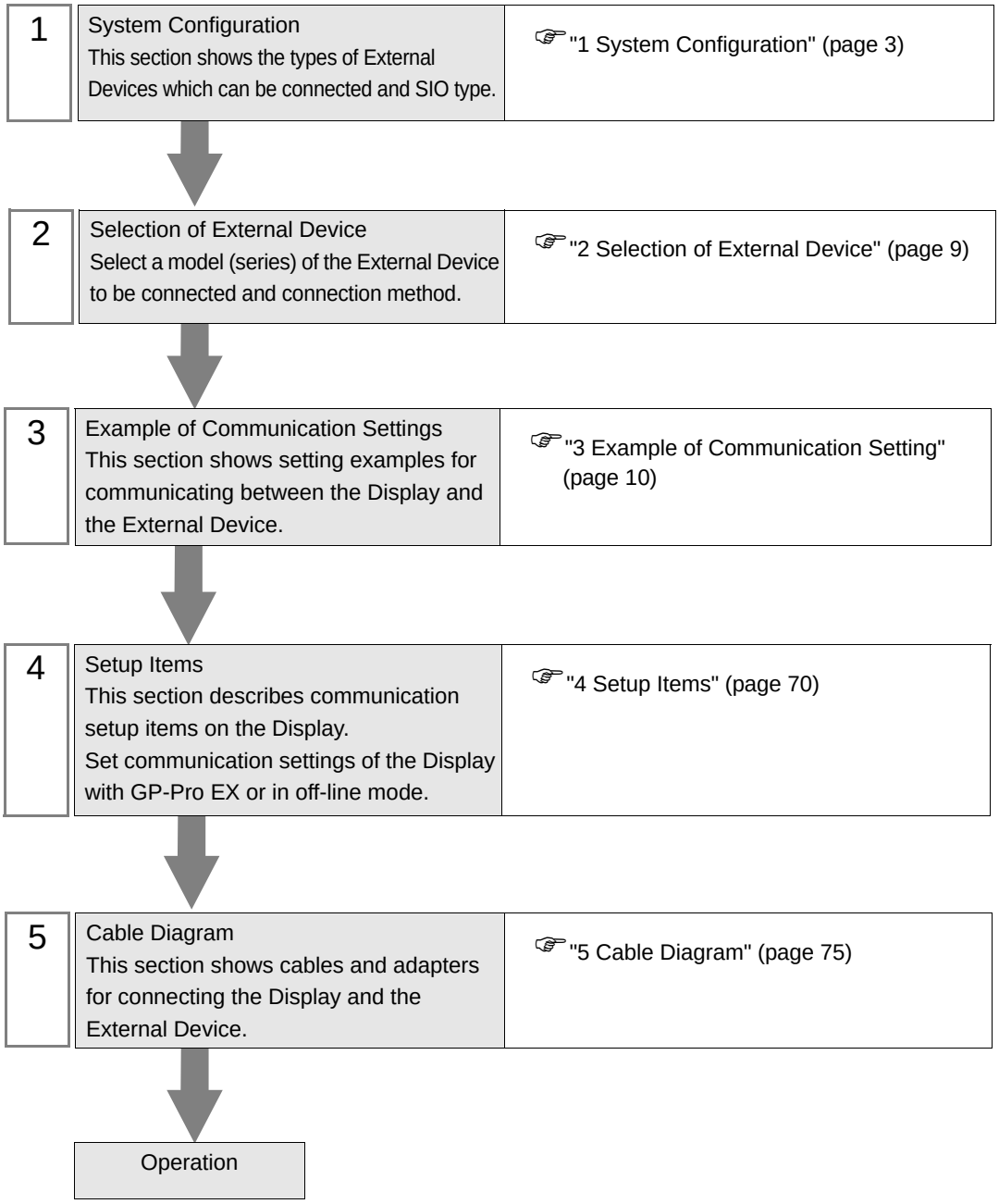
RKC Instrument Inc.

Temperature Controller MODBUS SIO Driver

Introduction

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

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 RKC Instrument Inc. and the Display are connected is shown.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
CB	CB100□□□□-□□*□□-5□/□Z-1021 CB400□□□□-□□*□□-5□/□Z-1021 CB500□□□□-□□*□□-5□/□Z-1021 CB700□□□□-□□*□□-5□/□Z-1021 CB900□□□□-□□*□□-5□/□Z-1021	Terminal block on the controller	RS422/485(2 wire)	Setting Example 1 (page 10)	Cable Diagram 3 (page 79)
FB400/FB900	FB900-□□-□*□□□1/□□-□□□□ FB400-□□-□*□□□1/□□-□□□□	Terminal block on the controller	RS232C	Setting Example 2 (page 12)	Cable Diagram 6 (page 91)
	FB900-□□-□*□□□4/□□-□□□□ FB400-□□-□*□□□4/□□-□□□□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 3 (page 14)	Cable Diagram 7 (page 92)
	FB900-□□-□*□□□5/□□-□□□□ FB900-□□-□*□□□X/□□-□□□□ FB900-□□-□*□□□Y/□□-□□□□ FB400-□□-□*□□□5/□□-□□□□ FB400-□□-□*□□□X/□□-□□□□ FB400-□□-□*□□□Y/□□-□□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 4 (page 16)	Cable Diagram 3 (page 79)
	FB900-□□-□*□□□W/□□-□□□□	Terminal block on the controller	RS232C	Setting Example 2 (page 12)	Cable Diagram 6 (page 91)
	FB400-□□-□*□□□W/□□-□□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 4 (page 16)	Cable Diagram 3 (page 79)
HA400/HA900	HA900-□□-□□-□*□□-□□6□-□/□/□ HA900-□□-□□-□*□□-□□□6-□/□/□ HA901-□□-□□-□*□□-□□6□-□/□/□ HA901-□□-□□-□*□□-□□□6-□/□/□ HA400-□□-□□-□*□□-□□6□-□/□/□ HA400-□□-□□-□*□□-□□□6-□/□/□ HA401-□□-□□-□*□□-□□6□-□/□/□ HA401-□□-□□-□*□□-□□□6-□/□/□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 5 (page 18)	Cable Diagram 3 (page 79)
	HA900-□□-□□-□*□□-□□8□-□/□/□ HA900-□□-□□-□*□□-□□□8-□/□/□ HA901-□□-□□-□*□□-□□8□-□/□/□ HA901-□□-□□-□*□□-□□□8-□/□/□ HA400-□□-□□-□*□□-□□8□-□/□/□ HA400-□□-□□-□*□□-□□□8-□/□/□ HA401-□□-□□-□*□□-□□8□-□/□/□ HA401-□□-□□-□*□□-□□□8-□/□/□	Terminal block on the controller	RS232C	Setting Example 6 (page 20)	Cable Diagram 6 (page 91)
	HA900-□□-□□-□*□□-□□□7-□/□/□ HA901-□□-□□-□*□□-□□□7-□/□/□ HA400-□□-□□-□*□□-□□□7-□/□/□ HA401-□□-□□-□*□□-□□□7-□/□/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 7 (page 22)	Cable Diagram 7 (page 92)

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Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
MA900	MA900-4□□□□-□□-□*□□□-□6/□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 8 (page 24)	Cable Diagram 3 (page 79)
	MA900-4□□□□-□□-□*□□□-□7/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 9 (page 26)	Cable Diagram 7 (page 92)
	MA900-4□□□□-□□-□*□□□-□8/□	Terminal block on the controller	RS232C	Setting Example 10 (page 28)	Cable Diagram 6 (page 91)
MA901	MA901-8□□□□-□□-□*□□□-□6/□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 8 (page 24)	Cable Diagram 3 (page 79)
	MA901-8□□□□-□□-□*□□□-□7/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 9 (page 26)	Cable Diagram 7 (page 92)
	MA901-8□□□□-□□-□*□□□-□8/□	Terminal block on the controller	RS232C	Setting Example 10 (page 28)	Cable Diagram 6 (page 91)
SRV	V-TIO-A-□□□□-□□*□□□-□□-□-□ V-TIO-C-□□□□-□□*□□□-□□-□-□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 14 (page 36)	Cable Diagram 3 (page 79)
SRX	X-TIO-A-□□-□□*□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 14 (page 36)	Cable Diagram 3 (page 79)
SA100	SA100□□□□-□□-□*□□-6□/□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 16 (page 40)	Cable Diagram 3 (page 79)
SA200	SA200□□□□-□□-□*□□-6□/□/□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 16 (page 40)	Cable Diagram 3 (page 79)
SR Mini HG (H-PCP-A)	H-PCP-A-□1N-□*□□Z-1021	Terminal block on the controller	RS232C	Setting Example 18 (page 44)	Cable Diagram 1 (page 75)
	H-PCP-A-□4N-□*□□Z-1021	Terminal block on the controller	RS422/485(4 wire)	Setting Example 19 (page 46)	Cable Diagram 2 (page 76)

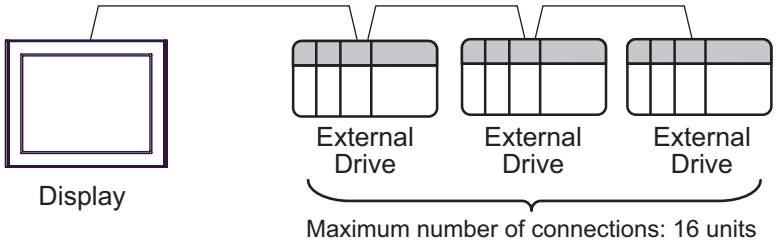
continued to next page

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
SR Mini HG (H-PCP-J)	H-PCP-J-□4□-D*□□	Connector on the controller	RS422/485(4 wire)	Setting Example 20 (page 48)	Cable Diagram 4 (page 83)
	H-PCP-J-□5□-D*□□	Connector on the controller	RS422/485(2 wire)	Setting Example 21 (page 51)	Cable Diagram 5 (page 86)
	H-PCP-J-□□1-D*□□	Connector on the controller	RS232C	Setting Example 22 (page 54)	Cable Diagram 1 (page 75)
	H-PCP-J-□□4-D*□□	Connector on the controller	RS422/485(4 wire)	Setting Example 20 (page 48)	Cable Diagram 8 (page 95)
	H-PCP-J-□□5-D*□□	Connector on the controller	RS422/485(2 wire)	Setting Example 21 (page 51)	Cable Diagram 9 (page 99)
SRZ (Z-TIO)	Z-TIO-A□-□□□□/□□-□□□□ Z-TIO-B□-□□/□N□-□□□□ Z-TIO-C□-□□□□/□□-□□□□ Z-TIO-D□-□□/□N□-□□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 23 (page 56)	Cable Diagram 10 (page 106)
SRZ (Z-DIO)	Z-DIO-A□-□□/□-□□□□□□□□ Z-DIO-A□-□□/N	Terminal block on the controller	RS422/485(2 wire)	Setting Example 24 (page 58)	Cable Diagram 10 (page 106)
SRZ (Z-CT)	Z-CT-A□/□-□□ Z-CT-A□/N	Terminal block on the controller	RS422/485(2 wire)	Setting Example 25 (page 60)	Cable Diagram 10 (page 106)
SRZ (Z-COM)	Z-COM-A-4□/□□□□ Z-COM-A-4□/N	COM.PORT1 or COM.PORT2 on the controller	RS422/485(4 wire)	Setting Example 26 (page 62)	Cable Diagram 11 (page 113)
	Z-COM-A-5□/□□□□ Z-COM-A-5□/N		RS422/485(2 wire)	Setting Example 27 (page 64)	Cable Diagram 12 (page 118)
	Z-COM-A-□4/□□□□ Z-COM-A-□4/N	COM.PORT3 or COM.PORT4 on the controller	RS422/485(4 wire)	Setting Example 28 (page 66)	Cable Diagram 11 (page 113)
	Z-COM-A-□5/□□□□ Z-COM-A-□5/N		RS422/485(2 wire)	Setting Example 29 (page 68)	Cable Diagram 12 (page 118)

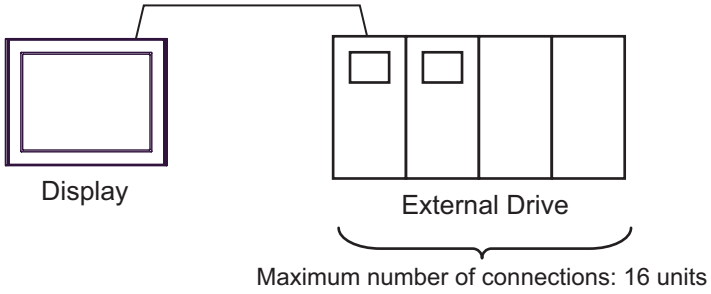
■ Connection Configuration

- 1:1 Connection

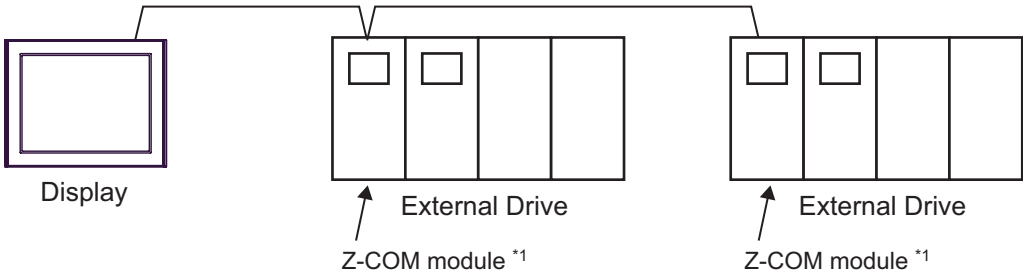
- 1:n Connection



- 1:n Connection (For the SRZ (Z-TIO), SRZ (Z-DIO), and SRZ (Z-CT) Series)



- 1:n Connection (For the SRZ (Z-COM) Series)



*1 Up to 16 Z-COM modules can be connected.

■ 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)

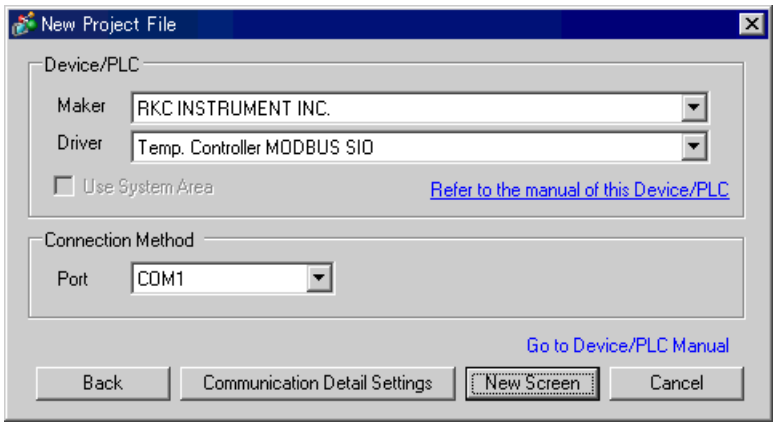
DIP switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (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 "RKC Instrument Inc.".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "Temperature Controller MODBUS SIO". Check the External Device which can be connected in "Temperature Controller MODBUS SIO" in system configuration. ☞"1 System Configuration" (page 3)
Use System Area	Cannot use in this driver.
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

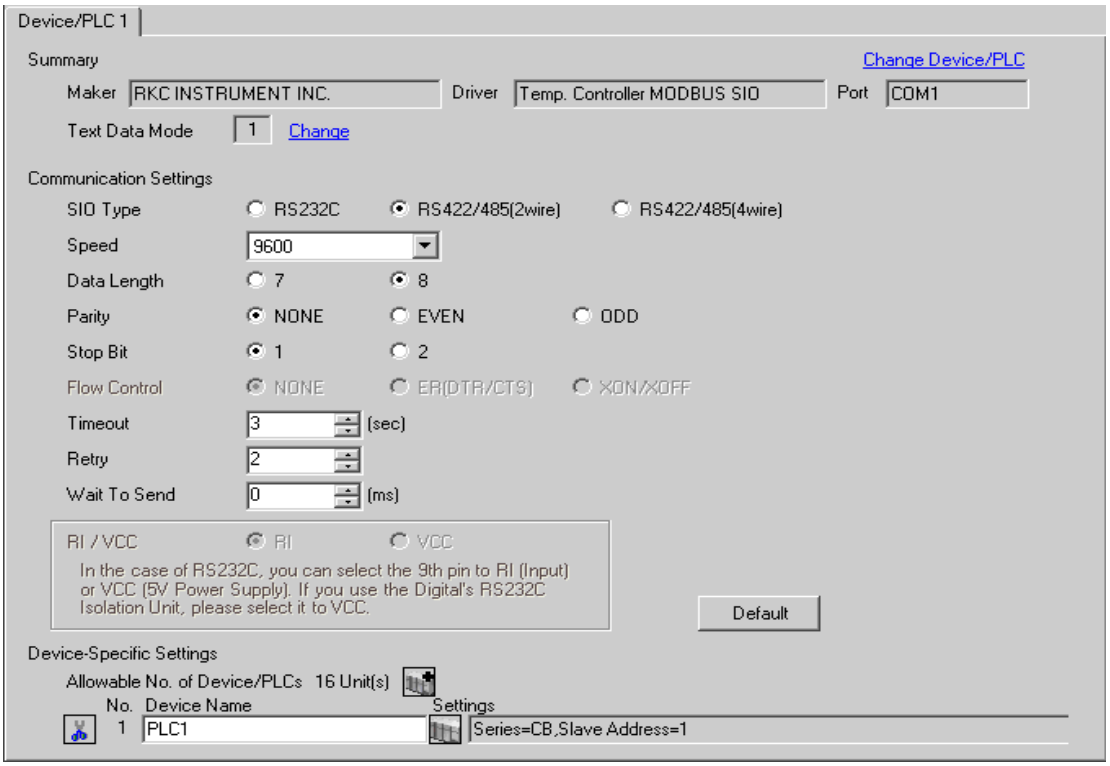
Examples of communication settings of the Display and the External Device, recommended by Digital Electronics Corp., are shown.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the communication setting mode.
2. Press the SET key to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the communication setting mode to the PV/SV display mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	2
bIT	0

NOTE

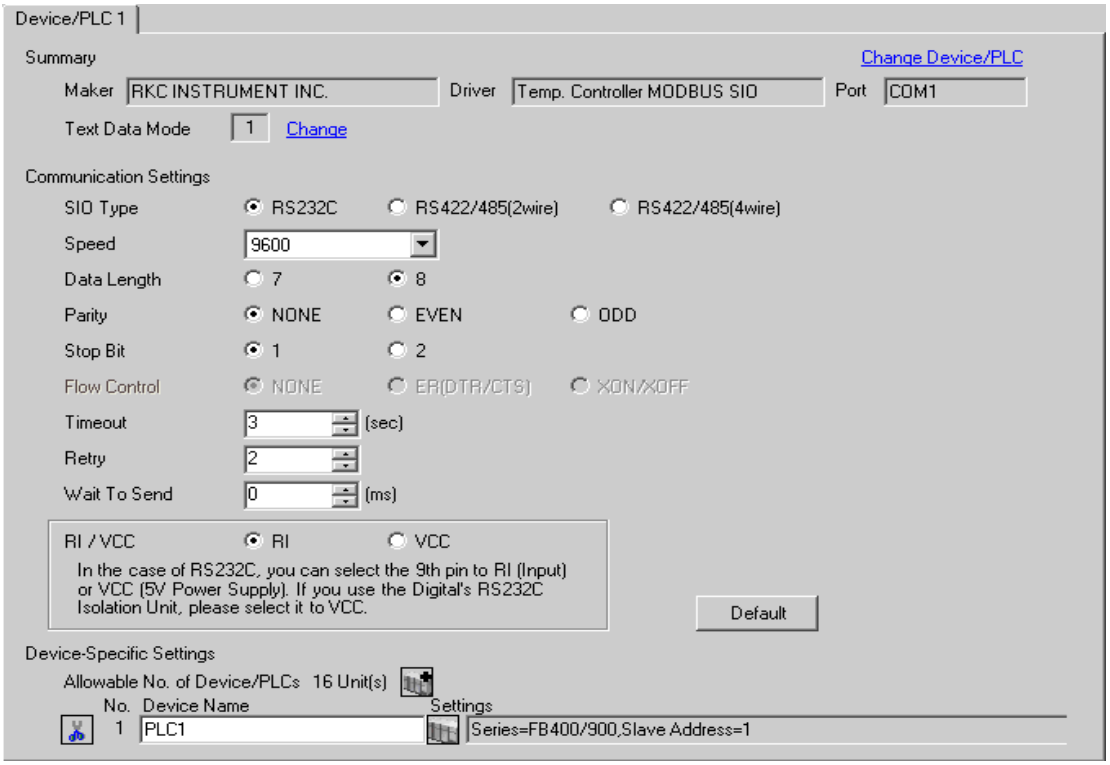
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press and hold the shift key to move from the PV/SV display mode to the engineering mode.
2. Press the up key several times to specify F60, and press the SET key.
3. Set 1 for CMP1.
4. While pressing down the SET key, press the shift key to move from the engineering mode to the PV/SV display mode.
5. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the setup setting mode.
6. Press the SET key several times to select the parameter.
7. Press the down/up keys to change the setting.
8. While pressing down the SET key, press the shift key to move from the setup setting mode to the PV/SV display mode.
9. To confirm the setting, restart the Temperature Controller.

Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

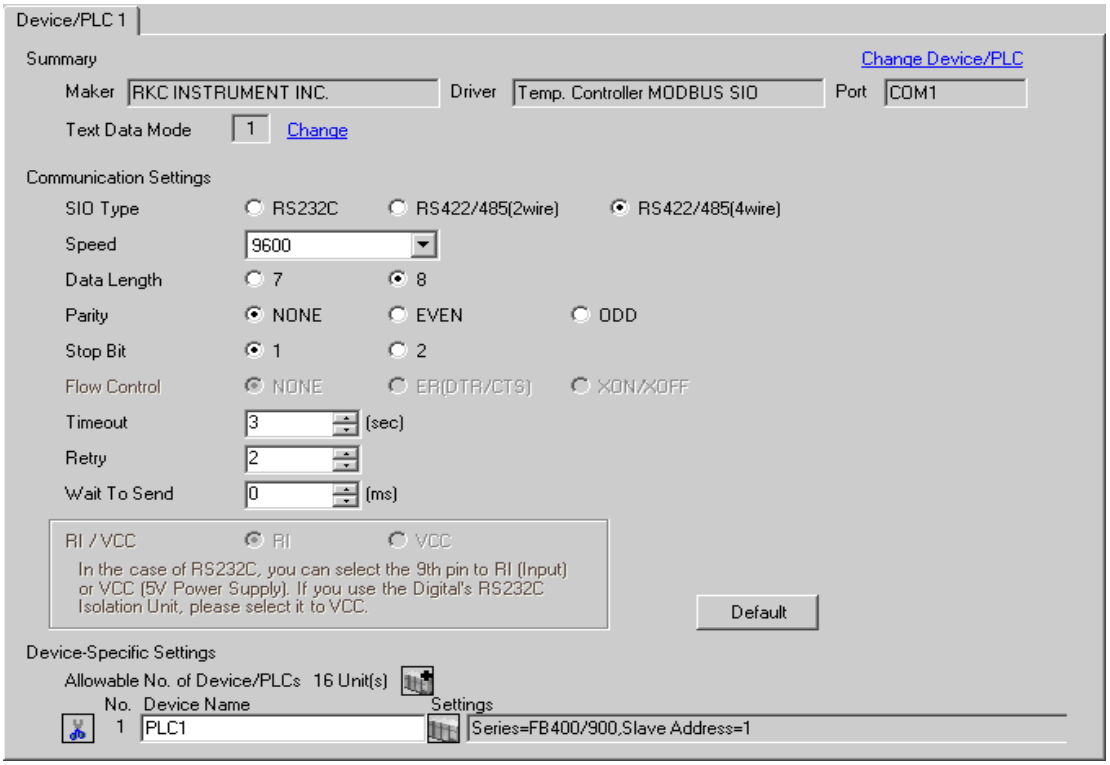
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press and hold the shift key to move from the PV/SV display mode to the engineering mode.
2. Press the up key several times to specify F60, and press the SET key.
3. Set 1 for CMP1.
4. While pressing down the SET key, press the shift key to move from the engineering mode to the PV/SV display mode.
5. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the setup setting mode.
6. Press the SET key several times to select the parameter.
7. Press the down/up keys to change the setting.
8. While pressing down the SET key, press the shift key to move from the setup setting mode to the PV/SV display mode.
9. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

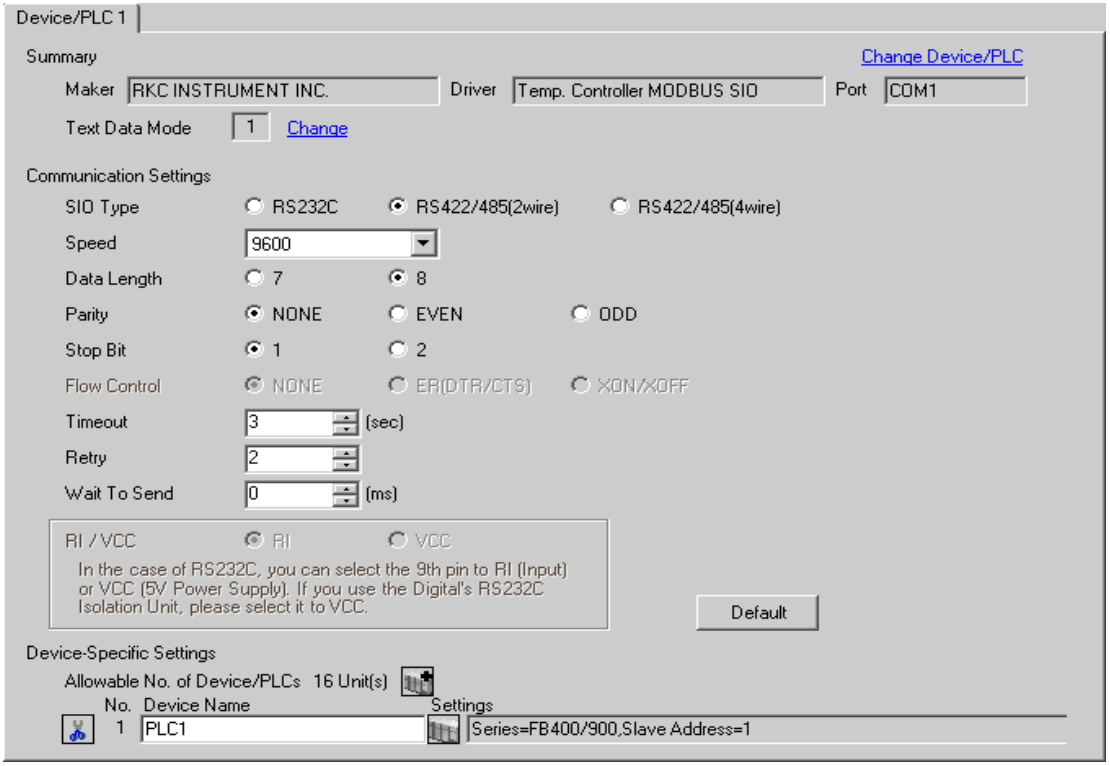
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press and hold the shift key to move from the PV/SV display mode to the engineering mode.
2. Press the up key several times to specify F60, and press the SET key.
3. Set 1 for CMP1.
4. While pressing down the SET key, press the shift key to move from the engineering mode to the PV/SV display mode.
5. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the setup setting mode.
6. Press the SET key several times to select the parameter.
7. Press the down/up keys to change the setting.
8. While pressing down the SET key, press the shift key to move from the setup setting mode to the PV/SV display mode.
9. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

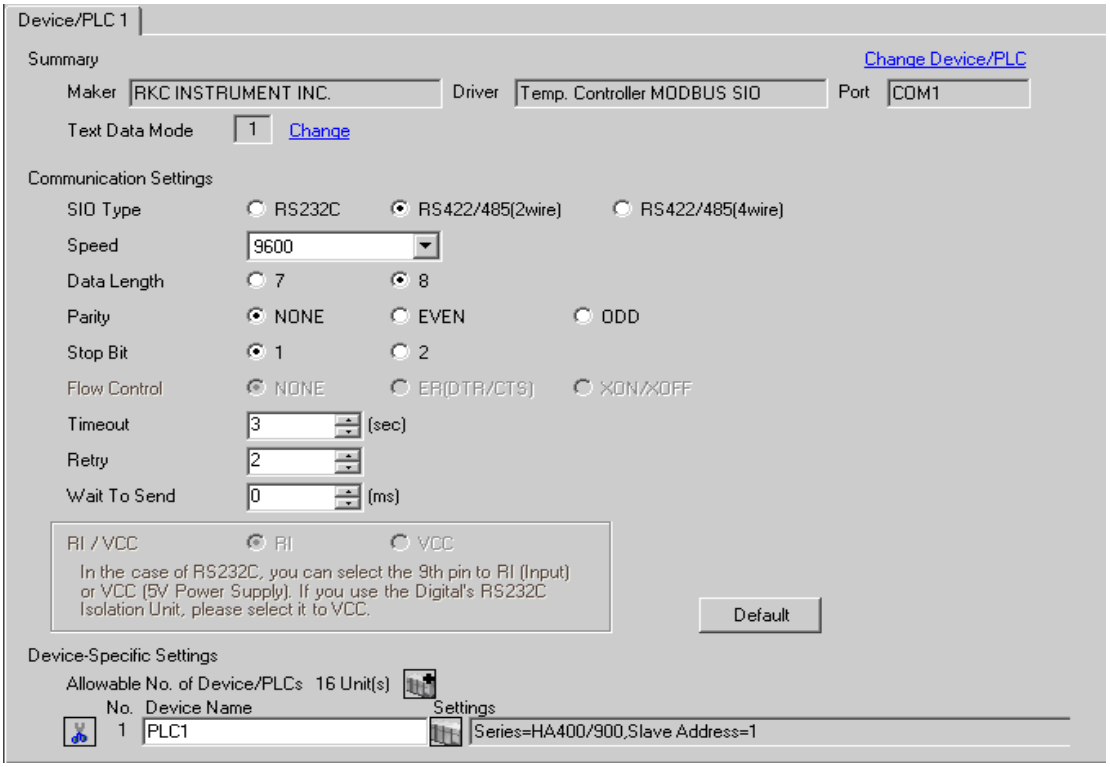
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the SV setting & monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the setup setting mode to the SV setting & monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

