YOKOGAWA Electric Corporation

Personal Computer Link SIO Driver

Introduction

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

In this manual, the connection procedure will be described by following the below sections:

1	System Configuration This section shows the types of External Devices which can be connected and SIO type.	☞"1 System Configuration" (page 3)
2	Selection of External Device Select a model (series) of the External Device to be connected and connection method.	☞"2 Selection of External Device" (page 8)
3	Example of Communication Settings This section shows setting examples for communicating between the Display and the External Device.	☞"3 Example of Communication Setting" (page 9)
4	Communication Settings This section describes communication setup items on the Display. Set communication settings of the Display with GP-Pro EX or in off-line mode.	☞"4 Setup Items" (page 49)
5	Cable Diagram This section shows cables and adapters for connecting the Display and the External Device.	☞"5 Cable Diagram" (page 54)

Operation

1 System Configuration

The system configuration in the case when the External Device of YOKOGAWA Electric Corp. and the Display are connected is shown.

IMPORTANT
- You cannot connect more than 2 Display units simultaneously by using CPU Direct and Personal Computer Link Module.
- Pass-Through Function can be used only when the display is connected to the programming port on the CPU.

1.1 CPU Direct

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FA-M3	F3SP21-0N F3SP25-2N F3SP28-3N F3SP35-5N F3SP38-6N F3SP53-4H F3SP58-6H F3SP28-3S F3SP38-6S F3SP53-4S F3SP58-6S F3SP59-7S	Programming port on CPU	RS232C	Setting Example 1 (page 9)	Cable Diagram1 (page 54)
	F3SP66-4S F3SP67-6S	SIO port on CPU unit	RS232C	Setting Example 20 (page 47)	Cable Diagram 9 (page 92)

1.2 Personal Computer Link Module

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FA-M3	F3SP20-0N F3SP21-0N F3SP25-2N F3SP28-3N F3SP30-0N F3SP35-5N F3SP36-3N F3SP38-6N F3SP53-4H F3SP58-6H F3SP28-3S F3SP38-6S F3SP53-4S F3SP58-6S F3SP59-7S F3SP66-4S F3SP67-6S	F3LC11-1N, F3LC11-1F, RS232C port on F3LC12-1F	RS232C	Setting Example 4 (page 15)	Cable Diagram 3 (page 60)
		RS422/485 (4Wire) port on F3LC11-2N, F3LC11-2F	RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 2 (page 55)
		RS422/485 (2Wire) port on F3LC11-2N, F3LC11-2F	RS422/485 (2wire)	Setting Example 2 (page 11)	Cable Diagram 4 (page 61)

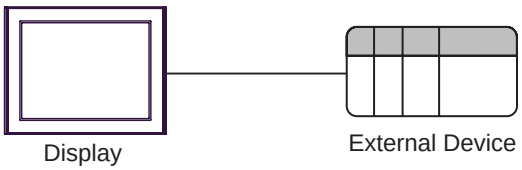
1.3 M&C Controllers

Series	CPU*1	Link I/F	SIO Type	Setting Example	Cable Diagram
Temperature Controllers (UT100 Series)	UT130-☐☐/RS	Terminal Block on the controller	RS422/485 (2wire)	Setting Example 5 (page 17)	Cable Diagram 5 (page 68)
	UT150-☐☐/RS	Terminal Block on the controller	RS422/485 (2wire)	Setting Example 6 (page 19)	Cable Diagram 5 (page 68)
	UT152-☐☐/RS	Terminal Block on the controller	RS422/485 (2wire)	Setting Example 7 (page 21)	Cable Diagram 5 (page 68)
	UT155-☐☐/RS	Terminal Block on the controller	RS422/485 (2wire)	Setting Example 8 (page 23)	Cable Diagram 5 (page 68)
	UP150-☐☐/RS	Terminal Block on the controller	RS422/485 (2wire)	Setting Example 9 (page 25)	Cable Diagram 5 (page 68)
Digital Indicating Controllers	UT320-☐1	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 10 (page 27)	Cable Diagram 6 (page 75)
			RS422/485 (2wire)	Setting Example 11 (page 29)	Cable Diagram 7 (page 80)
	UT350-☐1	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 12 (page 31)	Cable Diagram 6 (page 75)
			RS422/485 (2wire)	Setting Example 13 (page 33)	Cable Diagram 7 (page 80)
	UT420-☐7	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 14 (page 35)	Cable Diagram 6 (page 75)
			RS422/485 (2wire)	Setting Example 15 (page 37)	Cable Diagram 7 (page 80)
	UT450-☐1 UT450-☐2	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 16 (page 39)	Cable Diagram 6 (page 75)
			RS422/485 (2wire)	Setting Example 17 (page 41)	Cable Diagram 7 (page 80)
UT2000	UT2400-☐	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 18 (page 43)	Cable Diagram 8 (page 87)
	UT2800-☐	Terminal Block on the controller	RS422/485 (4wire)	Setting Example 19 (page 45)	Cable Diagram 8 (page 87)

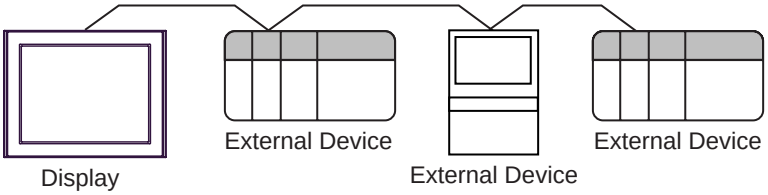
*1 Model number of external device, "☐" differs depending on the specification of external device.

