



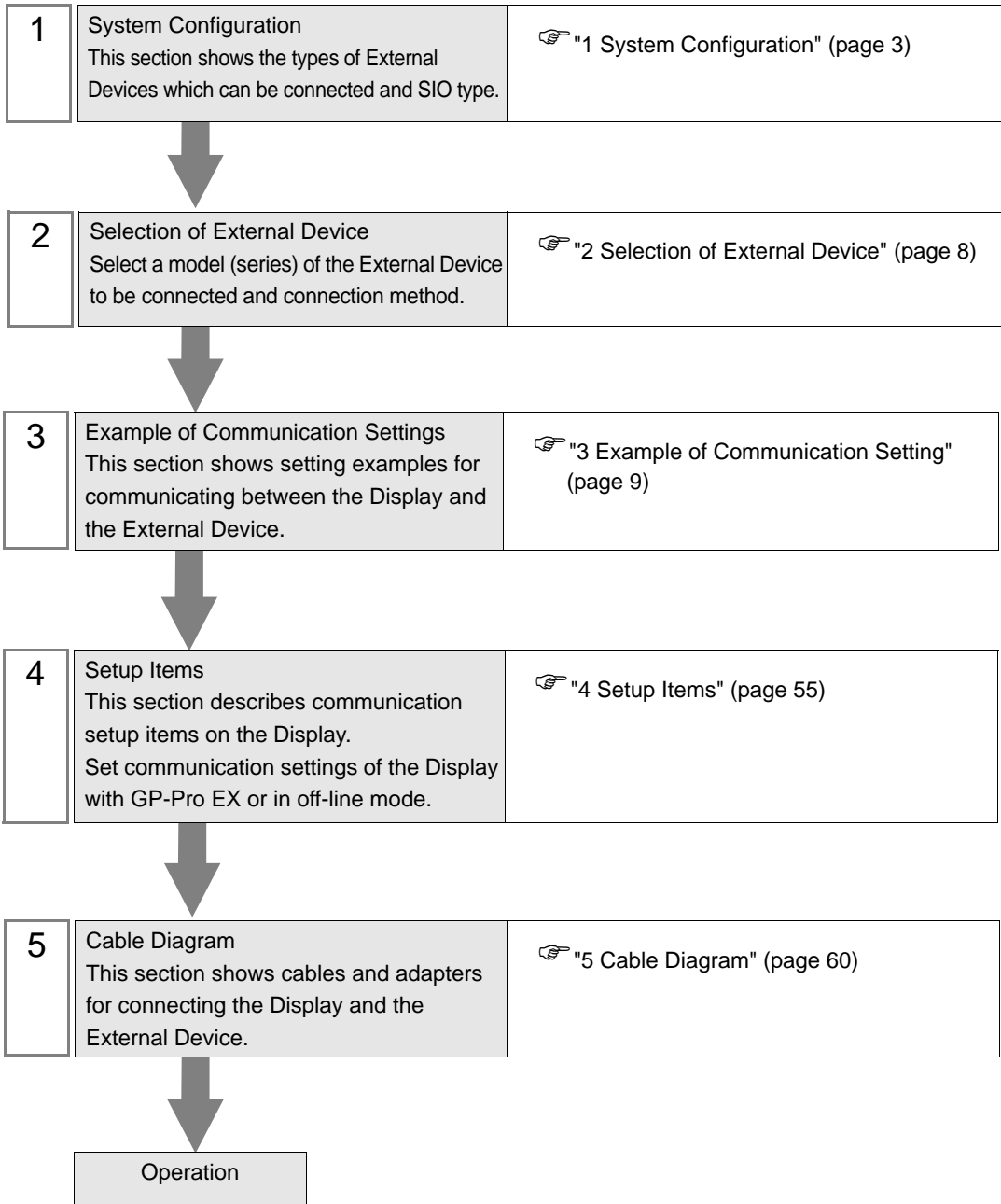
# Temperature Controller MODBUS SIO Driver

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## 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 9)	Cable Diagram 3 (page 64)
FB400/ FB900	FB900-□□-□*□□□1/□□-□□□□ FB400-□□-□*□□□1/□□-□□□□	Terminal block on the controller	RS232C	Setting Example 2 (page 11)	Cable Diagram 6 (page 76)
	FB900-□□-□*□□□4/□□-□□□□ FB400-□□-□*□□□4/□□-□□□□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 3 (page 13)	Cable Diagram 7 (page 77)
	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 15)	Cable Diagram 3 (page 64)
	FB900-□□-□*□□□W/□□-□□□□	Terminal block on the controller	RS232C	Setting Example 2 (page 11)	Cable Diagram 6 (page 76)
	FB400-□□-□*□□□W/□□-□□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 4 (page 15)	Cable Diagram 3 (page 64)
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 17)	Cable Diagram 3 (page 64)
	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 19)	Cable Diagram 6 (page 76)
	HA900-□□-□□-□*□□-□□□7-□/□/□ HA901-□□-□□-□*□□-□□□7-□/□/□ HA400-□□-□□-□*□□-□□□7-□/□/□ HA401-□□-□□-□*□□-□□□7-□/□/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 7 (page 21)	Cable Diagram 7 (page 77)

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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 23)	Cable Diagram 3 (page 64)
	MA900-4□□□□-□□-□*□□□-□7/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 9 (page 25)	Cable Diagram 7 (page 77)
	MA900-4□□□□-□□-□*□□□-□8/□	Terminal block on the controller	RS232C	Setting Example 10 (page 27)	Cable Diagram 6 (page 76)
MA901	MA901-8□□□□-□□-□*□□□-□6/□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 8 (page 23)	Cable Diagram 3 (page 64)
	MA901-8□□□□-□□-□*□□□-□7/□	Terminal block on the controller	RS422/485(4 wire)	Setting Example 9 (page 25)	Cable Diagram 7 (page 77)
	MA901-8□□□□-□□-□*□□□-□8/□	Terminal block on the controller	RS232C	Setting Example 10 (page 27)	Cable Diagram 6 (page 76)
SRV	V-TIO-A-□□□□-□□*□□□-□□-□□ V-TIO-C-□□□□-□□*□□□-□□-□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 14 (page 35)	Cable Diagram 3 (page 64)
SRX	X-TIO-A-□□-□□*□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 14 (page 35)	Cable Diagram 3 (page 64)
SA100	SA100□□□□-□□-□*□□-6□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 16 (page 39)	Cable Diagram 3 (page 64)
SA200	SA200□□□□-□□-□*□□-6□□□	Terminal block on the controller	RS422/485(2 wire)	Setting Example 16 (page 39)	Cable Diagram 3 (page 64)
SR Mini HG (H-PCP-A)	H-PCP-A-□1N-□*□□Z-1021	Terminal block on the controller	RS232C	Setting Example 18 (page 43)	Cable Diagram 1 (page 60)
	H-PCP-A-□4N-□*□□Z-1021	Terminal block on the controller	RS422/485(4 wire)	Setting Example 19 (page 45)	Cable Diagram 2 (page 61)

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 47)	Cable Diagram 4 (page 68)
	H-PCP-J-□5□-D*□□	Connector on the controller	RS422/485(2 wire)	Setting Example 21 (page 50)	Cable Diagram 5 (page 71)
	H-PCP-J-□□1-D*□□	Connector on the controller	RS232C	Setting Example 18 (page 43)	Cable Diagram 1 (page 60)
	H-PCP-J-□□4-D*□□	Connector on the controller	RS422/485(4 wire)	Setting Example 20 (page 47)	Cable Diagram 8 (page 80)
	H-PCP-J-□□5-D*□□	Connector on the controller	RS422/485(2 wire)	Setting Example 21 (page 50)	Cable Diagram 9 (page 84)

## ■ COM Port of IPC

When connecting IPC with External Device, the COM port which can be used changes with series and SIO type. Please refer to the manual of IPC for details.

### Usable port

Series	Usable port		
	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)
PS-2000B	COM1 <sup>*1</sup> , COM2, COM3 <sup>*1</sup> , COM4	-	-
PS-3450A, PS-3451A	COM1, COM2 <sup>*1*2</sup>	COM2 <sup>*1*2</sup>	COM2 <sup>*1*2</sup>
PS-3650A, PS-3651A	COM1 <sup>*1</sup>	-	-
PS-3700A (Pentium®4-M) PS-3710A	COM1 <sup>*1</sup> , COM2 <sup>*1</sup> , COM3 <sup>*2</sup> , COM4	COM3 <sup>*2</sup>	COM3 <sup>*2</sup>
PS-3711A	COM1 <sup>*1</sup> , COM2 <sup>*2</sup>	COM2 <sup>*2</sup>	COM2 <sup>*2</sup>
PL-3000B	COM1 <sup>*1*2</sup> , COM2 <sup>*1</sup> , COM3, COM4	COM1 <sup>*1*2</sup>	COM1 <sup>*1*2</sup>

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

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

### Dip switch setting: RS-232C

Dip switch	Setting	Description
1	OFF <sup>*1</sup>	Reserve (always OFF)
2	OFF	SIO type: RS-232C
3	OFF	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Does not Exist
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Does not Exist
9	OFF	RS (RTS) Auto control mode: Disable
10	OFF	

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

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

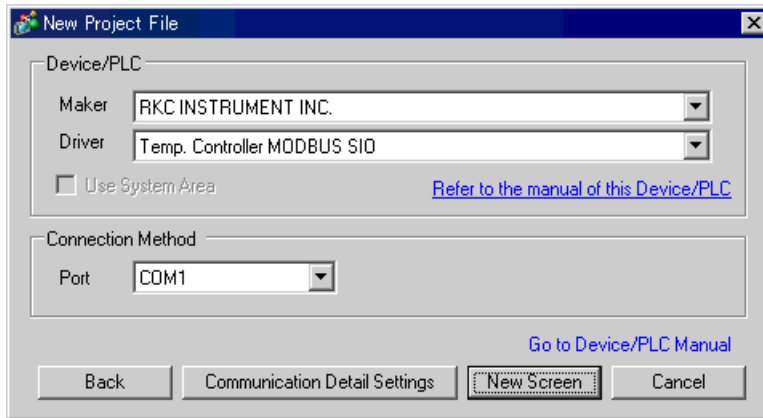
Dip switch	Setting	Description
1	OFF	Reserve (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA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

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

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

## 2 Selection of External Device

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Maker	Select the maker of 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.

The screenshot shows the 'Device/PLC 1' settings window. It includes a 'Summary' section with fields for 'Maker' (RKC INSTRUMENT INC.), 'Driver' (Temp. Controller MODBUS SIO), and 'Port' (COM1). Below this is the 'Communication Settings' section with various radio buttons and dropdown menus for 'SIO Type', 'Speed', 'Data Length', 'Parity', 'Stop Bit', 'Flow Control', 'Timeout', 'Retry', and 'Wait To Send'. A 'Default' button is located at the bottom right of the communication settings area. The 'Device-Specific Settings' section at the bottom shows 'Allowable No. of Device/PLCs' as 16 and a table with one entry: '1 | PLC1 | Settings | Series=CB, Slave Address=1'.