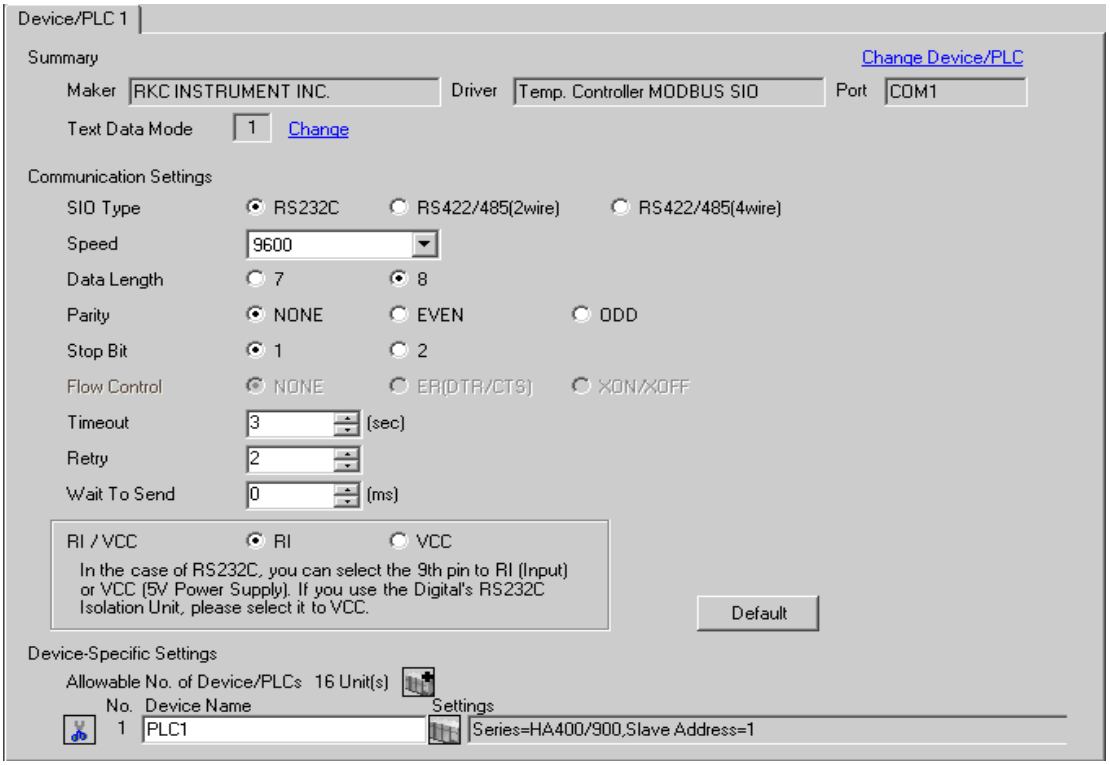
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the SV setting & monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the setup setting mode to the SV setting & monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

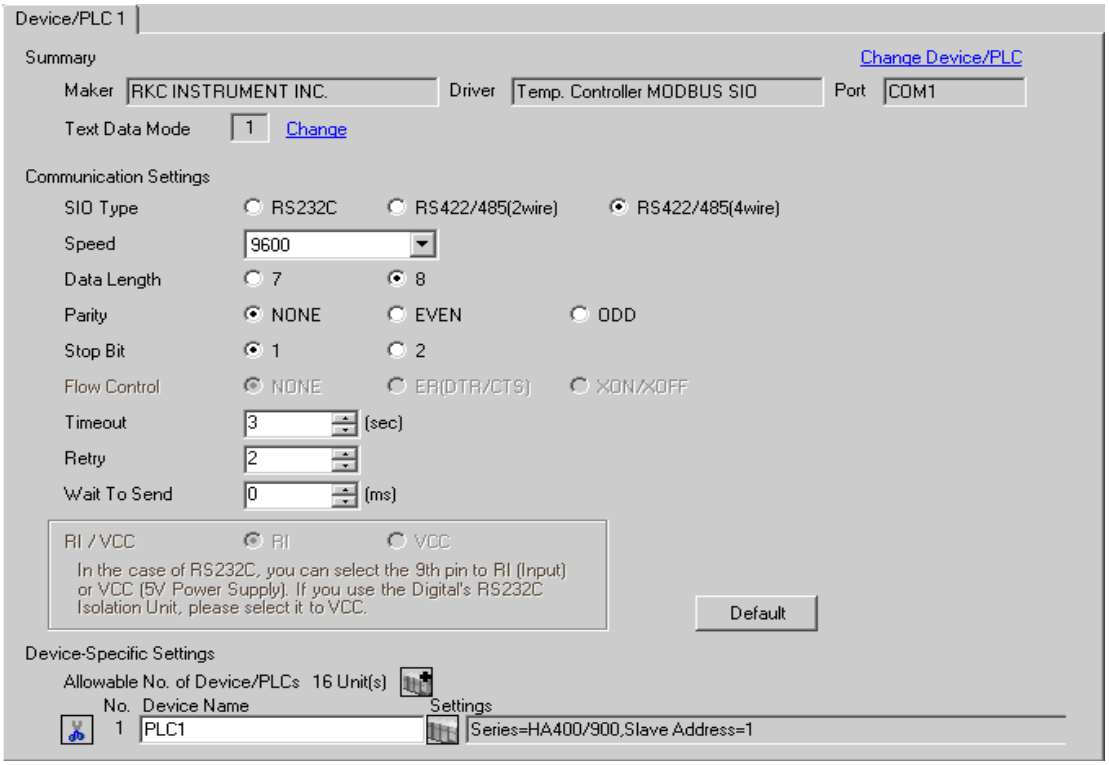
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 Setting

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

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the SV setting & monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the setup setting mode to the SV setting & monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add1	1
bPS1	9.6
bIT1	8n1

NOTE

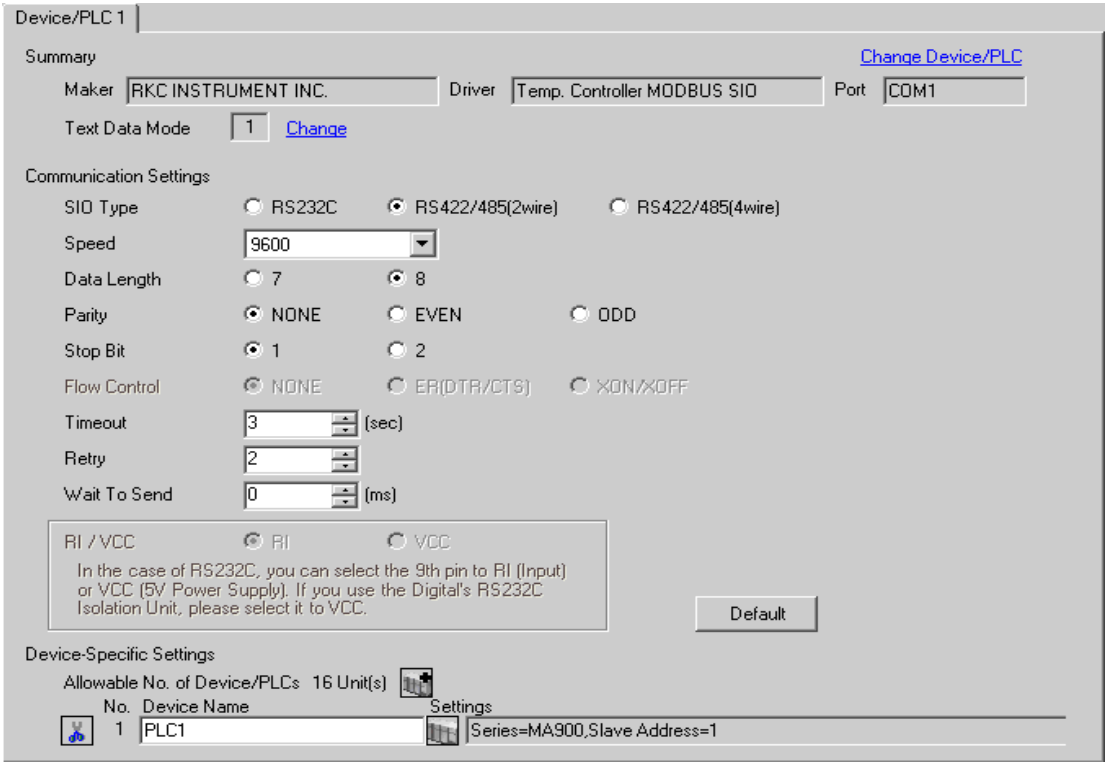
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

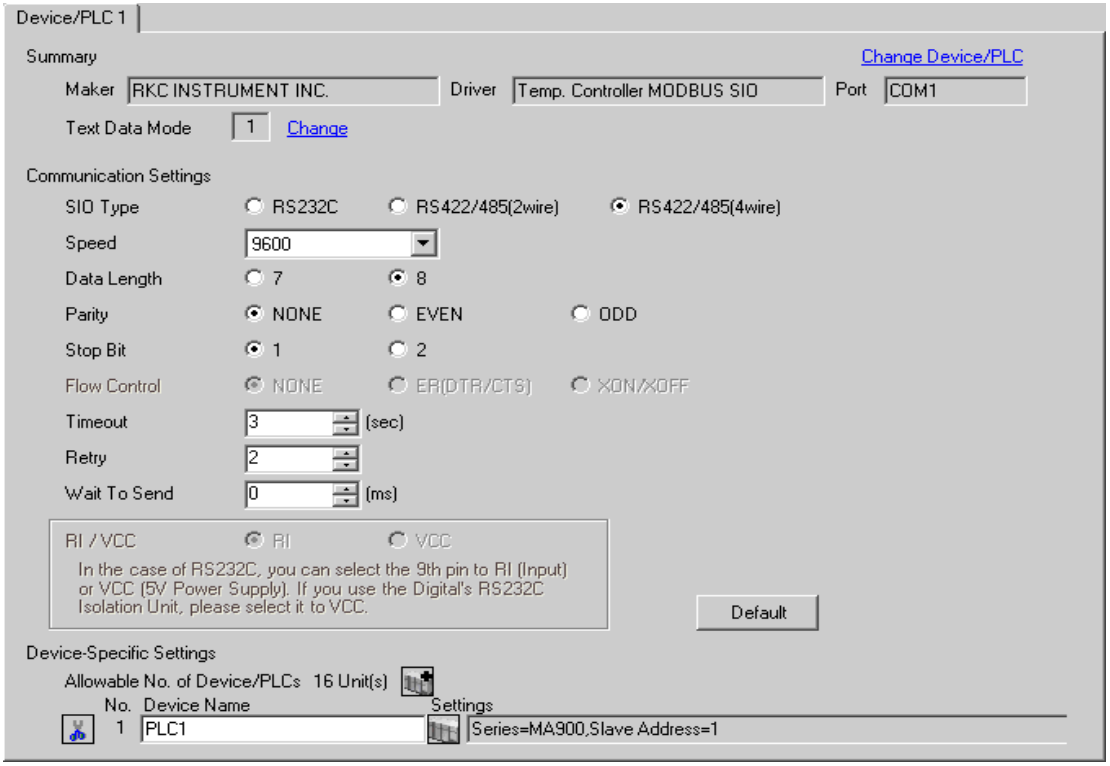
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

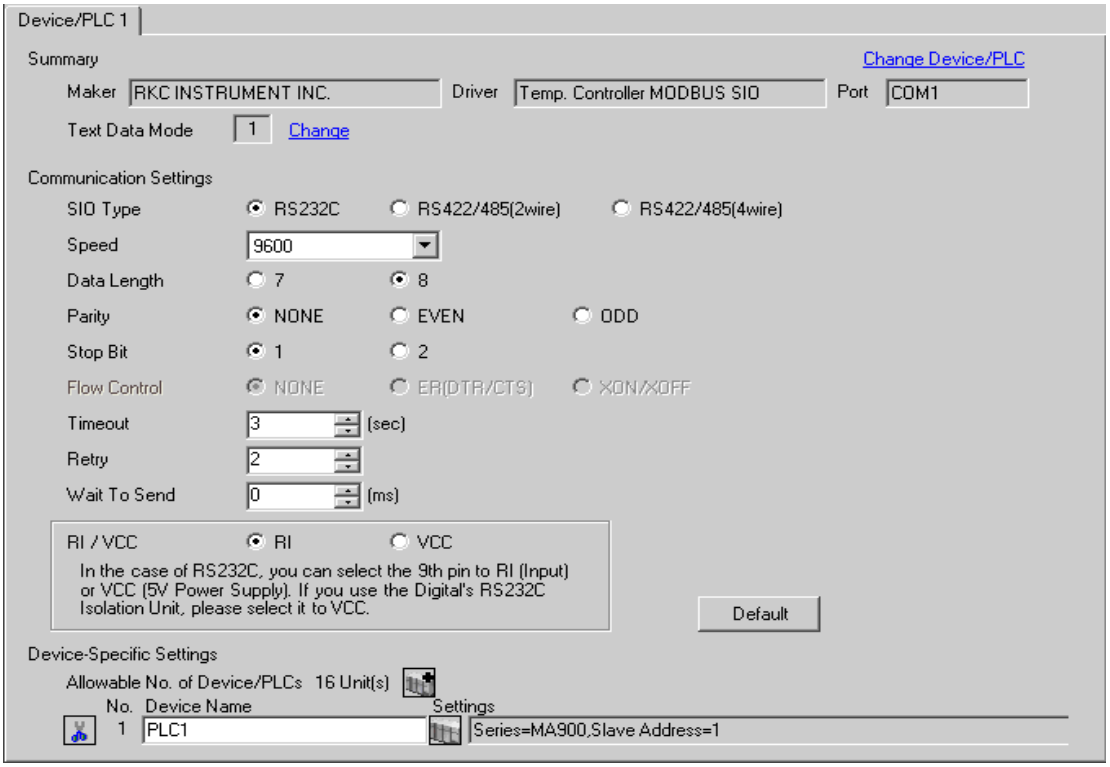
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

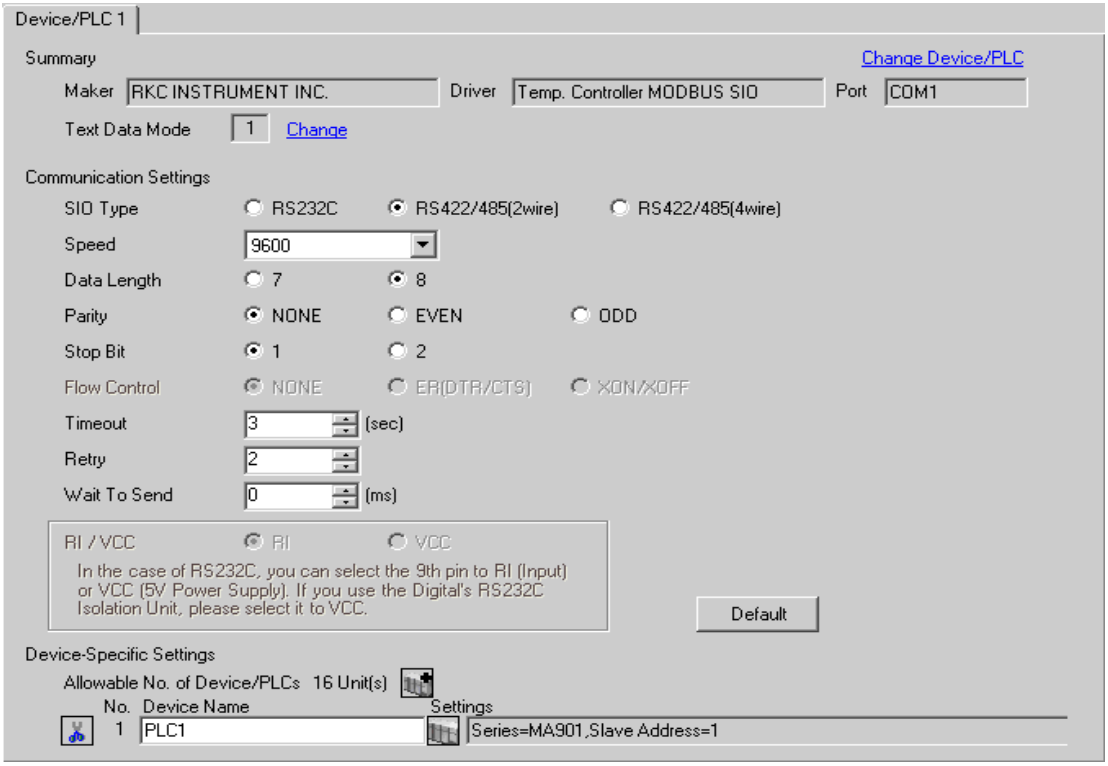
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

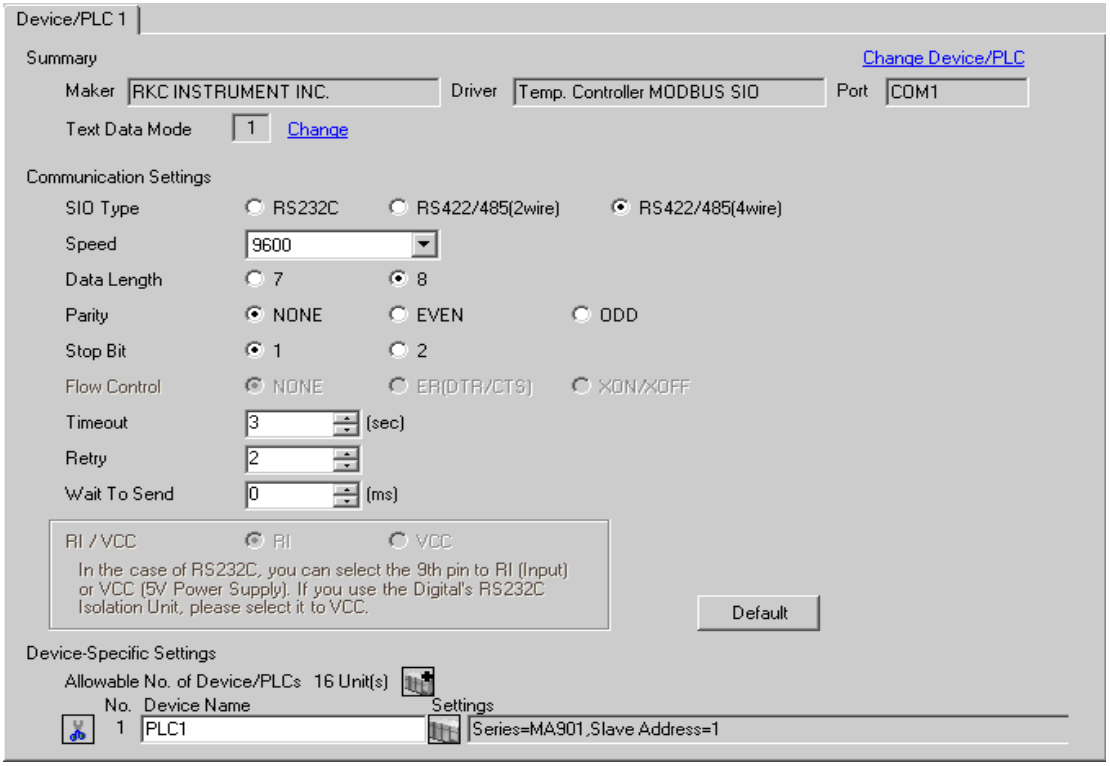
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

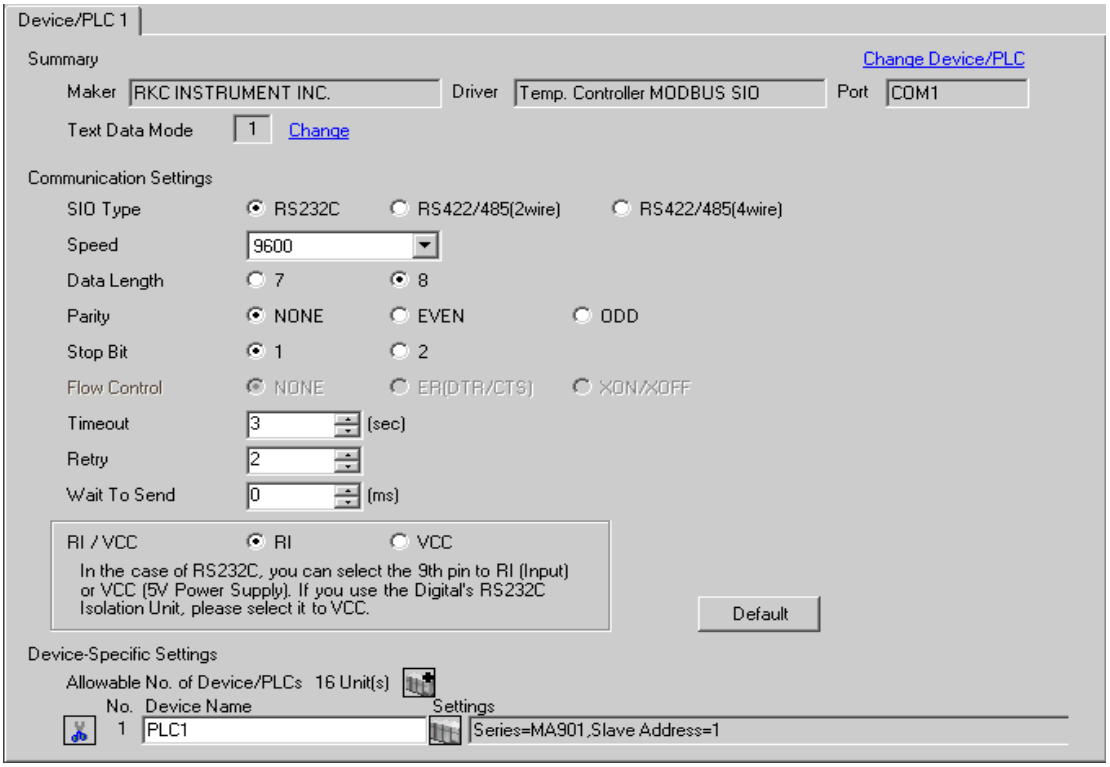
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.13 Setting Example 13

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the <R/S key to move from the PV/SV monitor mode to the setup setting mode.
2. Press the SET key several times to select the parameter.
3. Press the down/up keys and the <R/S key to change the setting.
4. While pressing down the SET key, press the <R/S key to move from the setup setting mode to the PV/SV monitor mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

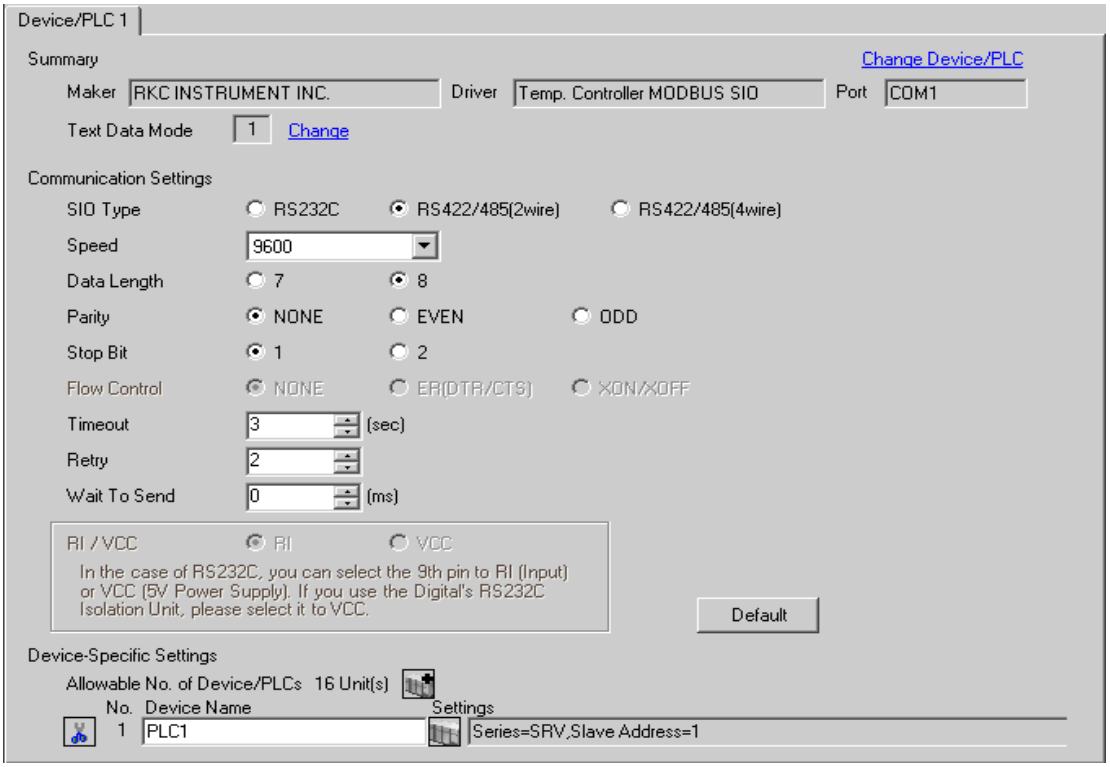
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.14 Setting Example 14

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the address setting switch on the front of the Temperature Controller and the DIP switch inside the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the address setting switch on the front of the Temperature Controller to set the module address for HOST link.

   The number added 1 to the set value becomes the module address.
2. Use the DIP switch inside the Temperature Controller to set the speed and the data bit configuration.

◆ Setting Value

Address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

DIP Switch	Settings	Description
1	ON	Speed
2	OFF	
3	ON	Data bit configuration
4	OFF	
5	OFF	
6	ON	Protocol selection
7	OFF	Fixed
8	OFF	

NOTE

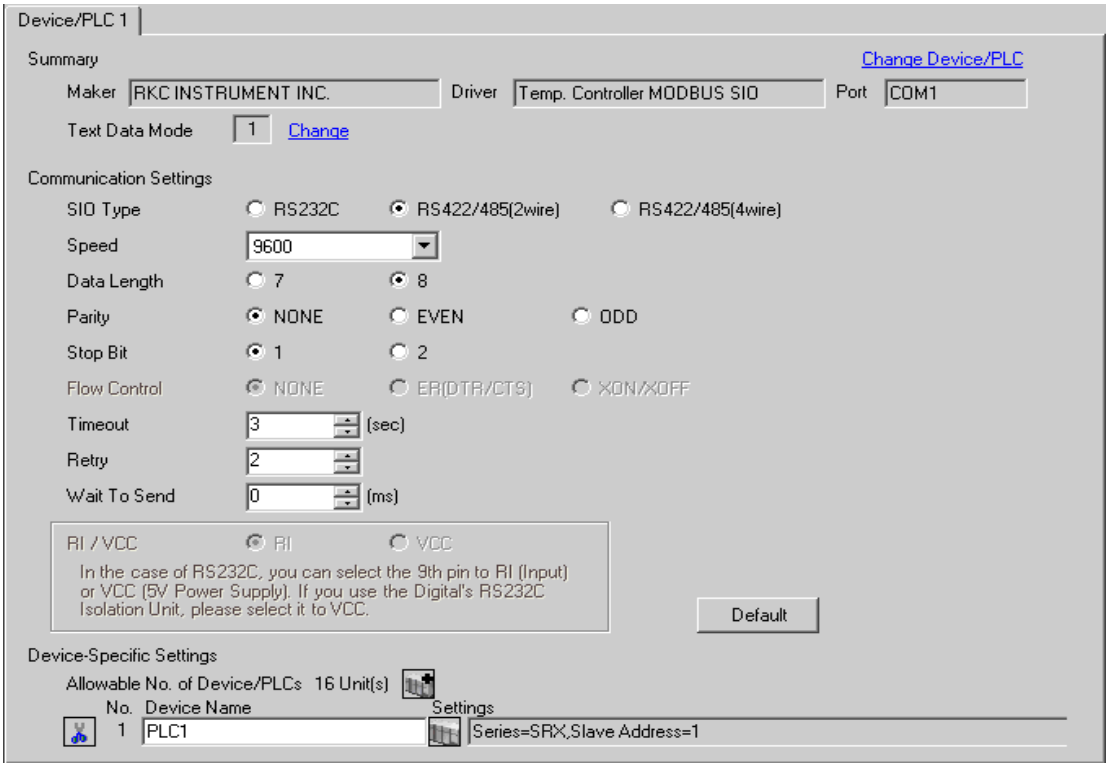
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.15 Setting Example 15

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the address setting switch on the front of the Temperature Controller and the DIP switch inside the Temperature Controller for communication settings of the External Device.
Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the address setting switch on the front of the Temperature Controller to set the module address for HOST link.
   The number added 1 to the set value becomes the module address.
2. Use the DIP switch inside the Temperature Controller to set the speed and the data bit configuration.

