

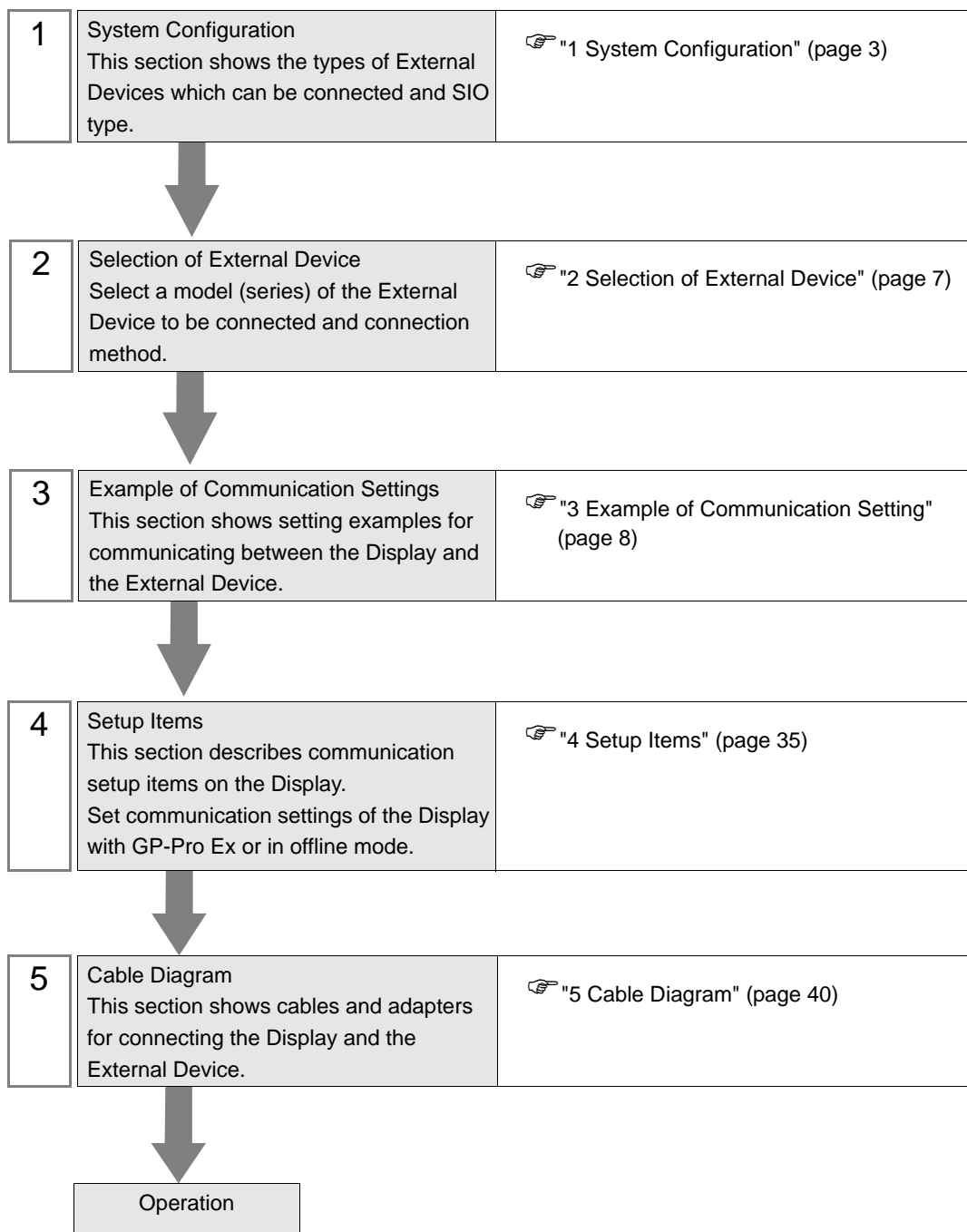
FP Series Computer Link SIO Driver

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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 Electric Works 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 8) | Cable Diagram 8 (page 65) |
| | | AFPG801 | | | | Cable Diagram 1 (page 40) |
| | | AFPG802 | | | | Cable Diagram 2 (page 42) |
| | | AFPG806 | | | | Cable Diagram 4 (page 53) |
| | | AFPG803 | | RS485 (2wire) | Setting Example 2 (page 10) | Cable Diagram 3 (page 44) |
| | | AFPG806 | | | | Cable Diagram 5 (page 54) |
| | FP0 | Tool port of the control unit | | RS232C | Setting Example 3 (page 12) | Cable Diagram 8 (page 65) |
| | | RS232C port of the control unit*1 | | RS232C | | Cable Diagram 6 (page 63) |
| | FP1 | Tool port of the control unit | | RS232C | Setting Example 4 (page 14) | Cable Diagram 9 (page 66) |
| | | RS232C port of the control unit*2 | | RS232C | | Cable Diagram 7 (page 64) |
| | FP-M | Tool port of the control unit | | RS232C | Setting Example 5 (page 16) | Cable Diagram 8 (page 65) |
| | | RS232C port of the control unit*3 | | RS232C | | Cable Diagram 7 (page 64) |
| | FP2 FP2SH | Tool port of the control unit | | RS232C | Setting Example 6 (page 18) | Cable Diagram 8 (page 65) |
| | | RS232C port of the control unit | | RS232C | | Cable Diagram 7 (page 64) |
| | | AFP2462 | | RS232C | | Cable Diagram 7 (page 64) |
| | | AFP2465*4 | AFP2803 | RS232C | Setting Example 6 (page 18) | Cable Diagram 7 (page 64) |
| | | | AFP2804 | RS422 (4wire) | Setting Example 7 (page 21) | Cable Diagram 11 (page 68) |
| | | | AFP2805 | RS485 (2wire) | Setting Example 8 (page 23) | Cable Diagram 3 (page 44) |

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|--------|--------|---------------------------------|---------------|------------------------------|----------------------------|
| FP | FP3 | Tool port of the control unit | RS232C | Setting Example 9 (page 25) | Cable Diagram 10 (page 67) |
| | | AFP3462 | RS232C | | Cable Diagram 7 (page 64) |
| | FP-e | Tool port of the control unit | RS232C | Setting Example 10 (page 27) | Cable Diagram 8 (page 65) |
| | | AFPE224300 | RS232C | | Cable Diagram 12 (page 71) |
| | | AFPE224305 | | | |
| | | AFPE214325 | | | |
| | | AFPE224302 | RS485 (2wire) | Setting Example 11 (page 29) | Cable Diagram 13 (page 72) |
| | | AFPE214322 | | | |
| | FP10S | RS232C port of the control unit | RS232C | Setting Example 12 (page 31) | Cable Diagram 7 (page 64) |
| | | AFP3462 | RS232C | | Cable Diagram 7 (page 64) |
| | FP10SH | Tool port of the control unit | RS232C | Setting Example 12 (page 31) | Cable Diagram 14 (page 81) |
| | | RS232C port of the control unit | RS232C | | Cable Diagram 7 (page 64) |
| | | AFP3462 | RS232C | | Cable Diagram 7 (page 64) |

*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.

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} |

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

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

*3 When making communication between an External Device and COM port on the Expansion slot, only RS-232C is supported. However, ER (DTR/CTS) control cannot be executed because of the specification of COM port.

For connection with External Device, use user-created cables and disable Pin Nos. 1, 4, 6 and 9.

Please refer to the IPC manual for details of pin layout.

DIP Switch setting: RS-232C

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

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

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

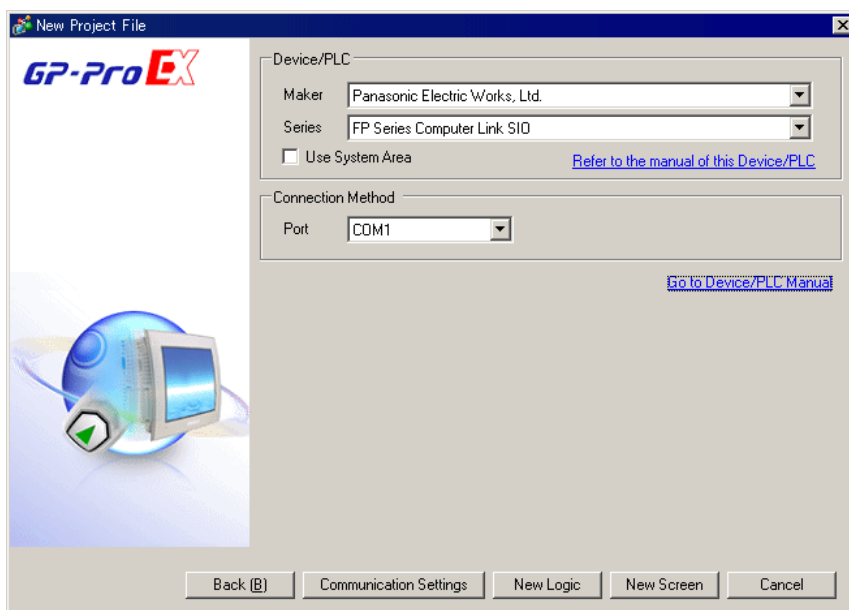
| DIP Switch | Setting | Description |
|------------|---------|---|
| 1 | OFF | Reserved (always OFF) |
| 2 | ON | SIO type: RS-422/485 |
| 3 | ON | |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance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

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

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

2 Selection of External Device

Select the External Device to be connected to the Display.



| Setup Items | Setup Description |
|-----------------|---|
| Maker | Select the maker of the External Device to be connected. Select "Panasonic 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 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 "Display Unit (System Area) Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - 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 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 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 |
| 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 AFP806, 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

Maker: Panasonic 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 | 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 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 |
| 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 |
|------------|-----|----------------------------|-------------------|
| 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 |

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 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.

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.

Default


Device-Specific Settings


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

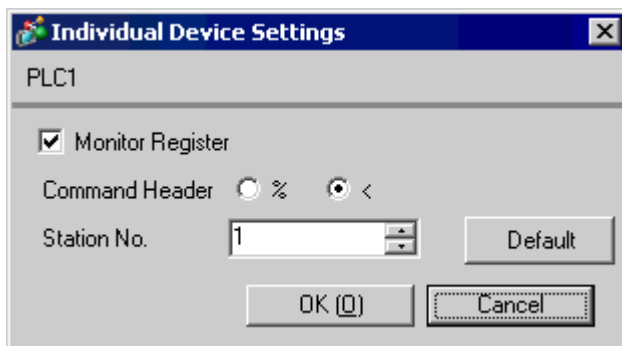
| No. | Device Name | Settings |
|-----|-------------|--|
| 1 | PLC1 | Monitor Register=ON, Station No.=1, Command Header=< |

| 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. 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 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 | <p>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.</p> <p>IMPORTANT</p> <ul style="list-style-type: none"> • 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 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.

| Comm. | Device | Option | | |
|---|--|--------|--|------------------------|
| FP Series Computer Link SIO [COM1] Page 1/1 | | | | |
| SIO Type | RS232C | | | |
| Speed | 19200 | | | |
| Data Length | <input type="radio"/> 7 <input checked="" type="radio"/> 8 | | | |
| Parity | <input type="radio"/> NONE <input type="radio"/> EVEN <input checked="" type="radio"/> ODD | | | |
| Stop Bit | <input checked="" type="radio"/> 1 <input type="radio"/> 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. 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].

| Comm. | Device | Option | | |
|-----------------------------|-------------------------------|---|----------|------------------------|
| | | | | |
| FP Series Computer Link SIO | | [COM1] | Page 1/1 | |
| Device/PLC Name | | [PLC1] ▼ | | |
| Monitor Register | <input type="radio"/> Disable | <input checked="" type="radio"/> Enable | | |
| Command Header | <input type="radio"/> % | <input checked="" type="radio"/> < | | |
| 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 | <p>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.</p> <p>IMPORTANT</p> <ul style="list-style-type: none"> 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 | |
| <p>RI / VCC <input checked="" type="radio"/> RI <input type="radio"/> VCC</p> <p>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.</p> | | | | |
| | Exit | | Back | 2005/09/02 13:19:21 |

| 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 and GP-4*0ITM 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 Electric Works 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..

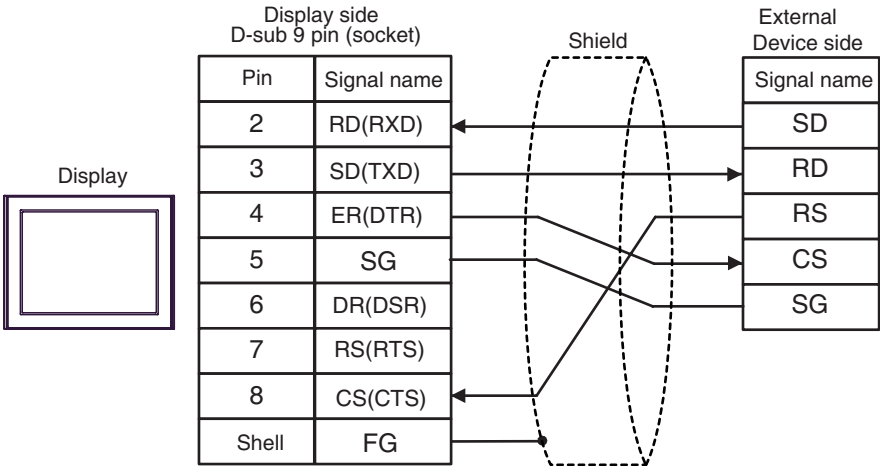
Cable Diagram 1

| Display (Connection Port) | Cable | | Notes |
|--|-------|--------------------|---------------------------------------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC ^{*1} PC/AT | 1A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 1B | User-created cable | |

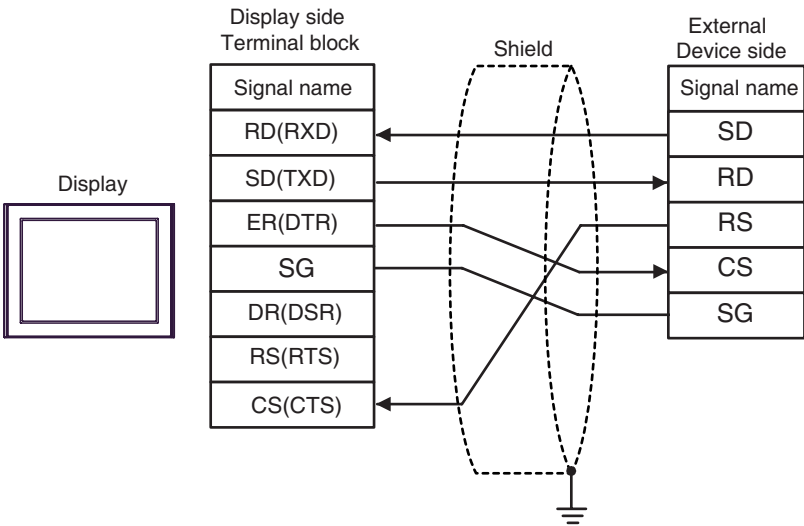
*1 Only the COM port which can communicate by RS-232C can be used.

