FX Series Computer Link Driver

Introduction

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

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

| 1 | System Configuration
This section shows the types of External Device which can be connected and SIO type. | ☞ "1 System Configuration" (page 3) |

| 2 | Selection of External Device
Select a model (series) of the External Device to be connected and connection method | ☞ "2 Selection of External Device" (page 7) |

| 3 | Example of Communication Settings
This section shows setting examples for communicating between the display and the External Device. | ☞ "3 Example of Communication Setting" (page 8) |

| 4 | Setup Items
This section describes communication setup items on the display.
Set communication settings of Display with GP-Pro Ex or in off-line mode. | ☞ "4 Setup Items" (page 15) |

| 5 | Cable Diagram
This section shows cables and adapters for connecting the display and the External Device. | ☞ "5 Cable Diagram" (page 20) |

Operation

1 System Configuration

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

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FX Series	FX0N [*1] FX1NC FX2NC	FX0N-232ADP	RS232C	Setting Example 1 (page 8)	Cable Diagram 2 (page 21)
		FX2NC-232ADP	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 20)
		FX0N-485ADP, FX2NC-485ADP	RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 3 (page 22)
			RS422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 4 (page 27)
	FX1S FX1N	FX1N-232-BD, FX2NC-232ADP+FX1N-CNV-BD	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 20)
		FX0N-232ADP+FX1N-CNV-BD	RS232C	Setting Example 1 (page 8)	Cable Diagram 2 (page 21)
		FX1N-485-BD, FX0N-485ADP+FX1N-CNV-BD, FX2NC-485ADP+FX1N-CNV-BD	RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 3 (page 22)
			RS422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 4 (page 27)
	FX2N [*2]	FX2N-232-BD, FX2NC-232ADP+FX2N-CNV-BD	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 20)
		FX0N-232ADP+FX2N-CNV-BD	RS232C	Setting Example 1 (page 8)	Cable Diagram 2 (page 21)
		FX2N-485-BD, FX0N-485ADP+FX2N-CNV-BD, FX2NC-485ADP+FX2N-CNV-BD	RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 3 (page 22)
			RS422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 4 (page 27)
	FX3UC [*3] FX3U [*3]	*When using channel 1 (Ch1) FX3U-232-BD, FX3U-232ADP+FX3U-CNV-BD *When using channel 2 (Ch2) FX3U-232ADP+FX3U-□□□-BD [*4], FX3U-232ADP+FX3U-■■■ADP [*5] +FX3U-CNV-BD	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 20)
		*When using channel 1 (Ch1) FX3U-485-BD, FX3U-485ADP+FX3U-CNV-BD *When using channel 2 (Ch2) FX3U-485ADP+FX3U-□□□-BD [*4], FX3U-485ADP+FX3U-■■■ADP [*5] +FX3U-CNV-BD	RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 3 (page 22)
			RS422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 4 (page 27)

*1   System version 1.20 or higher for External Device is required. You can monitor the special register D8001 to check the system version for External Device. Please refer to the manual of External Device for more details.

*2 System version 1.06 or higher for External Device is required. You can monitor the special register D8001 to check the system version for External Device. Please refer to the manual of External Device for more details.

*3 Simultaneous communication of Ch1 and Ch2 is available.

*4 Either of 232 or 485 is shown in ■ ■ ■.

*5 Any of 232, 422, 485 and USB is shown in □ □ □.

■ COM Port of IPC

When connecting IPC with External Device, the COM port which can be used changes with series and SIO type. Please refer to the manual of IPC 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	COM1, COM2[*1*2]	COM2[*1*2]	COM2[*1*2]
PS-3650A, PS-3651A	COM1[*1]	-	-
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]
PL-3000B	COM1[*1*2], COM2[*1], COM3, COM4	COM1[*1*2]	COM1[*1*2]

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

*2   It is necessary to set up the SIO type with the Dip switch. Please set up as follows according to SIO type to be used.

Dip switch setting: RS-232C

Dip switch	Setting	Description
1	OFF[*1]	Reserve (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): Does not Exist
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Does not Exist
9	OFF	RS (RTS) Auto control mode: Disable
10	OFF	

*1   It is necessary to turn ON the set value, only when using PS-3450A and PS-3451A.

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

Dip switch	Setting	Description
1	OFF	Reserve (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): Does not Exist
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Does not Exist
9	OFF	RS (RTS) Auto control mode: Disable
10	OFF	

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

Dip switch	Setting	Description
1	OFF	Reserve (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): Exist
8	ON	Short-circuit of SDB (TXB) and RDB (RXB): Exist
9	ON	RS (RTS) Auto control mode: Enable
10	ON	

2 Selection of External Device

Select the External Device to be connected to the Display.

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

3 Example of Communication Setting

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

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

3.1 Setting Example 1

■ Setting of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

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

■ Setting of External Device

Setting of External Device includes the setting with parameter and the setting by writing data to the special data register.

◆ Setting with parameter

Double-click [PC parameter] from [Parameter] in the tree view of the ladder software to display the [FX parameter] dialog box.

Click the [PC system settings (2)] tab for communication settings.

| IMPORTANT | • FX0N does not support the setting with parameter. Select the setting by writing data to the special data register. |

Setup items and description are shown below.

Setup Items	Setup Description
CH[*1]	CH1 or CH2
Protocol	Protocol communication only
Data Length	7
Parity	Even
Stop Bit	2
Line Speed	Match with the speed of Display
Header	None
Terminator	None
H/W Type	Normal/RS232C
Sum Check	Added
Control method	Form 4
Timeout	1

*1   Setting only for FX3UC, FX3U.

◆ Setting by writing data to the special data register

Write data to the data register of External Device. After writing, turn the power of External Device from OFF to ON.

| IMPORTANT | • When using the FX0N Series, turn ON M8120 for keeping communication settings before turning power from OFF to ON. |

Write destination data register and write data are shown below.

Write Destination Data Register		Write data
CH1 of FX3UC, FX3U and FX Series except above	CH2 of FX3UC, FX3U	
D8120	D8420	0xE89E
D8121	D8421	0
D8129	D8429	1

3.2　　Setting Example 2

■ Setting of GP-Pro EX

◆ Communication Settings

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

```
Device/PLC 1

Summary                                                          Change Device/PLC
  Maker  Mitsubishi Electric Corporation    Series  FX Series Computer Link    Port  COM1

  Text Data Mode      2    Change

Communication Settings
  SIO Type          C RS232C      C RS422/485(2wire)    C RS422/485(4wire)
  Speed             19200
  Data Length       C 7            C 8
  Parity            C NONE         C EVEN              C ODD
  Stop Bit          C 1            C 2
  Flow Control      C NONE         C ER(DTR/CTS)       C XON/XOFF
  Timeout           3         [sec]
  Retry             2
  Wait To Send      1         [ms]

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

Device-Specific Settings
  Allowable No. of Device/PLCs  16 Unit(s)
    No.  Device Name                    Settings
    1    PLC1                           Station No.=0
```

◆ Device Setting

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

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

```
Individual Device Settings          ×

PLC1

  Station No.              0

                          Default

      OK (O)              Cancel
```

■ Setting of External Device

Setting of External Device includes the setting with parameter and the setting by writing data to the special data register.