◆ Setting Value

Address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

DIP Switch	Settings	Description
1	ON	Speed
2	OFF	
3	ON	Data bit configuration
4	OFF	
5	OFF	
6	ON	Protocol selection
7	OFF	Fixed
8	OFF	Internal data bus Terminal resistance setting

NOTE

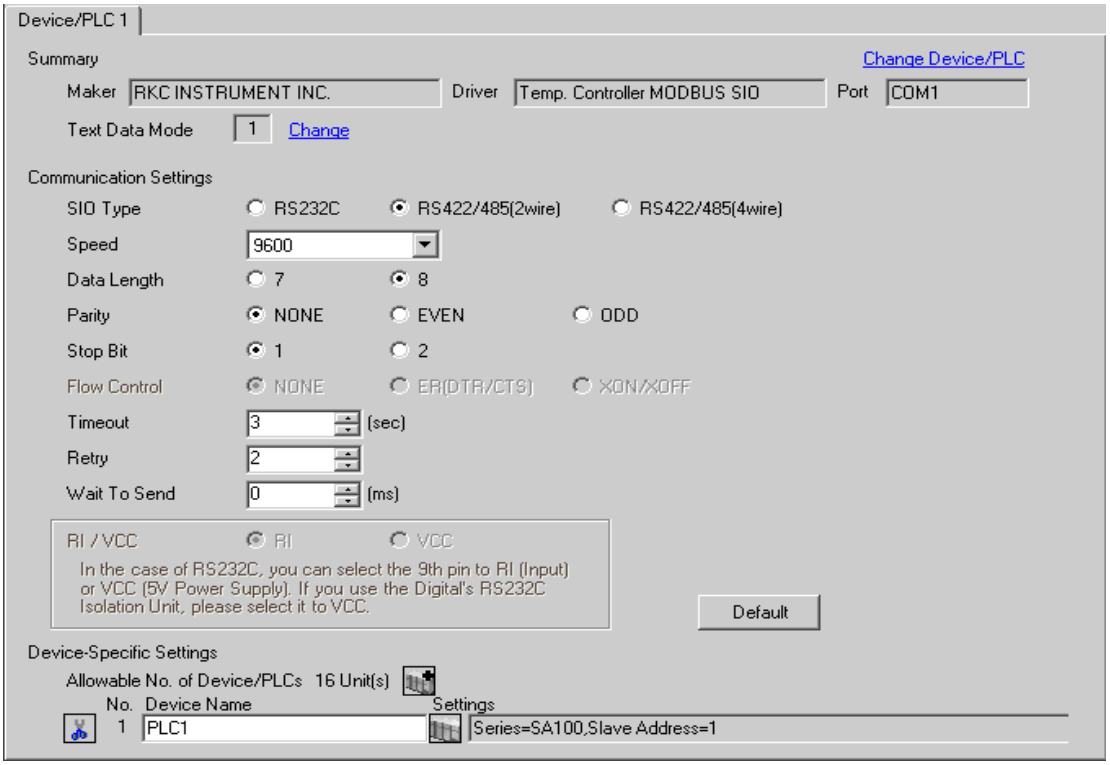
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.16 Setting Example 16

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the communication setting mode.
2. Press the SET key to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the communication setting mode to the PV/SV display mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

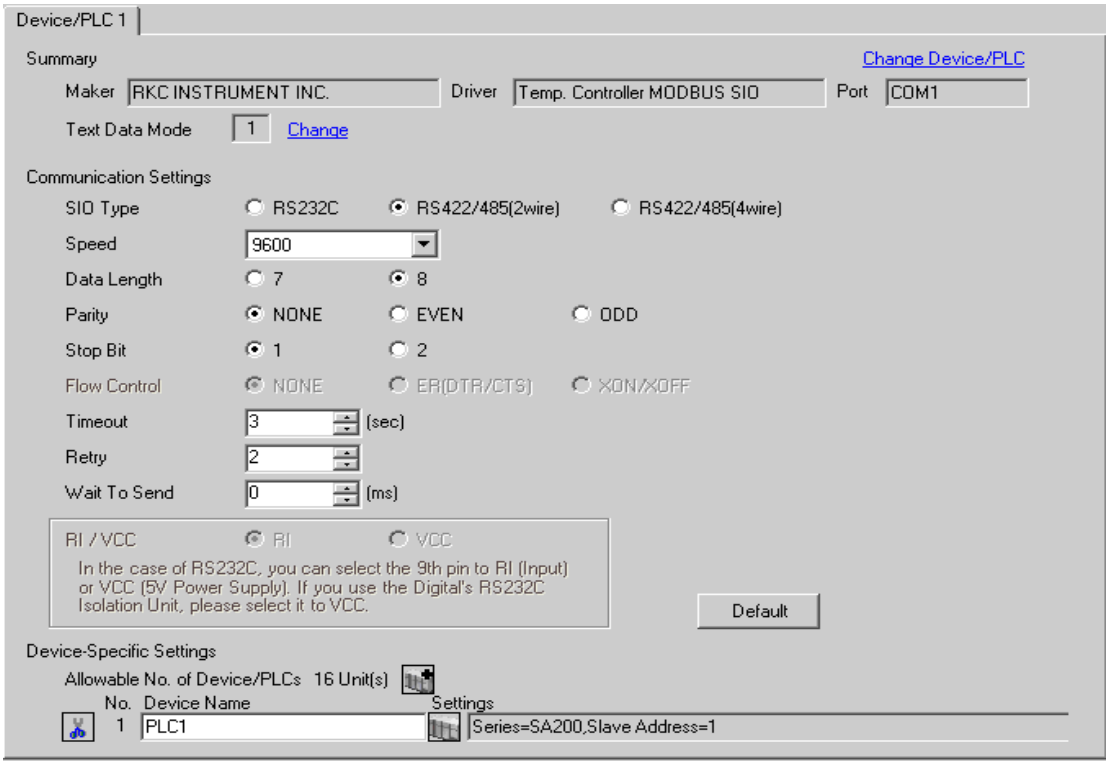
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.17 Setting Example 17

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the SET key, shift key, down key and up key on the front of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. While pressing down the SET key, press the shift key to move from the PV/SV display mode to the communication setting mode.
2. Press the SET key to select the parameter.
3. Press the down/up keys to change the setting.
4. While pressing down the SET key, press the shift key to move from the communication setting mode to the PV/SV display mode.
5. To confirm the setting, restart the Temperature Controller.

◆ Setting Value

Add	1
bPS	960
bIT	8n1

NOTE

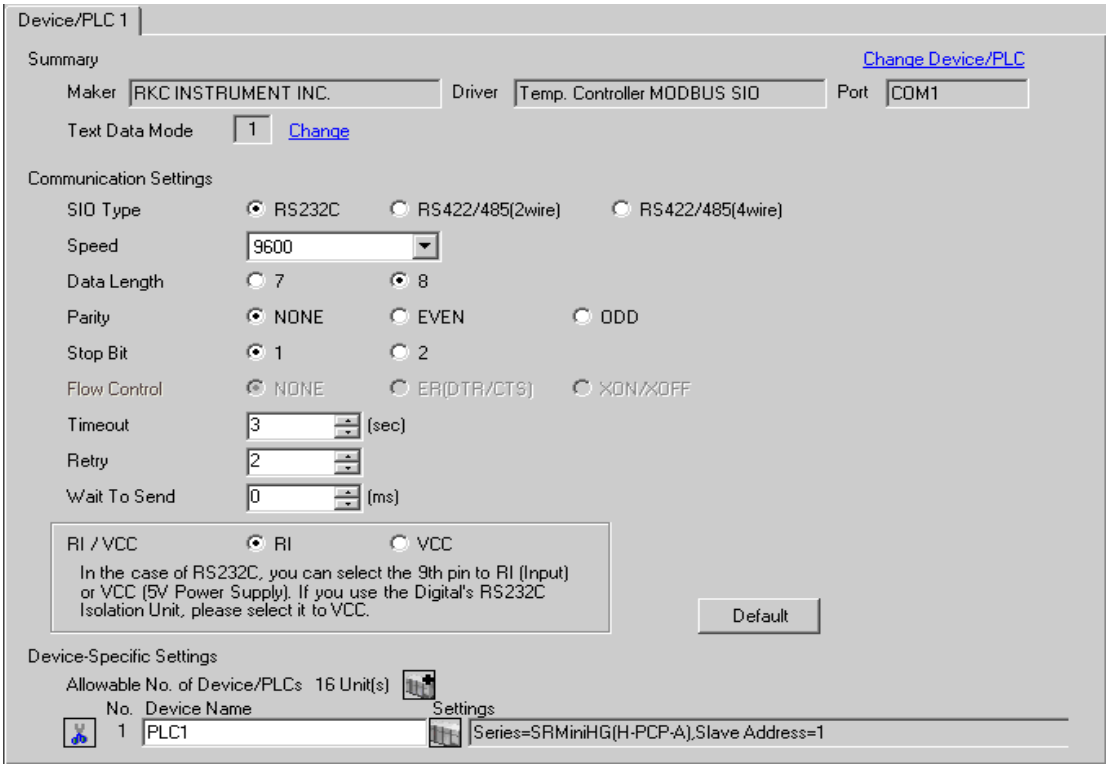
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.18 Setting Example 18

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the slave address setting switch on the front of the Temperature Controller and the DIP switch inside the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the slave address setting switch on the front of the Temperature Controller to set the slave address for HOST link.

   The number added 1 to the set value becomes the slave address.
2. Remove the Temperature Controller from the mother block, and use the DIP switch inside the Temperature Controller to set the speed and the data configuration.

◆ Setting Value

Slave address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

DIP Switch	Settings	Description
1	ON	Data configuration
2	ON	
3	ON	Speed
4	OFF	

NOTE

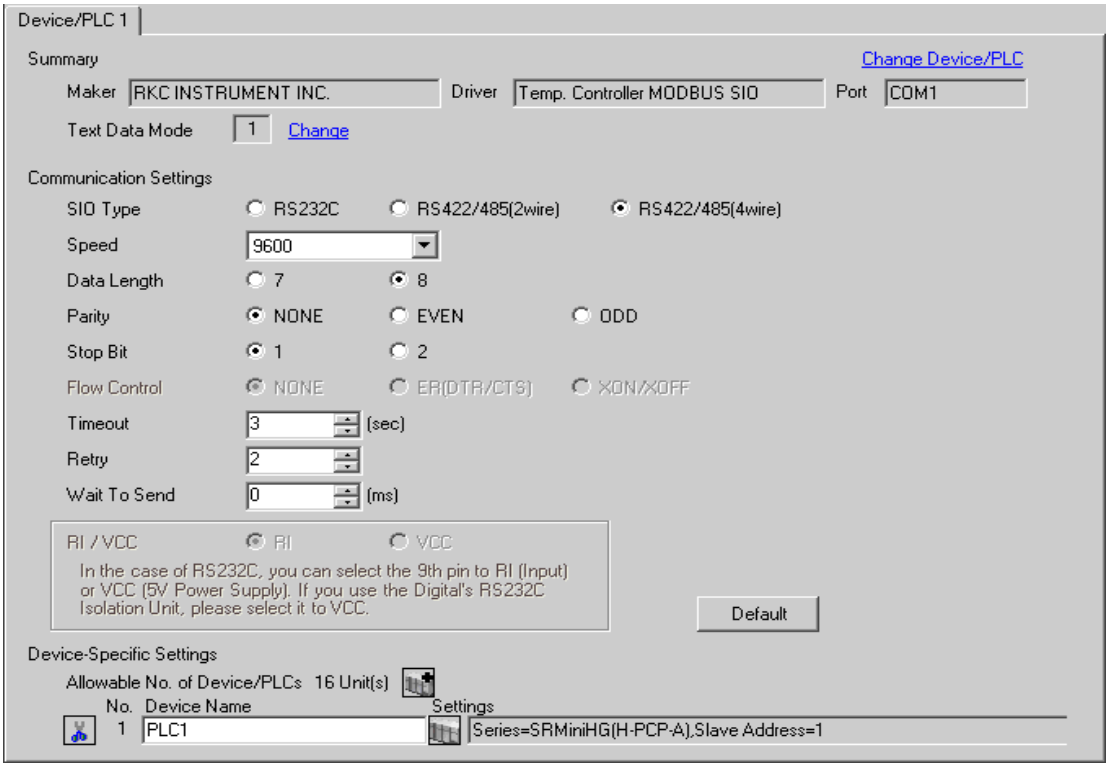
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.19 Setting Example 19

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the slave address setting switch on the front of the Temperature Controller and the DIP switch inside the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the slave address setting switch on the front of the Temperature Controller to set the slave address for HOST link.

   The number added 1 to the set value becomes the slave address.
2. Remove the Temperature Controller from the mother block, and use the DIP switch inside the Temperature Controller to set the speed and the data configuration.

◆ Setting Value

Slave address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

DIP Switch	Settings	Description
1	ON	Data configuration
2	ON	
3	ON	Speed
4	OFF	

NOTE

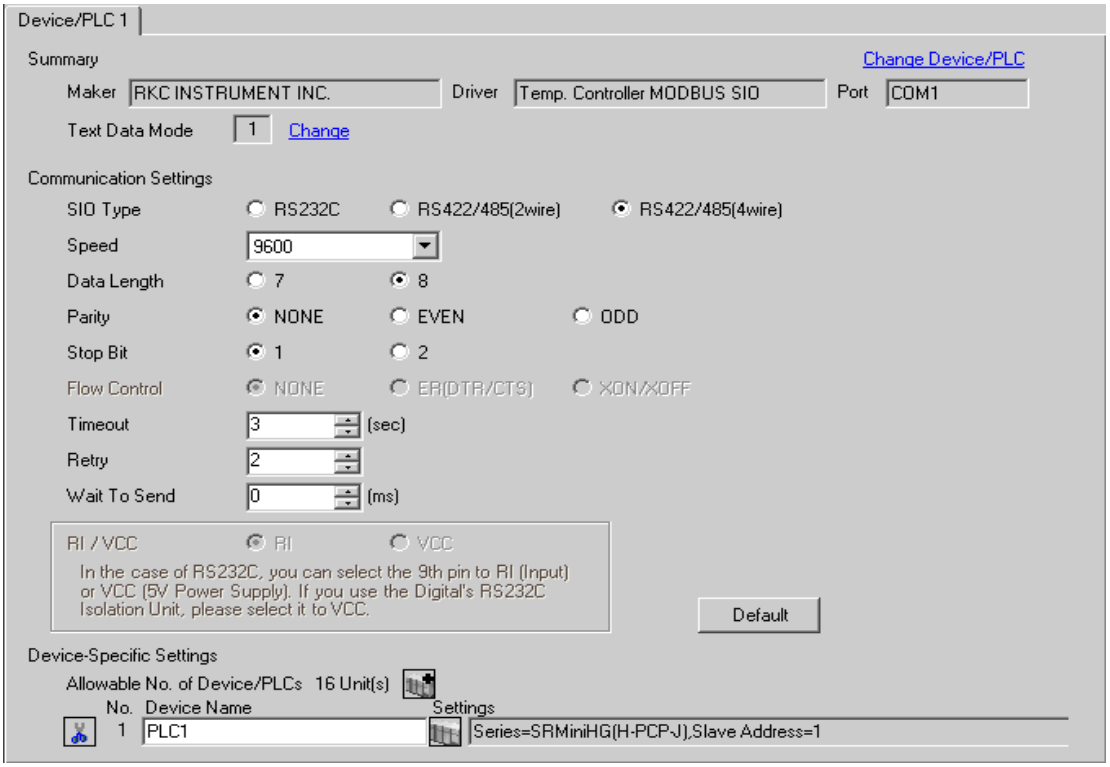
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.20 Setting Example 20

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the module address for HOST link.

   The number added 1 to the set value becomes the unit address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed and the data configuration.

◆ Setting Value

Unit address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

COM.PORT1/COM.PORT2 setting switch

SW2	Settings	Description
1	OFF	Data bit configuration
2	OFF	
3	OFF	Speed
4	OFF	
5	ON	Communication Protocol
6	OFF	
7	OFF	
8	OFF	

COM.PORT3 setting switch

SW3	Settings	Description
1	OFF	Data bit configuration
2	OFF	
3	OFF	Speed
4	OFF	
5	ON	Communication Protocol
6	OFF	Initialization
7	OFF	MODBUS mode selection
8	OFF	Fixed

NOTE

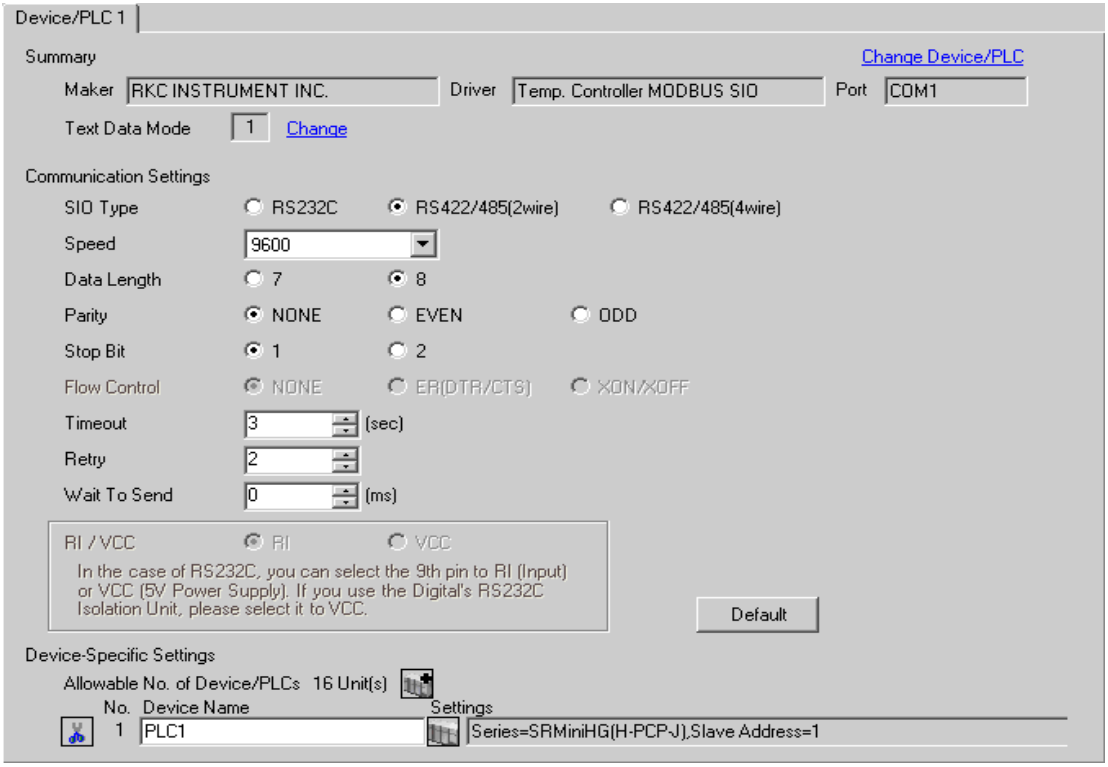
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.21 Setting Example 21

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the module address for HOST link.

   The number added 1 to the set value becomes the unit address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed and the data configuration.

◆ Setting Value

Unit address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

- COM.PORT1/COM.PORT2setting switch

SW2	Settings	Description
1	OFF	Data bit configuration
2	OFF	
3	OFF	Speed
4	OFF	
5	ON	Communication Protocol
6	OFF	
7	OFF	
8	OFF	

- COM.PORT3 setting switch

SW3	Settings	Description
1	OFF	Data bit configuration
2	OFF	
3	OFF	Speed
4	OFF	
5	ON	Communication Protocol
6	OFF	Initialization
7	OFF	MODBUS mode selection
8	OFF	Fixed

NOTE

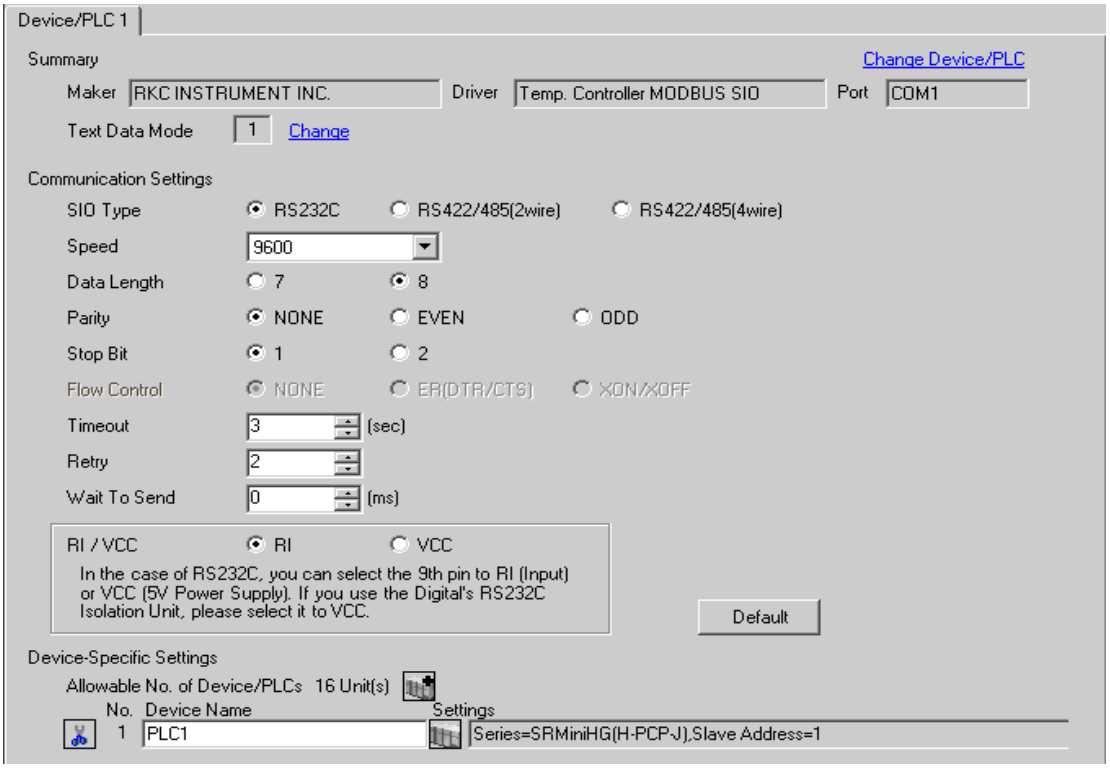
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.22 Setting Example 22

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the module address for HOST link.

   The number added 1 to the set value becomes the unit address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed and the data configuration.

◆ Setting Value

Unit address setting switch

High digit setting	0
Low digit setting	0

DIP Switch

- COM.PORT3 setting switch

SW3	Settings	Description
1	OFF	Data bit configuration
2	OFF	
3	OFF	Speed
4	OFF	
5	ON	Communication Protocol
6	OFF	Initialization
7	OFF	MODBUS mode selection
8	OFF	Fixed

NOTE

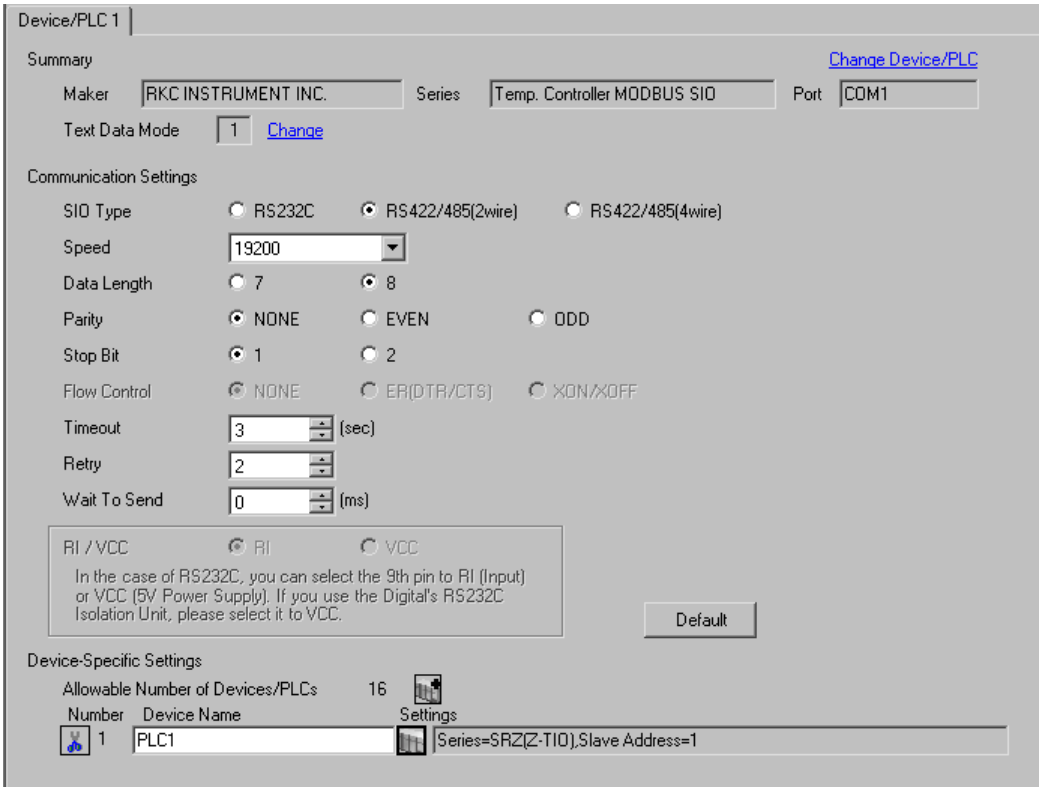
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.23 Setting Example 23

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 1 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
1	OFF	Speed: 19200 bps
2	ON	
3	OFF	Data bit configuration: Data length 8 bits, no parity, stop 1 bit
4	OFF	
5	ON	
6	ON	Communication protocol: MODBUS communication
7	OFF	Fixed
8	OFF	Fixed

NOTE

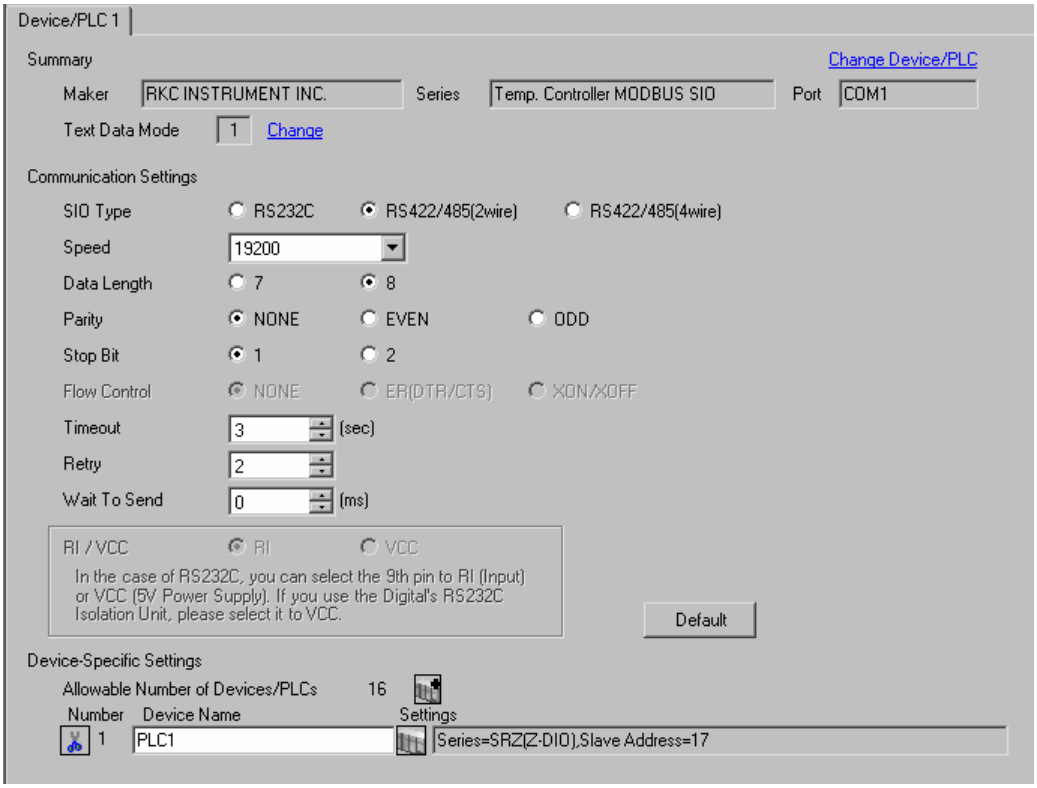
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.24 Setting Example 24