 ■ IPC COM Port (page 5)

1A)



1B)



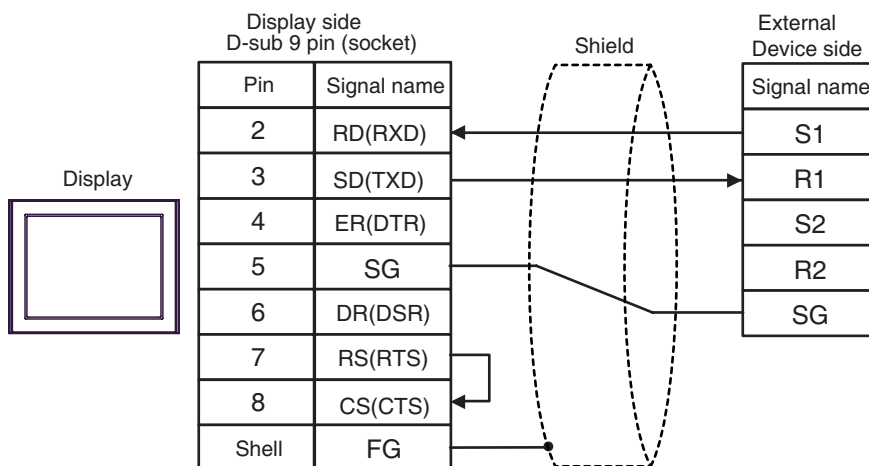
Cable Diagram 2

| Display (Connection Port) | Cable | | Notes |
|--|-------|--|---------------------------------------|
| GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC*1 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) | 2C | User-created cable (When using the COM.1 port) | |
| | 2D | User-created cable (When using the COM.2 port) | |

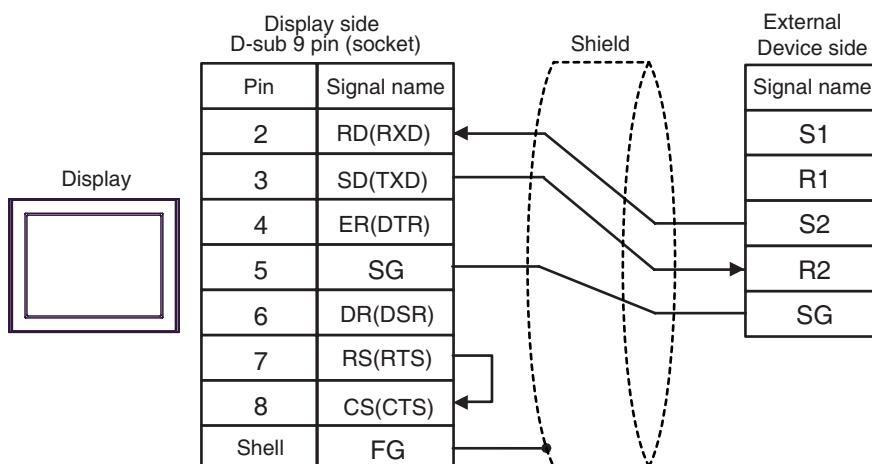
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

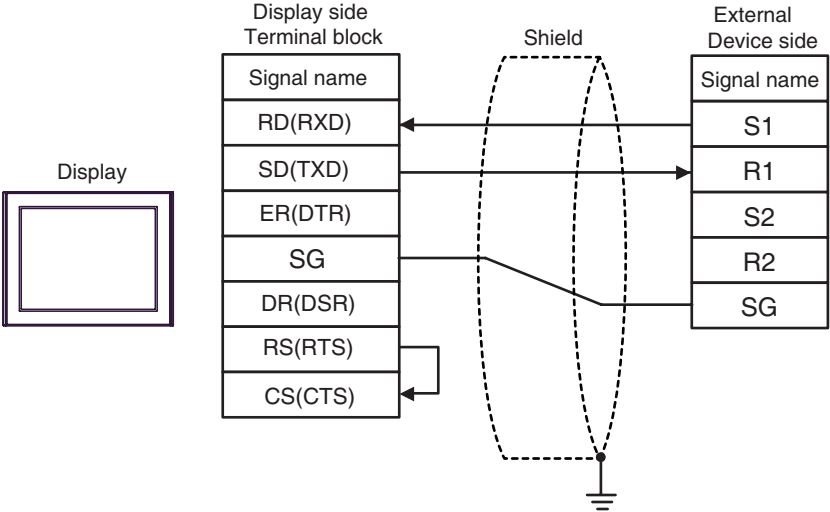
2A)



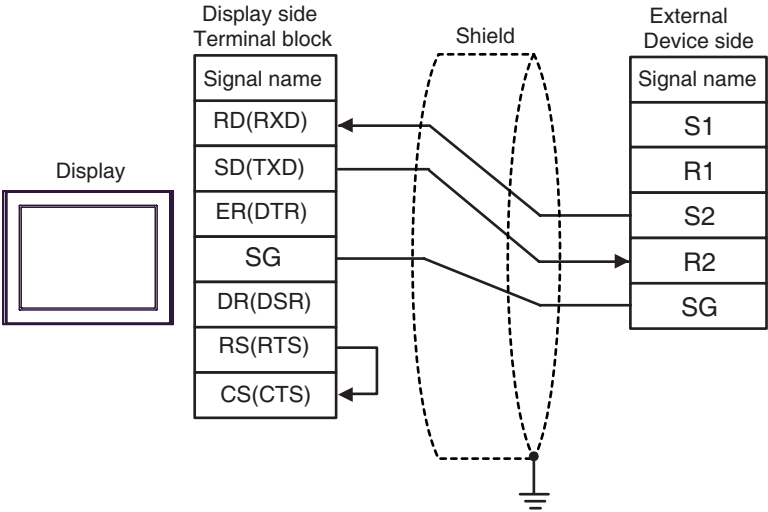
2B)



2C)



2D)



Cable Diagram 3


| Display (Connection Port) | Cable | | Notes |
|--|-------|---|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST ^{*2} (COM2) | 3A | COM port conversion adapter (for COM1) 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 | |
| | 3D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| IPC ^{*4} | 3E | COM port conversion adapter (for COM1) by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 3F | User-created cable | |
| GP-4106 (COM1) | 3G | User-created cable | |
| GP-4107 (COM1) | 3H | User-created cable | |

*1 All GP3000 models except AGP-3302B

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

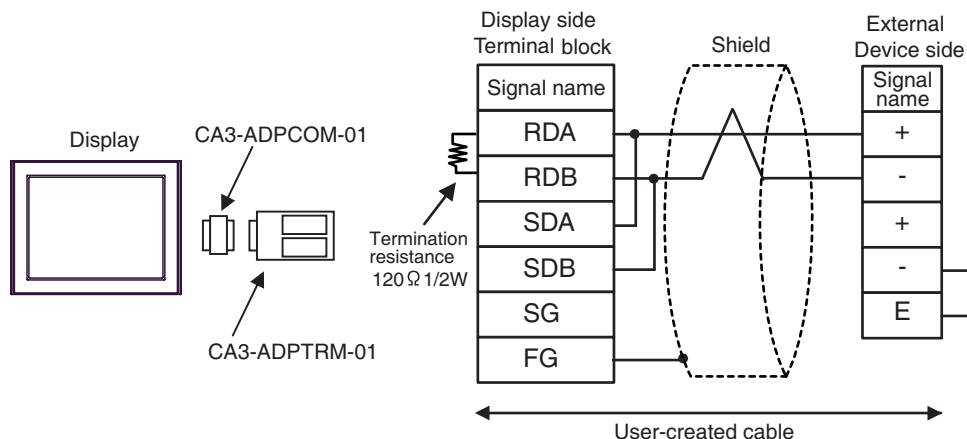
*3 All GP3000 models except GP-3200 series and AGP-3302B

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

 ■ IPC COM Port (page 5)

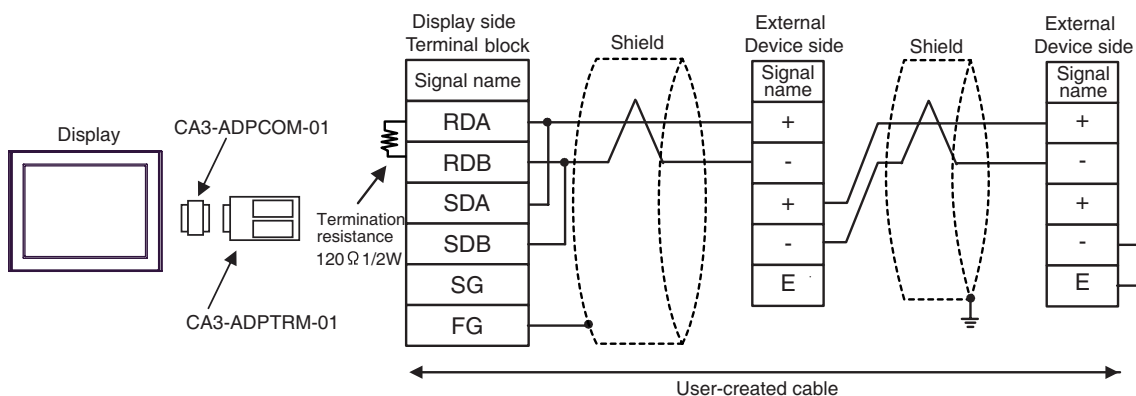
3A)

- 1:1 Connection

**IMPORTANT**

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

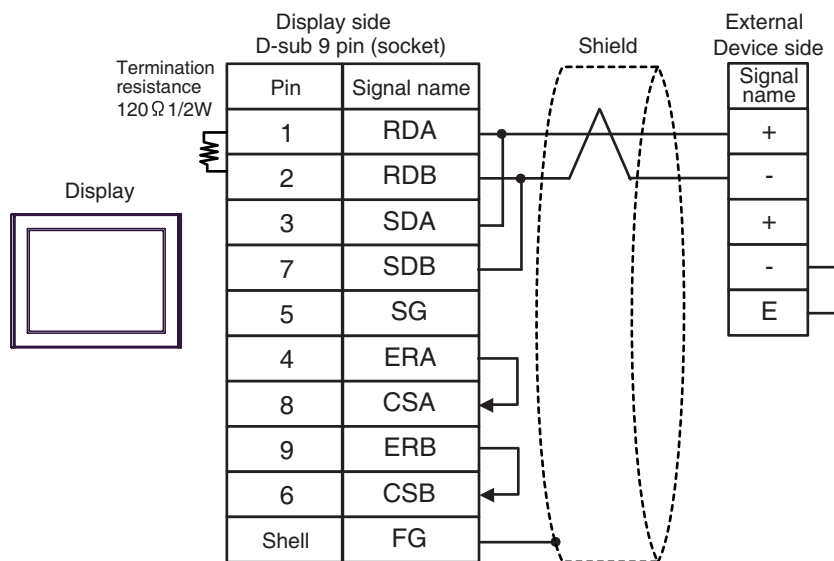
- 1:n Connection

**IMPORTANT**

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

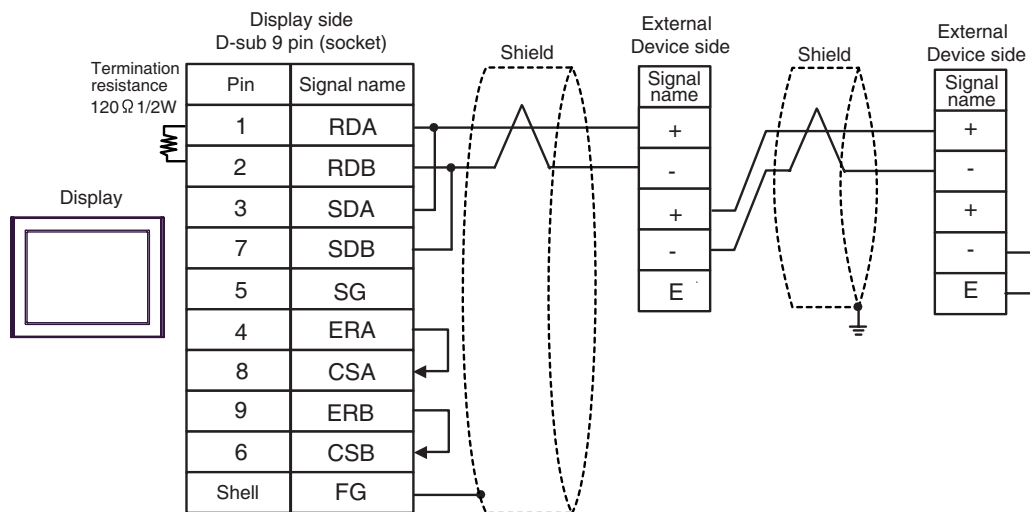
3B)

- 1:1 Connection

**IMPORTANT**

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

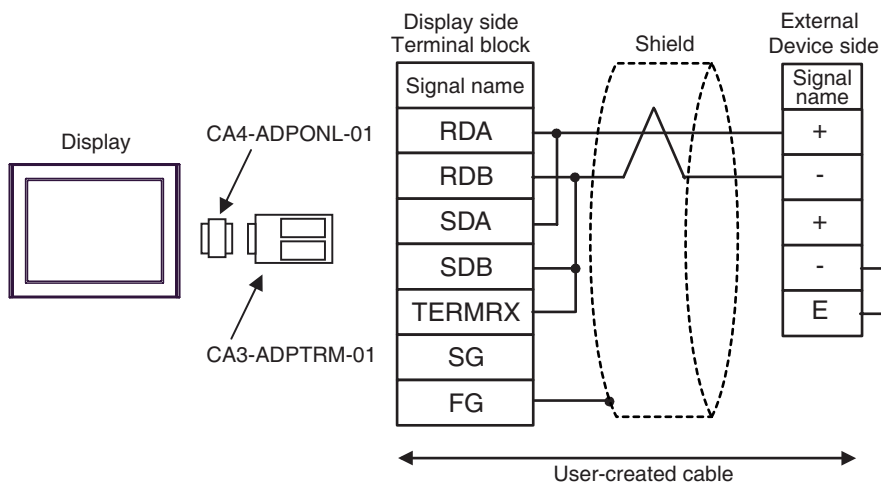
- 1:n Connection

**IMPORTANT**

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

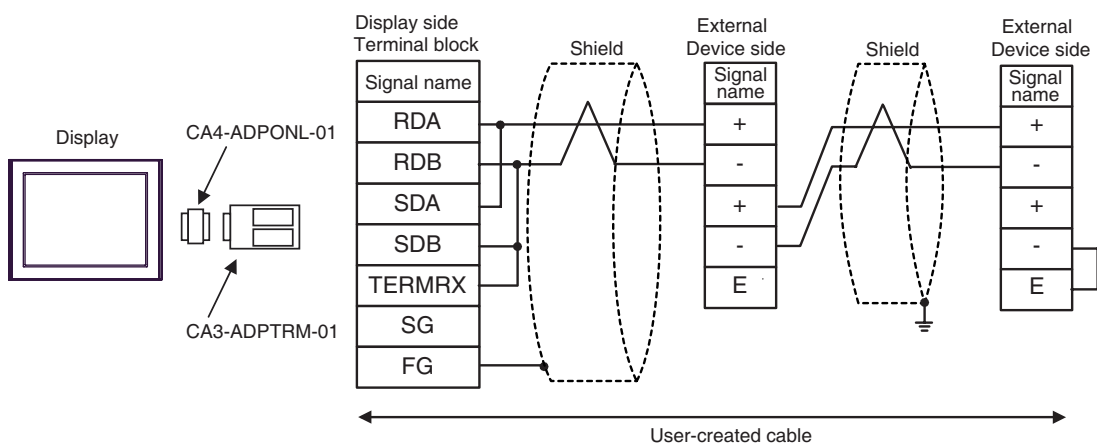
3C)

