



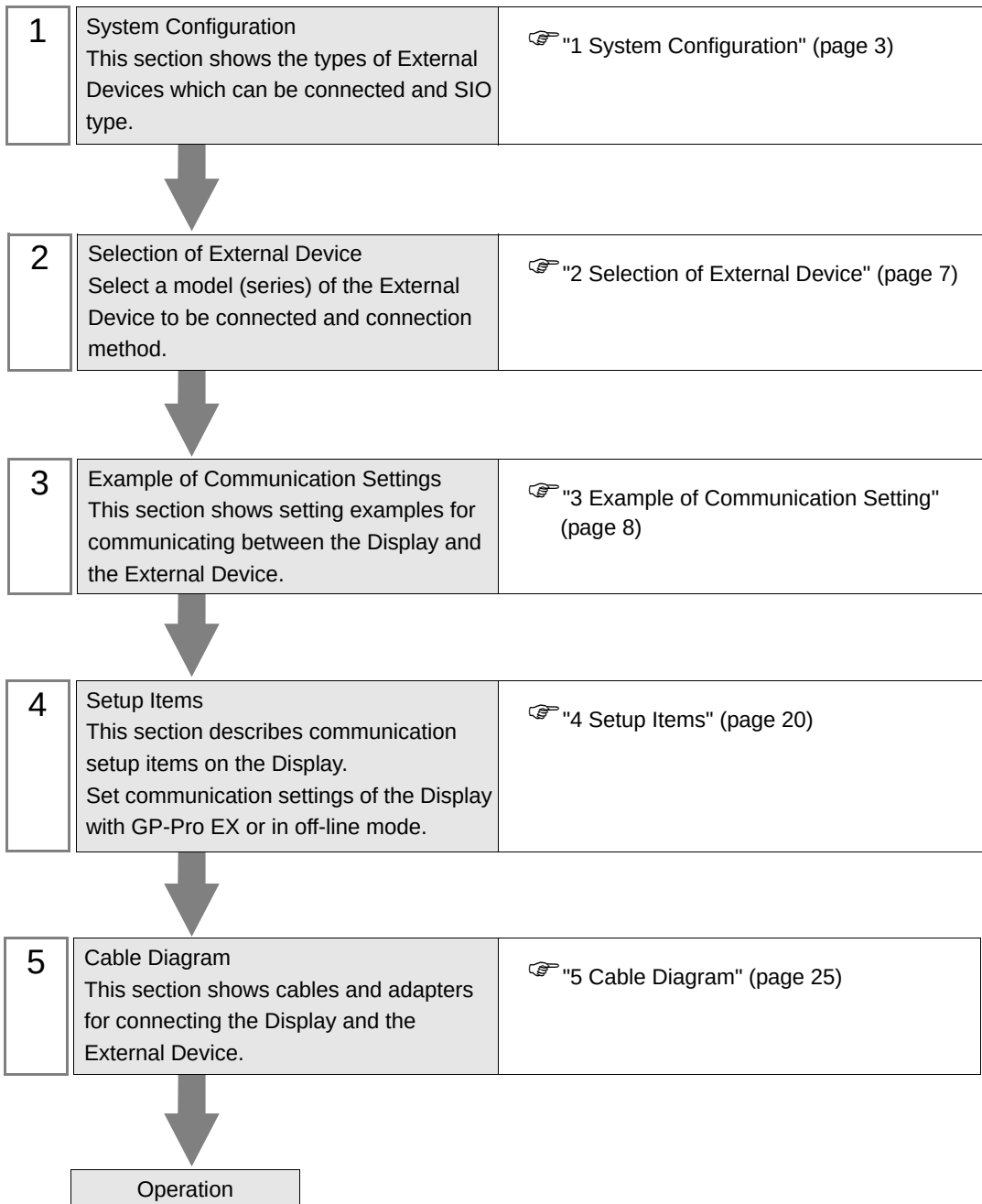
ROBO CYLINDER MODBUS SIO Driver

1	System Configuration.....	3
2	Selection of External Device	7
3	Example of Communication Setting	8
4	Setup Items.....	20
5	Cable Diagram	25
6	Supported Device.....	97
7	Device Code and Address Code.....	98
8	Error Messages.....	99

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 IAI Corporation and the Display are connected is shown.

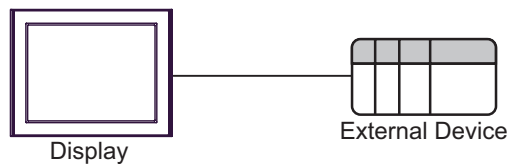
Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
PCON ACON SCON	PCON-□-□-□-□-□-□ ACON-□-□-□-□-□-□ SCON-□-□-□-□-□-□	SIO port	RS-232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 25)
			RS-422/485 (2 wire)	Setting Example 2 (page 10)	Cable Diagram 2 (page 26)
		D-sub 9 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 1 (page 8)	Cable Diagram 3 (page 34)
		Mini-DIN 8 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 1 (page 8)	Cable Diagram 4 (page 38)
ERC2	ERC2-□-□-□-□-□-□-□-□ ERC2-□-□-□-□-□-□-□-□	Teach port	RS-232C	Setting Example 3 (page 12)	Cable Diagram 1 (page 25)
			RS-422/485 (2 wire)	Setting Example 4 (page 14)	Cable Diagram 2 (page 26)
		Cable on CPU	RS-422/485 (2 wire)	Setting Example 4 (page 14)	Cable Diagram 5 (page 42)
		D-sub 9 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 3 (page 12)	Cable Diagram 6 (page 50)
		Mini-DIN 8 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 3 (page 12)	Cable Diagram 7 (page 59)
	ERC2-□-□-□-□-□-□-□-□	Cable on CPU	RS-232C	Setting Example 3 (page 12)	Cable Diagram 8 (page 68)
			RS-422/485 (2 wire)	Setting Example 4 (page 14)	Cable Diagram 9 (page 69)
		D-sub 9 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 3 (page 12)	Cable Diagram 10 (page 77)
		Mini-DIN 8 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 3 (page 12)	Cable Diagram 11 (page 81)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
ROBO NET ^{*1}	GateWayR RGW-SIO	Connector for network	RS-422/485 (2 wire)	Setting Example 5 (page 16)	Cable Diagram 12 (page 86)
		D-sub 9 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 6 (page 18)	Cable Diagram 13 (page 90)
		Mini-DIN 8 pin connector on SIO converter (RC□-TU-SIO-□)	RS-232C	Setting Example 6 (page 18)	Cable Diagram 14 (page 93)

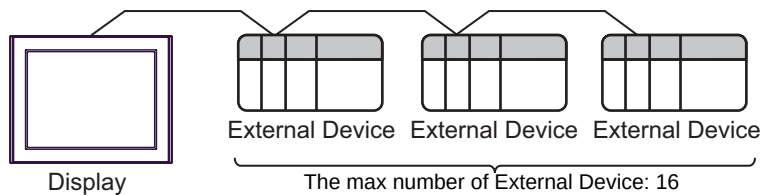
^{*1} Support only the Gateway mode.

■ Connection Configuration

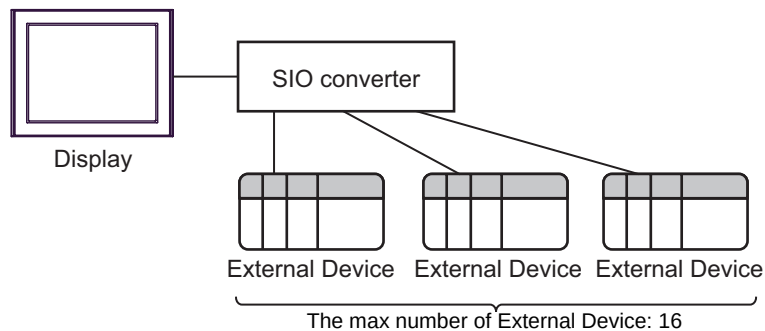
- 1:1 connection



- 1:n connection (For use COM1 or COM2)



- 1:n connection (For use SIO converter)



■ 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, PS-3651A	COM1 ^{*1}	-	-
PS-3700A (Pentium®4-M) PS-3710A	COM1 ^{*1} , COM2 ^{*1} , COM3 ^{*2} , COM4	COM3 ^{*2}	COM3 ^{*2}
PS-3711A	COM1 ^{*1} , COM2 ^{*2}	COM2 ^{*2}	COM2 ^{*2}
PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T	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.

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)

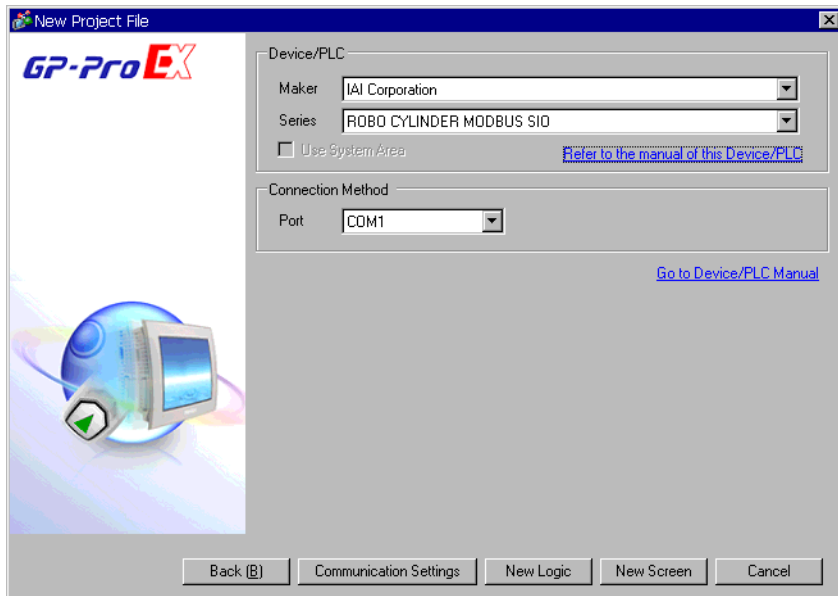
DIP switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (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 "IAI Corporation."
Series	Select a model (series) of the External Device to be connected and connection method. Select "ROBO CYLINDER MODBUS SIO." Check the External Device which can be connected in "ROBO CYLINDER MODBUS SIO" in system configuration. ☞ "1 System Configuration" (page 3)
Use System Area	Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)" This can also be set in GP-Pro EX or in the Display's off-line mode. Cf. GP-Pro EX Reference Manual "5.17.6 [System Settings] Setting Guide, [Display Unit] Settings Guide, System Area Settings" Cf. Maintenance/Troubleshooting Manual "2.15.1 Settings common to all Display models, [Main Unit Settings] Settings Guide, System Area Settings"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

The following shows examples of communication settings of the Display and the External Device, which is recommended by Pro-face.

3.1 Setting Example 1

■ Setting of GP-Pro EX

◆ Communication Settings

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

Device/PLC 1

Summary

Maker: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1

Text Data Mode: 1 [Change](#)

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Axis No.=0

◆ Device Setting

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

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

Individual Device Settings

PLC1

Axis No. 0

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets "adrs" to "63".)

Default

OK (O) Cancel

■ Setting of External Device

Communication setting of External Device using MODE selector switch, Address switch and setting tool (PC Interface Software for RC) of External Device.

Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Set the MODE selector switch of External Device as follows.

MODE selector switch	Setting Value
Selector switch	MANU

- 2 Set the Address switch of External Device as follows.

Address switch	Setting Value
ADRS	0

- 3 Start up the setting tool.
- 4 Select [Teach mode1 (Safety speed effective/PIO start prohibition)] of a window to select manual operation mode.
- 5 Expand the axis number to be set from the tree view and click [Parameter].
- 6 Set [SIO Baudrate[bps]] of External Device as follows.

Setup Item	Setting Value
SIO Baudrate[bps]	38400

- 7 Select [Send to Controller] from the [Parameter] menu and send the set contents to the controller.

3.2 Setting Example 2

■ Setting of GP-Pro EX

◆ Communication Settings

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

Device/PLC 1

Summary

Maker: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1

Text Data Mode: 1 Change

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Axis No.=0

◆ Device Setting

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

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

Individual Device Settings

PLC1

Axis No.: 0

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets "adrs" to "63".)

Default

OK (O) Cancel

■ Setting of External Device

Communication setting of External Device using MODE selector switch, Address switch and setting tool (PC Interface Software for RC) of External Device.

Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Set the MODE selector switch of External Device as follows.

MODE selector switch	Setting Value
Selector switch	MANU

- 2 Set the Address switch of External Device as follows.

Address switch	Setting Value
ADRS	0

- 3 Start up the setting tool.
- 4 Select [Teach mode1 (Safety speed effective/PIO start prohibition)] of a window to select manual operation mode.
- 5 Expand the axis number to be set from the tree view and click [Parameter].
- 6 Set [SIO Baudrate[bps]] of External Device as follows.

Setup Item	Setting Value
SIO Baudrate[bps]	38400

- 7 Select [Send to Controller] from the [Parameter] menu and send the set contents to the controller.

3.3 Setting Example 3

■ Setting of GP-Pro EX

◆ Communication Settings

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

Device/PLC 1

Summary

Maker: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1

Text Data Mode: 1 Change

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Axis No.=0

◆ Device Setting

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

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

Individual Device Settings

PLC1

Axis No.: 0

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets "adrs" to "63".)

Default

OK (O) Cancel

■ Setting of External Device

Communication setting of External Device using setting tool (PC Interface Software for RC) of External Device.
Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Start up the setting tool.
- 2 Select [Teach mode1 (Safety speed effective/PIO start prohibition)] of a window to select manual operation mode.
- 3 Select [Controller Setup]-[Assign Axis Number] from [Setting] menu.
- 4 Set axis number of [Assign Axis Number] dialog box as follows, and click [OK].

Setup Item	Setting Value
New Assign Axis Number	0

- 5 Expand the axis number to be set from the tree view and click [Parameter].
- 6 Set [SIO Baudrate[bps]] of External Device as follows.

Setup Item	Setting Value
SIO Baudrate[bps]	38400

- 7 Select [Send to Controller] from the [Parameter] menu and send the set contents to the controller.

3.4 Setting Example 4

■ Setting of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

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

■ Setting of External Device

Communication setting of External Device using setting tool (PC Interface Software for RC) of External Device.
Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Start up the setting tool.
- 2 Select [Teach mode1 (Safety speed effective/PIO start prohibition)] of a window to select manual operation mode.
- 3 Select [Controller Setup]-[Assign Axis Number] from [Setting] menu.
- 4 Set axis number of [Assign Axis Number] dialog box as follows, and click [OK].

Setup Item	Setting Value
New Assign Axis Number	0

- 5 Expand the axis number to be set from the tree view and click [Parameter].
- 6 Set [SIO Baudrate[bps]] of External Device as follows.

Setup Item	Setting Value
SIO Baudrate[bps]	38400

- 7 Select [Send to Controller] from the [Parameter] menu and send the set contents to the controller.

3.5 Setting Example 5

■ Setting of GP-Pro EX

◆ Communication Settings

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

Device/PLC 1

Summary

Maker: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1

Text Data Mode: 1 Change

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Axis No.=62

◆ 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

Axis No.: 62

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets "adrs" to "63".)

Default

OK (O) Cancel

■ Setting of External Device

Communication setting of External Device using MODE switch, Axis address setting switch, User setting switches and setting tool (gateway parameter selection tool) of External Device.

Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Set the MODE switch of GateWayR unit as follows.

MODE switch	Setting Value
MODE	MANU

- 2 Set the Axis address setting switch of controller unit as follows.

Axis address setting switch	Setting Value
ADRS	0

- 3 Set the User setting switches of GateWayR unit as follows.

User setting switches	Setting Value
SW1	OFF
SW2	OFF
SW3	Always OFF
SW4	Always OFF

- 4 Start up the setting tool.
- 5 Click [Read].
- 6 Click [Yes] of [Confirmation] dialog box.
- 7 Click [OK] of [Information] dialog box.
- 8 Set the setup items as follows, and click [Write].

Setup Items	Setting Value
Baud Rate	38400
Axis Type	1

- 9 Click [Yes] of [Confirmation] dialog box, and restart.
- 10 Set the MODE switch of GateWayR unit as follows.

MODE Switch	Setting Value
MODE	AUTO

3.6 Setting Example 6

■ Setting of GP-Pro EX

◆ Communication Settings

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

Device/PLC 1

Summary

Maker: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1

Text Data Mode: 1 [Change](#)

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

Number	Device Name	Settings
1	PLC1	Axis No.=62

◆ 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

Axis No.: 62

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets "adrs" to "63".)

Default

OK (O) Cancel

■ Setting of External Device

Communication setting of External Device using MODE switch, Axis address setting switch, User setting switches and setting tool (gateway parameter selection tool) of External Device.

Please refer to the manual of the External Device for more details.

◆ Procedure

- 1 Set the MODE switch of GateWayR unit as follows.

MODE switch	Setting Value
MODE	MANU

- 2 Set the Axis address setting switch of controller unit as follows.

Axis address setting switch	Setting Value
ADRS	0

- 3 Set the User setting switches of GateWayR unit as follows.

User setting switches	Setting Value
SW1	OFF
SW2	OFF
SW3	Always OFF
SW4	Always OFF

- 4 Start up the setting tool.
- 5 Click [Read].
- 6 Click [Yes] of [Confirmation] dialog box.
- 7 Click [OK] of [Information] dialog box.
- 8 Set the setup items as follows, and click [Write].

Setup Items	Setting Value
Baud Rate	38400
Axis Type	1

- 9 Click [Yes] of [Confirmation] dialog box, and restart.
- 10 Set the MODE switch of GateWayR unit as follows.

MODE Switch	Setting Value
MODE	AUTO

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 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: IAI Corporation Series: ROBO CYLINDER MODBUS SIO Port: COM1 [Change Device/PLC](#)

Text Data Mode: 1 [Change](#)

Communication Settings

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

Speed: 38400

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: 2 (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 Number of Devices/PLCs: 16

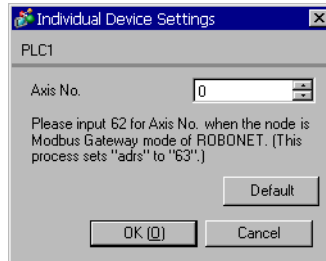
Number: 1 Device Name: PLC1 Settings: Axis No.=0

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	Display 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	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

■ Device Setting

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

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



Setup Items	Setup Description
Axis No.	When the External Device is other than the ROBONET Modbus gateway mode, input any number from 0 to 15 in the axis number. When the External Device is the ROBONET Modbus gateway, input 62 in the axis number.

4.2 Setup Items in Off-Line Mode

NOTE

- Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

Cf. Maintenance/Troubleshooting Manual "2.2 Off-line Mode"

■ Communication Settings

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

Comm.	Device	Option		
ROBO CYLINDER MODBUS SIO [COM1] Page 1/1				
SIO Type	RS232C			
Speed	38400			
Data Length	8			
Parity	☒ NONE ☐ EVEN ☐ ODD			
Stop Bit	☒ 1 ☐ 2			
Flow Control	NONE			
Timeout(s)	3			
Retry	2			
Wait To Send(ms)	2			
Exit		Back		2007/12/19 21:46:22

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	Display 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.

Continues to the next page.

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 Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].

Comm.	Device	Option		

ROBO CYLINDER MODBUS SIO [COM1] Page 1/1

Device/PLC Name

Axis No.

Please input 62 for Axis No. when the node is Modbus Gateway mode of ROBONET. (This process sets Adrs to 63.)

	Exit		Back	2007/12/19 21:46:26
--	------	--	------	------------------------

Setup Items	Setup Description
Device/PLC name	Select the External Device to set. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Axis No.	When the External Device is other than the ROBONET Modbus gateway mode, input any number from 0 to 15 in the axis number. When the External Device is the ROBONET Modbus gateway, input 62 in the axis number.

■ Option

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

Comm.	Device	Option		
ROBO CYLINDER MODBUS 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	2007/12/19 21:46:33

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

5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by IAI Corporation. 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.
- Make the External Device and 0V of SIO converter common.

Cable Diagram 1

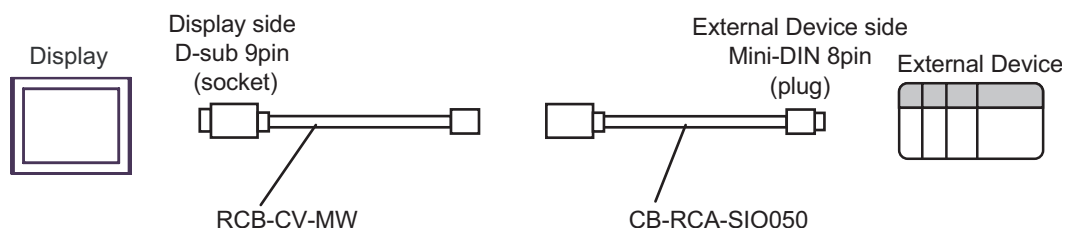
Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) LT (COM1) IPC ^{*1} PC/AT	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050	

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

☞ ■ IPC COM Port (page 5)

NOTE

- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-RCA-SIO050) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.



Cable Diagram 2

Display (Connection Port)	Cable		Notes
GP* ¹ (COM1) AGP-3302B (COM2) ST* ² (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	Cable length: 100m or less
	B	Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	
GP* ⁴ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	

continued to next page

Display (Connection Port)	Cable		Notes
IPC ^{*5}	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP ^{*3} 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	Cable length: 100m or less
	F	Your own cable 1 + Junction by AMP ^{*3} 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	

*1 All GP models except AGP-3302B

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

*3 When using more than one junction by AMP, your own cable 2 is required.

