



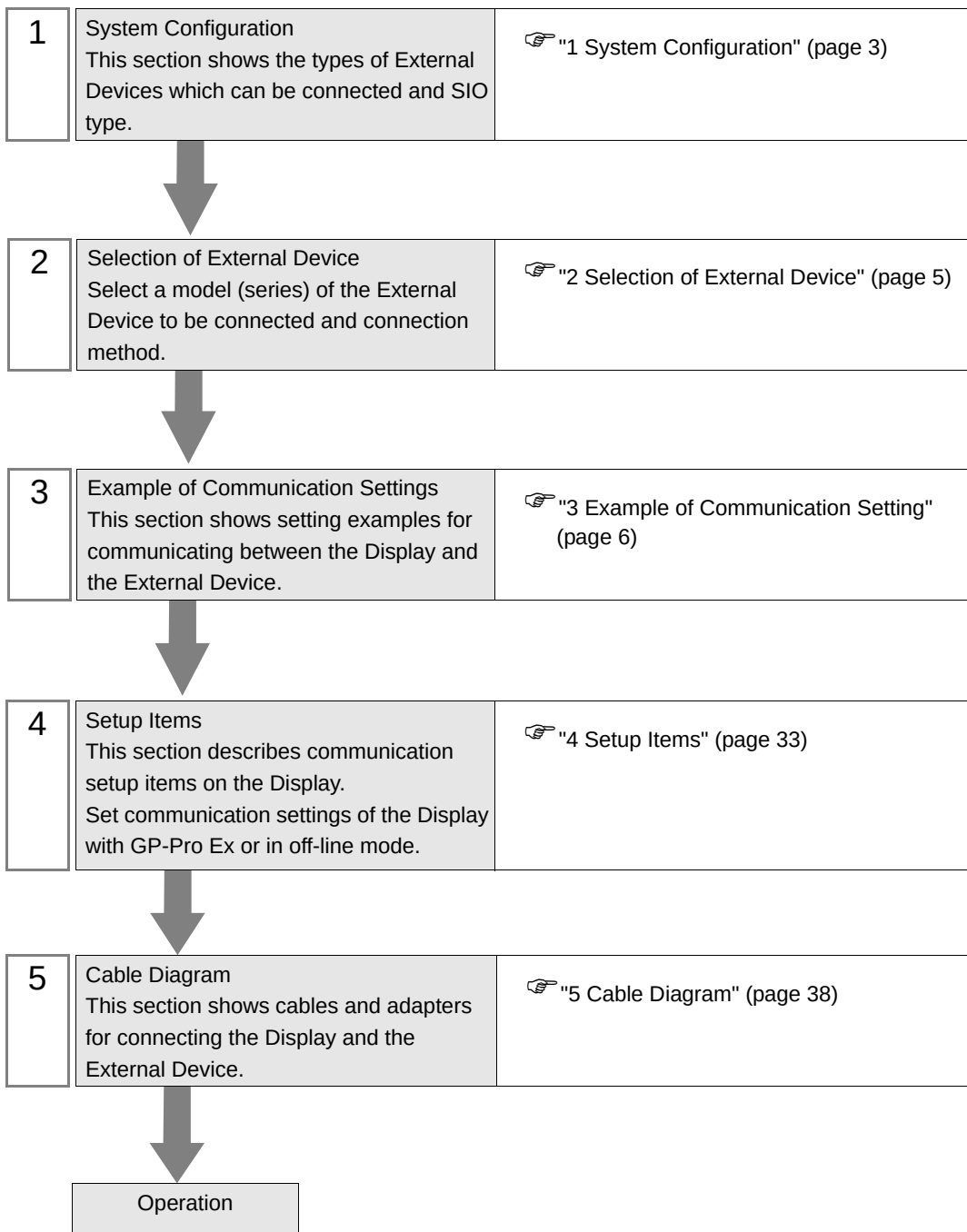
FP Series Computer Link SIO Driver

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Introduction

This manual describes how to connect the Display (GP3000 series) 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 Matsushita Electric Works, Ltd. and the Display are connected is shown.

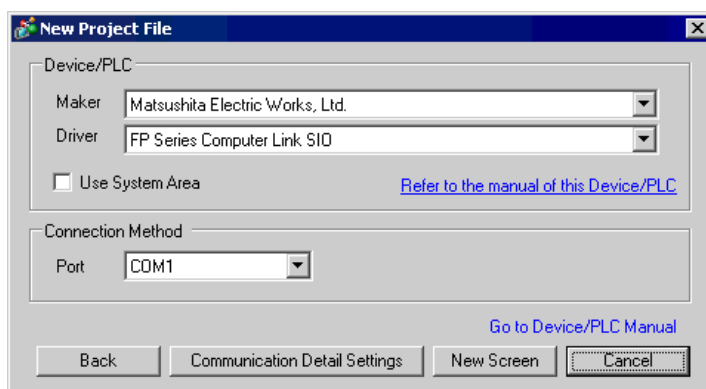
Series	CPU	Link I/F		SIO Type	Setting Example	Cable Diagram
FP	FPΣ	Tool port of the control unit		RS232C	Setting Example 1 (page 6)	" Cable Diagram 8" (page 53)
		AFPG801				" Cable Diagram 1" (page 38)
		AFPG802				" Cable Diagram 2" (page 39)
		AFPG806				" Cable Diagram 4" (page 45)
		AFPG803		RS485 (2wire)	Setting Example 2 (page 8)	" Cable Diagram 3" (page 40)
		AFPG806				" Cable Diagram 5" (page 46)
	FP0	Tool port of the control unit		RS232C	Setting Example 3 (page 10)	" Cable Diagram 8" (page 53)
		RS232C port of the control unit*1		RS232C		" Cable Diagram 6" (page 51)
	FP1	Tool port of the control unit		RS232C	Setting Example 4 (page 12)	" Cable Diagram 9" (page 54)
		RS232C port of the control unit*2		RS232C		" Cable Diagram 7" (page 52)
	FP-M	Tool port of the control unit		RS232C	Setting Example 5 (page 14)	" Cable Diagram 8" (page 53)
		RS232C port of the control unit*3		RS232C		" Cable Diagram 7" (page 52)
	FP2 FP2SH	Tool port of the control unit		RS232C	Setting Example 6 (page 16)	" Cable Diagram 8" (page 53)
		RS232C port of the control unit		RS232C		" Cable Diagram 7" (page 52)
		AFP2462		RS232C		" Cable Diagram 7" (page 52)
		AFP2465*4	AFP2803	RS232C	Setting Example 6 (page 16)	" Cable Diagram 7" (page 52)
			AFP2804	RS422 (4wire)	Setting Example 7 (page 19)	" Cable Diagram 11" (page 56)
			AFP2805	RS485 (2wire)	Setting Example 8 (page 21)	" Cable Diagram 3" (page 40)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FP	FP3	Tool port of the control unit	RS232C	Setting Example 9 (page 23)	" Cable Diagram 10" (page 55)
		AFP3462	RS232C		" Cable Diagram 7" (page 52)
	FP-e	Tool port of the control unit	RS232C	Setting Example 10 (page 25)	" Cable Diagram 8" (page 53)
		AFPE224300	RS232C		" Cable Diagram 12" (page 59)
		AFPE224305			
		AFPE214325			
		AFPE224302	RS485 (2wire)	Setting Example 11 (page 27)	" Cable Diagram 13" (page 60)
		AFPE214322			
	FP10S	RS232C port of the control unit	RS232C	Setting Example 12 (page 29)	" Cable Diagram 7" (page 52)
		AFP3462	RS232C		" Cable Diagram 7" (page 52)
	FP10SH	Tool port of the control unit	RS232C	Setting Example 12 (page 29)	" Cable Diagram 14" (page 65)
		RS232C port of the control unit	RS232C		" Cable Diagram 7" (page 52)
		AFP3462	RS232C		" Cable Diagram 7" (page 52)

- *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 multicomunication unit of FP2/FP2SH.
AFP2803, AFP2084 and AFP2085 are the communication blocks attached to AFP2465.