### ◆ 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.

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## 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=FB400/900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=FB400/900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=FB400/900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
<input type="button" value="1"/>	<input type="text" value="PLC1"/>	<input type="text" value="Series=HA400/900,Slave Address=1"/>

### ◆ 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.

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## 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=HA400/900,Slave Address=1

### ◆ 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.

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## 3.7 Setting Example 7

### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

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

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=HA400/900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA900,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA901,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA901,Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=MA901,Slave Address=1

### ◆ 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/PLC 1
[Change Device/PLC](#)

**Summary**

Maker  Driver  Port

Text Data Mode  [Change](#)

**Communication Settings**

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

Speed       

Data Length     7     8

Parity         NONE     EVEN     ODD

Stop Bit       1     2

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

Timeout       (sec)

Retry        

Wait To Send  (ms)

RI / VCC     RI     VCC


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

**Device-Specific Settings**

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

No.	Device Name	Settings
1	PLC1	Series=SRV,Slave Address=1

### ◆ 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/PLC 1
[Change Device/PLC](#)

**Summary**

Maker  Driver  Port

Text Data Mode  [Change](#)

**Communication Settings**

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

Speed       

Data Length     7         8

Parity         NONE         EVEN         ODD

Stop Bit         1         2

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

Timeout         (sec)

Retry         

Wait To Send     (ms)

RI / VCC     RI         VCC


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

**Device-Specific Settings**

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

No.	Device Name	Settings
1	PLC1	Series=SRX,Slave Address=1

### ◆ 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/PLC 1
[Change Device/PLC](#)

**Summary**

Maker  Driver  Port

Text Data Mode  [Change](#)

**Communication Settings**

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

Speed       

Data Length     7         8

Parity         NONE         EVEN         ODD

Stop Bit       1         2

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

Timeout       (sec)

Retry        

Wait To Send  (ms)

RI / VCC     RI     VCC


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

**Device-Specific Settings**

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

No.	Device Name	Settings
1	PLC1	Series=SA100.Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=SA200,Slave Address=1

### ◆ 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/PLC 1
[Change Device/PLC](#)

**Summary**

Maker  Driver  Port

Text Data Mode  [Change](#)

**Communication Settings**

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

**Device-Specific Settings**

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

No.	Device Name	Settings
1	PLC1	Series=SRMiniHG(H-PCP-A),Slave Address=1

### ◆ 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	
4	OFF	Speed

**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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=SRMiniHG(H-PCP-A),Slave Address=1

### ◆ 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/PLC 1
[Change Device/PLC](#)

**Summary**

Maker  Driver  Port

Text Data Mode  [Change](#)

**Communication Settings**

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

Speed       

Data Length     7     8

Parity         NONE     EVEN     ODD

Stop Bit       1     2

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

Timeout       (sec)

Retry        

Wait To Send    (ms)

RI / VCC     RI     VCC


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

**Device-Specific Settings**

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

No.	Device Name	Settings
1	PLC1	Series=SRMiniHG(H-PCPJ),Slave Address=1

### ◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=SRMiniHG(H-PCP-J),Slave Address=1

### ◆ 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 in 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/PLC 1

Summary [Change Device/PLC](#)

Maker  Driver  Port

Text Data Mode  [Change](#)

Communication Settings

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

Speed

Data Length  7  8

Parity  NONE  EVEN  ODD

Stop Bit  1  2

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

Timeout  (sec)

Retry

Wait To Send  (ms)

RI / VCC  RI  VCC


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

Device-Specific Settings

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

No.	Device Name	Settings
1	PLC1	Series=SRMiniHG(H-PCP-J),Slave Address=1

### ◆ 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 in 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.

## 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 9)

### 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.


The screenshot shows the 'Device/PLC 1' settings window. The 'Summary' section includes fields for 'Maker' (RKC INSTRUMENT INC.), 'Driver' (Temp. Controller MODBUS SIO), and 'Port' (COM1). The 'Text Data Mode' is set to '1'. The 'Communication Settings' section has radio buttons for SIO Type (RS232C, RS422/485(2wire), RS422/485(4wire)), a 'Speed' dropdown (9600), 'Data Length' (7, 8), 'Parity' (NONE, EVEN, ODD), 'Stop Bit' (1, 2), and 'Flow Control' (NONE, ER(DTR/CTS), XON/XOFF). It also has spinners for 'Timeout' (3 sec) and 'Retry' (2). A 'Wait To Send' spinner is set to 0 ms. Below this is a section for 'RI / VCC' with radio buttons for 'RI' and 'VCC', and a note about RS232C pin selection. A 'Default' button is present. The 'Device-Specific Settings' section shows 'Allowable No. of Device/PLCs' as 16 Unit(s) and 'No. Device Name' as 1 PLC1, with a 'Settings' button and a field for 'Series=CB, Slave Address=1'.

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.

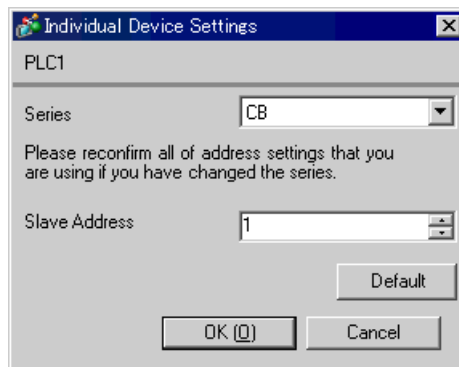
continued to next page

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.

Comm.	Device	Option		
Temp. Controller MODBUS SIO		[COM1]	Page 1/1	
SIO Type	RS422/485(2wire)			
Speed	9600			
Data Length	<input type="radio"/> 7 <input checked="" type="radio"/> 8 <input checked="" type="radio"/> NONE <input type="radio"/> EVEN <input type="radio"/> ODD			
Parity	<input checked="" type="radio"/> 1 <input type="radio"/> 2			
Stop Bit	NONE			
Flow Control				
Timeout(s)	3			
Retry	2			
Wait To Send(ms)	0			
Exit		Back		2006/01/17 18:06:30

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. <b>IMPORTANT</b> 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].

Comm.	Device	Option		
Temp. Controller MODBUS SIO		[COM1]	Page 1/1	
Device/PLC Name		PLC1 ▼		
Series		CB		
Slave Address		1 ▼ ▲		
Exit		Back		2006/01/17 18:06:33

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].

Comm.	Device	Option		
Temp. Controller MODBUS SIO			[COM1]	Page 1/1
RI / VCC                      ● RI                      ● VCC In the case of RS232C, you can select the 9th pin to RI(Input) or VCC(5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.				
	Exit		Back	2006/02/13 13:19:34

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.

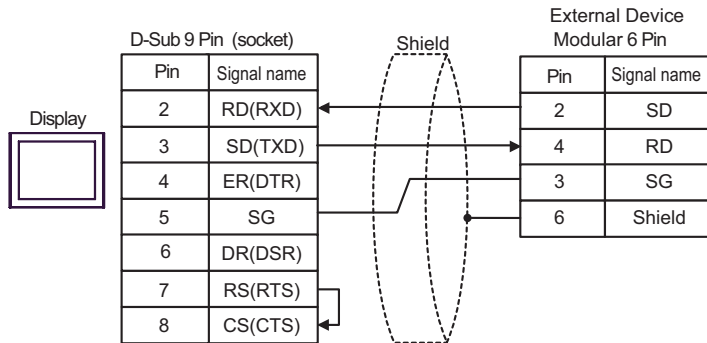
- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- When using RS422/485 (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* <sup>1</sup> PC/AT	Your own cable	Cable length: 10m or less

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

 ■ COM Port of IPC (page 6)



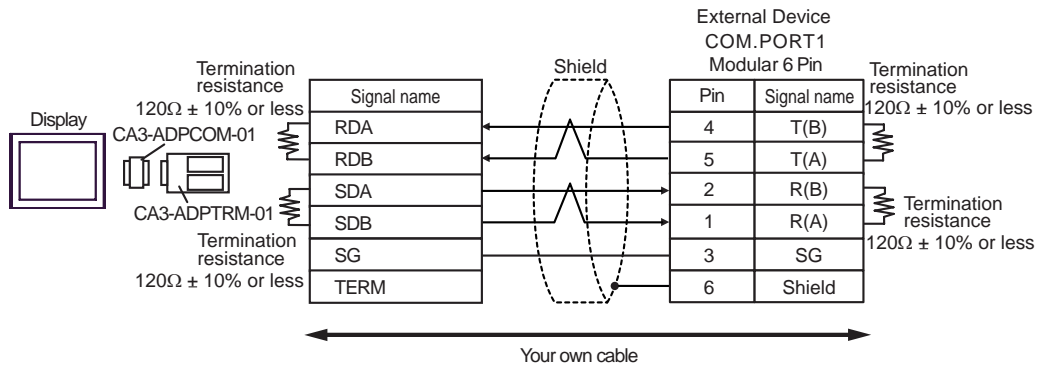
Cable Diagram 2

Display (Connection Port)	Cable		Remarks
GP* <sup>1</sup> (COM1) AGP-3302B (COM2) ST* <sup>2</sup> (COM2) LT (COM1) IPC* <sup>3</sup>	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	B	Your own cable	
GP* <sup>4</sup> (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

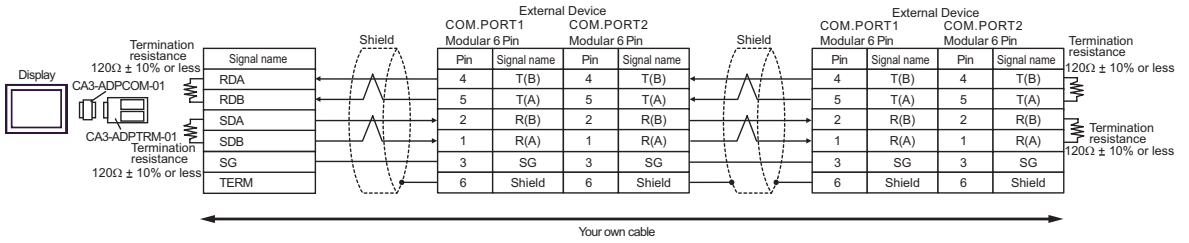
- \*1 All GP models except AGP-3302B
- \*2 All ST models except AST-3211A
- \*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.  
☞ ■ COM Port of IPC (page 6)
- \*4 All GP models except GP-3200 series and AGP-3302B