◆ Setting with Parameter

Double-click [PC parameter] from [Parameter] in the tree view of the ladder software to display the [FX parameter] dialog box.

Click the [PC system settings (2)] tab for communication settings.

| IMPORTANT | • FX0N does not support the setting with parameter. Select the setting by writing data to the special data register. |

Setup items and description are shown below.

Setup Items	Setup Description
CH[*1]	CH1 or CH2
Protocol	Protocol communication only
Data Length	7
Parity	Even
Stop Bit	2
Line Speed	Match with the speed of Display
Header	None
Terminator	None
H/W Type	RS-485/RS-422
Sum Check	Added
Control method	Form 4
Timeout	1

*1   Setting only for FX3UC, FX3U.

◆ Setting by writing data to the special data register

Write data to the data register of External Device. After writing, turn the power of External Device from OFF to ON.

| IMPORTANT | • When using the FX0N Series, turn ON M8120 for keeping communication settings before turning power from OFF to ON. |

Write destination data register and write data are shown below.

Write Destination Data Register		Write Data
CH1 of FX3UC, FX3U and FX Series except above	CH2 of FX3UC, FX3U	
D8120	D8420	0xE09E
D8121	D8421	0
D8129	D8429	1

3.3 Setting Example 3

■ Setting of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

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

■ Setting of External Device

Setting of External Device includes the setting with parameter and the setting by writing data to the special data register.

◆ Setting with Parameter

Double-click [PC parameter] from [Parameter] in the tree view of the ladder software to display the [FX parameter] dialog box.

Click the [PC system settings (2)] tab for communication settings.

| IMPORTANT | • FX0N does not support the setting with parameter. Select the setting by writing data to the special data register. |

Setup items and description are shown below.

Setup Items	Setup Description
CH[*1]	CH1 or CH2
Protocol	Protocol communication only
Data Length	7
Parity	Even
Stop Bit	2
Line Speed	Match with the speed of Display
Header	None
Terminator	None
H/W Type	RS-485/RS-422
Sum Check	Added
Control method	Form 4
Timeout	1

*1   Setting only for FX3UC, FX3U.

◆ Setting by writing data to the special data register

Write data to the data register of External Device. After writing, turn the power of External Device from OFF to ON.

| IMPORTANT | • When using the FX0N Series, turn ON M8120 for keeping communication settings before turning power from OFF to ON. |

Write destination data register and write data are shown below.

Write Destination Data Register		Write Data
CH1 of FX3UC, FX3U and FX Series except above	CH2 of FX3UC, FX3U	
D8120	D8420	0xE09E
D8121	D8421	0
D8129	D8429	1

4 Setup Items

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

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

)"3 Example of Communication Setting" (page 8)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between External Device and 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 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 Display retransmits the command.

continued to next page

Setup Items	Setup Description
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for Display from receiving packets to transmitting next commands. **NOTE** • Set the value more than twice as the scanning time of External Device when connecting to FX0N, FX1S, FX1N and FX1NC Series.
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.

■ Device Setting

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

When [Allowable No. of Device/PLCs] is multiple, click ▦ from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.
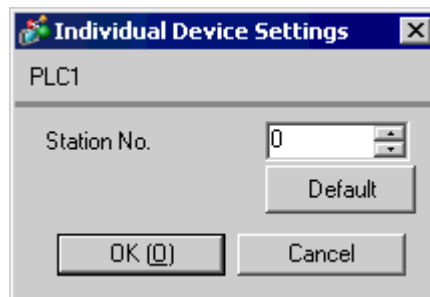
Setup Items	Setup Description
Station No.	Enter a station number of External Device, using 0 to F.

4.2 Setup Items in Off-Line Mode

NOTE • Please refer to Maintenance/Troubleshooting for more information on how to enter off-line mode
or about operation.
Cf. Maintenance/Troubleshooting "2.2 Offline Mode"

■ Communication Settings

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

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 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 Display retransmits the command.

Setup Items	Setup Description
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for Display from receiving packets to transmitting next commands. **NOTE** Set the value more than twice as the scanning time of External Device when connecting to FX0N, FX1S, FX1N and FX1NC Series.

■ Device Setting

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

Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Station No.	Enter a station number of the External Device, using 0 to F.

■ Option

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

Comm.	Device	Option		

FX Series Computer Link   [COM1]   Page 1/1

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

| | Exit | | Back | 2005/09/02
12:35:00 |
|---|---|---|---|---|

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.

5   Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Mitsubishi Electric

Corp. Please be assured there is no operational problem in applying the cable diagram shown in this manual.
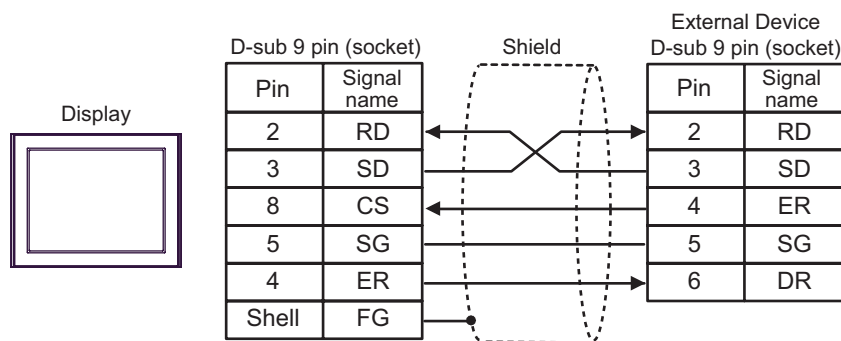
- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.

- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.

- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc.

Cable Diagram 1

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC[*1] PC/AT	Your own cable	The cable length must be 15 meters or less.

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

☞ ■ COM Port of IPC (page 5)

Display	D-sub 9 pin (socket)		Shield	External Device D-sub 9 pin (socket)	
	Pin	Signal name		Pin	Signal name
	2	RD		2	RD
	3	SD		3	SD
	8	CS		4	ER
	5	SG		5	SG
	4	ER		6	DR
	Shell	FG			

Cable Diagram 2

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC*1 PC/AT	Your own cable	The cable length must be 15 meters or less.