- 1:1 Connection

**IMPORTANT**

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

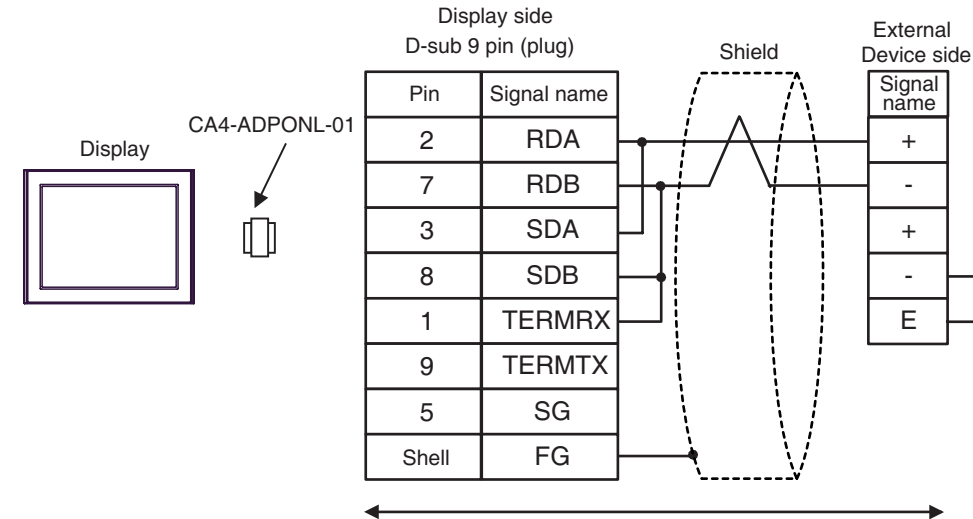
- 1:n Connection

**IMPORTANT**

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

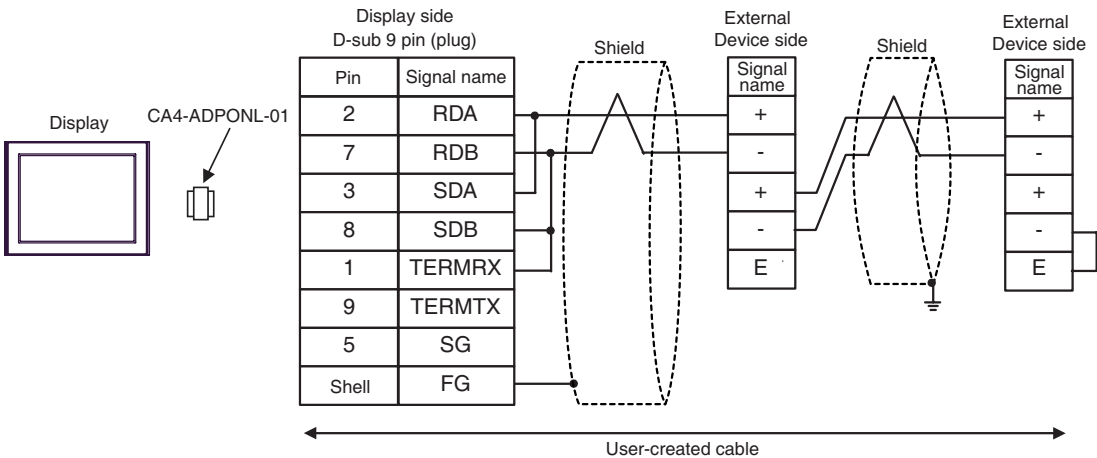
3D)

- 1:1 Connection



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

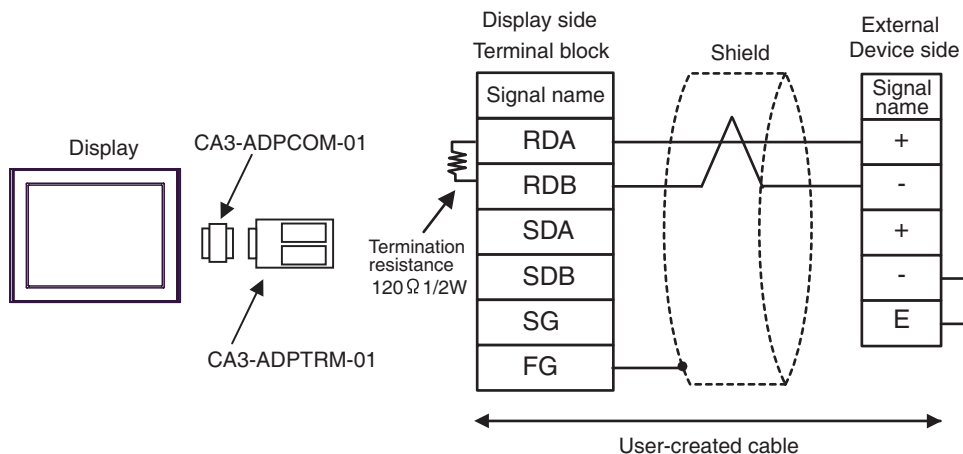
- 1:n Connection



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

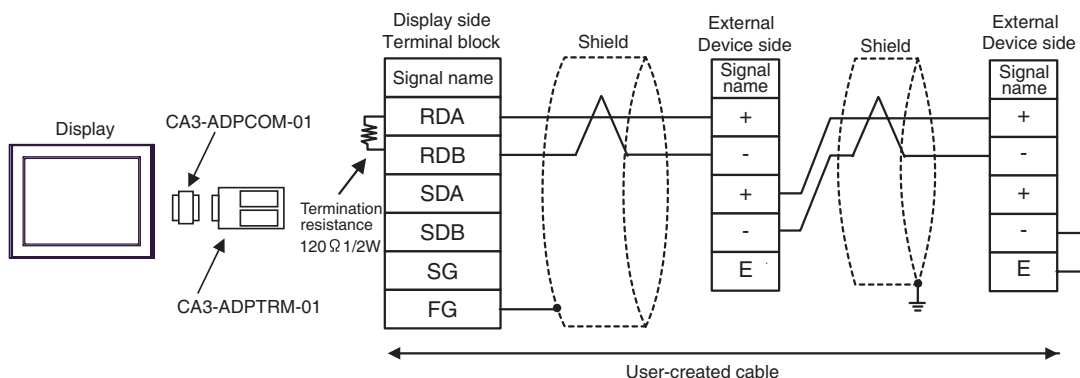
3E)

- 1:1 Connection

**IMPORTANT**

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

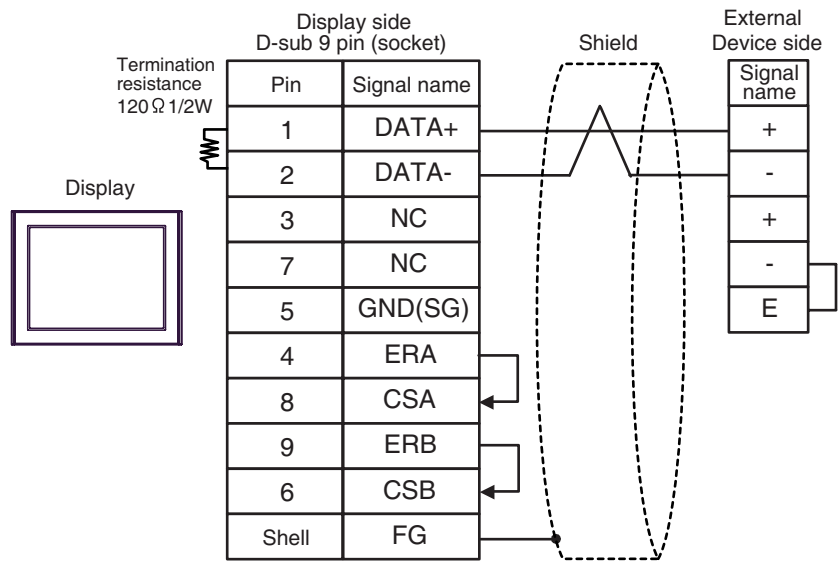
- 1:n Connection

**IMPORTANT**

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

3F)

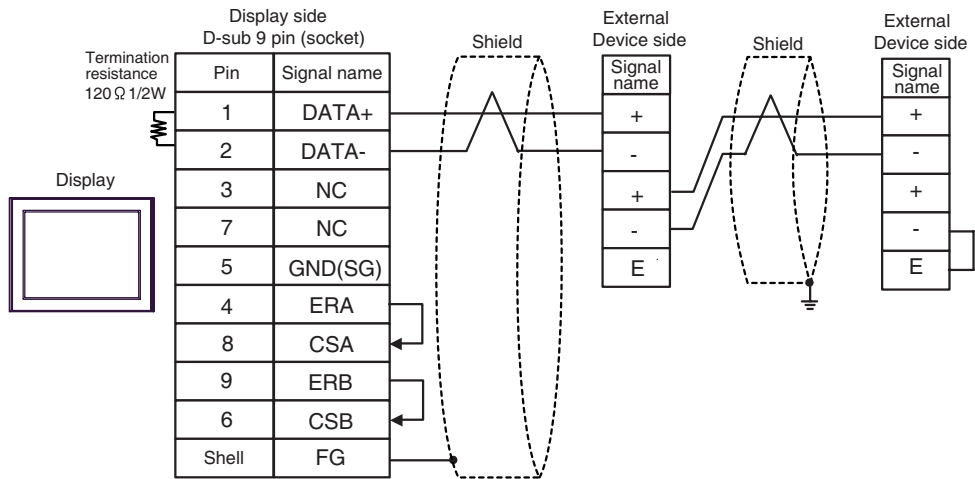
- 1:1 Connection



IMPORTANT

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

- 1:n Connection

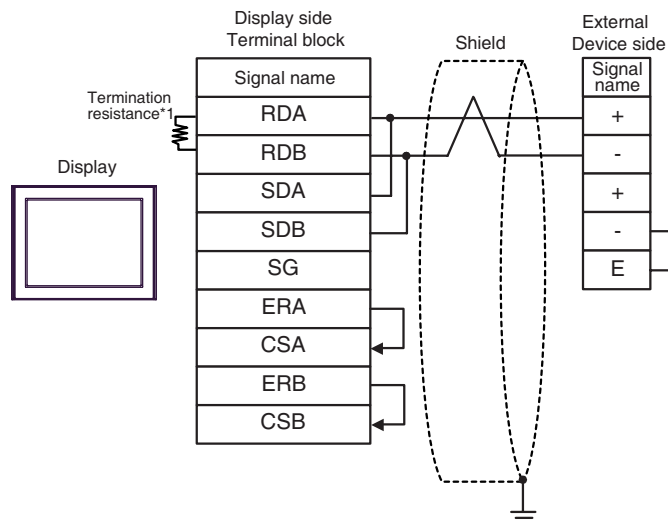


IMPORTANT

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

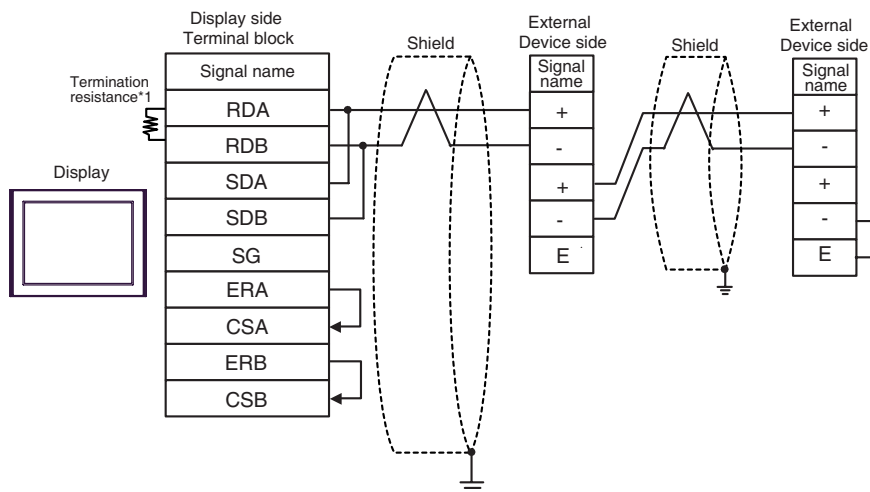
3G)

- 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**

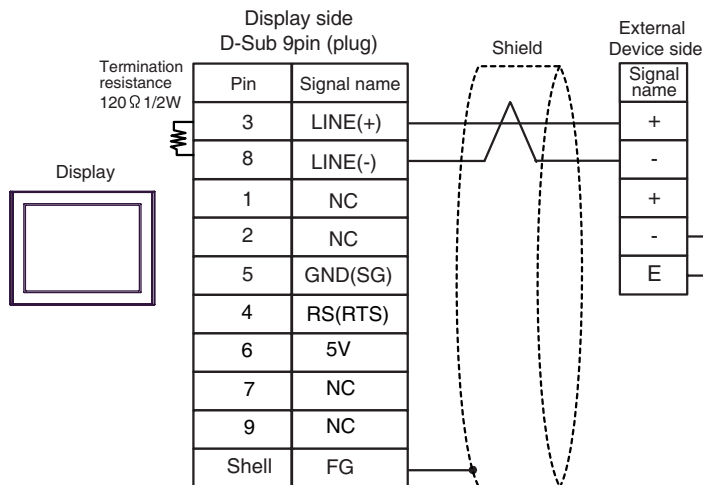
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

*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

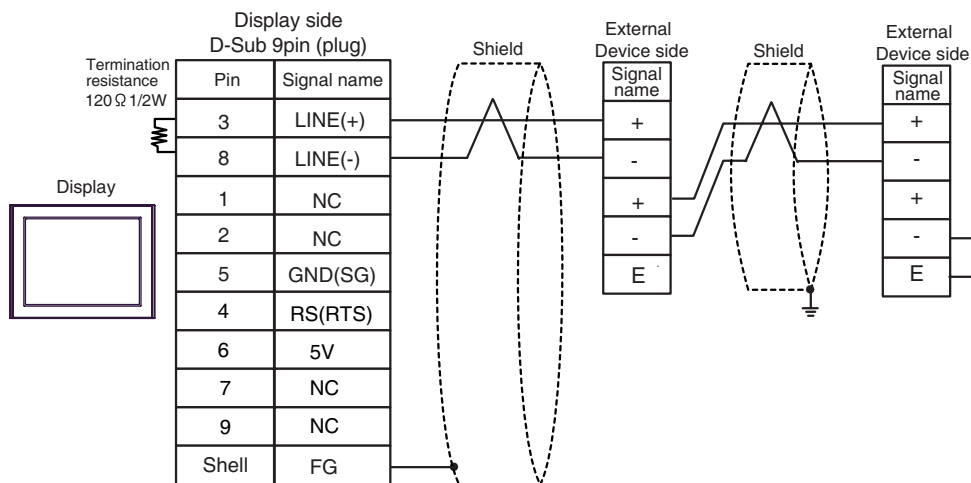
**IMPORTANT**

- 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 GP-4107 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 GP-4107 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.