2 Selection of External Device

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "Matsushita Electric Works, Ltd.".
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)
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 "6.13.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting" Cf. GP3000 Series User Manual "4.3.6 System Area Setting"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

Examples of communication settings of the Display and the External Device, recommended by 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 setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker: Matsushita Electric Works, Ltd. Series: FP Series Computer Link SIO Port: COM1

Text Data Mode: 2 [Change](#)

Communication Settings

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

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☐ NONE ☐ EVEN ☒ ODD

Stop Bit: ☒ 1 ☐ 2

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

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

RI / VCC: ☒ RI ☐ VCC

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

Default

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Monitor Register=ON, Station No.=1, Command Header=<

◆ Device Setting

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

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

Individual Device Settings

PLC1

☒ Monitor Register

Command Header: ☐ % ☒ < ☐ >

Station No.: 1

Default

OK (O) Cancel

■ 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 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 Device, click from [Device-Specific Settings] of [Device/PLC Settings] 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 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 Device, click  from [Device-Specific Settings] of [Device/PLC Settings] 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 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 Device, click  from [Device-Specific Settings] of [Device/PLC Settings] 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 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 Device, click from [Device-Specific Settings] of [Device/PLC Settings] 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 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 Device, click from [Device-Specific Settings] of [Device/PLC Settings] 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 setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker: Matsushita Electric Works, Ltd. Series: FP Series Computer Link SIO Port: COM1

Text Data Mode: 2 [Change](#)

Communication Settings

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

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☐ NONE ☐ EVEN ☒ ODD

Stop Bit: ☒ 1 ☐ 2

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

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

RI / VCC: ☒ RI ☐ VCC

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

Default

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Monitor Register=ON, Station No.=1, Command Header=<

◆ Device Setting

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

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

Individual Device Settings

PLC1

☒ Monitor Register

Command Header: ☐ % ☒ <

Station No.: 1

Default

OK Cancel

■ Setting of External Device

- ◆ When using the multicomcommunication 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 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 Device, click from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

■ Setting of External Device

- ◆ When using the multicomcommunication 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 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 Device, click from [Device-Specific Settings] of [Device/PLC Settings] 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 setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: Matsushita Electric Works, Ltd. Series: FP Series Computer Link SIO Port: COM1

Text Data Mode: 2

Communication Settings

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

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☐ NONE ☐ EVEN ☒ ODD

Stop Bit: ☒ 1 ☐ 2

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

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

RI / VCC: ☒ RI ☐ VCC

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

Default

Device-Specific Settings

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

No. Device Name: 1

Device Name: PLC1

Settings

Monitor Register=DN, Station No.=1, Command Header=<

◆ Device Setting

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

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

Individual Device Settings

PLC1

☒ Monitor Register

Command Header: ☒ % ☐ <

Station No.: 1

Default

OK (O) Cancel

■ 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 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 Device, click  from [Device-Specific Settings] of [Device/PLC Settings] 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 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 Device, click  from [Device-Specific Settings] of [Device/PLC Settings] 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
SW6	ON	Baud Rate
SW7	ON	
SW8	OFF (19200)	
SW8	OFF (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

4 Setup Items

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

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

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

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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

Device/PLC 1

Summary

Maker Series Port [Change Device/PLC](#)

Text Data Mode [Change](#)

Communication Settings

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

Speed

Data Length ☐ 7 ☒ 8

Parity ☐ NONE ☐ EVEN ☒ ODD

Stop Bit ☒ 1 ☐ 2

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

Timeout (sec)

Retry

Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC

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

Device-Specific Settings

Allowable No. of Device/PLCs

No. Device Name Settings

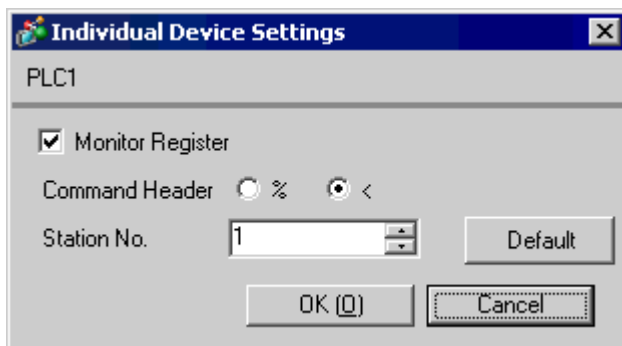
Monitor Register=ON, Station No.=1, Command Header=<

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

■ Device Setting

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

When [Allowable No. of Device/PLCs] is multiple, you can click  from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.



Setup Items	Setup Description
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.
Station No.	Use an integer 1 to 32 to enter the station number of the External Device to communicate.

4.2 When setting in off-line mode

NOTE

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

Cf. GP3000 Series User Manual "Chapter 4 Settings"

■ Communication Settings

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

Comm.	Device	Option		
FP Series Computer Link SIO [COM1] Page 1/1				
SIO Type	RS232C			
Speed	19200			
Data Length	☐ 7 ☒ 8			
Parity	☐ NONE ☐ EVEN ☒ ODD			
Stop Bit	☒ 1 ☐ 2			
Flow Control	ER(DTR/CTS)			
Timeout(s)	3			
Retry	2			
Wait To Send(ms)	0			
Exit		Back		2005/09/02 13:19:17

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 (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.
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].

Comm.	Device	Option		
FP Series Computer Link SIO		[COM1]	Page 1/1	
Device/PLC Name PLC1				
Monitor Register ☐ Disable ☒ Enable Command Header ☐ % ☒ < Station No. 1 ▼ ▲				
Exit		Back		2005/09/02 13:19:19

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])
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	Setting of communication format. Select "%" when the External Device to communicate is FP2, FP2SH, FP3, FP10S, FP10SH, and select "<" for other models.
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].

Comm.	Device	Option		

FP Series Computer Link SIO [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 13:19:21
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Setup Items	Setup Description
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type.

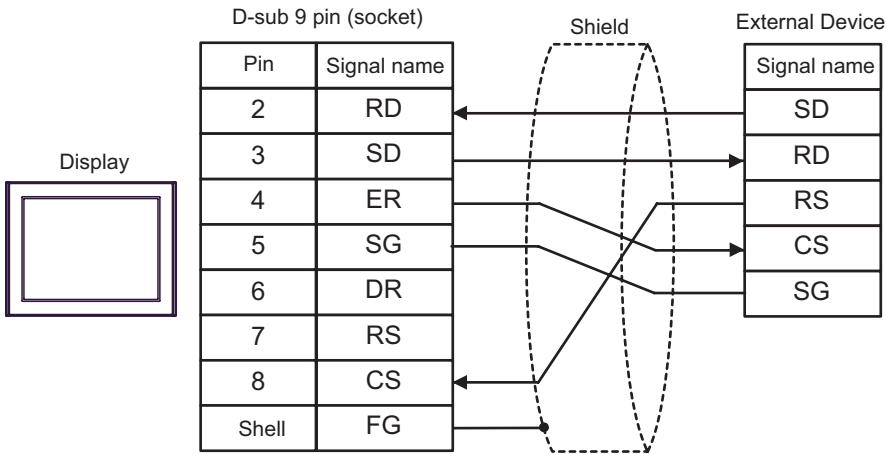
5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Matsushita Electric Works, 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.

Cable Diagram 1

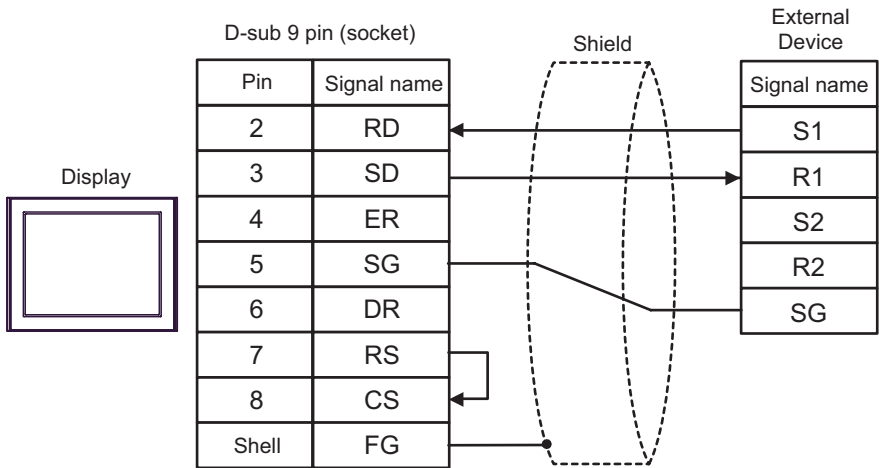
Display (Connection Port)	Cable	Notes
GP (COM1)	Your own cable	The cable length must be 15m or less.



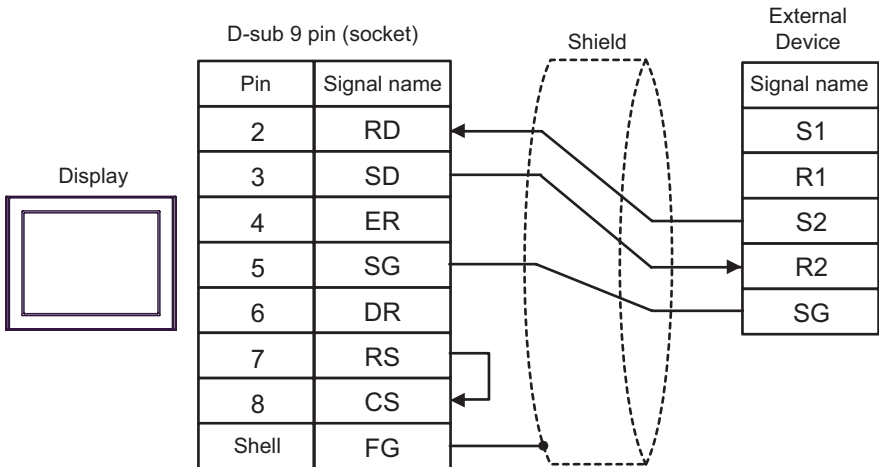
Cable Diagram 2

Display (Connection Port)	Cable		Notes
GP (COM1)	A	Your own cable	The cable length must be 15m or less.
	B	Your own cable	