■ Connection Configuration

- 1:1 Connection



- 1:n Connection



NOTE

- FA-M3 or M&C controller (PA device) supported by this driver can be connected up to 16 at 1:n connection.
- When Sequence Control is not required, the system can be composed only of M&C controller.

■ IPC COM Port

When connecting IPC with an External Device, the COM port used depends on the series and SIO type. Please refer to the IPC manual for details.

Usable port

Series	Usable port		
	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)
PS-2000B	COM1[*1], COM2, COM3[*1], COM4	-	-
PS-3450A, PS-3451A	COM1, COM2[*1*2]	COM2[*1*2]	COM2[*1*2]
PS-3650A, PS-3651A	COM1[*1]	-	-
PS-3700A (Pentium®4-M) PS-3710A	COM1[*1], COM2[*1], COM3[*2], COM4	COM3[*2]	COM3[*2]
PS-3711A	COM1[*1], COM2[*2]	COM2[*2]	COM2[*2]
PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T	COM1[*1*2], COM2[*1], COM3, COM4	COM1[*1*2]	COM1[*1*2]

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

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

*1 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)

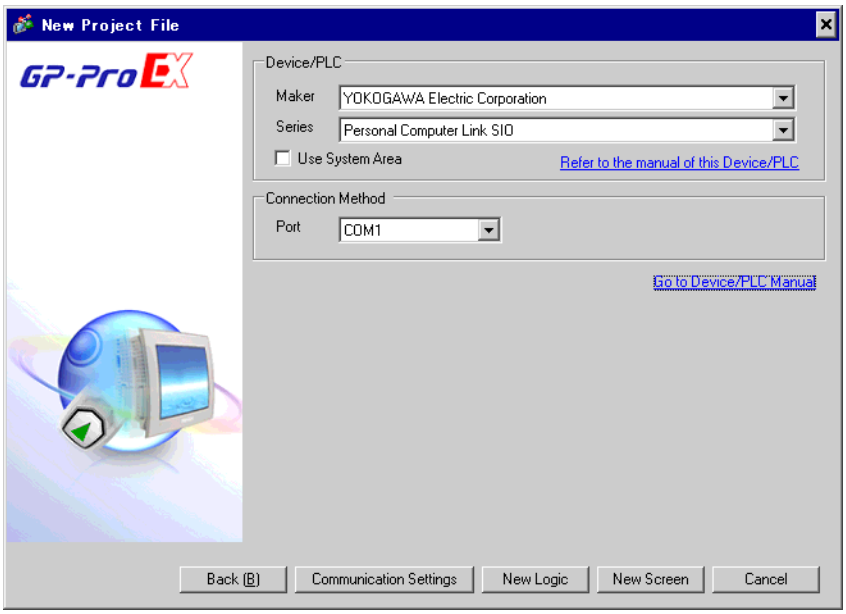
DIP switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA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

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

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

2 Selection of External Device

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "YOKOGAWA Electric Corporation".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "Personal Computer Link SIO". Check the External Device which can be connected in "Personal Computer Link SIO" in system configuration. ☞ "1 System Configuration" (page 3)
Use System Area	Check this option when you synchronize the system data area of Display and the device (memory) of External Device. When synchronized, you can use the ladder program of External Device to switch the display or display the window on the display. Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)" This can be also set with GP-Pro EX or in off-line mode of Display. Cf. GP-Pro EX Reference Manual " 5.17.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting" Cf. Maintenance/Troubleshooting "2.15.1 Settings common to all Display models◆System Area Settings"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

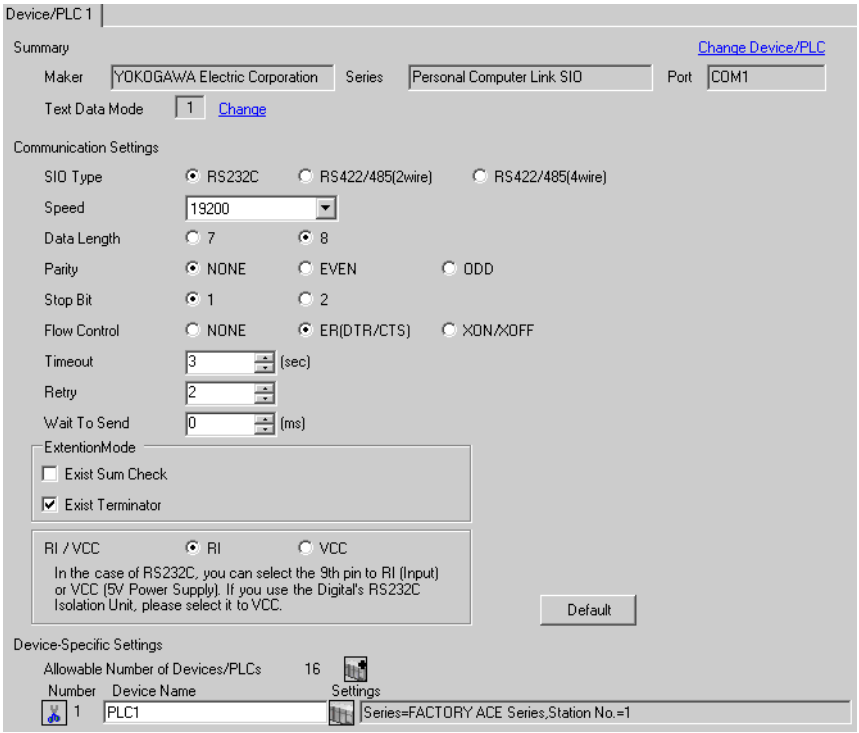
Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