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 17 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
1	OFF	Speed: 19200 bps
2	ON	
3	OFF	Data bit configuration: Data length 8 bits, no parity, stop 1 bit
4	OFF	
5	ON	
6	ON	Communication protocol: MODBUS communication
7	OFF	Fixed
8	OFF	Fixed

NOTE

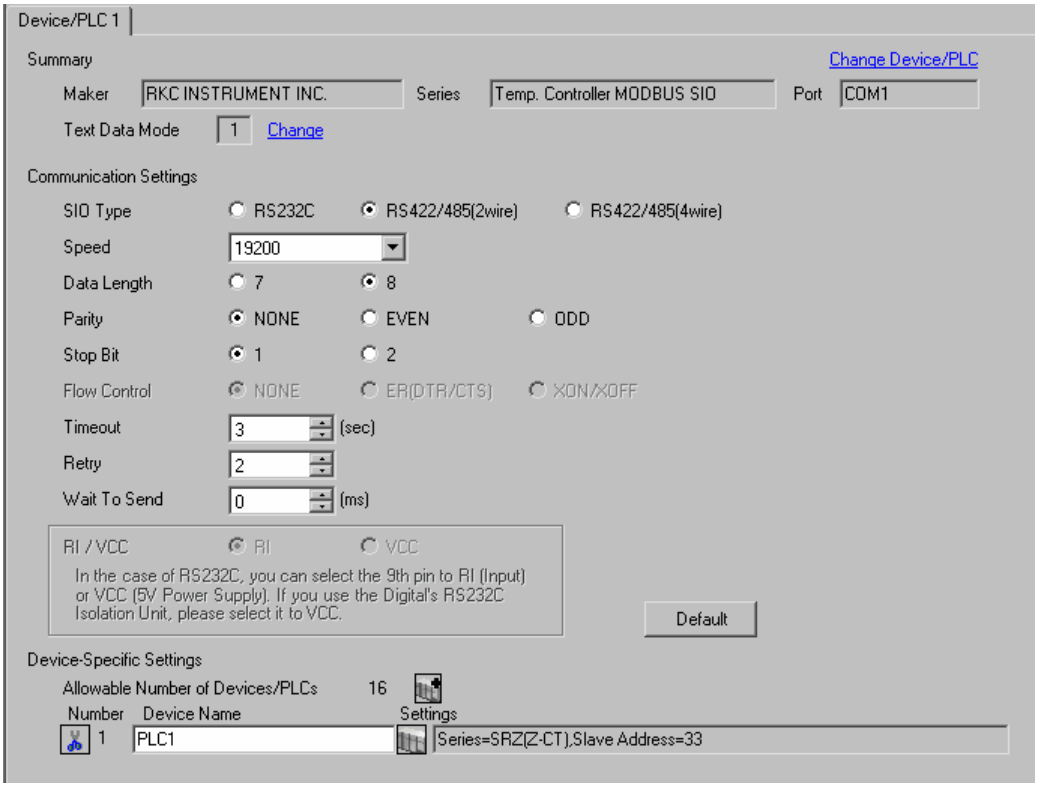
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.25 Setting Example 25

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.
Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 33 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
1	OFF	Speed: 19200 bps
2	ON	
3	OFF	Data bit configuration: Data length 8 bits, no parity, stop 1 bit
4	OFF	
5	ON	
6	ON	Communication protocol: MODBUS communication
7	OFF	Fixed
8	OFF	Fixed

NOTE

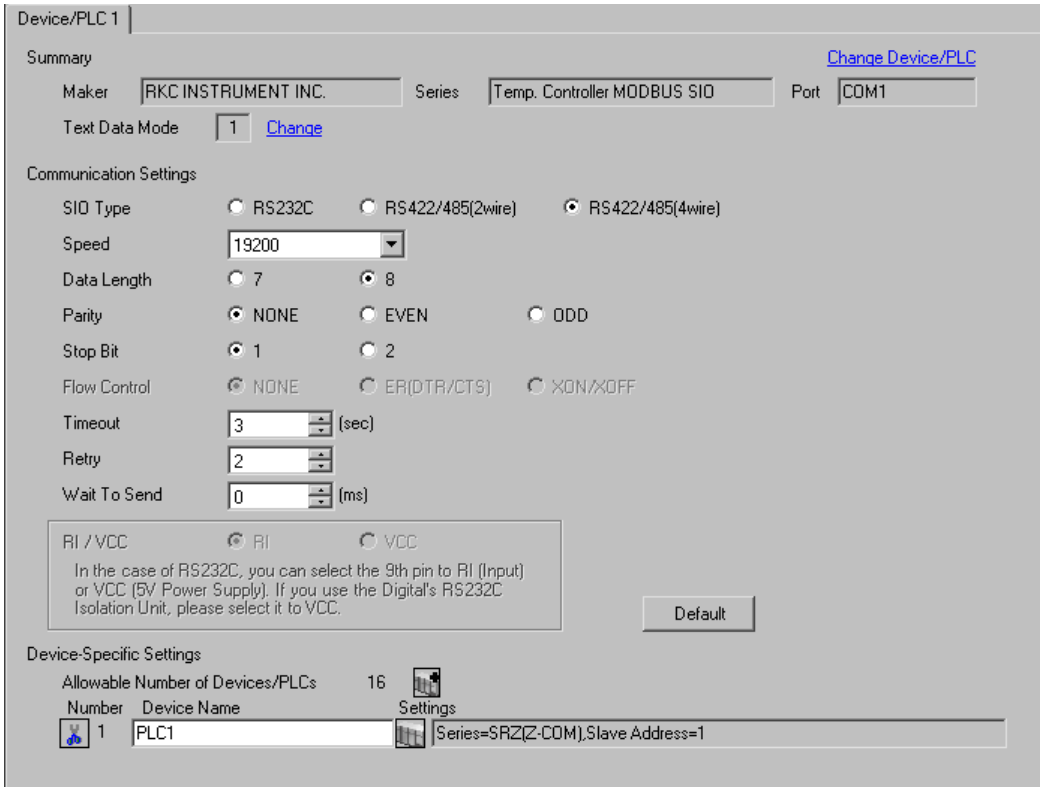
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.26 Setting Example 26

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.
Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 1 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
1	OFF	Speed: 19200 bps
2	ON	
3	ON	Communication protocol: Host communication (MODBUS) Data length 8 bits, no parity, stop 1 bit

NOTE

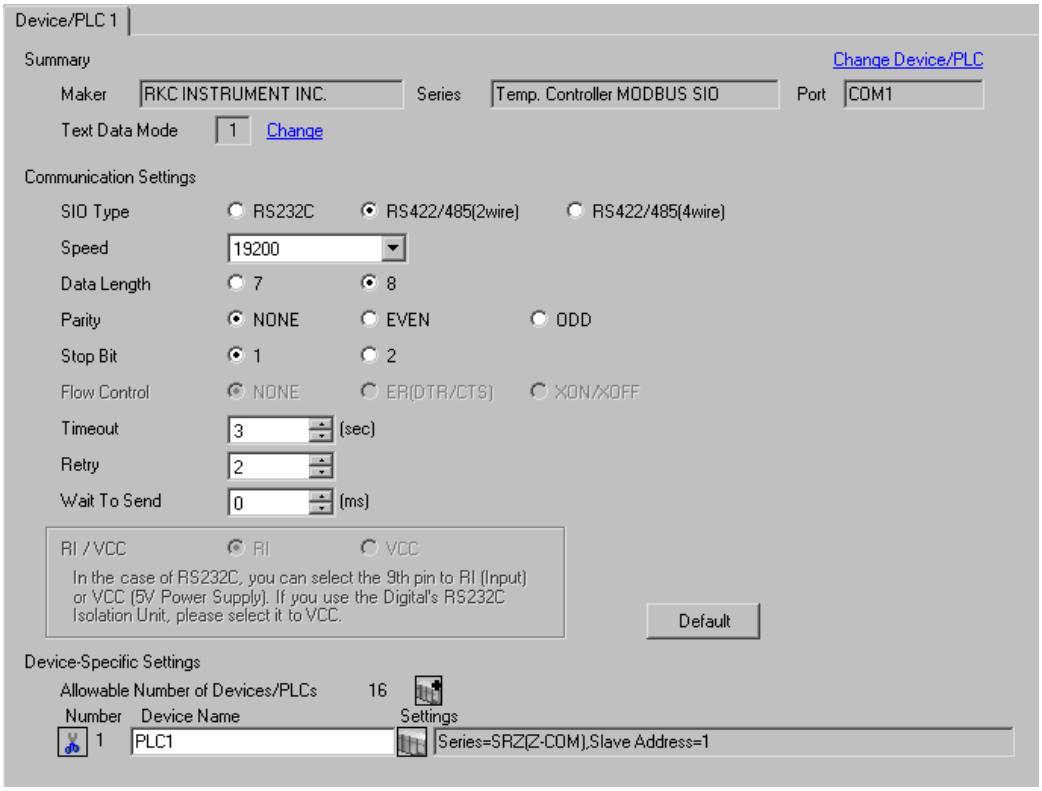
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.27 Setting Example 27

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.
Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 1 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
1	OFF	Speed: 19200 bps
2	ON	
3	ON	Communication protocol: Host communication (MODBUS) Data length 8 bits, no parity, stop 1 bit

NOTE

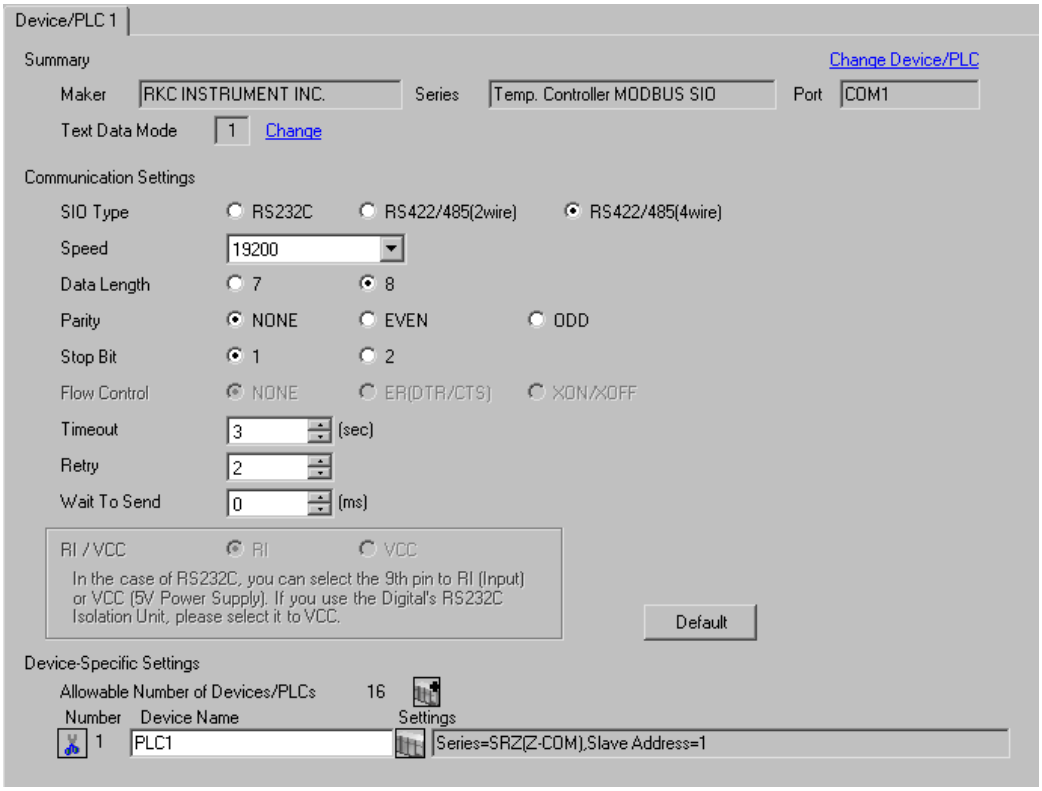
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.28 Setting Example 28

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 1 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
4	ON	Speed: 19200 bps
5	ON	Communication protocol: Host communication (MODBUS) Data length 8 bits, no parity, stop 1 bit
6	OFF	
7	OFF	
8	OFF	DIP switch setting: Enabled

NOTE

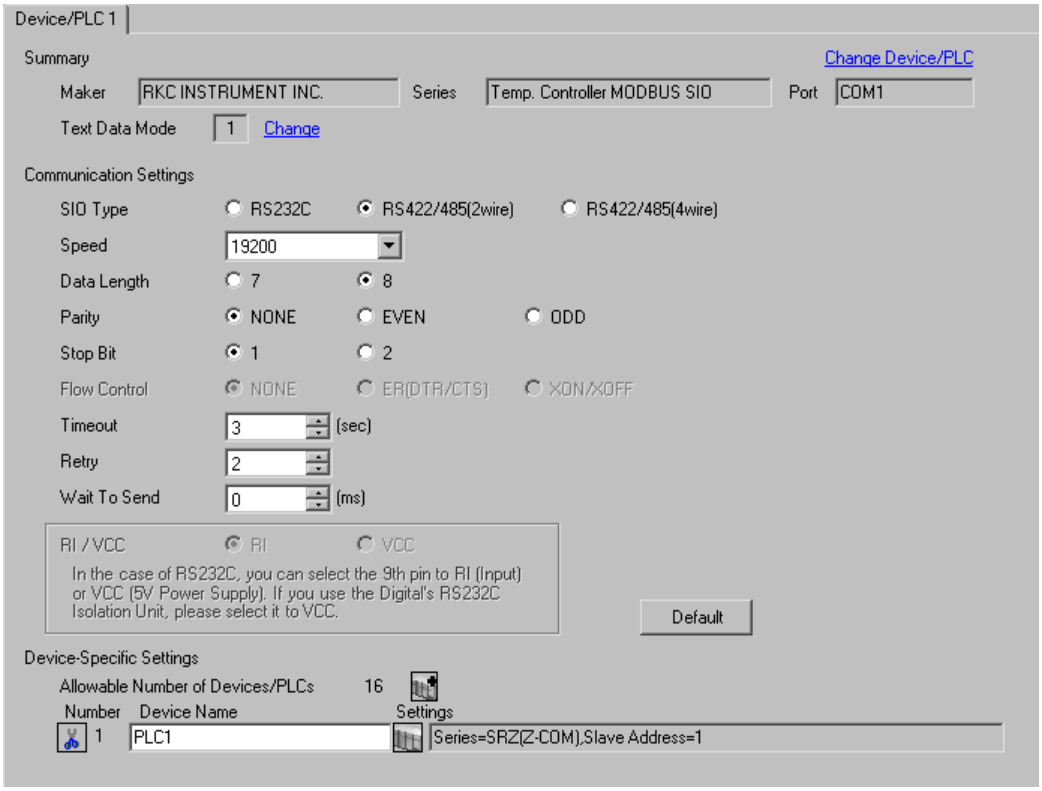
- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

3.29 Setting Example 29

■ 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 the External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

■ Settings of External Device

Use the unit address setting switch on the front of the Temperature Controller and the DIP switch on the side of the Temperature Controller for communication settings of the External Device.

Please refer to the manual of the Temperature Controller for more details.

◆ Procedure

1. Use the unit address setting switch on the front of the Temperature Controller to set the slave address.
   The number added 1 to the set value becomes the slave address.
2. Use the DIP switch on the side of the Temperature Controller to set the speed, data bit configuration, and communication protocol.
3. After completing the settings, turn ON the Temperature Controller again.

◆ Setting Value

Unit address setting switch

Slave address setting	0

DIP Switch

SW	Settings	Description
4	ON	Speed: 19200 bps
5	ON	Communication protocol: Host communication (MODBUS) Data length 8 bits, no parity, stop 1 bit
6	OFF	
7	OFF	
8	OFF	DIP switch setting: Enabled

NOTE

- Parameters to be set vary depending on the Temperature Controller. Please refer to the manual of the Temperature Controller for more details.

4 Setup Items

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

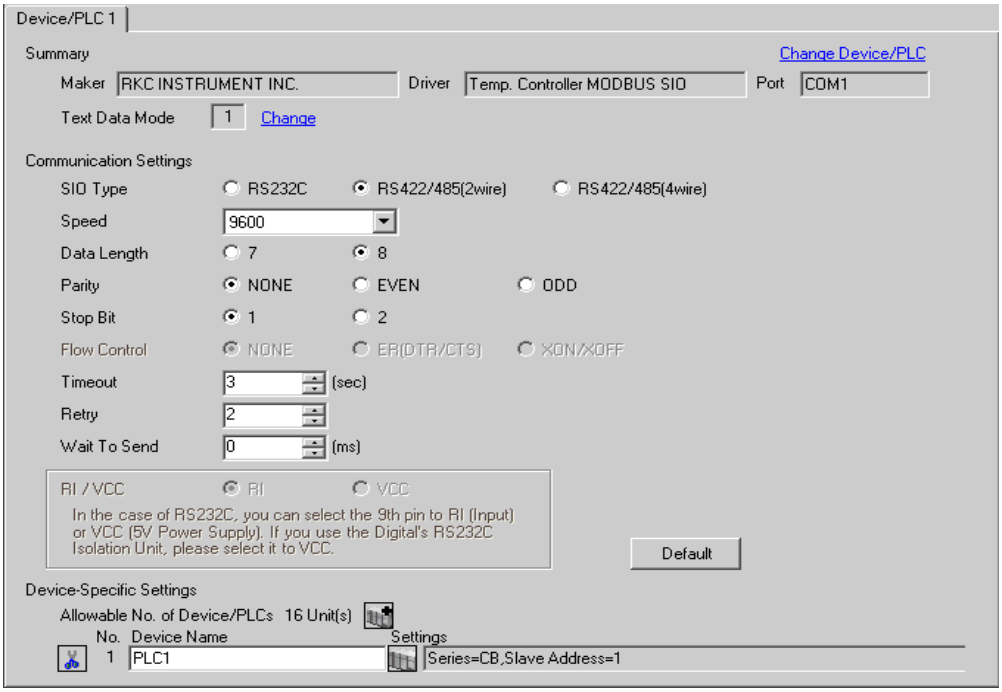
The setting of each parameter must be identical to that of External Device.

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

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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



Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between 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	The communication control method to prevent overflow of transmission and reception data is displayed.
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.

continued to next page

Setup Items	Setup Description
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	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.

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

Setup Items	Setup Description
Series	Select a model of the External Device.
Slave Address	Enter the Slave Address of the External Device.

4.2 Setup Items in Off-Line Mode

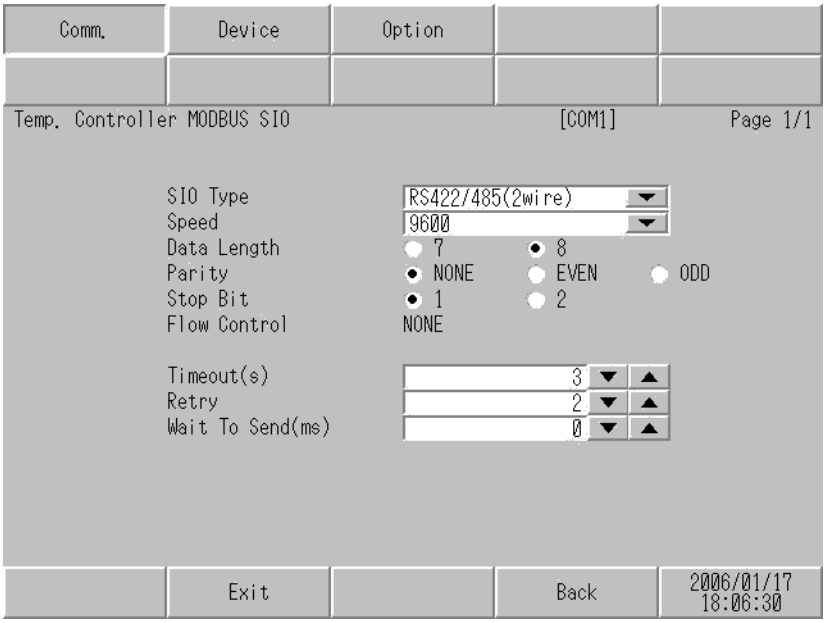
NOTE

- 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 Equipment Settings] in the off-line mode. Touch the External Device you want to set from the displayed list.

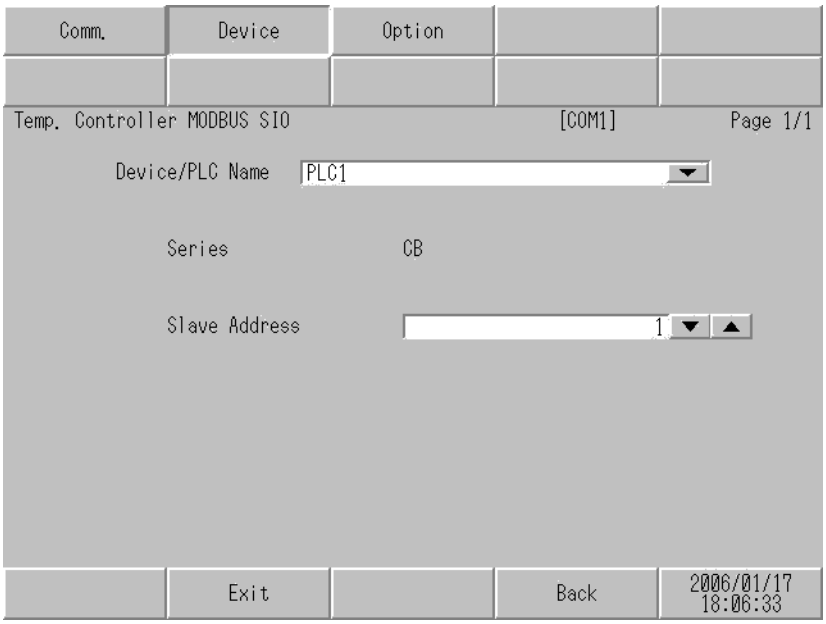


Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. **IMPORTANT** To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	The communication control method to prevent overflow of transmission and reception data is displayed.
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.

Setup Items	Setup Description
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.

■ Device Setting

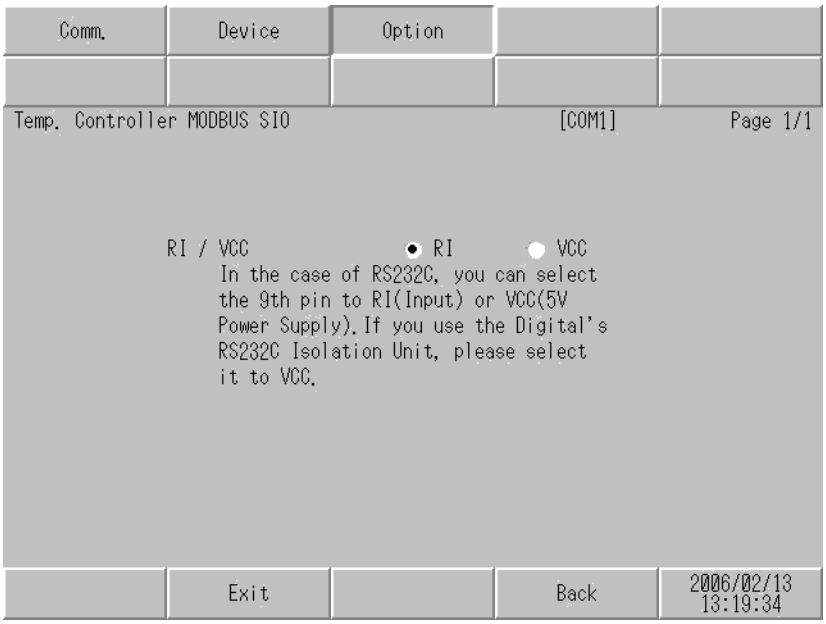
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].



Setup Items	Setup Description
Device name	Select the External Device to set. Device name is a title of the External Device set with GP-Pro EX.(Default [PLC1])
Series	Displays a model of the External Device.
Slave Address	Enter the slave address of the External Device, using 1 to 99.

■ Option

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



Setup Items	Setup Description
RI/VCC	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

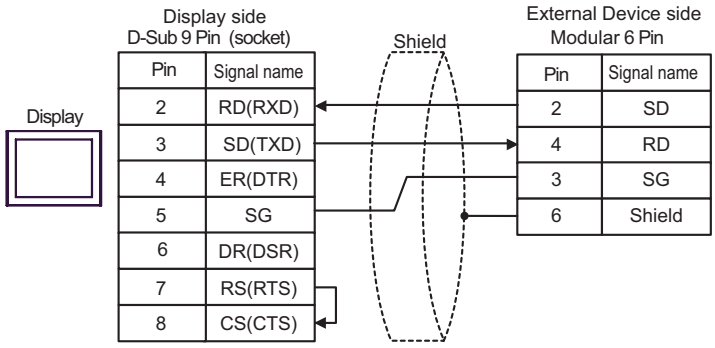
The cable diagram shown below may be different from the cable diagram recommended by RKC Instrument Inc. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- When using RS422/485 (2 wire) or RS422/485 (4 wire) for connection, you can connect maximum 16 units of Temperature Controller. Note that you can connect maximum 15 units of Temperature Controller when using RS422/485 (4 wire) to connect the FB400/900 Series.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc..