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

- 1:1 Connection

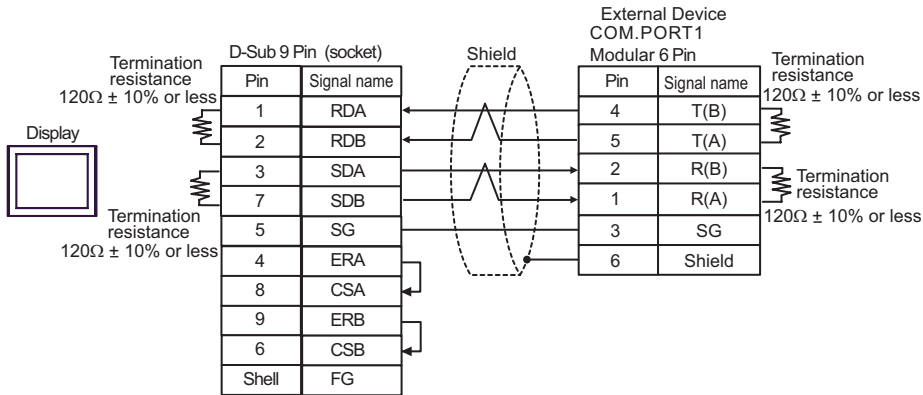


- 1:n connection

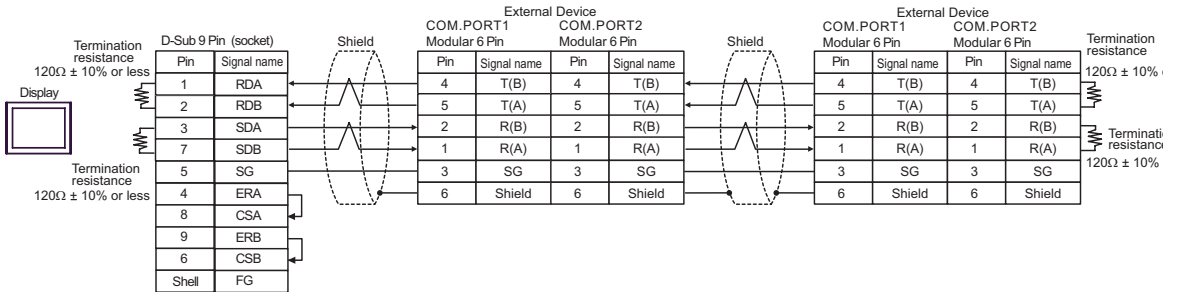


B) When using your own cable

- 1:1 Connection

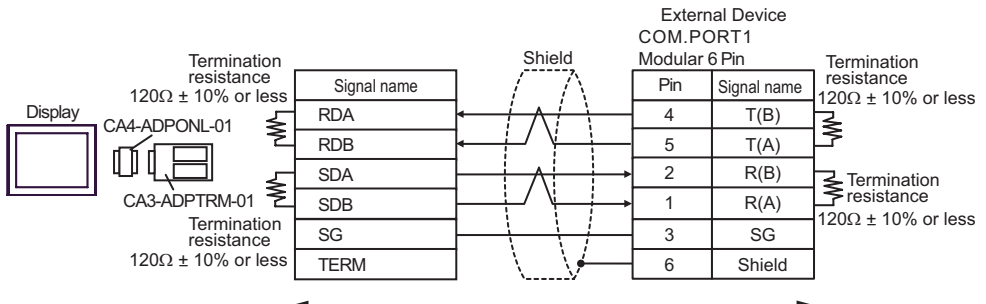


- 1:n Connection

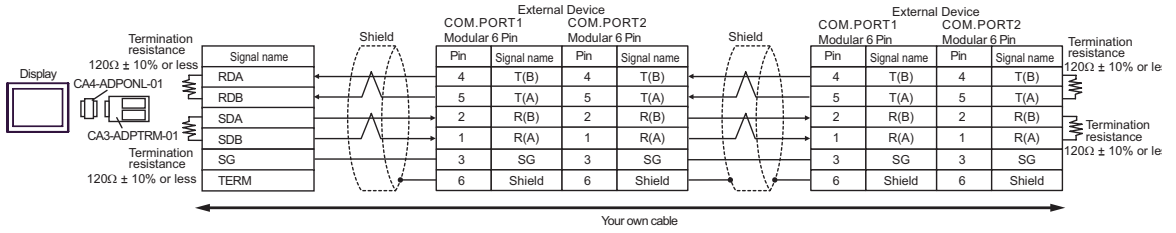


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection

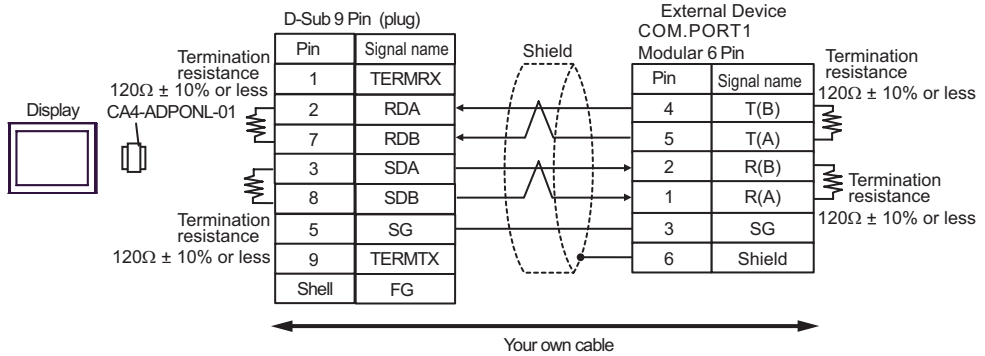


• 1:n Connection

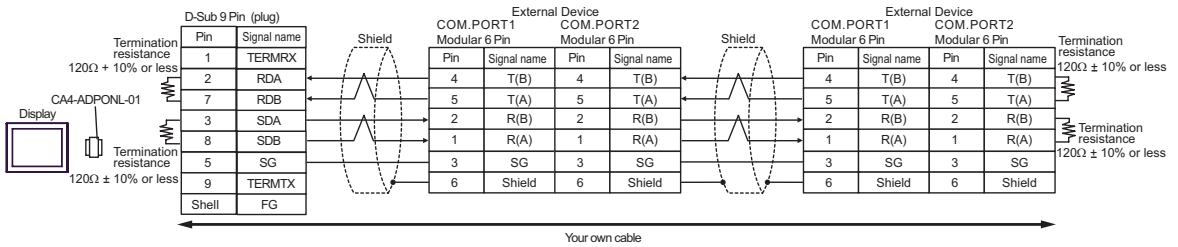


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

• 1:1 Connection



• 1:n Connection



Cable Diagram 3


Display (Connection Port)	Cable		Remarks
GP* <sup>1</sup> (COM1) AGP-3302B (COM2) ST* <sup>2</sup> (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 600m or less
	B	Your own cable	
GP* <sup>3</sup> (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC* <sup>4</sup>	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

\*1 All GP models except AGP-3302B

\*2 All ST models except AST-3211A

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

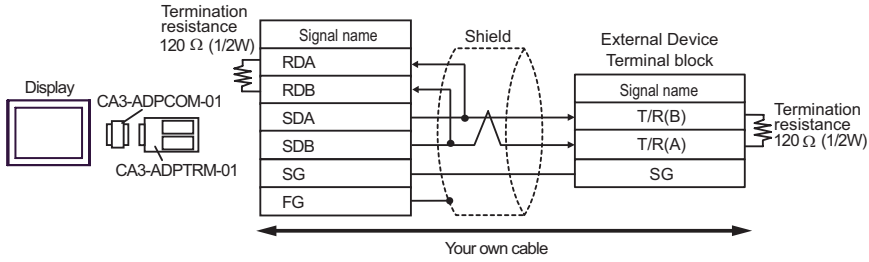
\*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.

 ■ COM Port of IPC (page 6)

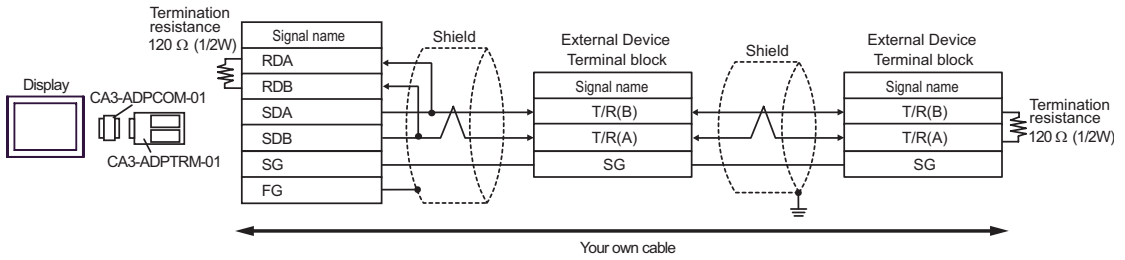


A) When using the COM port conversion adapter (CA3-ADPCOM-01) and the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection

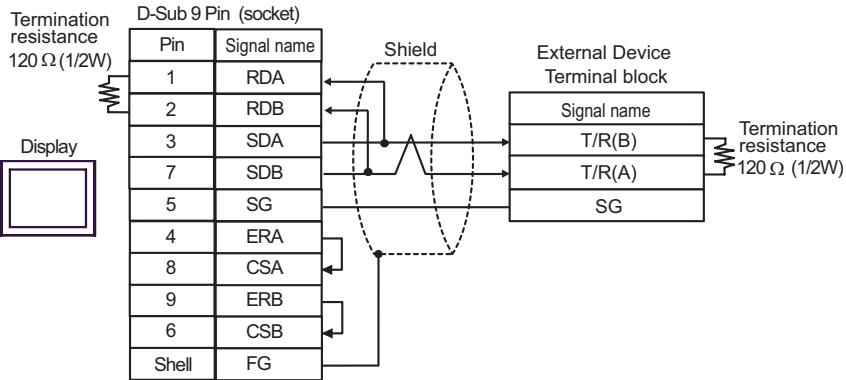


- 1: n connection

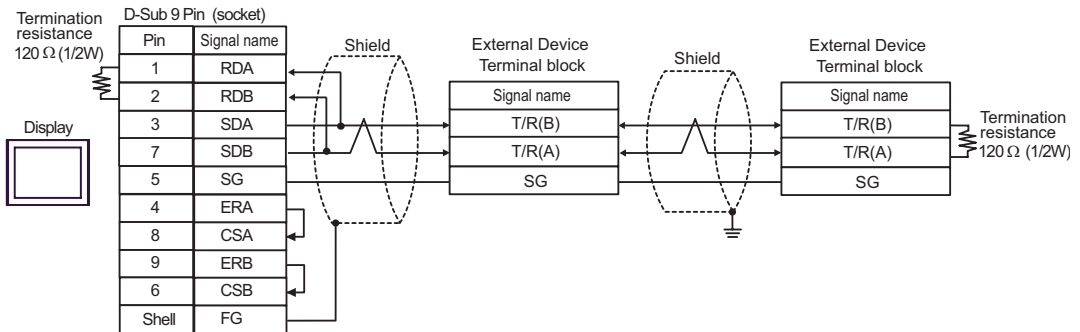


B) When using your own cable

- 1:1 Connection

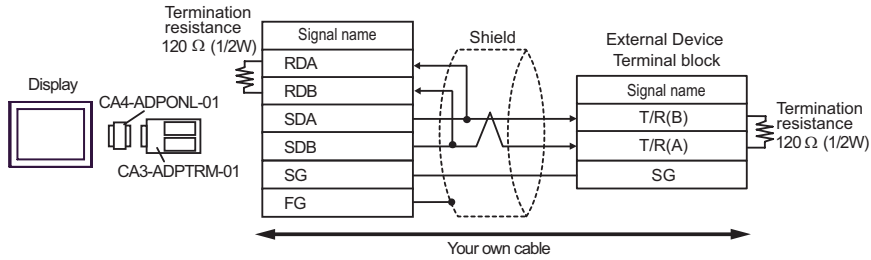


- 1:n Connection

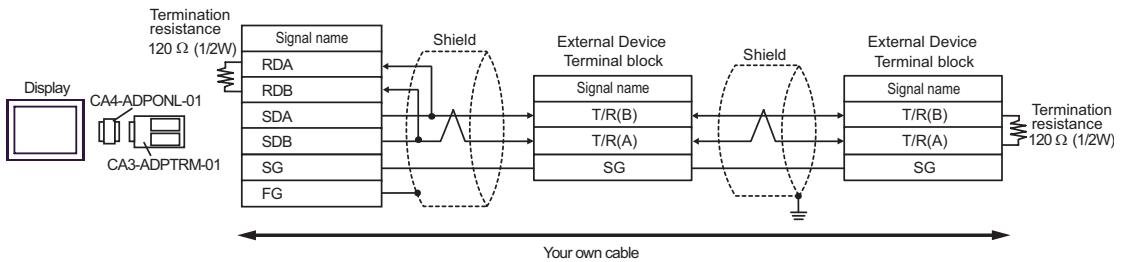


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection

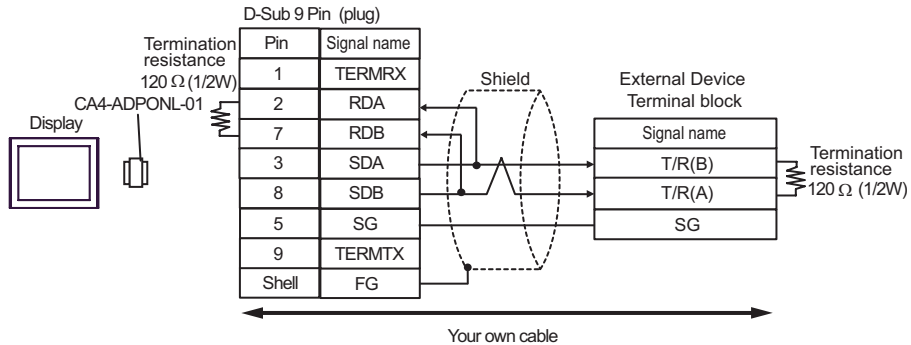


- 1:n Connection

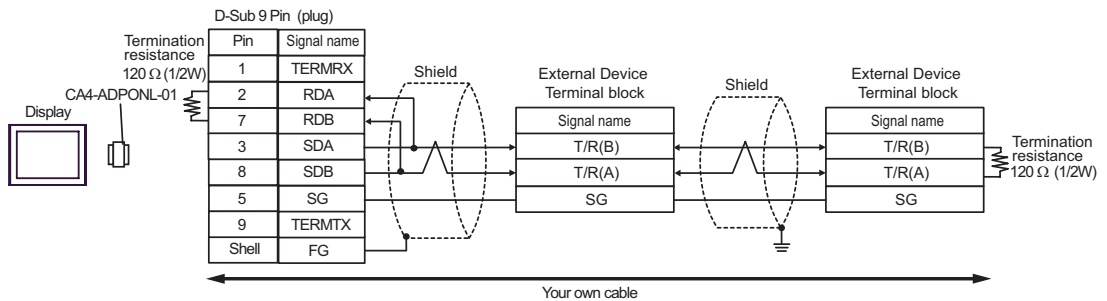


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

- 1:1 Connection

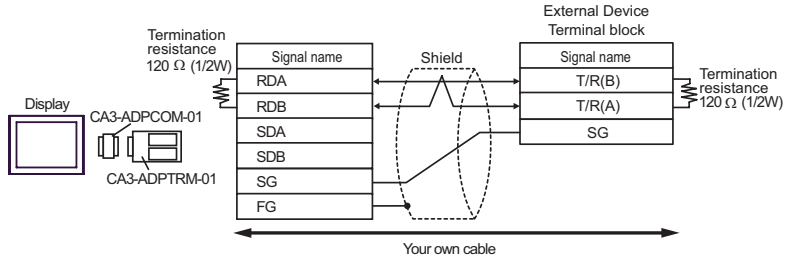


- 1:n Connection

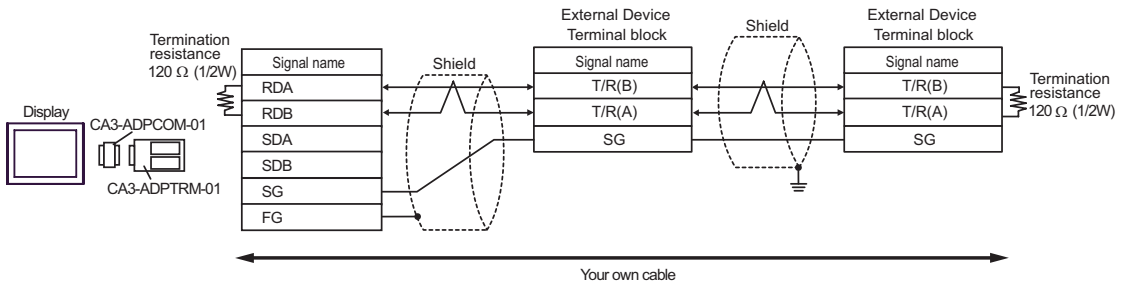


E) When using the COM port conversion adapter (CA3-ADPCOM-01) and the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection

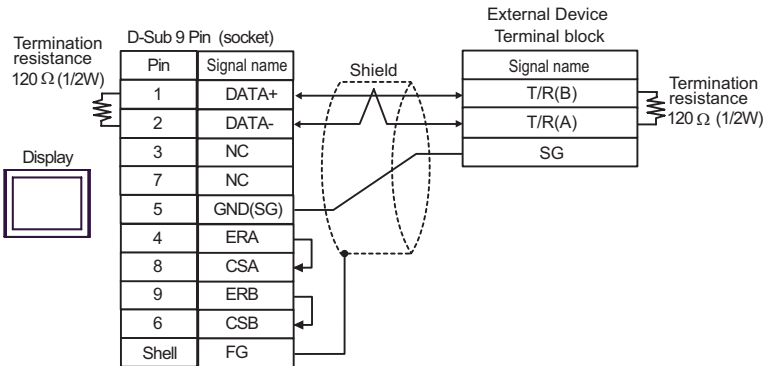


- 1: n connection

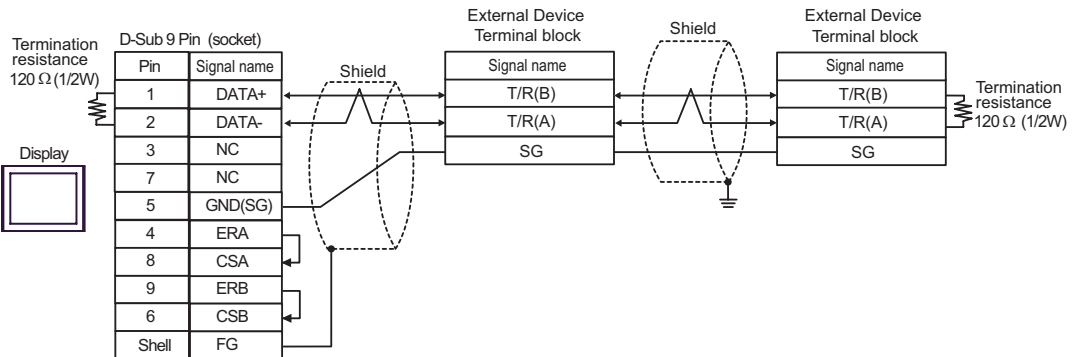


F) When using your own cable

- 1:1 Connection



- 1:n Connection




Cable Diagram 4

Display (Connection Port)	Cable		Remarks
GP* <sup>1</sup> (COM1) AGP-3302B (COM2) ST* <sup>2</sup> (COM2) LT (COM1) IPC* <sup>3</sup>	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 5m or less
	B	Your own cable	
GP* <sup>4</sup> (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

\*1 All GP models except AGP-3302B

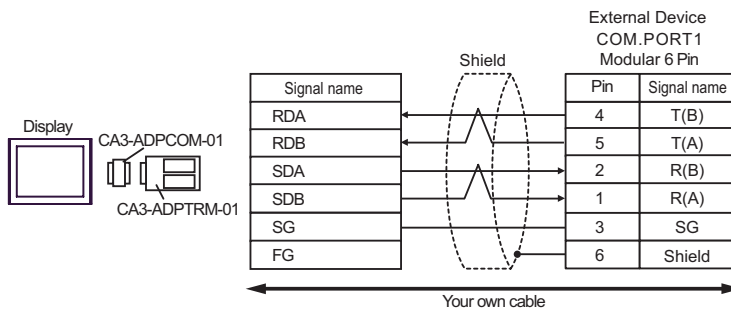
\*2 All ST models except AST-3211A

\*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.  
 ■ COM Port of IPC (page 6)

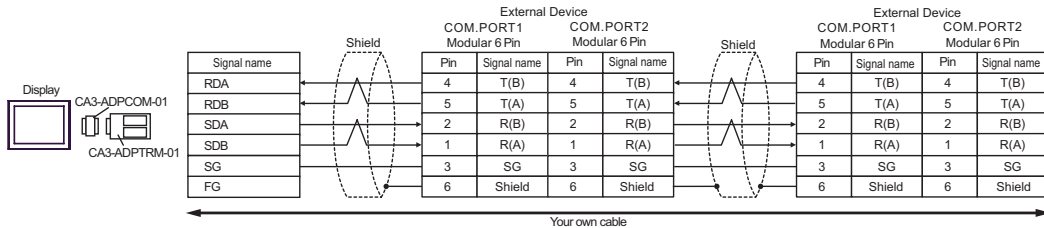
\*4 All GP models except GP-3200 series and AGP-3302B

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

- 1:1 Connection



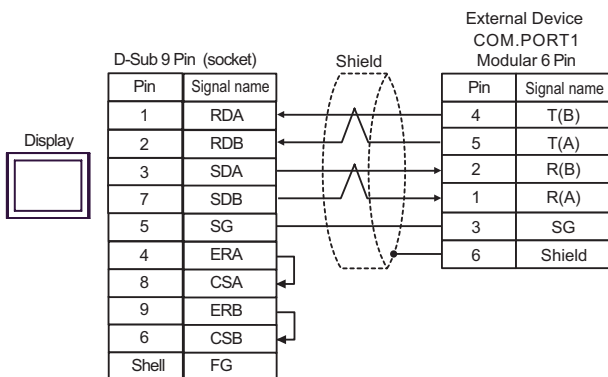
- 1: n connection



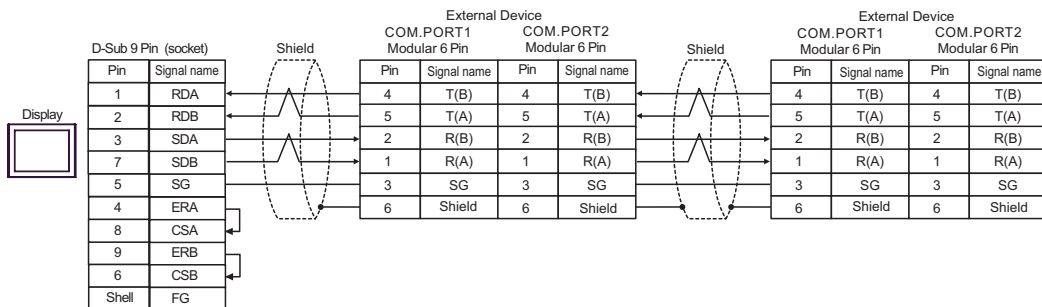
**NOTE** • Termination resistance is not necessary.