A) When using your own cable



B) When using your own cable



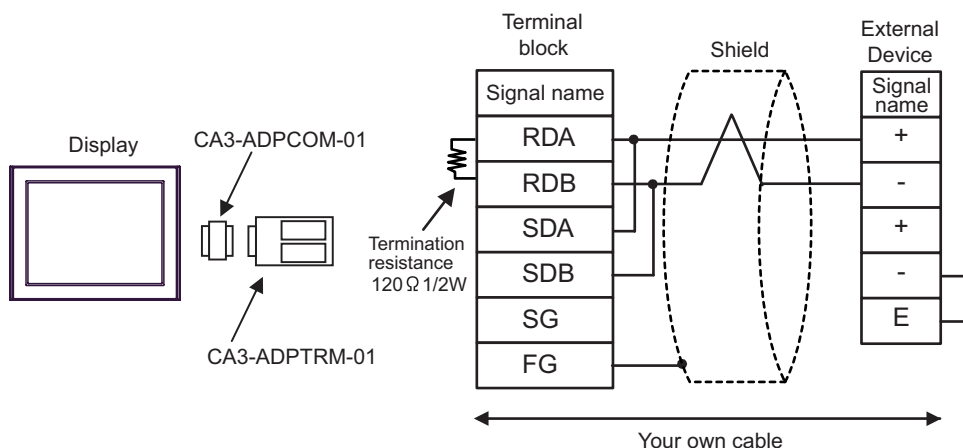
Cable Diagram 3

Display (Connection Port)	Cable		Notes
GP* ¹ (COM1) AGP-3302 (COM2)	A	COM port conversion adapter (for COM1) 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 1200m or less.
	B	Your own cable	
GP* ¹ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302

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

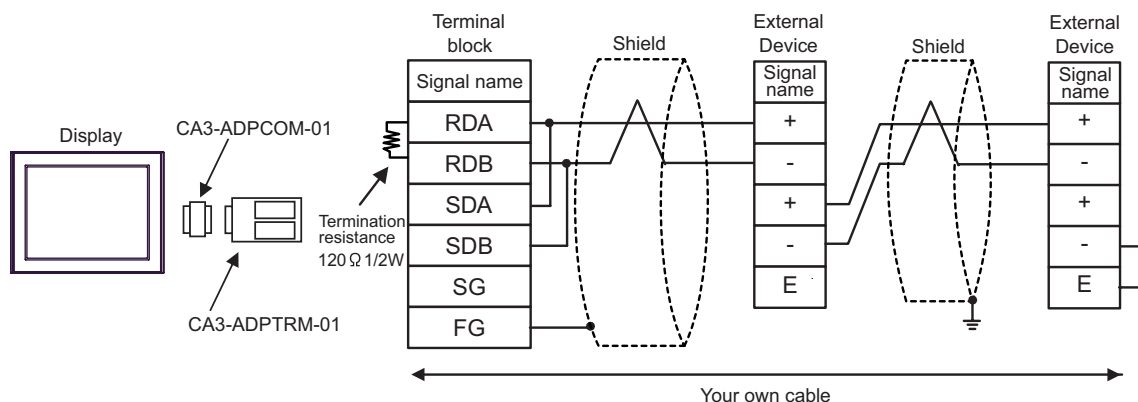
- 1:1 Connection



IMPORTANT

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

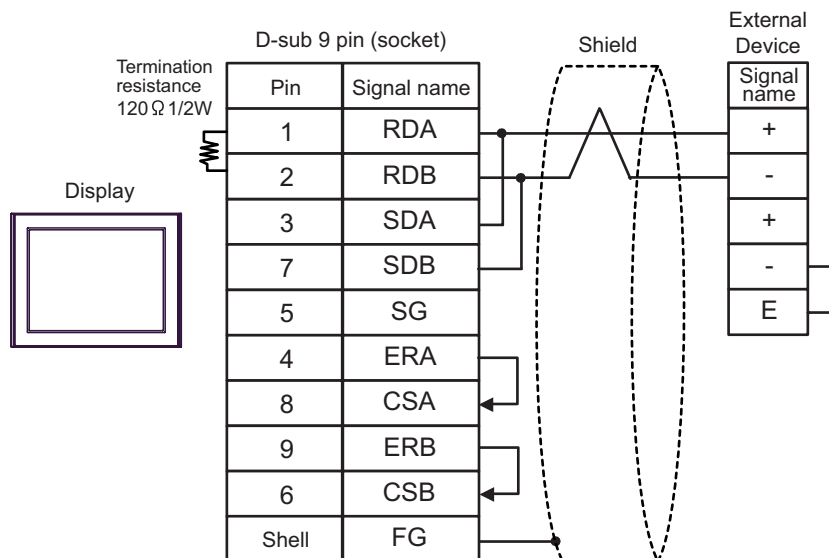
- 1:n Connection

**IMPORTANT**

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

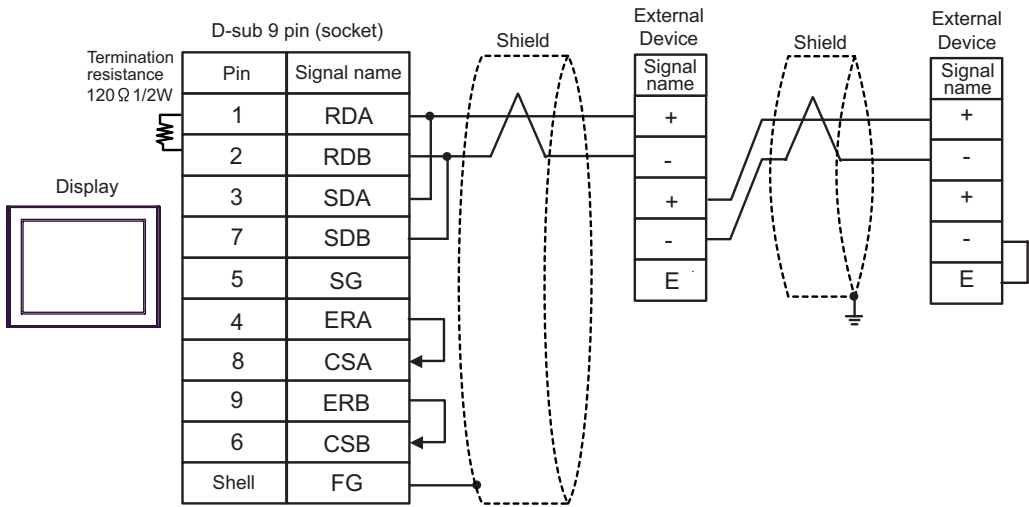
B) When using your own cable

- 1:1 Connection

**IMPORTANT**

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

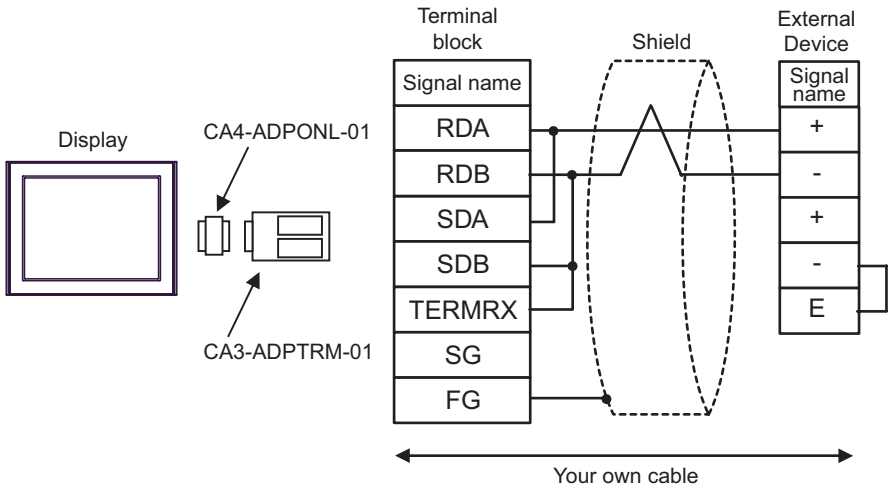
• 1:n Connection



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

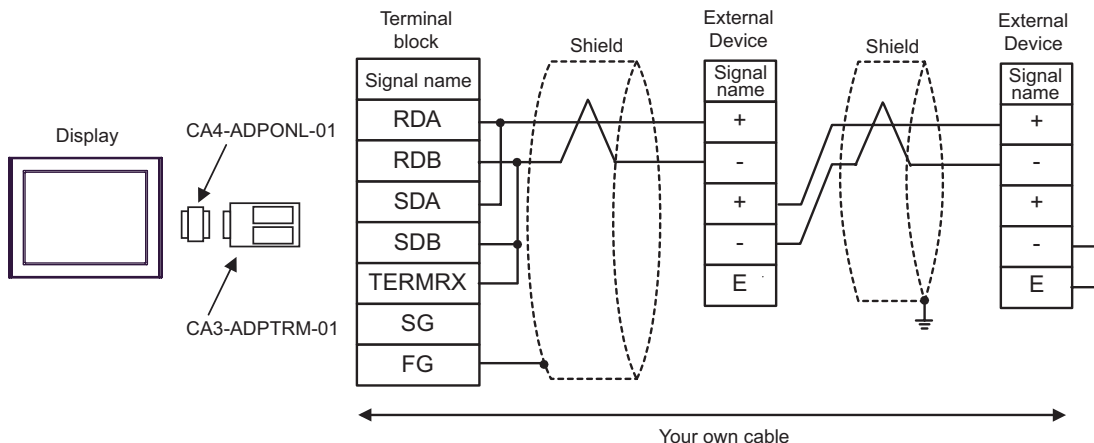
C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