Cable Diagram 1

Display (Connection Port)	Cable	Remarks
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	User-created cable	Cable length: 15m or less

*1 Only the COM port which can communicate by RS-232C can be used.
☞ ■ IPC COM Port (page 7)



Cable Diagram 2

Display (Connection Port)	Cable		Remarks
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	

*1 All GP models except AGP-3302B

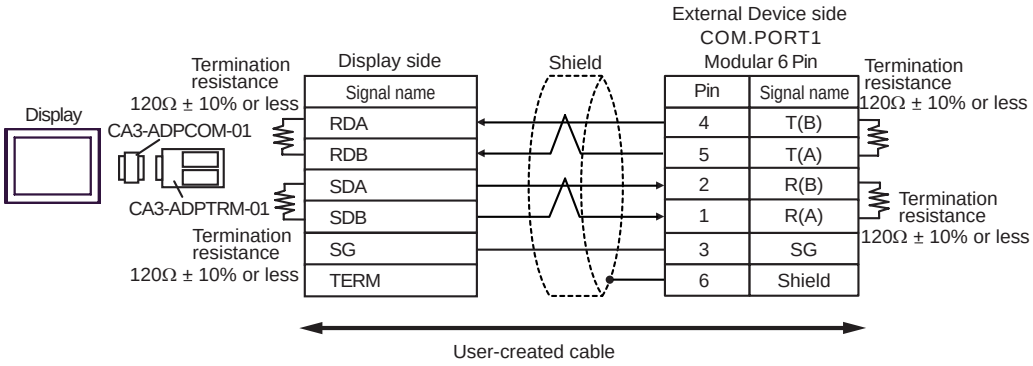
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 7)

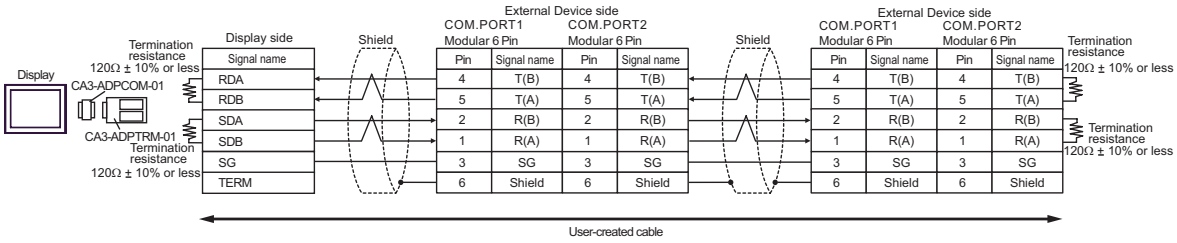
*4 All GP models except GP-3200 series and AGP-3302B

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

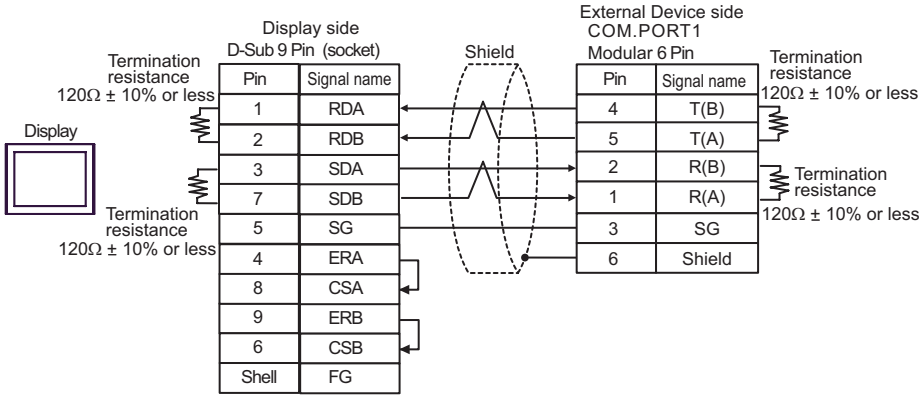


- 1: n connection

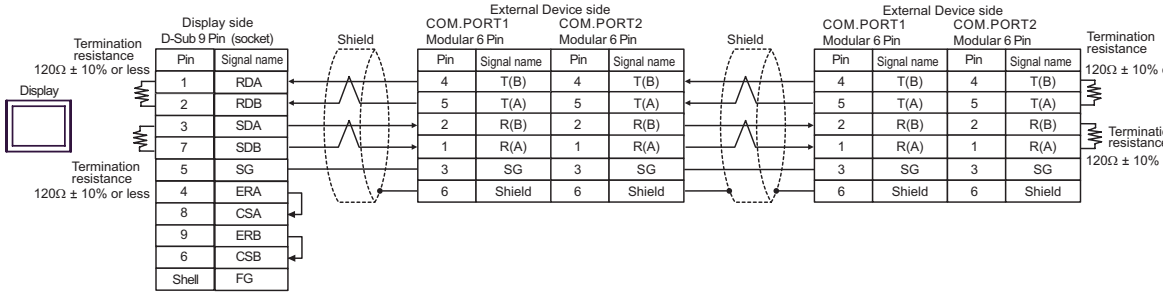


B) When using a user-created cable

- 1:1 Connection

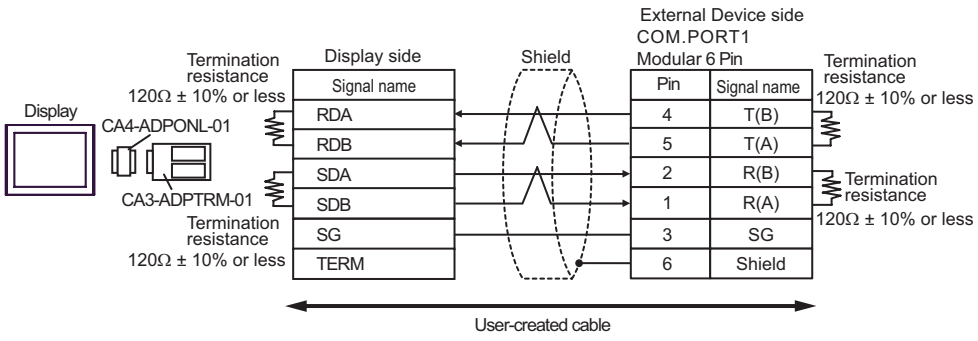


- 1:n Connection

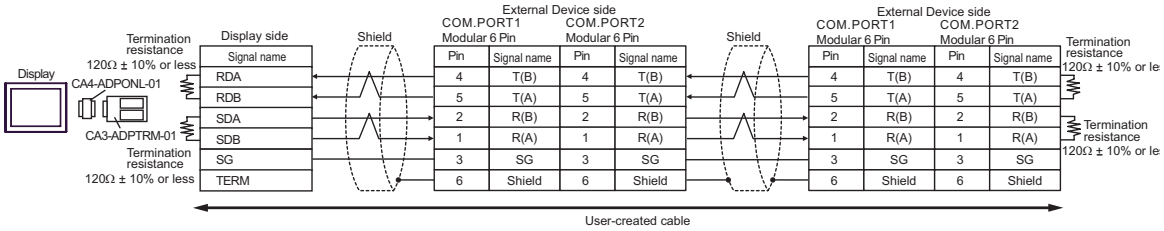


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

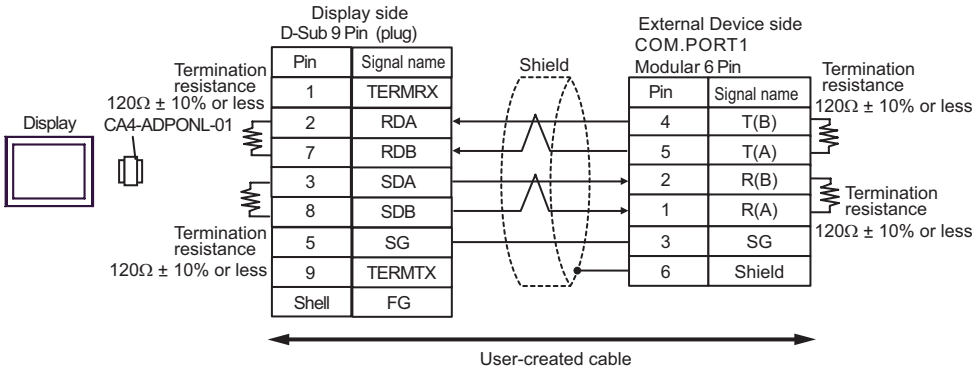


- 1:n Connection

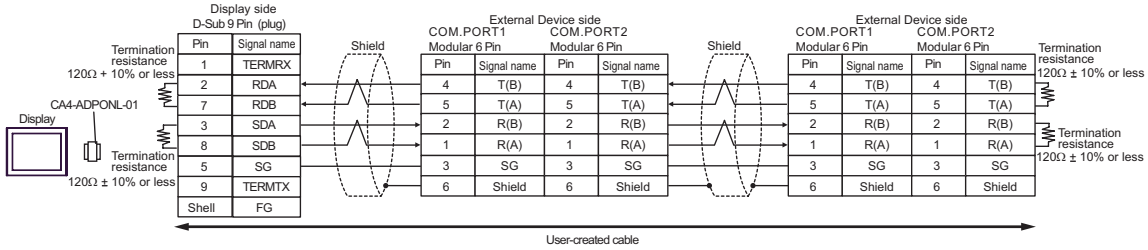


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection



Cable Diagram 3

Display (Connection Port)	Cable		Remarks
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 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	F	User-created cable	

*1 All GP models except AGP-3302B

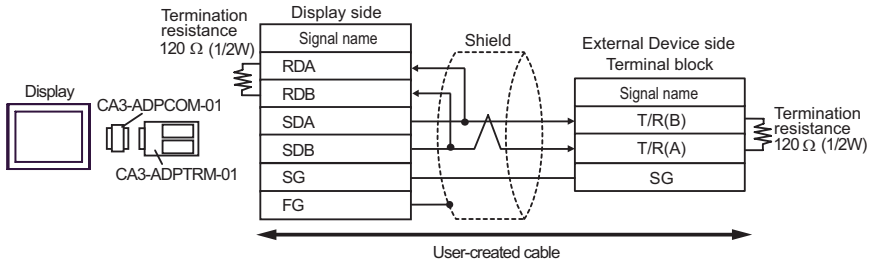
*2 All ST models except AST-3211A and AST-3302B

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

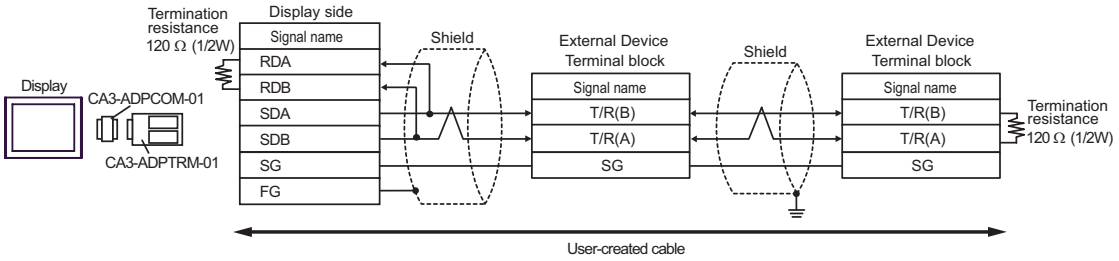
*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
☞ ■ IPC COM Port (page 7)

A) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

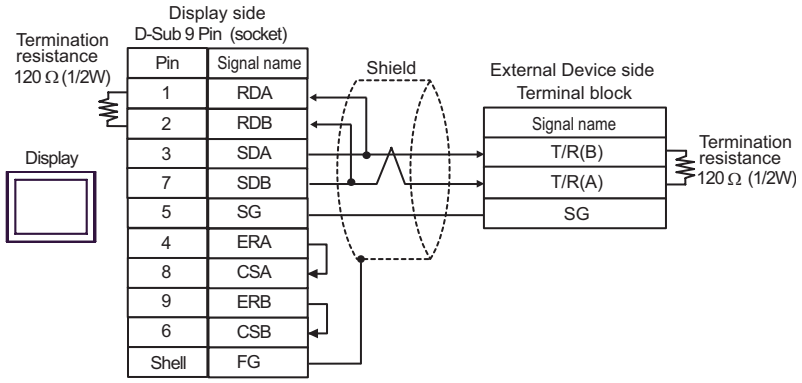


- 1: n connection

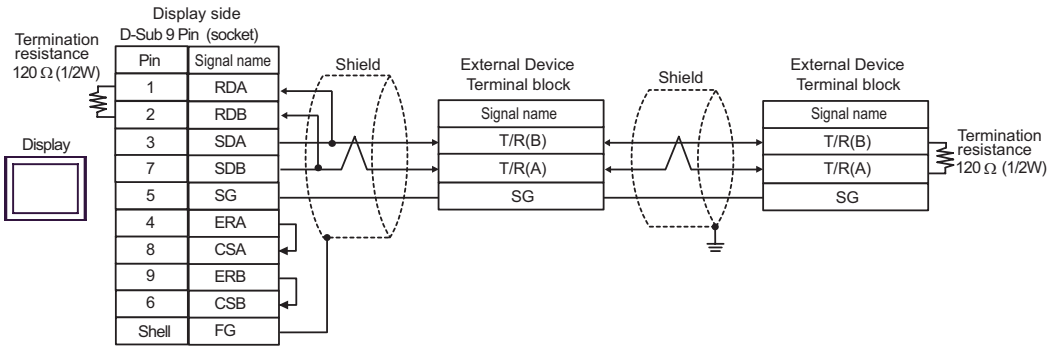


B) When using a user-created cable

- 1:1 Connection

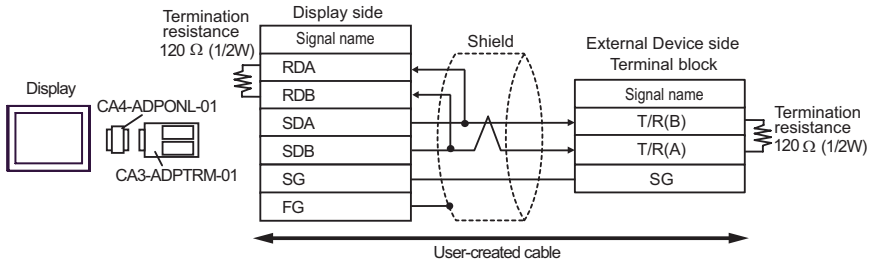


- 1:n Connection

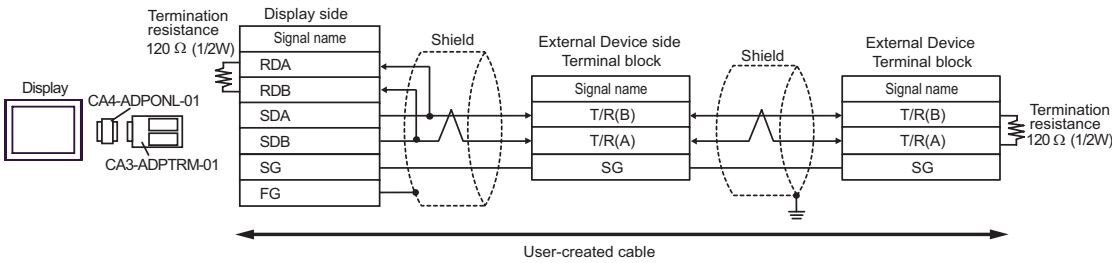


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

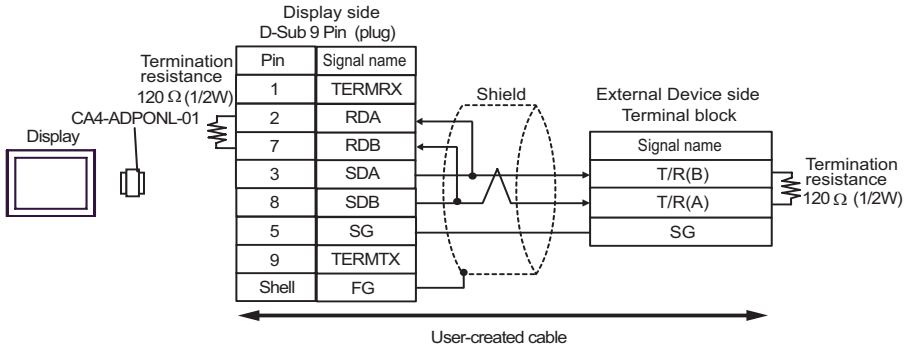


- 1:n Connection

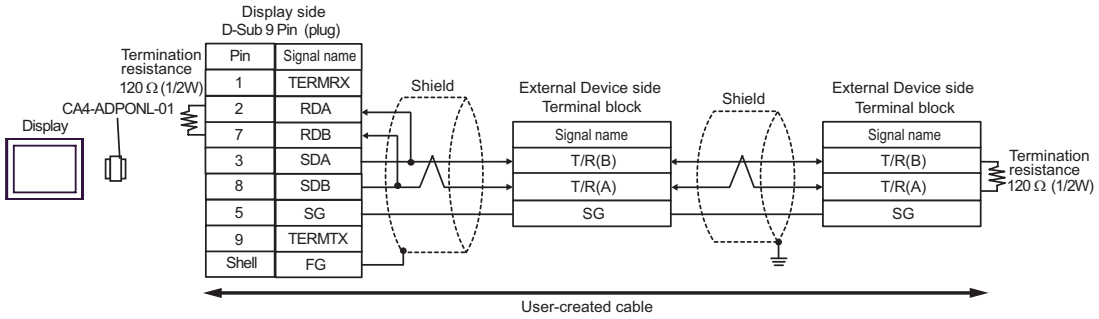


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection

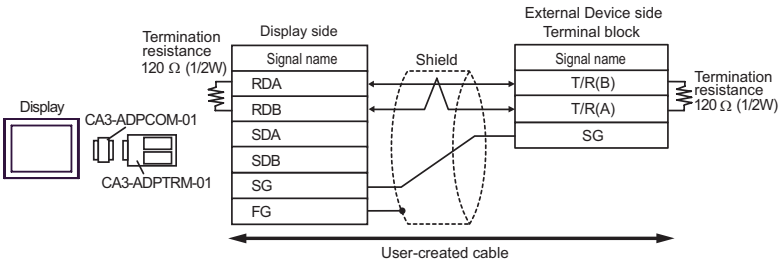


- 1:n Connection

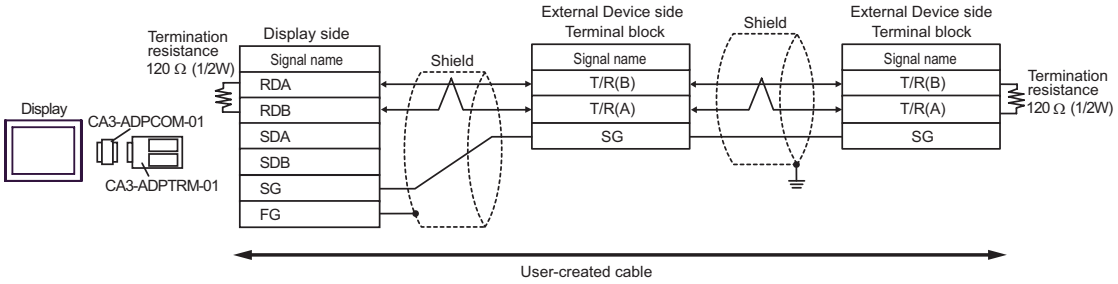


E) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

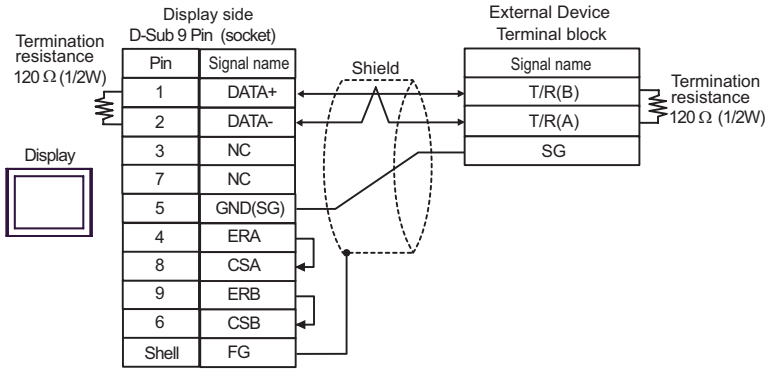


- 1: n connection

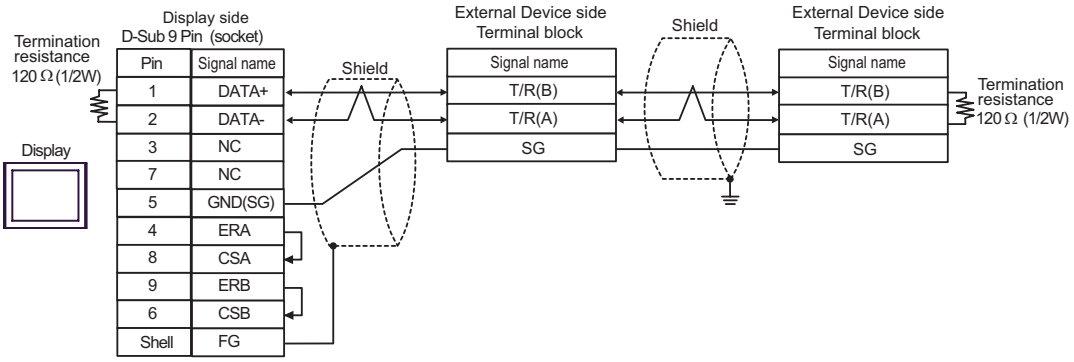


F) When using a user-created cable

- 1:1 Connection



- 1:n Connection



Cable Diagram 4

Display (Connection Port)	Cable		Remarks
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	

*1 All GP models except AGP-3302B

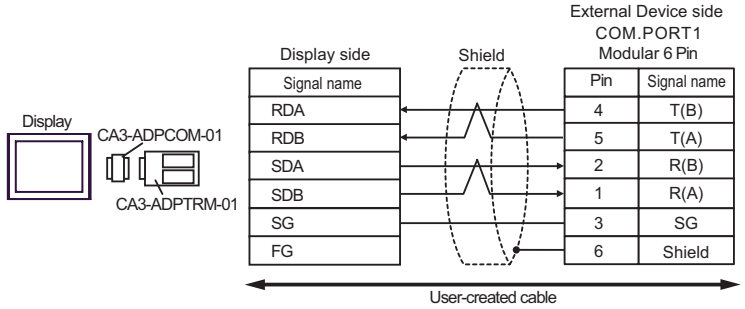
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 7)

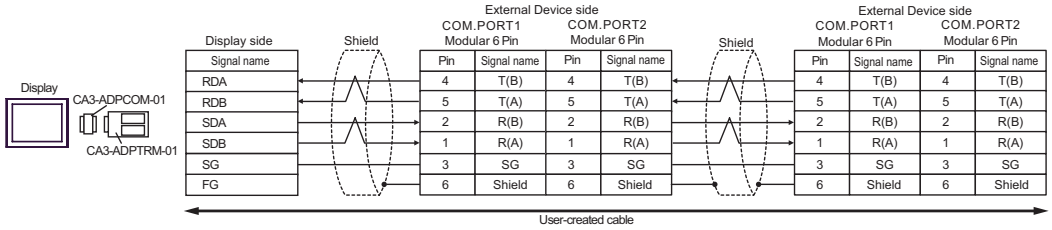
*4 All GP models except GP-3200 series and AGP-3302B

A) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

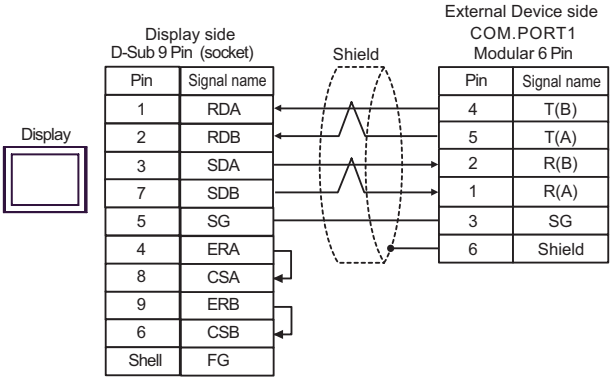


NOTE

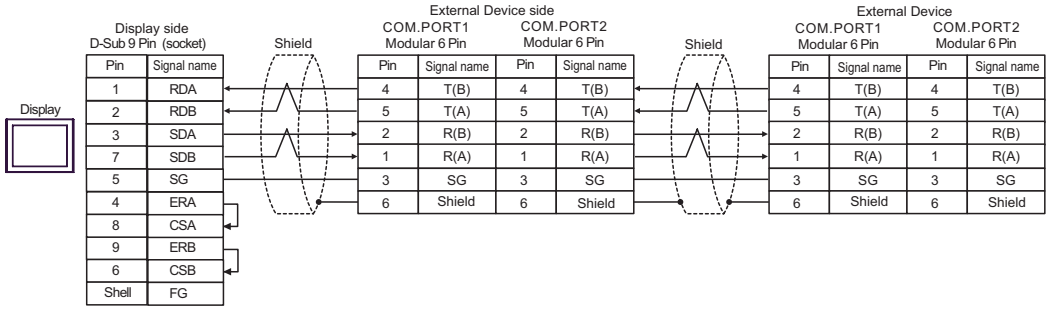
- Termination resistance is not necessary.

B) When using a user-created cable

- 1:1 Connection



- 1:n Connection

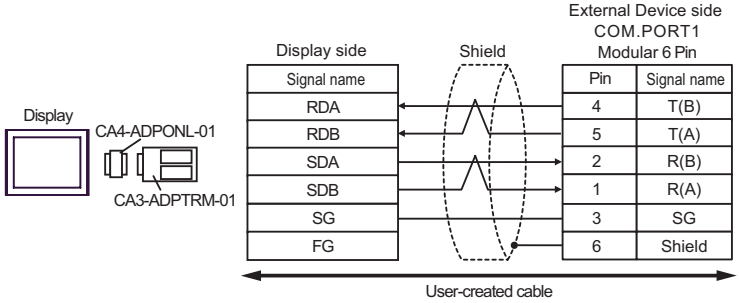


NOTE

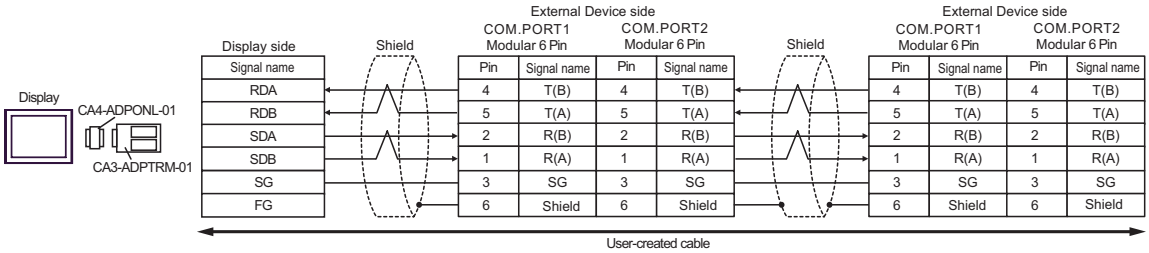
- Termination resistance is not necessary.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1:n Connection

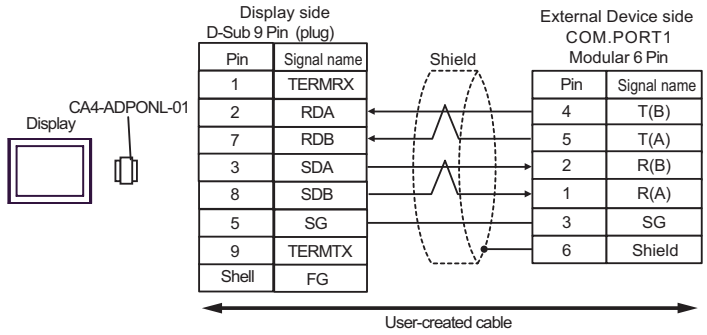


NOTE

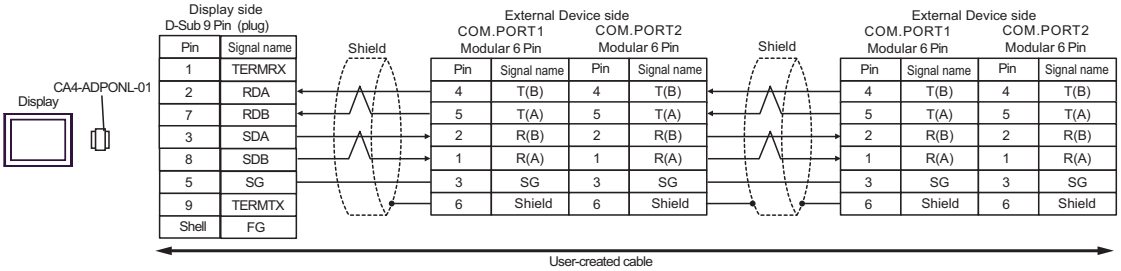
- Termination resistance is not necessary.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection



NOTE

- Termination resistance is not necessary.

Cable Diagram 5

Display (Connection Port)	Cable		Remarks
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 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	F	User-created cable	

*1 All GP models except AGP-3302B

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

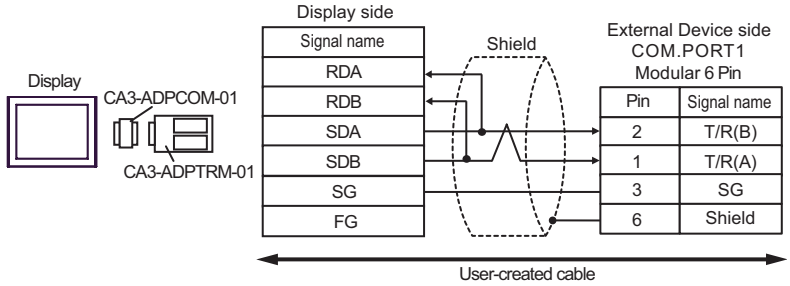
*3 All GP models except GP-3200 series and AGP-3302B

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

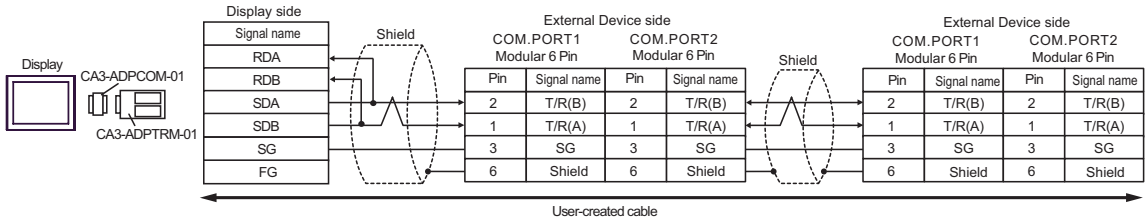
☞ ■ IPC COM Port (page 7)

A) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

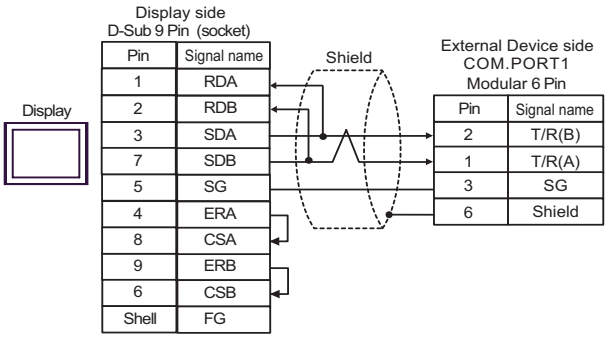


NOTE

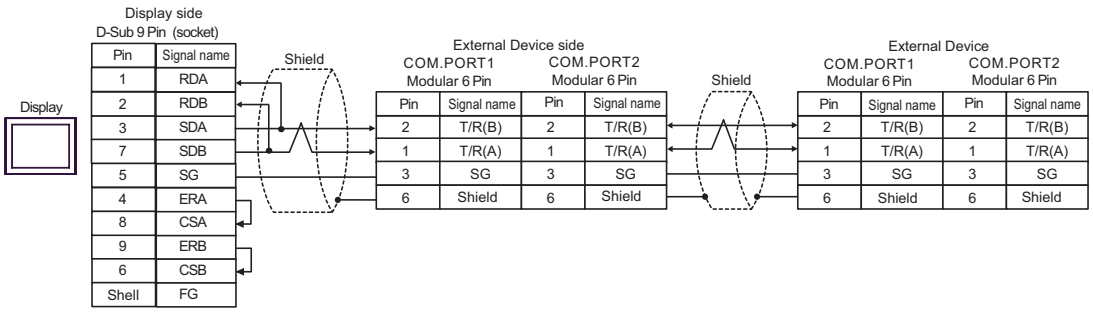
- Termination resistance is not necessary.