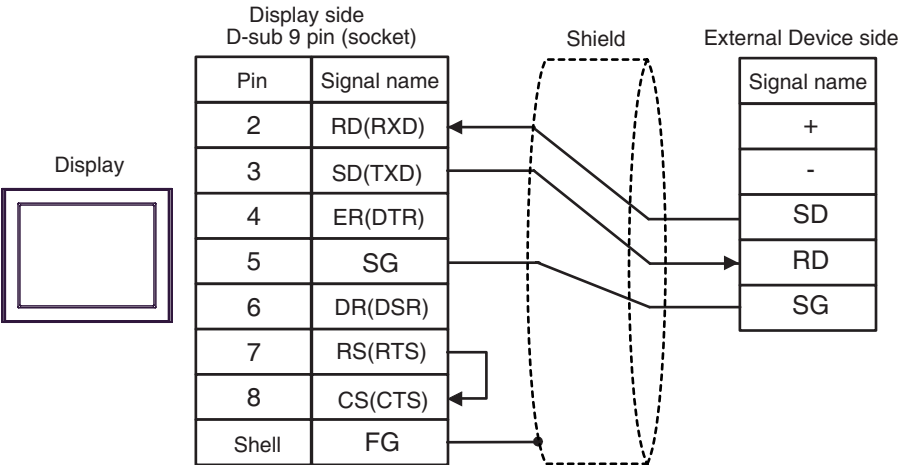
Cable Diagram 4

| Display (Connection Port) | Cable | | Notes |
|--|-------|--------------------|---------------------------------------|
| GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC*1 PC/AT | 4A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 4B | User-created cable | |

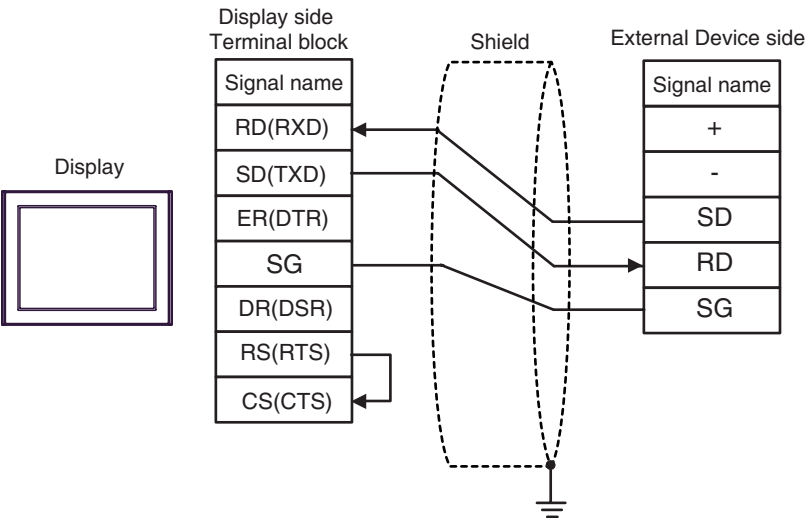
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

4A)



4B)



Cable Diagram 5


| Display (Connection Port) | Cable | | Notes |
|--|-------|---|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*0ITM (COM1) ST ^{*2} (COM2) | 5A | COM port conversion adapter (for COM1) 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 | |
| | 5D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| IPC ^{*4} | 5E | COM port conversion adapter (for COM1) by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 5F | User-created cable | |
| GP-4106 (COM1) | 5G | User-created cable | |
| GP-4107 (COM1) | 5H | User-created cable | |

*1 All GP3000 models except AGP-3302B

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

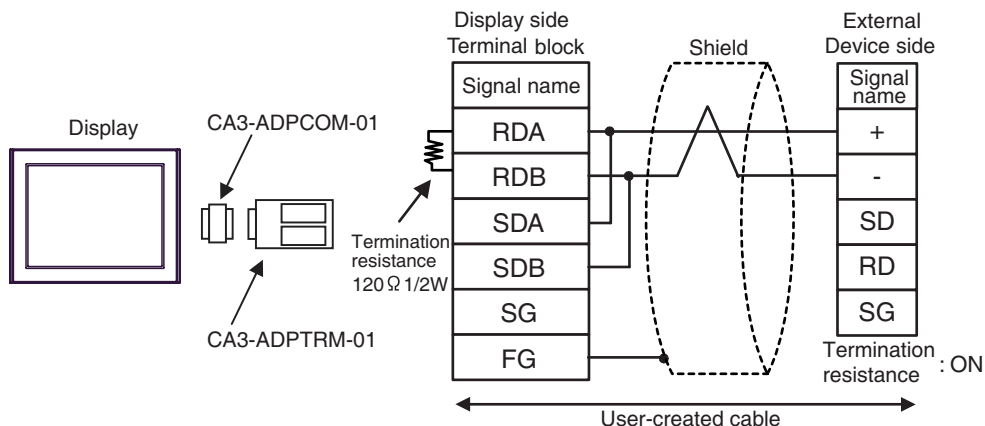
*3 All GP3000 models except GP-3200 series and AGP-3302B

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

 ■ IPC COM Port (page 5)

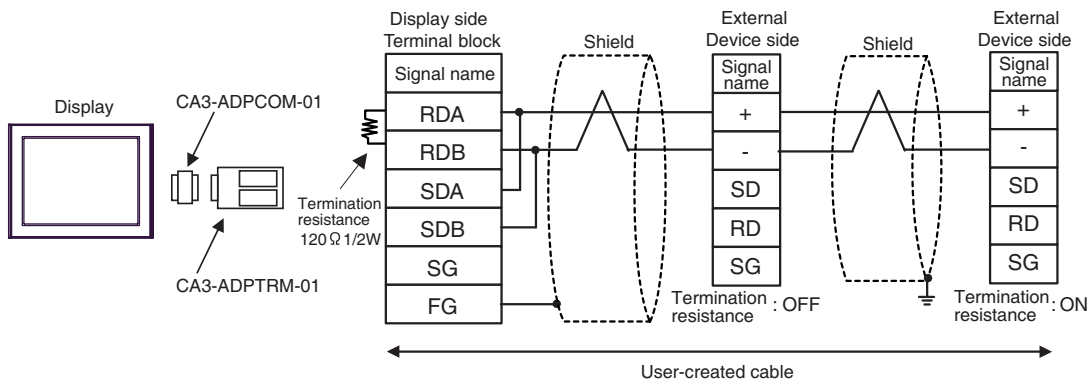
5A)

- 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.

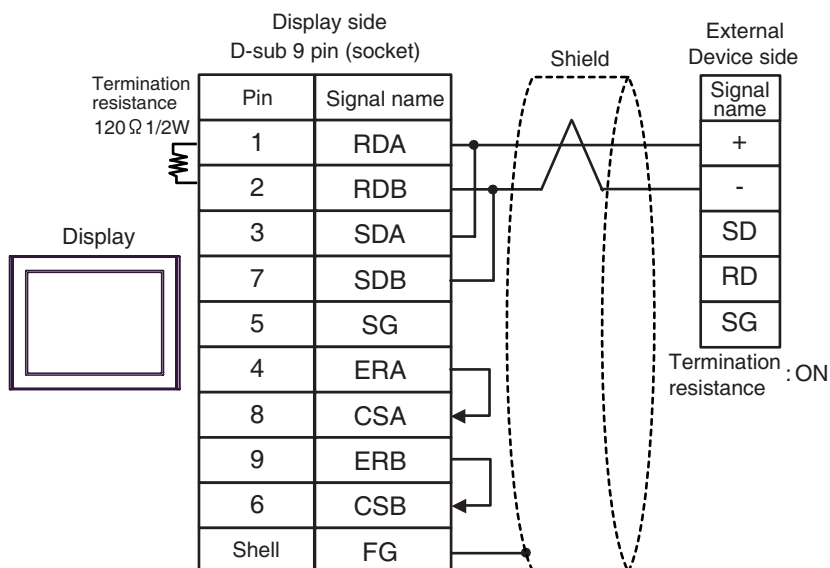
- 1:n Connection

**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.

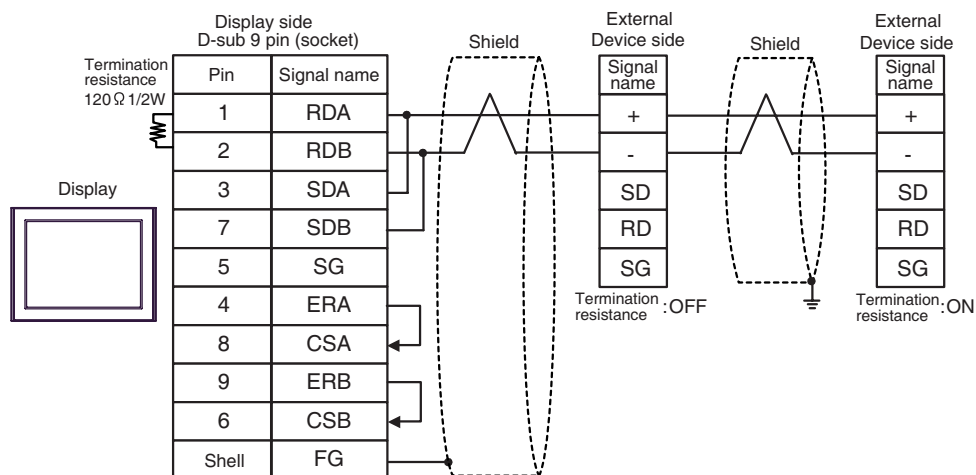
5B)

- 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.

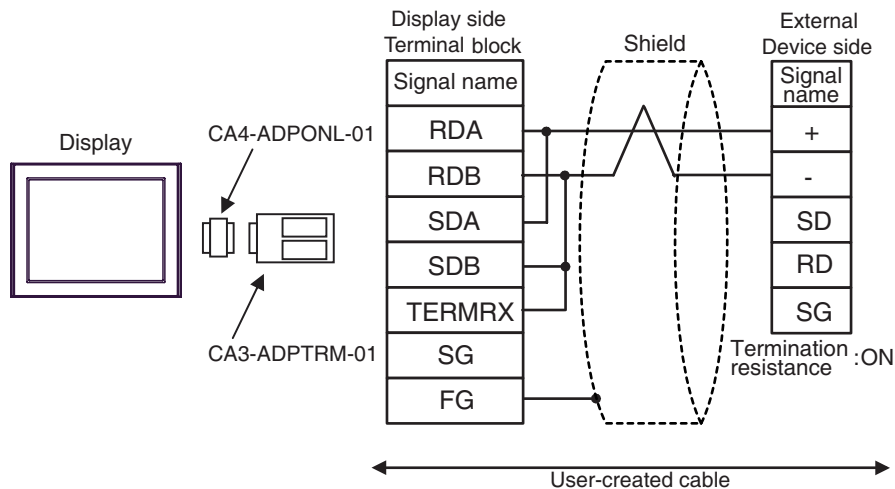
- 1:n Connection

**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.

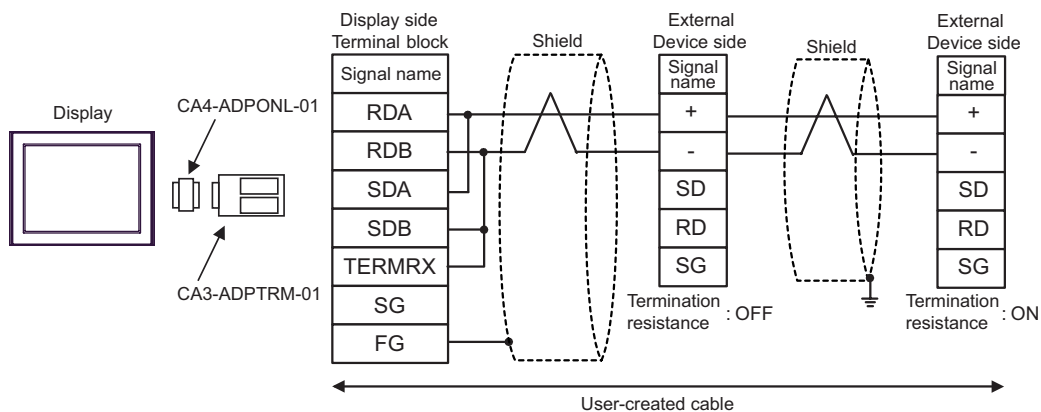
5C)

- 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.

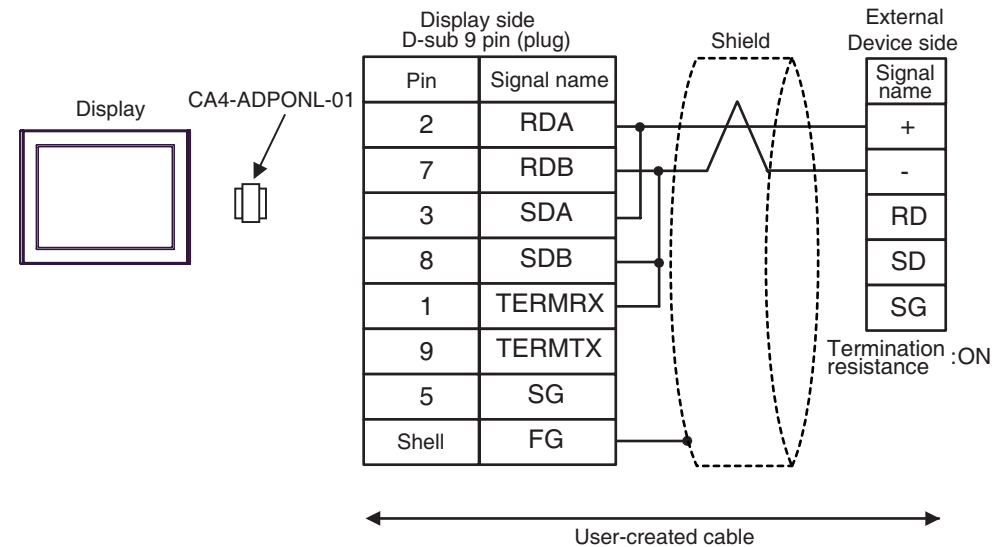
- 1:n Connection

**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.

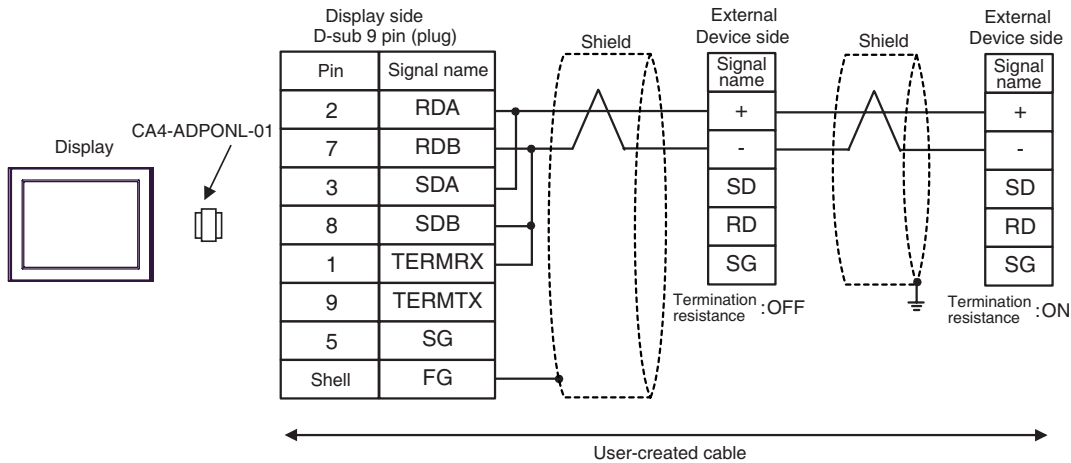
5D)

- 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.

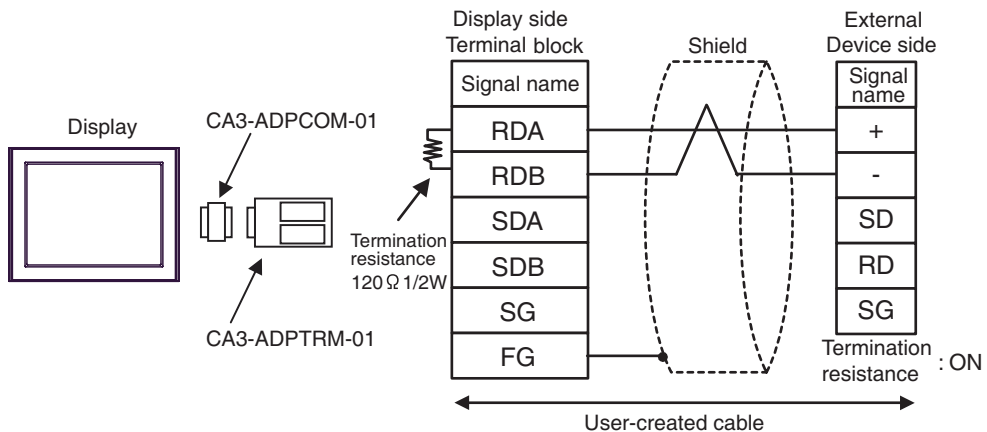
- 1:n Connection



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.