*1   Only the COM port which can communicate by RS-232C can be used.
          ☞ ■ COM Port of IPC (page 5)

Display

D-sub 9 pin (socket)

Pin	Signal name
2	RD
3	SD
4	ER
5	SG
8	CS
Shell	FG

Shield

External Device
D-sub 25 pin (plug)

Pin	Signal name
2	SD
3	RD
6	DR
7	SG
20	ER
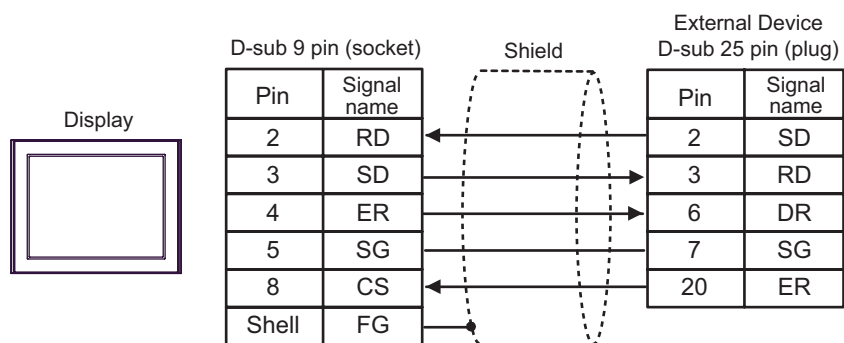
Cable Diagram 3

Display (Connection Port)		Cable	Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 500 meters or less.[*4]
	B	Your own cable	
GP[*5] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 500 meters or less.[*4]
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1   All GP models except AGP-3302B

*2   All ST models except AST-3211A

*3   Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
      ☞ ■ COM Port of IPC (page 5)

*4   When using FX1N-485-BD, FX2N-485-BD, FX3U-485-BD, the cable length must be 50 meters or less.

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

NOTE
- The shield of cables connected to FX2N-485-BD, FX1N-485-BD, FX2NC-485ADP and FX3U-485ADP must be D-class grounded.
- Connect the shield of cable connected to FX0N-485ADP to the adapter FG terminal. In addition, always connect the FG terminal of FX0N-485ADP to the ground terminal of External Device body with D-class grounded.
- FX3U-485-BD and FX3U-485ADP have built-in termination resistance. Use the termination resistance switch to set termination resistance.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
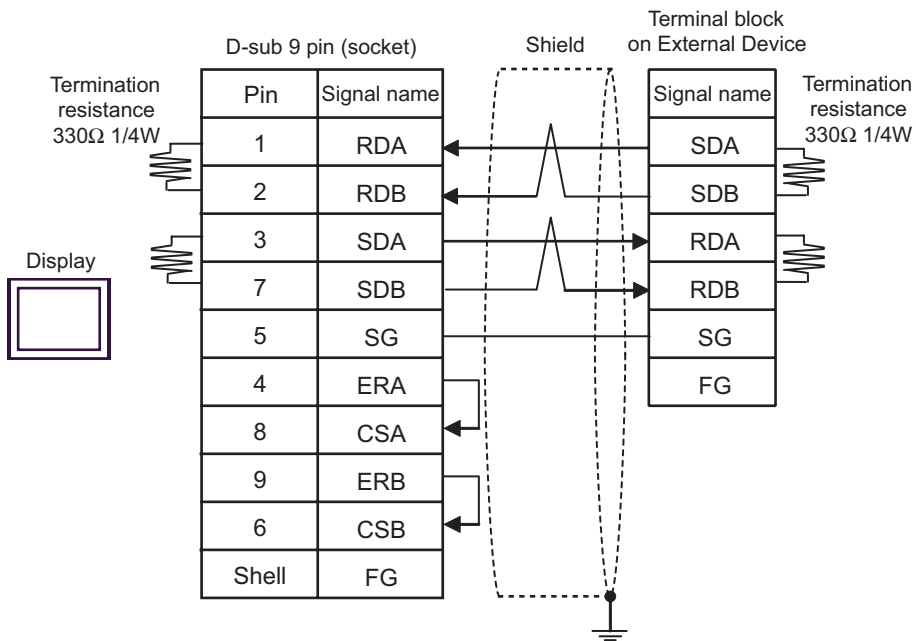
• 1:1 connection
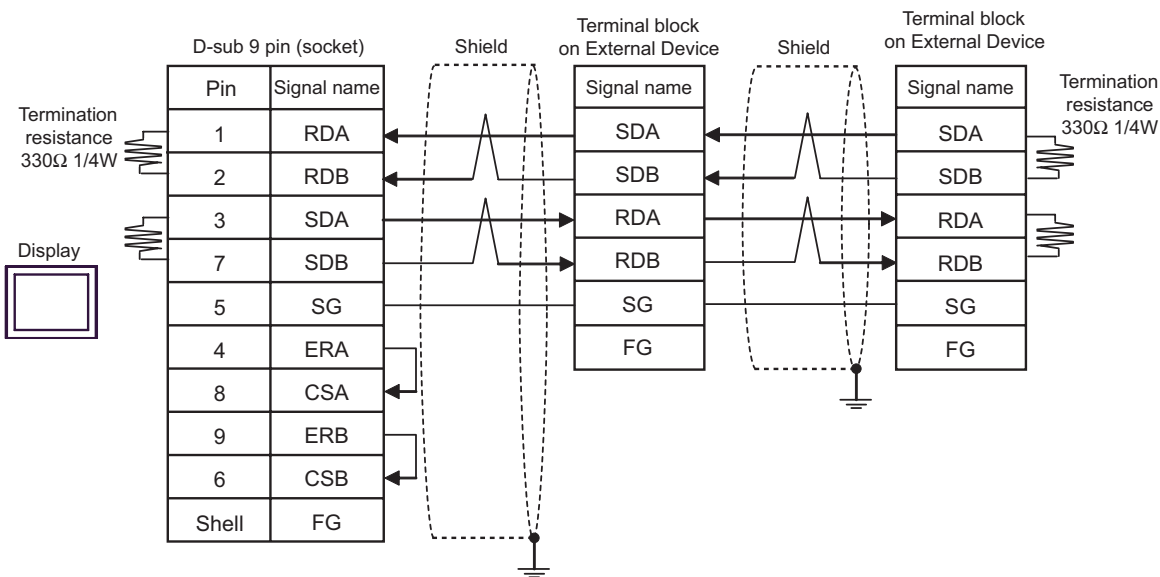

• 1:n connection
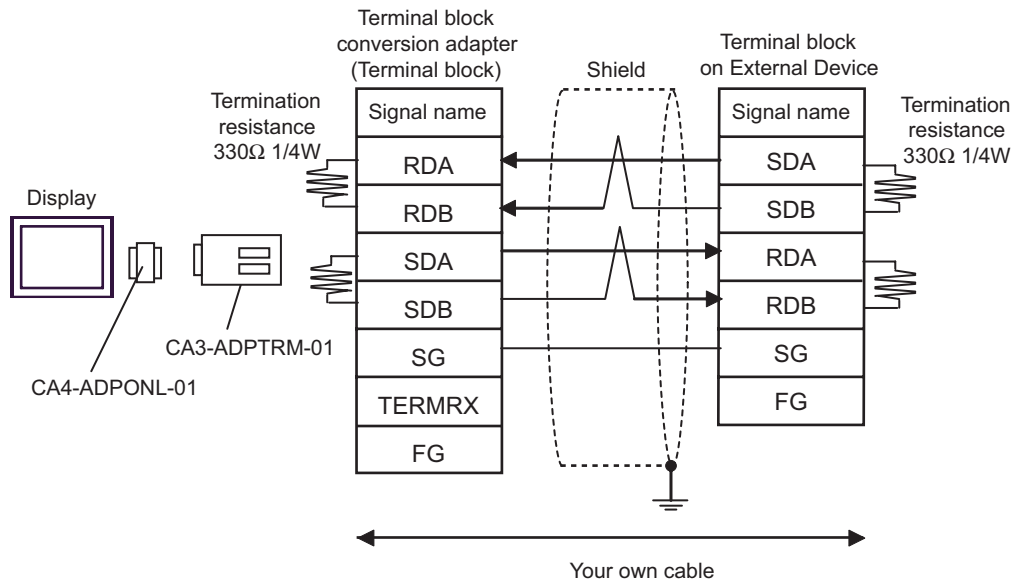
B) When making your own cable