B) When using a user-created cable

- 1:1 Connection



- 1:n Connection

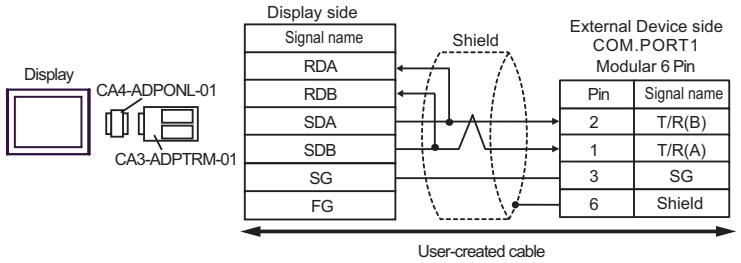


NOTE

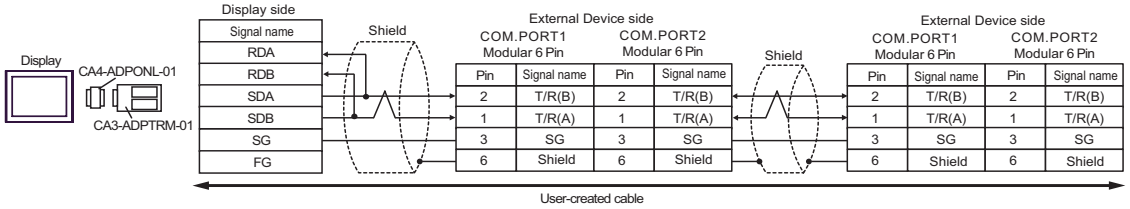
- Termination resistance is not necessary.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1:n Connection

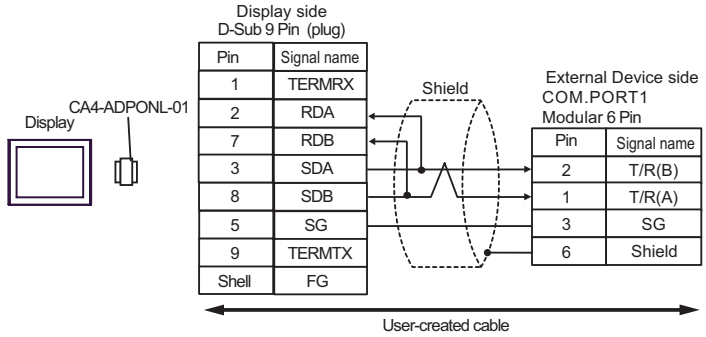


NOTE

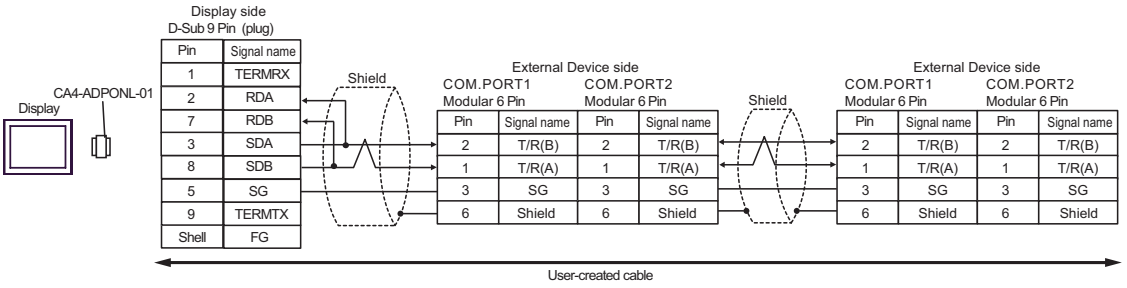
- Termination resistance is not necessary.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection

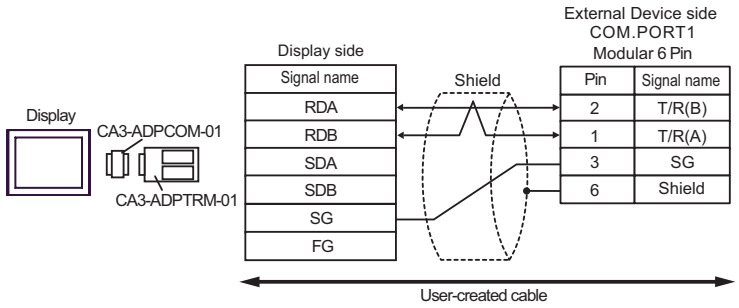


NOTE

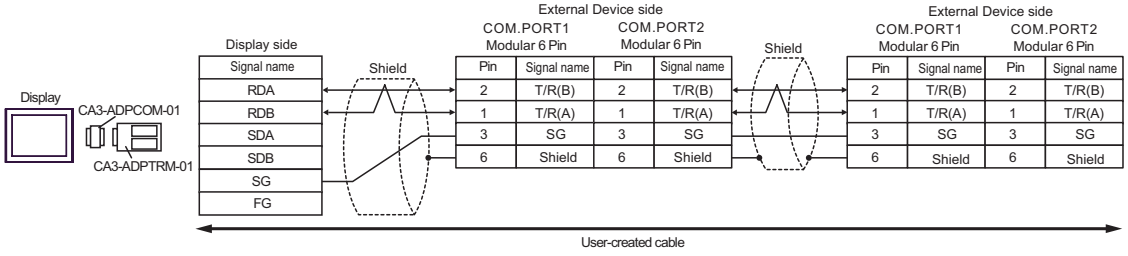
- Termination resistance is not necessary.

E) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

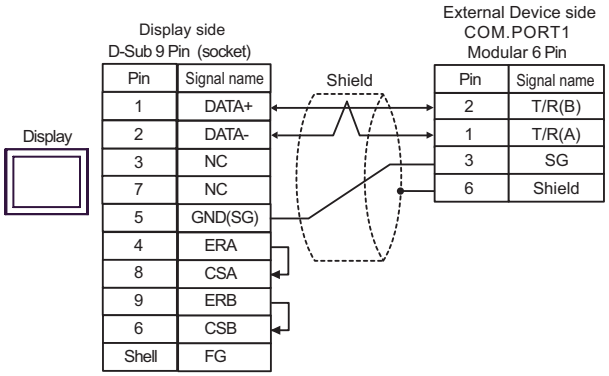


NOTE

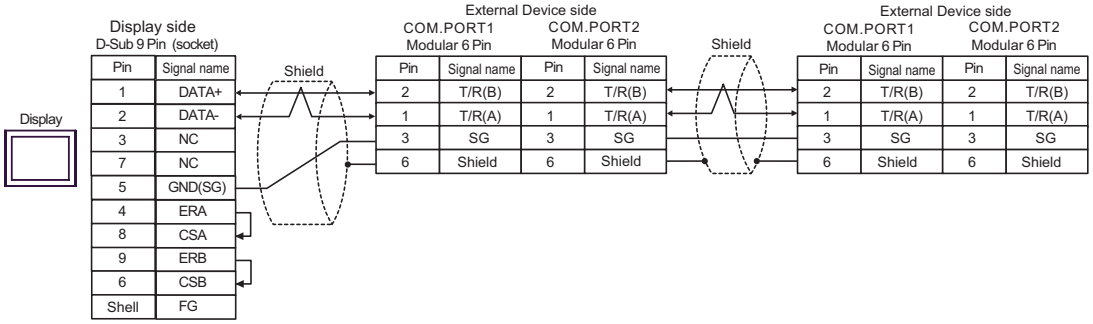
- Termination resistance is not necessary.

F) When using a user-created cable

- 1:1 Connection



- 1:n Connection



NOTE

- Termination resistance is not necessary.

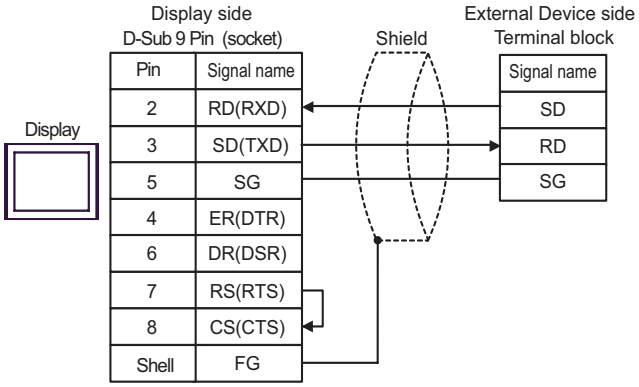
Cable Diagram 6

Display (Connection Port)	Cable	Remarks
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	User-created cable	Cable length: 15m or less

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

☞■ IPC COM Port (page 7)

When using a user-created cable



Cable Diagram 7

Display (Connection Port)	Cable		Remarks
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	

*1 All GP models except AGP-3302B

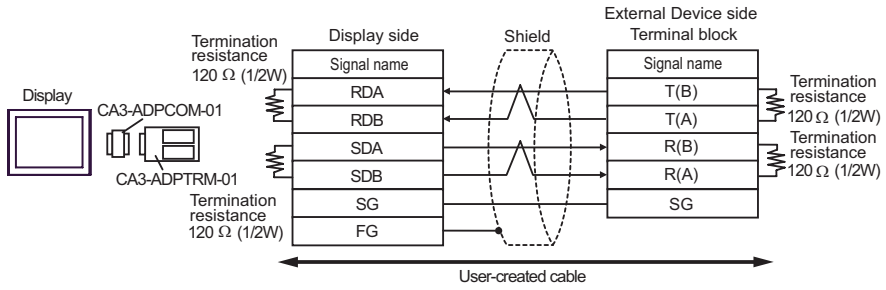
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 7)

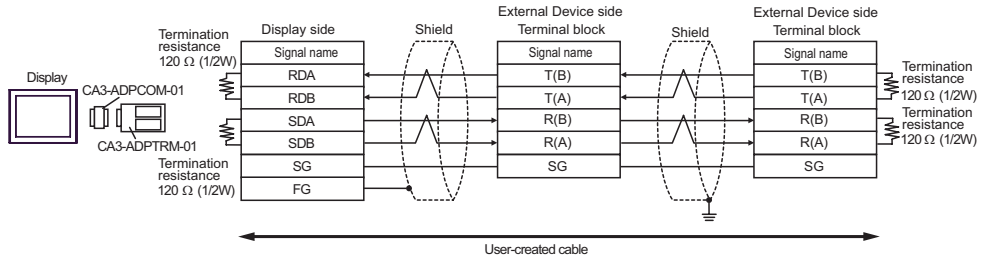
*4 All GP models except GP-3200 series and AGP-3302B

A) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

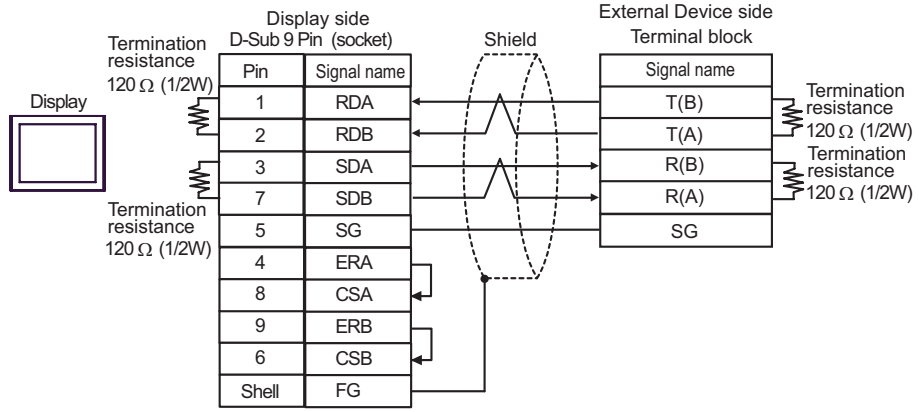


- 1: n connection

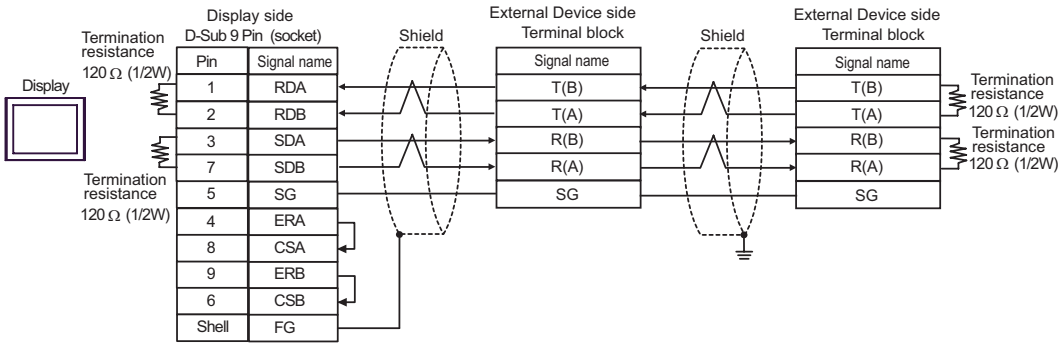


B) When using a user-created cable

- 1:1 Connection

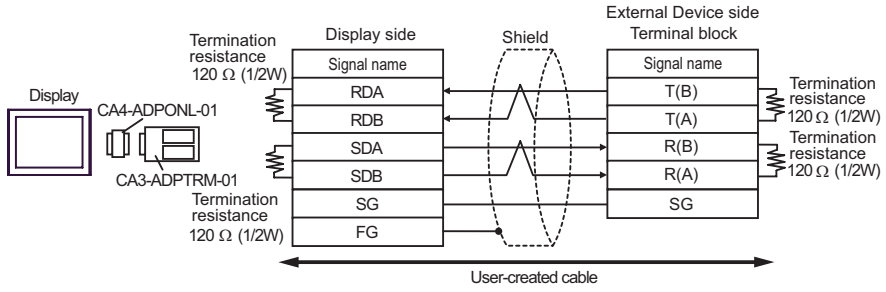


- 1:n Connection

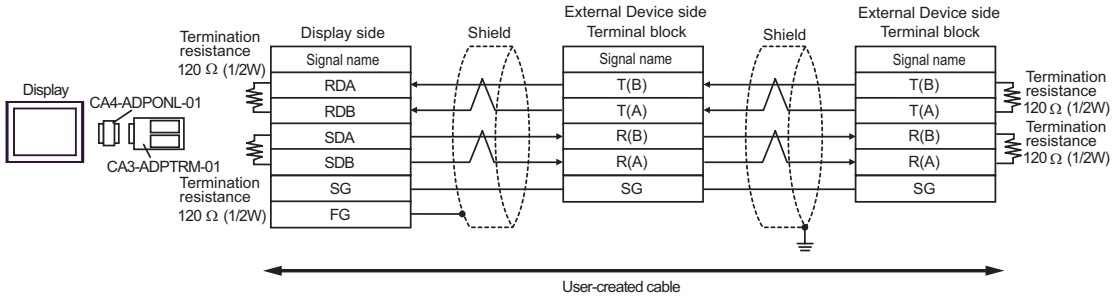


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection

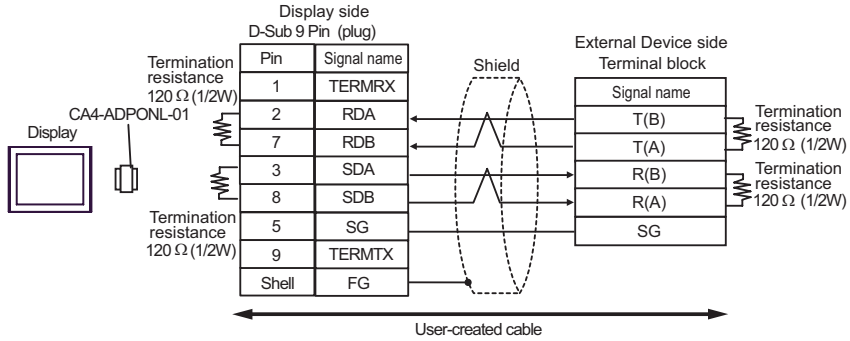


- 1:n Connection

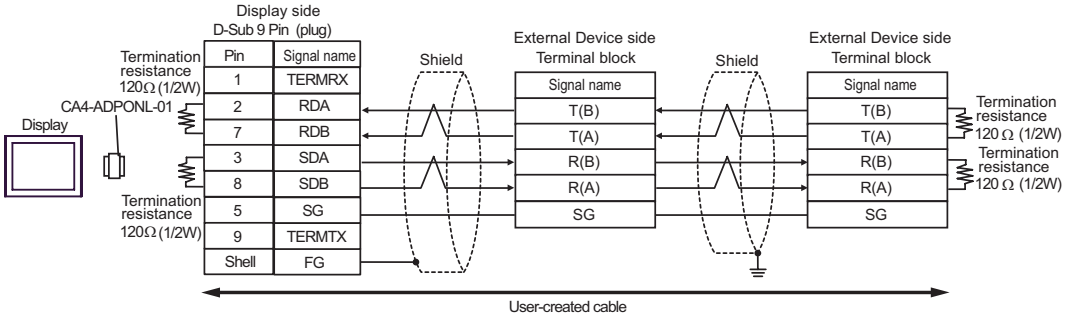


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection



Cable Diagram 8

Display (Connection Port)	Cable		Remarks
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	

*1 All GP models except AGP-3302B

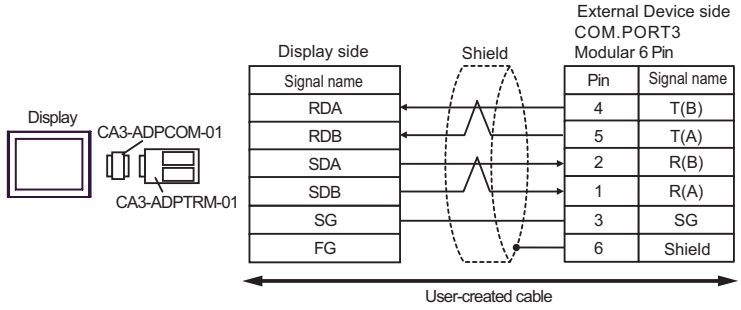
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 7)

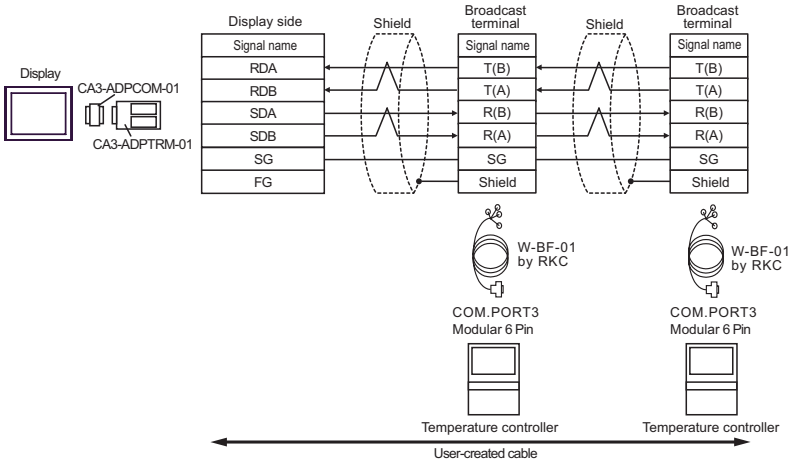
*4 All GP models except GP-3200 series and AGP-3302B

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

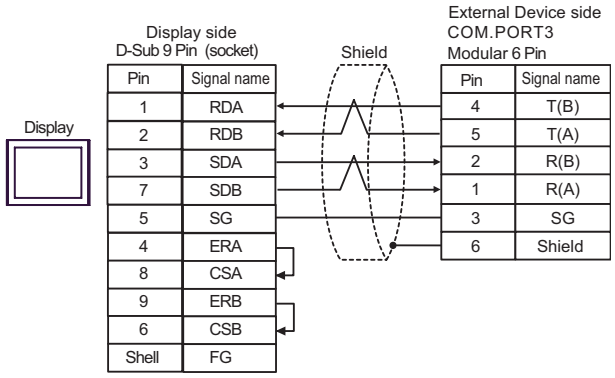


NOTE

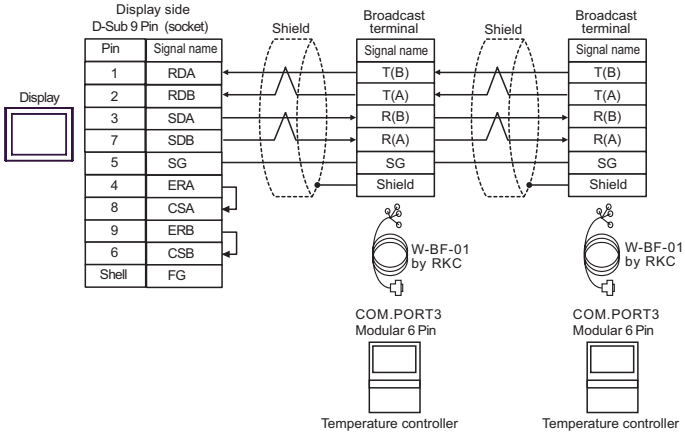
- Termination resistance is not necessary.

B) When using a user-created cable

- 1:1 Connection



- 1:n Connection

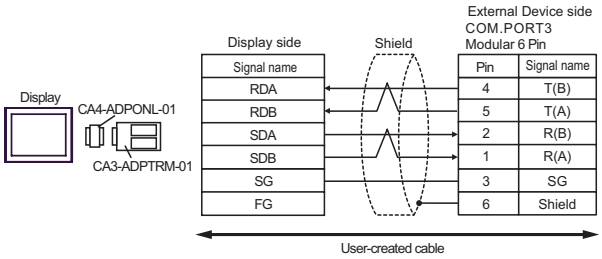


NOTE

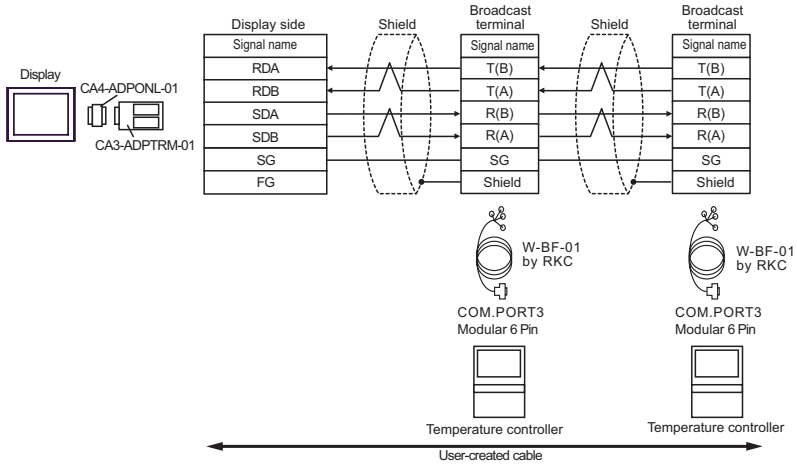
- Termination resistance is not necessary.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1:n Connection

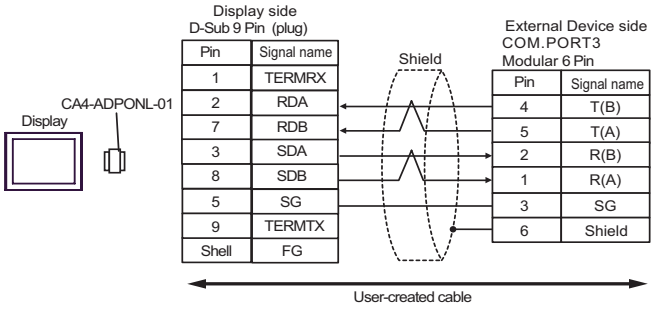


NOTE

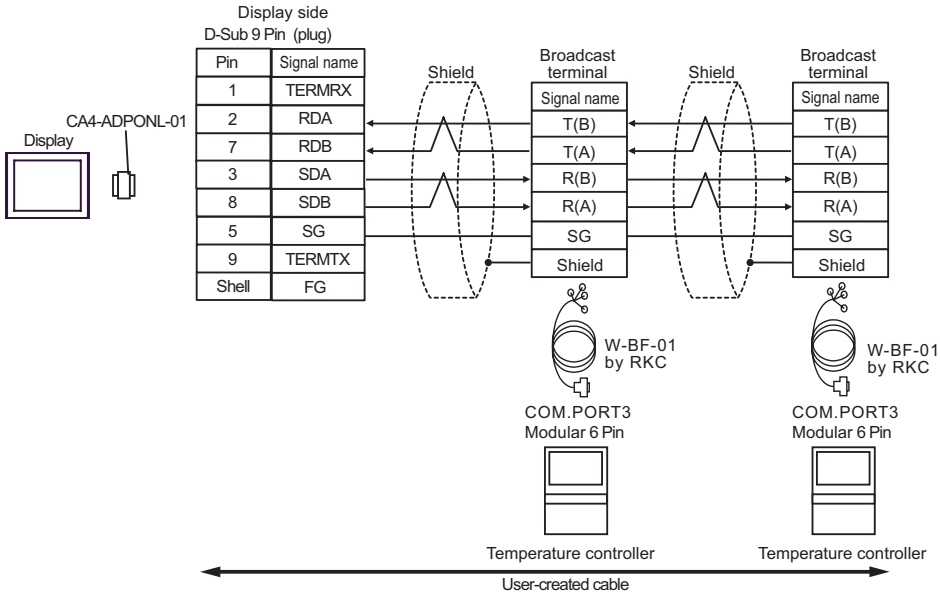
- Termination resistance is not necessary.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection



NOTE • Termination resistance is not necessary.

Cable Diagram 9

Display (Connection Port)	Cable		Remarks
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 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	F	User-created cable	

*1 All GP models except AGP-3302B

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

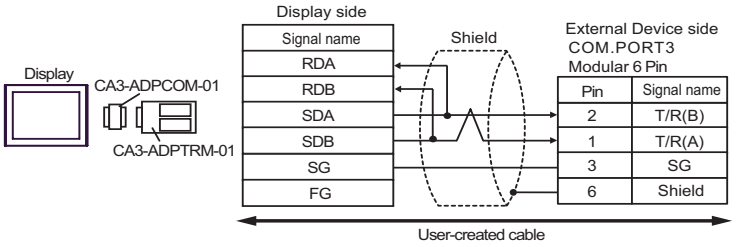
*3 All GP models except GP-3200 series and AGP-3302B

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

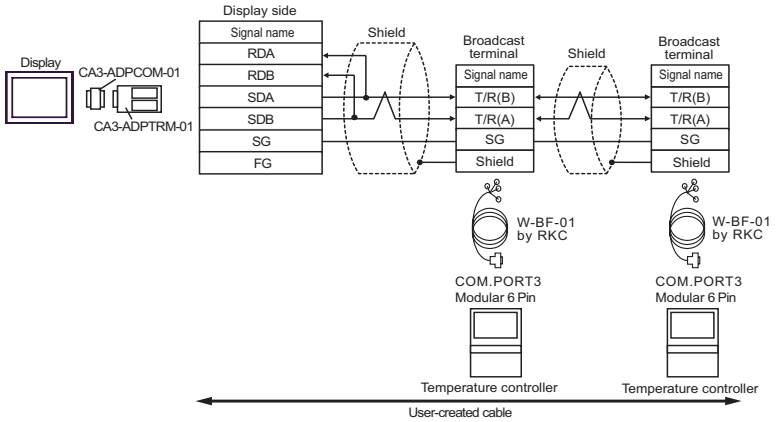
☞ ■ IPC COM Port (page 7)

A) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

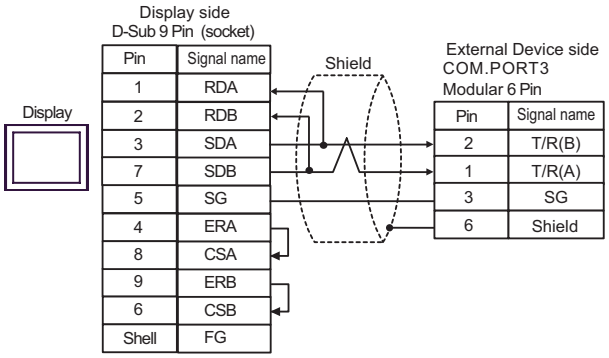


NOTE

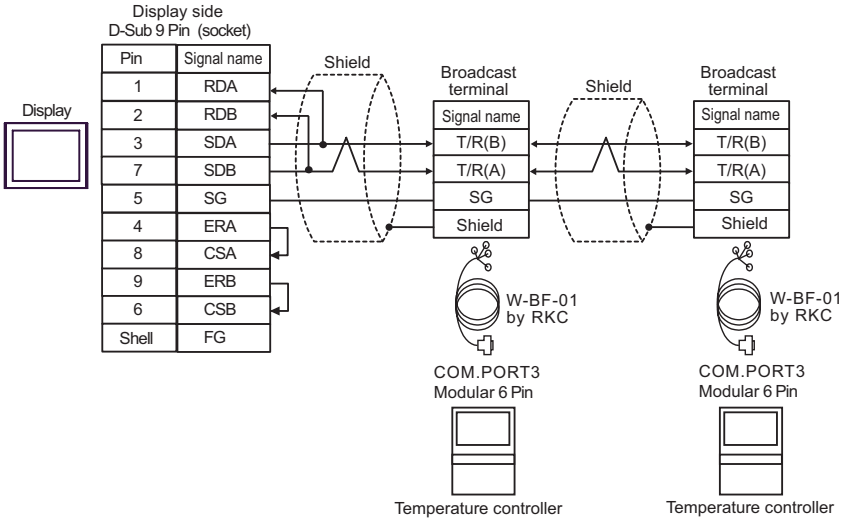
- Termination resistance is not necessary.