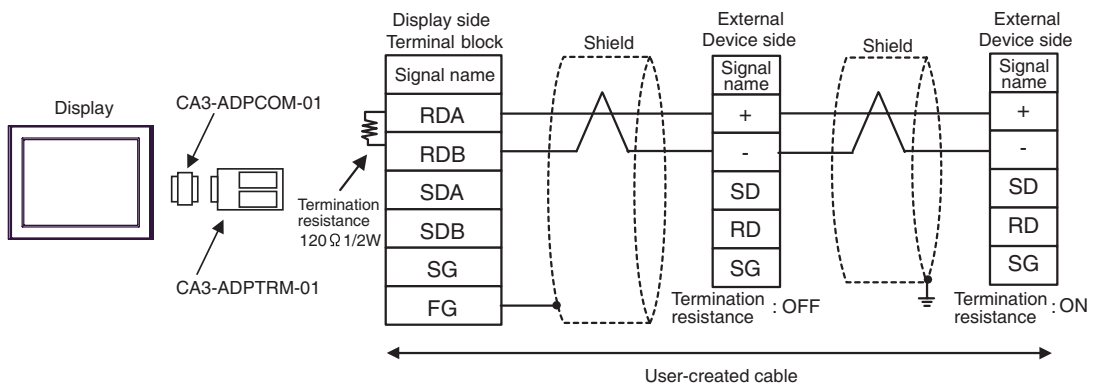
5E)

- 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.

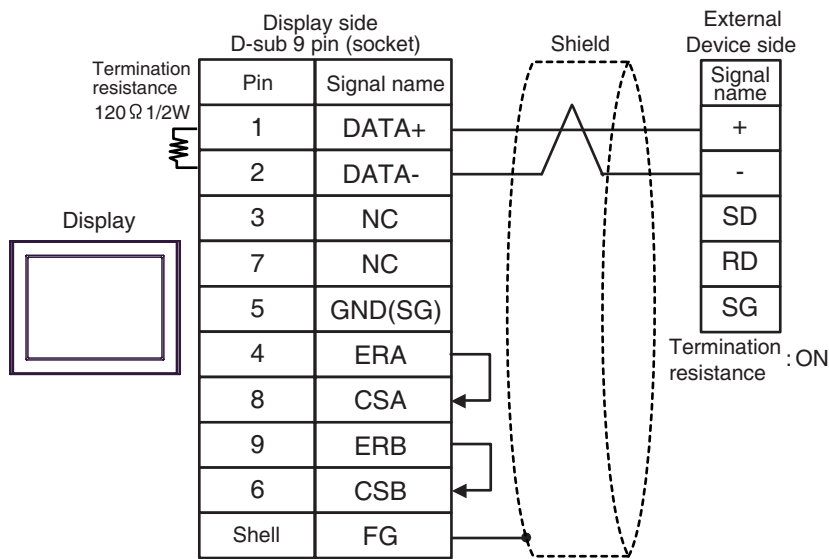
- 1:n Connection

**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.

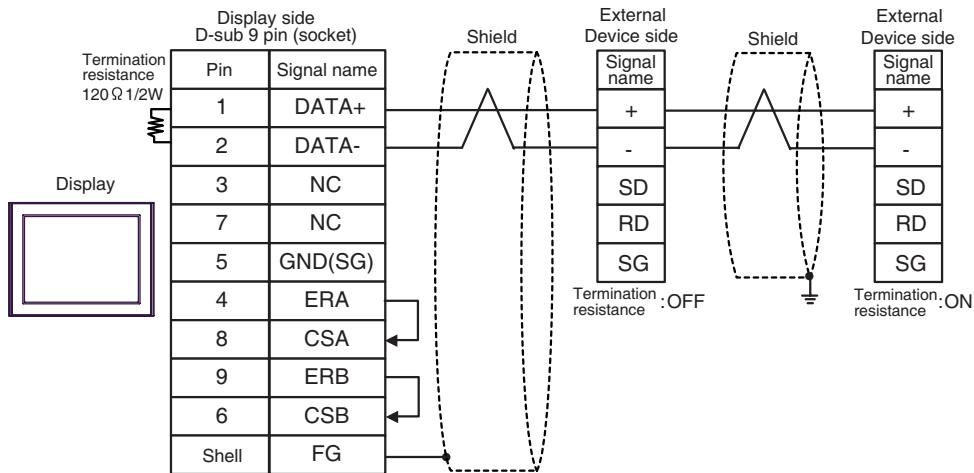
5F)

- 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.

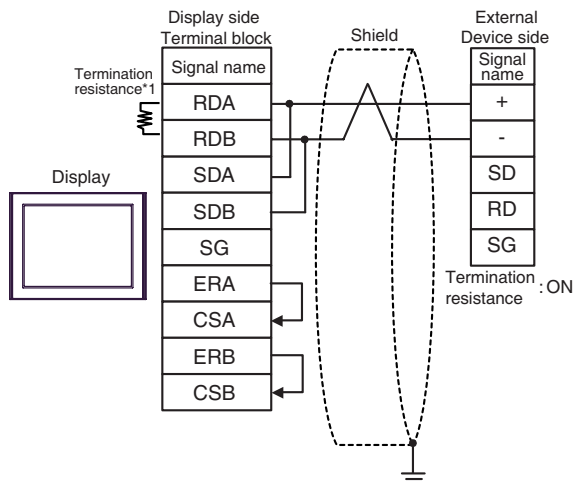
- 1:n Connection



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.

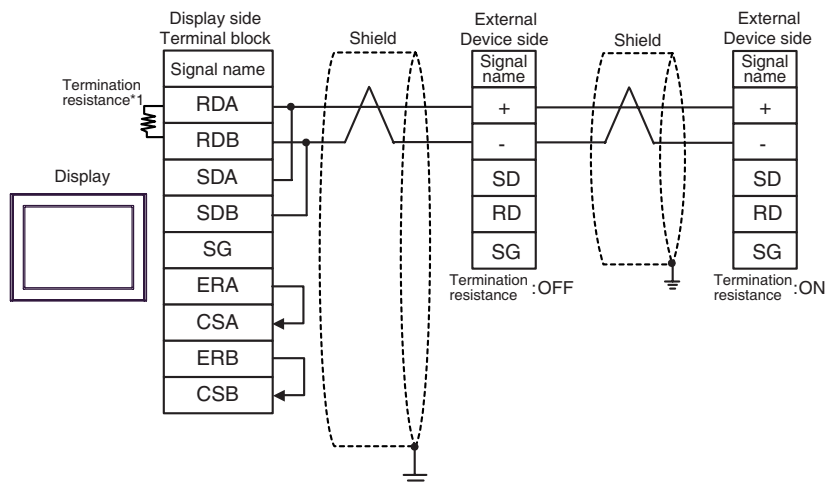
5G)

- 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**

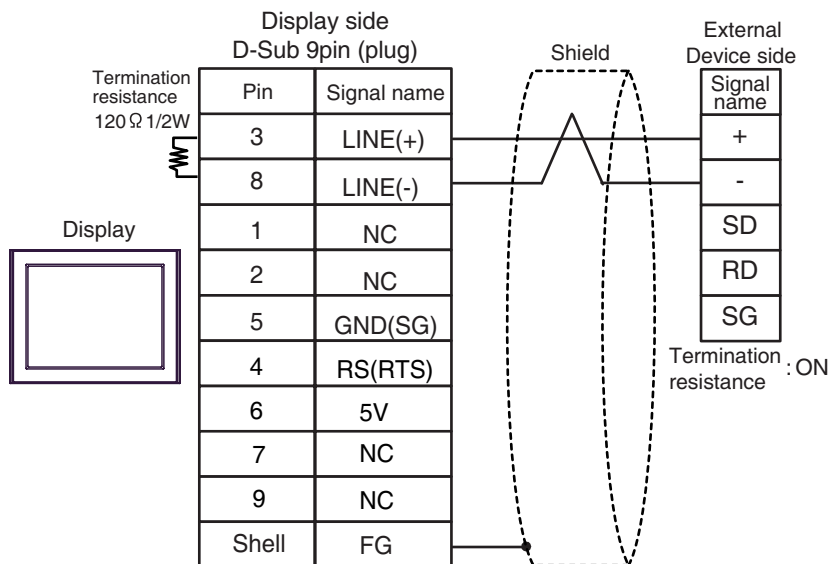
- Use the DIP switch in the communication cassette to set the termination resistance. Set SW1-1 of the External Device which terminates the connection to ON.

*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

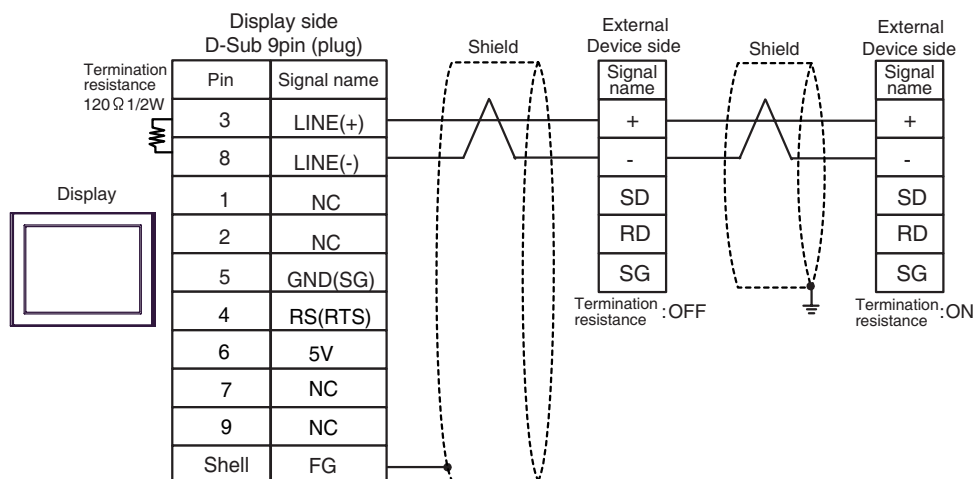
**IMPORTANT**

- The 5V output (Pin #6) on the GP-4107 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 GP-4107 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.

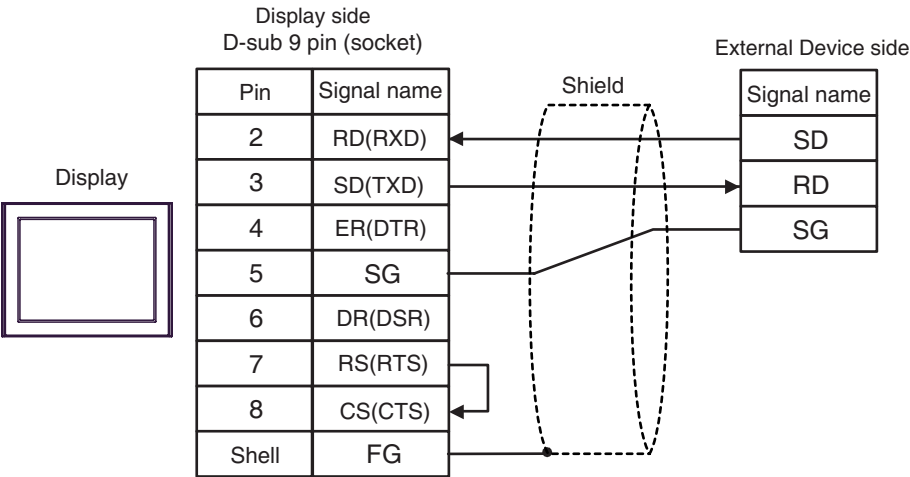
Cable Diagram 6

| Display (Connection Port) | Cable | | Notes |
|--|-------|--------------------|--------------------------------------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 6A | User-created cable | The cable length must be 3m or less. |
| GP-4105 (COM1) | 6B | User-created cable | |

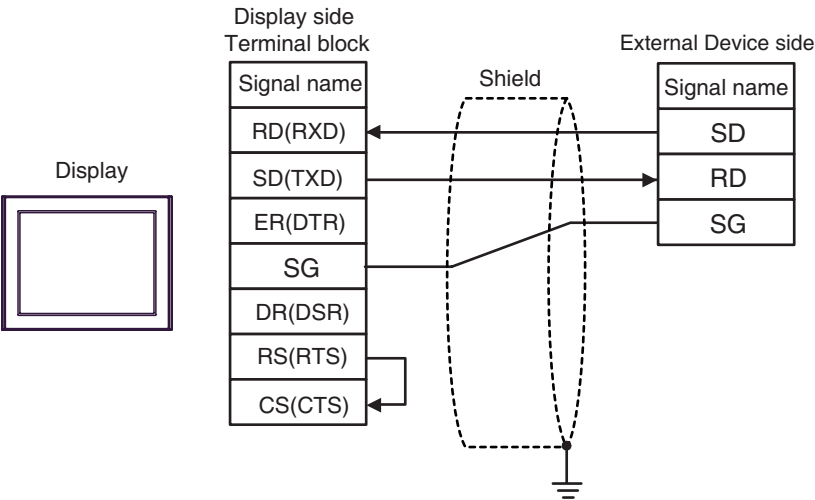
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

6A)



6B)



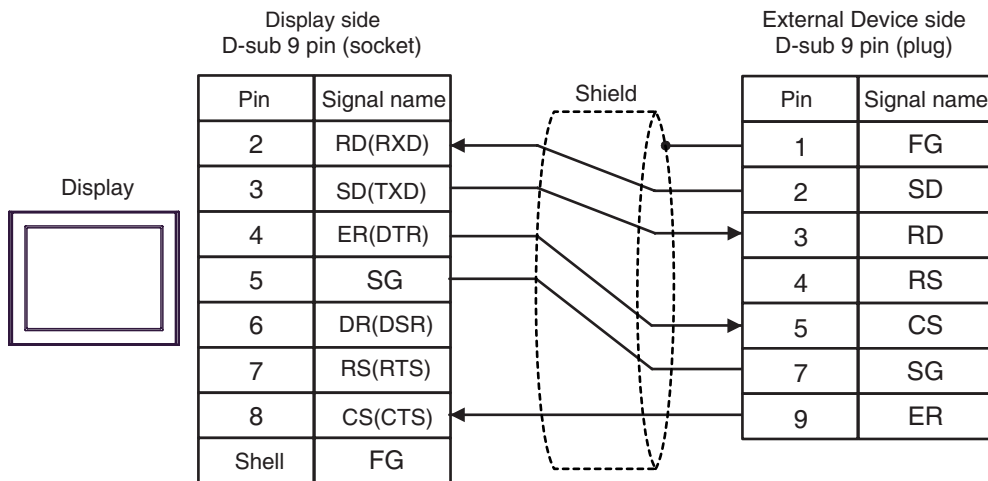
Cable Diagram 7

| Display (Connection Port) | Cable | | Notes |
|--|-------|--------------------|--|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 7A | User-created 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. |
| GP-4105 (COM1) | 7B | User-created cable | |

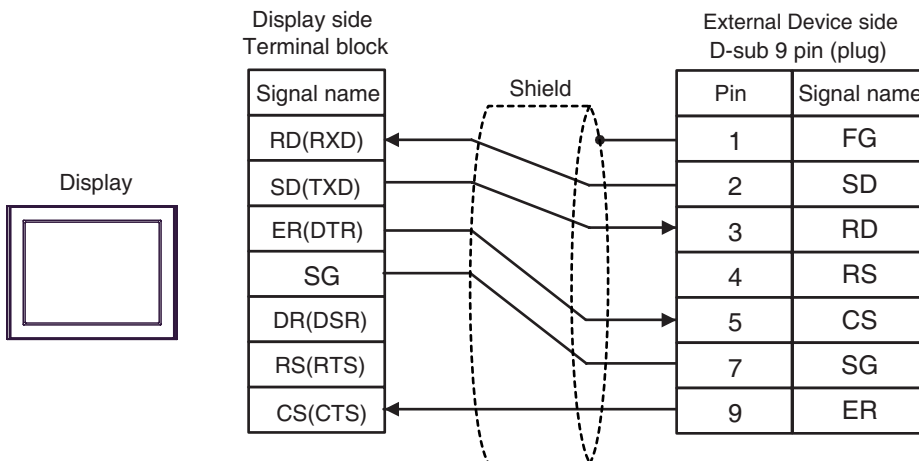
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

7A)



7B)