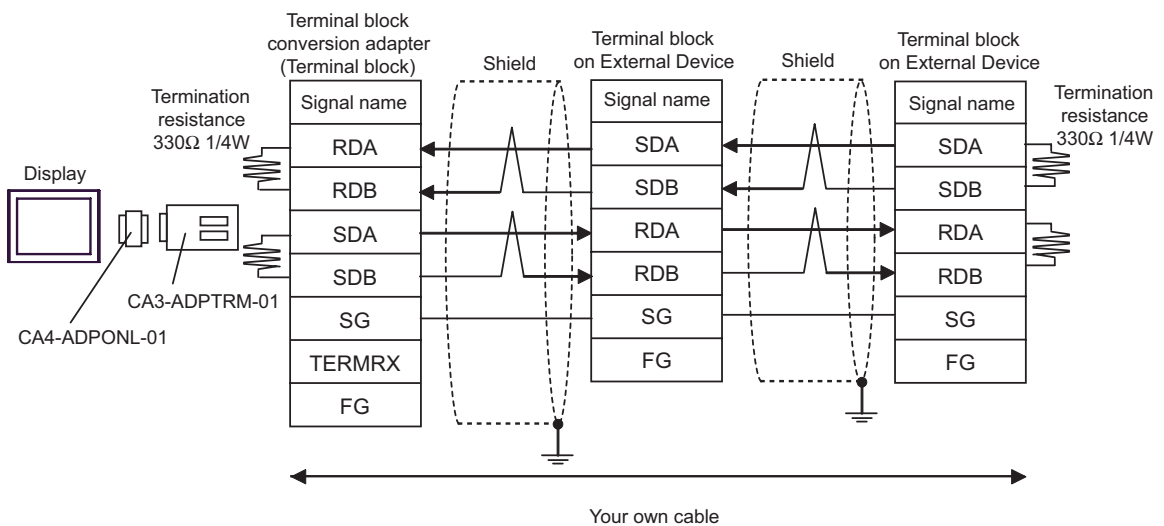• 1:1 connection

• 1:n connection

C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
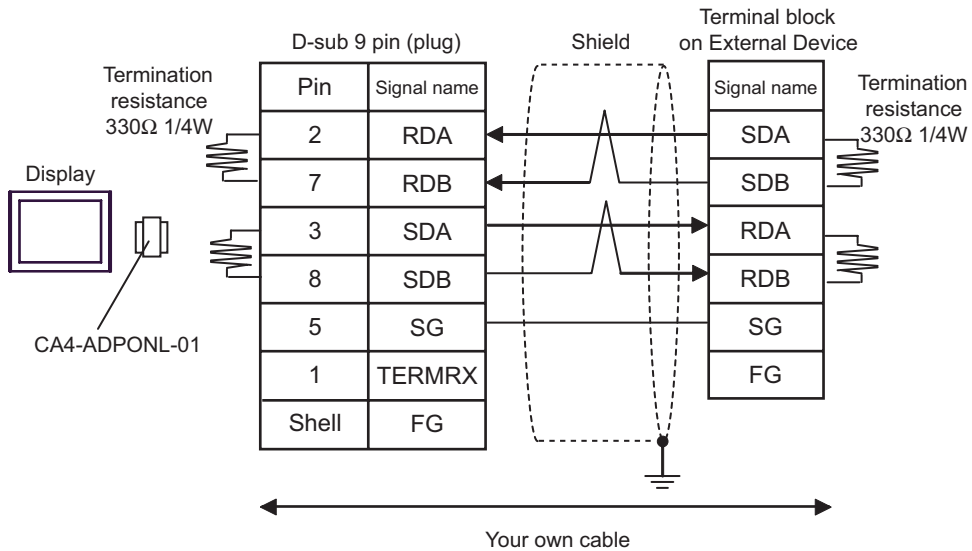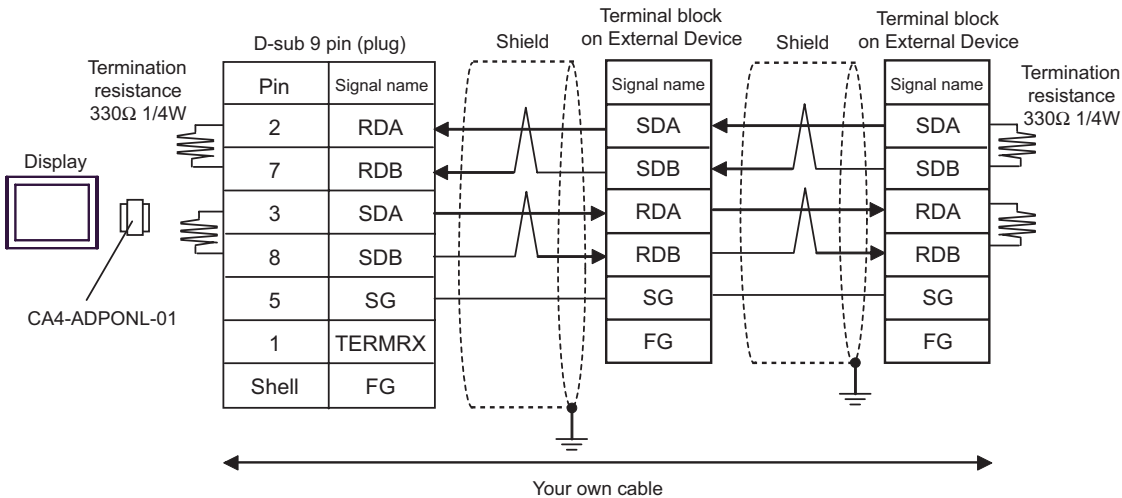
• 1:1 connection

• 1:n connection

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

• 1:1 connection

• 1:n connection

Cable Diagram 4

Display (Connection Port)		Cable	Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 500 meters or less.[*3]
	B	Your own cable	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 500 meters or less.[*3]
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*5]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 500 meters or less.[*3]
	F	Your own cable	

*1   All GP models except AGP-3302B

*2   All ST models except AST-3211A

*3   When using FX1N-485-BD, FX2N-485-BD, FX3U-485-BD, the cable length must be 50 meters or less.