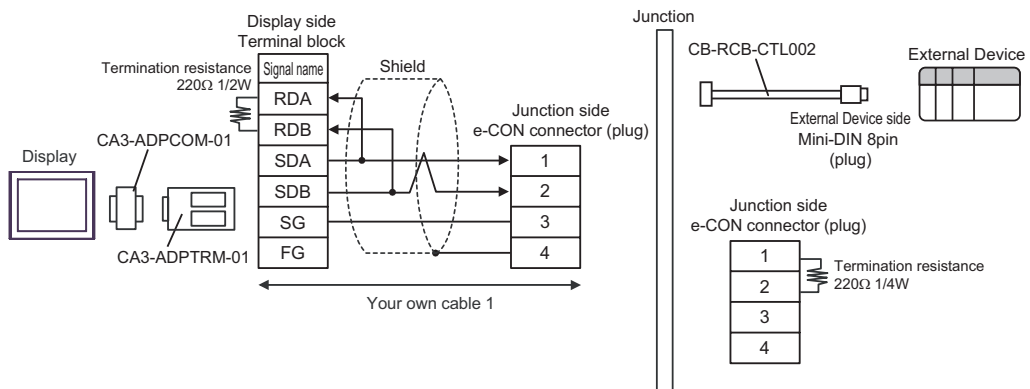
*4 All GP models except GP-3200 series and AGP-3302B

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

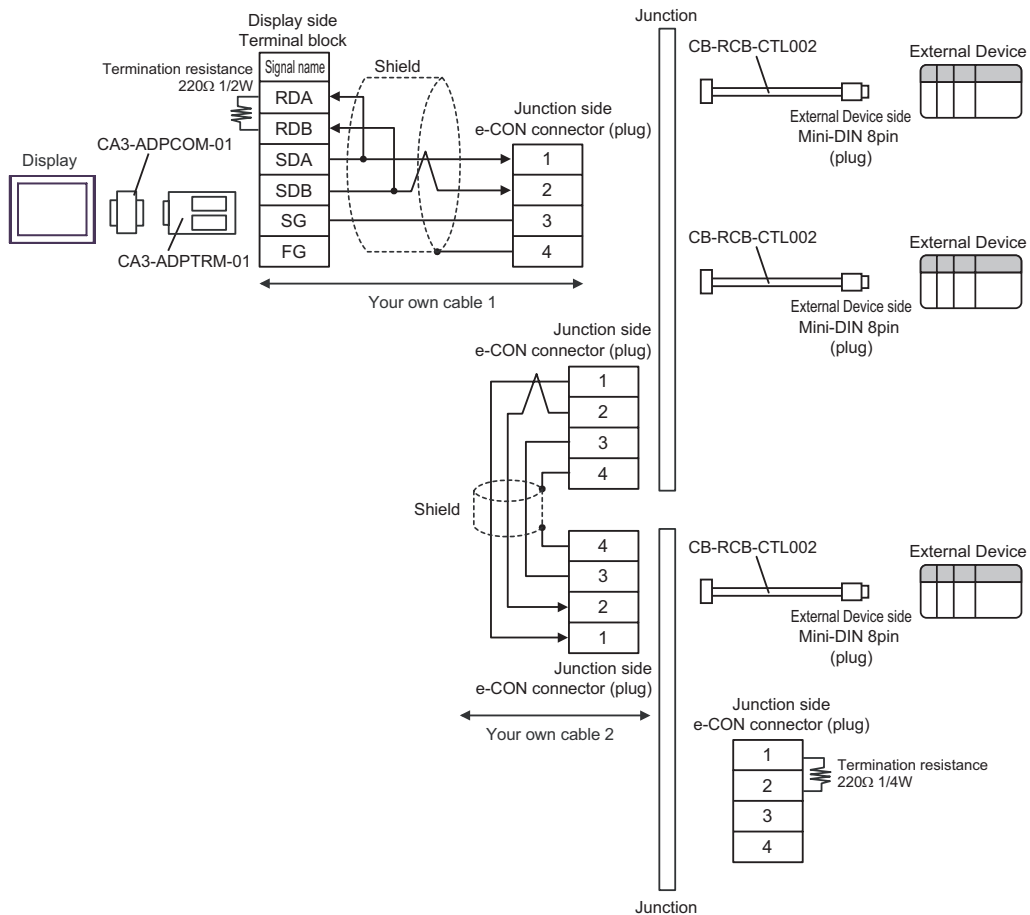
 ■ IPC COM Port (page 5)

- A) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

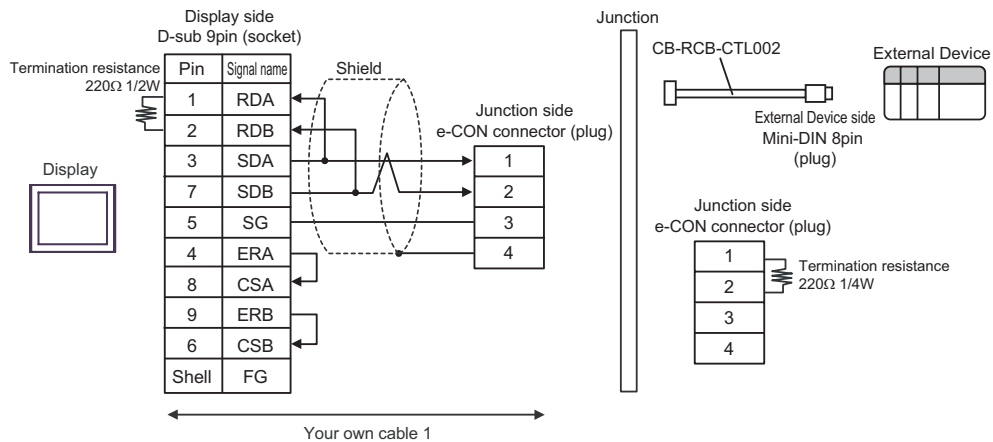


- 1:n connection

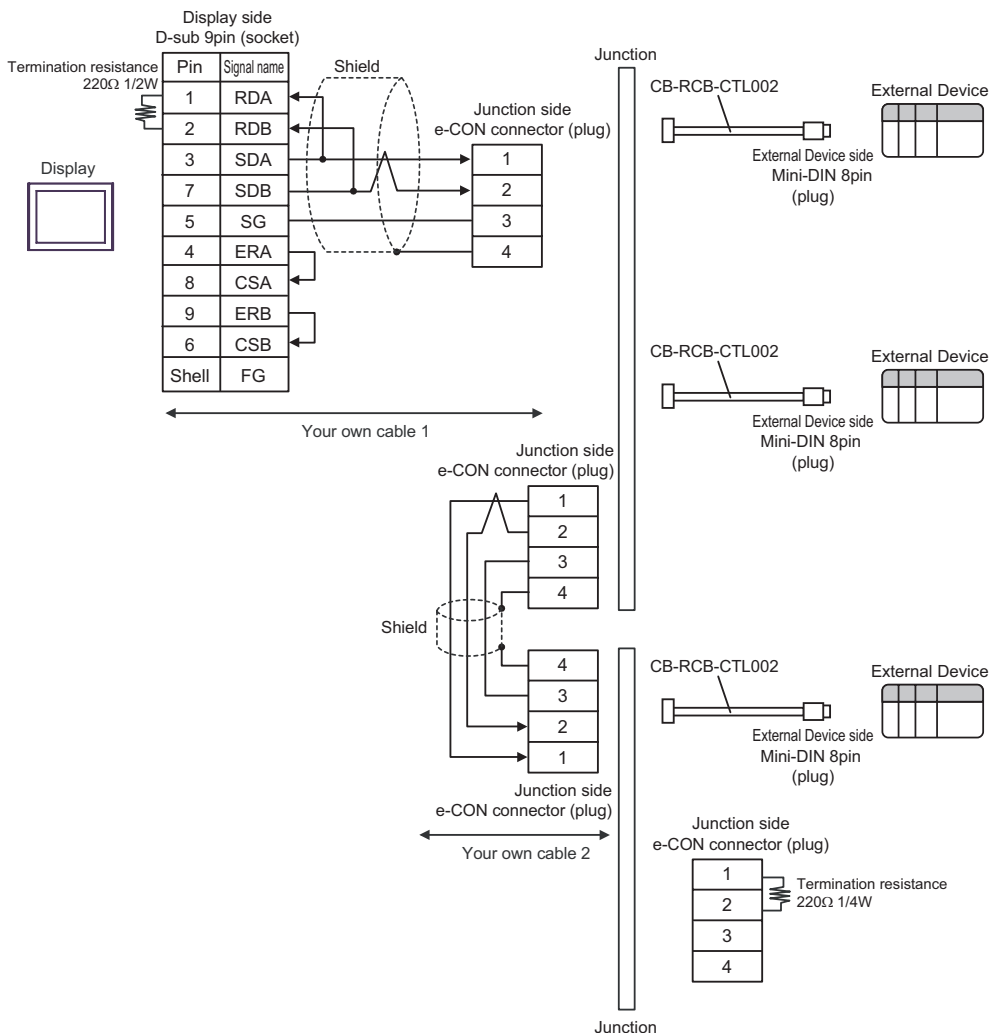


B) When using your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

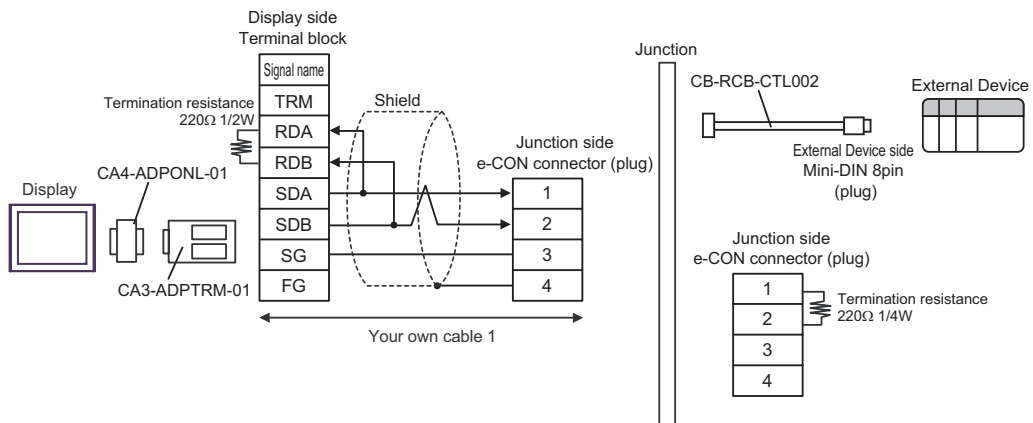


- 1:n connection

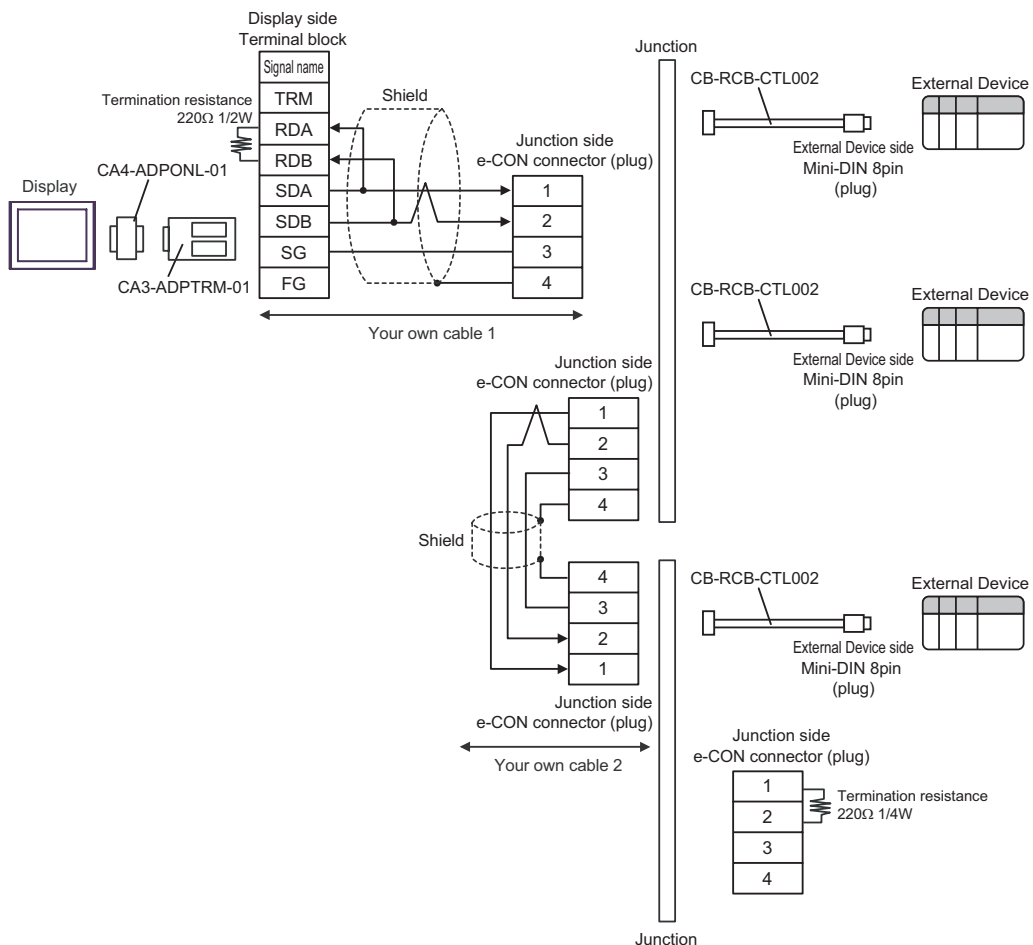


- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

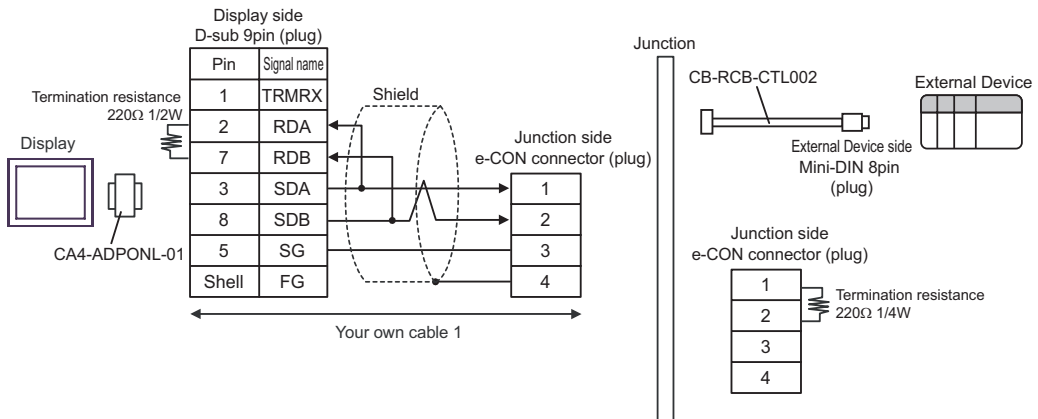


- 1:n connection

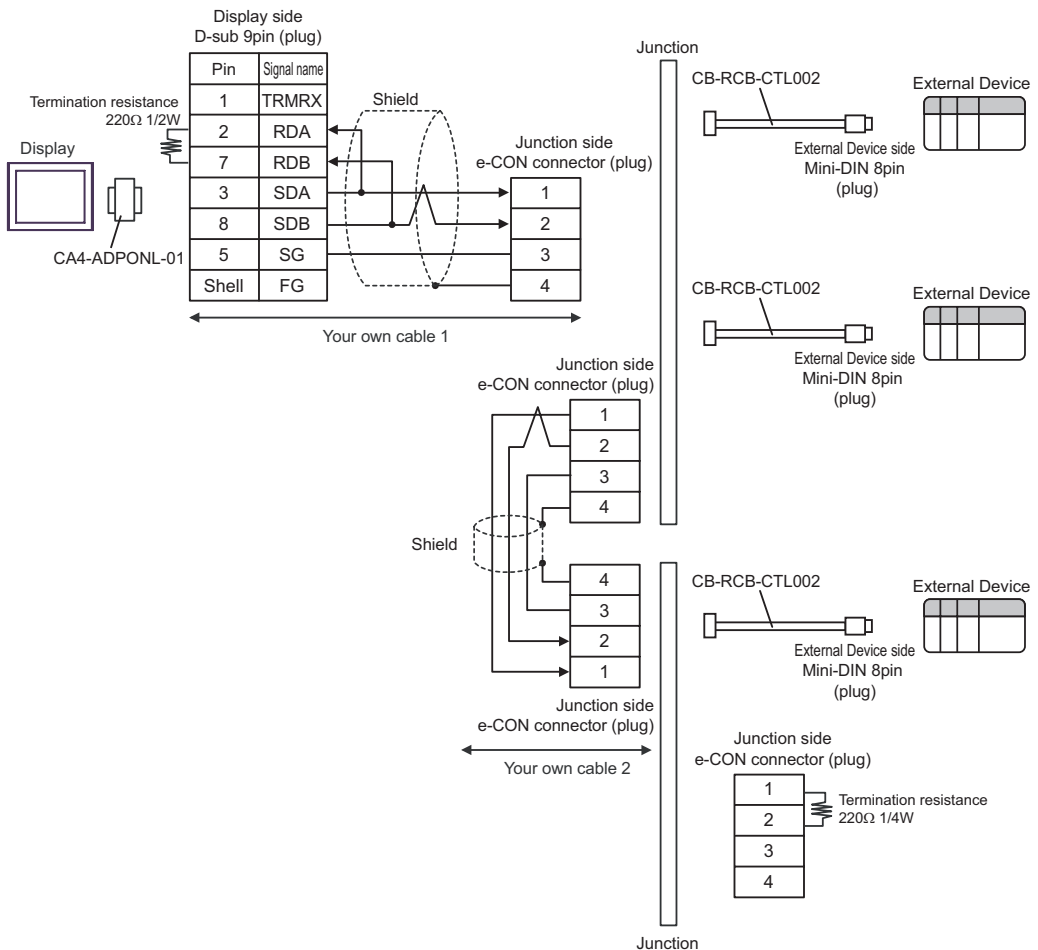


D) When using the online adapter (CA4-ADPONL-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

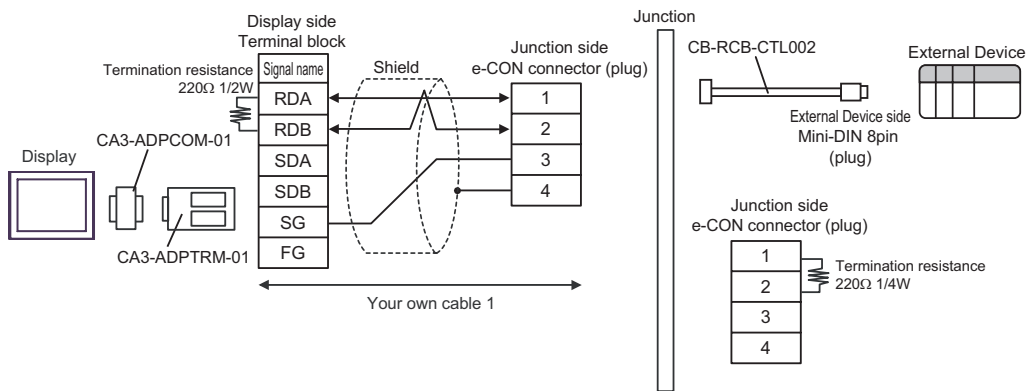


- 1:n connection

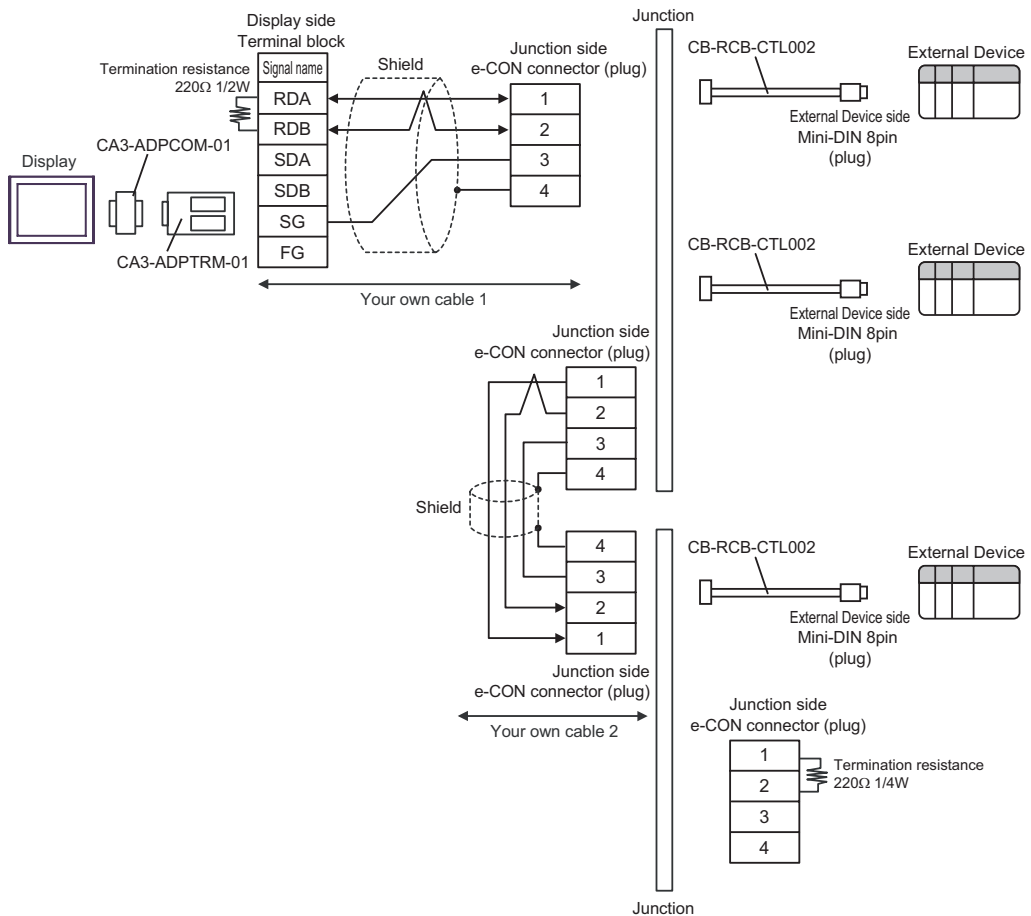


E) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

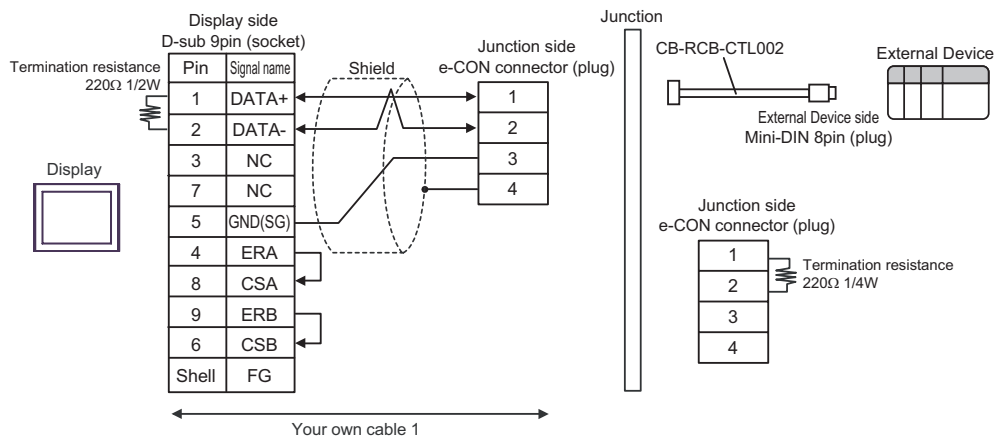


- 1:n connection

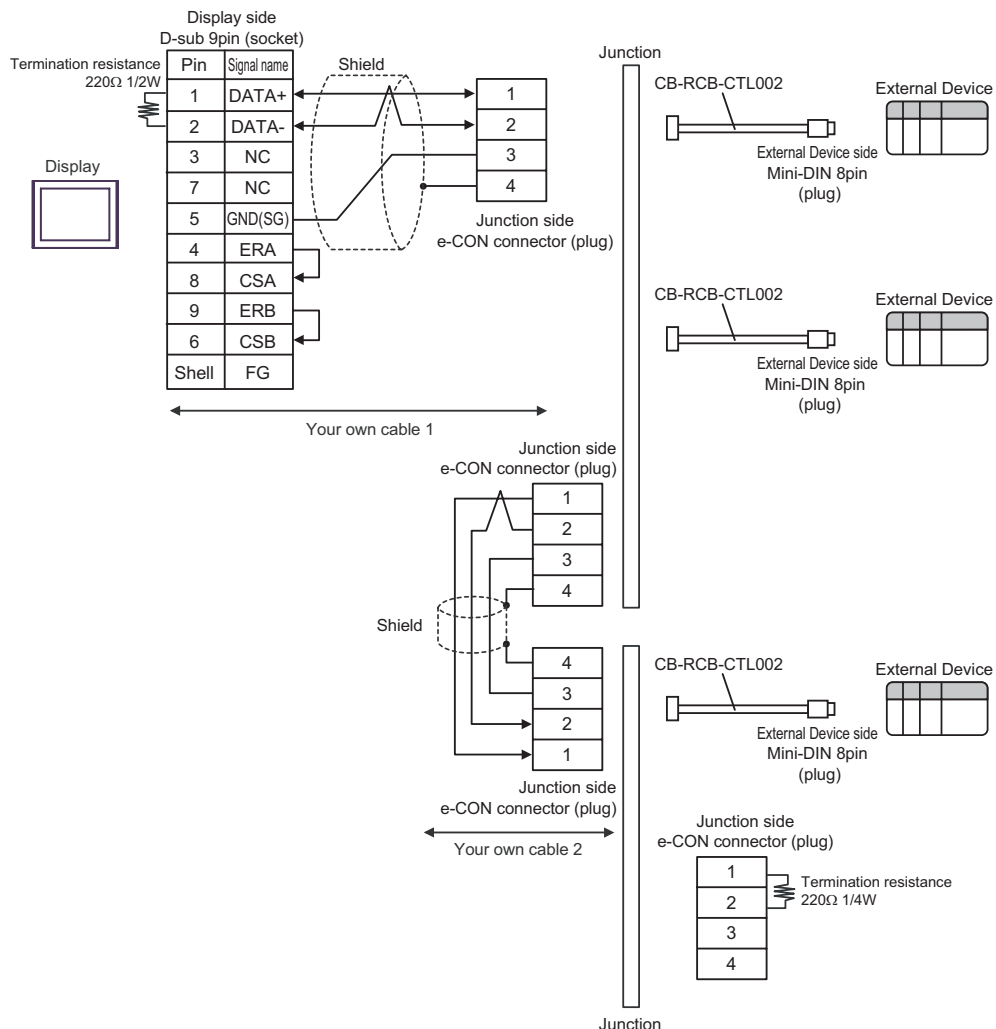


F) When using your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection



- 1:n connection



Cable Diagram 3

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	A	Your own cable + SIO converter by IAI Corporation RC□-TU-SIO-□ + Controller link cable by IAI Corporation CB-RCB-CTL002	Cable length from Display to SIO converter: 15m or less Cable length from SIO converter to External Device: 100m or less
	B	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP* ² 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	
	C	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP* ² 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	

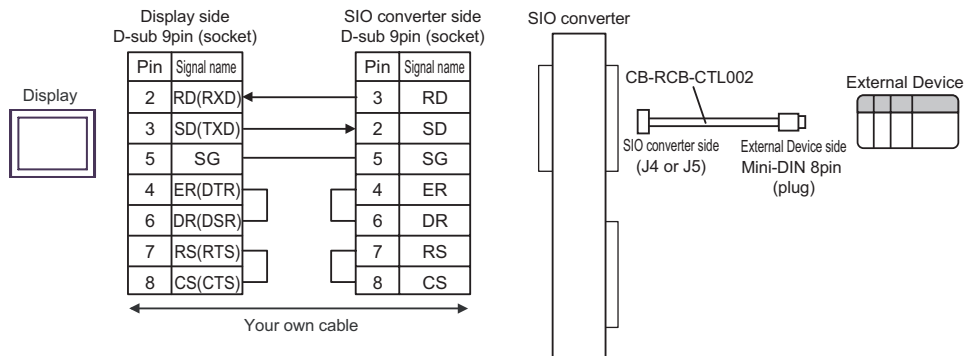
*1 Only the COM port which can communicate by RS-232C can be used.