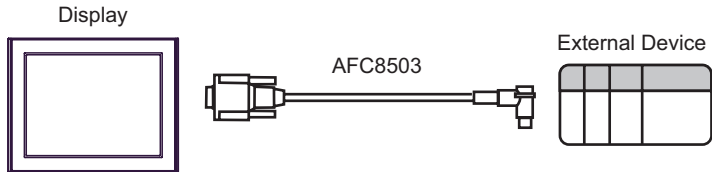
Cable Diagram 8

| Display (Connection Port) | Cable | | Notes |
|--|-------|---|-------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 8A | FP0/FP2/FP-M ↔ DOS-V PC connection cable by Panasonic Electric Works Co., Ltd. AFC8503 (3m) | |
| GP-4105 (COM1) | 8B | Panasonic Electric Works PLC FP Series CPU Cable by Pro-face ZC9CBFP21(2m) | |

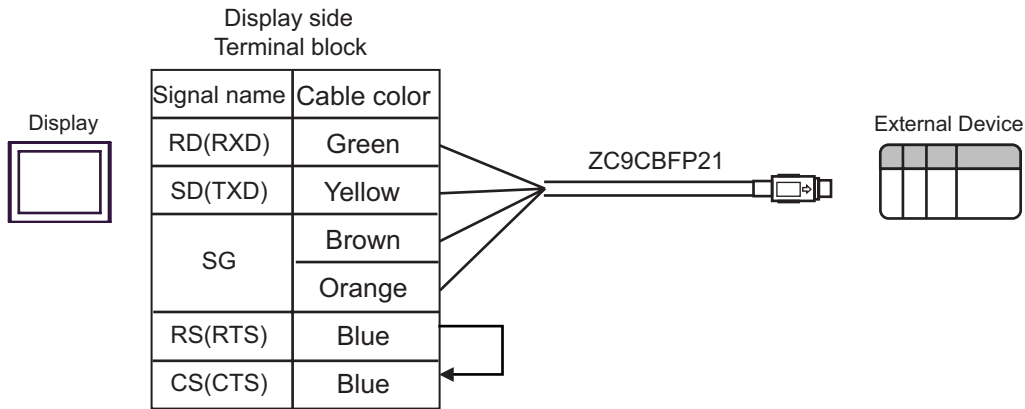
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

8A)



8B)



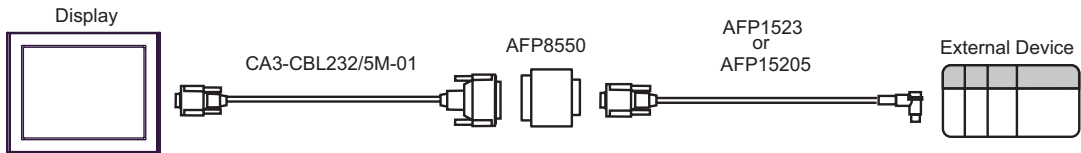
Cable Diagram 9

| Display (Connection Port) | Cable | | Notes |
|--|-------|---|-------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 9A | RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Panasonic Electric Works Co., Ltd. AFP8550 + Programming cable by Panasonic Electric Works Co., Ltd. AFP1523 (3m) or AFP15205 (0.5m) | |
| GP-4105 (COM1) | 9B | User-created cable + RS422/232C conversion adapter by Panasonic Electric Works Co., Ltd. AFP8550 + Programming cable by Panasonic Electric Works Co., Ltd. AFP1523 (3m) or AFP15205 (0.5m) | |

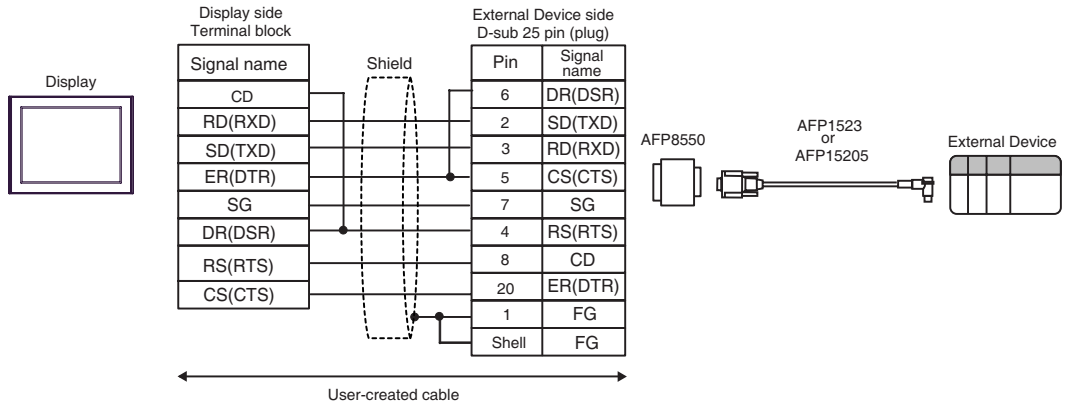
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

9A)



9B)



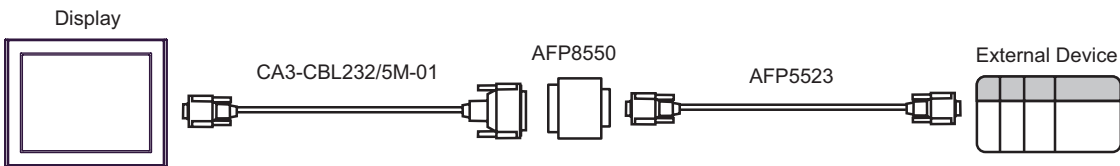
Cable Diagram 10

| Display (Connection Port) | Cable | | Notes |
|--|-------|--|-------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 10A | RS232C cable by Pro-face CA3-CBL232/5M-01 (5m) + RS422/232C conversion adapter by Panasonic Electric Works Co., Ltd. AFP8550 + Programming cable by Panasonic Electric Works Co., Ltd. AFP5523 (3m) | |
| GP-4105 (COM1) | 10B | User-created cable + RS422/232C conversion adapter by Panasonic Electric Works Co., Ltd. AFP8550 + Programming cable by Panasonic Electric Works Co., Ltd. AFP5523 (3m) | |

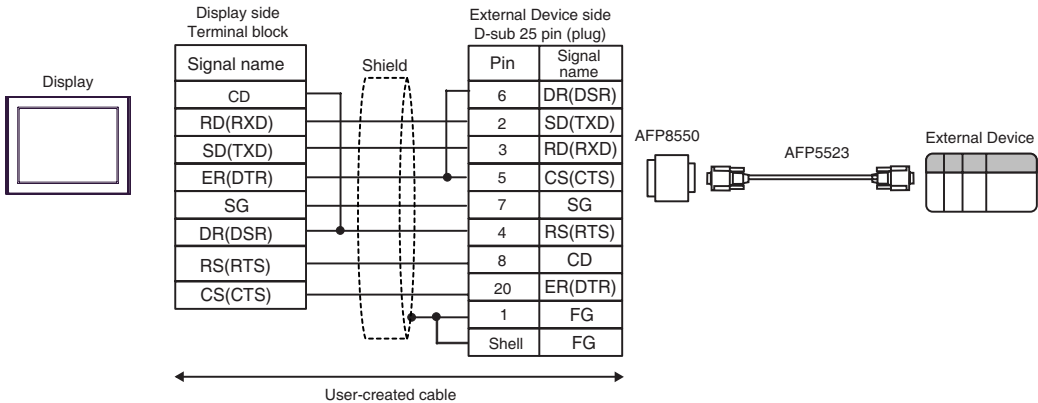
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

10A)



10B)



Cable Diagram 11

| Display (Connection Port) | Cable | | Notes |
|---|-------|---|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST ^{*2} (COM2) IPC ^{*3} | 11A | COM port conversion adapter (for COM1) 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 | |
| | 11D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| GP-4106 (COM1) | 11E | User-created cable | |

*1 All GP3000 models except AGP-3302B

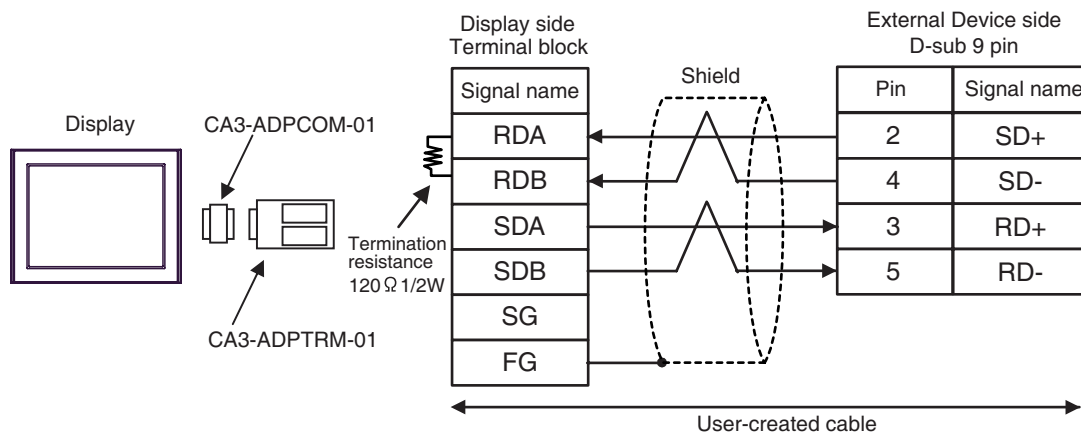
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.

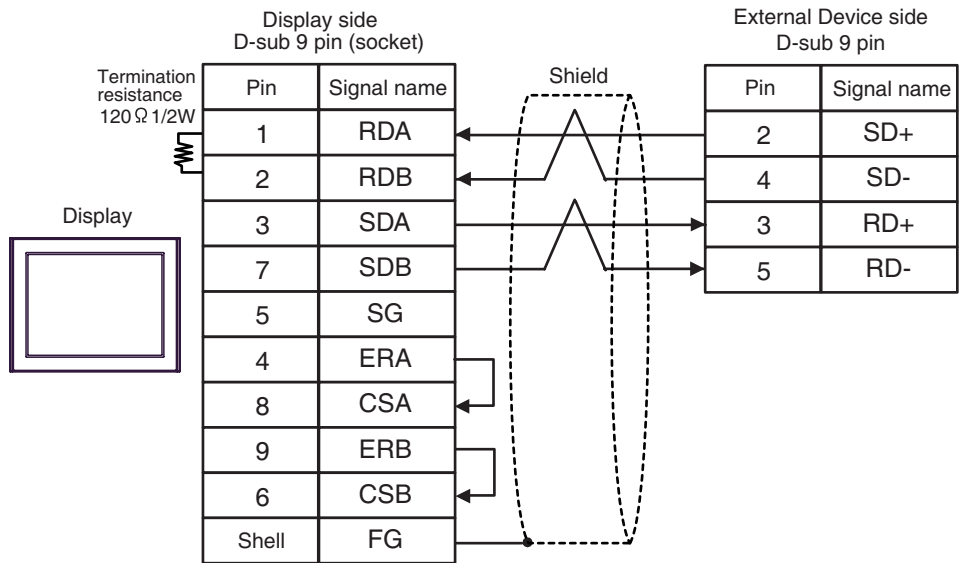
☞ ■ IPC COM Port (page 5)

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

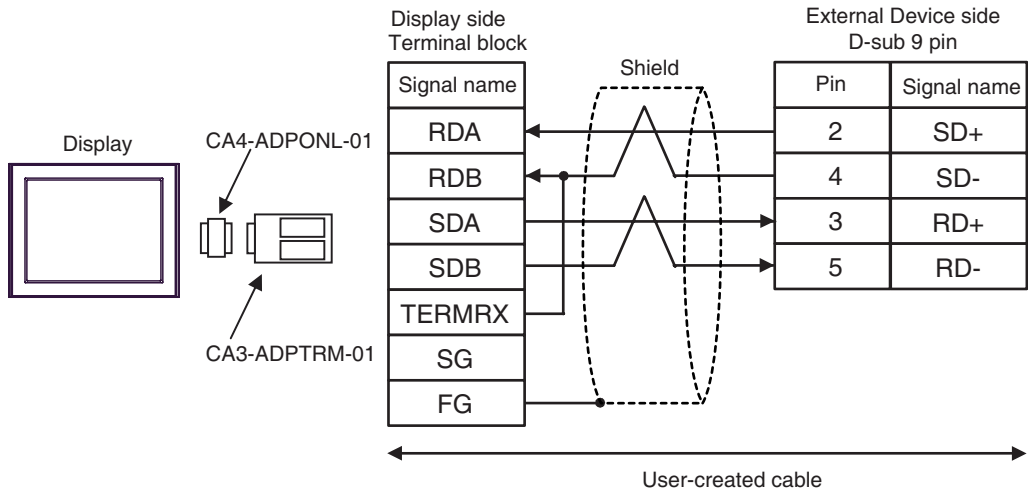
11A)



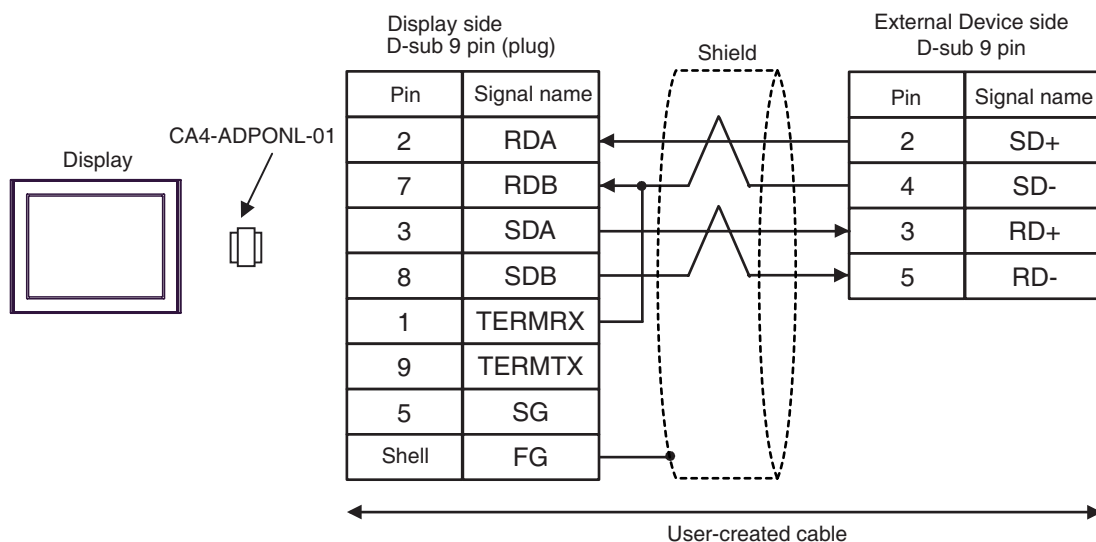
11B)



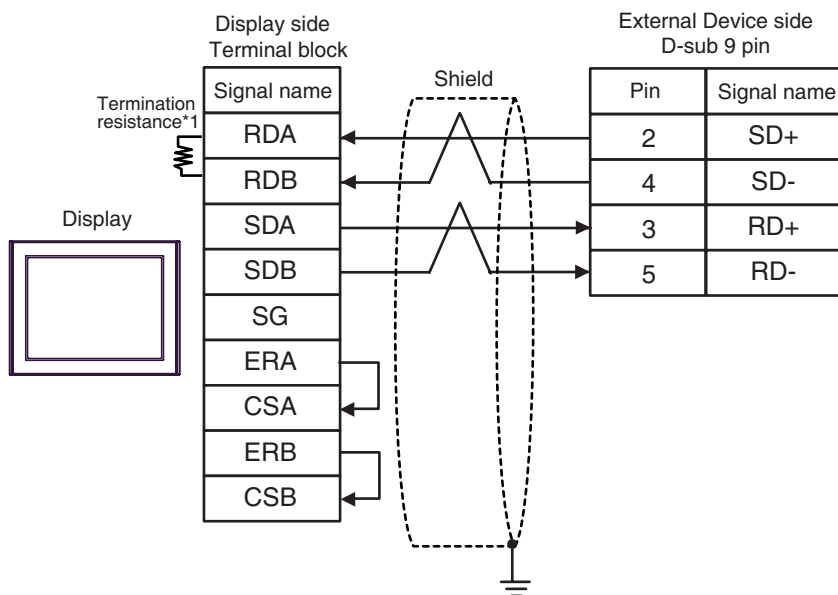
11C)



