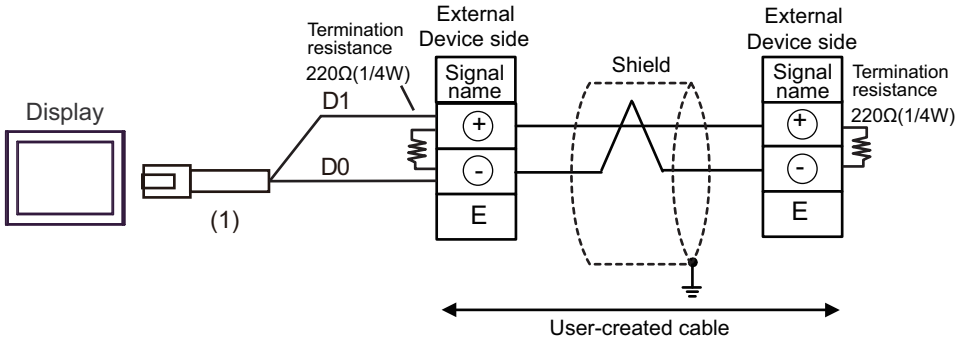
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13J)

- 1:1 Connection



- 1:n Connection



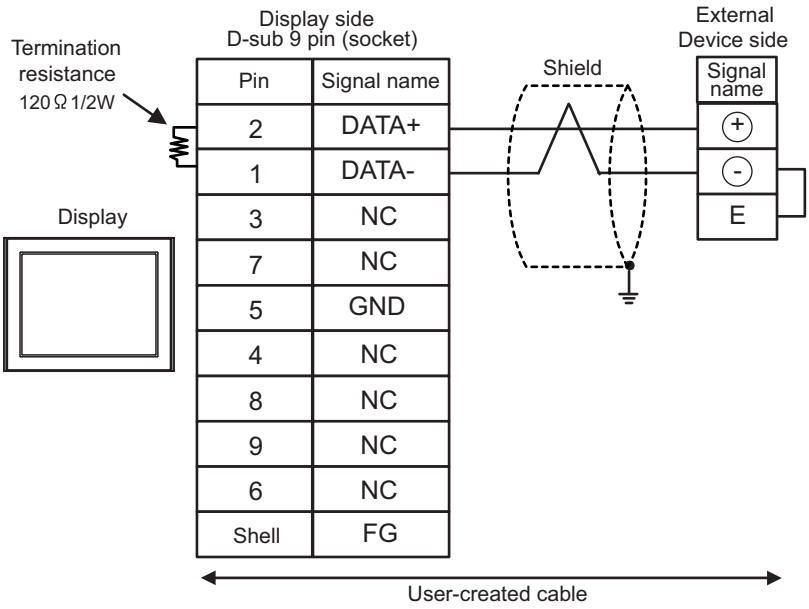
IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

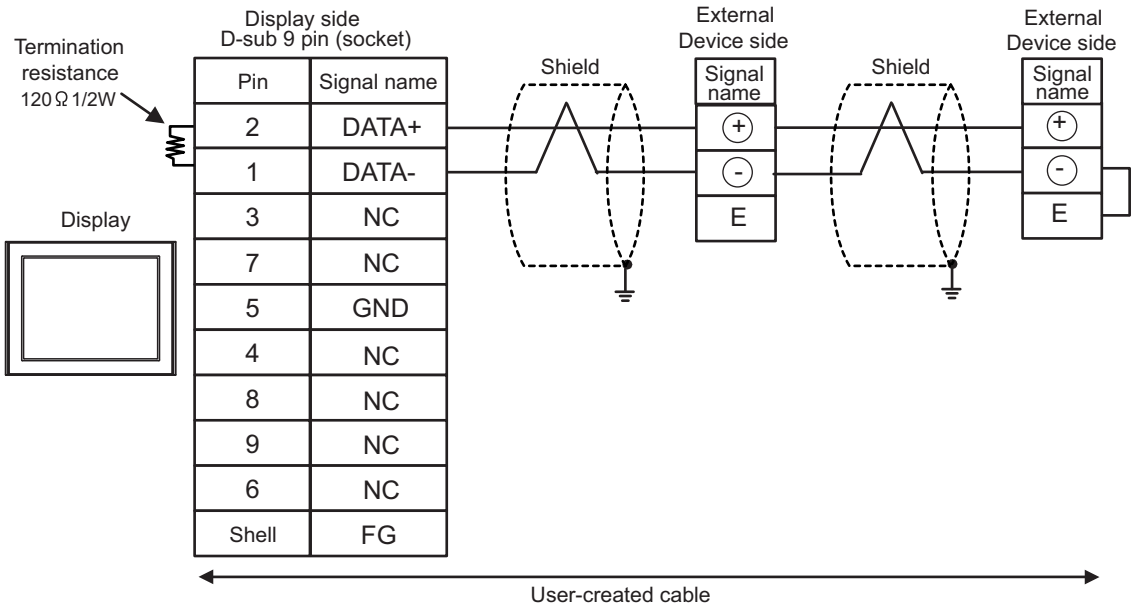
Number	Name	Notes
(1)	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	

13K)

- 1:1 Connection



- 1:n Connection



IMPORTANT

- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

Cable Diagram 14

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	14A	Connection cable for FP10SH by Panasonic Industrial Devices SUNX Co., Ltd. AFB85853 (3m)	
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	14B	User-created cable + Connection cable for FP10SH by Panasonic Industrial Devices SUNX Co., Ltd. AFB85853 (3m)	

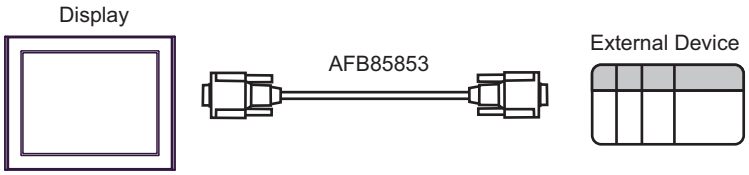
*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

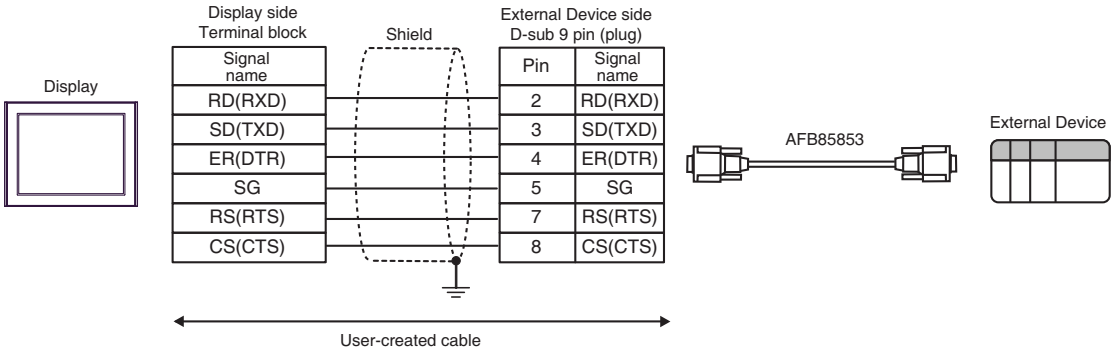
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 6)

14A)



14B)



Cable Diagram 15

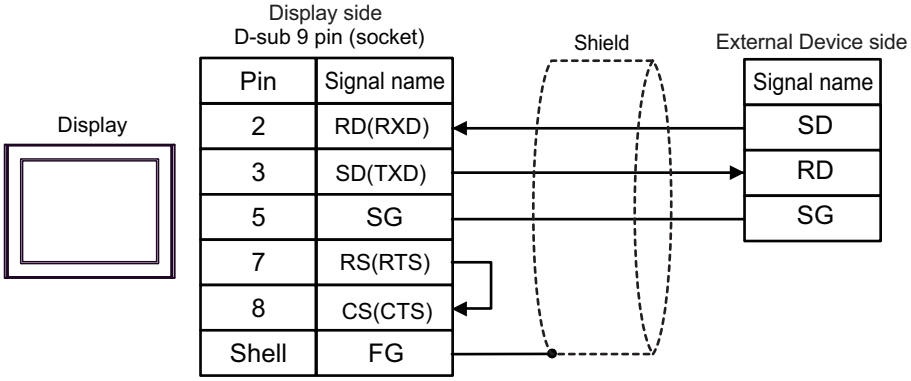
Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	15A	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	15B	User-created cable	The cable length must be 15m or less.
LT-4*01TM (COM1) LT-Rear Module (COM1)	15C	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	The cable length must be 15m or less.