■ Setting of GP-Pro EX

◆ Communication Settings

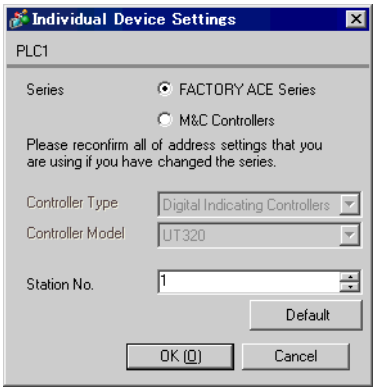
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



■ Setting of External Device

Execute [Configuration] from the [Project] menu in the ladder tool and set as below. Please refer to each maker's manual of the External Device for more detail on ladder tool.

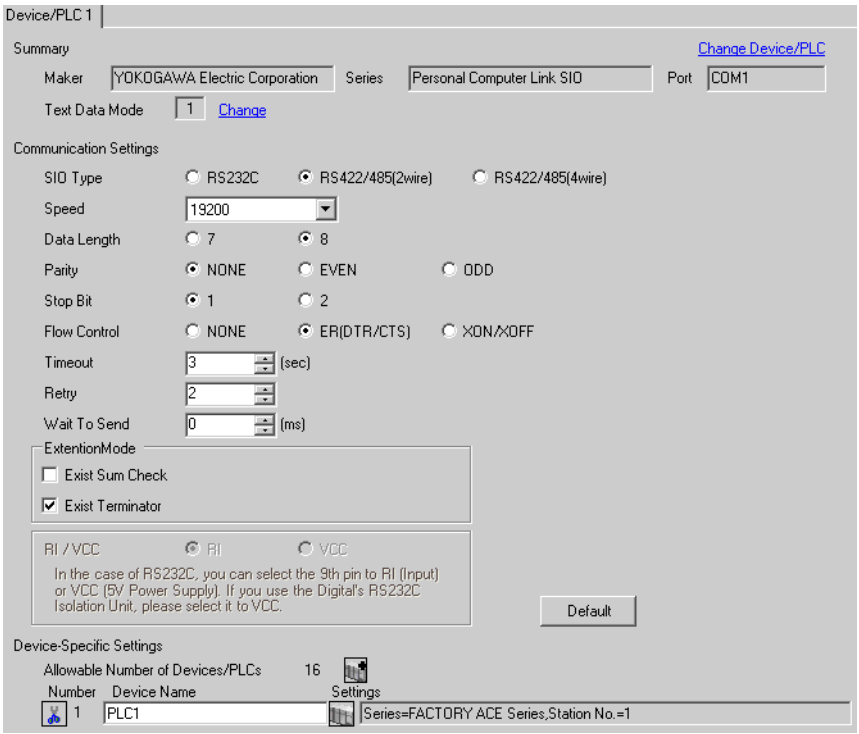
Setup Items	Settings
Speed	19200
Data Length	8
Parity	None
Stop Bit	1
Exist Sum Check	None
Exist Terminator	Exists
Protect	None

3.2 Setting Example 2

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

■ Setting of External Device

Set the computer link module as below. Please refer to each maker's manual of the External Device for more detail.

◆ Transmission Speed Setting Switch

Setup Items	Settings
Speed	19200

◆ Data Code Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	Data Length
SW2	OFF	Parity Bit
SW3	OFF	-
SW4	OFF	Stop Bit
SW5	OFF	Exist Sum Check
SW6	ON	Exist Terminator
SW7	OFF	Protect
SW8	OFF	Always OFF