 ■ IPC COM Port (page 5)

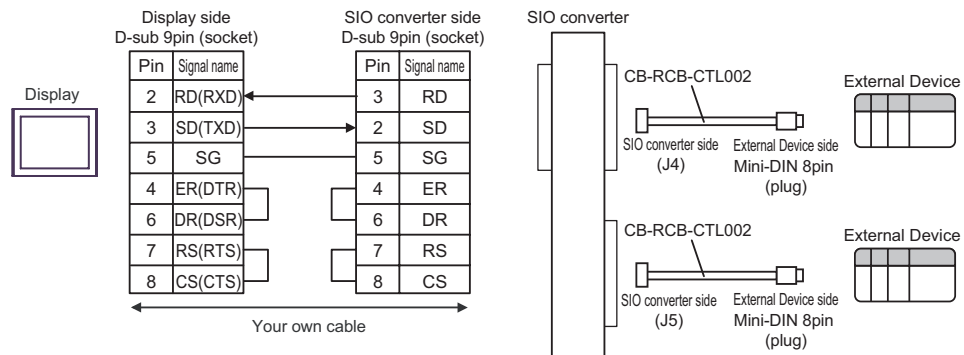
*2 When using more than one junction by AMP, your own cable 3 is required.

A) When using your own cable, SIO converter (RC□-TU-SIO-□) and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

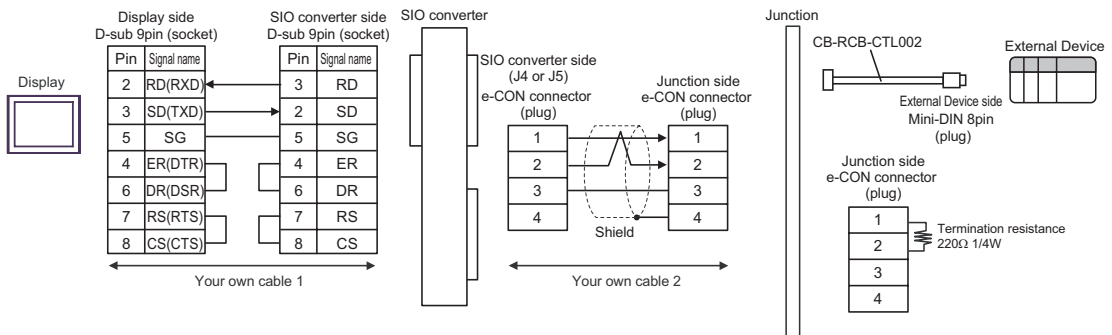


- 1:n connection

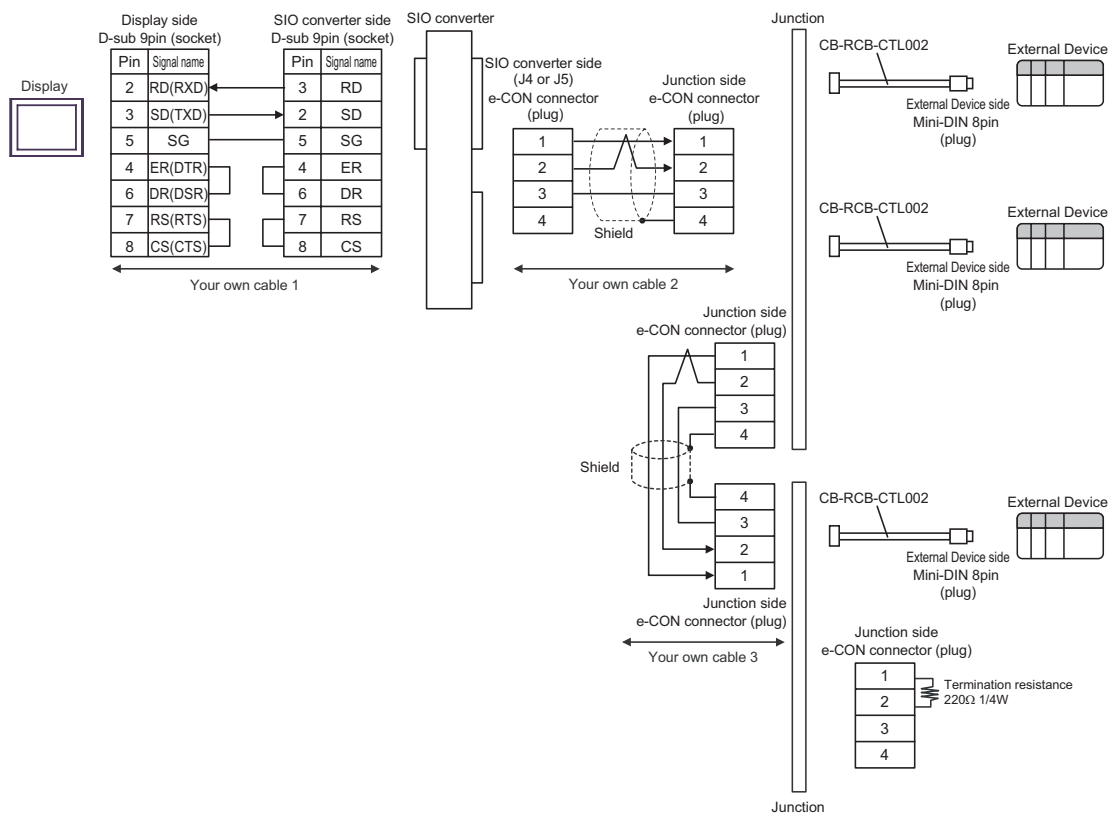


B) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

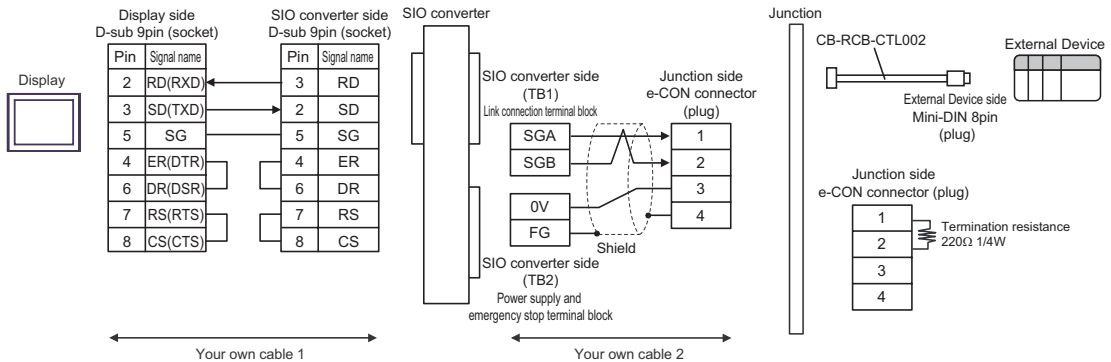


- 1:n connection

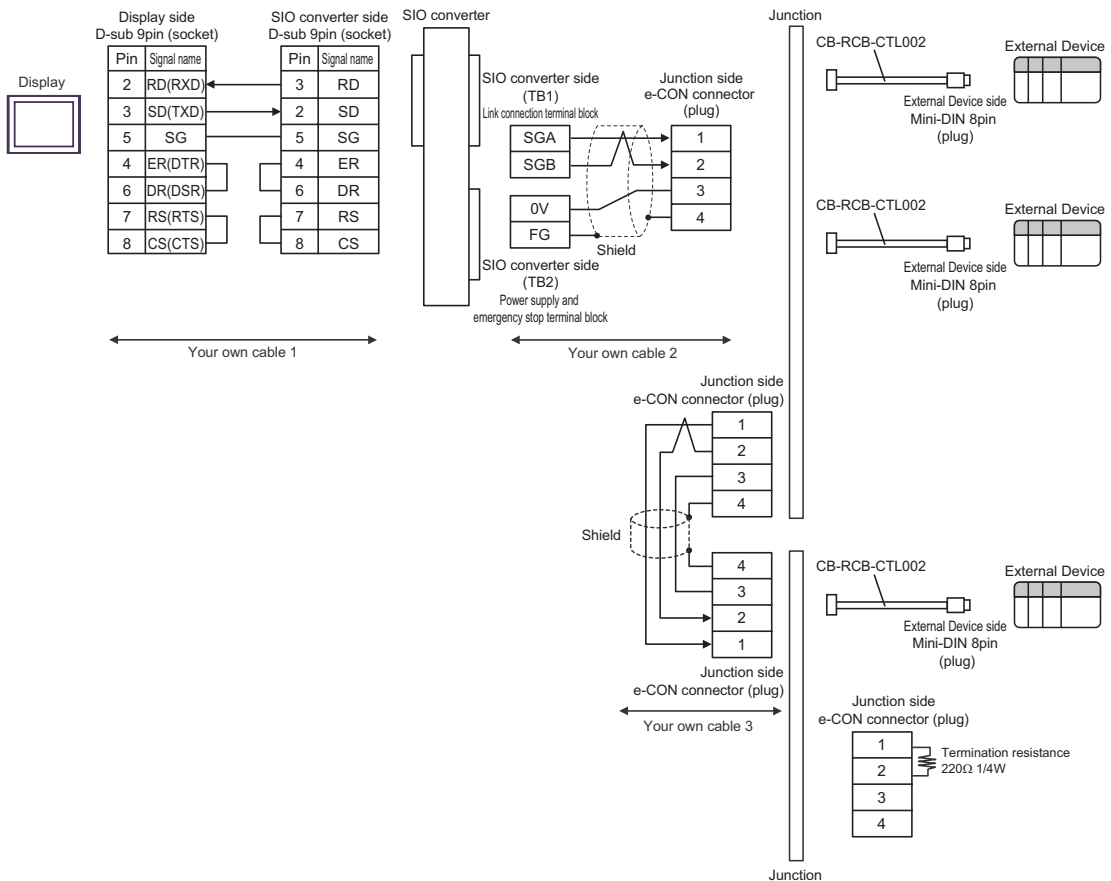


C) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection



- 1:n connection



Cable Diagram 4

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	A	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Controller link cable by IAI Corporation CB-RCB-CTL002	Cable length from SIO converter to External Device: 100m or less
	B	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	
	C	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Controller link cable by IAI Corporation CB-RCB-CTL002	

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

 ■ IPC COM Port (page 5)

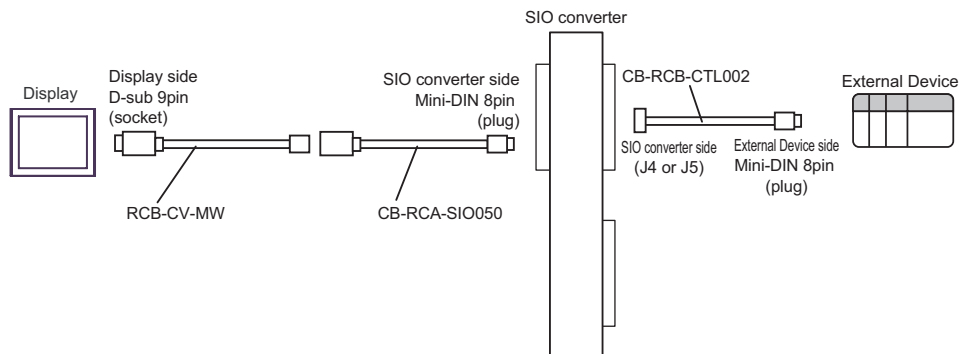
*2 When using more than one junction by AMP, your own cable 2 is required.

NOTE

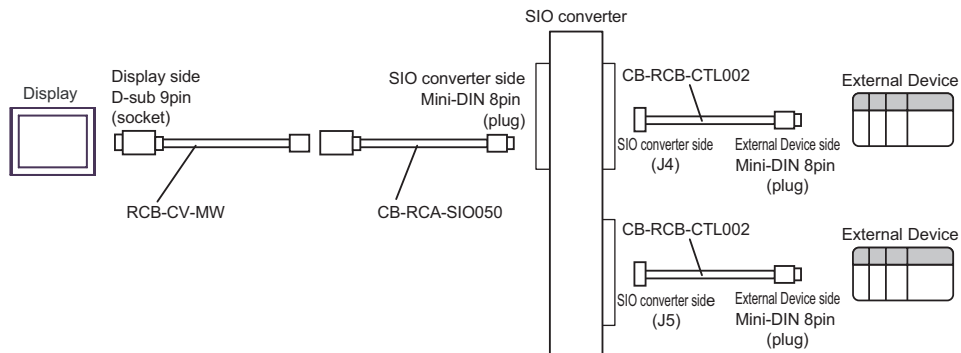
- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-RCA-SIO050) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.
- When connecting to 3 or more External Devices, use a junction by AMP.

A) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

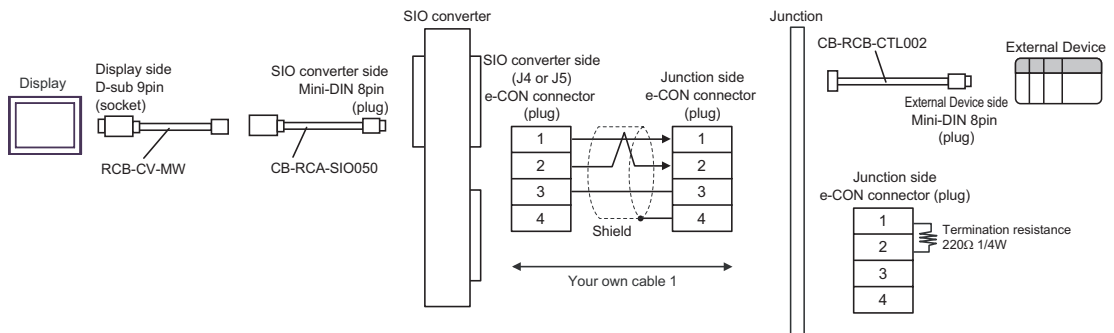


- 1:n connection

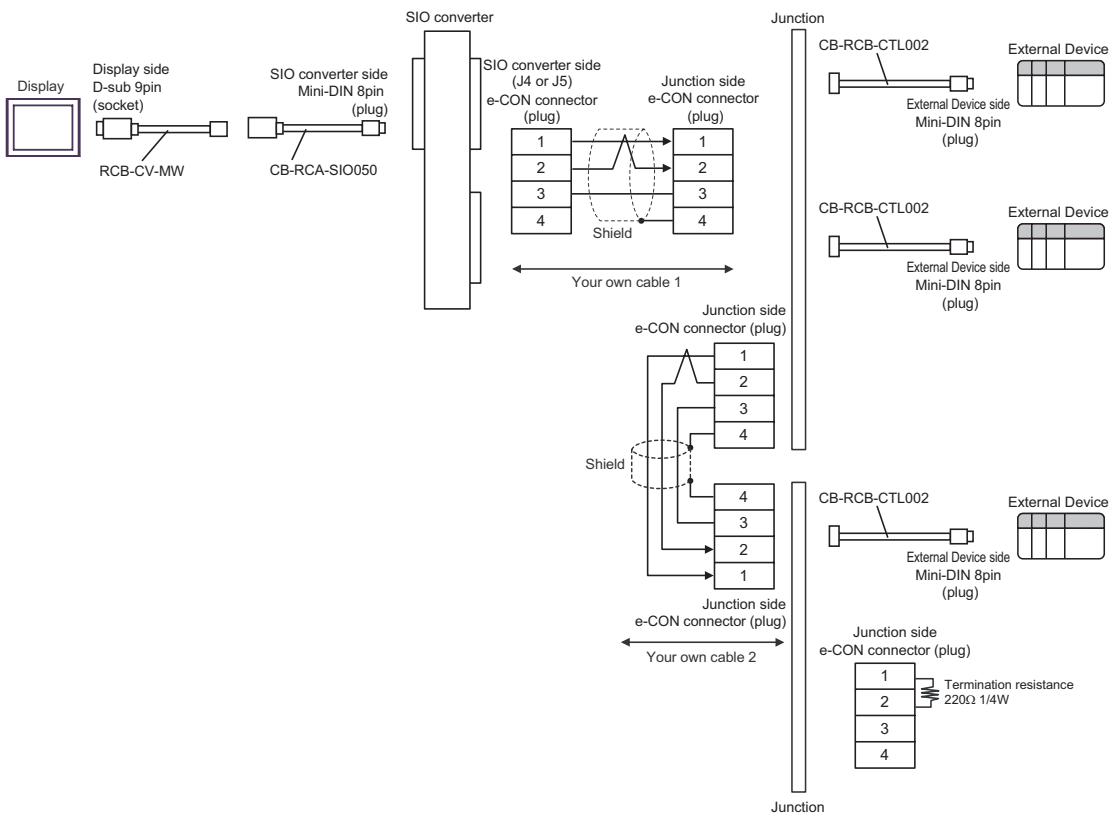


- B) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection

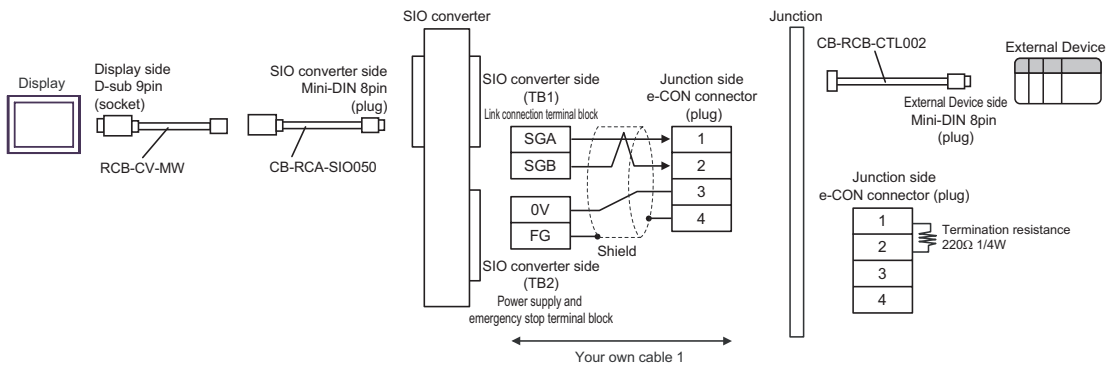


- 1:n connection

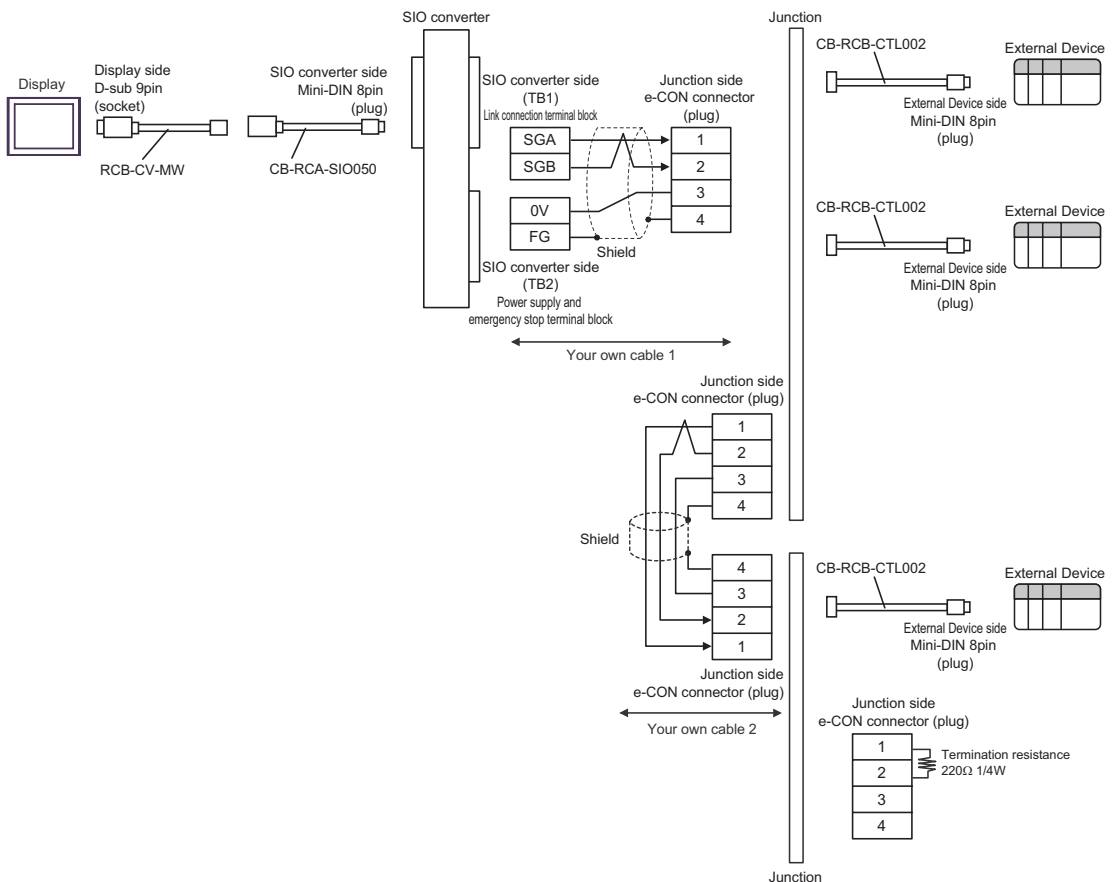


- C) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP and controller link cable (CB-RCB-CTL002) by IAI Corporation

- 1:1 connection



- 1:n connection



Cable Diagram 5

Display (Connection Port)	Cable		Notes
GP* ¹ (COM1) AGP-3302B (COM2) ST* ² (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length: 100m or less
	B	Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	
GP* ³ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	

continued to next page

Display (Connection Port)	Cable		Notes
IPC ^{*4}	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length: 100m or less
	F	Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	

*1 All GP models except AGP-3302B

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

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

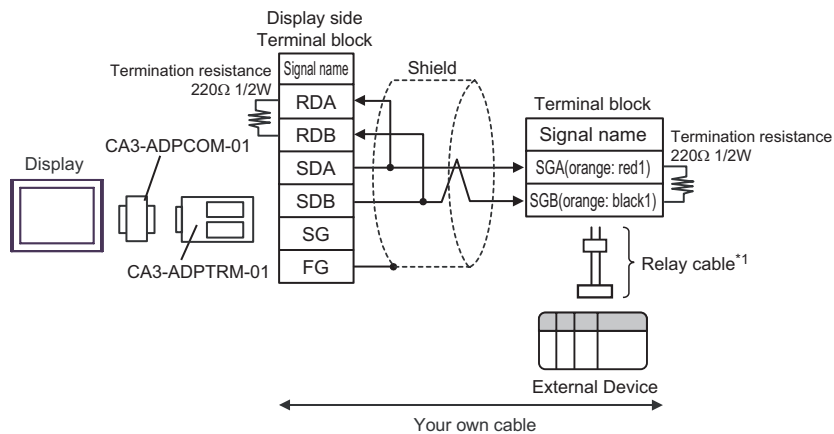
*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.