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

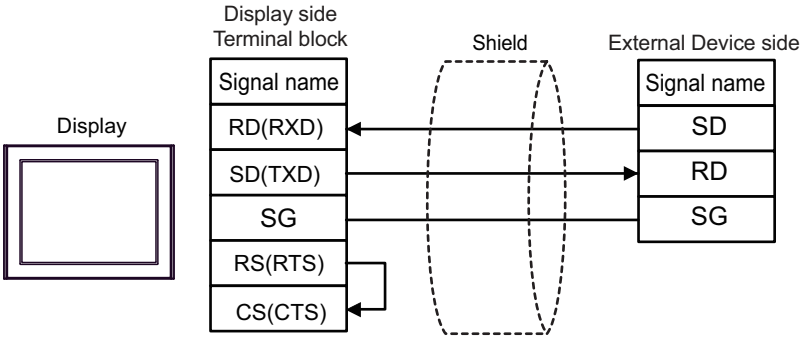
*2 Except SP-5B00

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

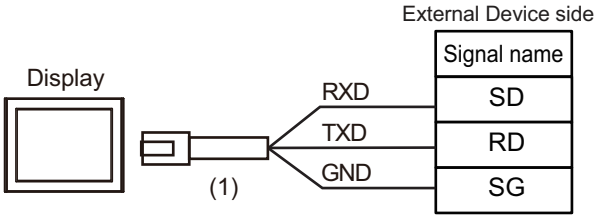
15A)



15B)



15C)



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

Cable Diagram 16

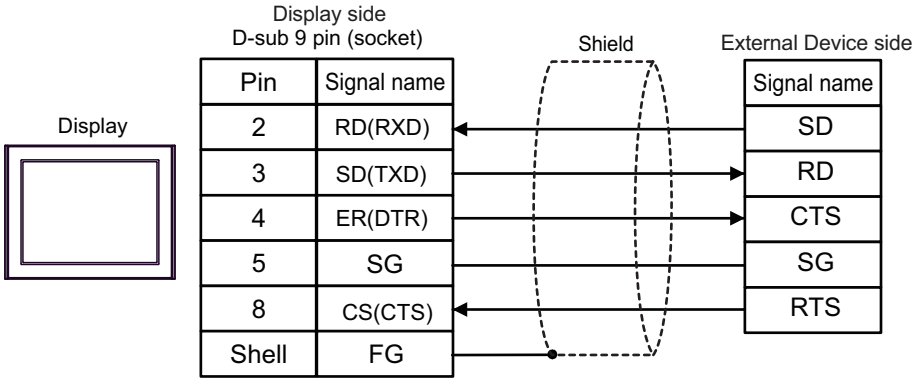
Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT	16A	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1)	16B	User-created cable	The cable length must be 15m or less.
LT-4*01TM (COM1) LT-Rear Module (COM1)	16C	RJ45 RS-232C Cable (5m) by Pro-face PFXZLMCBRJR21	The cable length must be 15m or less.

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

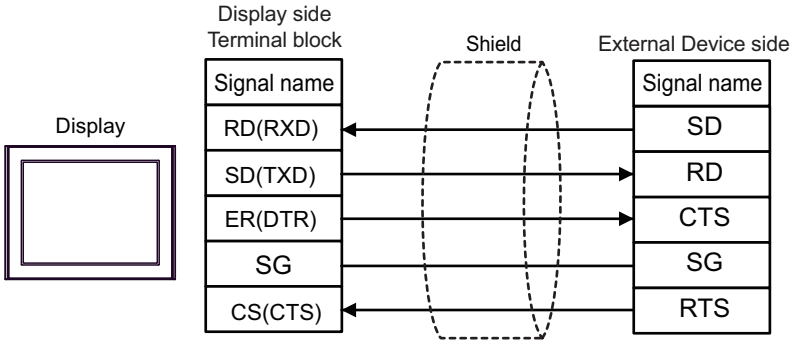
*2 Except SP-5B00

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

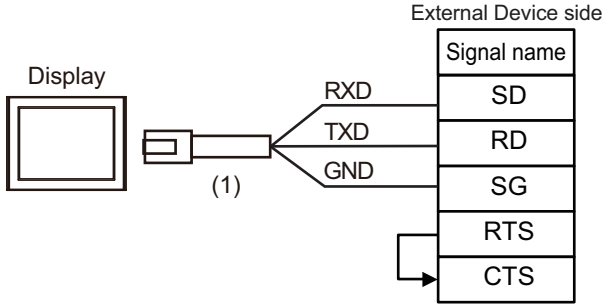
16A)



16B)



16C)



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

Cable Diagram 17

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1) IPC[*3]	17A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 400m or less.
	17B	User-created cable	
GP3000[*4] (COM2)	17C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 400m or less.
	17D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	17E	User-created cable	The cable length must be 400m or less.
GP4000[*5] (COM2) GP-4201T (COM1) SP5000[*6] (COM1/2) SP-5B00 (COM2) ST6000[*7] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*8] (COM2) PS6000 (Basic Box) (COM1/2)	17F	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*9] + User-created cable	The cable length must be 400m or less.
	17B	User-created cable	
PE-4000B[*10] PS5000[*10] PS6000 (Optional Interface)[*10]	17G	User-created cable	The cable length must be 400m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. (Except PE-4000B, PS5000, and PS6000)

☞ ■ IPC COM Port (page 6)

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

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

*6 Except SP-5B00

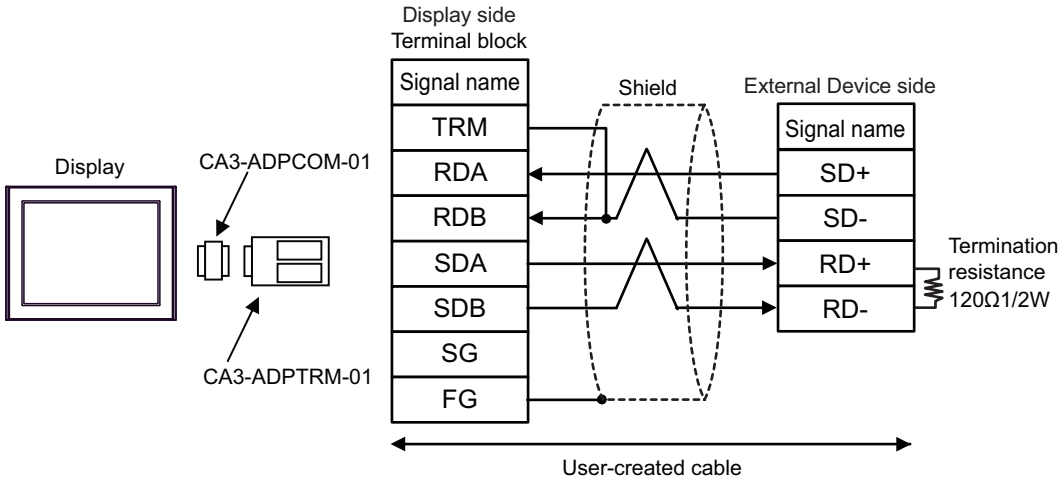
*7 Except ST-6200

*8 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

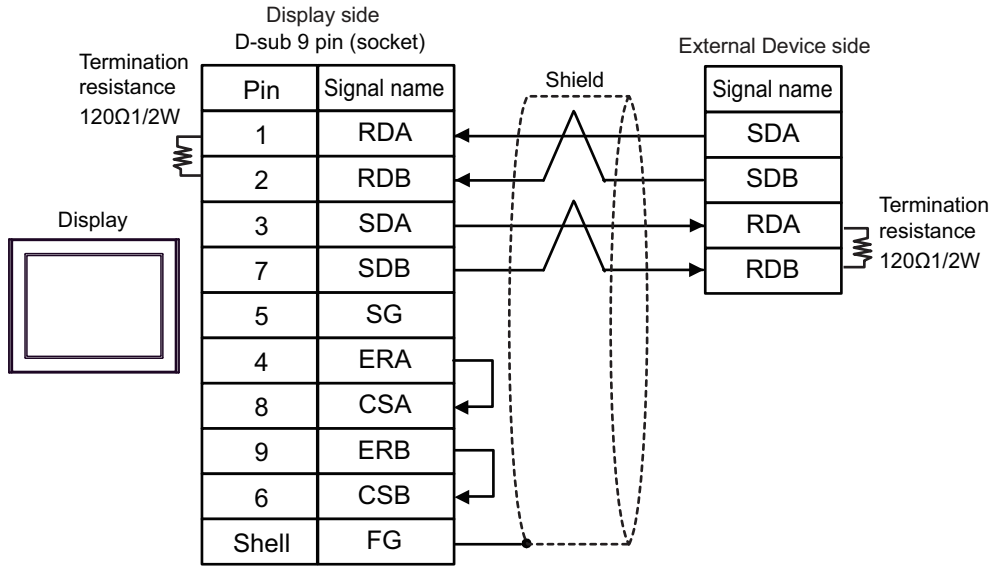
*9 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 17A.