◆ Station No. Setting Switch

Setup Items	Settings
Station No.	No.1 station

NOTE

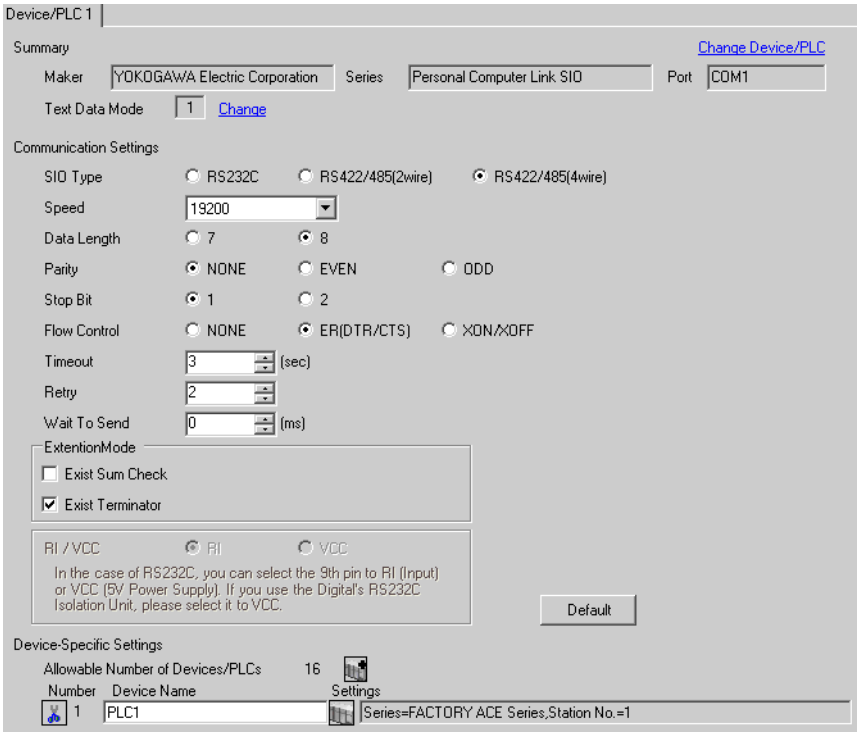
- Set the termination resistance switch of only the module which terminates the connection to 2-WIRE. Set other switches to OFF.

3.3 Setting Example 3

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

■ Setting of External Device

Set the computer link module as below. Please refer to each maker's manual of the External Device for more detail.

◆ Transmission Speed Setting Switch

Setup Items	Settings
Speed	19200

◆ Data Code Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	Data Length
SW2	OFF	Parity Bit
SW3	OFF	-
SW4	OFF	Stop Bit
SW5	OFF	Exist Sum Check
SW6	ON	Exist Terminator
SW7	OFF	Protect
SW8	OFF	Always OFF

◆ Station No. Setting Switch

Setup Items	Settings
Station No.	No.1 station

NOTE

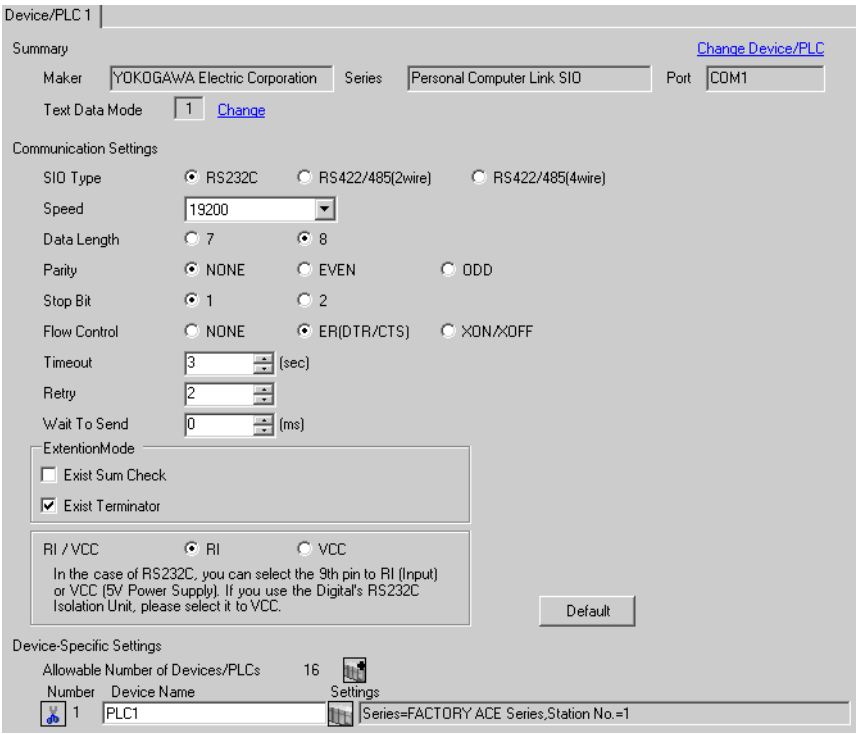
- Set the termination resistance switch of only the module which terminates the connection to 4-WIRE. Set other switches to OFF.

3.4 Setting Example 4

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

■ Setting of External Device

Set the computer link module as below. Please refer to each maker's manual of the External Device for more detail.