B) When using your own cable

- 1:1 Connection



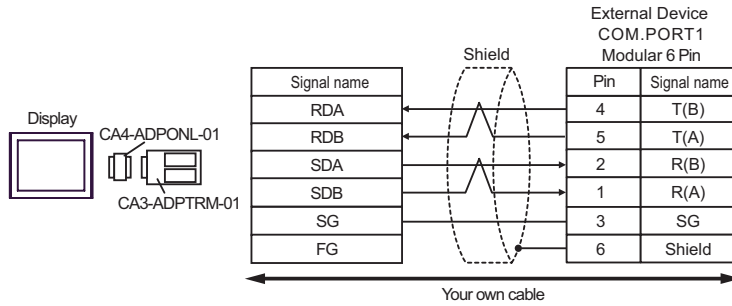
- 1:n Connection



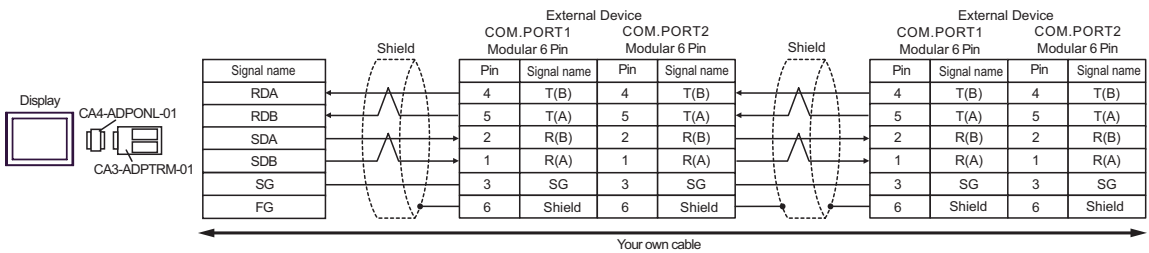
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



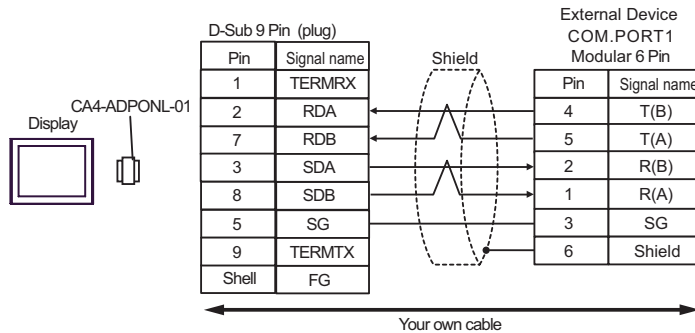
- 1:n Connection



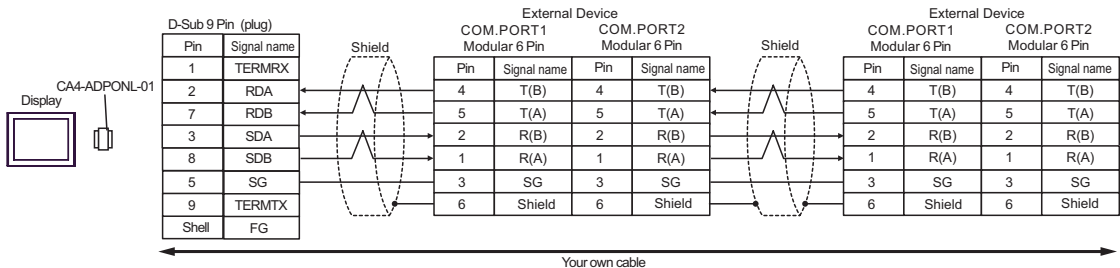
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



- 1:n Connection



**NOTE** • Termination resistance is not necessary.

Cable Diagram 5


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

\*1 All GP models except AGP-3302B

\*2 All ST models except AST-3211A

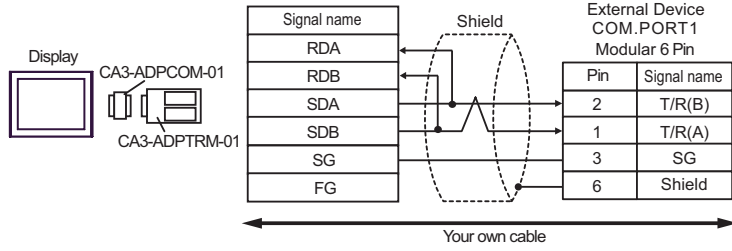
\*3 All GP models except GP-3200 series and AGP-3302B

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

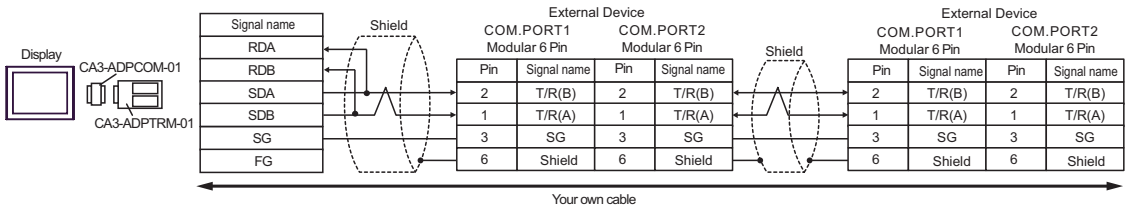
 ■ COM Port of IPC (page 6)

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

- 1:1 Connection



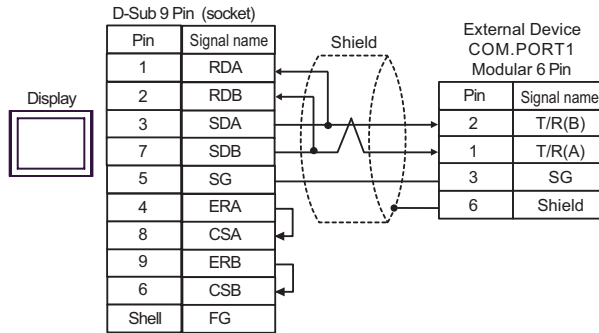
- 1: n connection



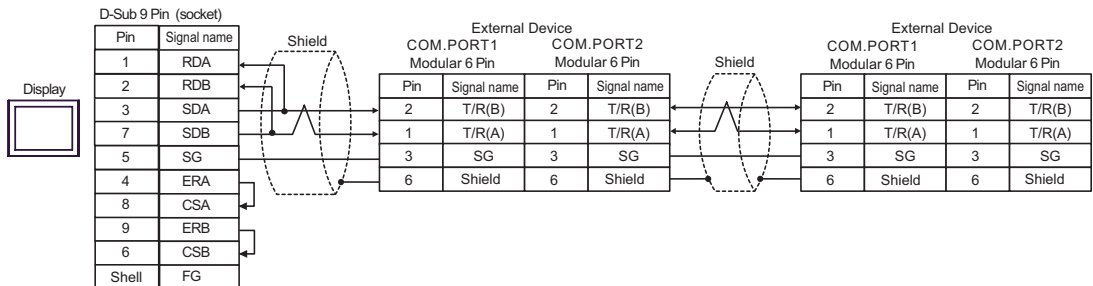
**NOTE** • Termination resistance is not necessary.

B) When using your own cable

- 1:1 Connection



- 1:n Connection

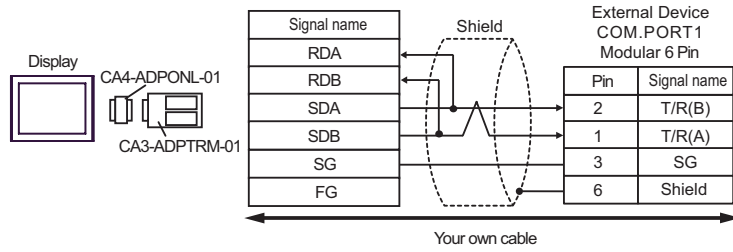


**NOTE** • Termination resistance is not necessary.

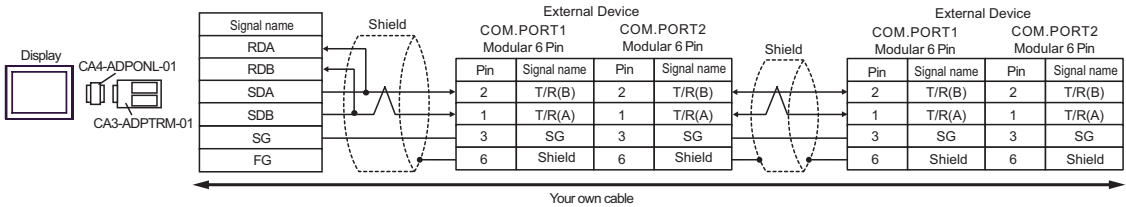


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection



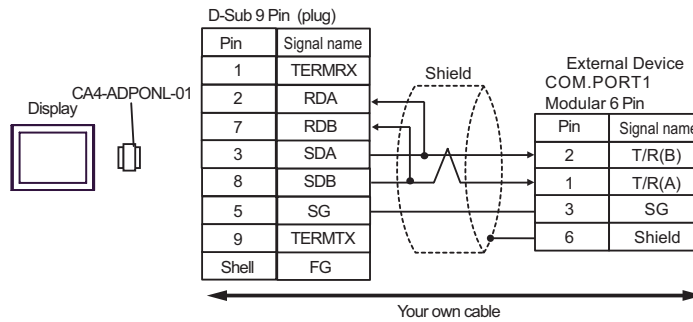
- 1:n Connection



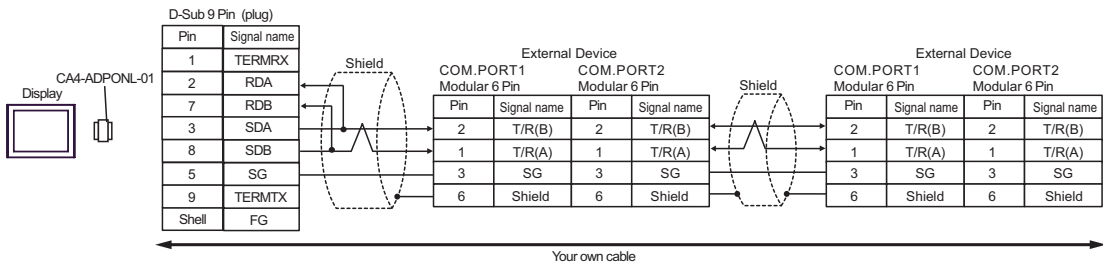
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