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

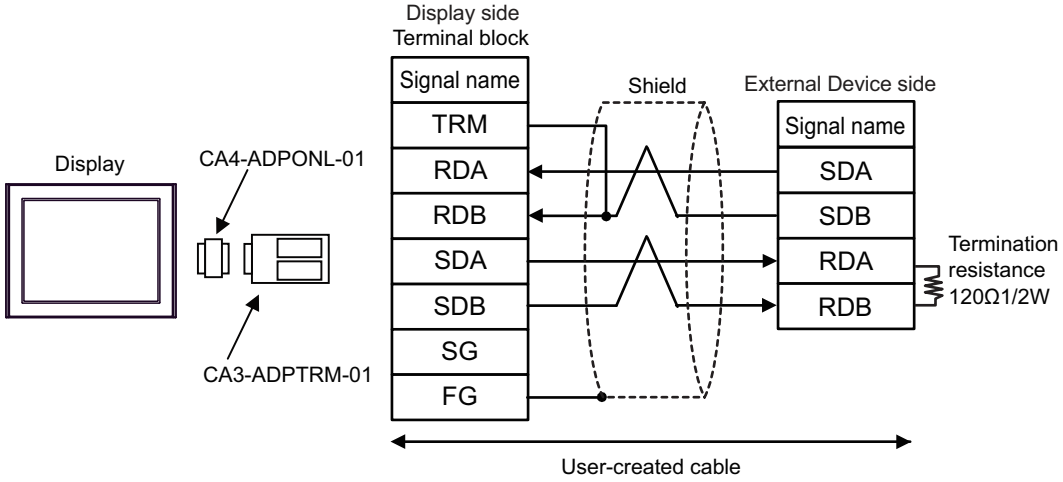
17A)



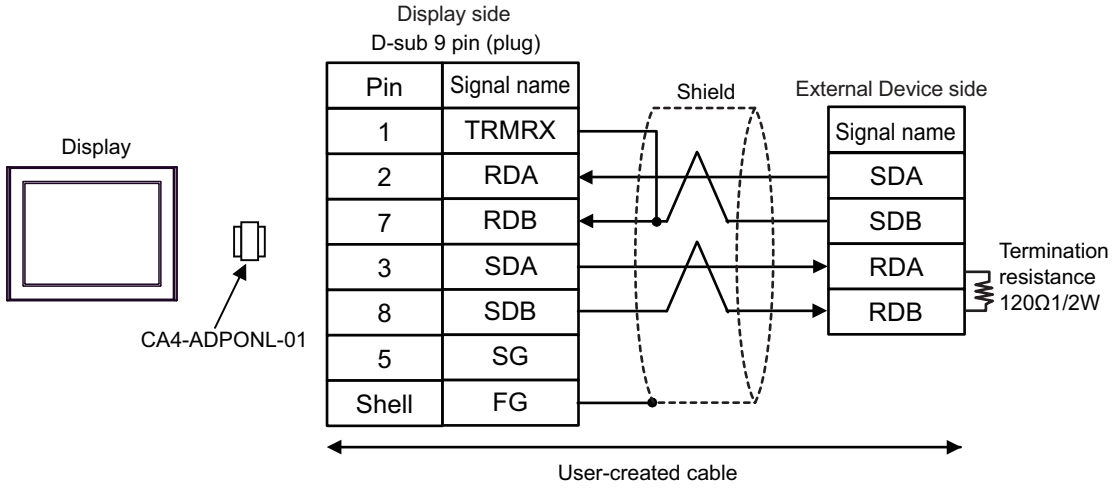
17B)



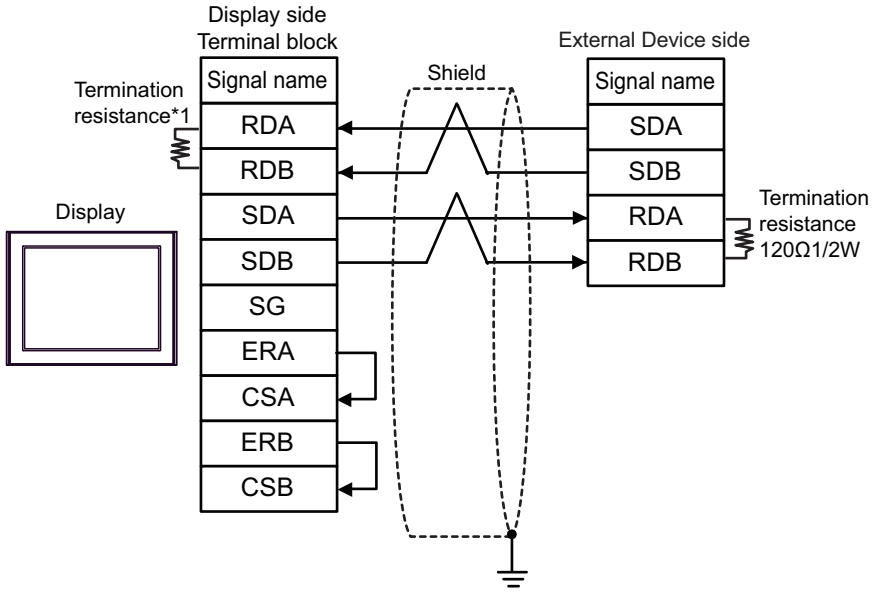
17C)


Display side
Terminal block
Signal name
TRM
RDA
RDB
SDA
SDB
SG
FG
Shield
External Device side
Signal name
SDA
SDB
RDA
RDB
Termination resistance 120Ω1/2W
Display
CA4-ADPONL-01
CA3-ADPTRM-01
User-created cable

17D)


Display side
D-sub 9 pin (plug)
Pin
Signal name
1 TRMRX
2 RDA
7 RDB
3 SDA
8 SDB
5 SG
Shell FG
Shield
External Device side
Signal name
SDA
SDB
RDA
RDB
Termination resistance 120Ω1/2W
Display
CA4-ADPONL-01
User-created cable

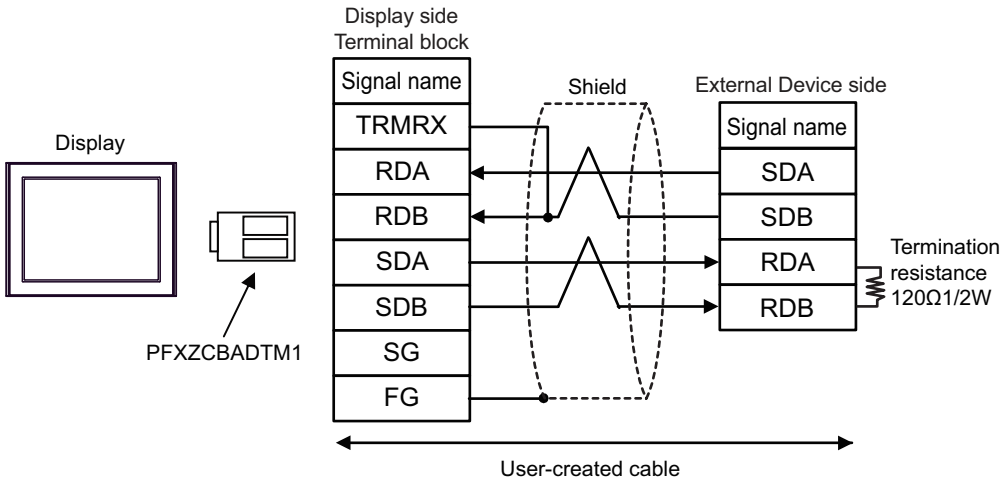
17E)



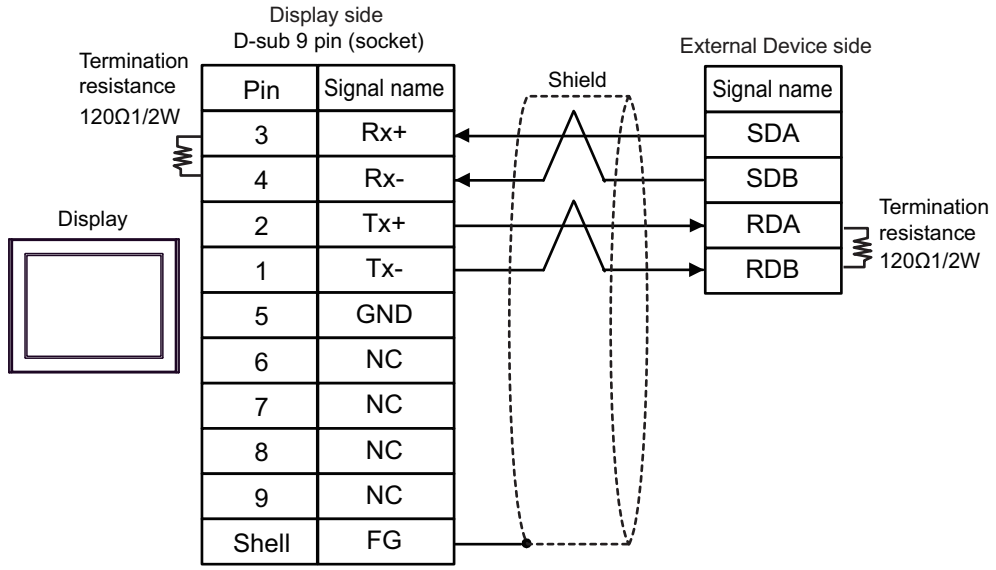
*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