• 1:1 Connection



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

- 1:n Connection

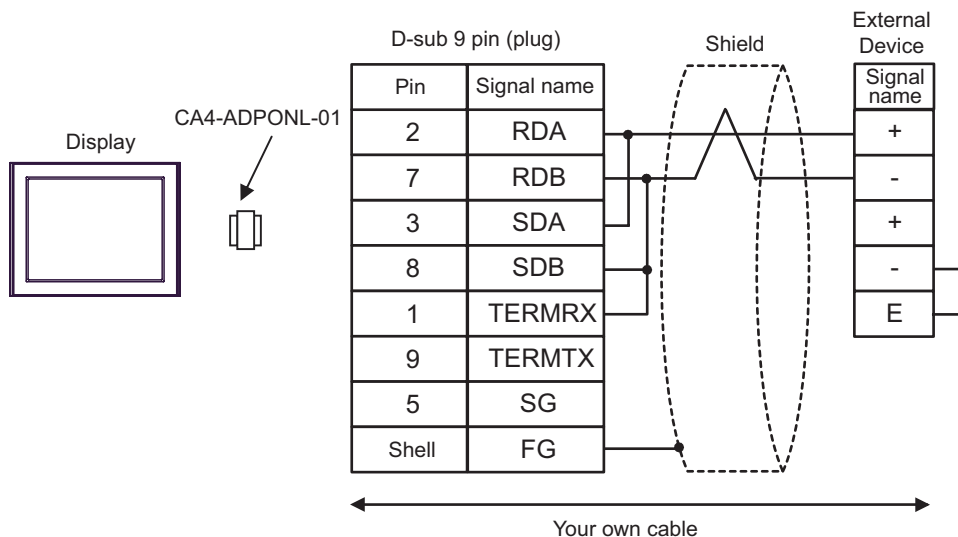


IMPORTANT

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

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

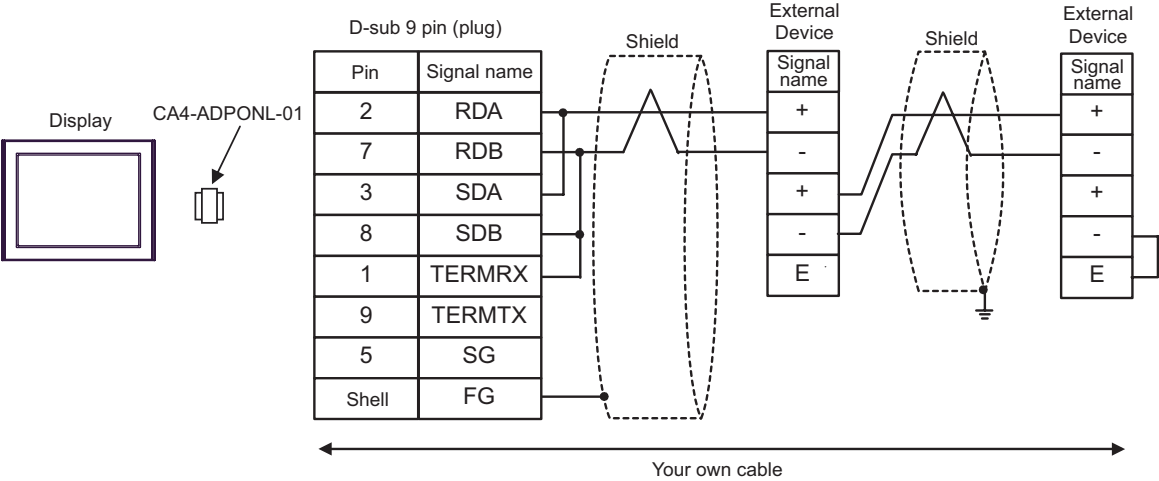
- 1:1 Connection



IMPORTANT

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

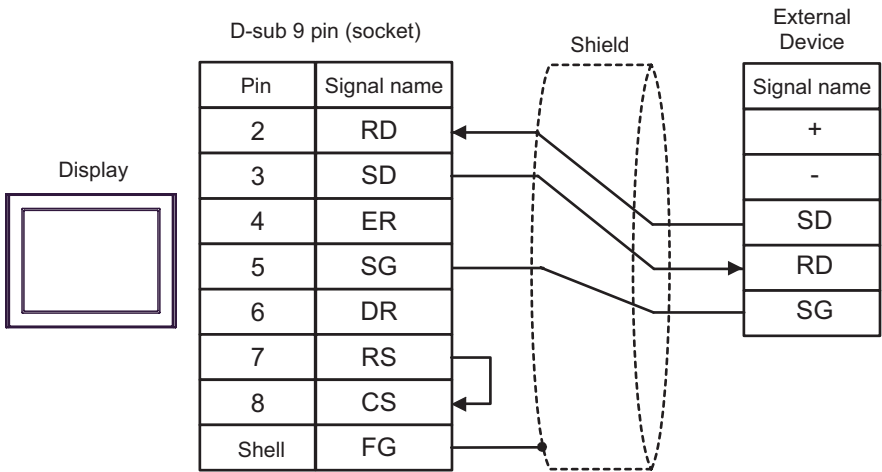
- 1:n Connection



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
GP (COM1)	Your own cable	The cable length must be 15m or less.



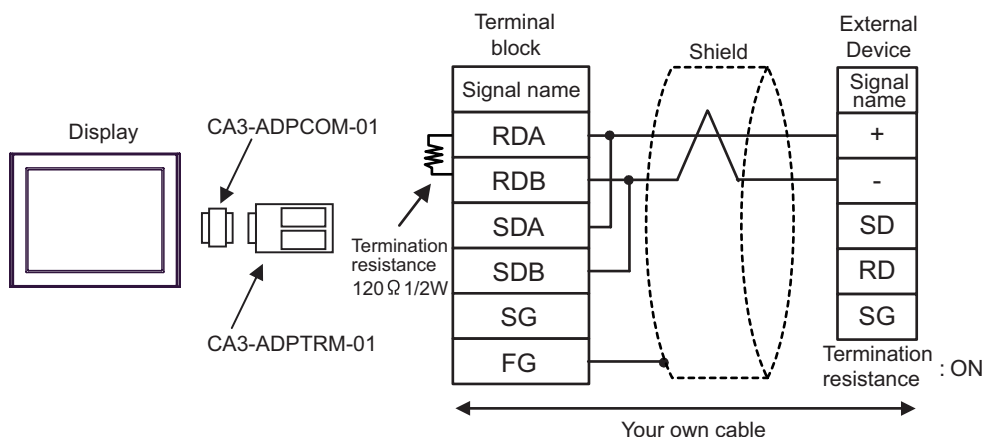
Cable Diagram 5

Display (Connection Port)	Cable		Notes
GP*1 (COM1) AGP-3302 (COM2)	A	COM port conversion adapter (for COM1) 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 1200m or less.
	B	Your own cable	
GP *1(COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302

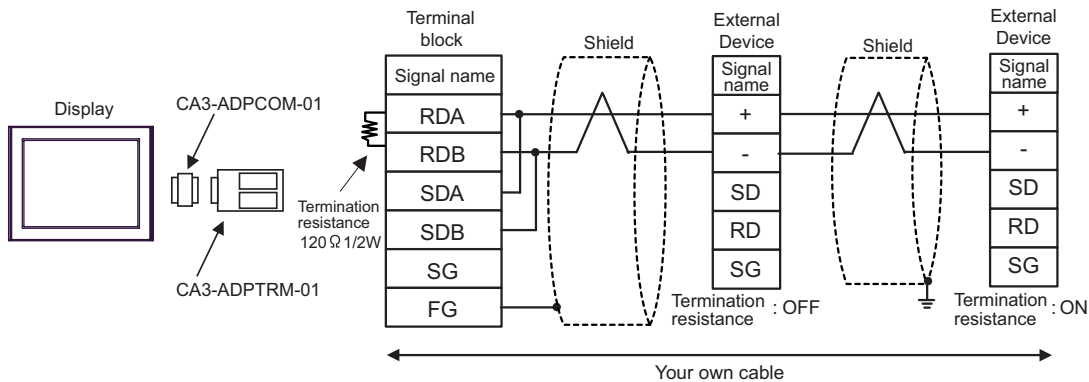
A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

- 1:1 Connection



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

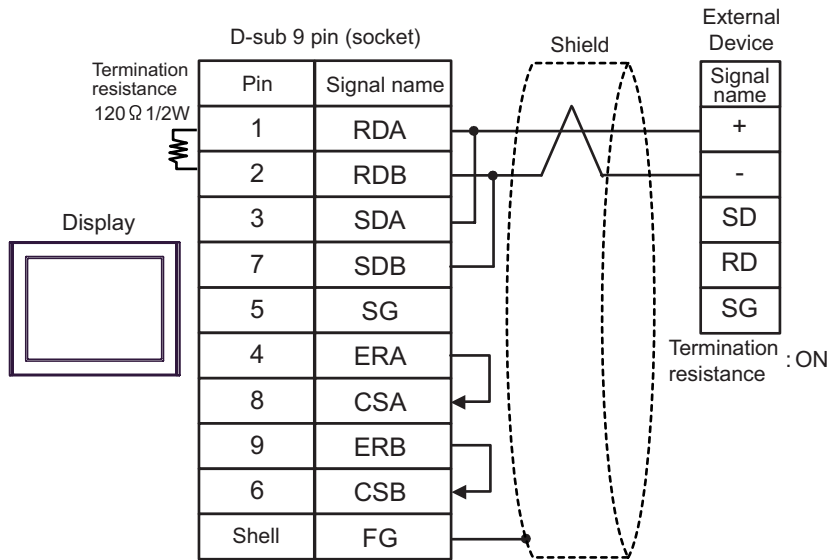
- 1:n Connection



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.