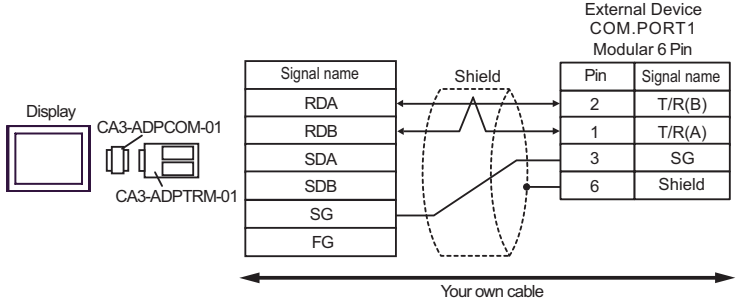
- 1:n Connection



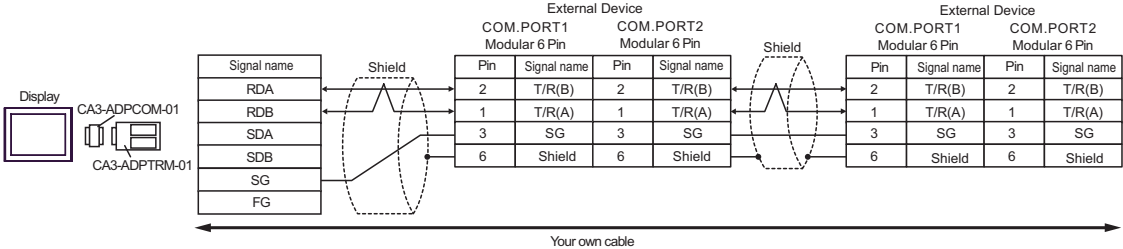
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



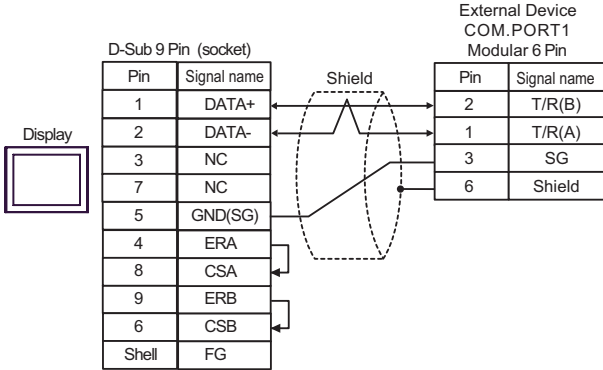
- 1: n connection



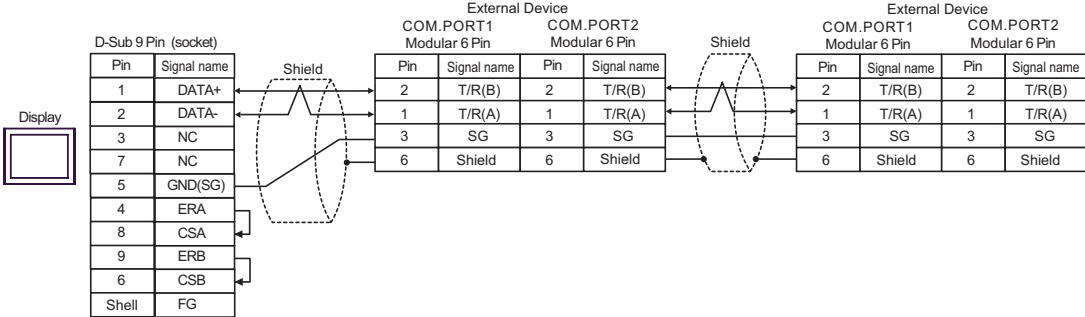
**NOTE** • Termination resistance is not necessary.

F) When using your own cable

- 1:1 Connection



- 1:n Connection



**NOTE** • Termination resistance is not necessary.

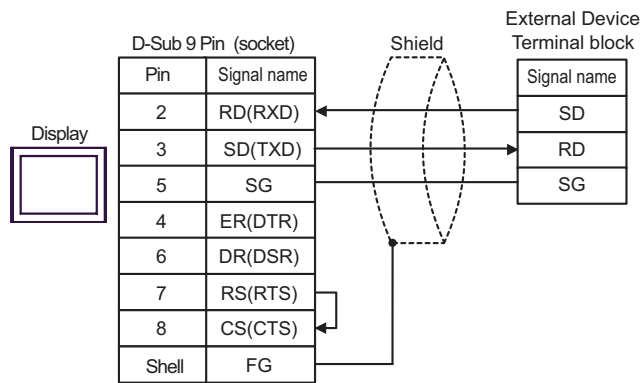
Cable Diagram 6

Display (Connection Port)	Cable	Remarks
GP (COM1) ST (COM1) LT (COM1) IPC*1 PC/AT	Your own cable	Cable length: 10m or less

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

☞ ■ COM Port of IPC (page 6)

When using your own cable




Cable Diagram 7

Display (Connection Port)	Cable		Remarks
GP* <sup>1</sup> (COM1) AGP-3302B (COM2) ST* <sup>2</sup> (COM2) LT (COM1) IPC* <sup>3</sup>	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 600m or less
	B	Your own cable	
GP* <sup>4</sup> (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

\*1 All GP models except AGP-3302B

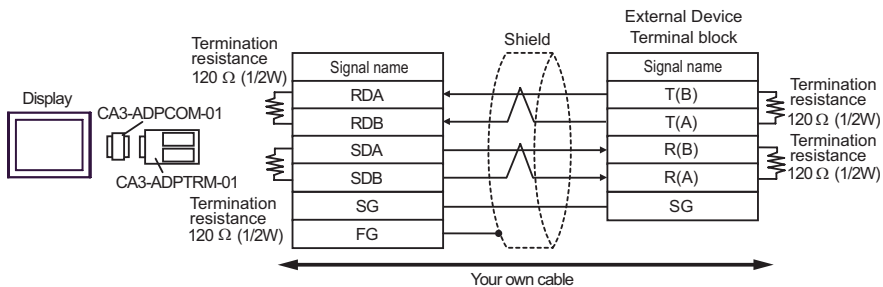
\*2 All ST models except AST-3211A

\*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.  
 ■ COM Port of IPC (page 6)

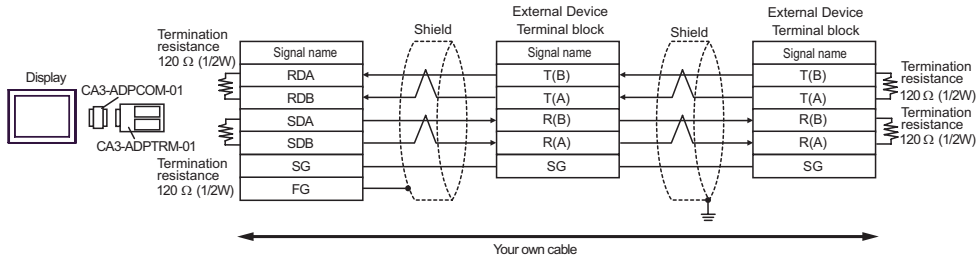
\*4 All GP models except GP-3200 series and AGP-3302B