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

*5   Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
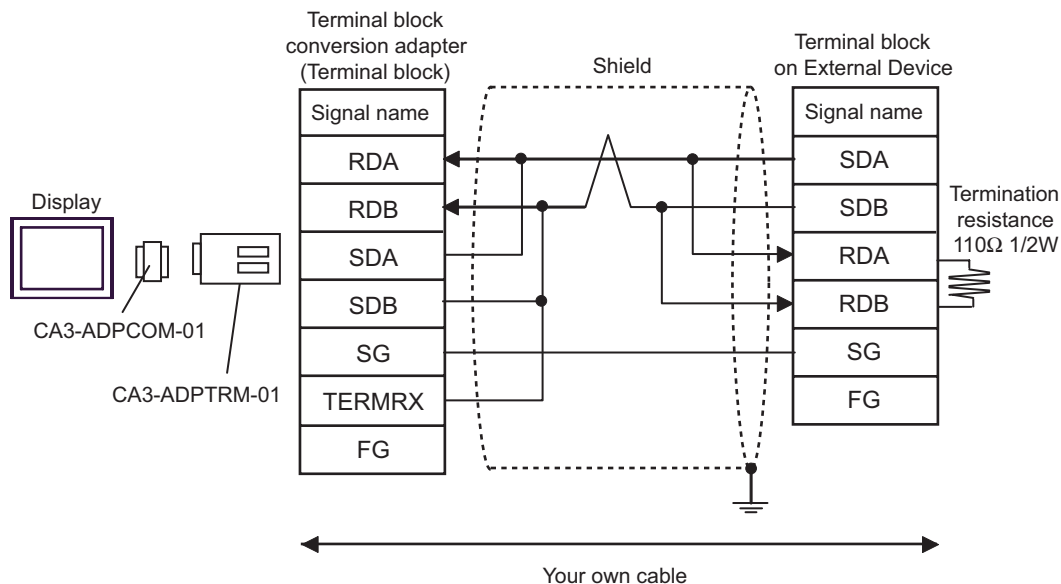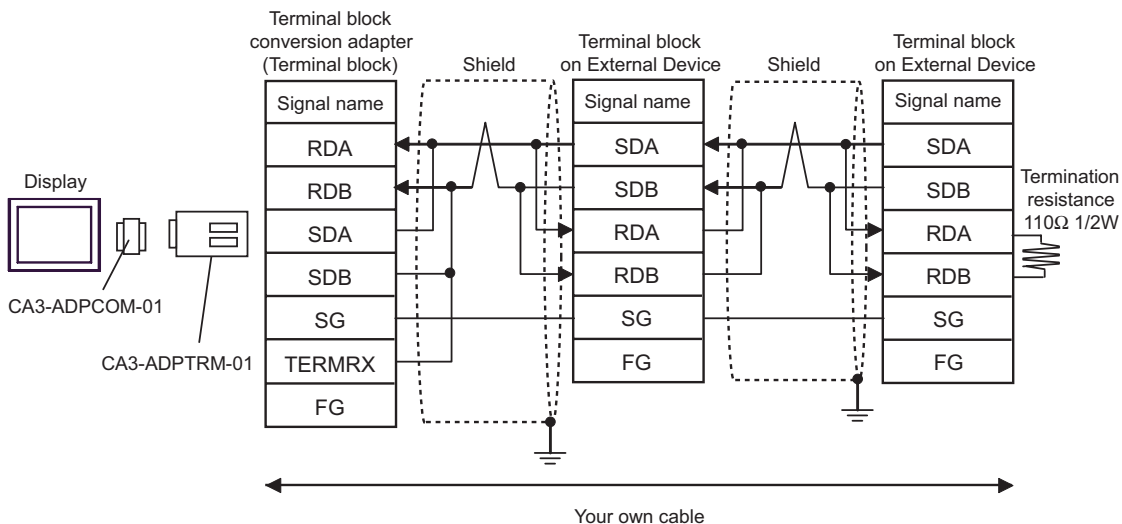☞ ■ COM Port of IPC (page 5)

NOTE
- The shield of cables connected to FX2N-485-BD, FX1N-485-BD, FX2NC-485ADP and FX3U-485ADP must be D-class grounded.
- Connect the shield of cable connected to FX0N-485ADP to the adapter FG terminal. In addition, always connect the FG terminal of FX0N-485ADP to the ground terminal of External Device body with D-class grounded.
- FX3U-485-BD and FX3U-485ADP have built-in termination resistance. Use the termination resistance switch to set termination resistance.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
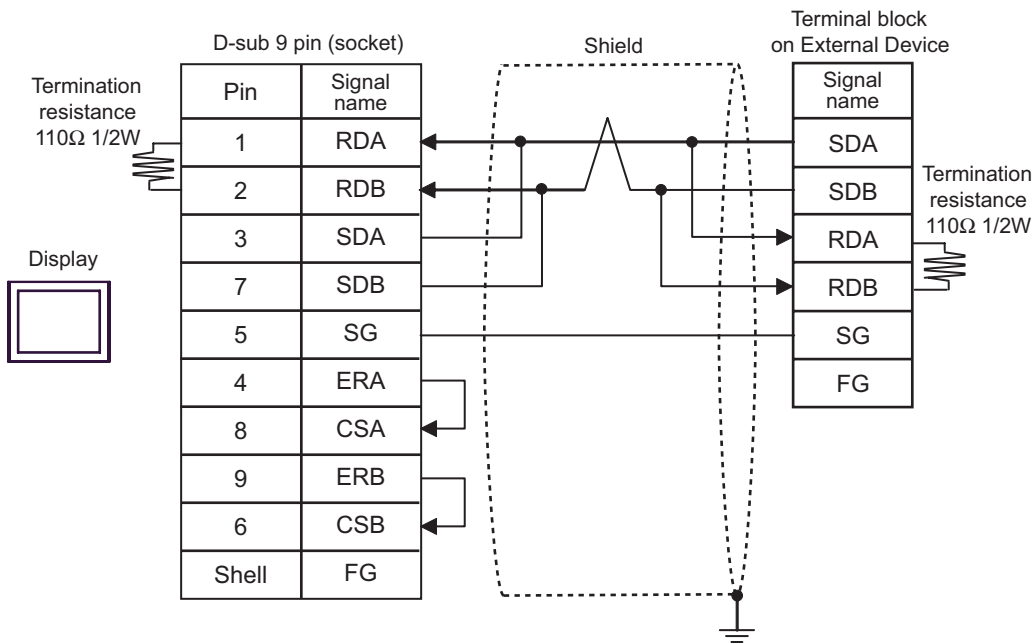
• 1:1 connection
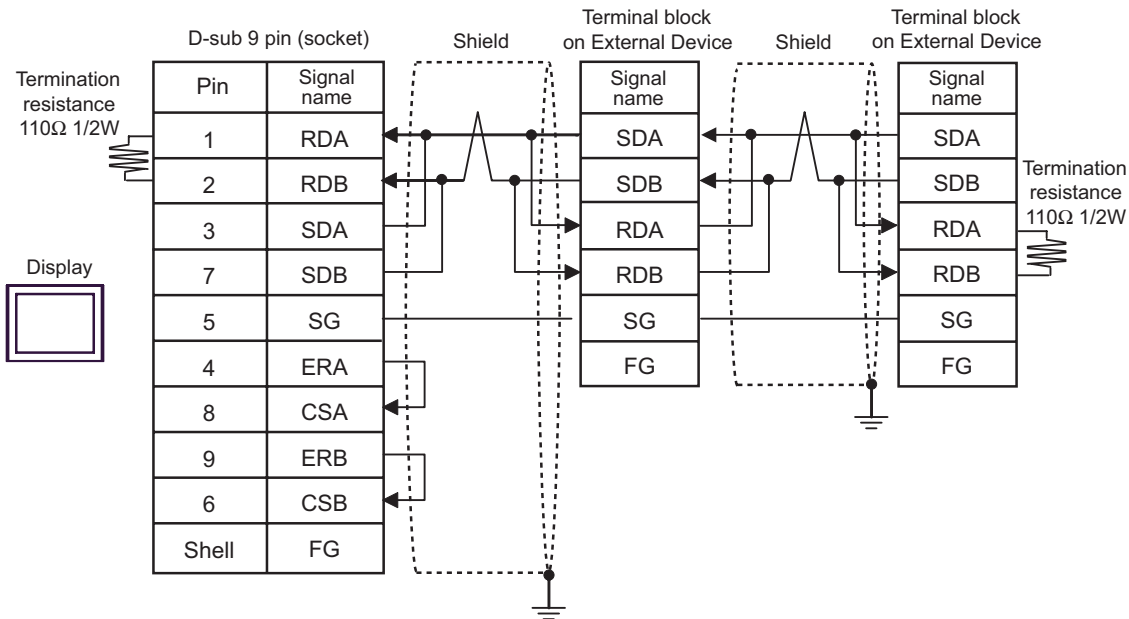