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

17F)



17G)


Display side
D-sub 9 pin (socket)
Termination resistance
120Ω1/2W
Display
Pin
Signal name
3
Rx+
4
Rx-
2
Tx+
1
Tx-
5
GND
6
NC
7
NC
8
NC
9
NC
Shell
FG
Shield
External Device side
Signal name
SDA
SDB
RDA
RDB
Termination resistance
120Ω1/2W

Cable Diagram 18

Display (Connection Port)	Cable		Notes
GP3000[*1] (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000[*2] (COM2) LT3000 (COM1)	18A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	18B	User-created cable	
GP3000[*3] (COM2)	18C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	18D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	18E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 1200m or less.
	18F	User-created cable	
GP-4106 (COM1) GP-4116T (COM1)	18G	User-created cable	The cable length must be 1200m or less.
GP-4107 (COM1) GP-4*03T[*5] (COM2) GP-4203T (COM1)	18H	User-created cable	The cable length must be 1200m or less.
GP4000[*6] (COM2) GP-4201T (COM1) SP5000[*7] (COM1/2) SP-5B00 (COM2) ST6000[*8] (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000[*9] (COM2) PS6000 (Basic Box) (COM1/2)	18I	RS-422 terminal block conversion adapter by Pro-face PFXZCBADTM1[*10] + User-created cable	The cable length must be 1200m or less.
	18B	User-created cable	
LT-4*01TM (COM1) LT-Rear Module (COM1)	18J	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	The cable length must be 200m or less.
PE-4000B[*11] PS5000[*11] PS6000 (Optional Interface)[*11]	18K	User-created cable	The cable length must be 1200m or less.

*1 All GP3000 models except AGP-3302B

*2 Except AST-3211A and AST-3302B

*3 All GP3000 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. (Except PE-4000B, PS5000, and PS6000)

■ IPC COM Port (page 6)

*5 Except GP-4203T

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

*7 Except SP-5B00

*8 Except ST-6200

*9 Due to the COM port specifications, flow control is not possible. Omit wiring the control pins on the Display side of the cable diagram.

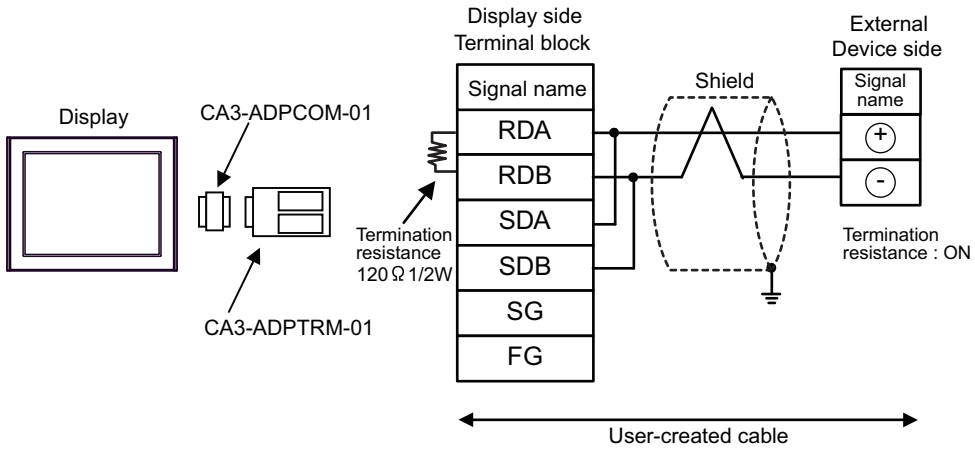
*10 When using a Terminal Block Conversion Adapter (CA3-ADPTRM-01) instead of the RS-422 Terminal Block Conversion Adapter, refer to Cable Diagram 13A.

*11 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.

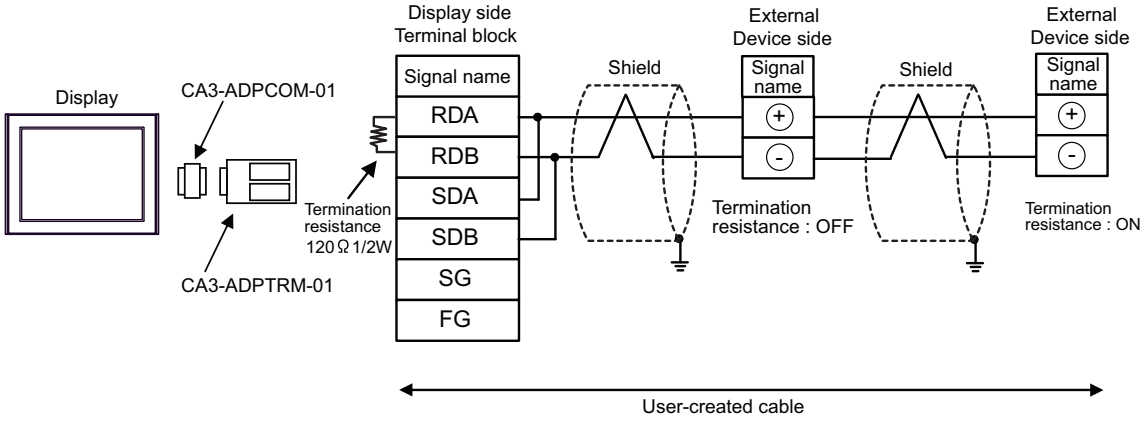
■ IPC COM Port (page 6)

18A)

- 1:1 Connection



- 1:n Connection

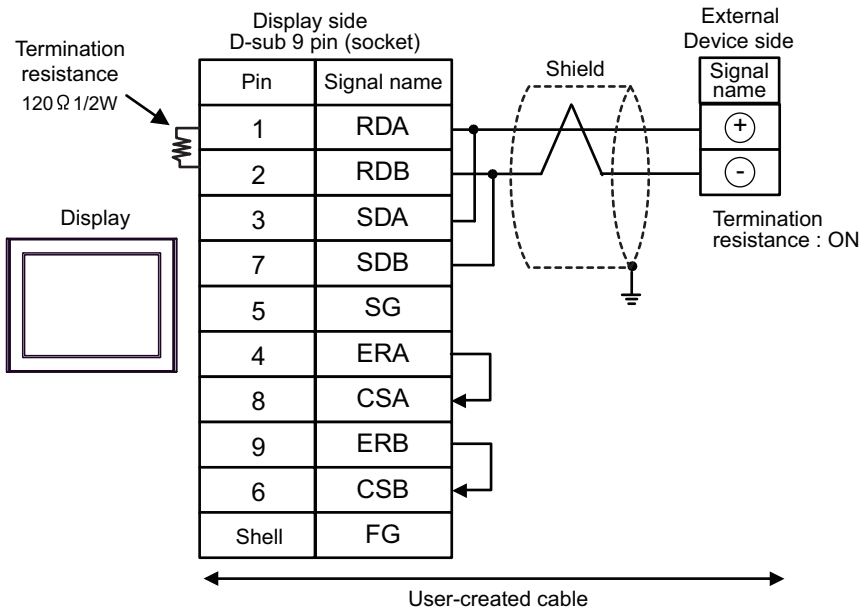


NOTE

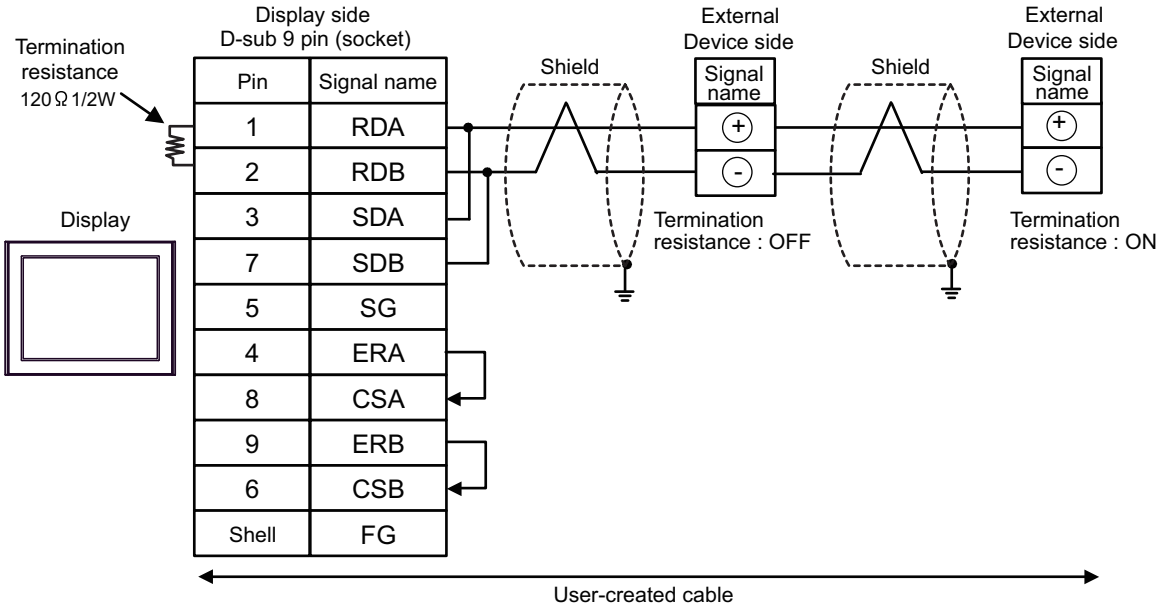
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18B)