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

- 1:1 Connection

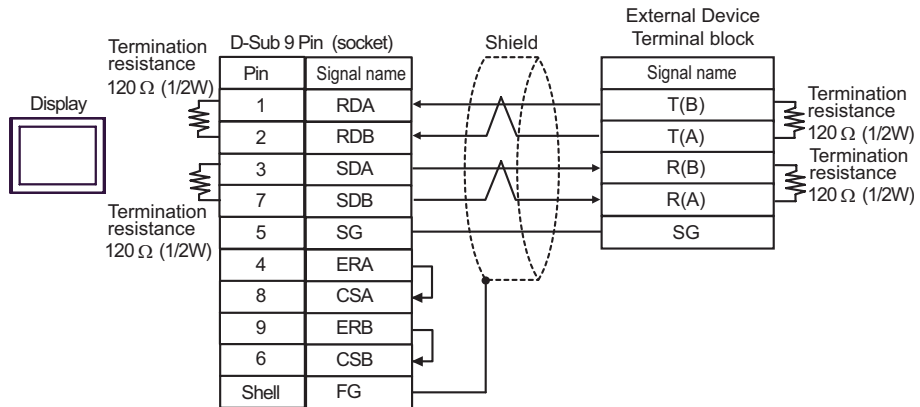


- 1:n connection

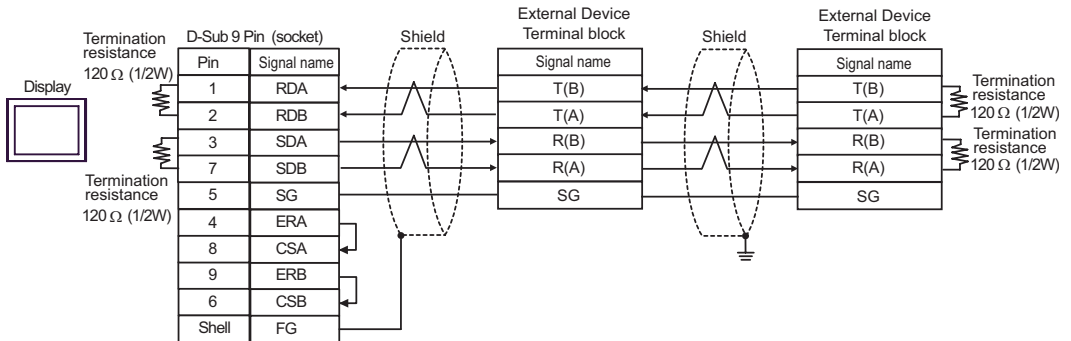


B) When using your own cable

- 1:1 Connection

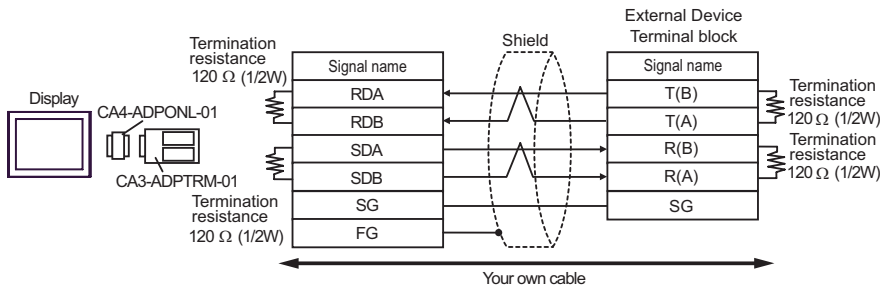


- 1:n Connection

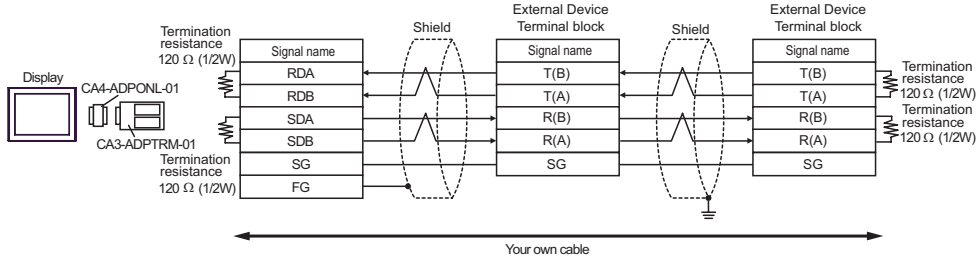


C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection

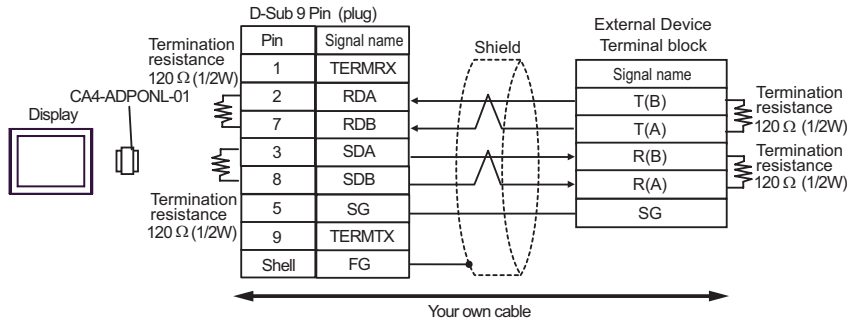


- 1:n Connection

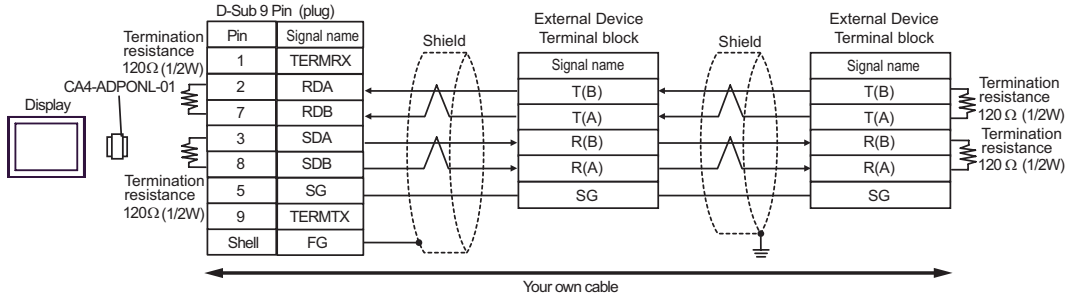


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

- 1:1 Connection



- 1:n Connection



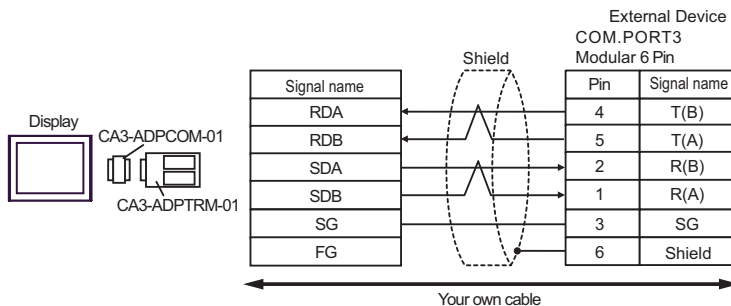
Cable Diagram 8

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 + Your own cable	Cable length: 5m or less
	B	Your own cable	
GP*4 (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

- \*1 All GP models except AGP-3302B
- \*2 All ST models except AST-3211A
- \*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.  
☞ ■ COM Port of IPC (page 6)
- \*4 All GP models except GP-3200 series and AGP-3302B

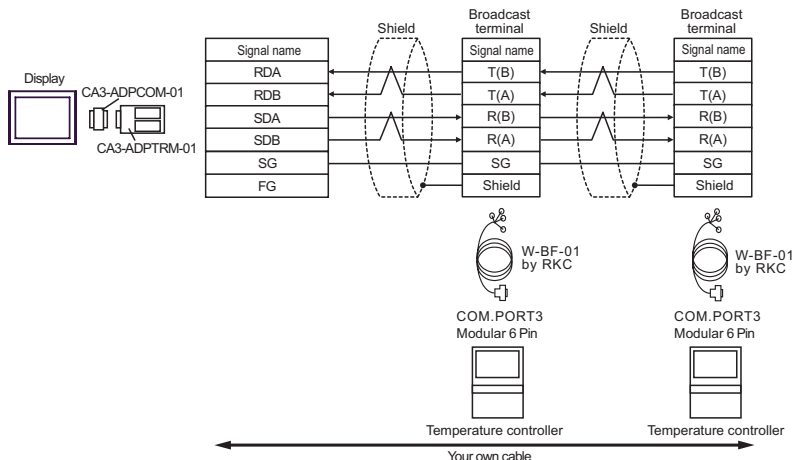
A) When using the COM port conversion adapter (CA3-ADPCOM-01) and the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection





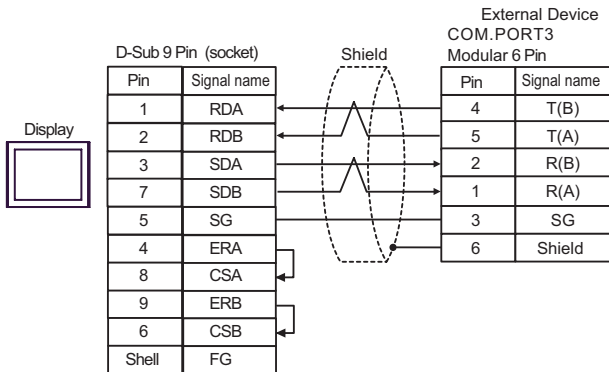
- 1: n connection



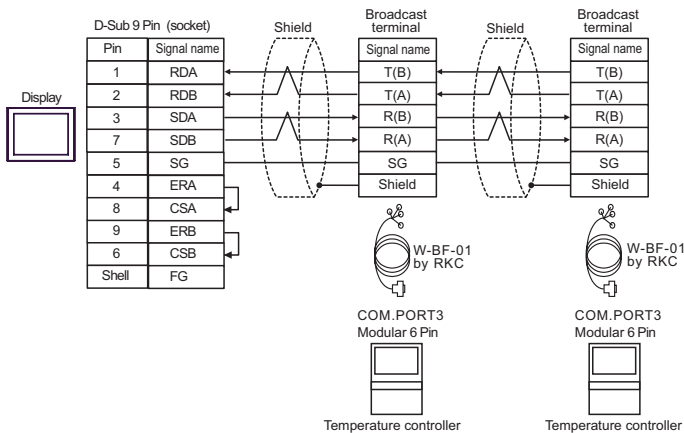
**NOTE** • Termination resistance is not necessary.

B) When using your own cable

- 1:1 Connection

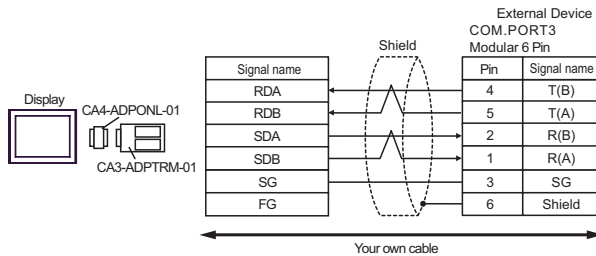


- 1:n Connection

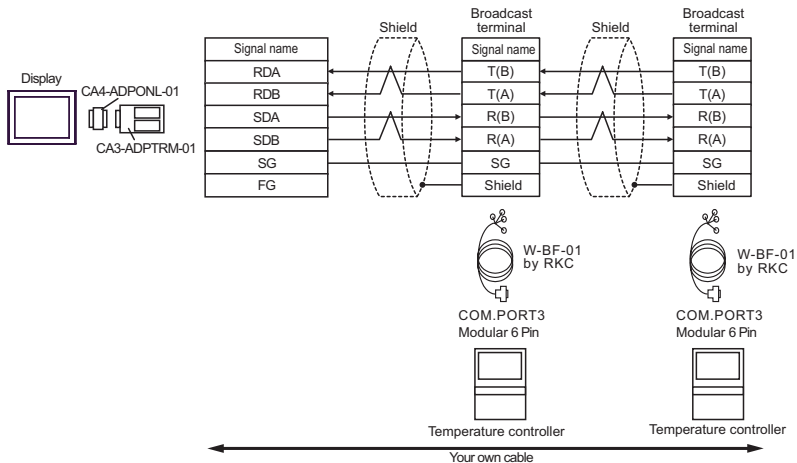


**NOTE** • Termination resistance is not necessary.

- C) When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face
- 1:1 Connection

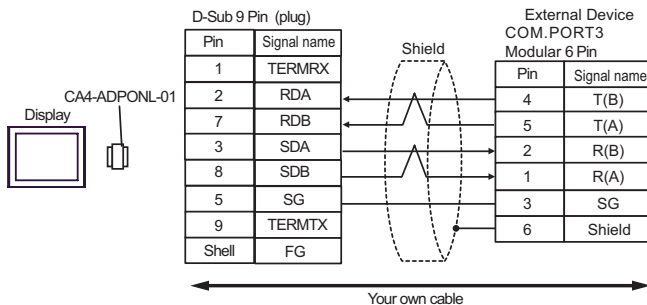


- 1:n Connection

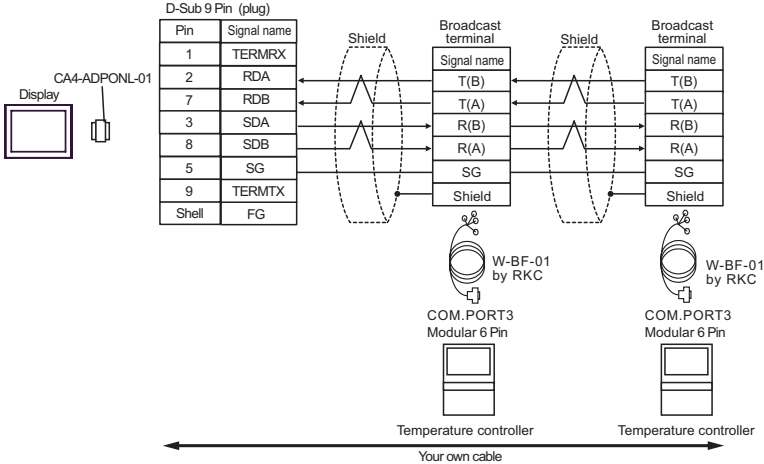


**NOTE** • Termination resistance is not necessary.

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



- 1:n Connection



**NOTE** • Termination resistance is not necessary.

Cable Diagram 9


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

\*1 All GP models except AGP-3302B

\*2 All ST models except AST-3211A

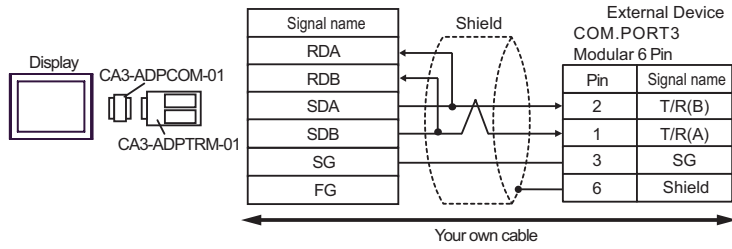
\*3 All GP models except GP-3200 series and AGP-3302B