• 1:n connection
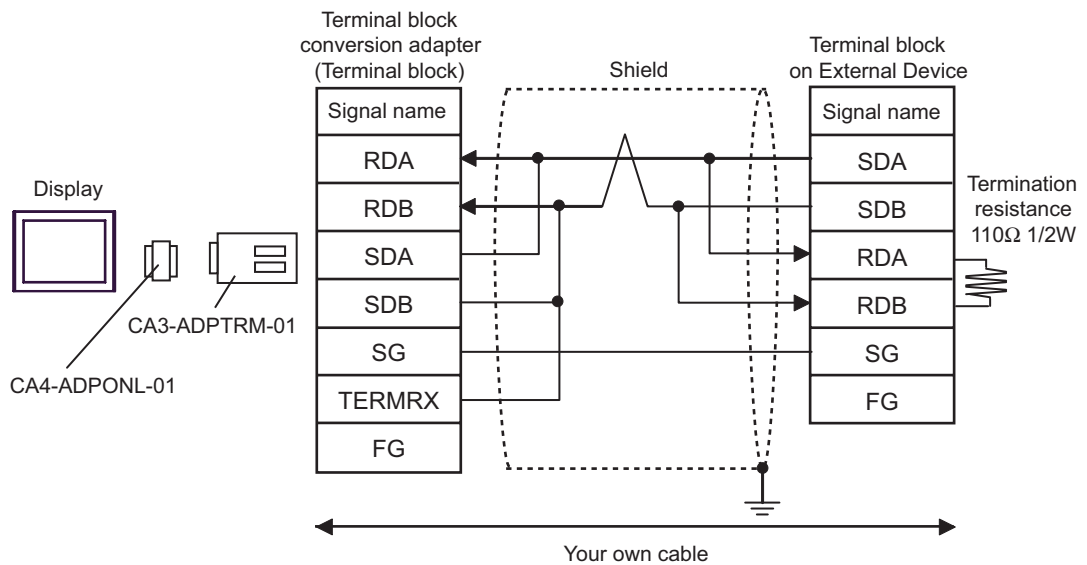
B) When making your own cable
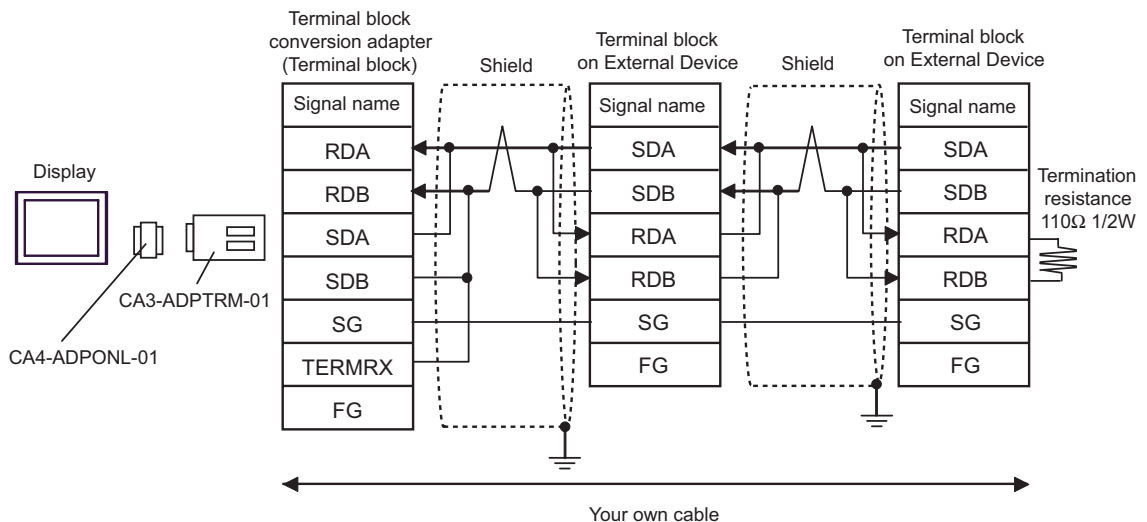
• 1:1 connection