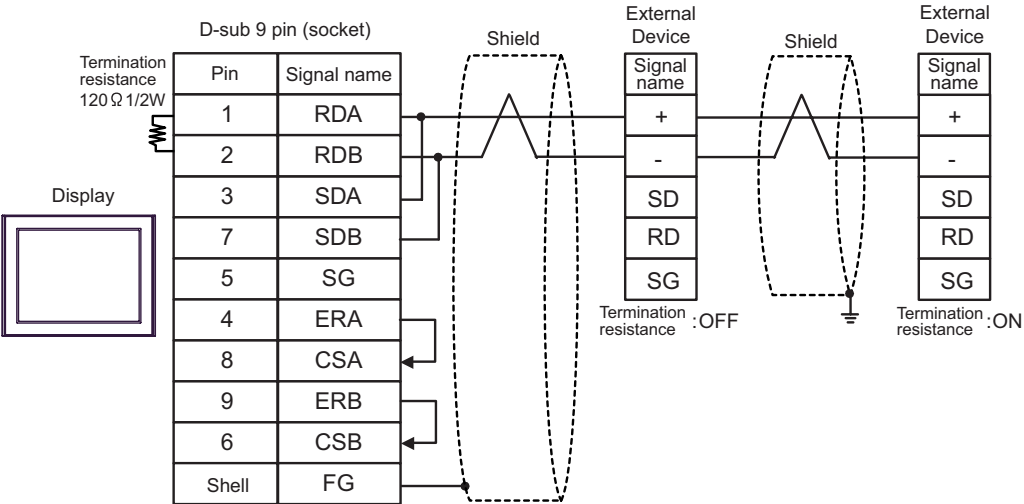
B) When using your own cable

- 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.

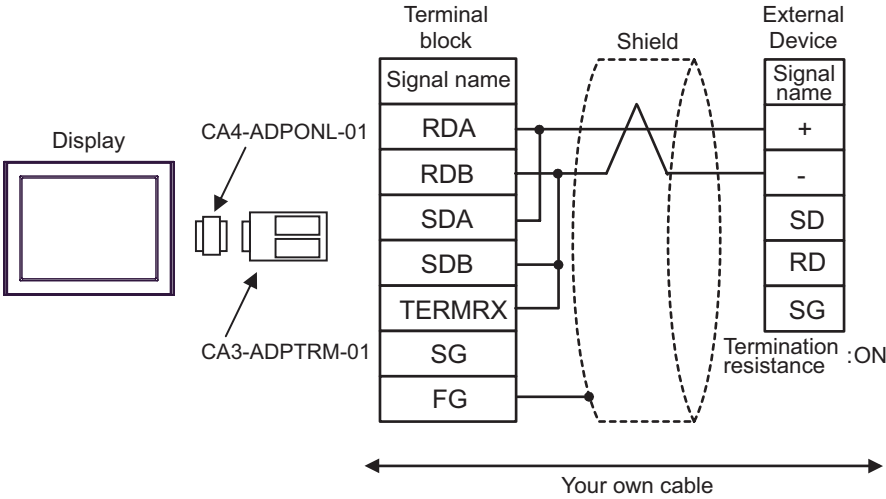
- 1:n Connection



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.

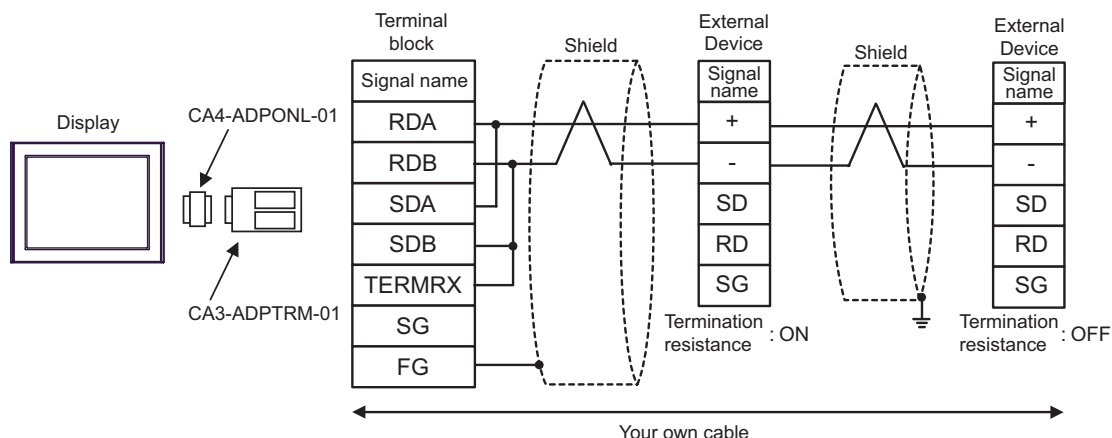
C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

- 1:1 Connection



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

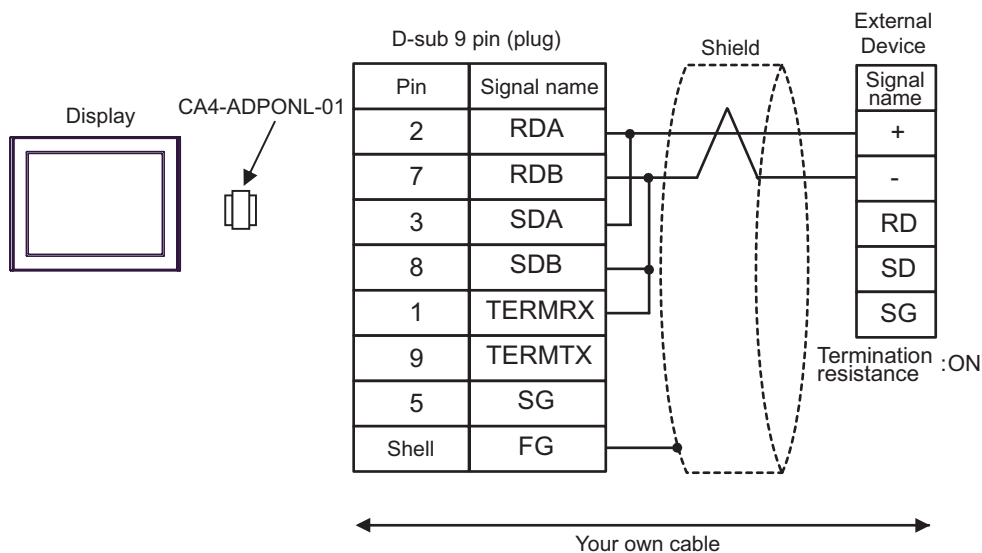
- 1:n Connection



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.

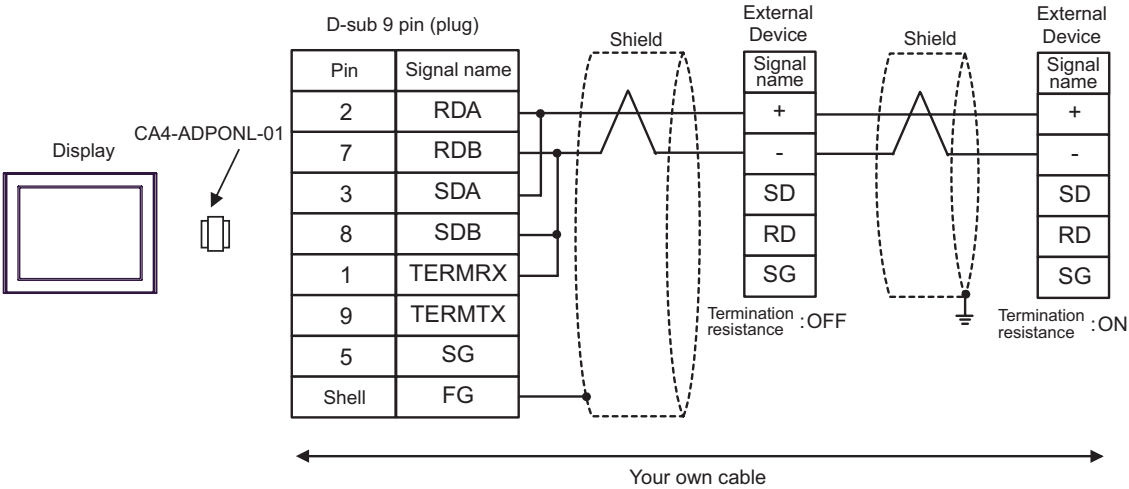
D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

- 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.

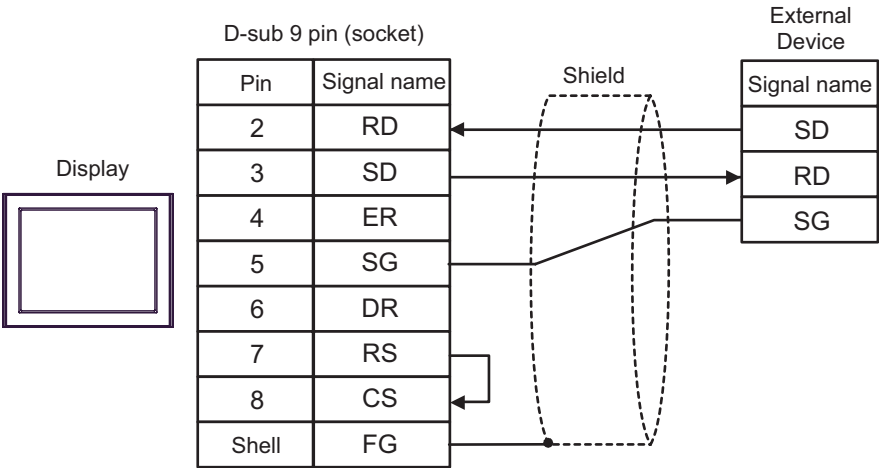
- 1:n Connection



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.