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

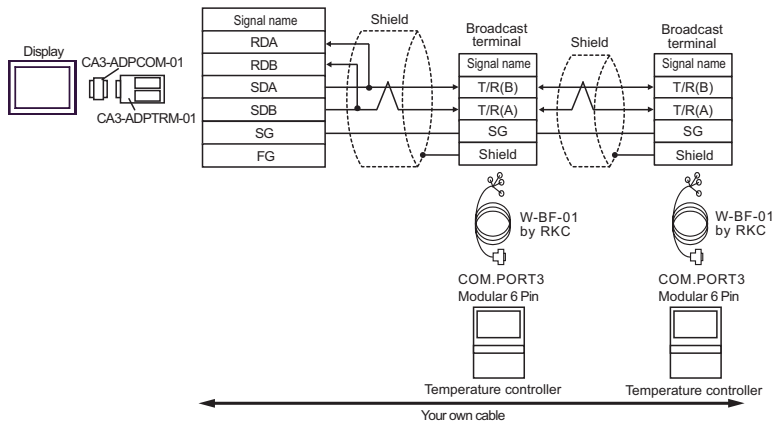
 ■ COM Port of IPC (page 6)

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

- 1:1 Connection



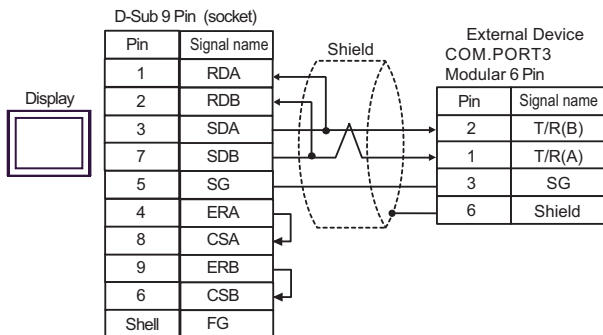
- 1: n connection



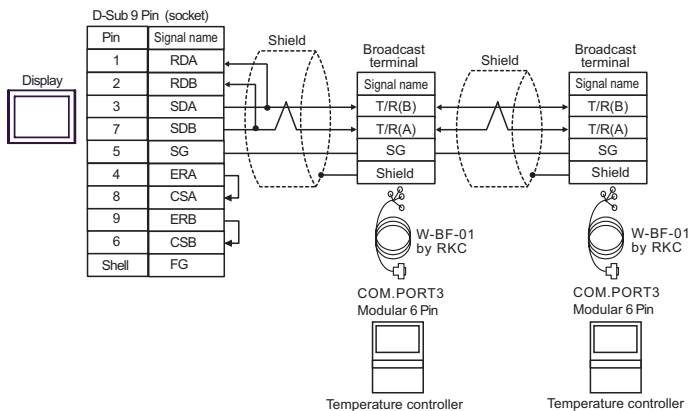
**NOTE** • Termination resistance is not necessary.

B) When using your own cable

- 1:1 Connection



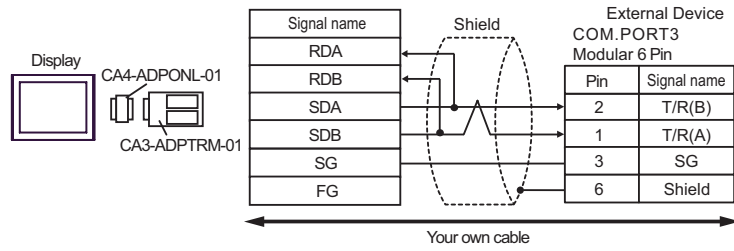
- 1:n Connection



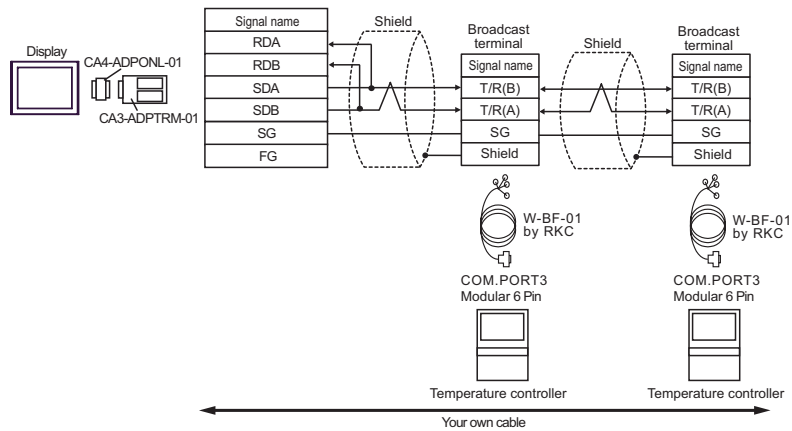
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



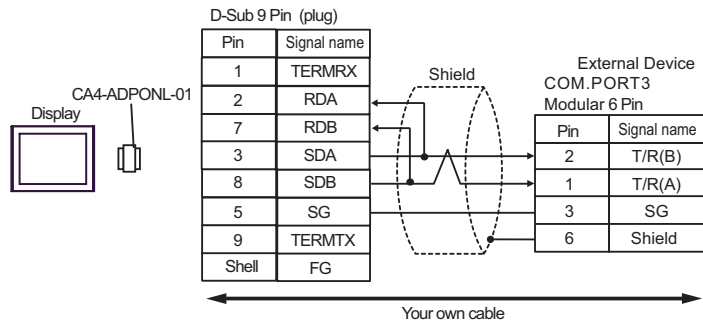
- 1:n Connection



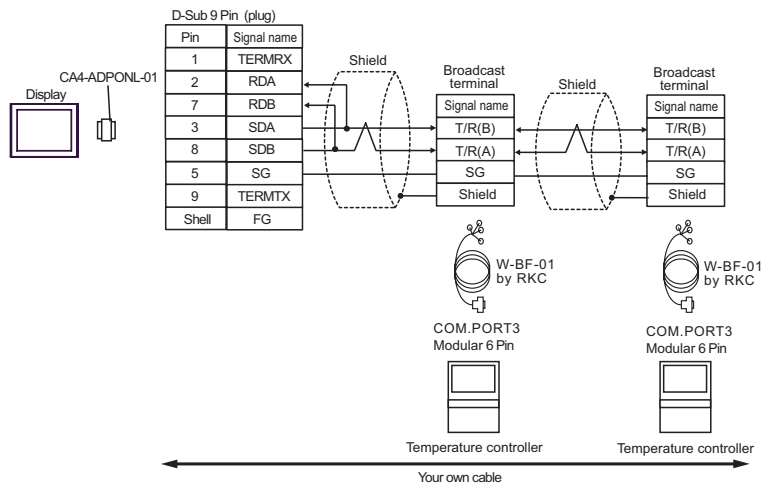
**NOTE** • Termination resistance is not necessary.

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

- 1:1 Connection



- 1:n Connection

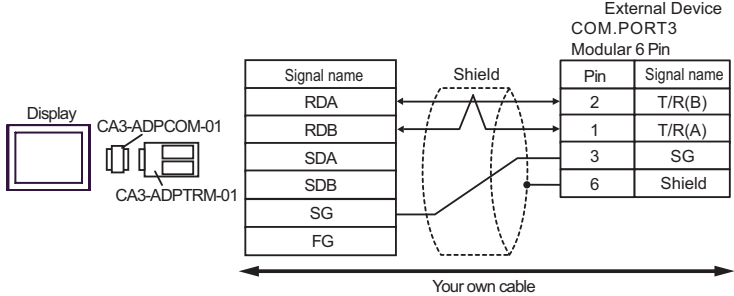


**NOTE** • Termination resistance is not necessary.

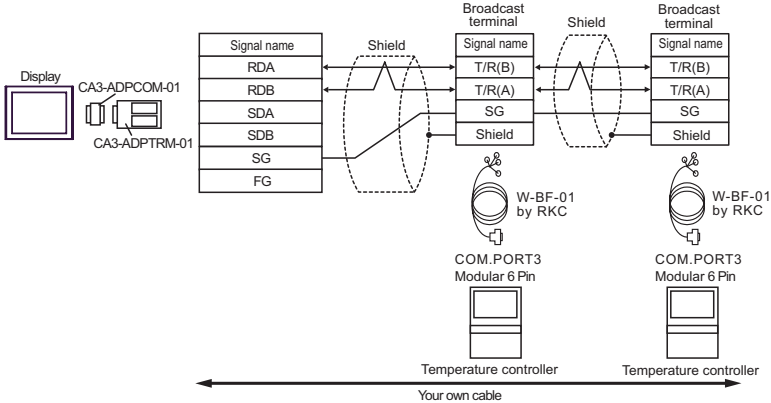


E) When using the COM port conversion adapter (CA3-ADPCOM-01) and the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face

- 1:1 Connection



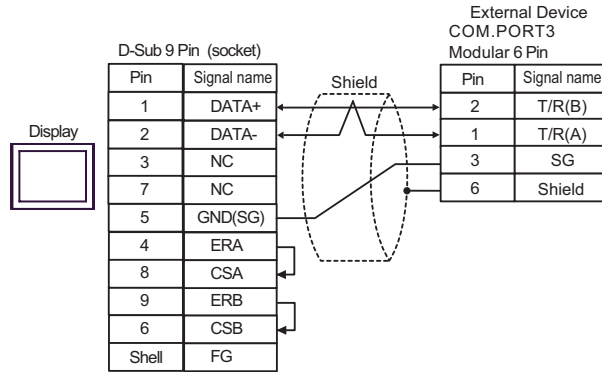
- 1: n connection



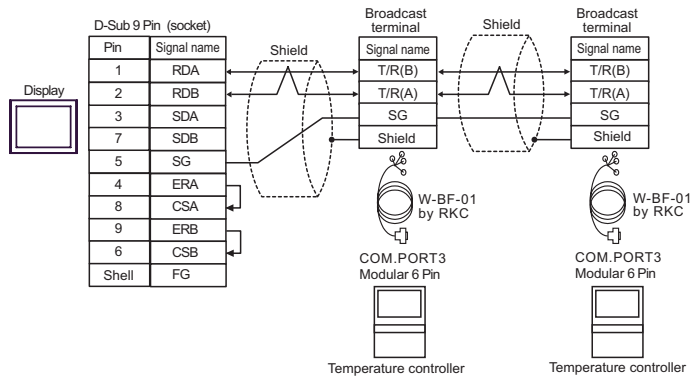
**NOTE** • Termination resistance is not necessary.

F) When using your own cable

- 1:1 Connection



- 1:n Connection




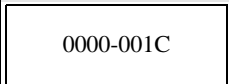

**NOTE** • Termination resistance is not necessary.

## 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.

### 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		*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)"

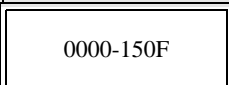

- Please refer to the precautions on manual notation for icons in the table.

 "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		*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	<span style="border: 1px solid black; padding: 2px;">L/H</span>	*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		*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		*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		*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.

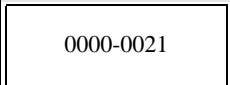
**IMPORTANT**

- 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		*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		*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		*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**

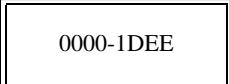

- To set [Enable System Data Area] in the system area setting of GP-Pro EX may cause malfunction. Do not set [Enable System Data Area].

- 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		*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

## 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	<p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• IP address is displayed such as "IP address(Decimal): MAC address( Hex)".</li> <li>• Device address is displayed such as "Address: Device address".</li> <li>• Received error codes are displayed such as "Decimal[Hex]".</li> </ul>

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.