• 1:n connection

C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
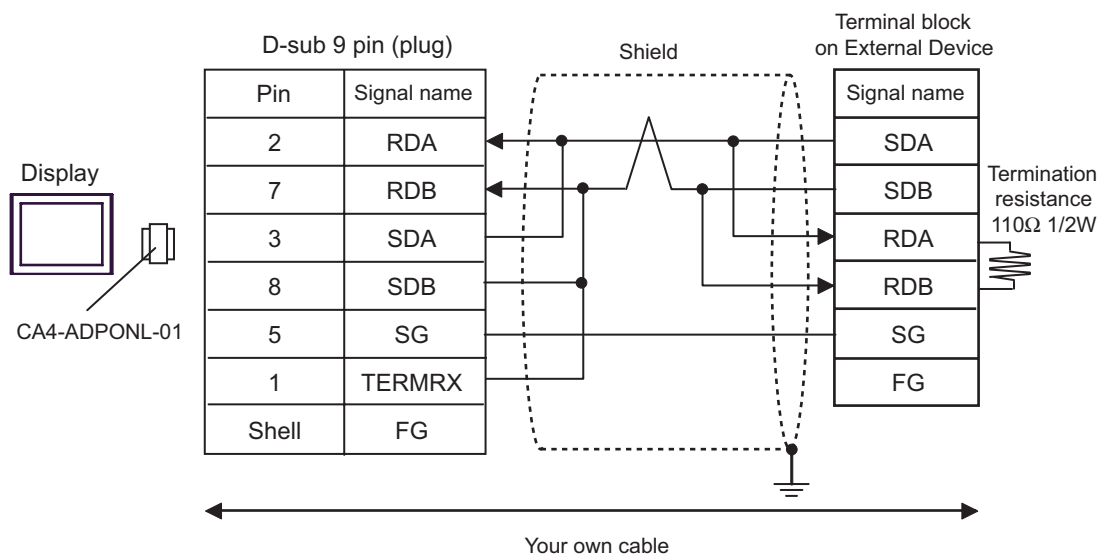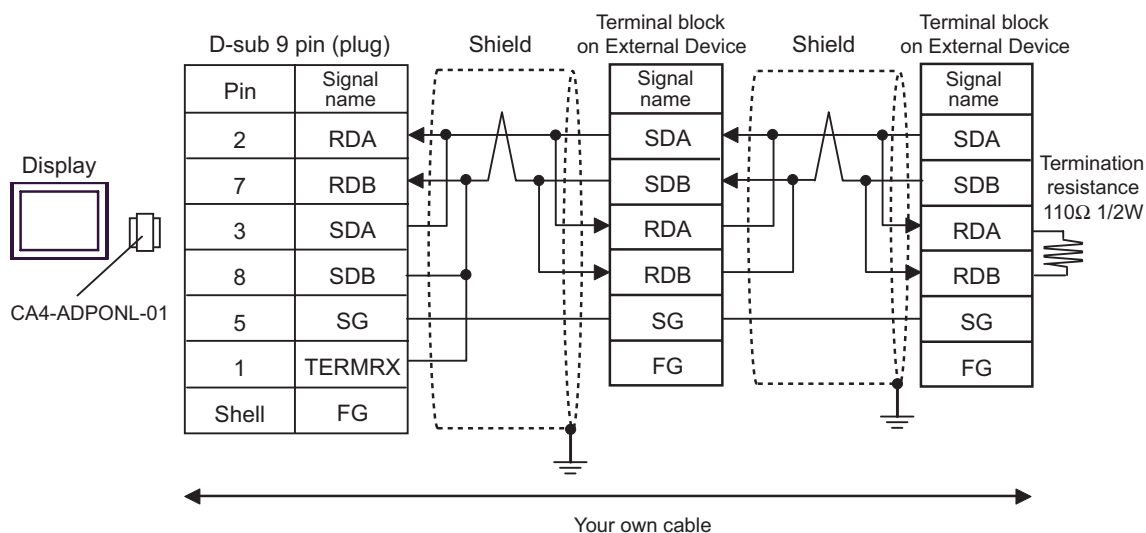
• 1:1 connection

• 1:n connection

D)When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable
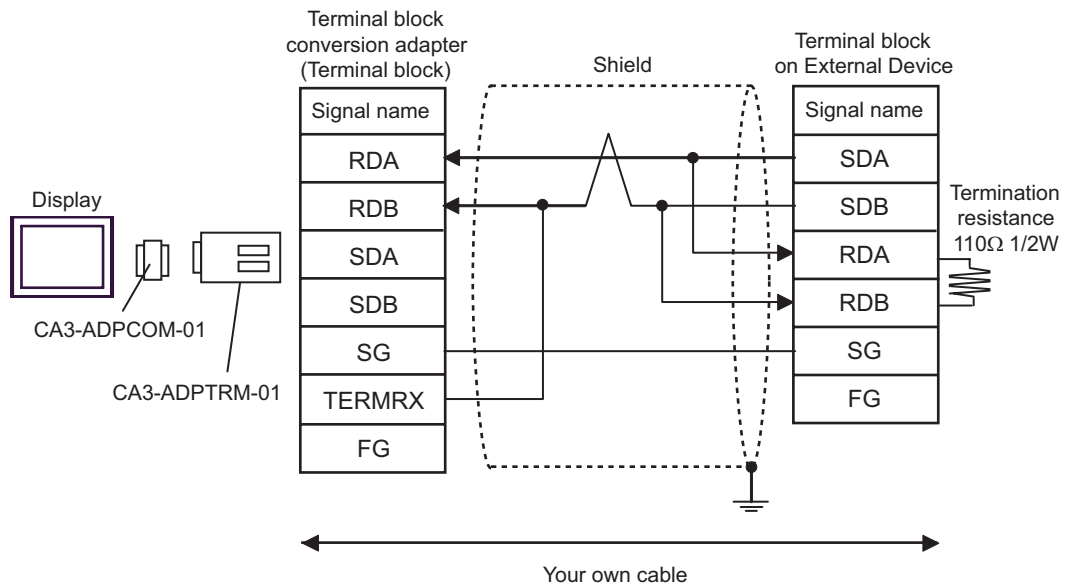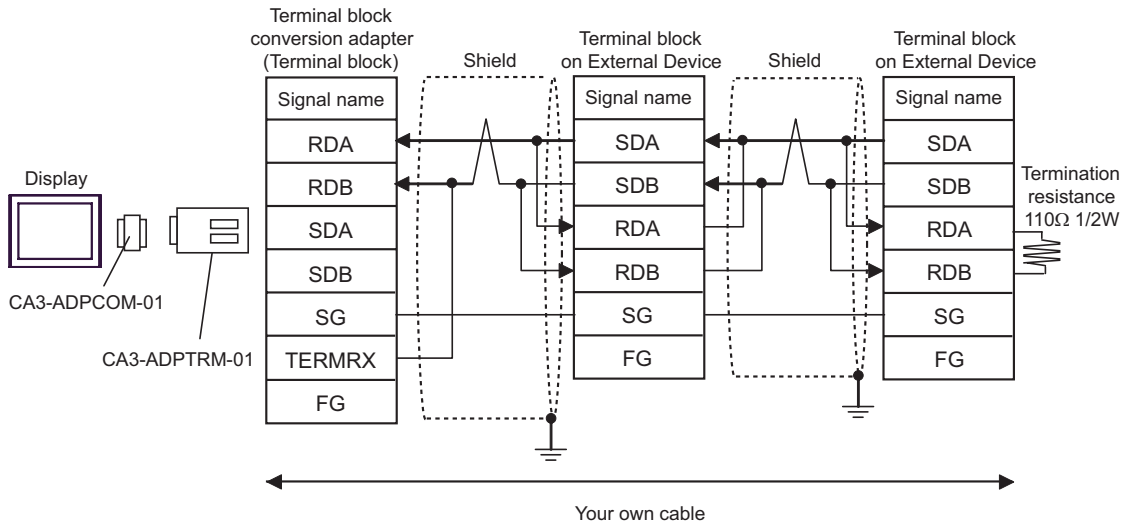
• 1:1 connection