◆ Transmission Speed Setting Switch

Setup Items	Settings
Speed	19200

◆ Data Code Setting Switch

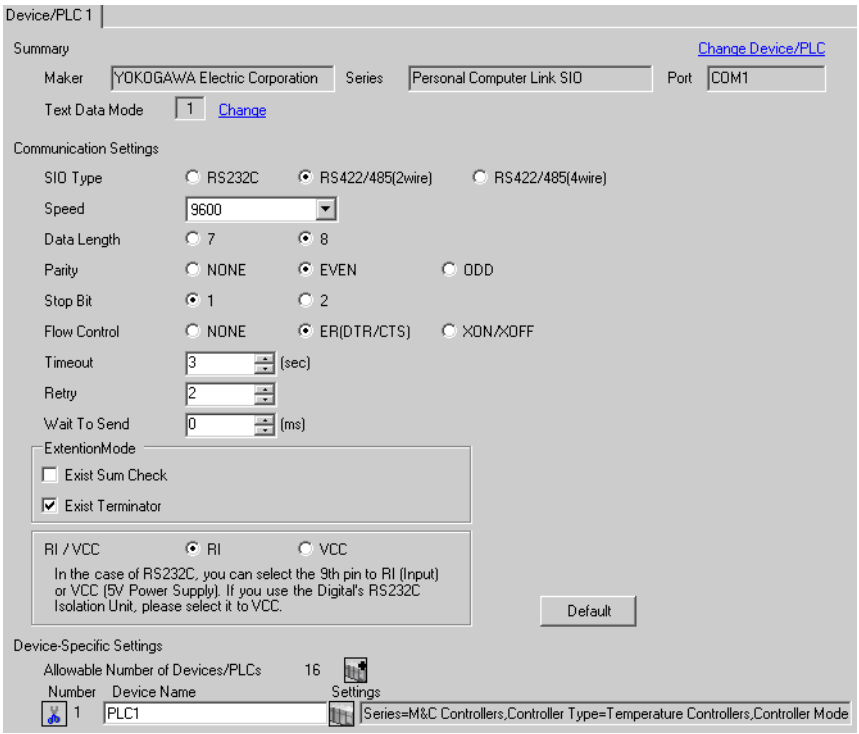
DIP Switch	Settings	Setup Description
SW1	ON	Data Length
SW2	OFF	Parity Bit
SW3	OFF	-
SW4	OFF	Stop Bit
SW5	OFF	Exist Sum Check
SW6	ON	Exist Terminator
SW7	OFF	Protect
SW8	OFF	Always OFF

3.5 Setting Example 5

■ Setting of GP-Pro EX

◆ Communication Settings

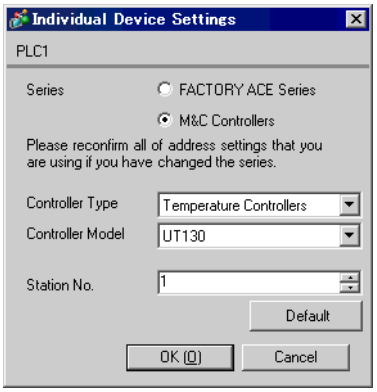
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display [LOC].

4 Set “-1” to [LOC] and press SET/ENT key.
Display changes to [Setup Parameter Setting Display].

5 Press SET/ENT key several times to display communication setup items.

6 Enter set value using UP or DOWN key and press SET/ENT key.

7 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

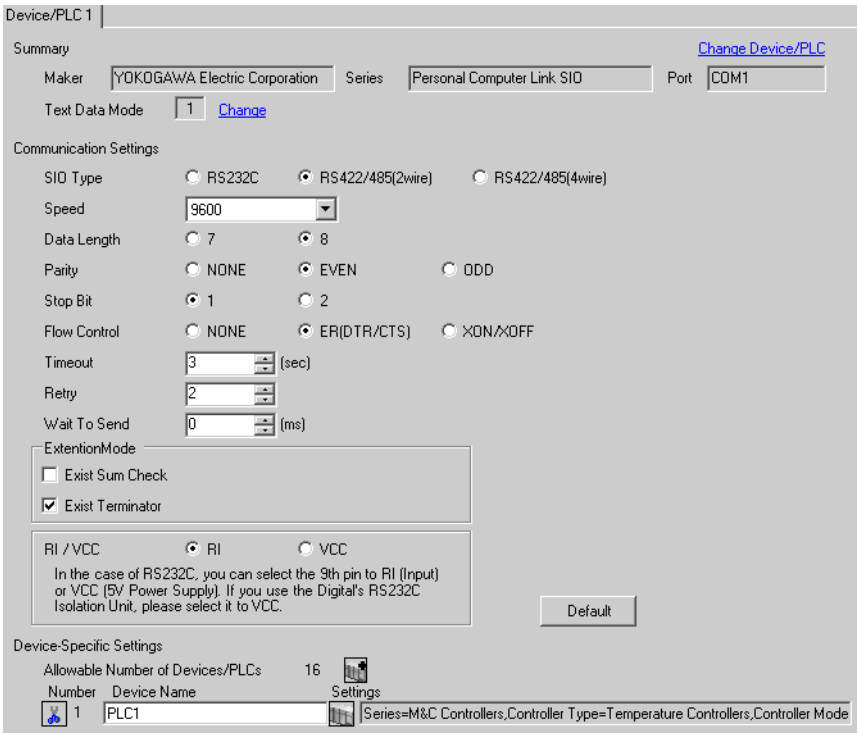
Setup Items	Settings
PSL	0: PC-link communication
Adr	1
bPS	9.6: 9600bps
PrI	Evn
StP	1
dLn	8

3.6 Setting Example 6

■ Setting of GP-Pro EX

◆ Communication Settings

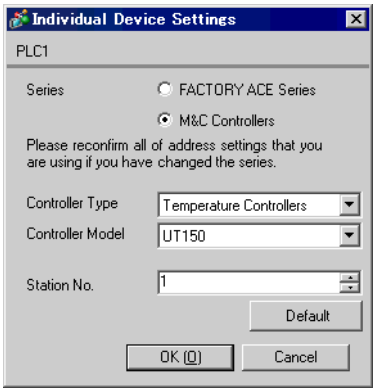
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display [LOC].