B) When using a user-created cable

- 1:1 Connection



- 1:n Connection

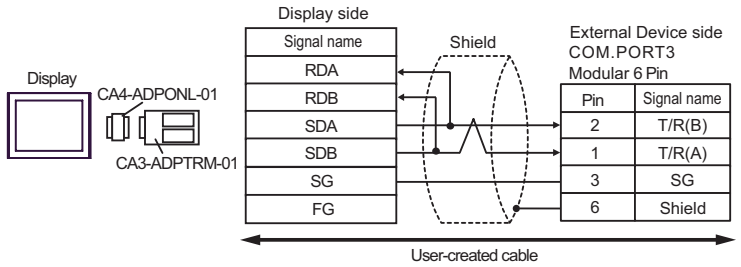


NOTE

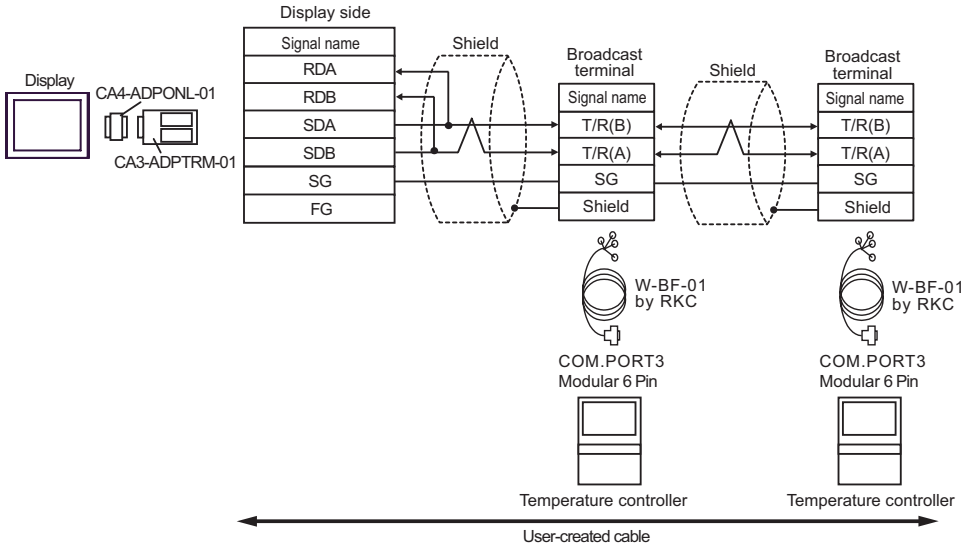
- Termination resistance is not necessary.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1:n Connection

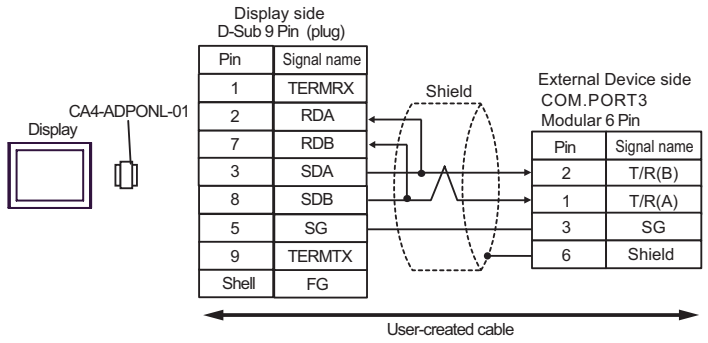


NOTE

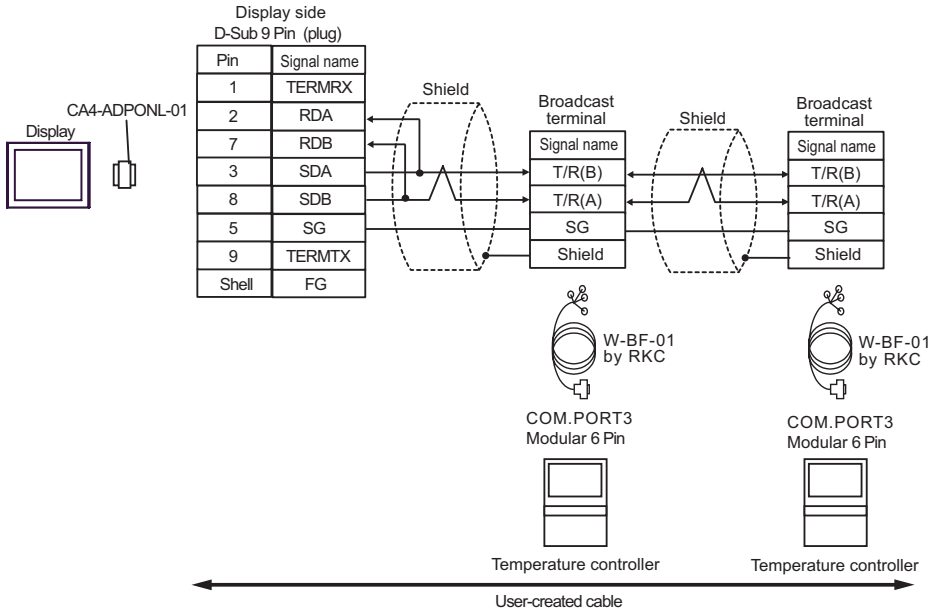
- Termination resistance is not necessary.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face and a user-created cable

- 1:1 Connection



- 1:n Connection

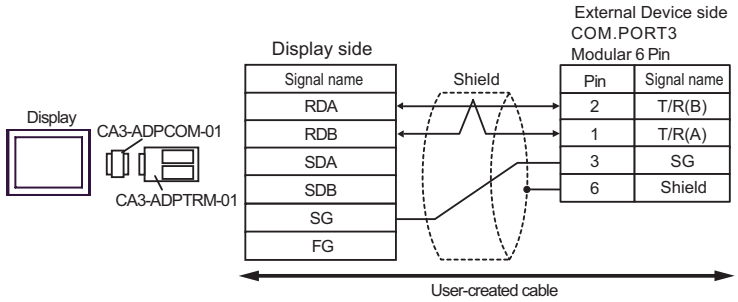


NOTE

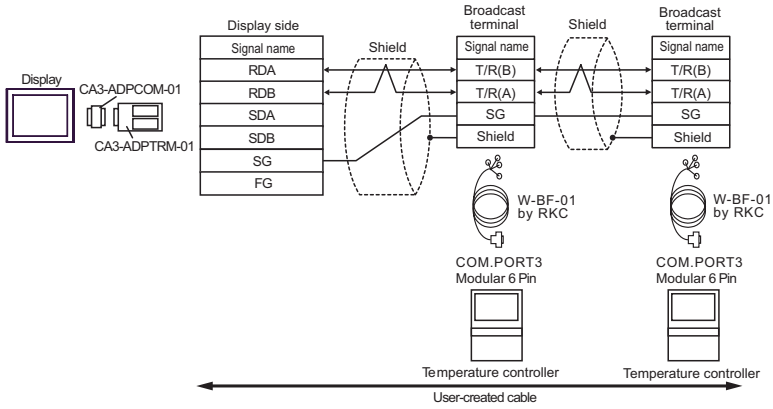
- Termination resistance is not necessary.

E) When using the COM port conversion adapter (CA3-ADPCOM-01) , the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable

- 1:1 Connection



- 1: n connection

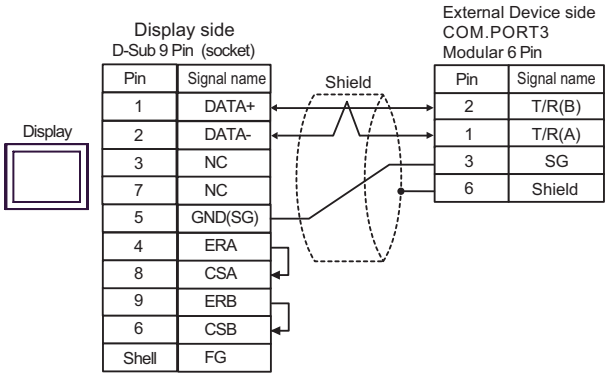


NOTE

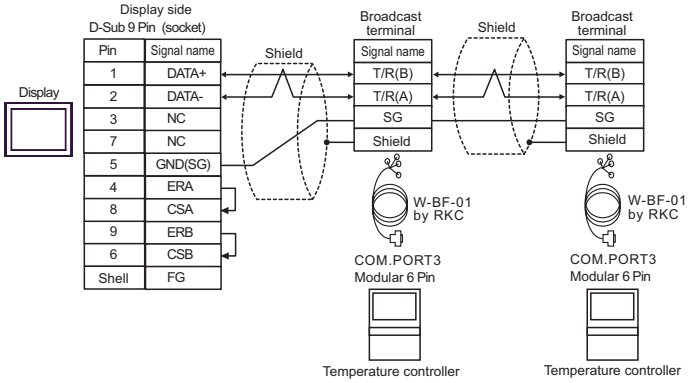
- Termination resistance is not necessary.

F) When using a user-created cable

- 1:1 Connection



- 1:n Connection



NOTE

- Termination resistance is not necessary.

Cable Diagram 10

Display (Connection Port)	Cable		Remarks
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 + User-created cable	Cable length: 1200m or less
	B	User-created cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	
	F	User-created cable	

*1 All GP models except AGP-3302B

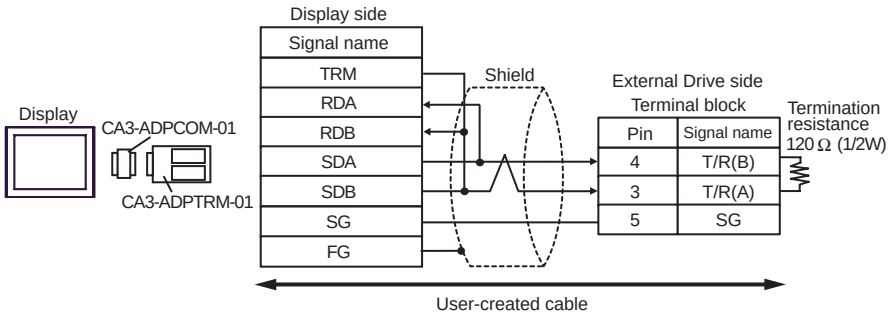
*2 All ST models except AST-3211A and AST-3302B

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

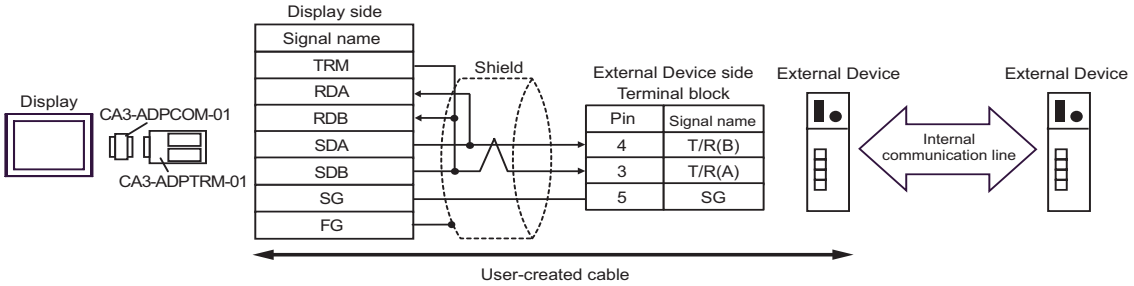
*4 Only the COM port which can communicate by RS-422/485 (2wire) can be used.
☞ ■ IPC COM Port (page 7)

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.

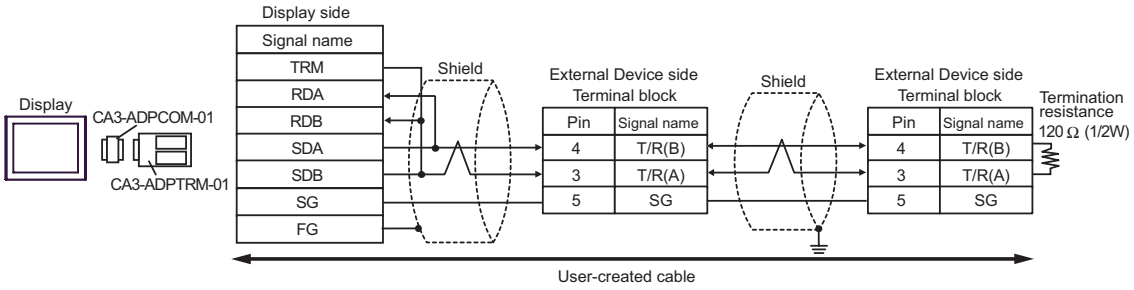
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)

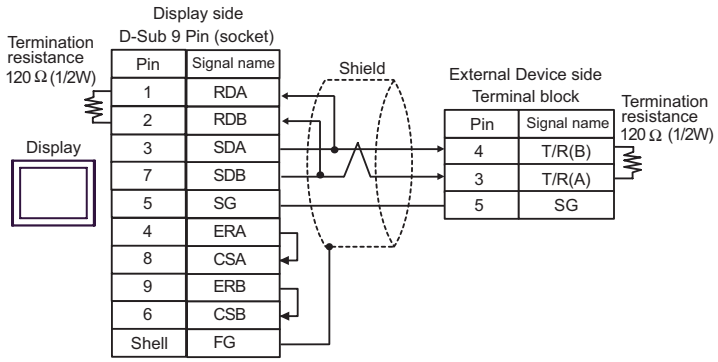


- 1:n Connection

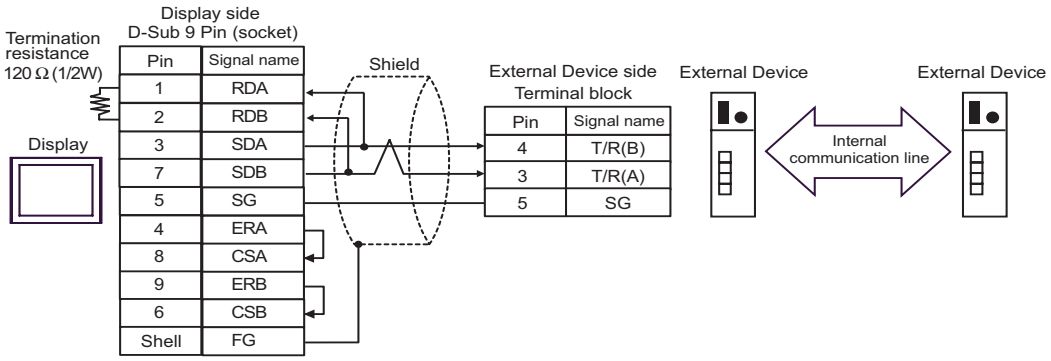


B) When using a user-created cable.

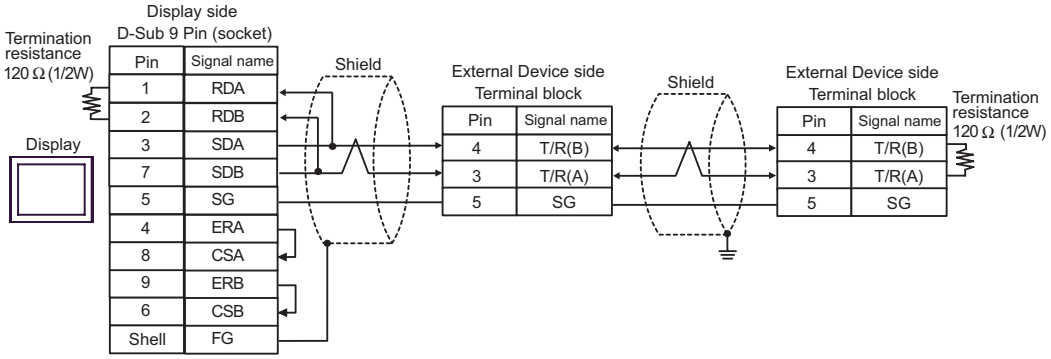
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)

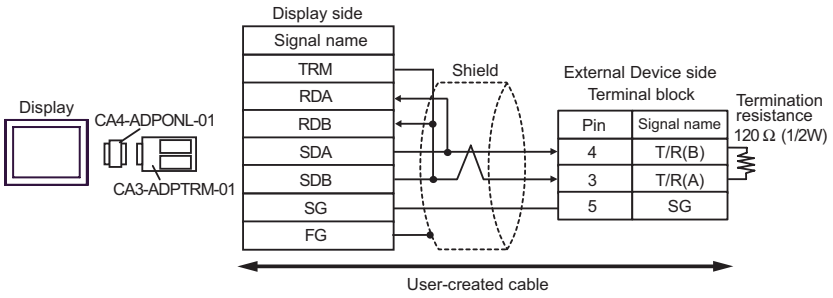


- 1:n Connection

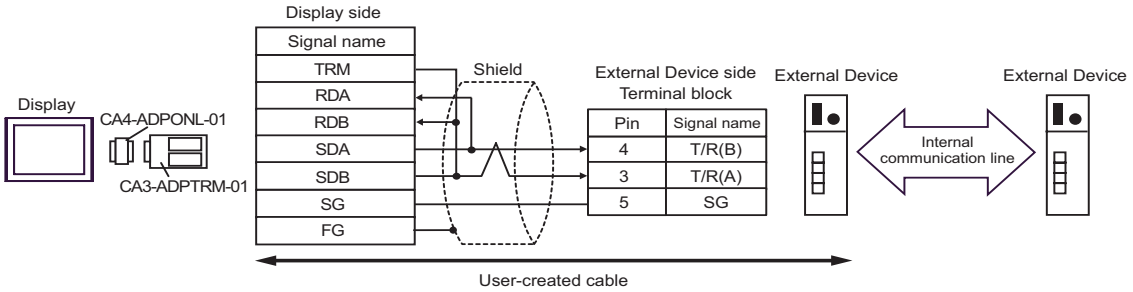


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.

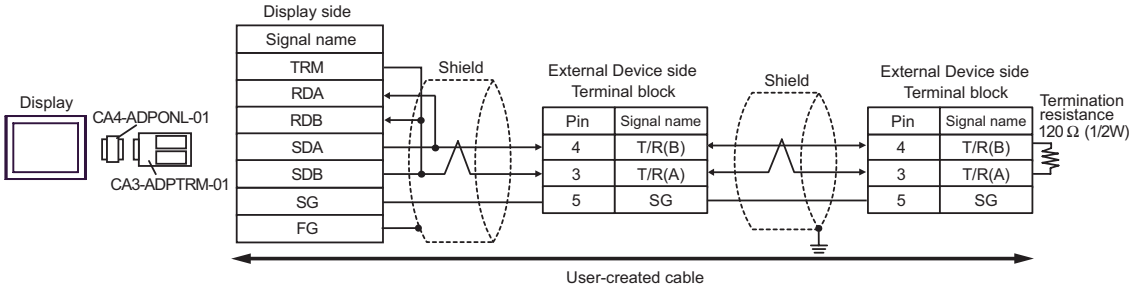
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)

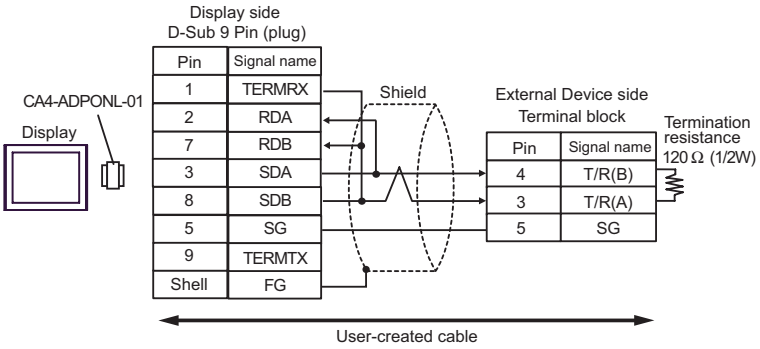


- 1:n Connection

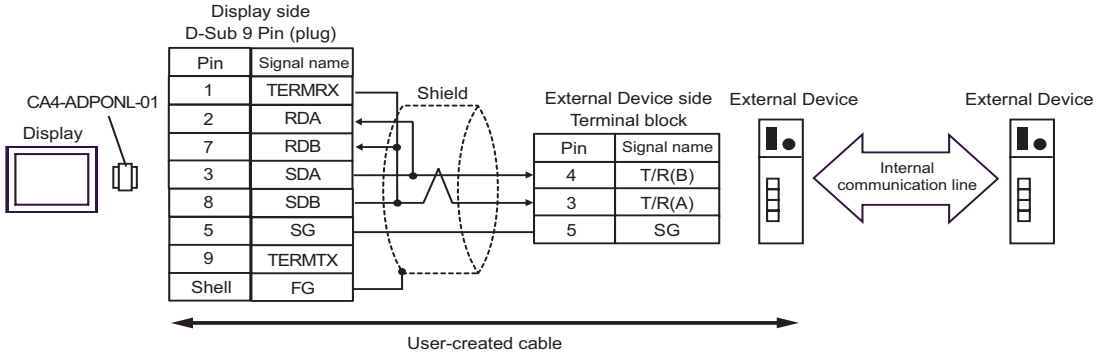


D) When using the online adapter (CA4-ADPONL-01) by Pro-face, and a user-created cable.

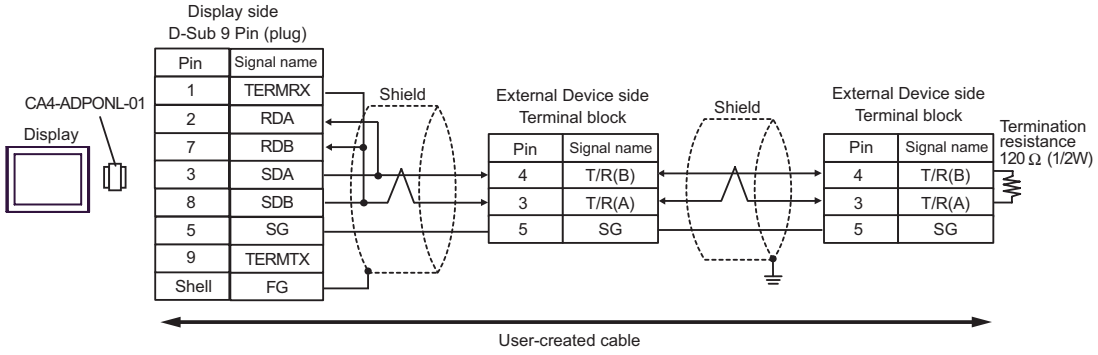
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)

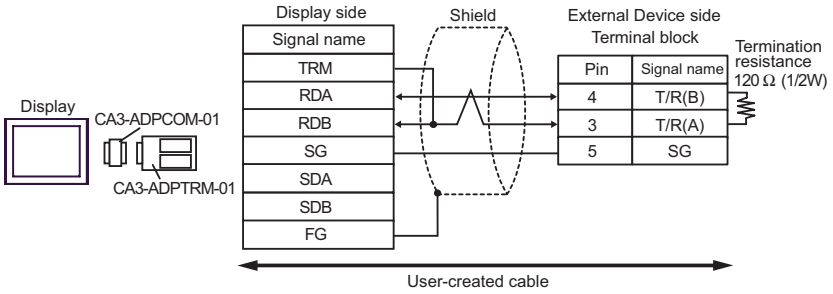


- 1:n Connection

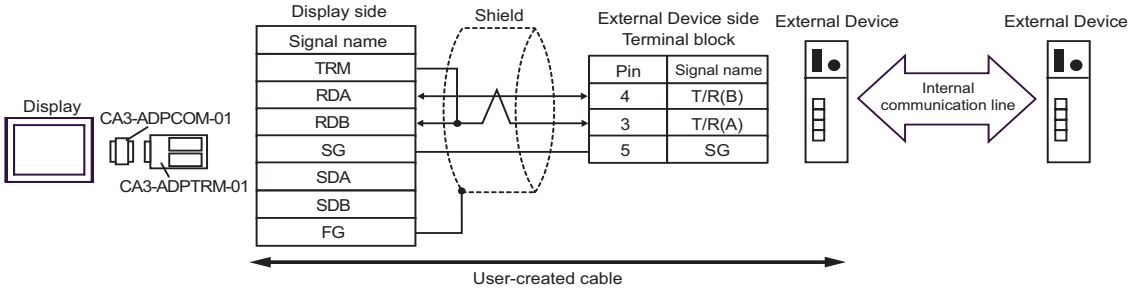


E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, and a user-created cable.

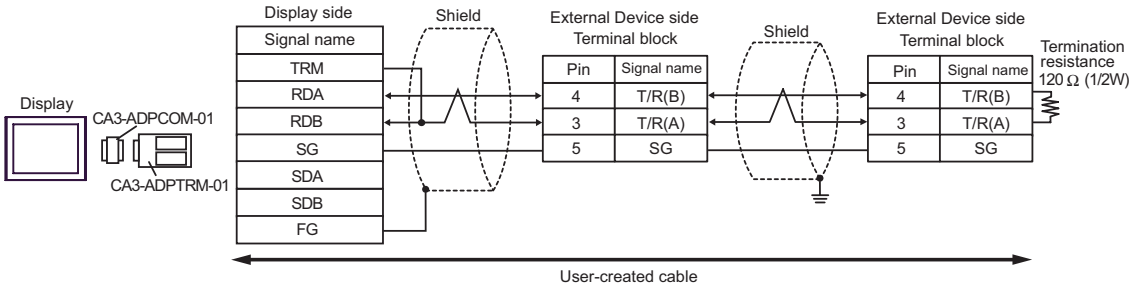
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)

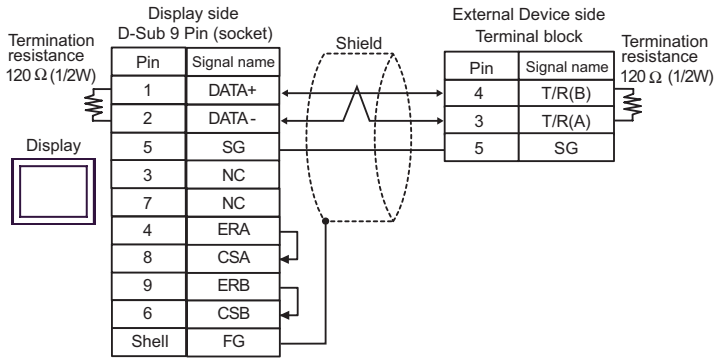


- 1:n Connection

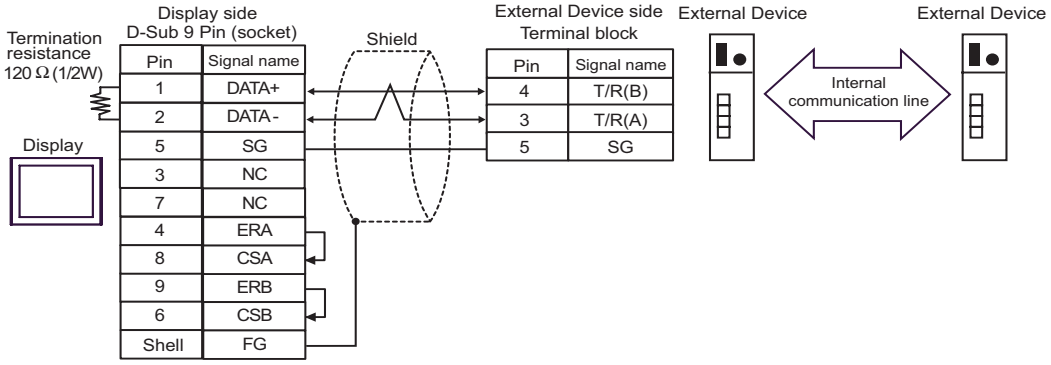


F) When using a user-created cable.