- 1:1 Connection



- 1:n Connection

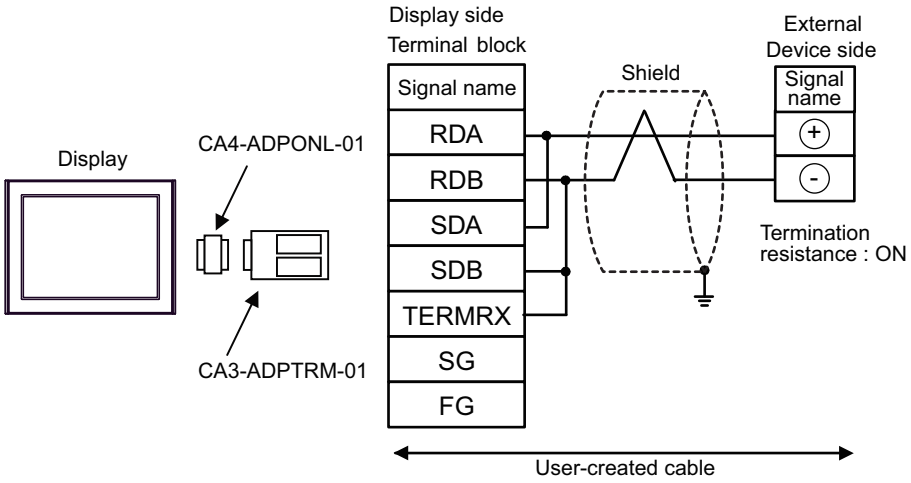


NOTE

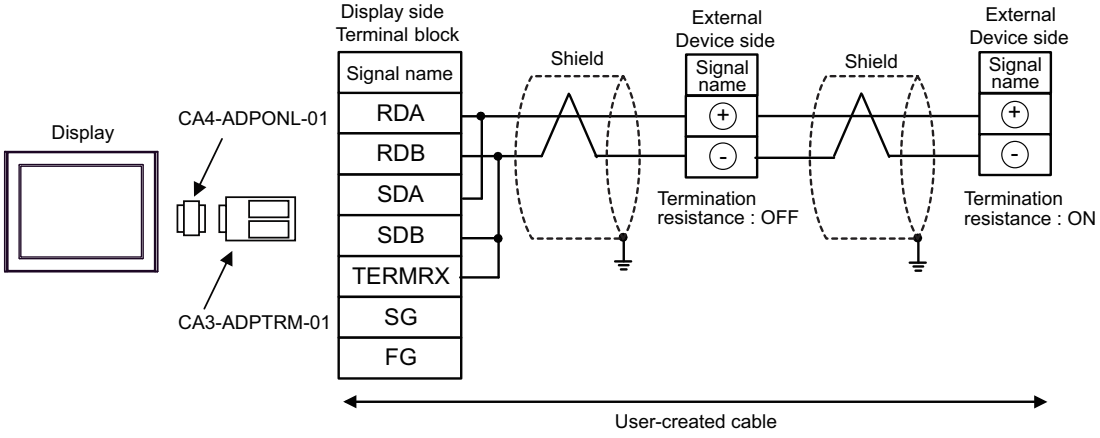
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18C)

- 1:1 Connection



- 1:n Connection

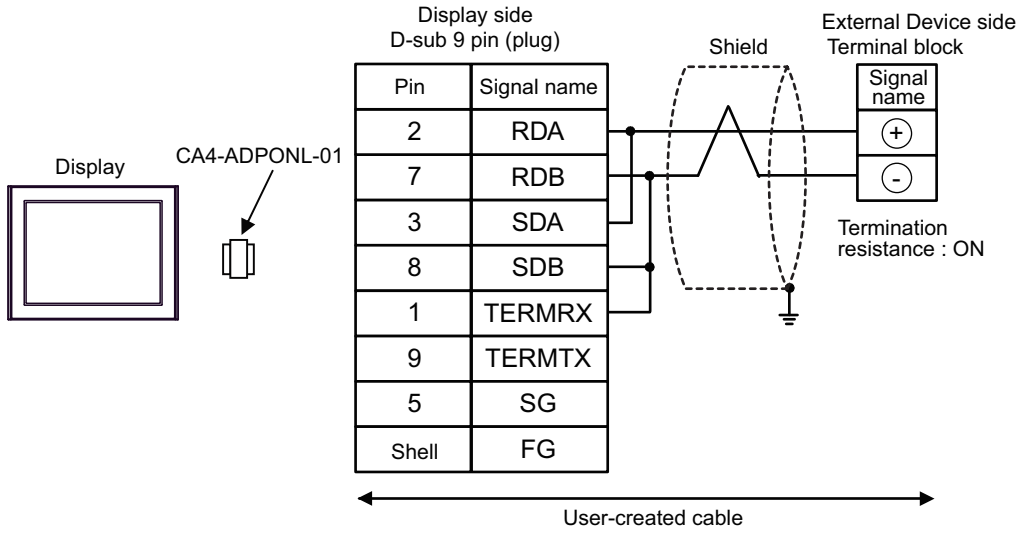


NOTE

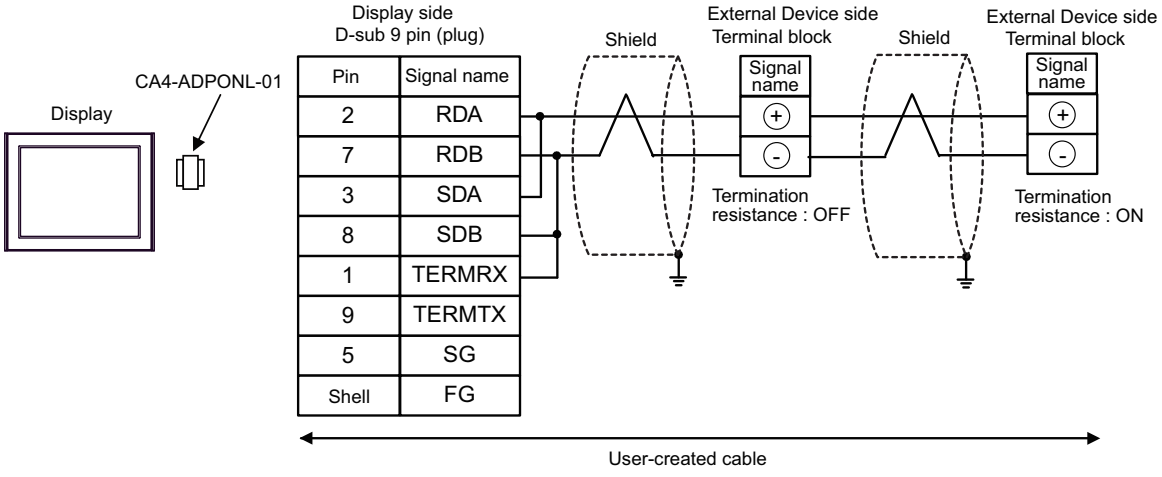
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18D)