4 Set “-1” to [LOC] and press SET/ENT key.
Display changes to [Setup Parameter Setting Display].

5 Press SET/ENT key several times to display communication setup items.

6 Enter set value using UP or DOWN key and press SET/ENT key.

7 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

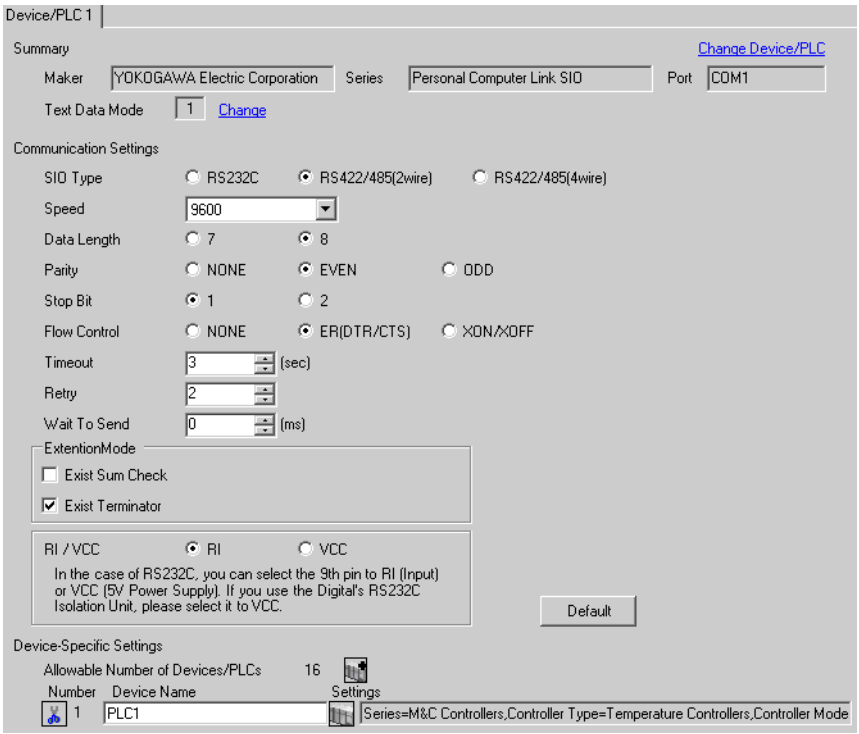
Setup Items	Settings
PSL	0: PC-link communication
Adr	1
bPS	9.6: 9600bps
PrI	Evn
StP	1
dLn	8

3.7 Setting Example 7

■ Setting of GP-Pro EX

◆ Communication Settings

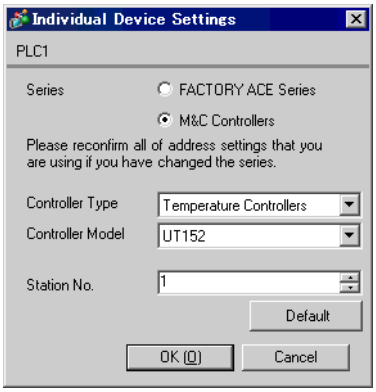
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display [LOC].

4 Set “-1” to [LOC] and press SET/ENT key.
Display changes to [Setup Parameter Setting Display].

5 Press SET/ENT key several times to display communication setup items.

6 Enter set value using UP or DOWN key and press SET/ENT key.

7 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

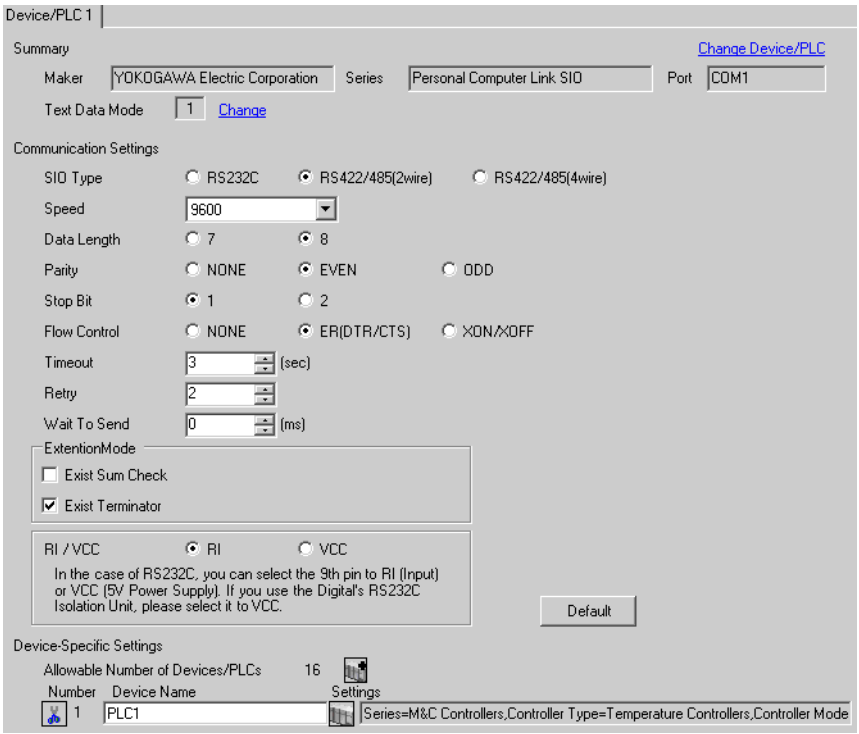
Setup Items	Settings
PSL	0: PC-link communication
Adr	1
bPS	9.6: 9600bps
PrI	Evn
StP	1
dLn	8