■ IPC COM Port (page 5)

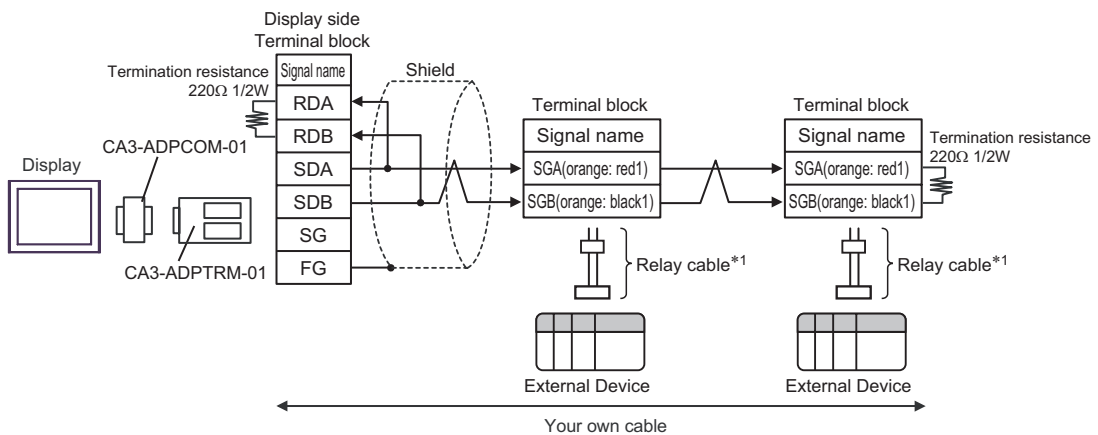
- A) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

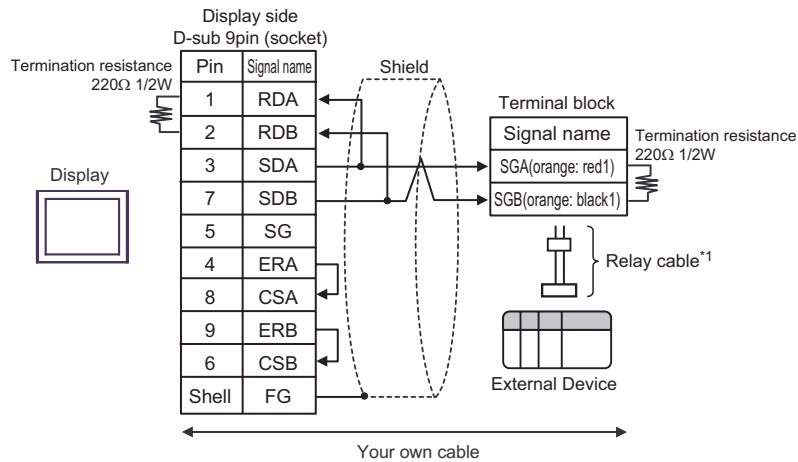
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

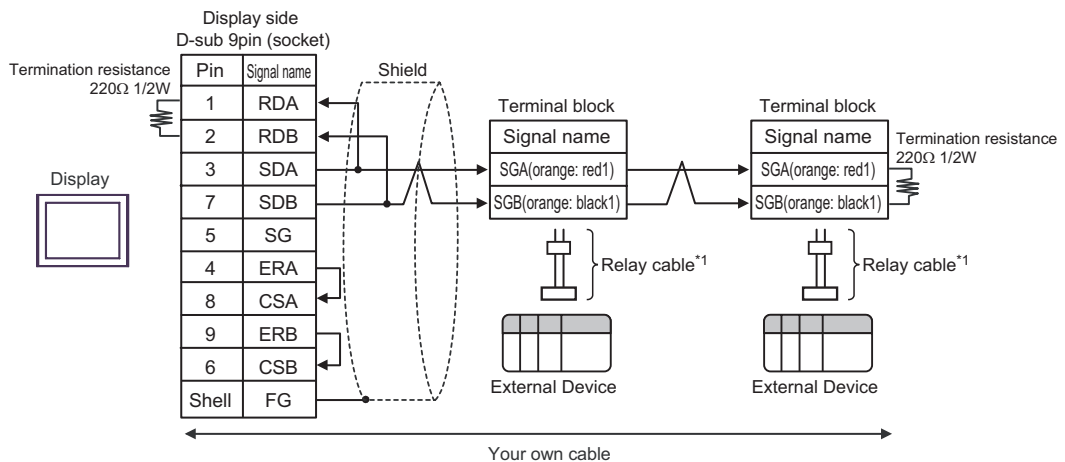
B) When using your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

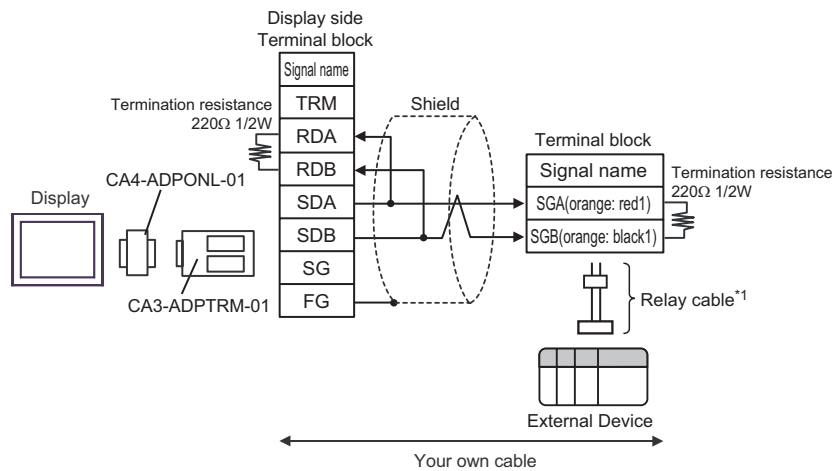
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

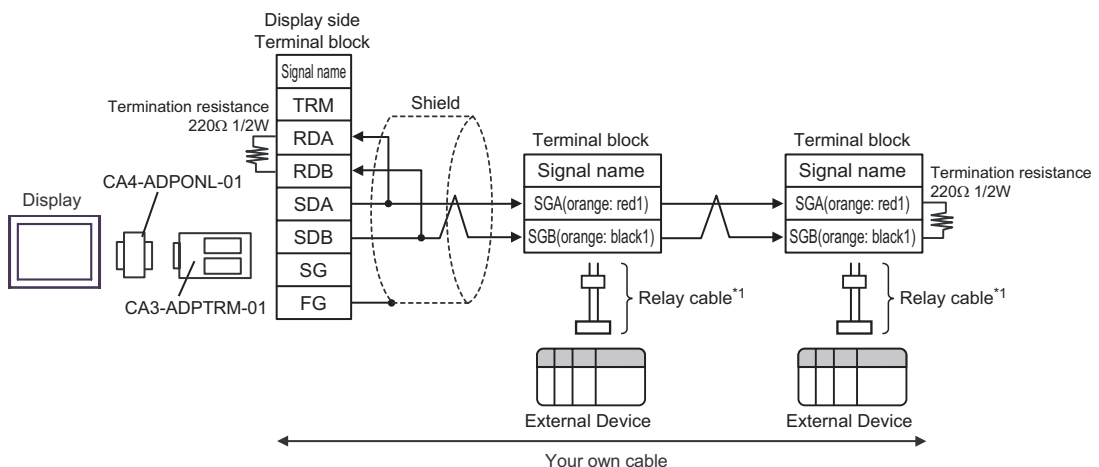
- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

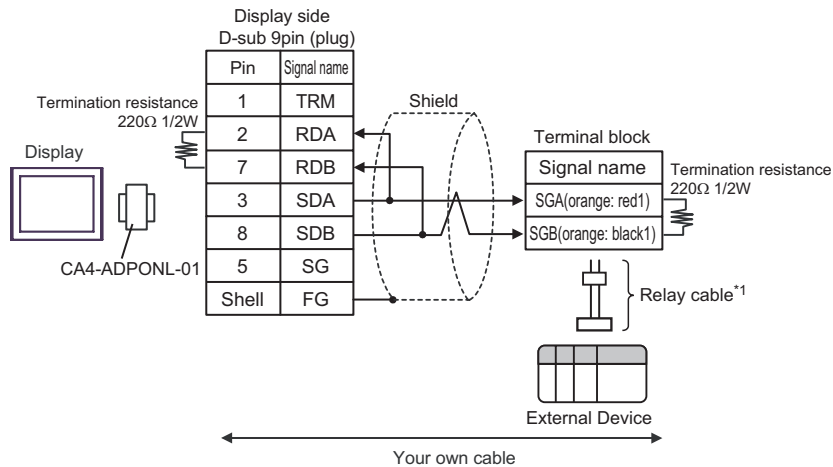
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

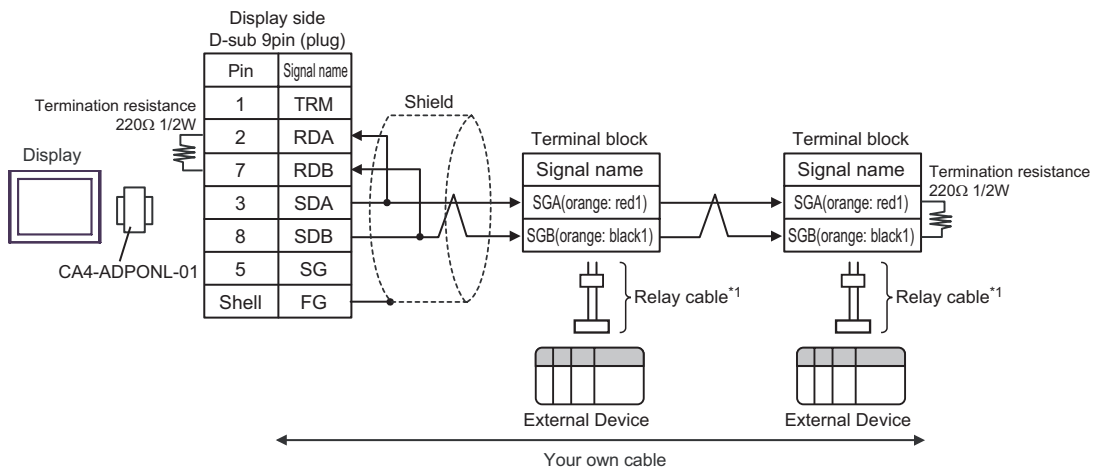
- D) When using the online adapter (CA4-ADPONL-01) by Pro-face, your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

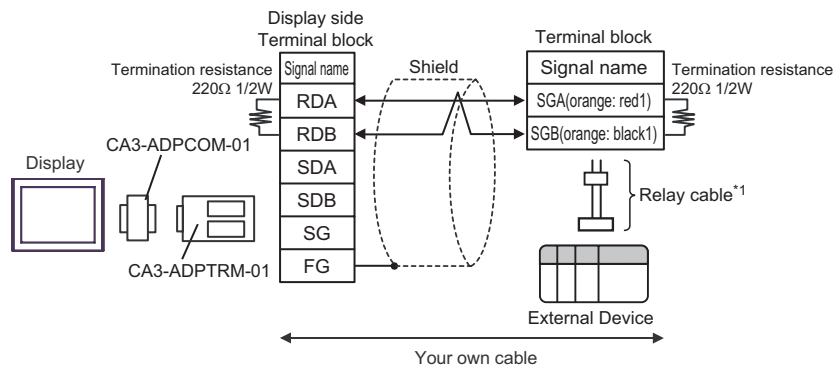
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

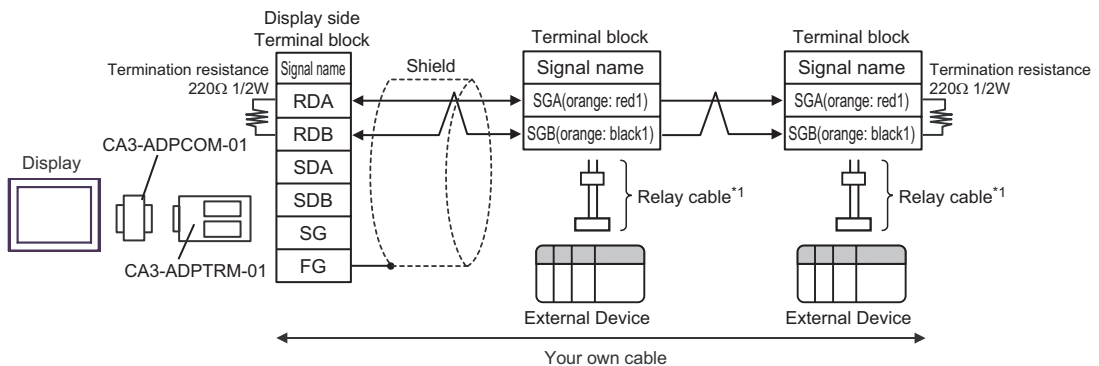
- E) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

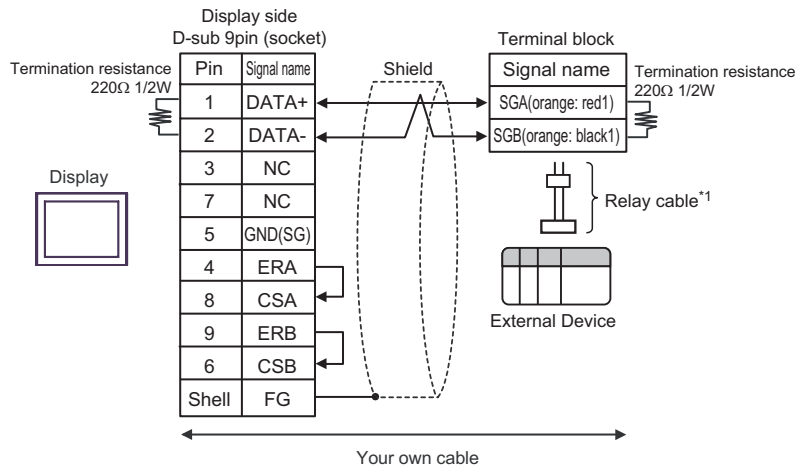
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

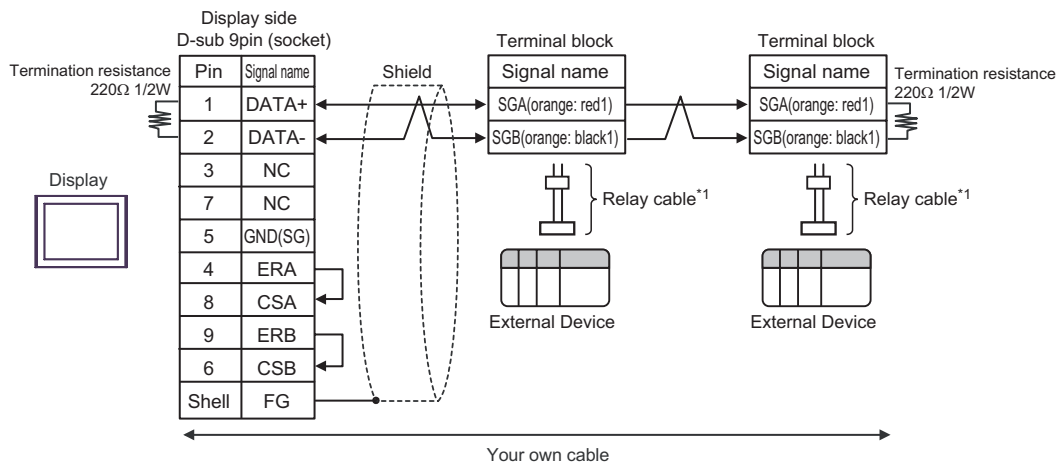
F) When using your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

Cable Diagram 6

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	A	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length from Display to SIO converter: 15m or less Cable length from SIO converter to External Device: 100m or less
	B	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	
	C	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP* ² 5-1473574-4 + Your own cable 3 + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	

continued to next page

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	D	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP* ² 5-1473574-4 + Your own cable 3 + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length from Display to SIO converter: 15m or less Cable length from SIO converter to External Device: 100m or less
	E	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Insulated PIO terminal block by IAI Corporation RC□-TU-PIO-□ + Relay cable by IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6	

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

 ■ IPC COM Port (page 5)

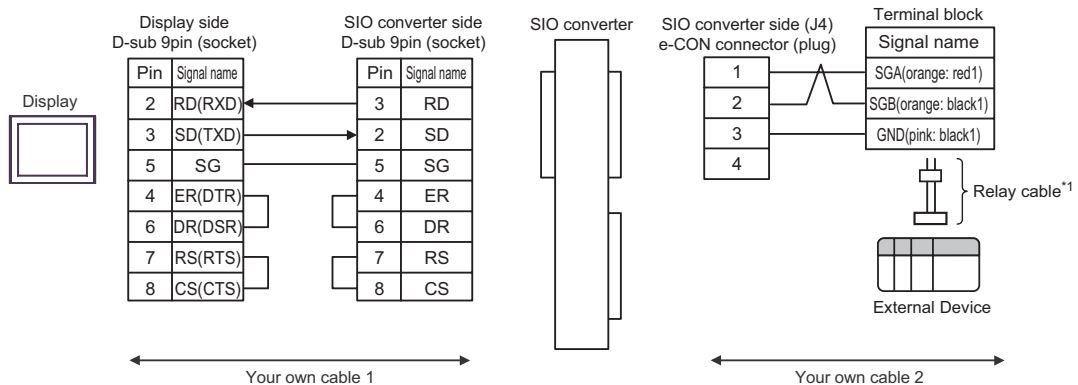
*2 When using more than one junction by AMP, your own cable 4 is required.

NOTE

- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

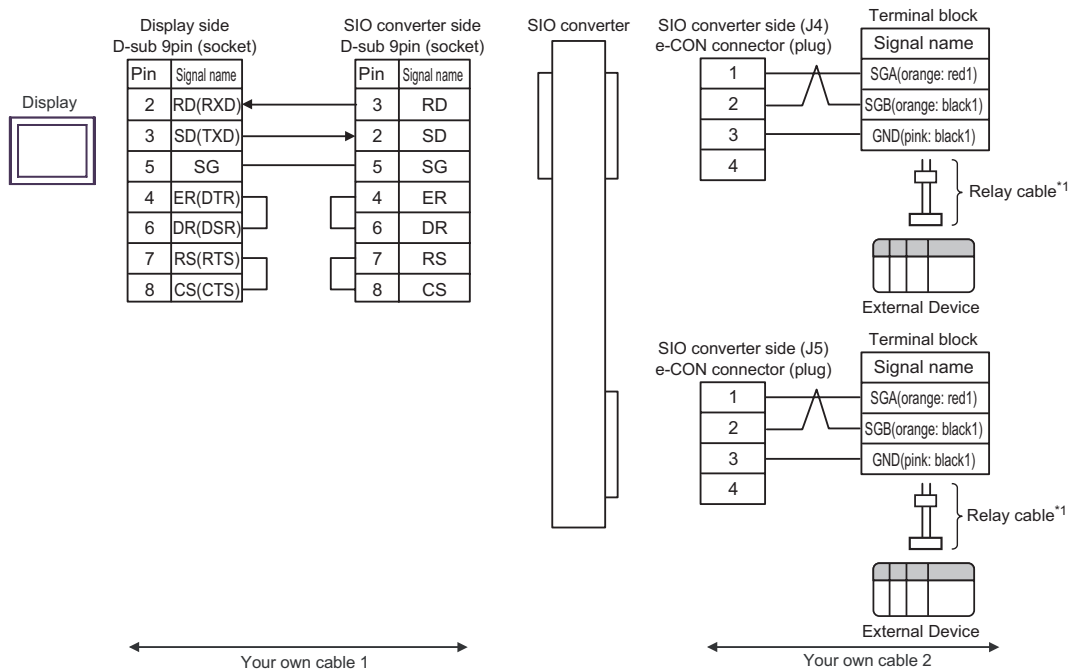
- A) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, terminal block and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

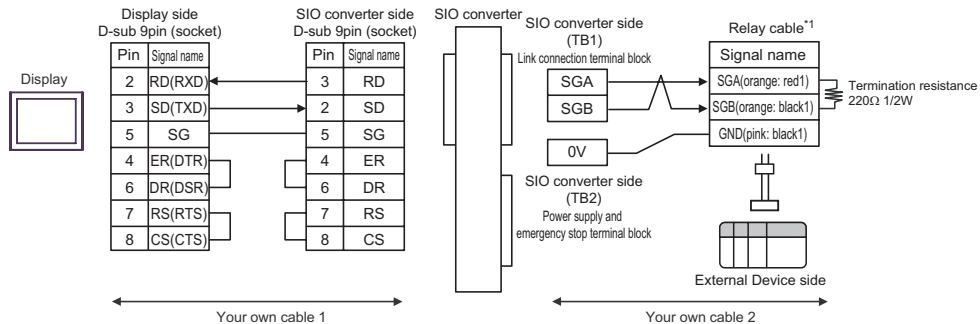
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

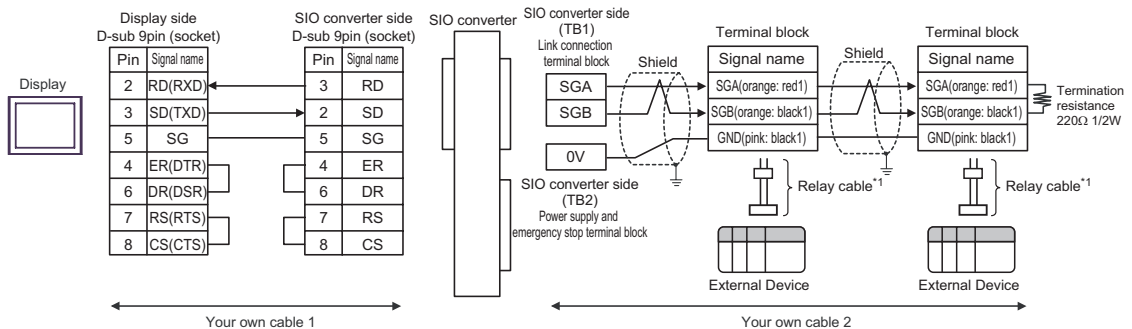
B) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2 and relay cable (CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

- 1:n connection



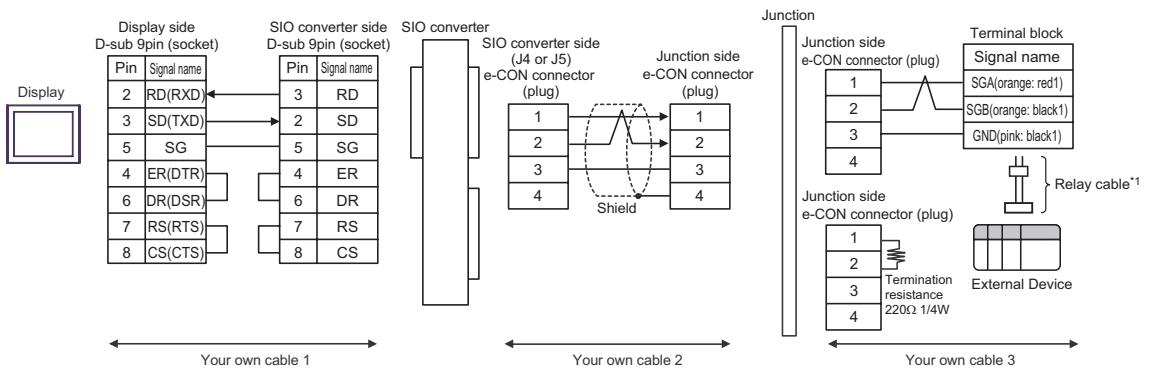
*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

NOTE

- When connecting to more than one equipment, connect the terminal block.