11D)



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 |

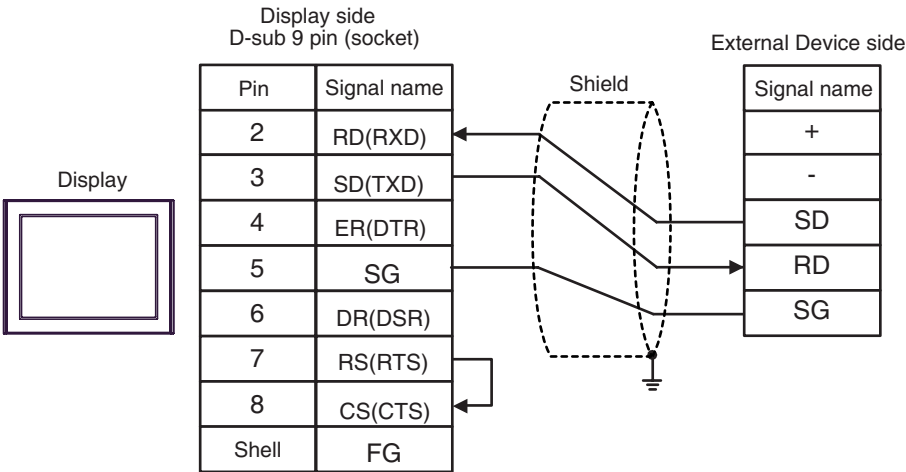
Cable Diagram 12

| Display (Connection Port) | Cable | | Notes |
|--|-------|--------------------|---------------------------------------|
| GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC*1 PC/AT | 12A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 12B | User-created cable | |

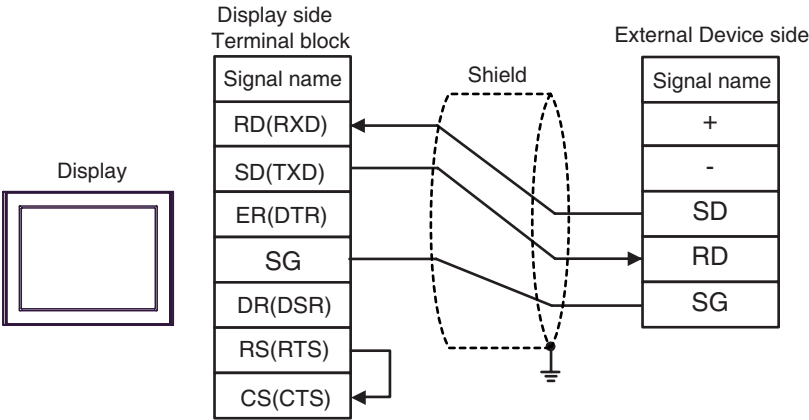
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

12A)



12B)



Cable Diagram 13


| Display (Connection Port) | Cable | | Notes |
|--|-------|---|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST ^{*2} (COM2) | 13A | COM port conversion adapter (for COM1) 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 | |
| | 13D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| IPC ^{*4} | 13E | COM port conversion adapter (for COM1) by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 13F | User-created cable | |
| GP-4106 (COM1) | 13G | User-created cable | |
| GP-4107 (COM1) | 13H | User-created cable | |

*1 All GP3000 models except AGP-3302B

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

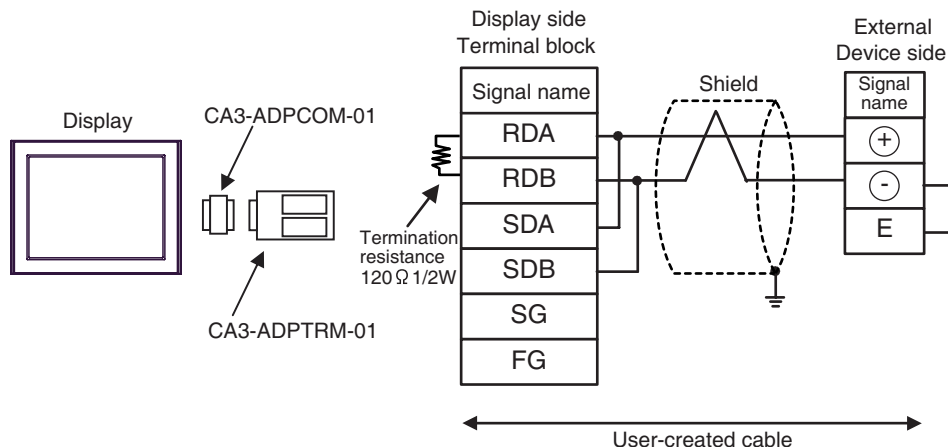
*3 All GP3000 models except GP-3200 series and AGP-3302B

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

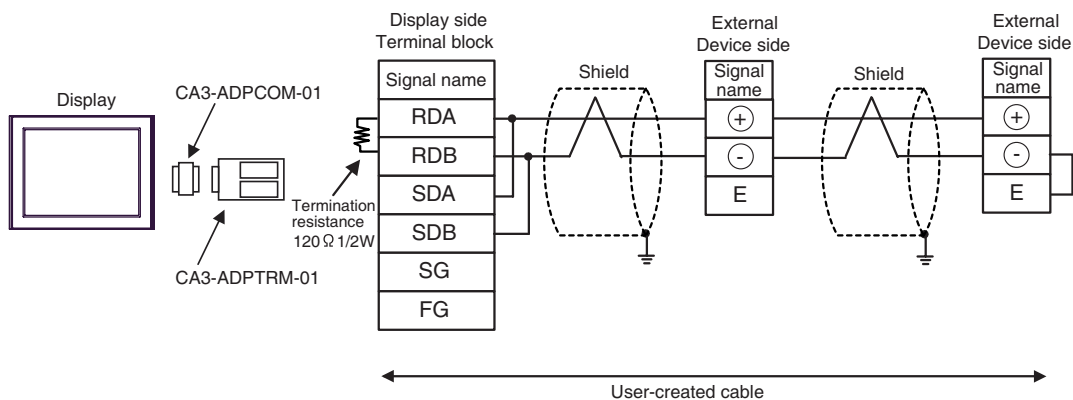
 ■ IPC COM Port (page 5)

13A)

- 1:1 Connection



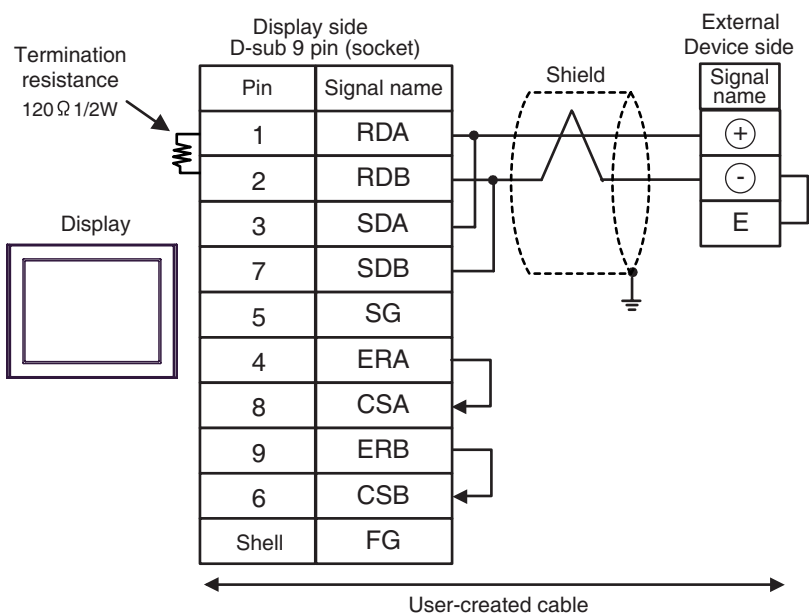
- 1:n Connection

**IMPORTANT**

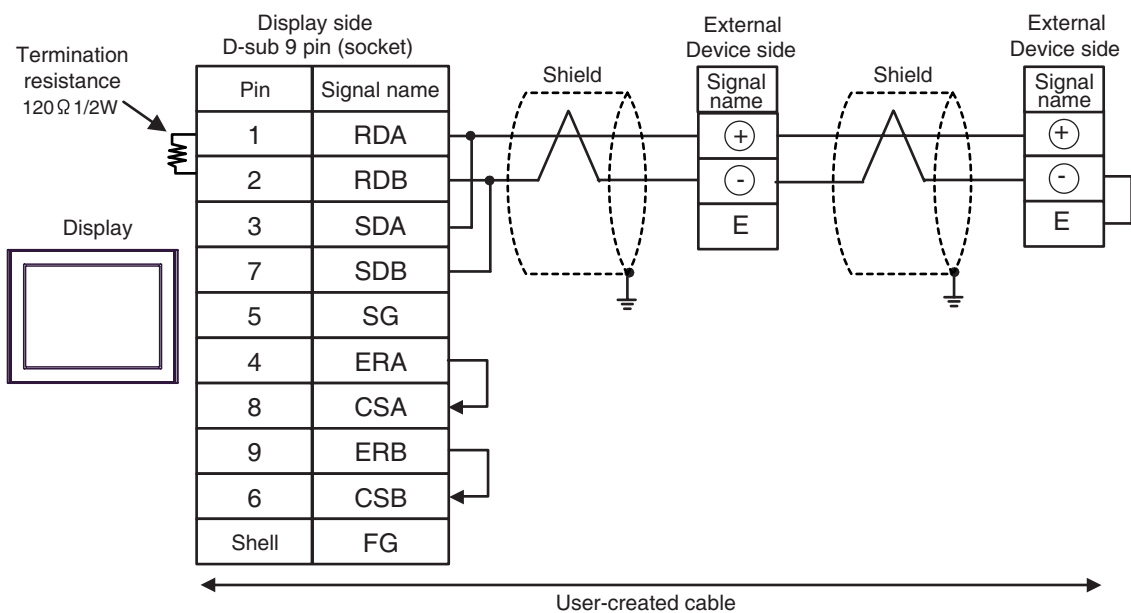
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13B)

- 1:1 Connection



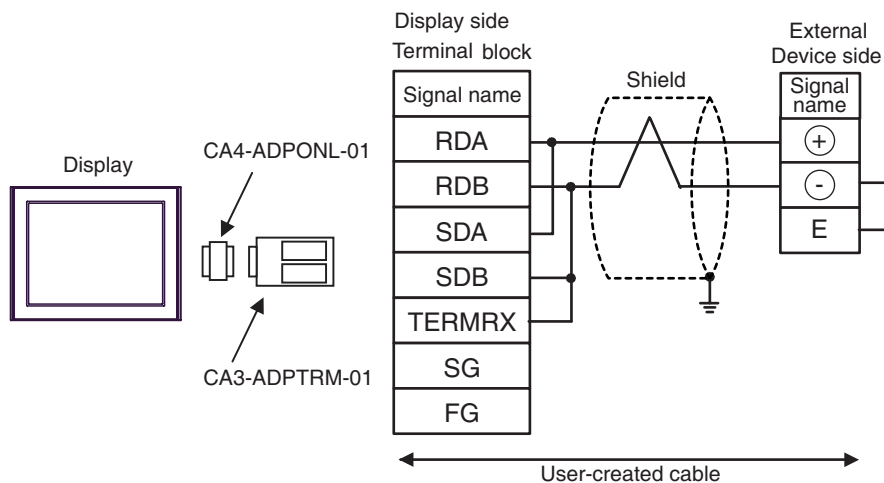
- 1:n Connection

**IMPORTANT**

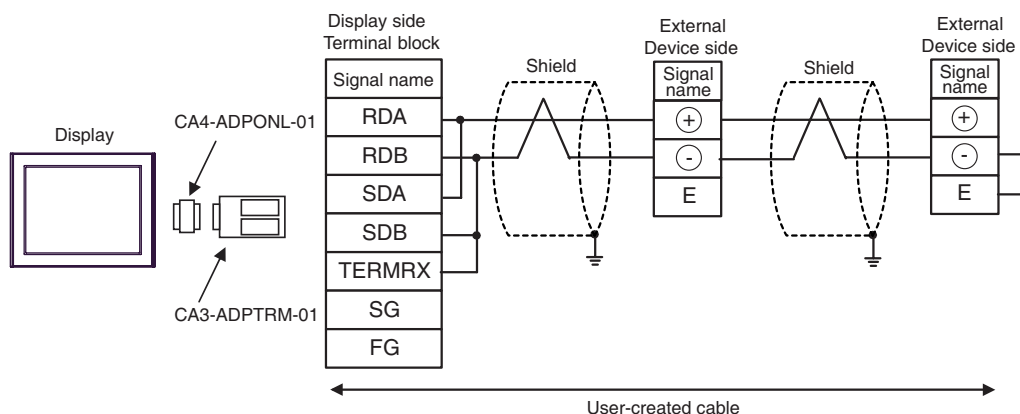
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13C)

- 1:1 Connection



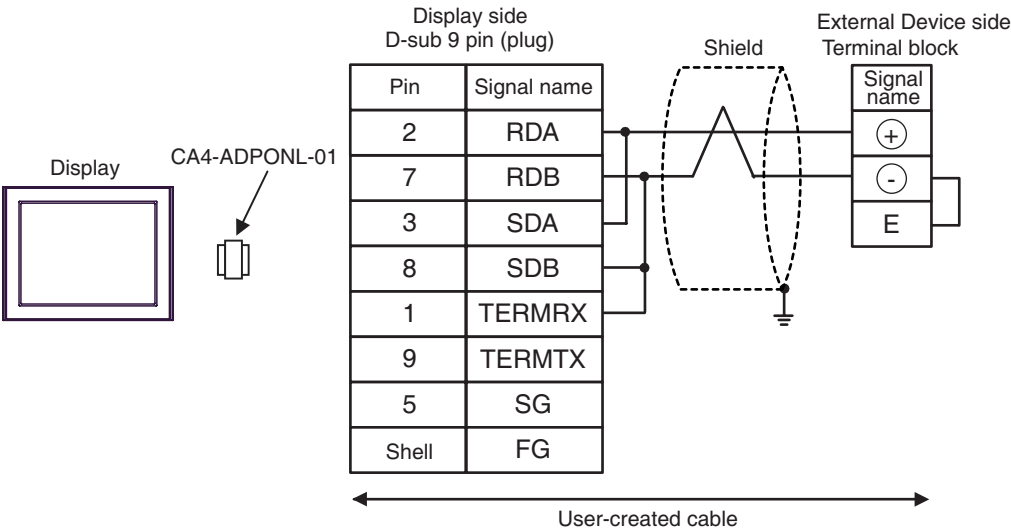
- 1:n Connection

**IMPORTANT**

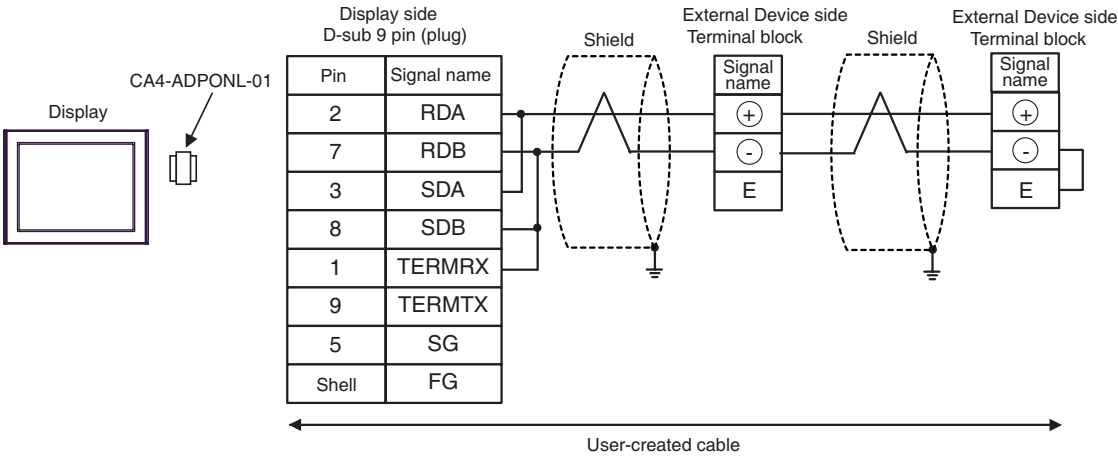
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13D)