3.8 Setting Example 8

■ Setting of GP-Pro EX

◆ Communication Settings

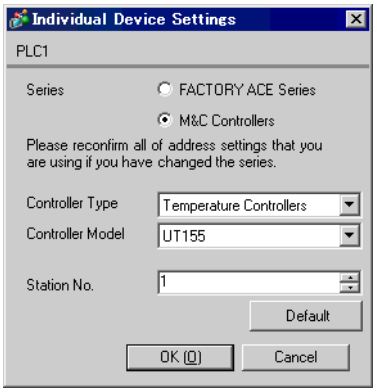
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display [LOC].

4 Set “-1” to [LOC] and press SET/ENT key.
Display changes to [Setup Parameter Setting Display].

5 Press SET/ENT key several times to display communication setup items.

6 Enter set value using UP or DOWN key and press SET/ENT key.

7 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

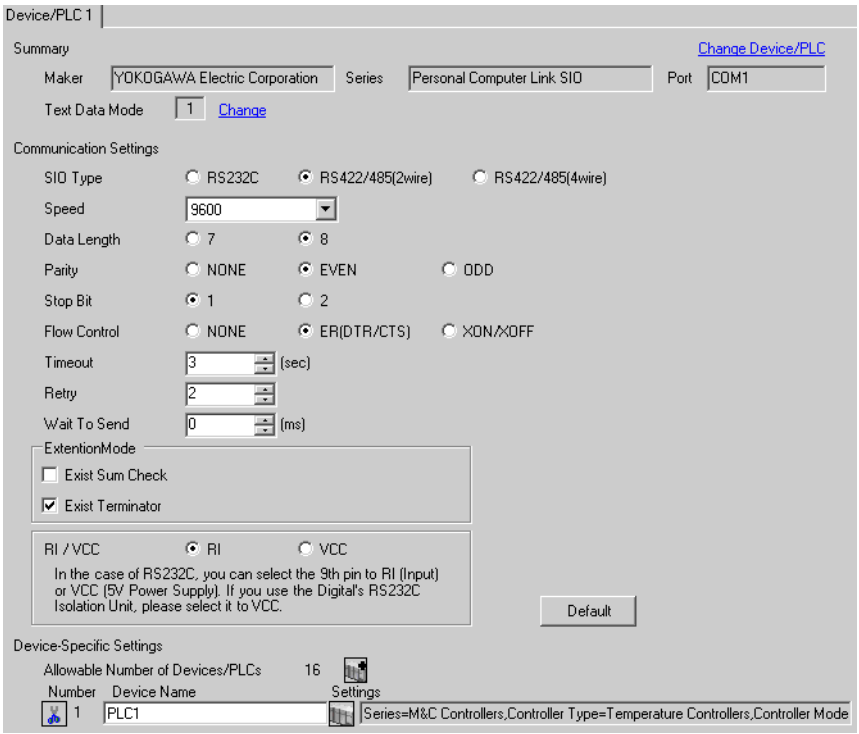
Setup Items	Settings
PSL	0: PC-link communication
Adr	1
bPS	9.6: 9600bps
PrI	Evn
StP	1
dLn	8

3.9 Setting Example 9

■ Setting of GP-Pro EX

◆ Communication Settings

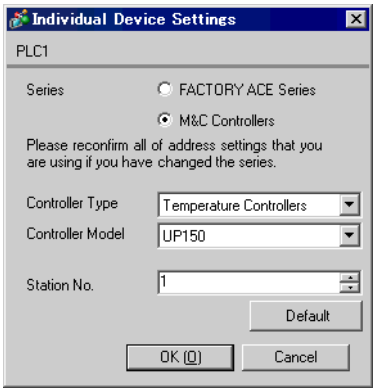
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display [LOC].