- 1:1 Connection



1:n Connection

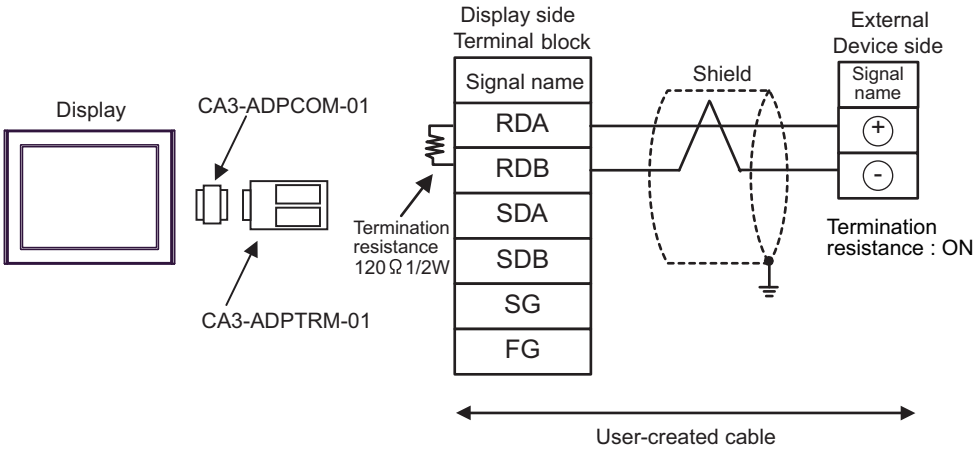


NOTE

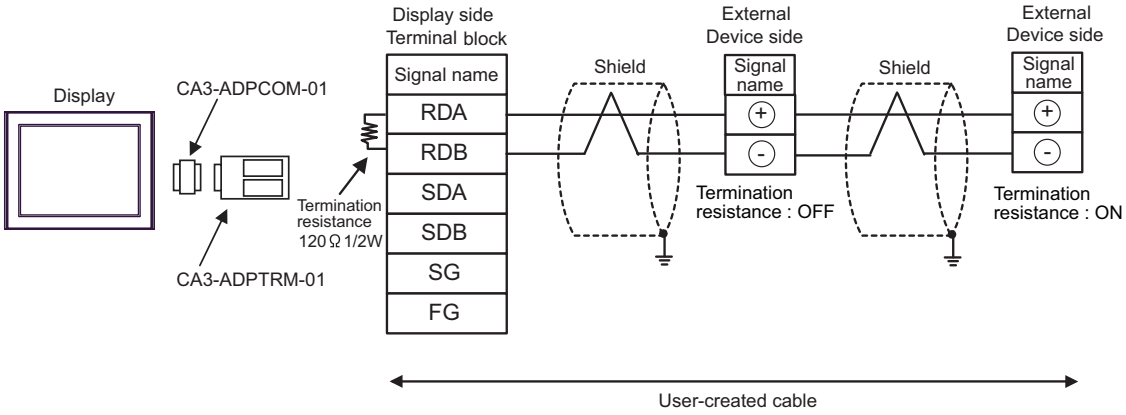
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18E)

- 1:1 Connection



- 1:n Connection

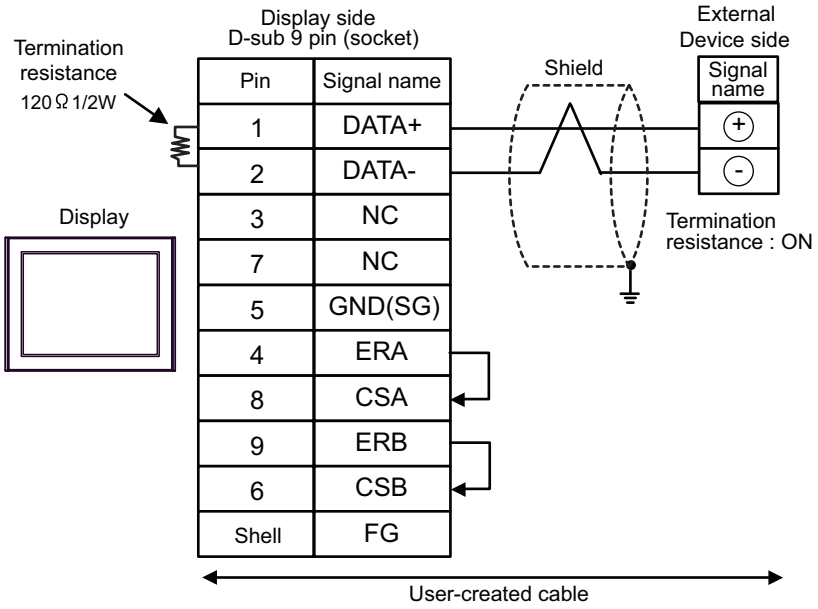


NOTE

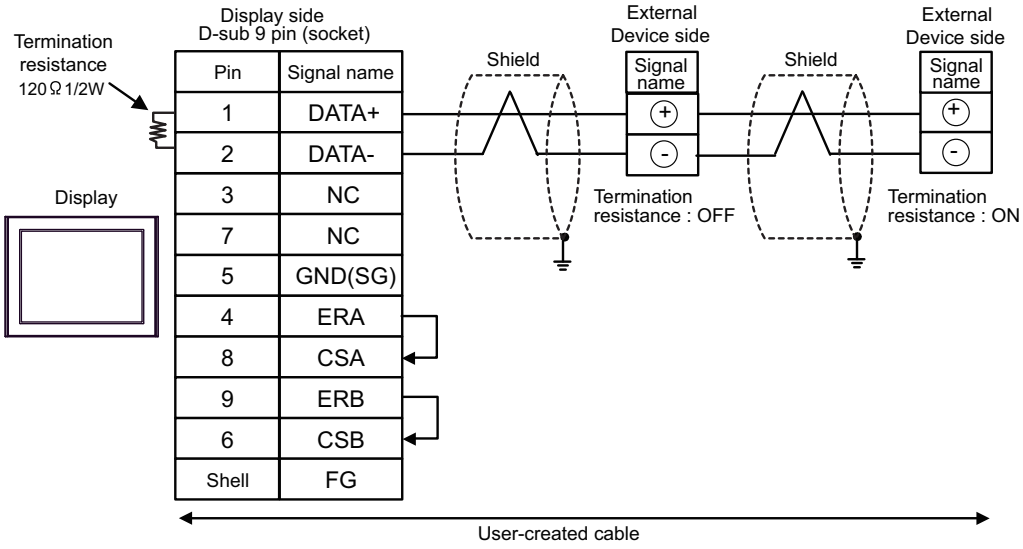
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18F)

- 1:1 Connection



- 1:n Connection

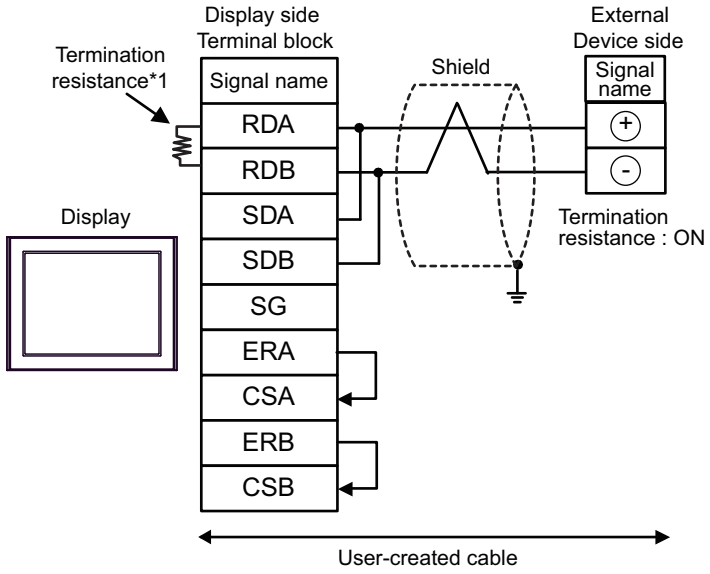


NOTE

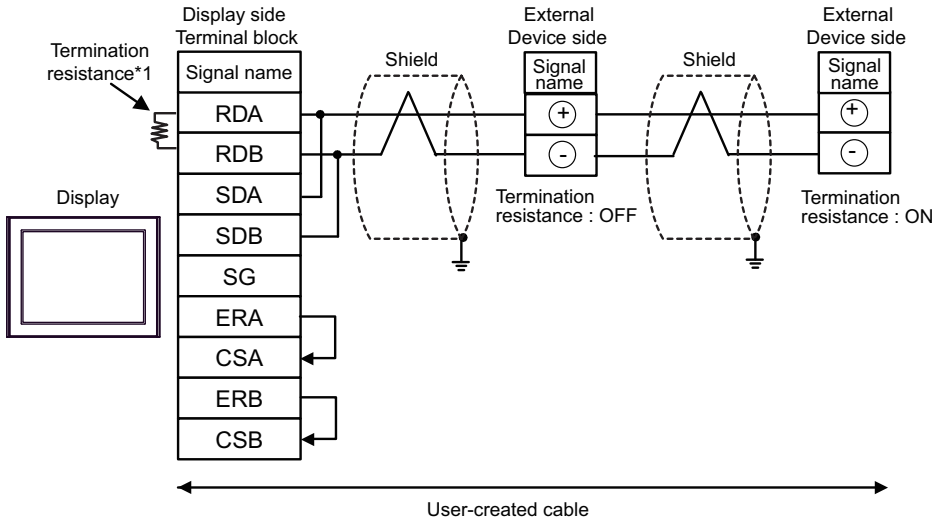
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18G)

- 1:1 Connection



- 1:n Connection



NOTE

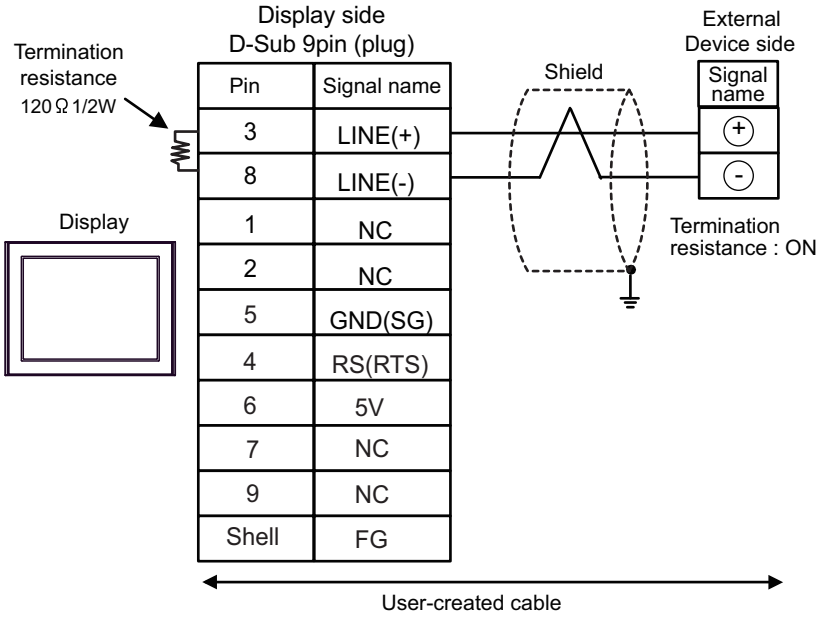
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