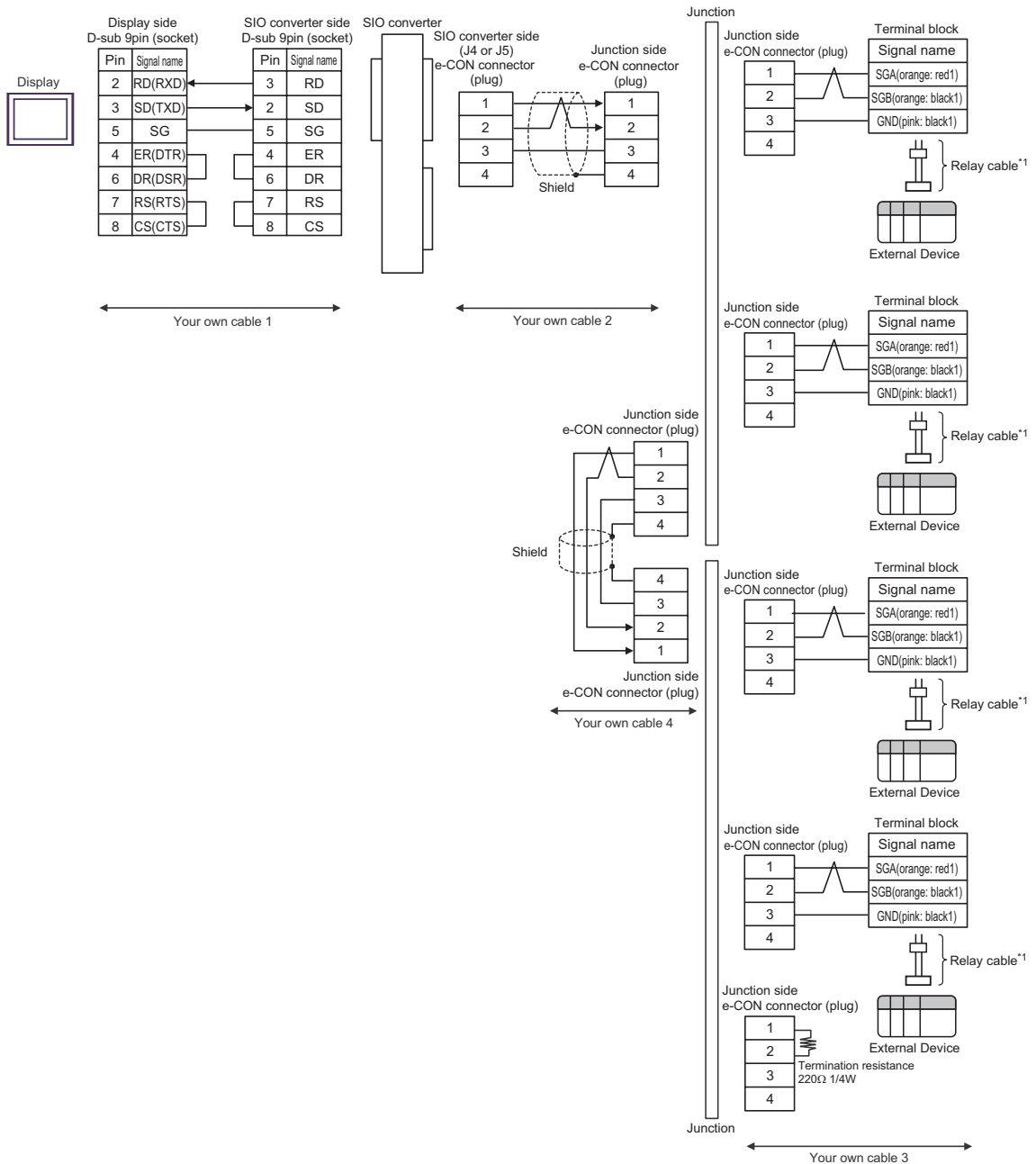
- C) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, your own cable 3, terminal block and relay cable (CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

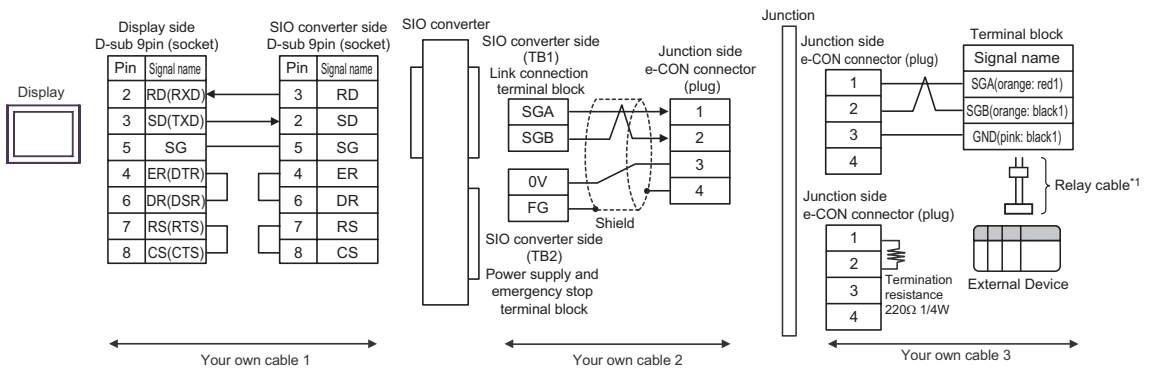
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

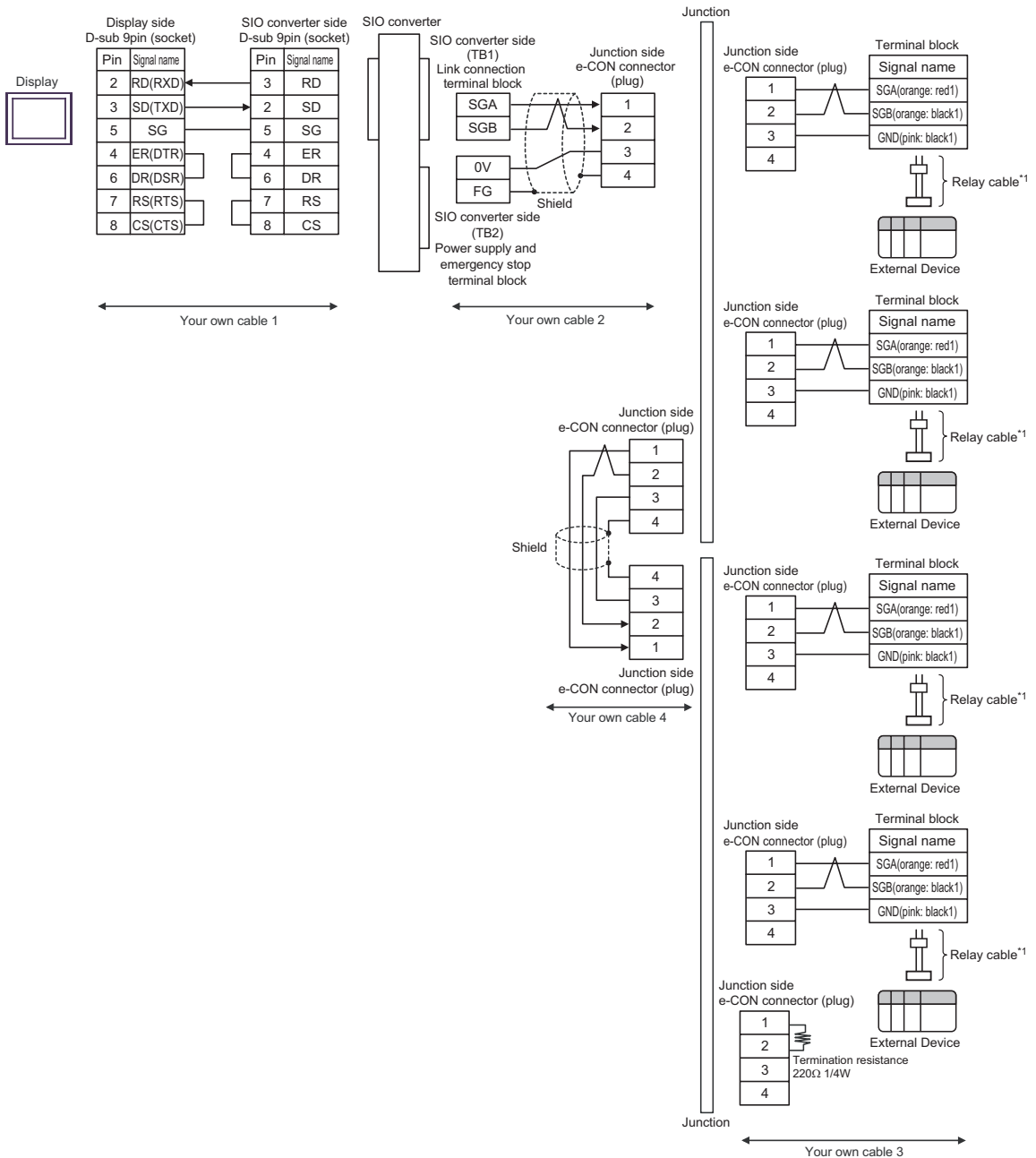
D) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, your own cable 3, terminal block and relay cable (CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

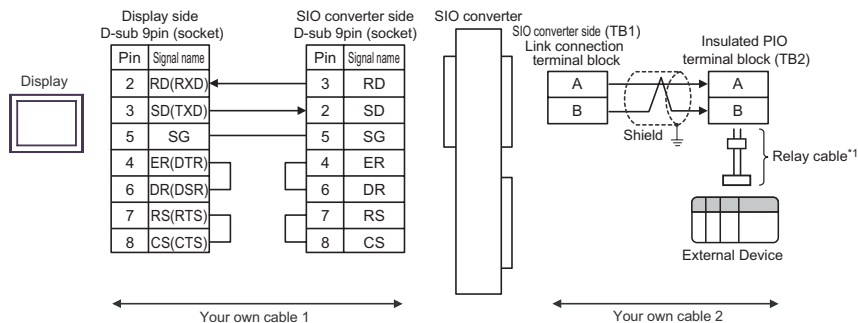
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

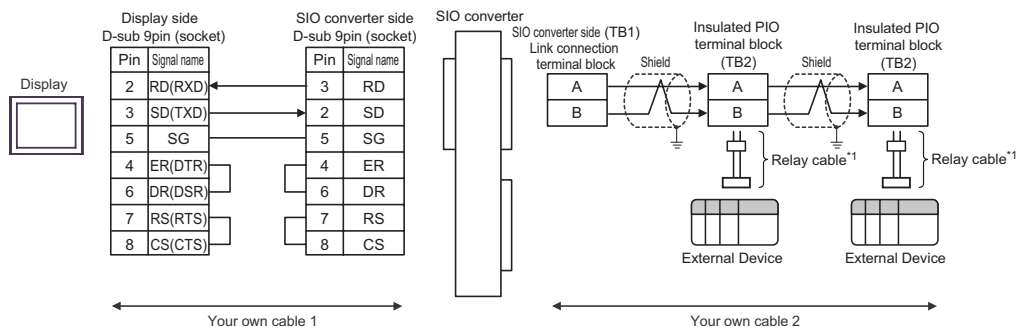
E) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, insulated PIO terminal block (RC□-TU-PIO-□) and relay cable (CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6 as the relay cable.

- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6 as the relay cable.

NOTE

- Set the termination resistance connection switch of the PIO terminal block on the end to RTON side.

Cable Diagram 7

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	A	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length from SIO converter to External Device: 100m or less
	B	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	
	C	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Your own cable 2 + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	

continued to next page

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	D	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Your own cable 2 + Terminal block + Relay cable by IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB	Cable length from SIO converter to External Device: 100m or less
	E	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable + Insulated PIO terminal block by IAI Corporation RC□-TU-PIO-□ + Relay cable by IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6	

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

 ■ IPC COM Port (page 5)

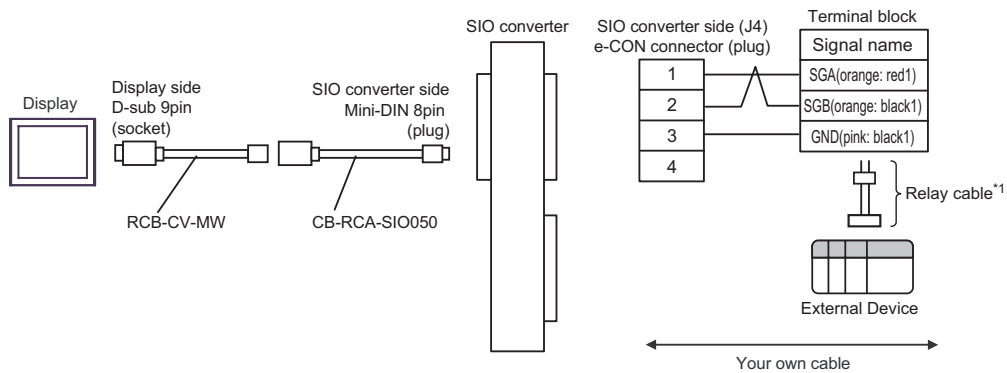
*2 When using more than one junction by AMP, your own cable 3 is required.

NOTE

- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-RCA-SIO050) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.
- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

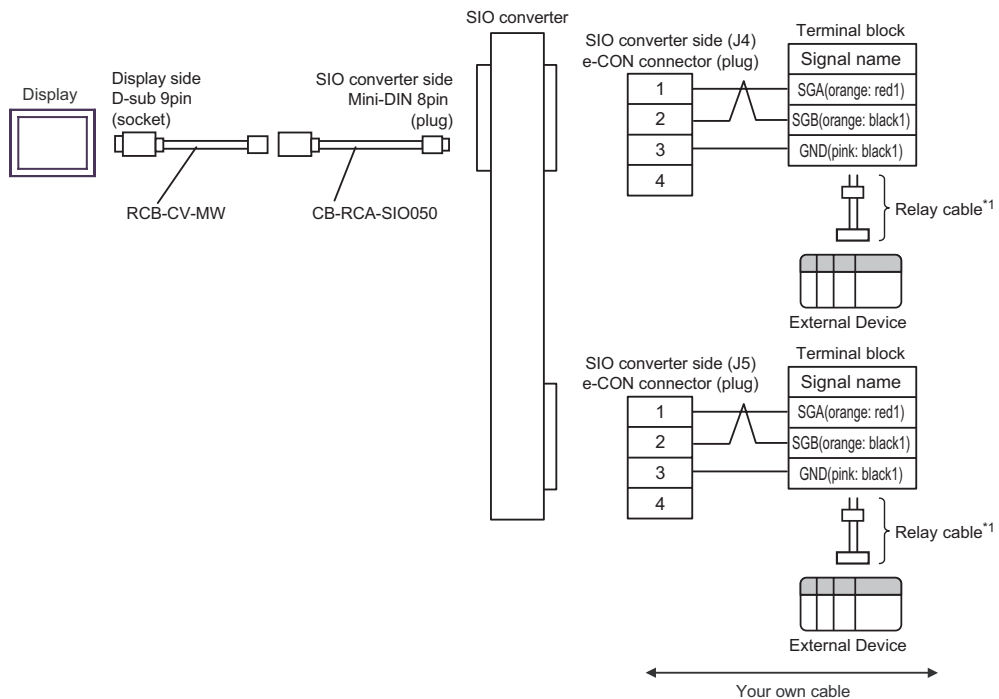
A) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable, terminal block and relay cable (CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

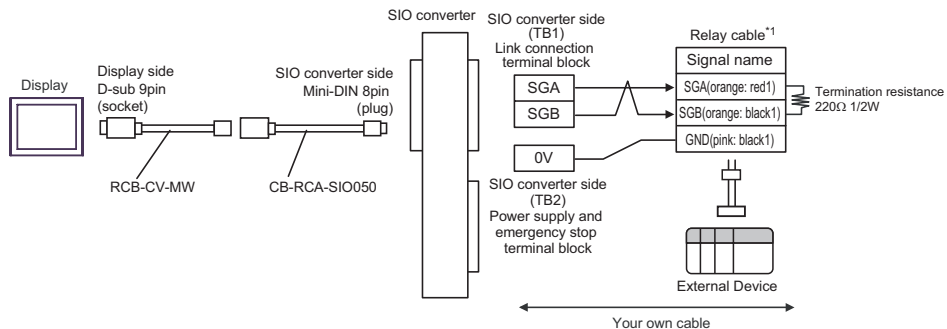
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

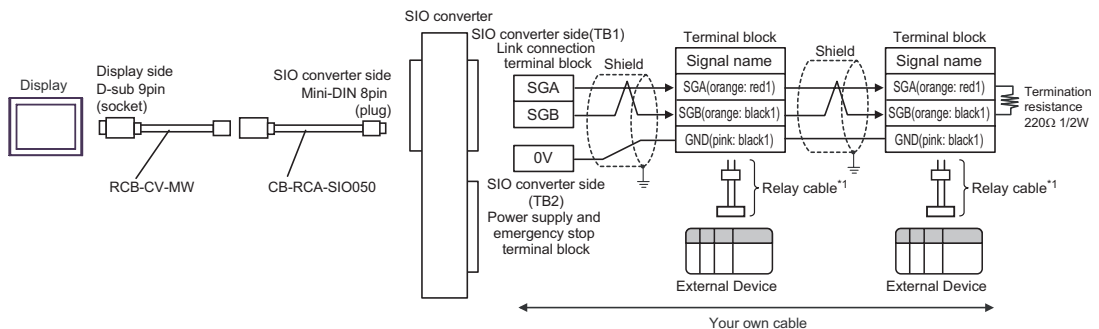
- B) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable and relay cable (CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

- 1:n connection



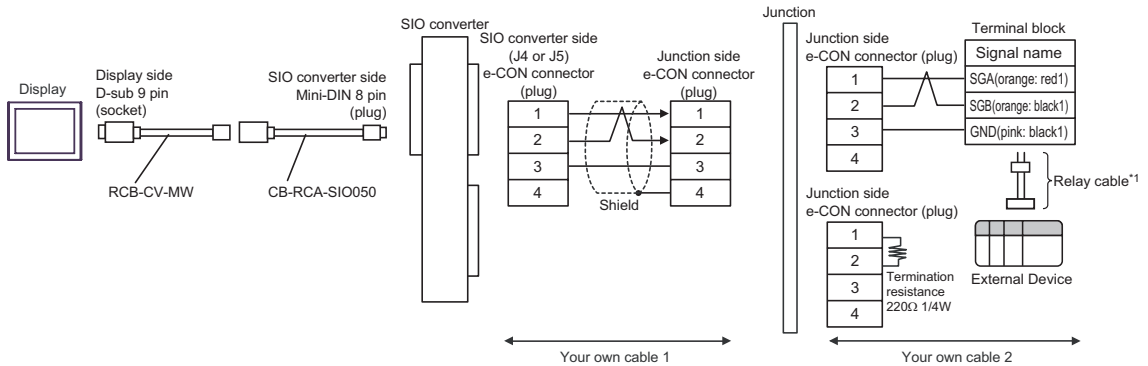
- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□□ or CB-ERC-PWBIO□□□□-RB as the relay cable.

NOTE

- When connecting to more than one equipment, connect the terminal block.

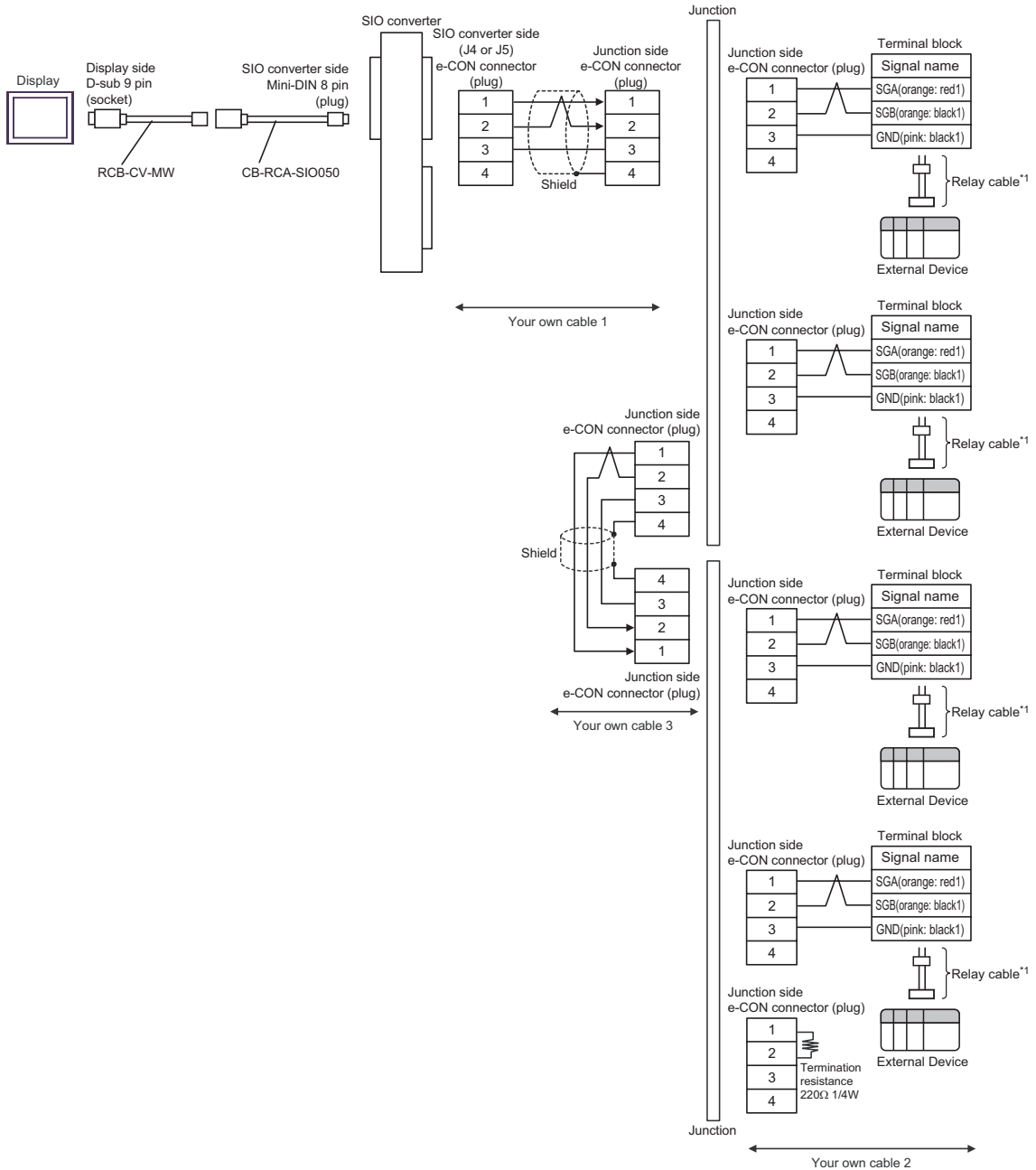
- C) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP, your own cable 2, terminal block and relay cable (CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



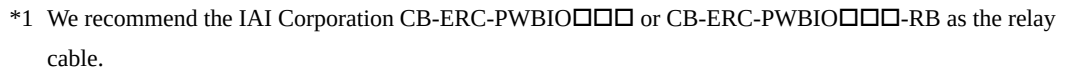
- *1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