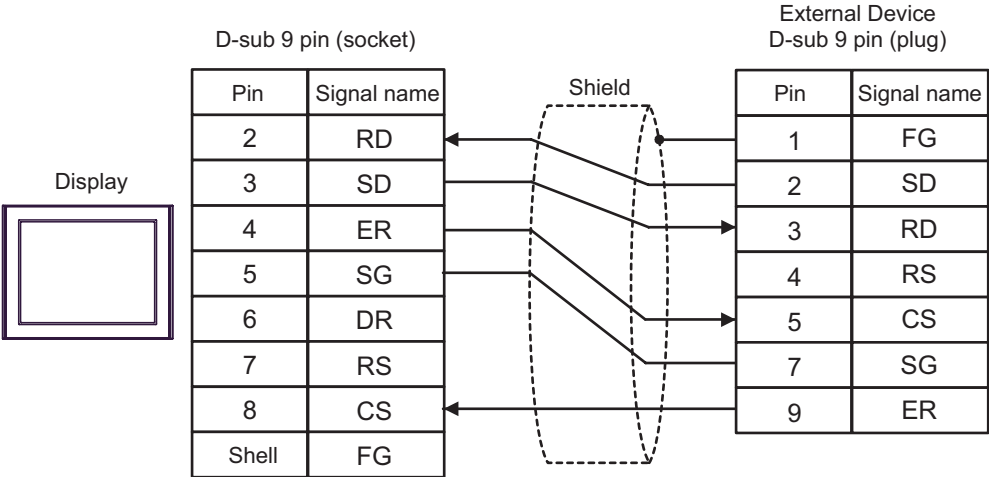
Cable Diagram 6

Display (Connection Port)	Cable	Notes
GP (COM1)	Your own cable	The cable length must be 3m or less.



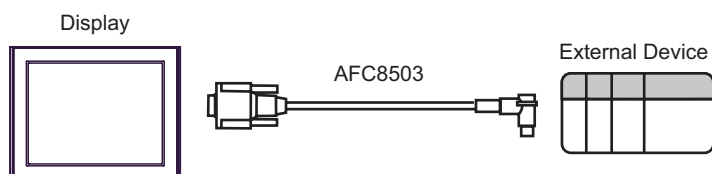
Cable Diagram 7

Display (Connection Port)	Cable	Notes
GP (COM1)	Your own cable	The cable length must be 15m or less. When you use the multicomcommunication unit (AFP2465) in FP2, FP2SH and set the speed to 115200 bps or faster, however, the cable length must be 3m or less.



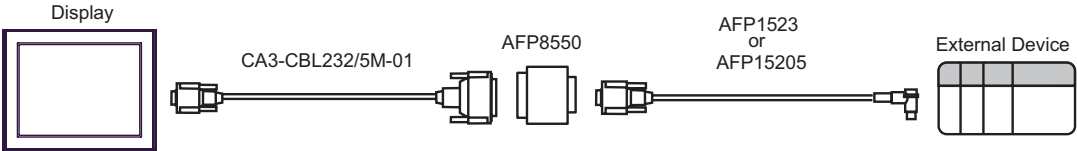
Cable Diagram 8

Display (Connection Port)	Cable	Notes
GP (COM1)	FP0/FP2/FP-M ↔ DOS-V PC connection cable by Matsushita Electric Works, Ltd. AFC8503 (3m)	



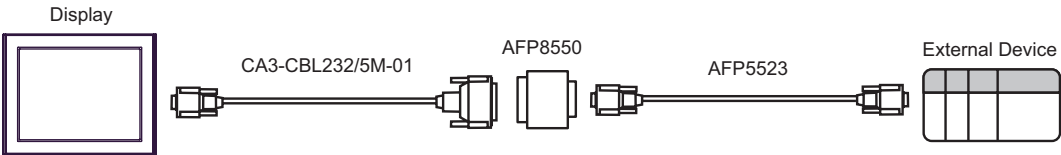
Cable Diagram 9

Display (Connection Port)	Cable	Notes
GP (COM1)	RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Matsushita Electric Works, Ltd. AFP8550 + Programming cable by Matsushita Electric Works, Ltd. AFP1523 (3m) or AFP15205 (0.5m)	



Cable Diagram 10

Display (Connection Port)	Cable	Notes
GP (COM1)	RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Matsushita Electric Works, Ltd. AFP8550 + Programming cable by Matsushita Electric Works, Ltd. AFP5523 (3m)	

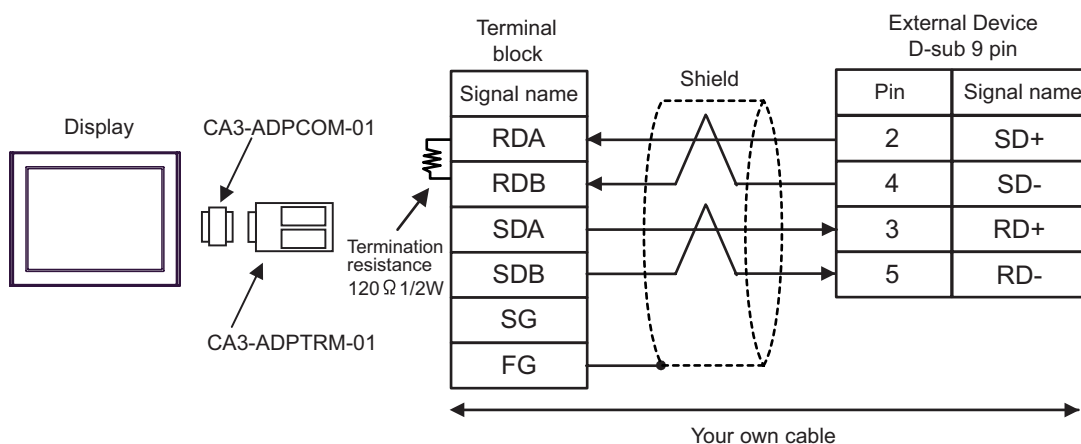


Cable Diagram 11

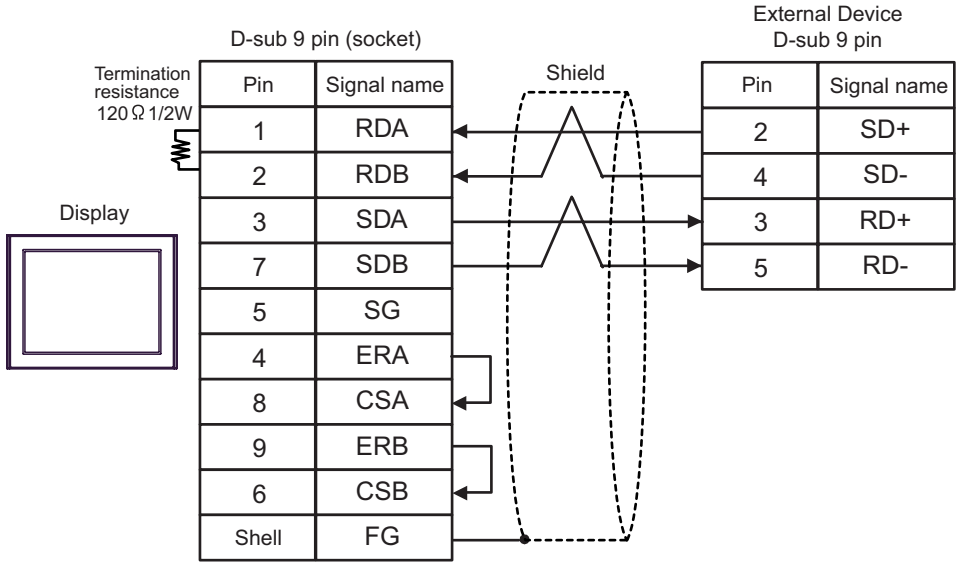
Display (Connection Port)	Cable		Notes
GP*1 (COM1) AGP-3302 (COM2)	A	COM port conversion adapter (for COM1) by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 400m or less.
	B	Your own cable	
GP *1(COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302