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

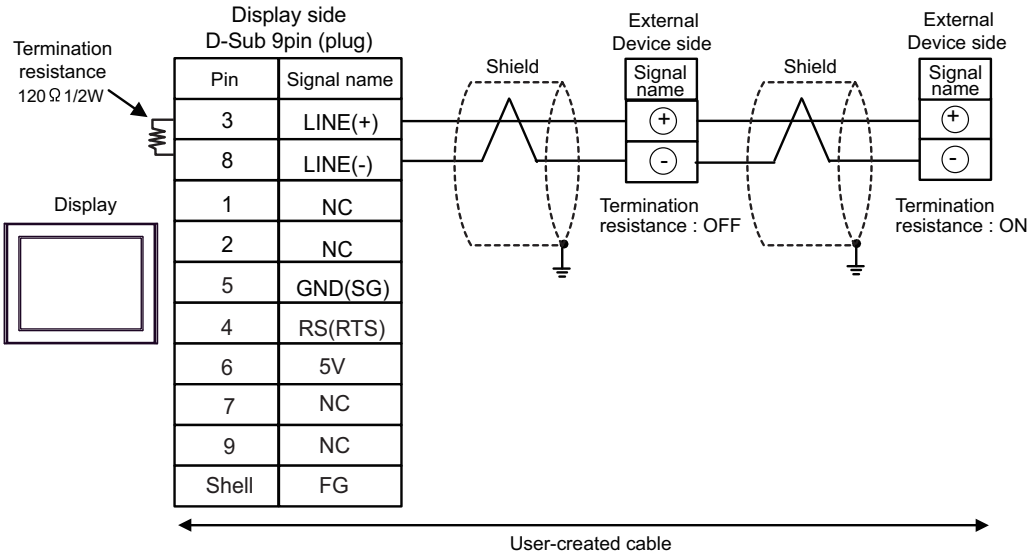
DIP Switch No.	Set Value
1	OFF
2	OFF
3	ON
4	ON

18H)

- 1:1 Connection



- 1:n Connection



IMPORTANT

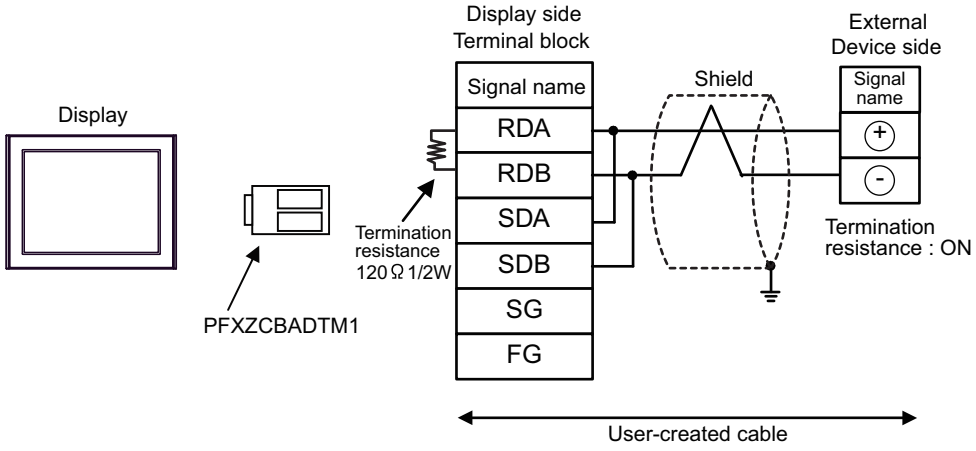
- The 5V output (Pin #6) on the Display is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices.

NOTE

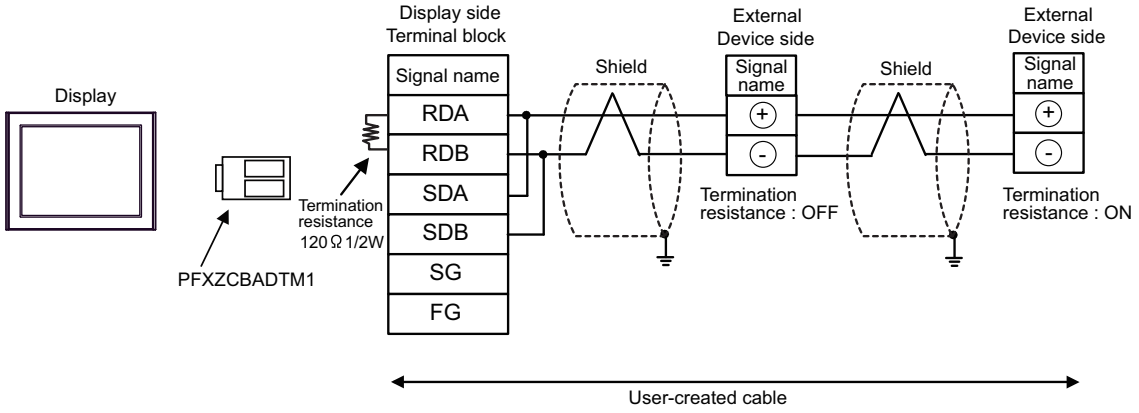
- Set the termination resistance selector switch of the External Device which terminates the connection to ON.
- In COM on the GP-4107, the SG and FG terminals are isolated.

18I)

- 1:1 Connection



- 1:n Connection

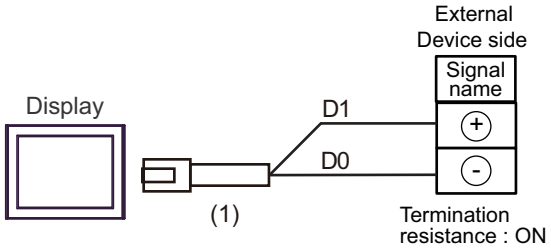


NOTE

- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

18J)