- 1:n connection

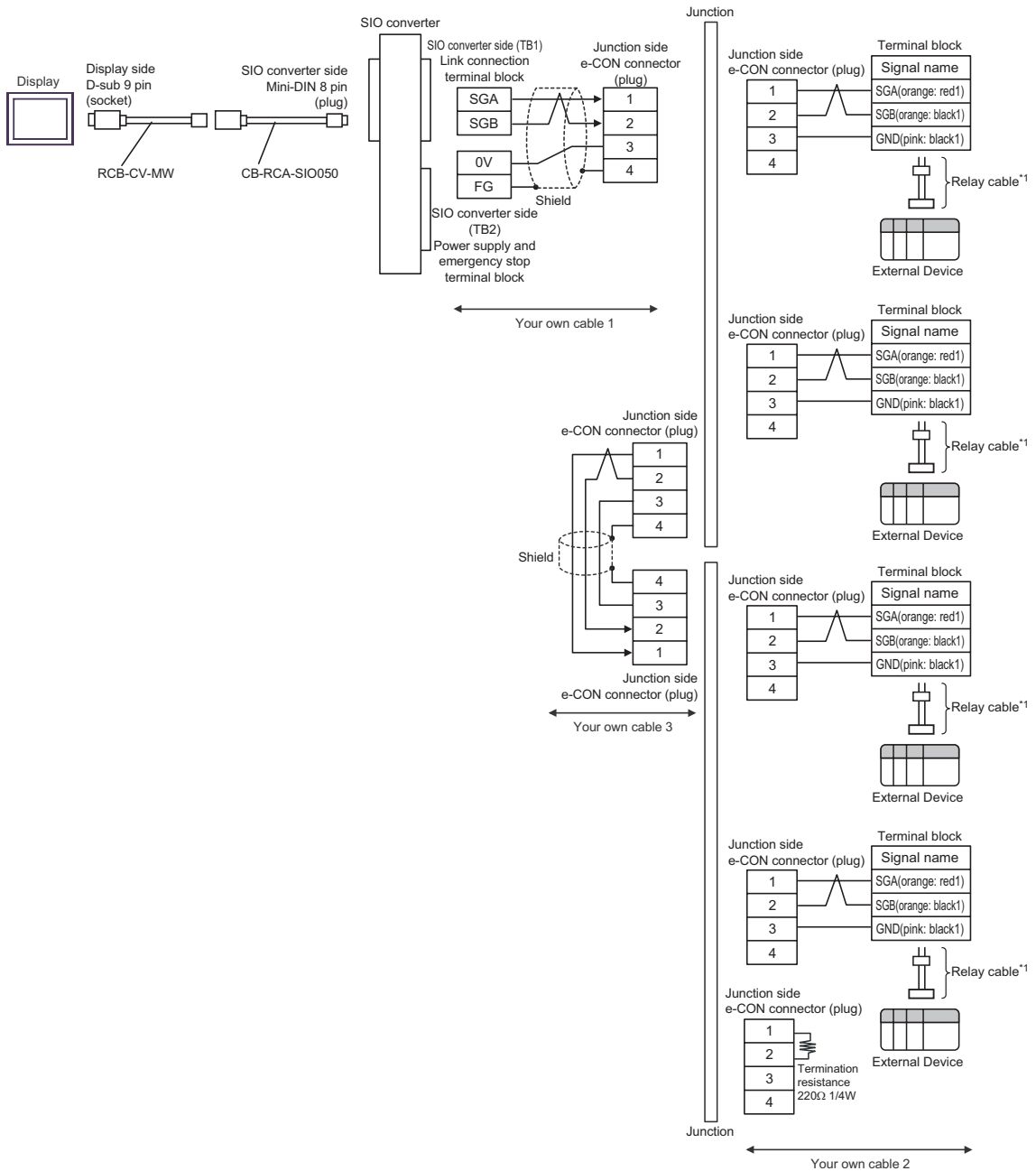


*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

- 1:1 connection



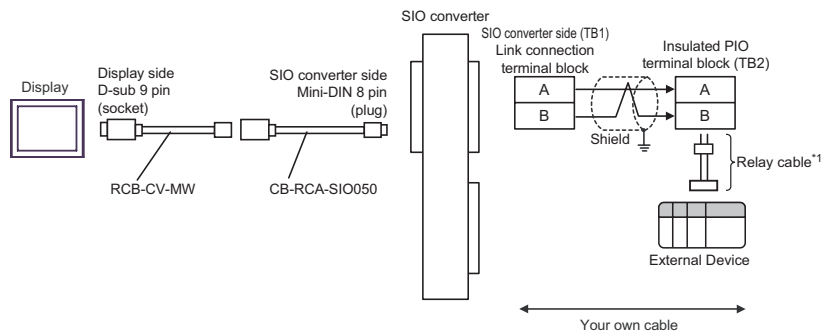
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□ or CB-ERC-PWBIO□□□-RB as the relay cable.

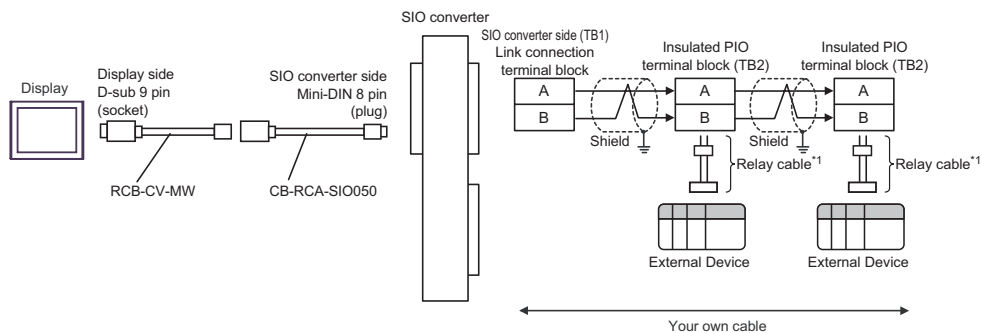
E) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable, insulated PIO terminal block (RC□-TU-PIO-□) and relay cable (CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6 as the relay cable.

- 1:n connection



*1 We recommend the IAI Corporation CB-ERC-PWBIO□□□-H6 or CB-ERC-PWBIO□□□-RB-H6 as the relay cable.

NOTE

- Set the termination resistance connection switch of the PIO terminal block on the end to RTON side.

Cable Diagram 8

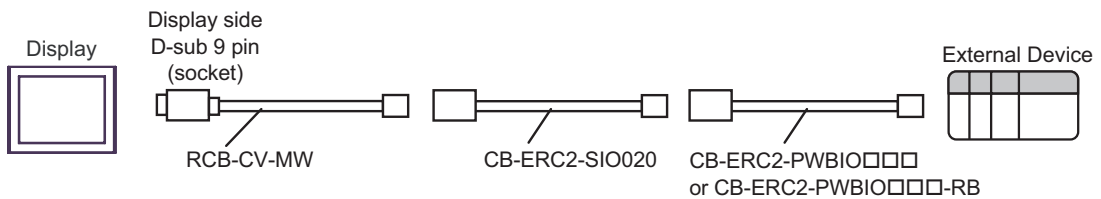
Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable for PC connection by IAI Corporation CB-ERC2-SIO020 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	

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

 ■ IPC COM Port (page 5)

NOTE

- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-ERC2-SIO020) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.



Cable Diagram 9

Display (Connection Port)	Cable		Notes
GP* ¹ (COM1) AGP-3302B (COM2) ST* ² (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	Cable length: 100m or less
	B	Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	
GP* ⁴ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP* ³ 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	

continued to next page

Display (Connection Port)	Cable		Notes
GP ^{*4} (COM2)	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable 1 + Junction by AMP ^{*3} 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	Cable length: 100m or less
IPC ^{*5}	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable 1 + Junction by AMP ^{*3} 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	
	F	Your own cable 1 + Junction by AMP ^{*3} 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	

*1 All GP models except AGP-3302B

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

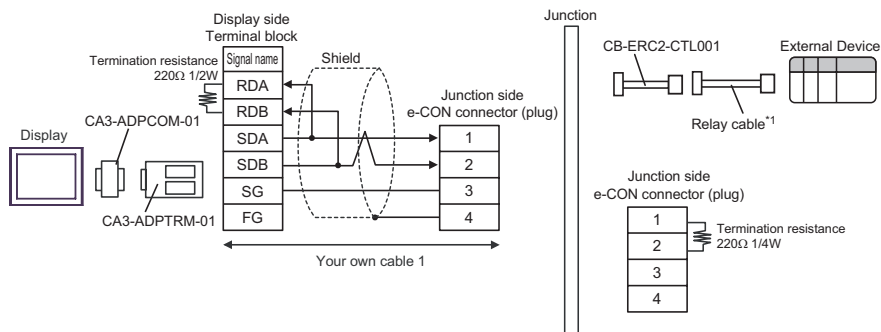
*3 When using more than one junction by AMP, your own cable 2 is required.

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

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

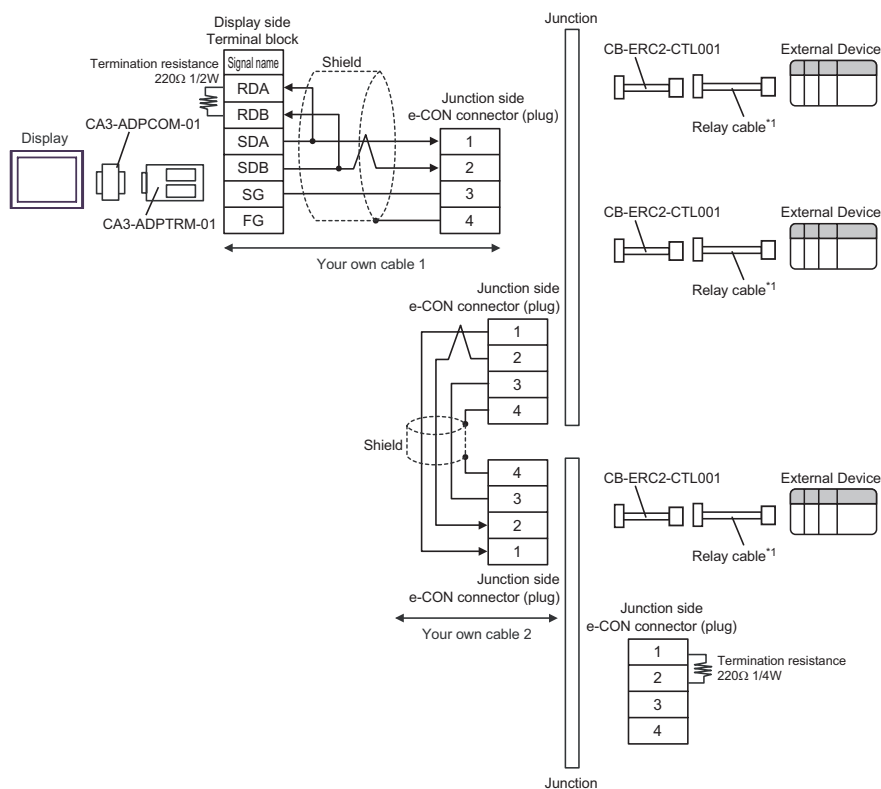
 ■ IPC COM Port (page 5)

- A) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation
- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

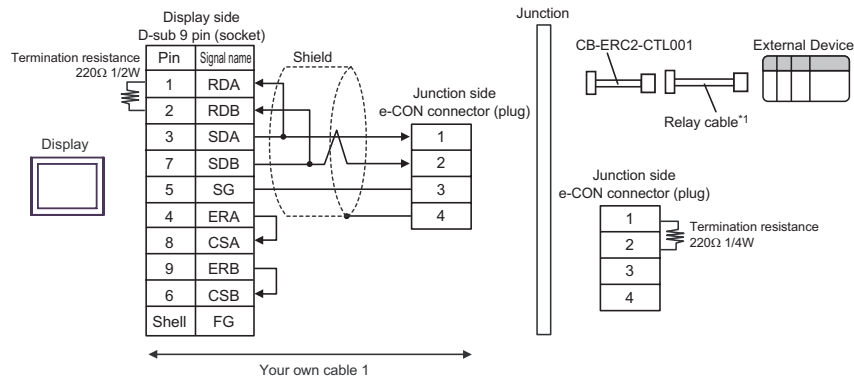
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

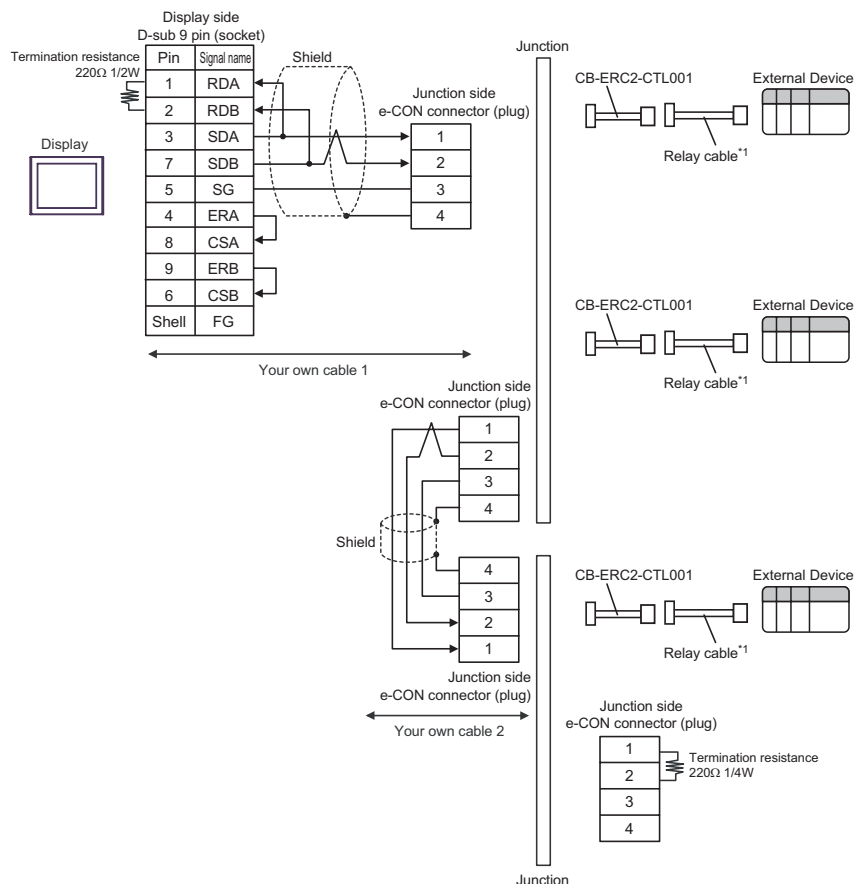
- B) When using your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

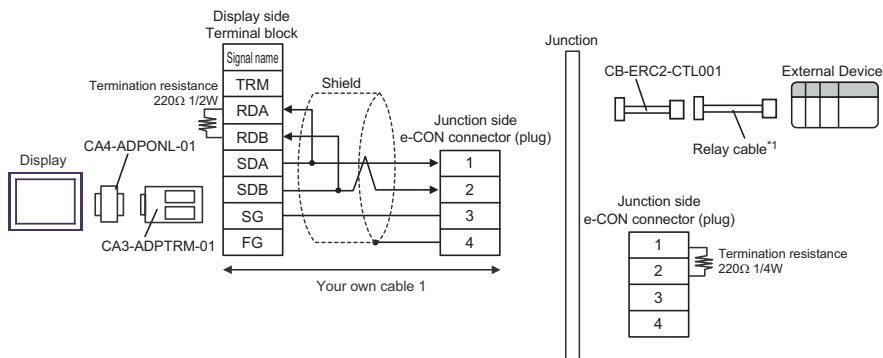
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

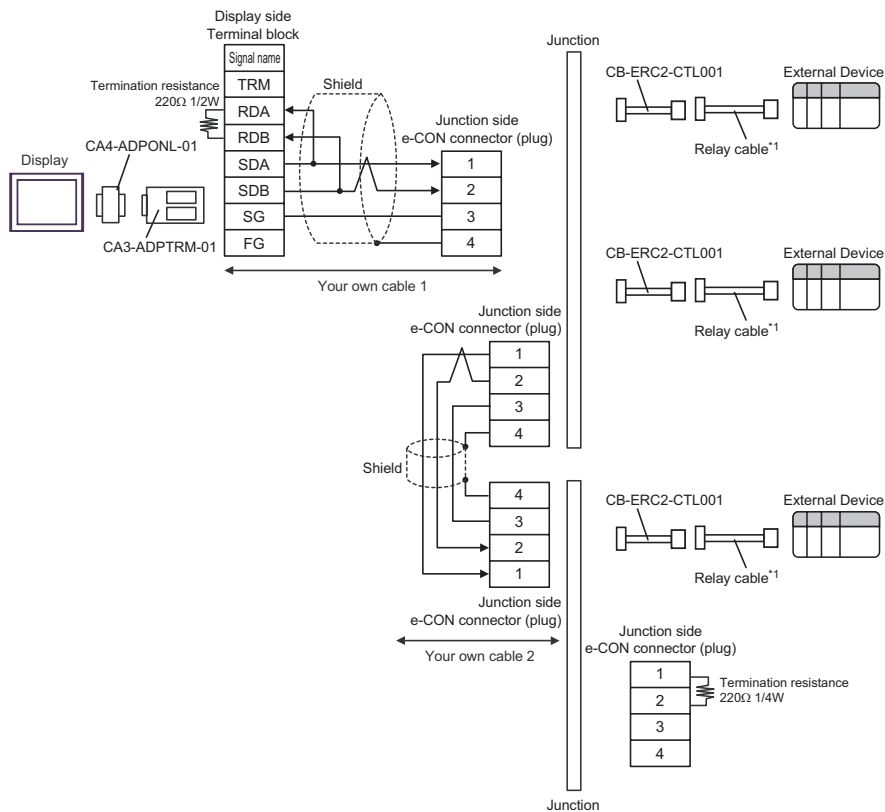
- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

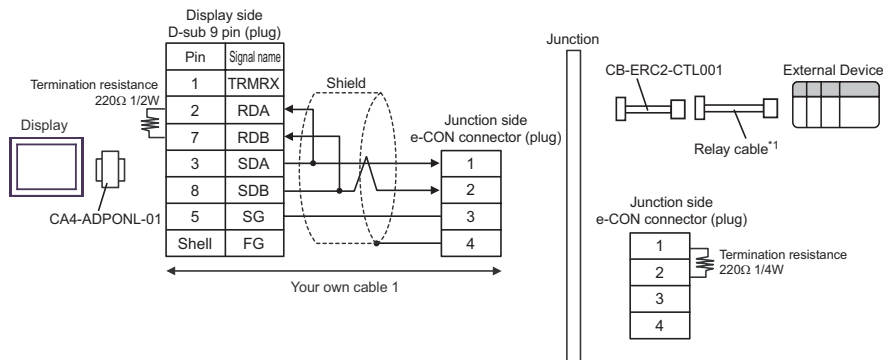
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

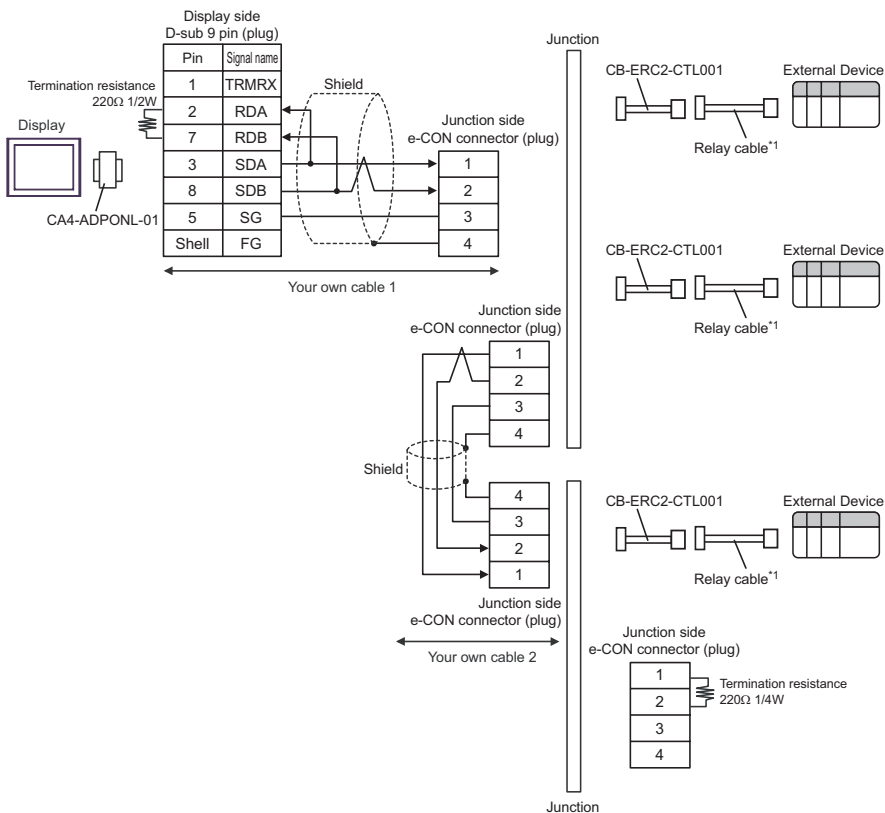
D) When using the online adapter (CA4-ADPONL-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



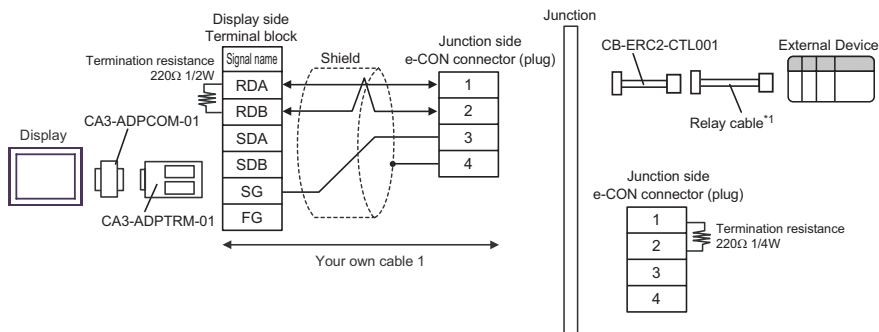
*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

- 1:n connection



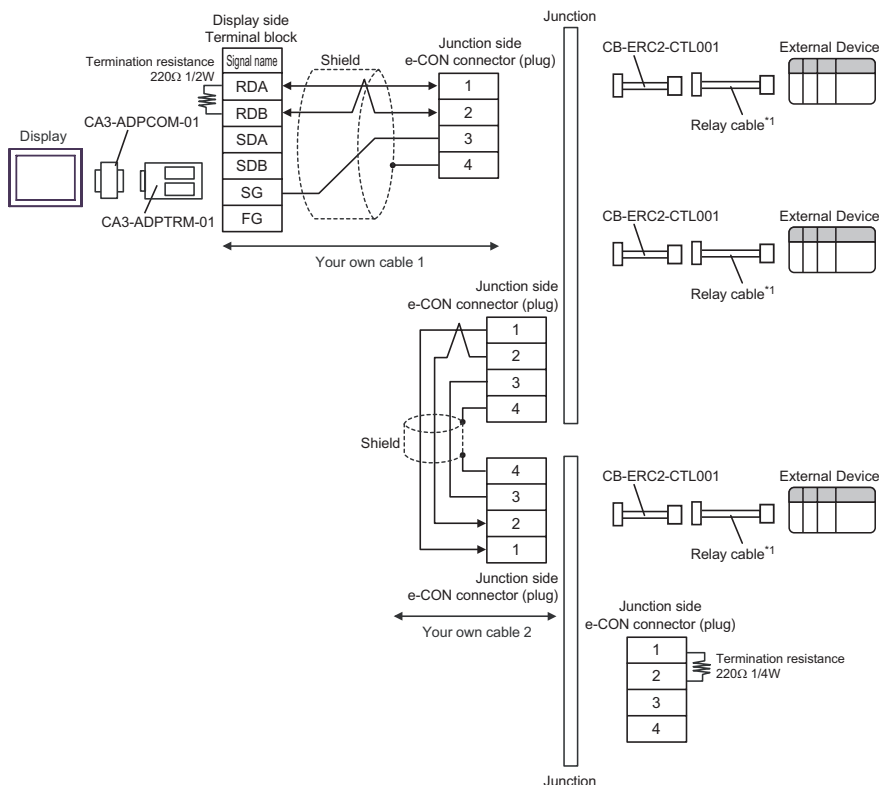
*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