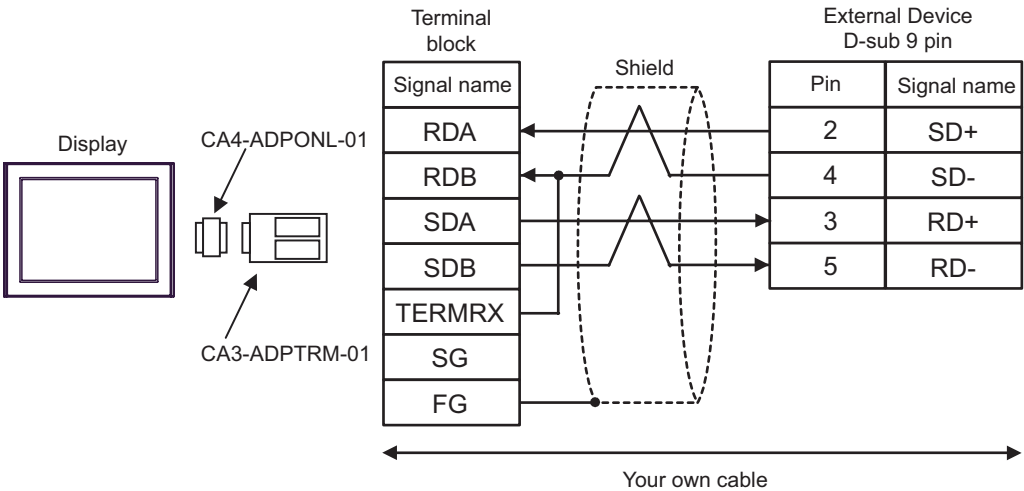
A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable



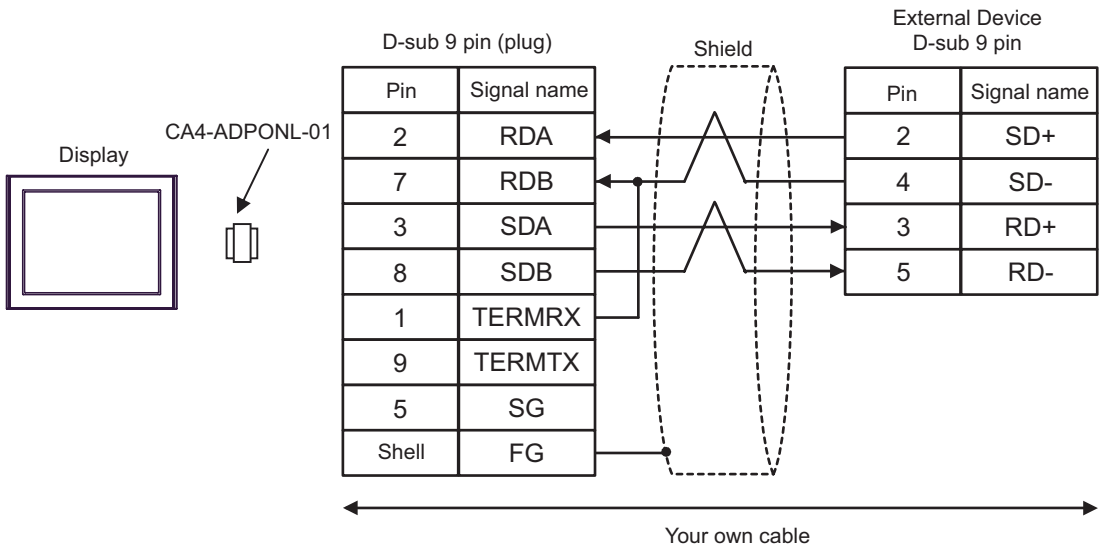
B) When using your own cable



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

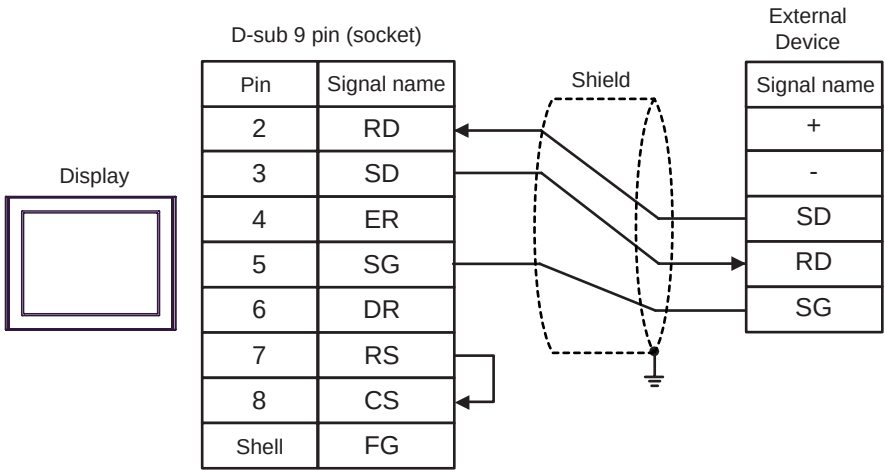


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable



Cable Diagram 12

Display (Connection Port)	Cable	Notes
GP (COM1)	Your own cable	The cable length must be 15m or less.



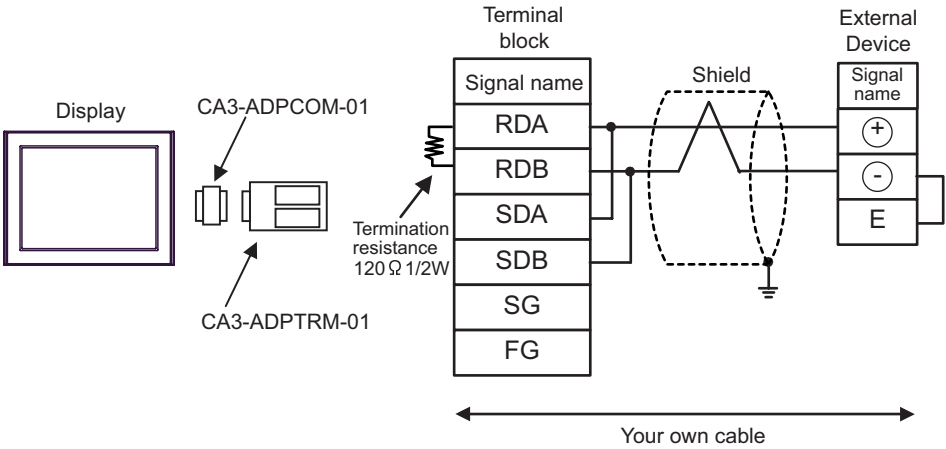
Cable Diagram 13

Display (Connection Port)	Cable		Notes
GP*1 (COM1) AGP-3302 (COM2)	A	COM port conversion adapter (for COM1) 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 1200m or less.
	B	Your own cable	
GP *1(COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