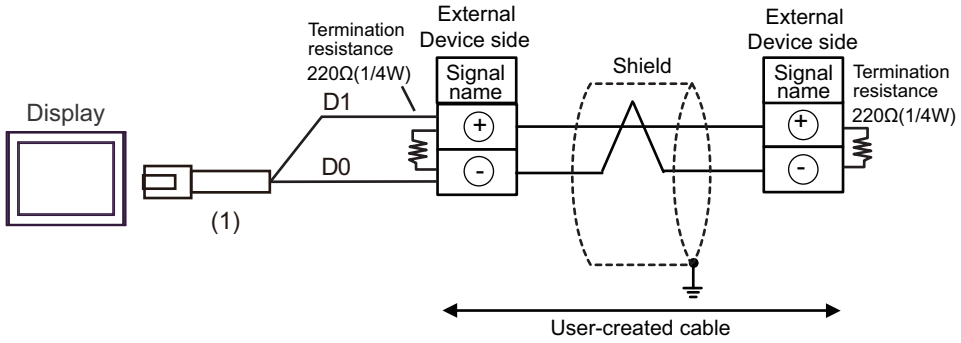
- 1:1 Connection



NOTE

- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

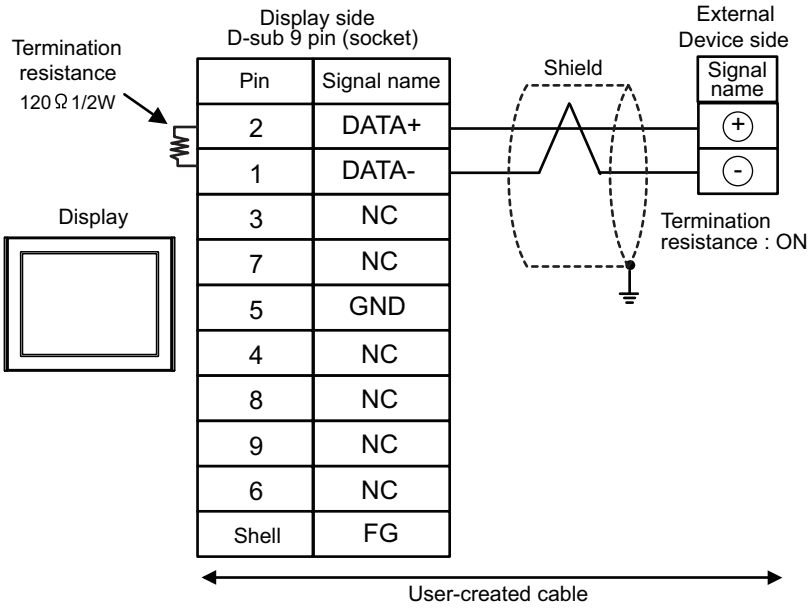
- 1:n Connection



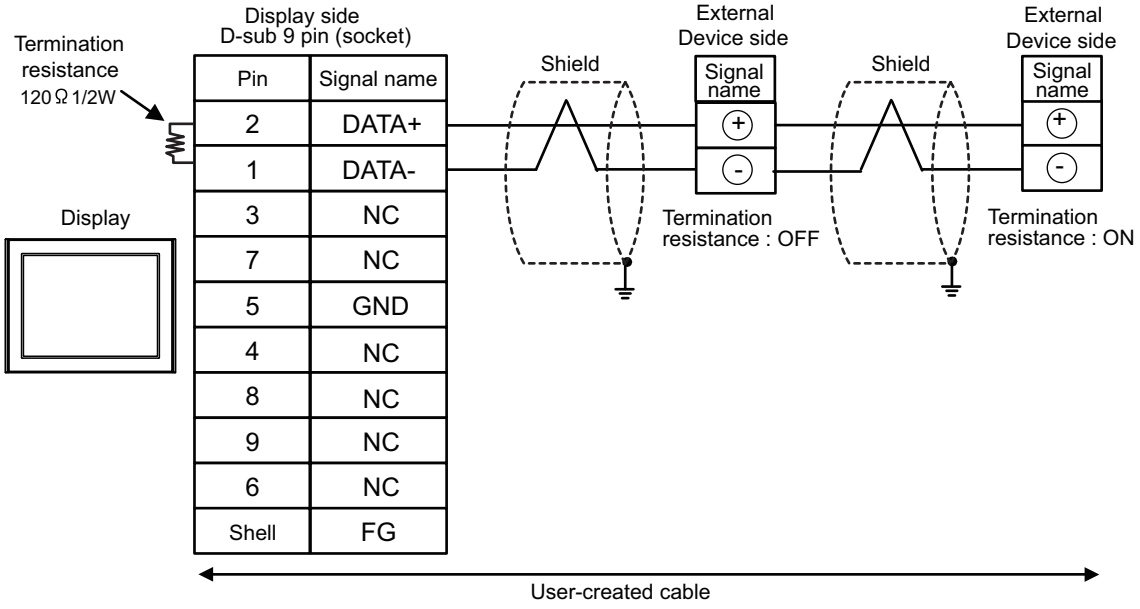
Number	Name	Notes
(1)	RJ45 RS-485 Cable (5m) by Pro-face PFXZLMCBRJR81	

18K)

- 1:1 Connection



- 1:n Connection



NOTE

- Set the termination resistance selector switch of the External Device which terminates the connection to ON.

6 Supported Device

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

6.1 FP Series (Except FP7 Series)

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Input Relay	X0000 - X511F	WX000 - WX511	L/H	*1
Output Relay	Y0000 - Y511F	WY000 - WY511		
Internal Relay	R0000 - R886F	WR000 - WR886		
Link Relay	L0000 - L639F	WL000 - WL639		
Special Relay	R9000 - R910F	WR900 - WR910		*1
Timer (Contact)	T0000 - T3071	--------		*1
Counter (Contact)	C0000 - C3071	-------		*1
Timer/Counter (Setting Value)	-----	SV0000 - SV3071		
Timer/Counter (Elapsed Value)	-----	EV0000 - EV3071		
Data Register		DT00000 - DT10239*2		Bit F *3
Link Register		LD0000 - LD8447		Bit F
File Register		FL00000 - FL32764		Bit F
Special Data Register		DT90000 - DT90511		Bit F *1*4

*1 Write disable

*2 You can specify the area of DT0000 - DT8999 only as system data area.

*3 The following addresses of DT09000 are handled as special data register in FP0 (C10/C14/C16/C32/SL1), FP1, FP-e, FP-M, FP3.

*4 Can be used only in FP0 (T32C), FPΣ, FP2, FP2SH, FP10S, FP10SH.

NOTE

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

6.2 FP7 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
External input relay	X00000 - X0511F	WX0000 - WX0511	L / H	*1
External output relay	Y00000 - Y0511F	WY0000 - WY0511		*1
Internal relay	R00000 - R02047F	WR0000 - WR2047		*1
Link relay	L00000 - L1023F	WL0000 - WL1023		*1
System relay	SR00000 - SR0223F	WS0000 - WS0223		*2
Timer(Contact)	T00000 - T04095	-----		*1 *2
Counter(Contact)	C00000 - C01023	-----		*1 *2
Pulse relay	P00000 - P0255F	-----		*1 *2
Error alarm relay	E00000 - E04095	-----		*1 *2
Direct input	IN00000 - IN0062F	WI0000 - WI0062		*2 *3
Direct output	OT00000 - OT0062F	WO0000 - WO0062		*3
Data register	DT000000.0 - DT999423.F	DT000000 - DT999423		*1
Link register	LD00000.0 - LD16383.F	LD00000 - LD16383		*1
Unit Memory	UM00000.0 - UM7FFFF.F	UM00000 - UM7FFFF		*3 *5
System data	-----	SD00000 - SD00255		*2
Timer set value register	-----	TS00000 - TS04095		*1 *4
Timer elapsed value register	-----	TE00000 - TE04095		*1 *4
Counter set value register	-----	CS00000 - CS01023		*1 *4
Counter elapsed value register	-----	CE00000 - CE01023		*1 *4
Index register	-----	I0000 - I000E		*4 *5

*1 You can use these devices as a global device and local device. If used as a local device, configure a program block number. Please enter the program block number of the program with the local device.
Example:
X000 (Global external input device, address 000)
023_X000 (Local external input device, Program block 23, address 000)

*2 Write disabled

*3 You need to set the slot number for these devices. You can use these devices without the program block number.
Example:
S16:IN000 (Direct input device, Slot number 16, address 000)

*4 32-bit device

*5 Hexadecimal address

NOTE

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

7 Device Code and Address Code

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

7.1 FP Series (Except FP7 Series)

Device	Device Name	Device Code (HEX)	Address Code
Input Relay	WX	0080	Word Address
Output Relay	WY	0081	Word Address
Internal Relay	WR	0082	Word Address
Link Relay	WL	0084	Word Address
Special Relay	WR9	0083	Word Address
Timer/Counter (Setting Value)	SV	0060	Word Address
Timer/Counter (Elapsed Value)	EV	0061	Word Address
Data Register	DT	0000	Word Address
Link Register	LD	0002	Word Address
File Register	FL	0010	Word Address
Special Data Register	DT9	0001	Word Address

7.2 FP7 Series

■ Global Devices

Device	Device Name	Device Code (HEX)	Address Code
External input relay	X / WX	0080	Word Address
External output relay	Y / WY	0081	Word Address
Internal relay	R / WR	0082	Word Address
Link relay	L / WL	0084	Word Address
System relay	SR / WS	0089	Word Address
Data register	DT	0000	Word Address
Link register	LD	0002	Word Address
System data	SD	0004	Word Address
Timer set value register	TS	0064	Word Address
Timer elapsed value register	TE	0065	Word Address
Counter set value register	CS	0062	Word Address
Counter elapsed value register	CE	0063	Word Address

Device	Device Name	Device Code (HEX)	Address Code
Index register	I	0005	Word Address

■ Unit / Local Devices

Device	Device Name	Device Code (HEX)	Address Code
External input relay	_X / _WX	0090	(Program No. × 0x10000) + Word Address
External output relay	_Y / _WY	0091	(Program No. × 0x10000) + Word Address
Internal relay	_R / _WR	0092	(Program No. × 0x10000) + Word Address
Link relay	_L / _WL	0094	(Program No. × 0x10000) + Word Address
Direct input	IN / WI	0097	(Unit No. × 0x10000) + Word Address
Direct output	OT / WO	0098	(Unit No. × 0x10000) + Word Address
Data register	_DT	0014	(Program No. × 0x10000) + Word Address
Link register	_LD	0012	(Program No. × 0x10000) + Word Address
Unit Memory	UM	0013	(Unit No. × 0x10000) + Word Address
Timer set value register	_TS	0074	(Program No. × 0x10000) + Word Address
Timer elapsed value register	_TE	0075	(Program No. × 0x10000) + Word Address
Counter set value register	_CS	0072	(Program No. × 0x10000) + Word Address
Counter elapsed value register	_CE	0073	(Program No. × 0x10000) + Word Address

8 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device. **NOTE** • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is diplayed 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: 2 [02H])"

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

■ Error Code Unique to External Device

Error Code (HEX)	Description
61	Data error There was a mistake in the contact, data area, data number designation, size designation, range, or format designation.

■ Error Message Unique to External Device

Error No.	Error Message	Description
RHxx128	An invalid Station No. is set	Unable to connect to the External Device for the defined station number. Check the station number.