- 1:1 Connection



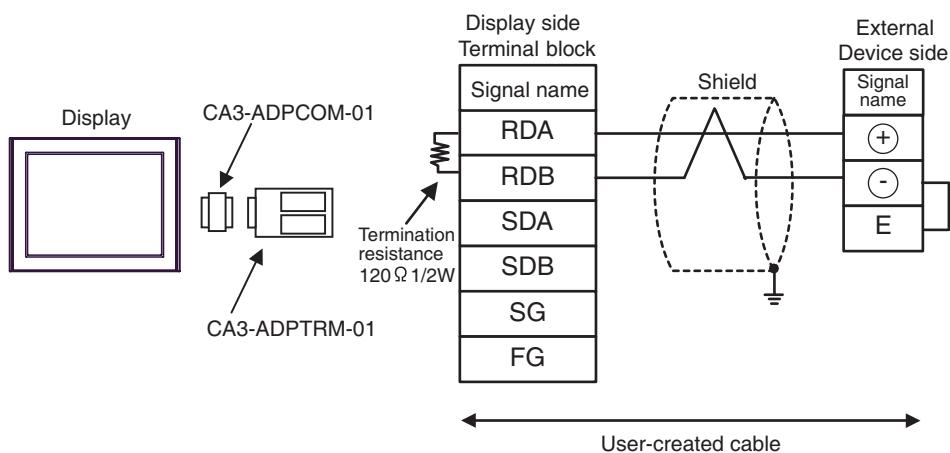
1:n Connection



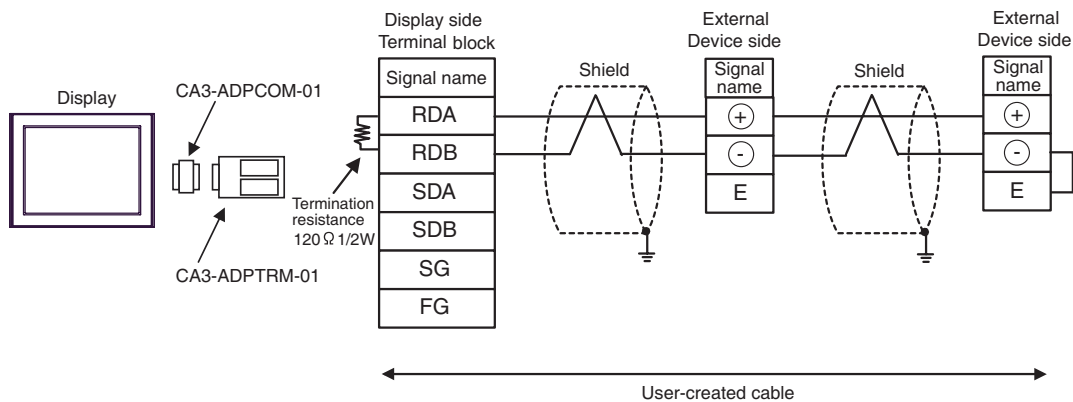
IMPORTANT • Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13E)

- 1:1 Connection



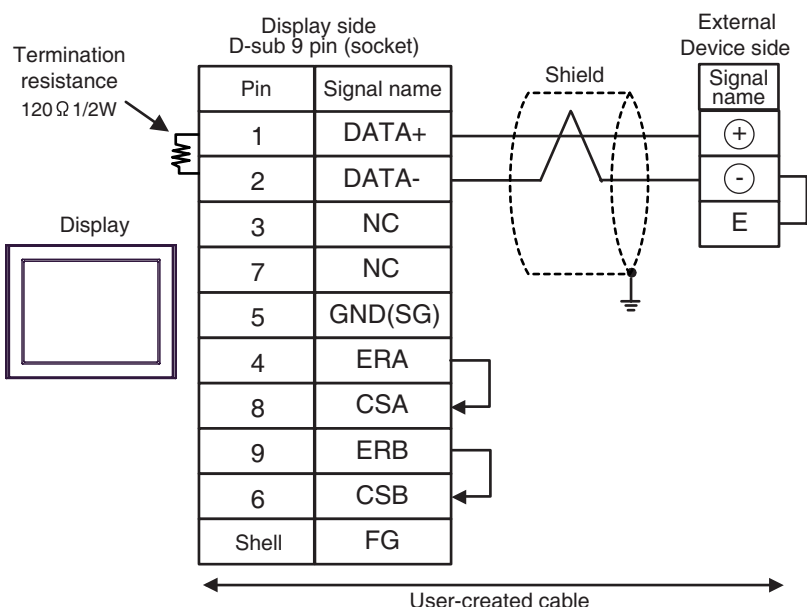
- 1:n Connection

**IMPORTANT**

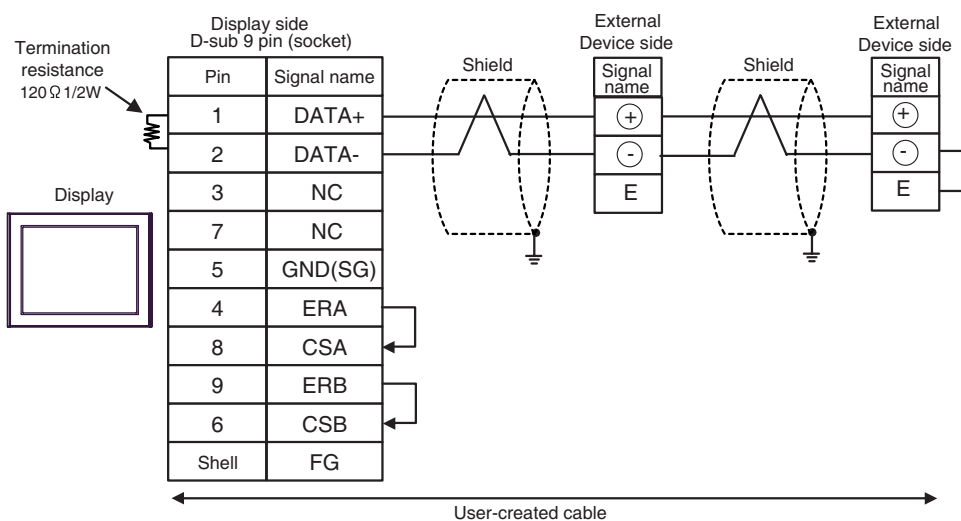
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13F)

- 1:1 Connection



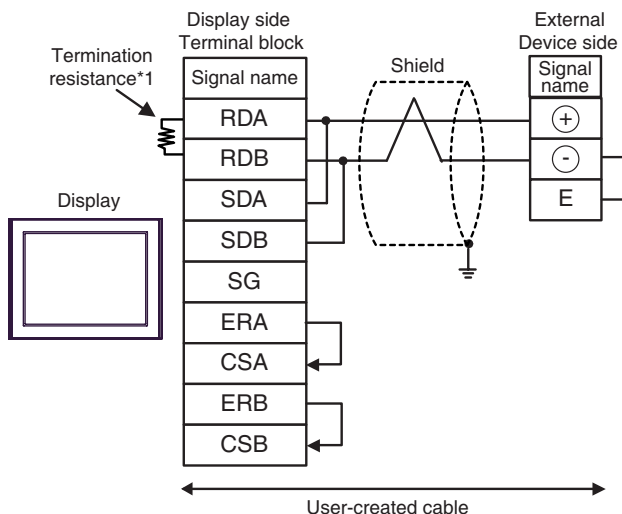
- 1:n Connection

**IMPORTANT**

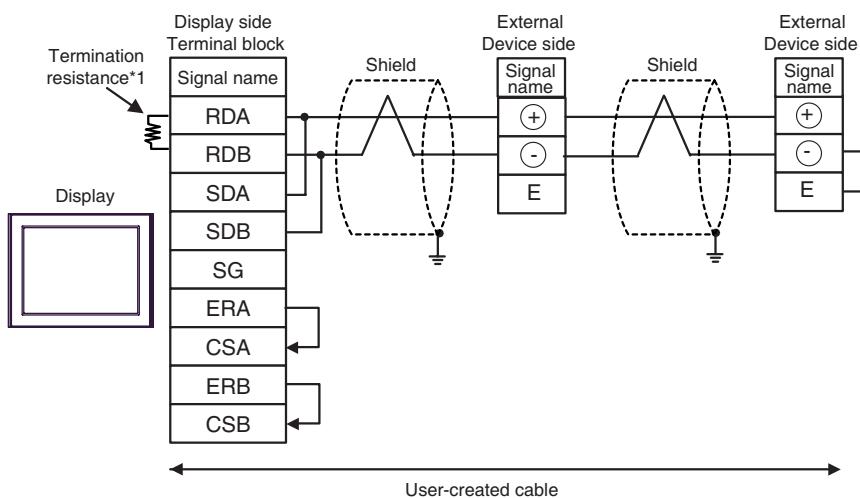
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

13G)

- 1:1 Connection



- 1:n Connection

**IMPORTANT**

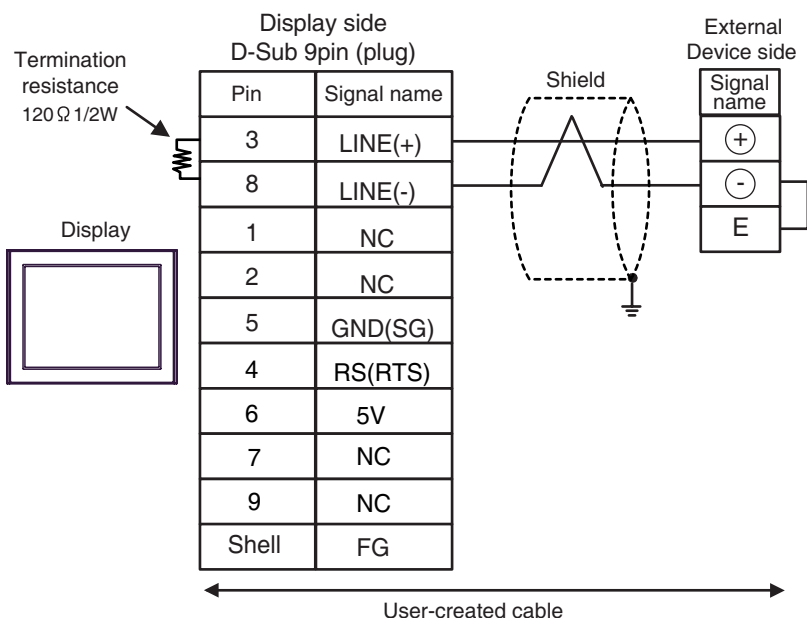
- Use the lead wire to connect between "-" terminal and "E" terminal in the External Device which terminates the connection.

*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.

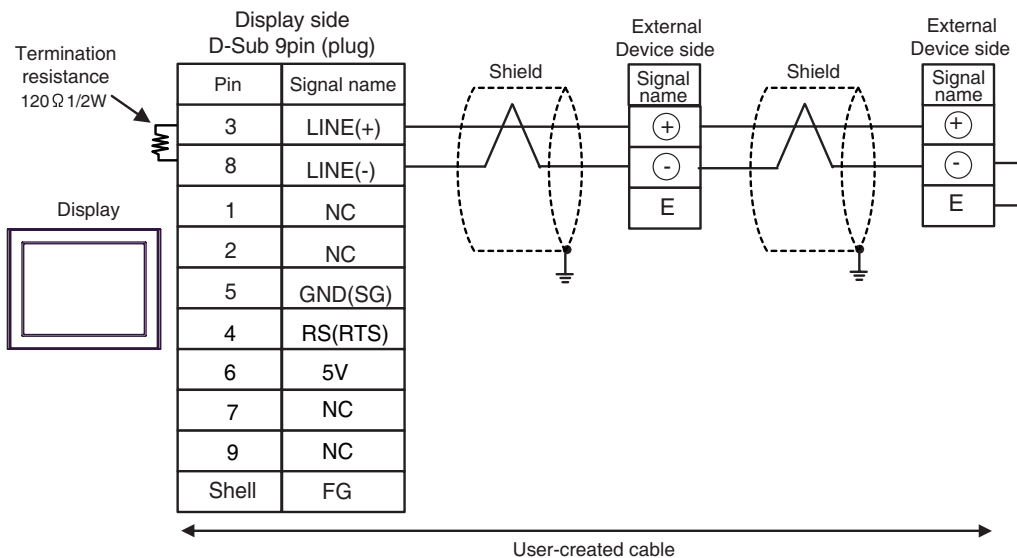
| DIP Switch No. | Set Value |
|----------------|-----------|
| 1 | OFF |
| 2 | OFF |
| 3 | ON |
| 4 | ON |

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 GP-4107 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.

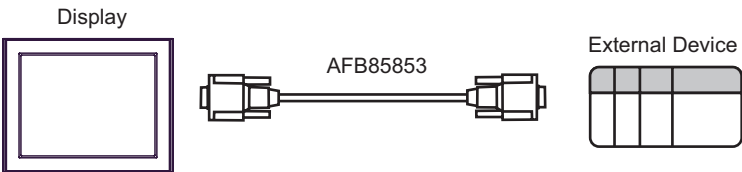
Cable Diagram 14

| Display (Connection Port) | Cable | | Notes |
|--|-------|--|-------|
| GP3000 (COM1) GP-4*0ITM (COM1) ST (COM1) IPC*1 PC/AT | 14A | Connection cable for FP10SH by Panasonic Electric Works Co., Ltd. AFB85853 (3m) | |
| GP-4105 (COM1) | 14B | User-created cable + Connection cable for FP10SH by Panasonic Electric Works Co., Ltd. AFB85853 (3m) | |

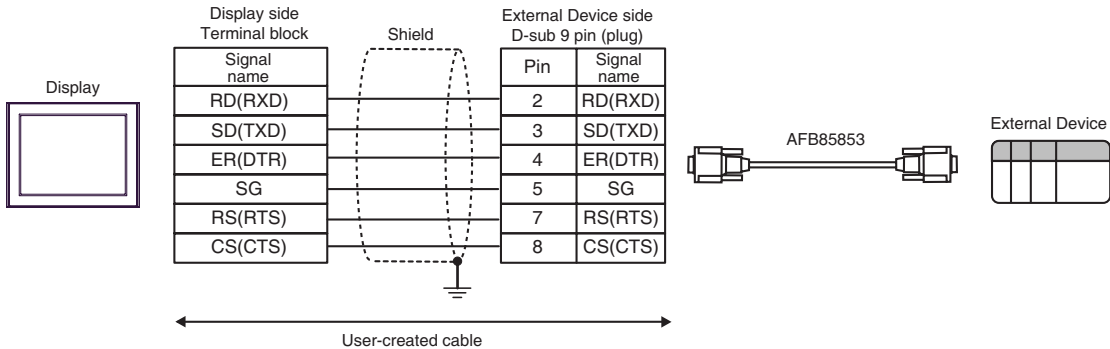
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

14A)





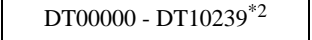




14B)



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 "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.

| 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 | <p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">NOTE</div> <ul style="list-style-type: none"> • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "Decimal[Hex]". |

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 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.
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