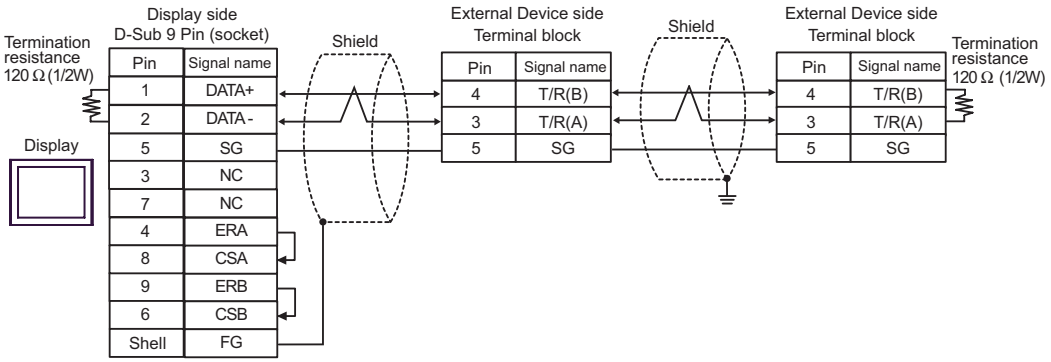
- 1:1 Connection



- 1:n Connection (When connecting with the internal communication line)



- 1:n Connection



Cable Diagram 11

Display (Connection Port)	Cable		Remarks
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1) IPC[*3]	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	Cable length: 1200m or less
	B	User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
GP[*4] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	

*1 All GP models except AGP-3302B

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

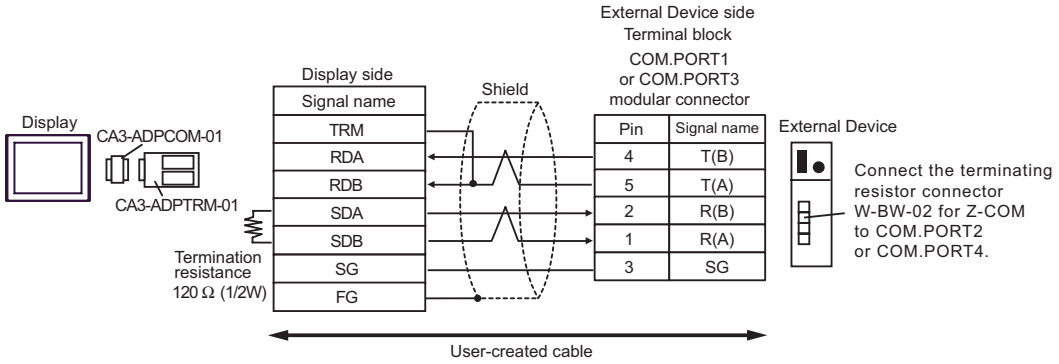
*3 Only the COM port which can communicate by RS-422/485 (4wire) can be used.
☞■ IPC COM Port (page 7)

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

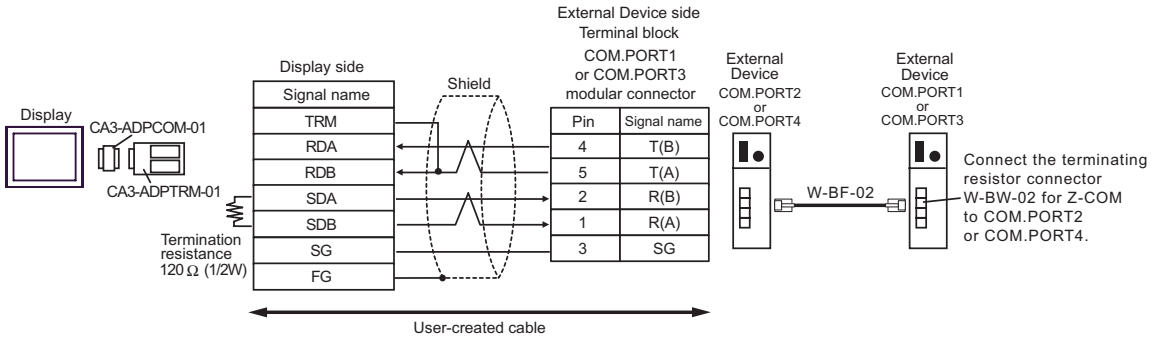
*5 To use multiple External Devices, utilize the W-BF-02 connector cable from RKC Instrument Inc.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

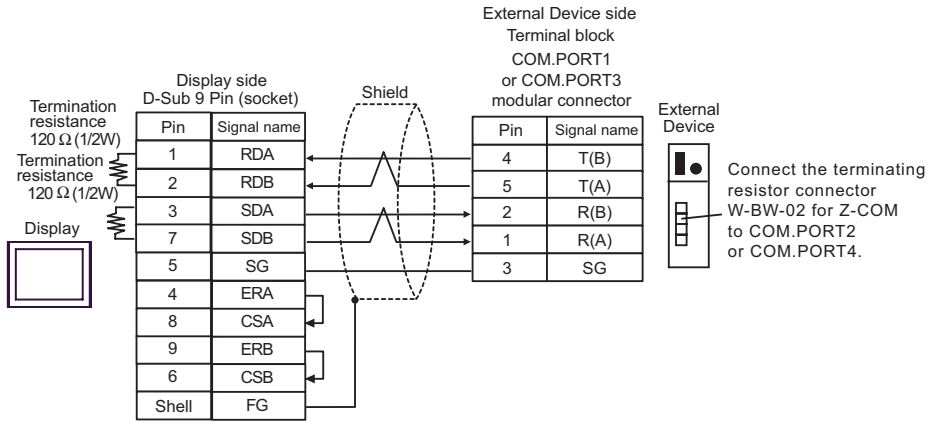


NOTE

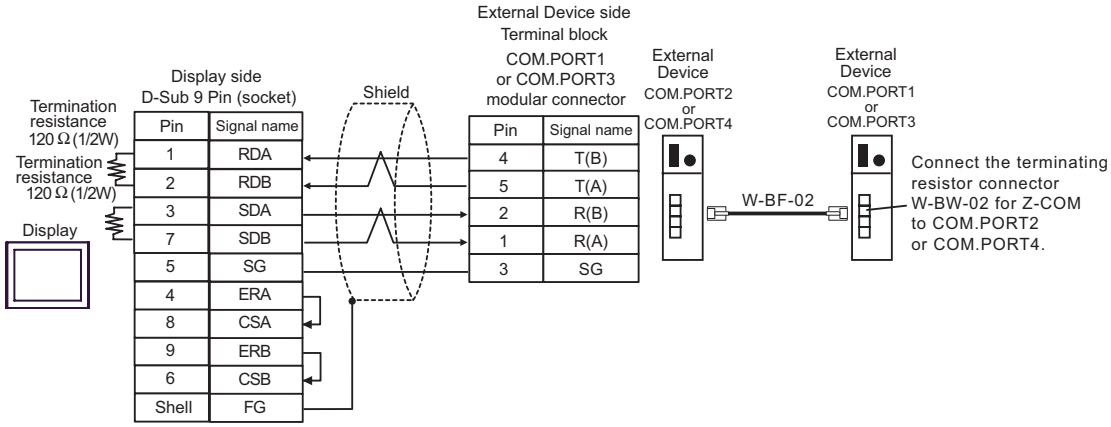
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

B) When using a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

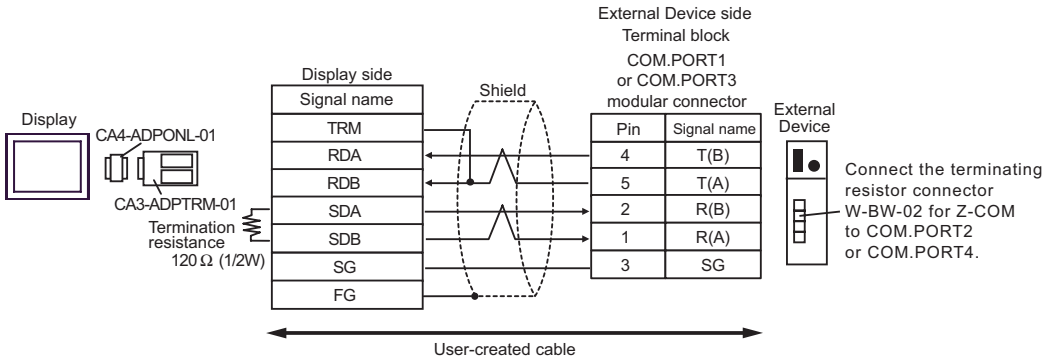


NOTE

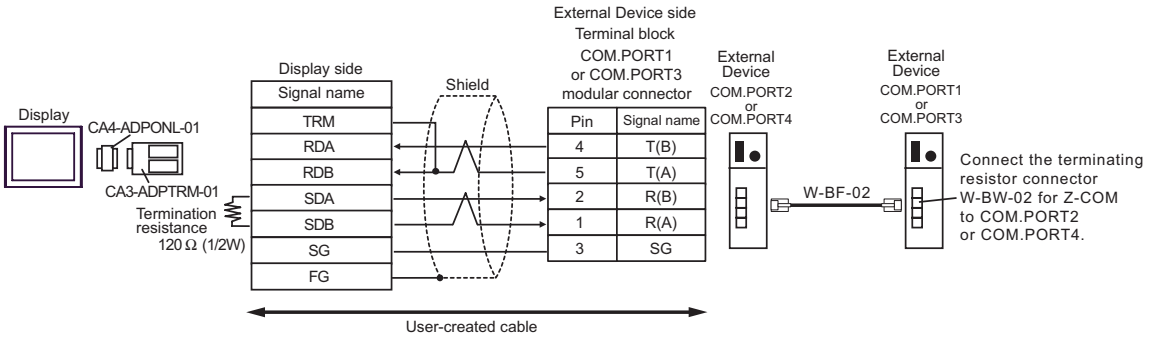
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

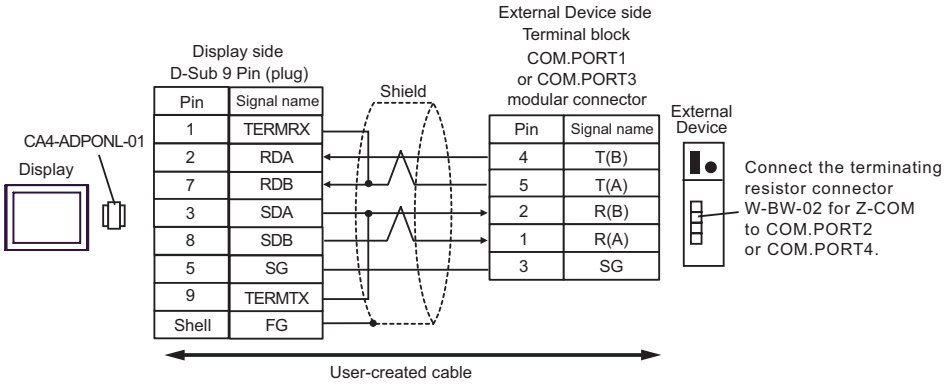


NOTE

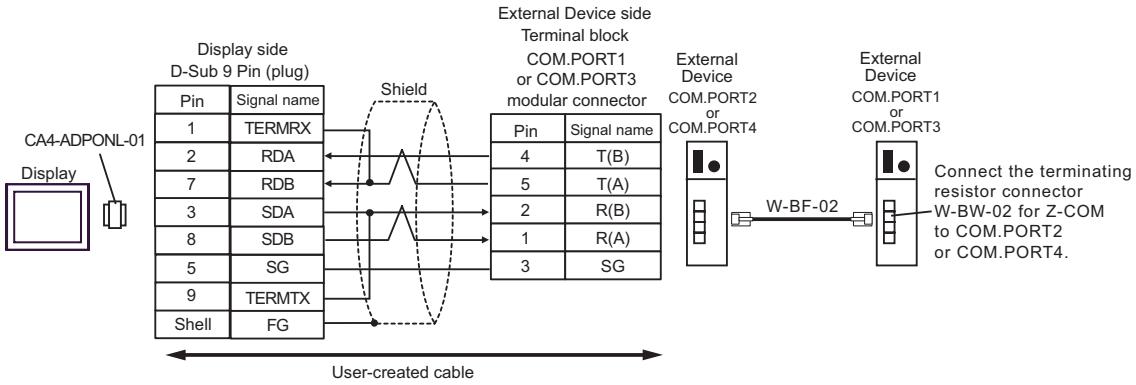
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection



NOTE

- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

Cable Diagram 12

Display (Connection Port)	Cable		Remarks
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 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	Cable length: 1200m or less
	B	User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	
	F	User-created cable + Connector cable from RKC Instrument Inc.[*5] W-BF-02	

*1 All GP models except AGP-3302B

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

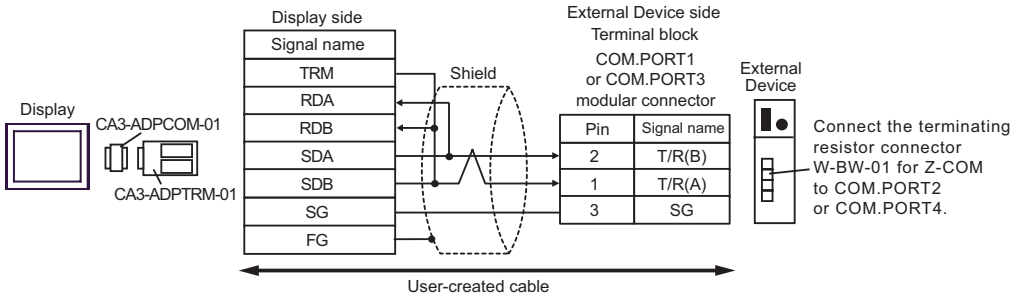
*3 All GP models except GP-3200 and AGP-3302B

*4 Only the COM port which can communicate by RS-422/485 (2wire) can be used.
☞■ IPC COM Port (page 7)

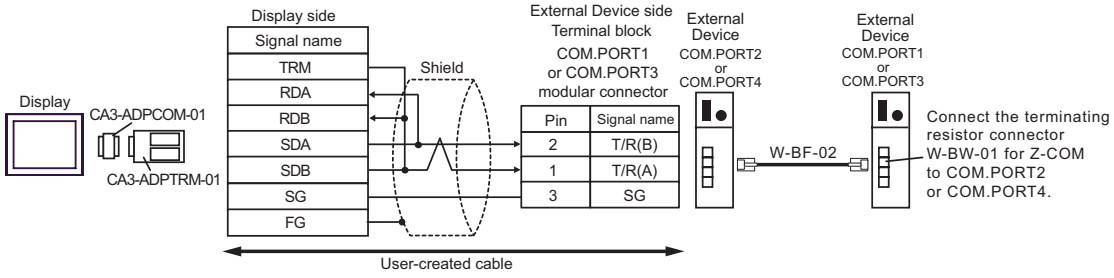
*5 To use multiple External Devices, utilize the W-BF-02 connector cable from RKC Instrument Inc.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

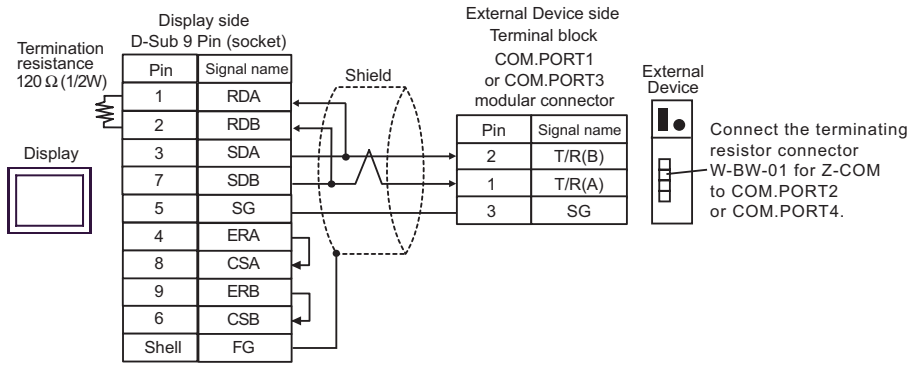


NOTE

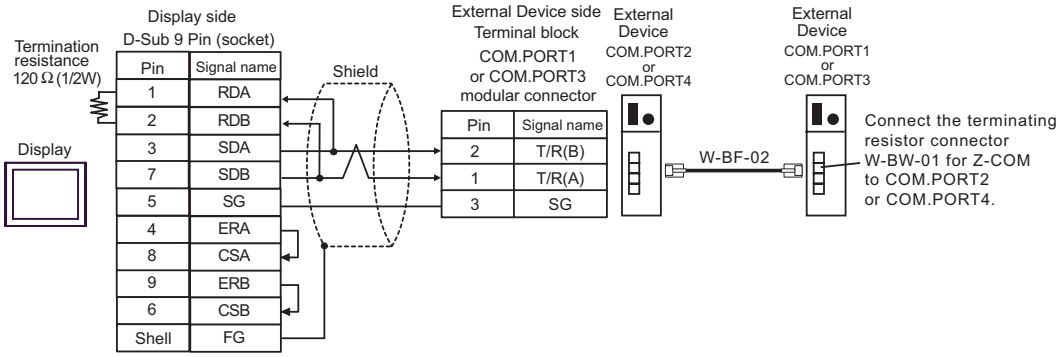
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

B) When using a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

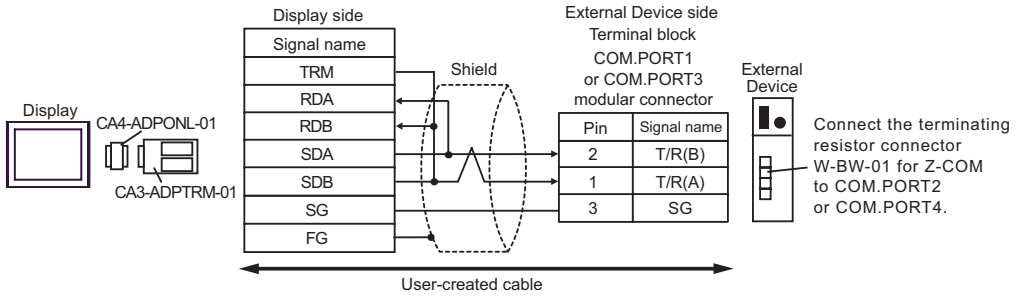


NOTE

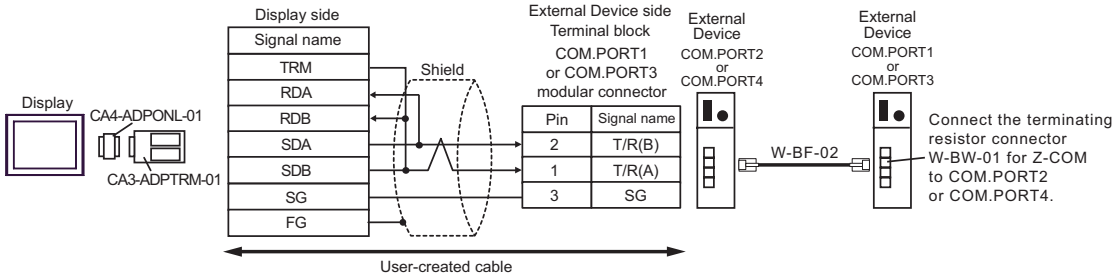
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

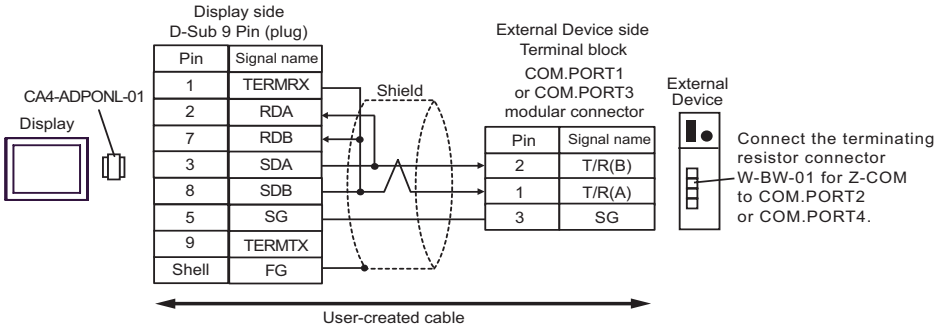


NOTE

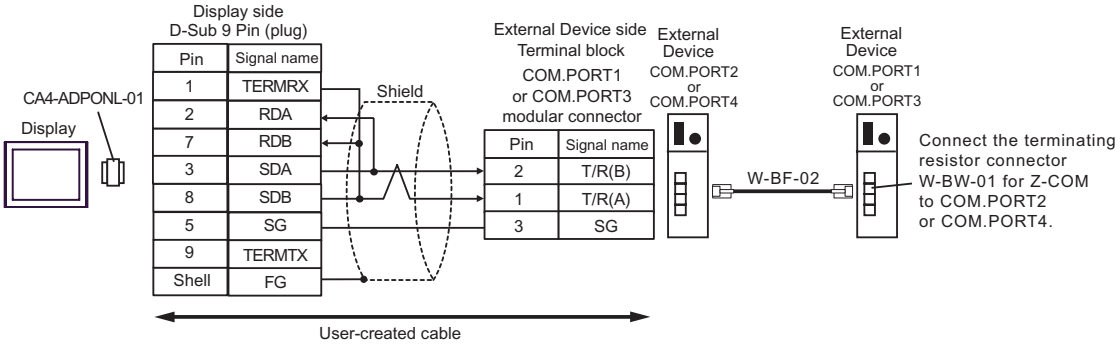
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

D) When using the online adapter (CA4-ADPONL-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

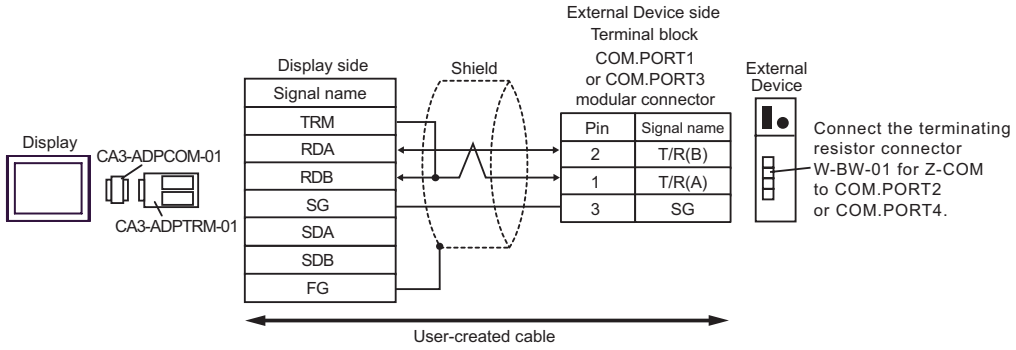


NOTE

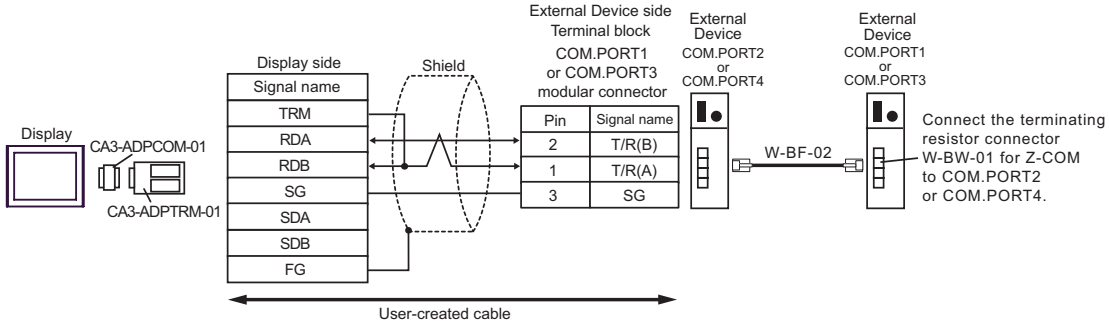
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:n Connection

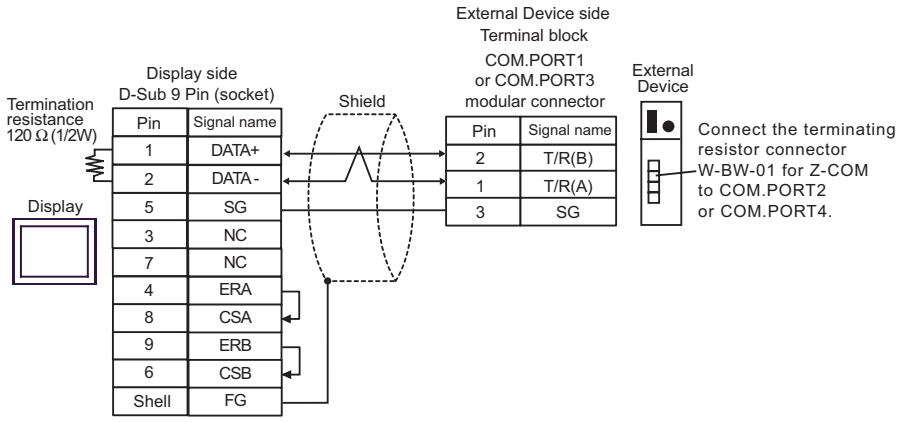


NOTE

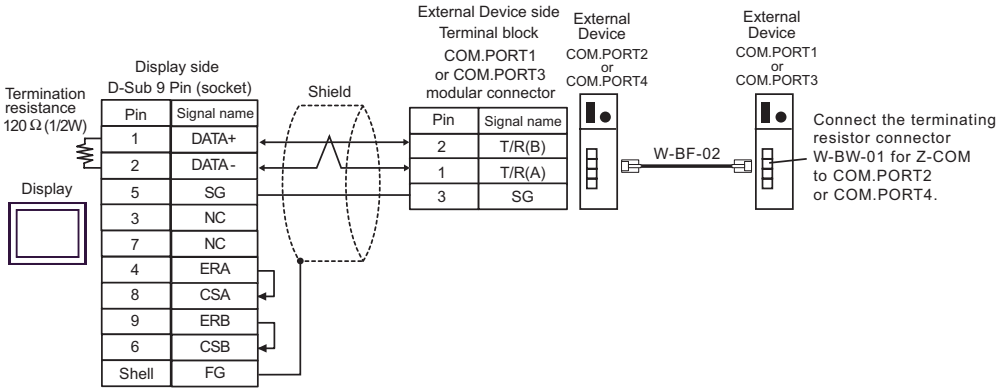
- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

F) When using a user-created cable, and the connector cable from RKC Instrument Inc.(W-BF-02).

- 1:1 Connection



- 1:1 Connection



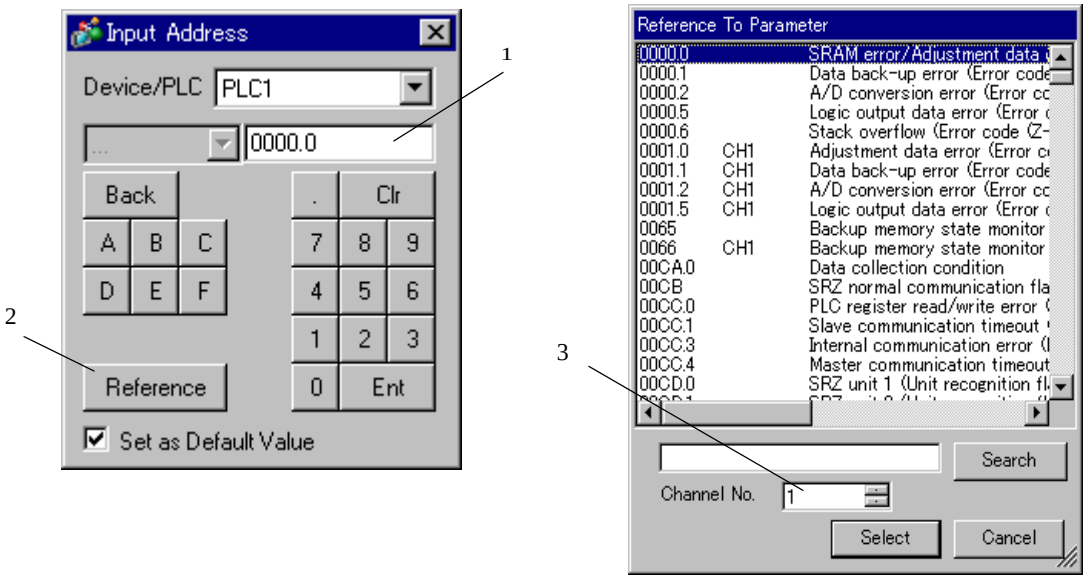
NOTE

- We recommend the TM4P-66P from HIROSE ELECTRIC CO., LTD. as the modular connector.
- To use the External Device's COM.PORT, pair COM.PORT1 with COM.PORT2, and COM.PORT3 with COM.PORT4.

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.

Enter the External Device address in the dialog below.



1. Address	Enter the address.
2. Reference	Available parameter list ([Reference To Parameter] dialog box) is displayed. Click the parameter to use and press “Select”, then the address is entered.
3.Channel No.	Enter the channel No. to be displayed on the list. [channel No.] is displayed when “SRZ (Z-COM) ” of the series of the external device is selected.

NOTE

- When [Set as Default Value] is selected, the value displays as the default when entering a new address.

6.1 CB Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-001C.F	0000-001C	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.2 FB400/900Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-150F.F	0000-150F	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.3 HA900/400 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-0535.F	0000-0535	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.4 MA900/901 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-14A0.F	0000-14A0	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.5 SRV Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-1880.F	0000-1880	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.6 SRX Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-1883.F	0000-1883	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.7 SA100 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-0021.F	0000-0021	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.8 SA200 Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-001E.F	0000-001E	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.9 SR Mini HG(H-PCP-A)Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-02EE.F	0000-02EE	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.10 SR Mini HG(H-PCP-J) Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-1DEE.F	0000-1DEE	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.11 SRZ (Z-TIO) / SRZ (Z-DIO) Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-150F.F	0000-150F	L / H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.12 SRZ (Z-CT) Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-01F1.F	0000-01F1	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

6.13 SRZ (Z-COM) Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Holding Register	0000.0-801B.F	0000-801B	L/H	*1

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

IMPORTANT

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

NOTE

- You can set only Read Area Size for the system data area available to use in the Temperature Controller. Please refer to the GP-Pro EX Reference Manual for reading area size.

  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"

- Even if you use the nonexistent address, read error may not be displayed. In this case, "0" is retained for the read data. Note that the writing error is displayed.

7 Device Code and Address Code

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

7.1 CB Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.2 FB900/400 Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.3 HA900/400 Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.4 MA900/901 Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.5 SRV Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.6 SRX Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.7 SA100 Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.8 SA200 Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.9 SR Mini Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.10 SR Mini HG Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.11 SRZ (Z-TIO) / SRZ (Z-DIO) Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.12 SRZ (Z-CT) Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

7.13 SRZ (Z-COM) Series

Device	Device Name	Device Code (HEX)	Address Code
Holding Register	-	0080	Same as Word Address

8 Error Messages

Error messages are displayed on the screen of the 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 the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX.(Initial value[PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device. **NOTE** • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is 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.