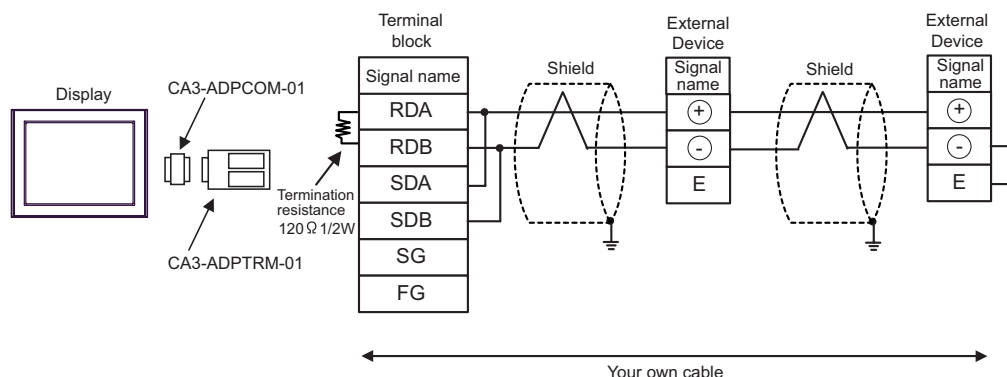
*1 All GP models except AGP-3302

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



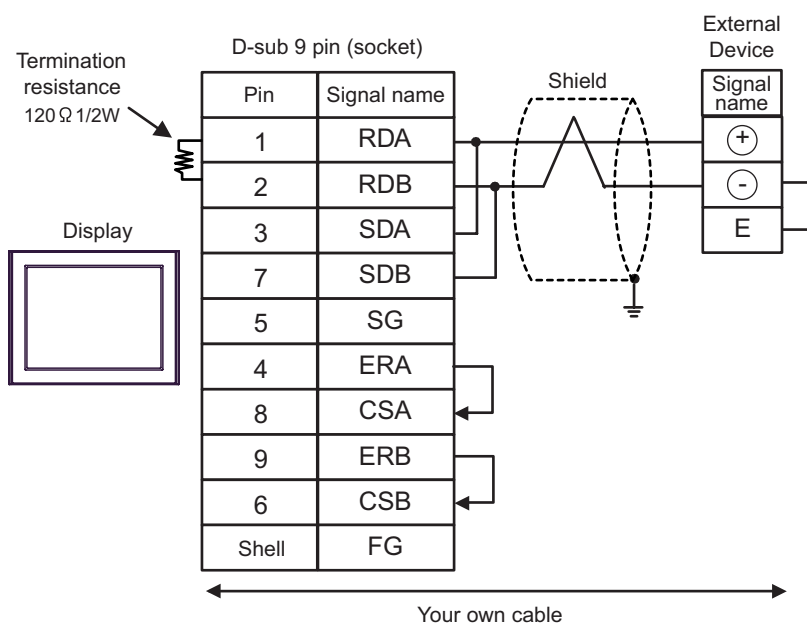
- 1:n Connection


IMPORTANT

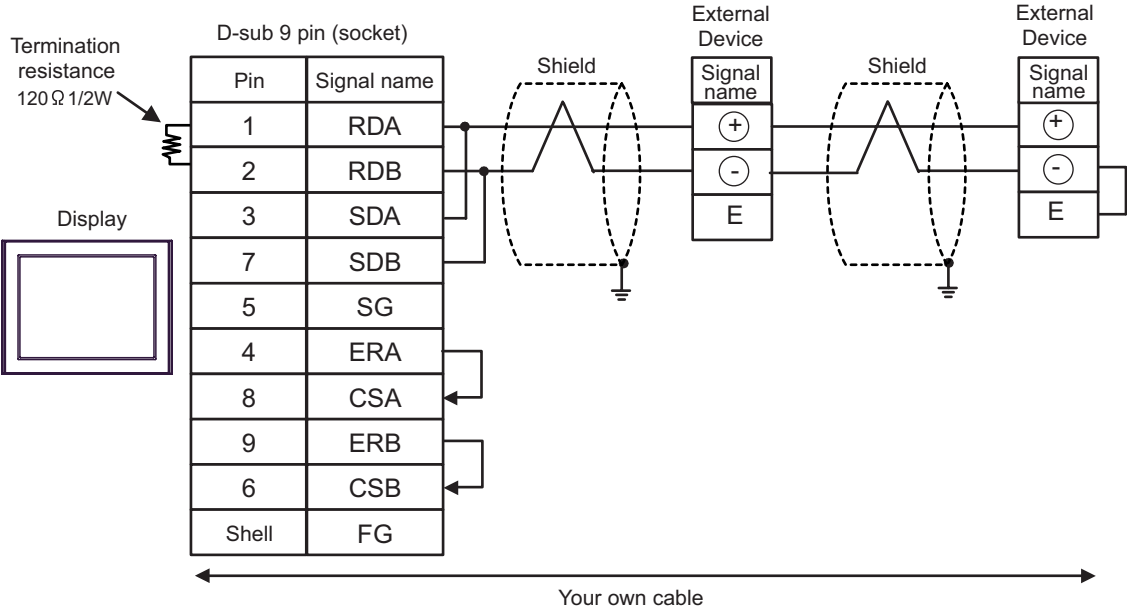
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

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

- 1:1 Connection



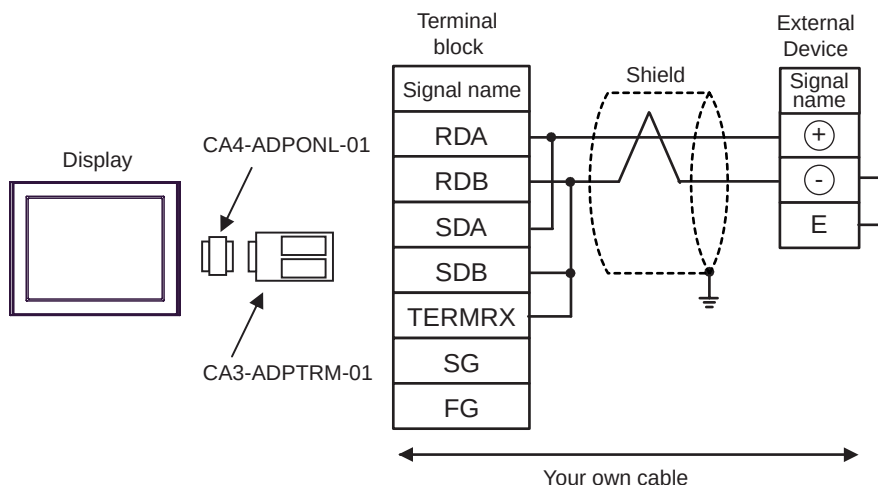
• 1:n Connection



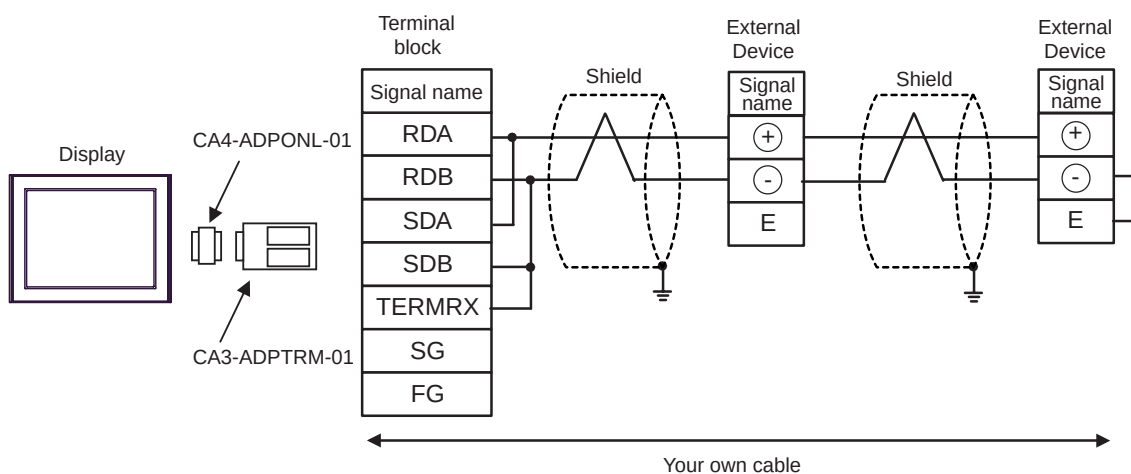
IMPORTANT • Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

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

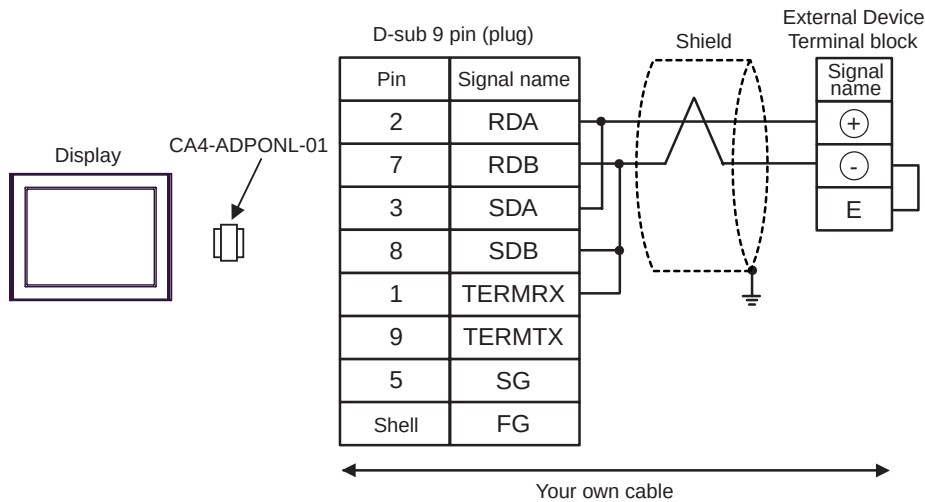


IMPORTANT

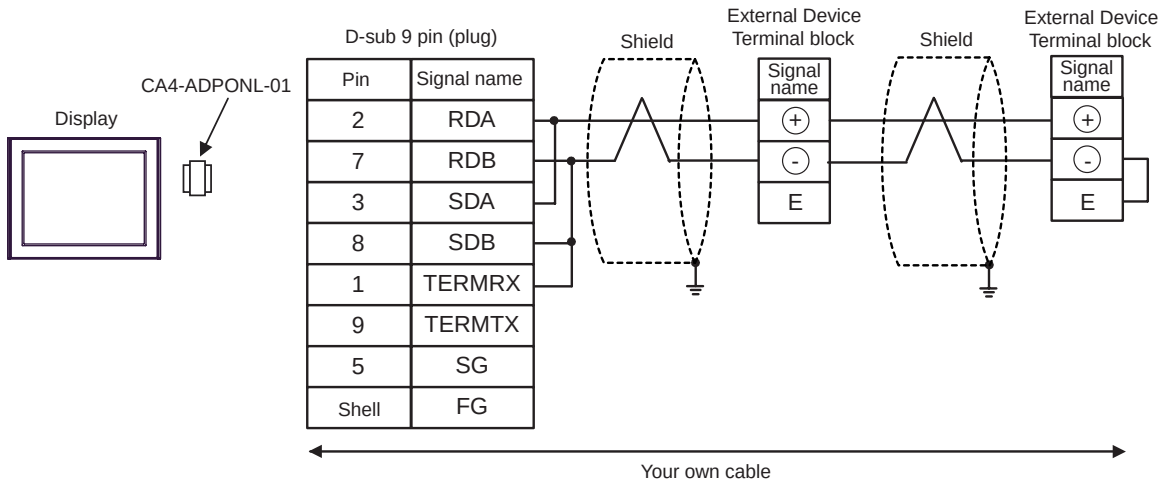
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

D) When using your own cable

- 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.

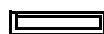
Cable Diagram 14

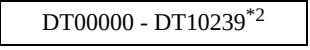
Display (Connection Port)	Cable	Notes
GP (COM1)	Connection cable for FP10SH by Matsushita Electric Works, Ltd. AFB85853 (3m)	



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	X0000 - X511F	WX000 - WX511		*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		 *3
Link Register		LD0000 - LD8447		
File Register		FL00000 - FL32764		
Special Data Register		DT90000 - DT90511		 *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 "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	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

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 - Received error codes are displayed such as "Decimal [Hex]". - IP address is displayed such as "IP address (Decimal): MAC address (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 the External Device for more detail of received error codes.
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