- E) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation
- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

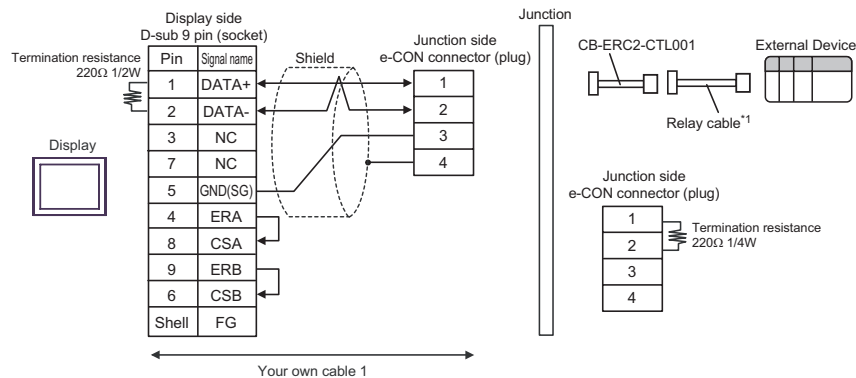
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

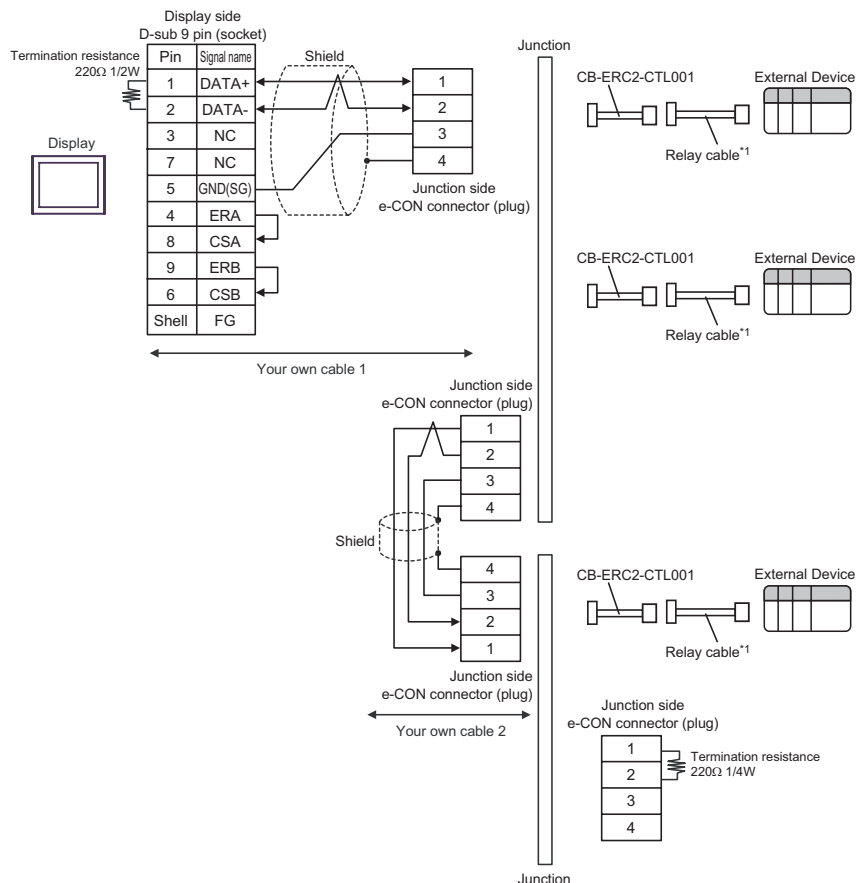
F) When using your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

- 1:n connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

Cable Diagram 10

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	A	Your own cable + SIO converter by IAI Corporation RC□-TU-SIO-□ + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	Cable length from Display to SIO converter: 15m or less
	B	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP*2 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	
	C	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP*2 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	

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

 ■ IPC COM Port (page 5)

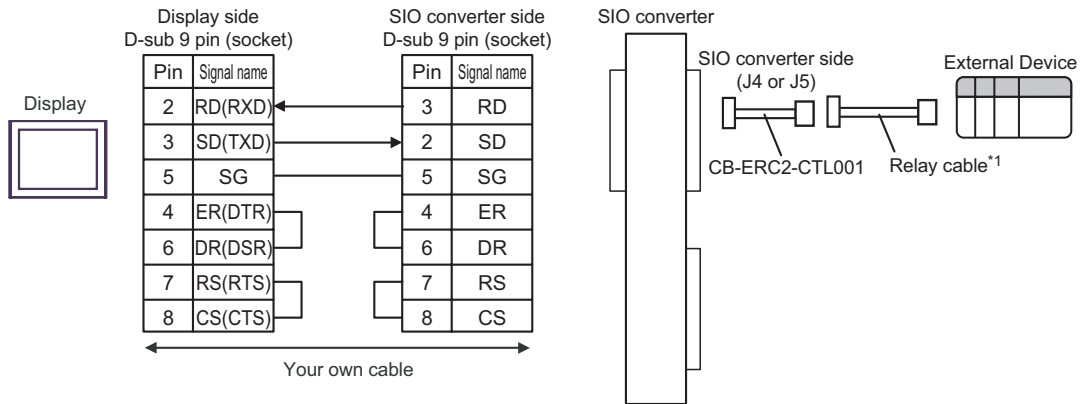
*2 When using more than one junction by AMP, your own cable 3 is required.

NOTE

- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

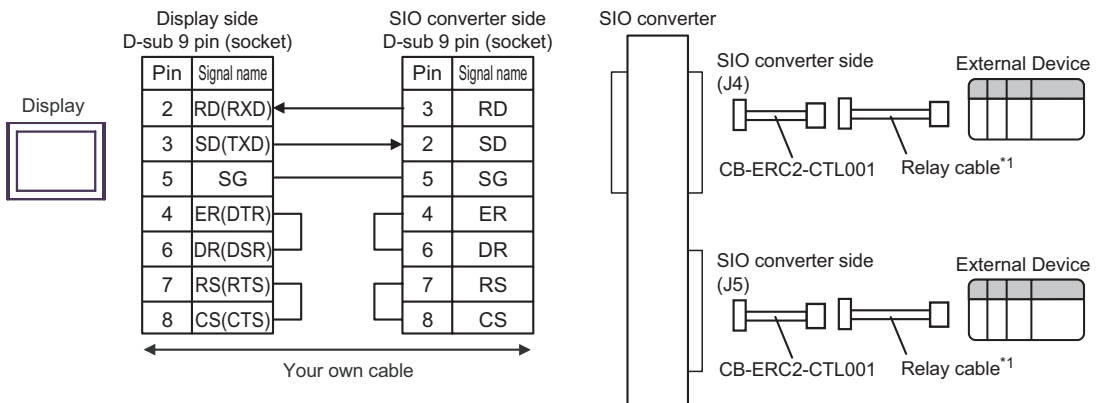
A) When using your own cable, SIO converter (RC□-TU-SIO-□), relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

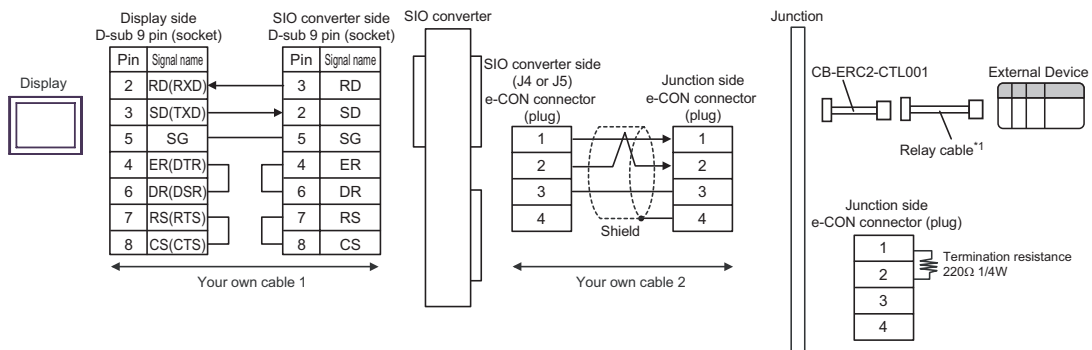
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

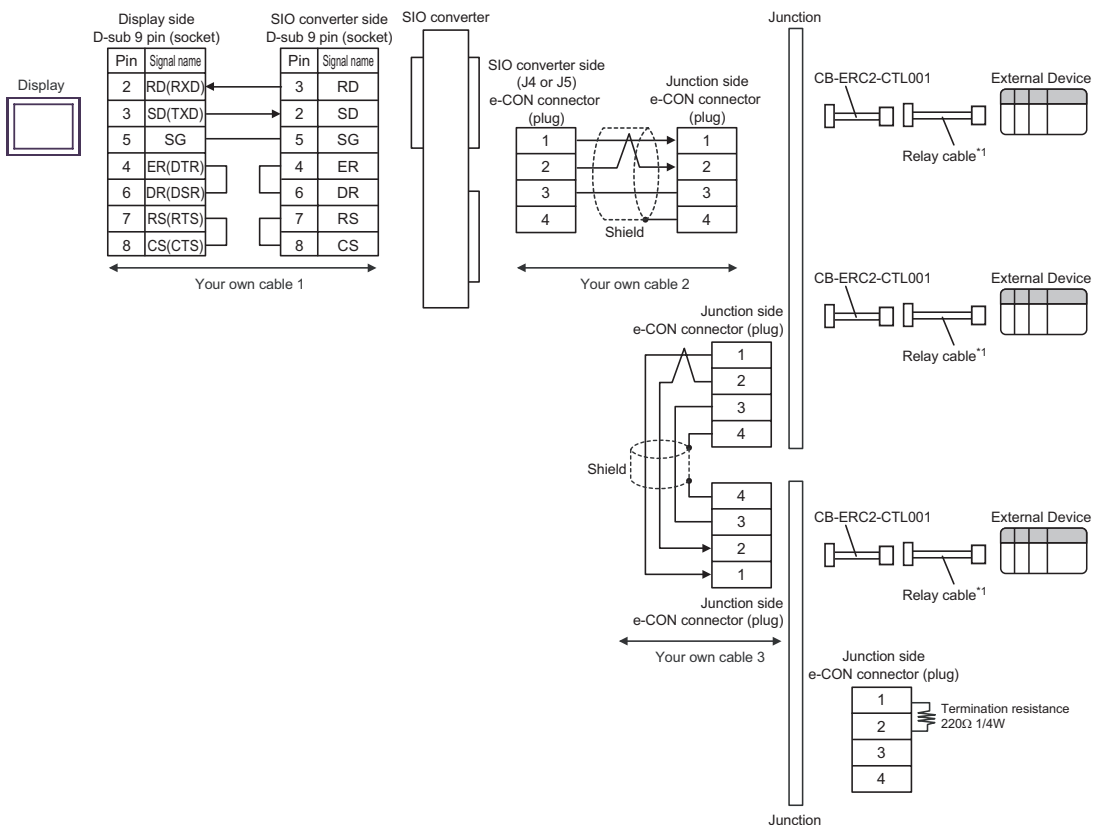
- B) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB as the relay cable.

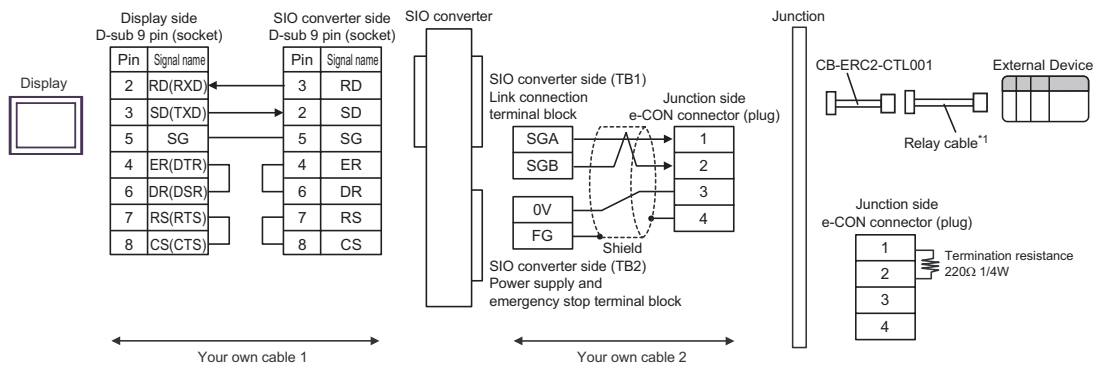
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB as the relay cable.

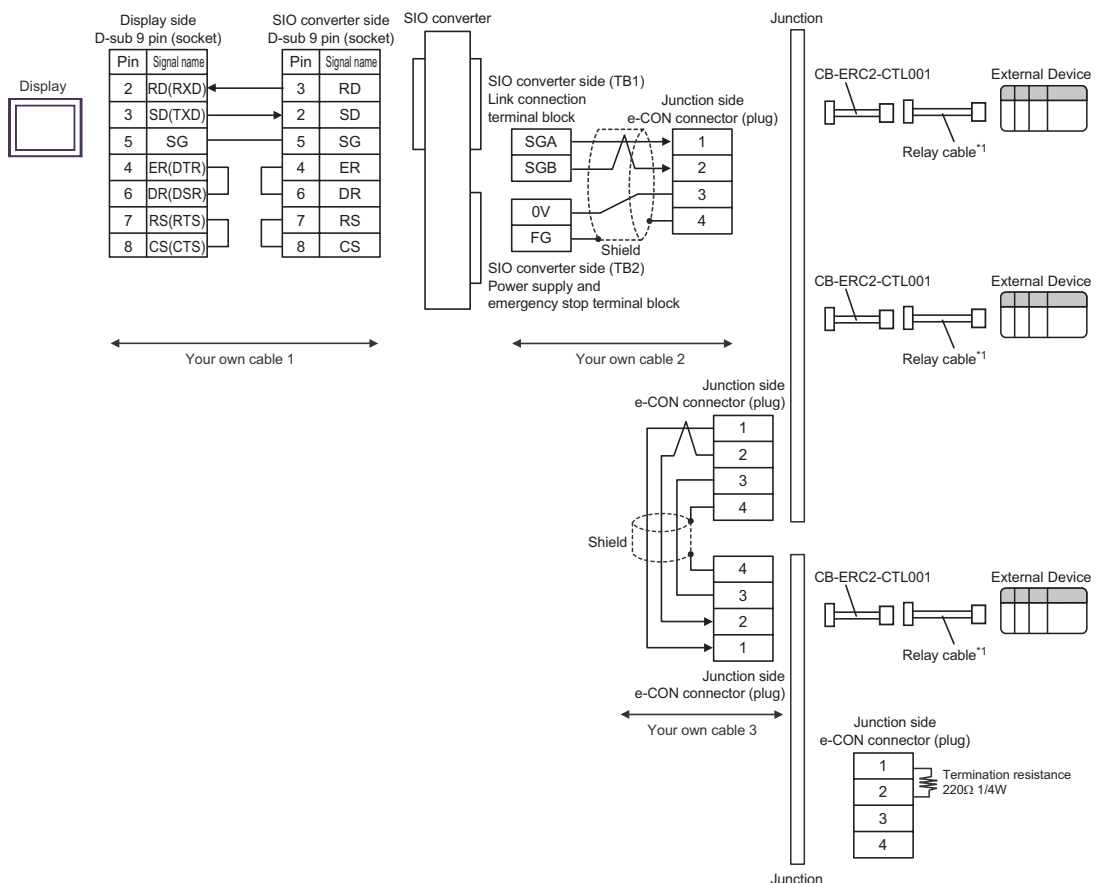
- C) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB) by IAI Corporation

• 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB as the relay cable.

• 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□□ or CB-ERC2-PWBIO□□□□-RB as the relay cable.

Cable Diagram 11

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	A	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	Cable length from SIO converter to External Device: 100m or less
	B	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	

continued to next page

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	C	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Relay cable by IAI Corporation CB-ERC2-CTL001 + Relay cable by IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB	Cable length from SIO converter to External Device: 100m or less

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

 ■ IPC COM Port (page 5)

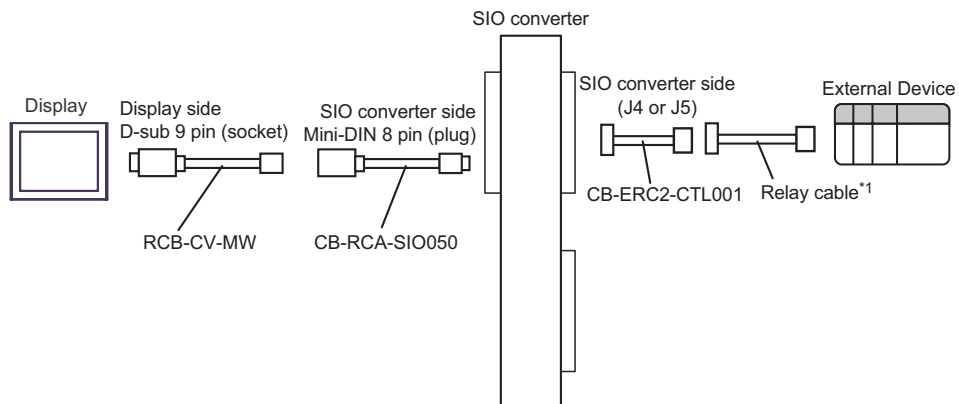
*2 When using more than one junction by AMP, your own cable 2 is required.

NOTE

- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-RCA-SIO050) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.
- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

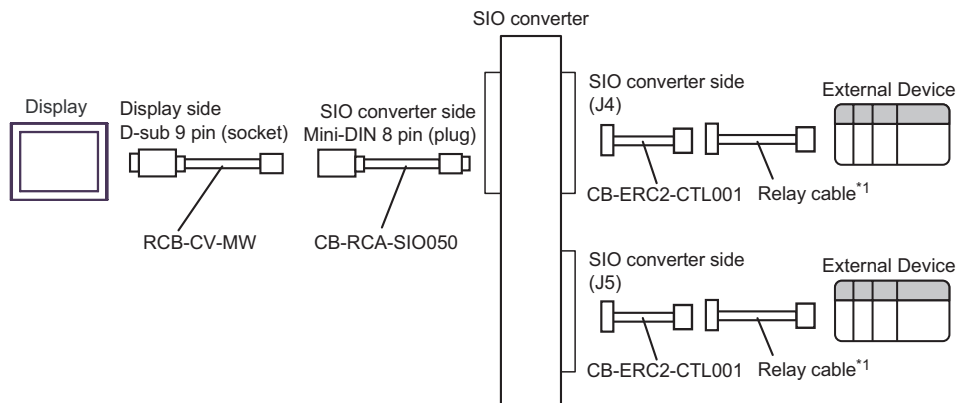
- A) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□), relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

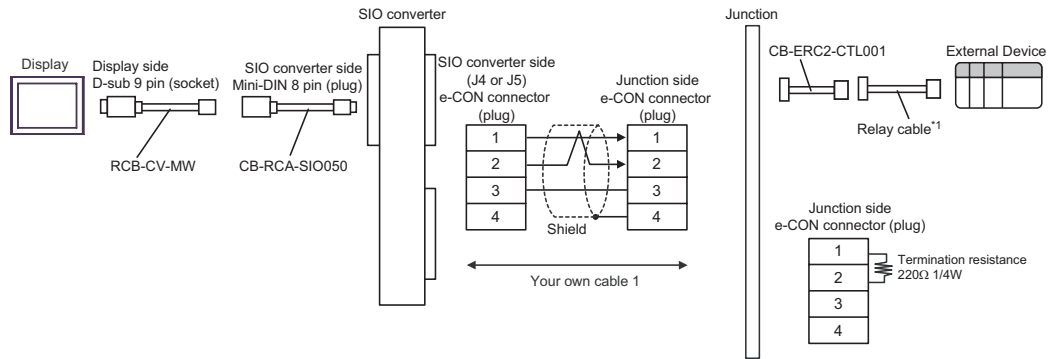
- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

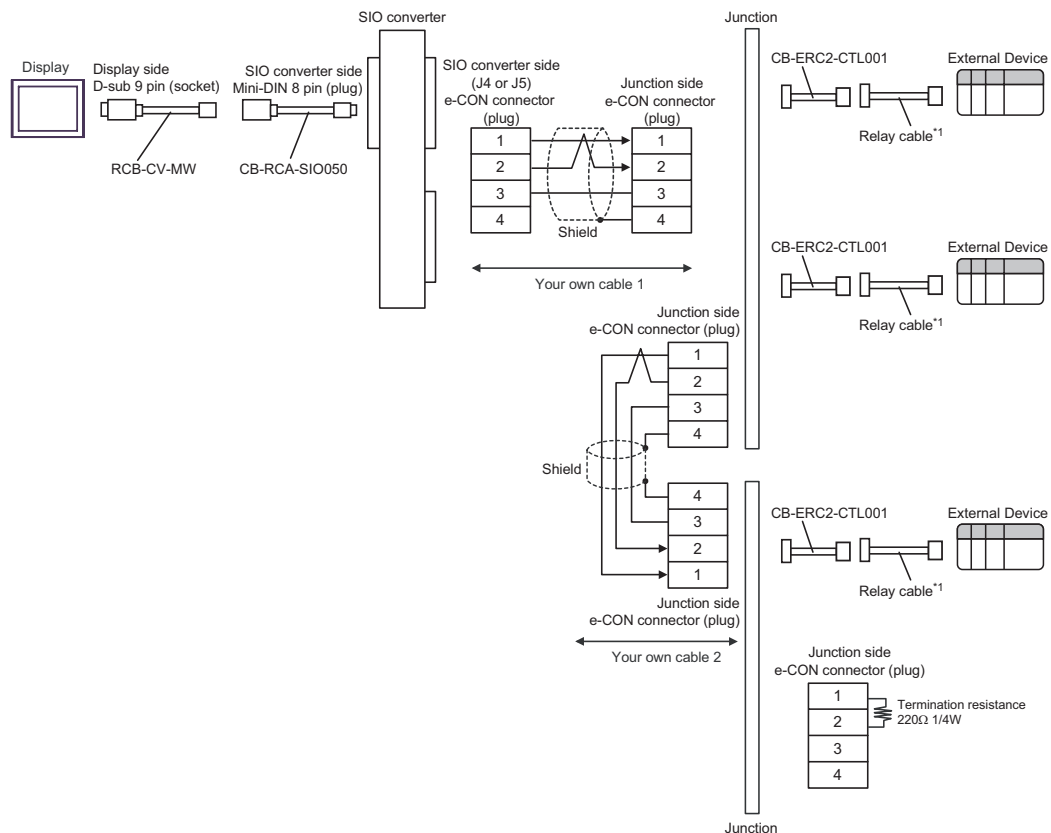
B) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