• 1:n connection

E) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion
adapter (CA3-ADPTRM-01) by Pro-face and your own cable
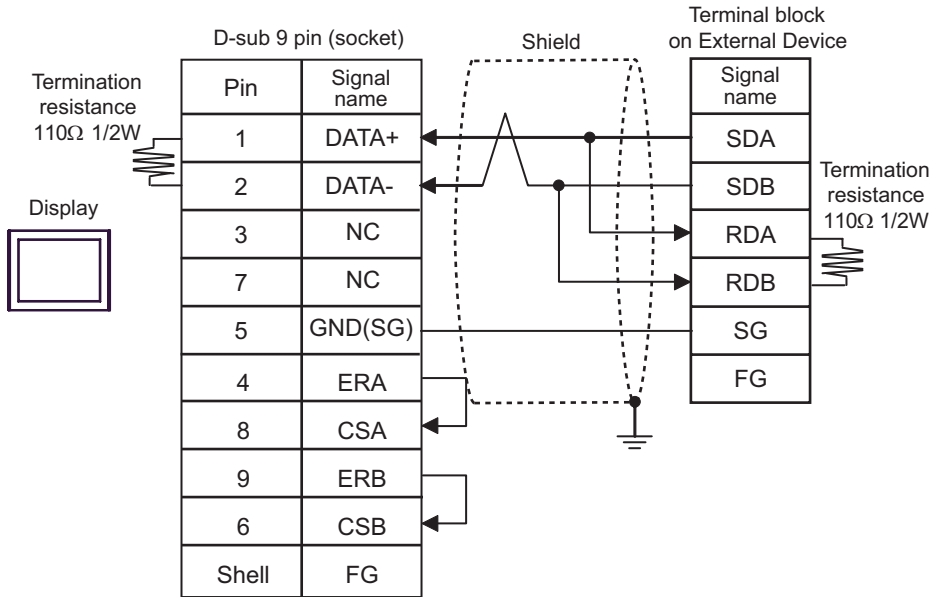
• 1:1 connection

Your own cable

• 1:n connection

Your own cable

F) When making your own cable

• 1:1 connection

D-sub 9 pin (socket)		Shield	Terminal block on External Device
Pin	Signal name		Signal name
1	DATA+		SDA
2	DATA-		SDB
3	NC		RDA
7	NC		RDB
5	GND(SG)		SG
4	ERA		FG
8	CSA		
9	ERB		
6	CSB		
Shell	FG		

Termination resistance 110Ω 1/2W

Display

Termination resistance 110Ω 1/2W

• 1:n connection

D-sub 9 pin (socket)		Shield	Terminal block on External Device	Shield	Terminal block on External Device
Pin	Signal name		Signal name		Signal name
1	DATA+		SDA		SDA
2	DATA-		SDB		SDB
3	NC		RDA		RDA
7	NC		RDB		RDB
5	GND(SG)		SG		SG
4	ERA		FG		FG
8	CSA				
9	ERB				
6	CSB				
Shell	FG				

Termination resistance 110Ω 1/2W

Display

Termination resistance 110Ω 1/2W
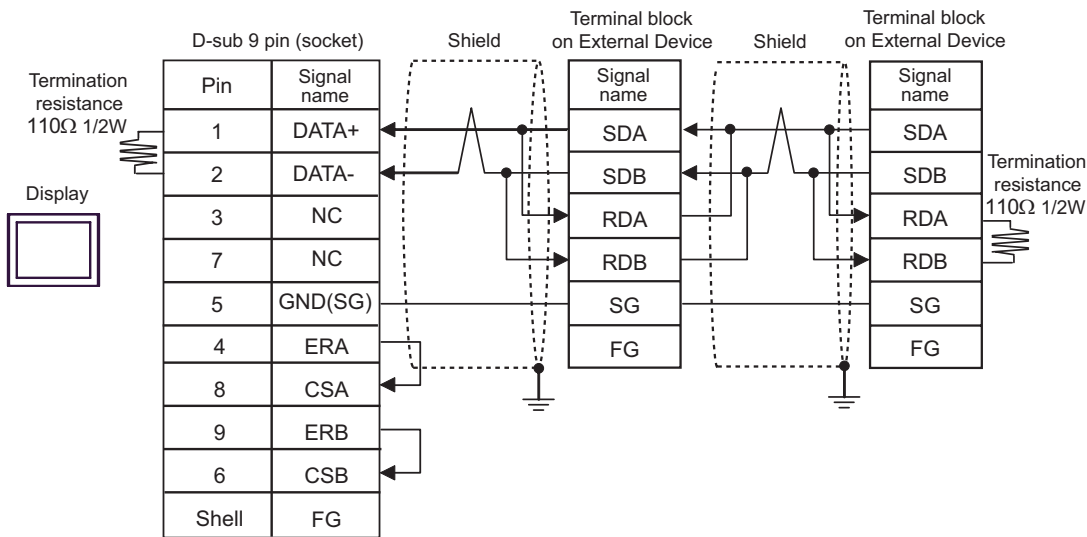
6   Supported Device

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

☐▭▭▭ This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Input Relay	X000 - X377	X000 - X360		⌐oct**8**⌐
Output Relay	Y000 - Y377	Y000 - Y360		*1
Auxiliary Relay	M0000 - M7679	M0000 - M7664		⌐÷**16**⌐
Special Auxiliary Relay	M8000 - M8511	M8000 - M8496		
State	S0000 - S4095	S0000 - S4080		
Timer (Contact)	TS000 - TS511	------		
Counter (Contact)	CS000 - CS255	------	⌐**L / H**⌐	
Timer (Current Value)	------	TN000 - TN511		
Counter (Current Value)	------	CN000 - CN199		*2
		CN200 - CN255		
Data Register	------	D0000 - D7999		⌐Bit**F**⌐
Special Data Register	------	D8000 - D8511		*3 *4
Extension Register	------	R00000 - R32767		⌐Bit**F**⌐ *5

*1   Specify word address only for the divisible value by 20oct. (Example: X0, X20, X40..., X360)

*2   CN200 to CN255 are 32-bit length counter.
       Do not step over 32-bit counter to specify the counter address.
       For example, when you read or write more than 2 words from CN199, error messages such as "Out of range devices exist in write devices (Address: (Device Address))" or "Out of range devices exist in read devices (Address: (Device Address))" are displayed.

*3   D1000 to D2499 in FX1S Series and FX0N Series are file registers. You can specify the file capacity by the ladder software to access to the file register. When you access the address of the nonexistent file register, error response (error code: 06(0x06)) will be returned from External Device.

*4   Do not step over the special data register to specify the data register address. For example, when you read or write more than 2 words from D7999, error messages such as "Out of range devices exist in write devices (Address: (Device Address))" or "Out of range devices exist in read devices (Address: (Device Address))" are displayed.

*5   Supported only by FX3UC, FX3U.

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

      Cf.   GP-Pro EX Reference Manual "Appendix 1.4 LS Area (only for direct access method)"

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

   ☞ "Manual Symbols and Terminology"

7   Device Code and Address Code

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

Device	Device Name	Device Code (HEX)	Address Code
Input Relay	X	0080	Value of word address divided by 0x10
Output Relay	Y	0081	Value of word address divided by 0x10
Auxiliary Relay	M	0082	Value of word address divided by 16
Special Auxiliary Relay	M	0083	Value of word address divided by 16
State	S	0087	Value of word address divided by 16
Timer (Current Value)	TN	0060	Word Address
Counter (Current Value) [CN000 - CN199]	CN	0061	Word Address
Counter (Current Value) [CN200 - CN255]	CN	0064	Word Address
Data Register	D	0000	Word Address
Special Data Register	D	0001	Word Address
Extension Register	R	000F	Word Address

8 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs.Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of External Device where error occurs, or error codes received from 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[02])"

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