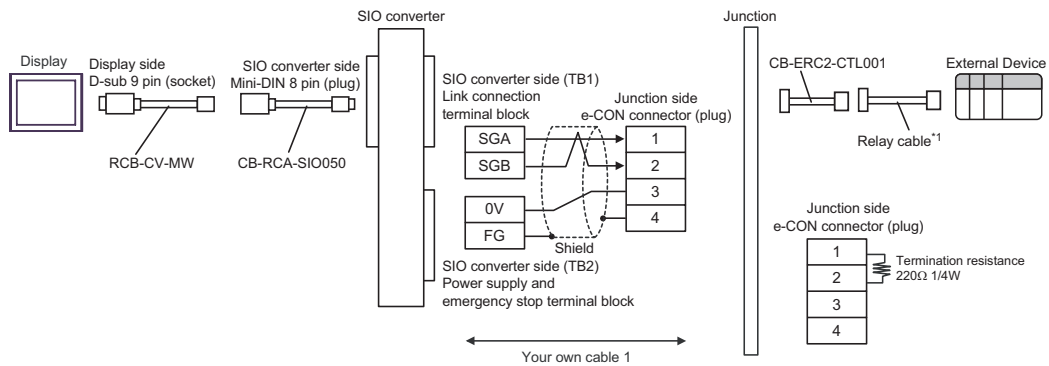
- 1:n connection



*1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

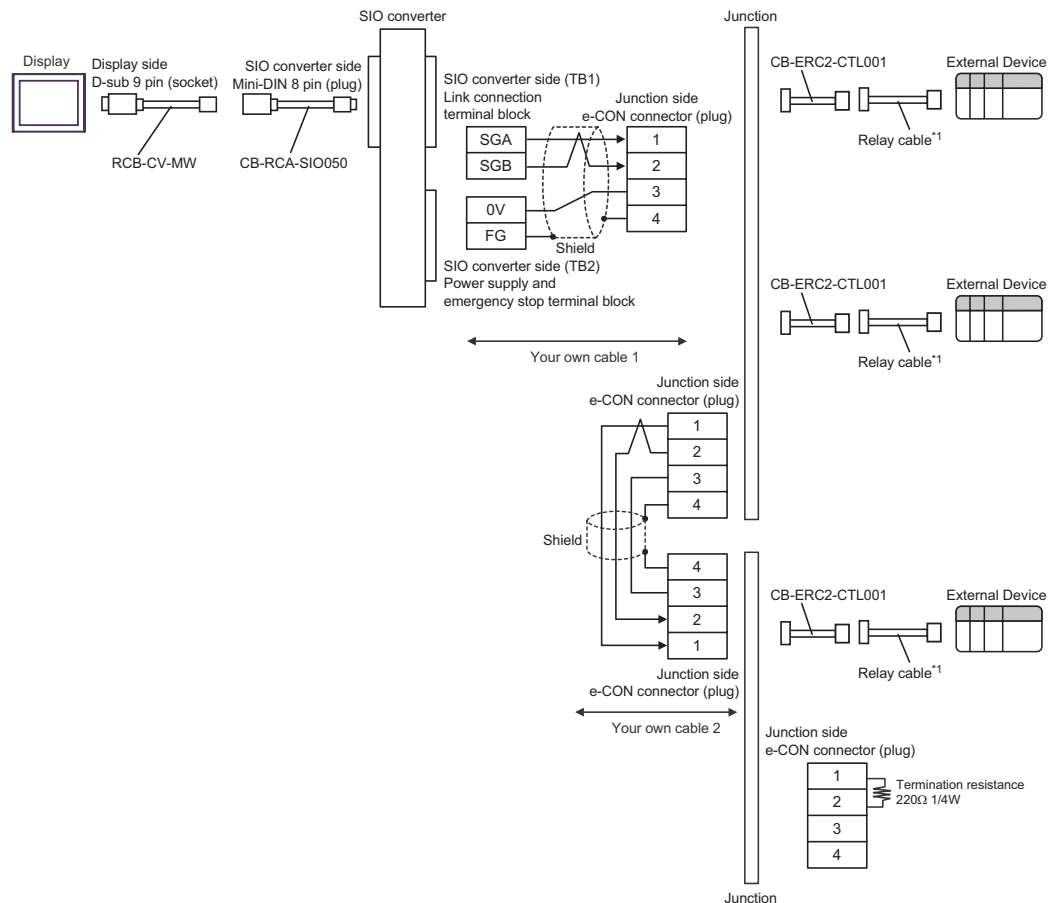
- C) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP, relay cable (CB-ERC2-CTL001) and relay cable (CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB) by IAI Corporation

- 1:1 connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

- 1:n connection



- *1 We recommend the IAI Corporation CB-ERC2-PWBIO□□□ or CB-ERC2-PWBIO□□□-RB as the relay cable.

Cable Diagram 12

Display (Connection Port)	Cable		Notes
GP* ¹ (COM1) AGP-3302B (COM2) ST* ² (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	Cable length: 100m or less
	B	Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
GP* ³ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
IPC* ⁴	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
	F	Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	

*1 All GP models except AGP-3302B

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

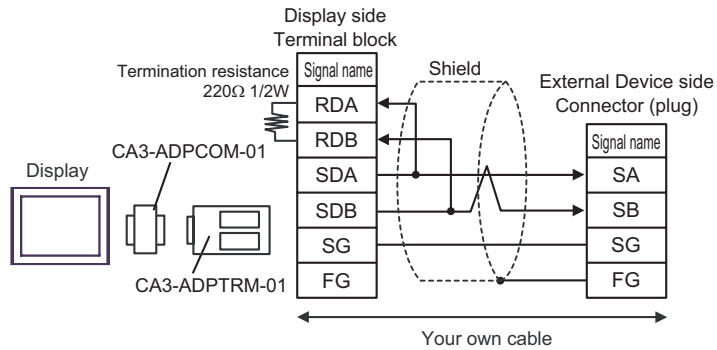
*3 All GP models except GP-3200 series and AGP-3302B

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

■ IPC COM Port (page 5)

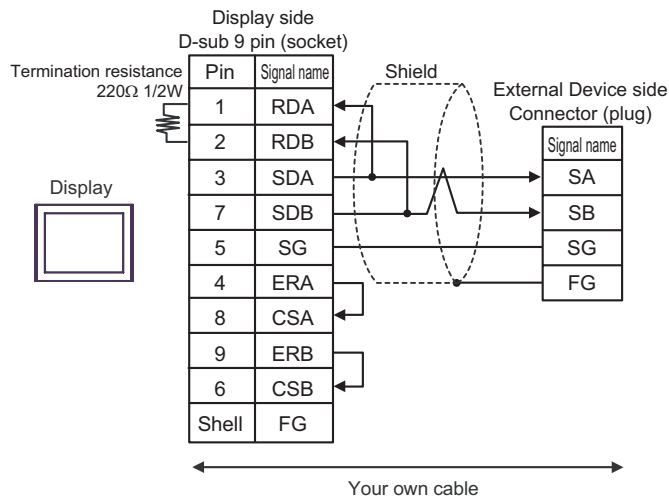
A) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



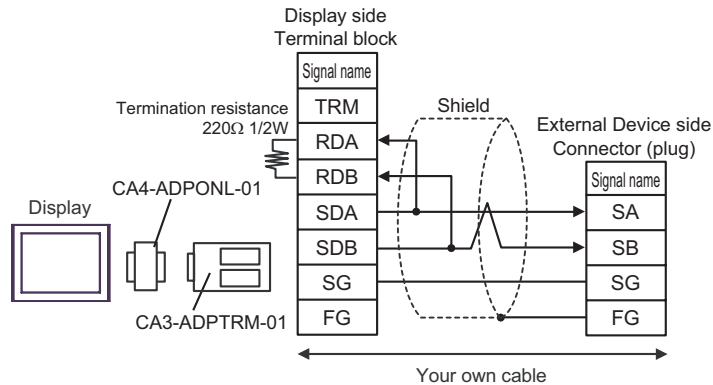
B) When using your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



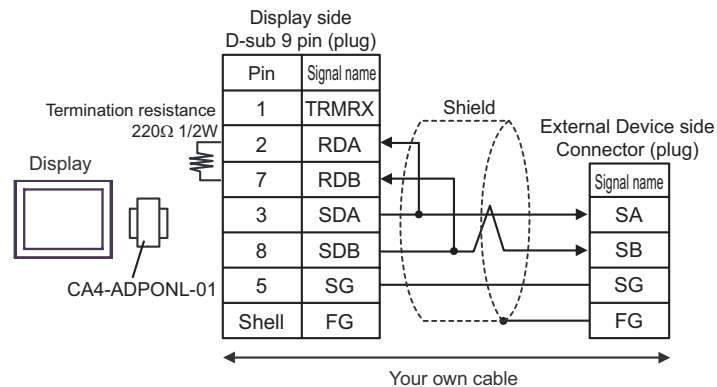
C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection

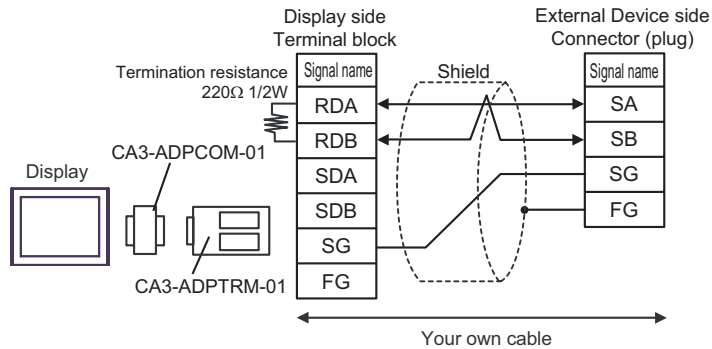


D) When using the online adapter (CA4-ADPONL-01) by Pro-face, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

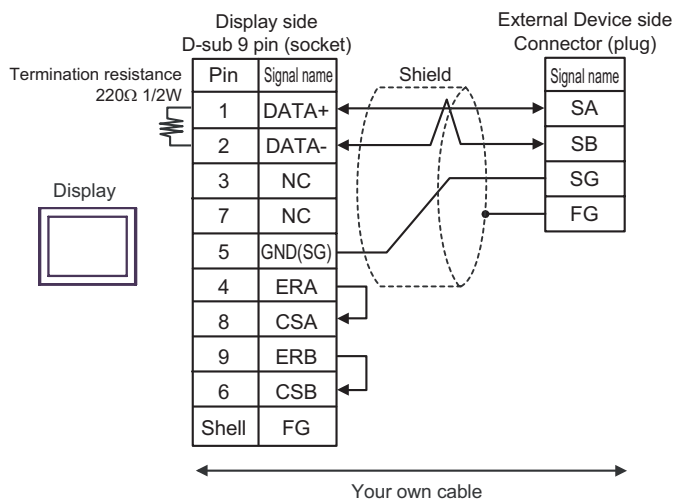
- 1:1 connection



- E) When using the com port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.
- 1:1 connection



- F) When using your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.
- 1:1 connection



Cable Diagram 13

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	A	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	Cable length from Display to SIO converter: 15m or less Cable length from SIO converter to External Device: 100m or less
	B	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
	C	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP*2 5-1473574-4 + Your own cable 3 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
	D	Your own cable 1 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 2 + Junction by AMP*2 5-1473574-4 + Your own cable 3 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	

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

 ■ IPC COM Port (page 5)

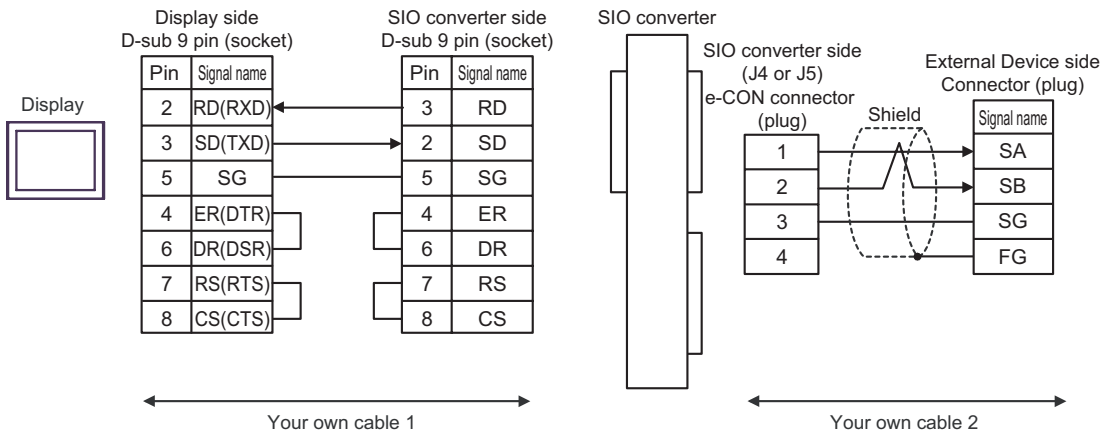
*2 When using more than one junction by AMP, your own cable 4 is required.

NOTE

- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

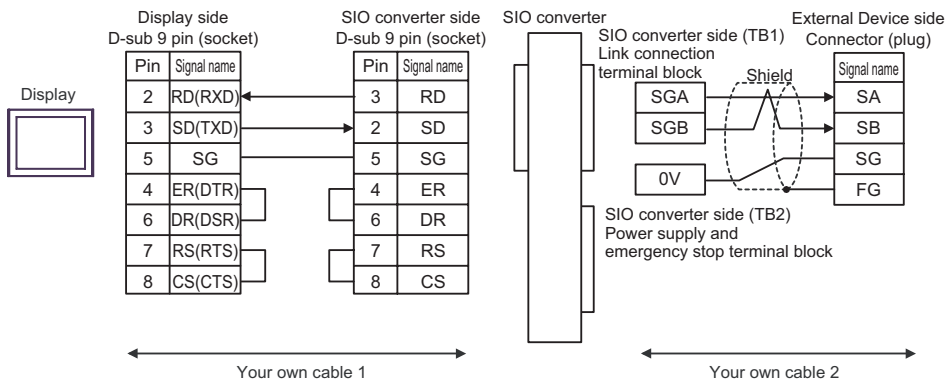
A) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



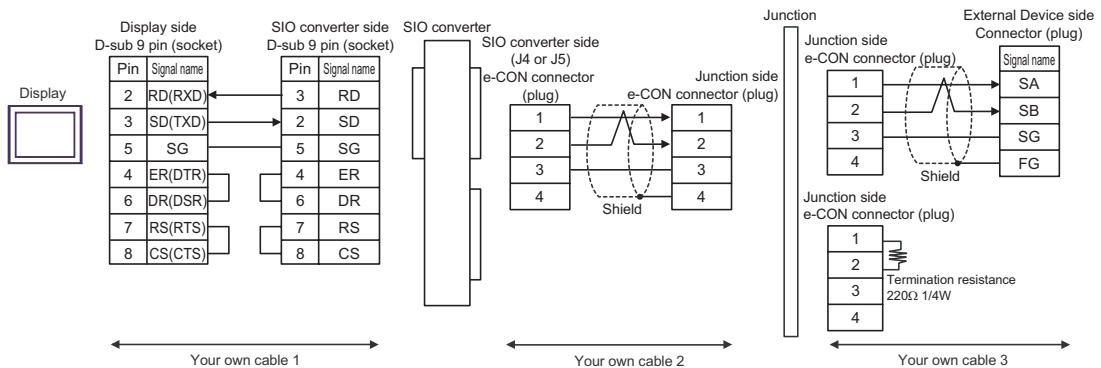
B) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



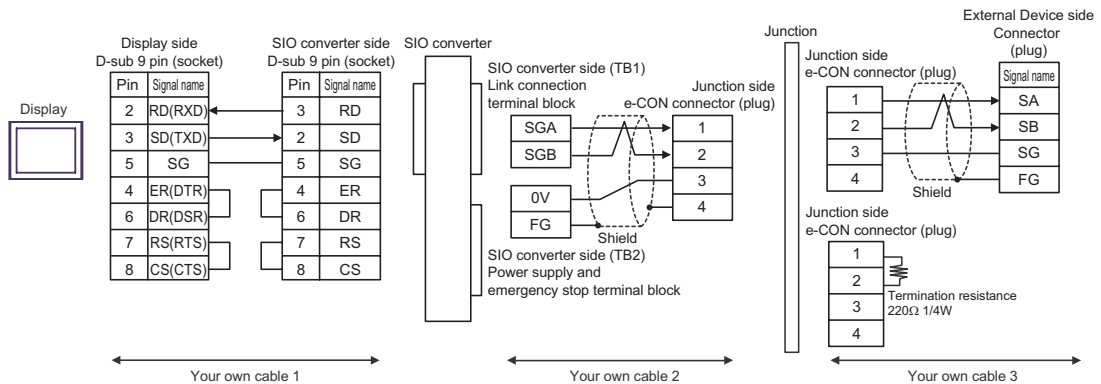
C) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, your own cable 3 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



D) When using your own cable 1, SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 2, junction (5-1473574-4) by AMP, your own cable 3 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



Cable Diagram 14

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	A	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	Cable length from SIO converter to External Device: 100m or less
	B	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	
	C	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP*2 5-1473574-4 + Your own cable 2 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	

continued to next page

Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) LT (COM1) IPC* ¹ PC/AT	D	RS232C conversion unit by IAI Corporation RCB-CV-MW + Communication cable by IAI Corporation CB-RCA-SIO050 + SIO converter by IAI Corporation RC□-TU-SIO-□ + Your own cable 1 + Junction by AMP* ² 5-1473574-4 + Your own cable 2 + Connector by Phoenix Contact K.K. MC1.5/4-ST-3.5	Cable length from SIO converter to External Device: 100m or less

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

 ■ IPC COM Port (page 5)

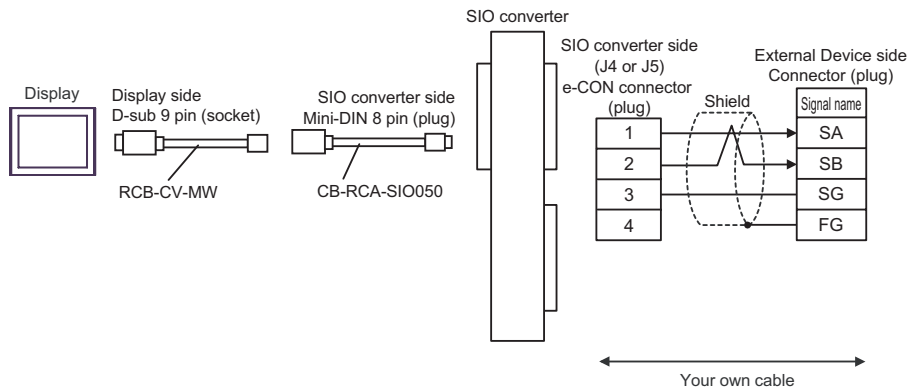
*2 When using more than one junction by AMP, your own cable 3 is required.

NOTE

- RS232C conversion unit (RCB-CV-MW) and communication cable (CB-RCA-SIO050) are accessories of PC Interface Software (RCM-101-MW) by IAI Corporation.
- When connecting to 3 or more External Devices, use link connection terminal block or junction by AMP.

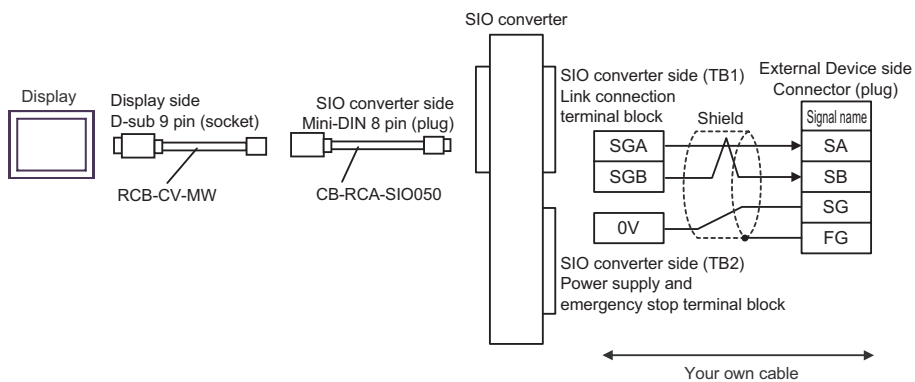
A) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



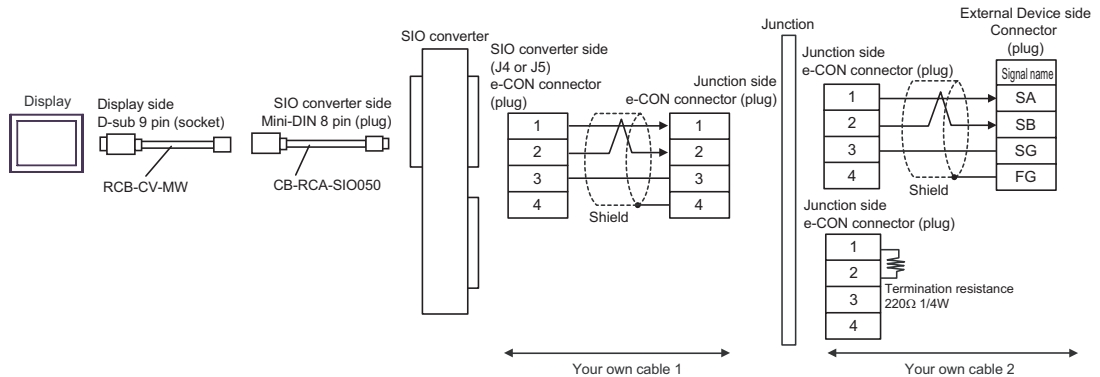
B) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



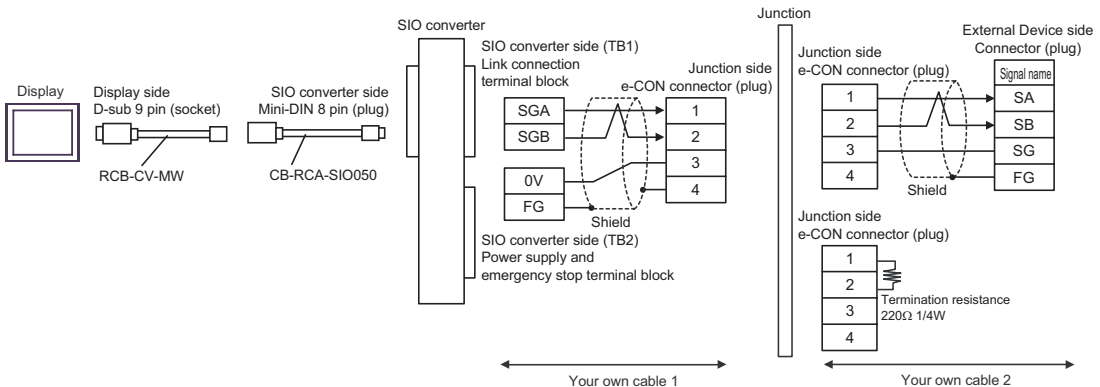
- C) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP, your own cable 2 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



- D) When using RS232C conversion unit (RCB-CV-MW), communication cable (CB-RCA-SIO050), SIO converter (RC□-TU-SIO-□) by IAI Corporation, your own cable 1, junction (5-1473574-4) by AMP, your own cable 2 and connector (MC1.5/4-ST-3.5) by Phoenix Contact K.K.

- 1:1 connection



6 Supported Device

Range of supported device address is shown in the table below.

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Data register	D0000,00 - DFFFF,15	 D0000 - DFFFF		*1*2
Status register	S0000 - SFFFF	S0000 - SFFF0		

*1 System status register (D9008) in the data register has an area for 2 words. When accessing D9008 on the Display, you need to access separately both from the upper and lower words.

e.g. When accessing the 16th bit, assign "D9008,00" on the Display. In the same way, when accessing the 0 bit, assign "D9009,00."

*2 Once a bit is written, the Display reads the corresponding word address of the External Device, sets the bit to the read-in word address, and returns it to the External Device. While the Display reads data of the External Device and returns the data, if the writing process is conducted with the word address ladder program, data may not be written correctly.

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 (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
Data register	D	0000	Word Address
Status register	S	0080	Value of word address divided by 16

8 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs. Device name is a title of External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of External Device where error occurs, or error codes received from External Device. NOTE • IP address is displayed such as "IP address (Decimal): MAC address (Hex)". • Device address is 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 "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.

■ Error Codes Unique to External Device

Error Code	Description
01H	ILLEGAL FUNCTION
02H	ILLEGAL DATA ADDRESS
03H	ILLEGAL DATA VALUE
04H	SLAVE DEVICE FAILURE