4 Set “-1” to [LOC] and press SET/ENT key.
Display changes to [Setup Parameter Setting Display].

5 Press SET/ENT key several times to display communication setup items.

6 Enter set value using UP or DOWN key and press SET/ENT key.

7 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

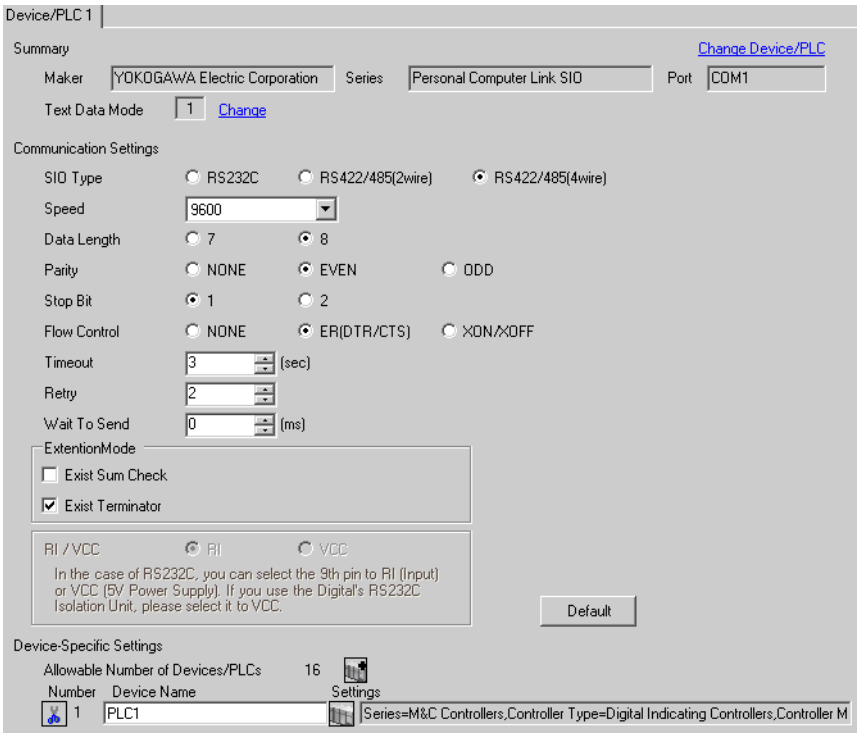
Setup Items	Settings
PSL	0: PC-link communication
Adr	1
bPS	9.6: 9600bps
PrI	Evn
StP	1
dLn	8

3.10 Setting Example 10

■ Setting of GP-Pro EX

◆ Communication Settings

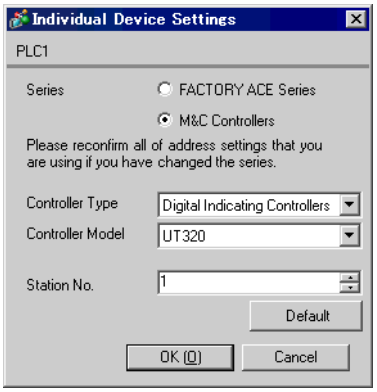
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display communication setup items.

4 Enter set value using UP or DOWN key and press SET/ENT key.

5 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

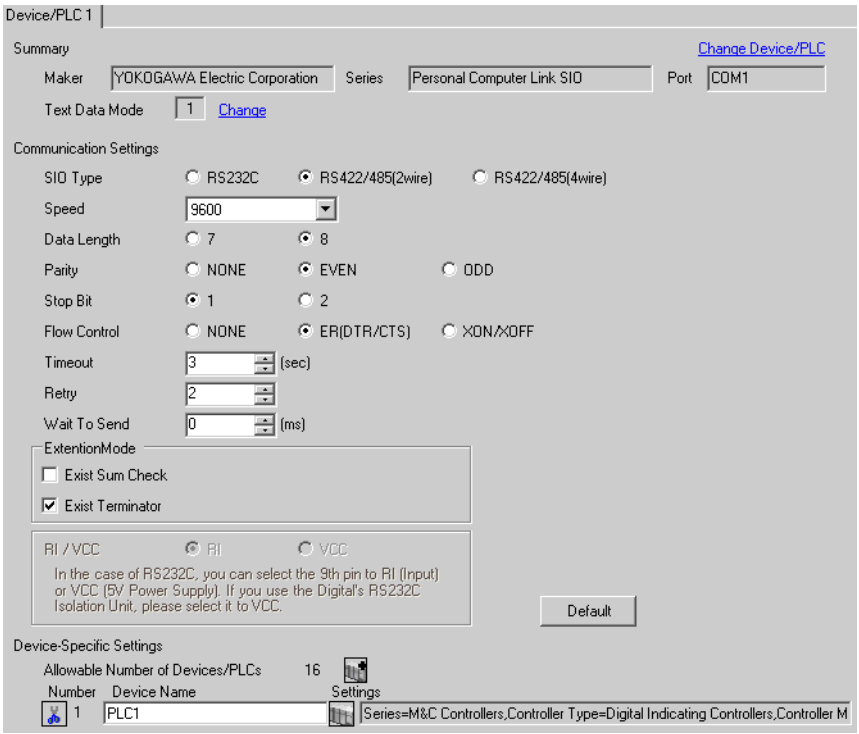
Setup Items	Settings
P.SL	0: PC link communication
bPS	4: 9600 (bps)
PrI	1: Even
StP	1
dLn	8
Adr	1

3.11 Setting Example 11

■ Setting of GP-Pro EX

◆ Communication Settings

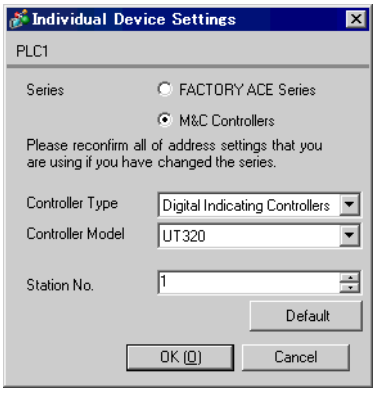
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display communication setup items.

4 Enter set value using UP or DOWN key and press SET/ENT key.

5 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

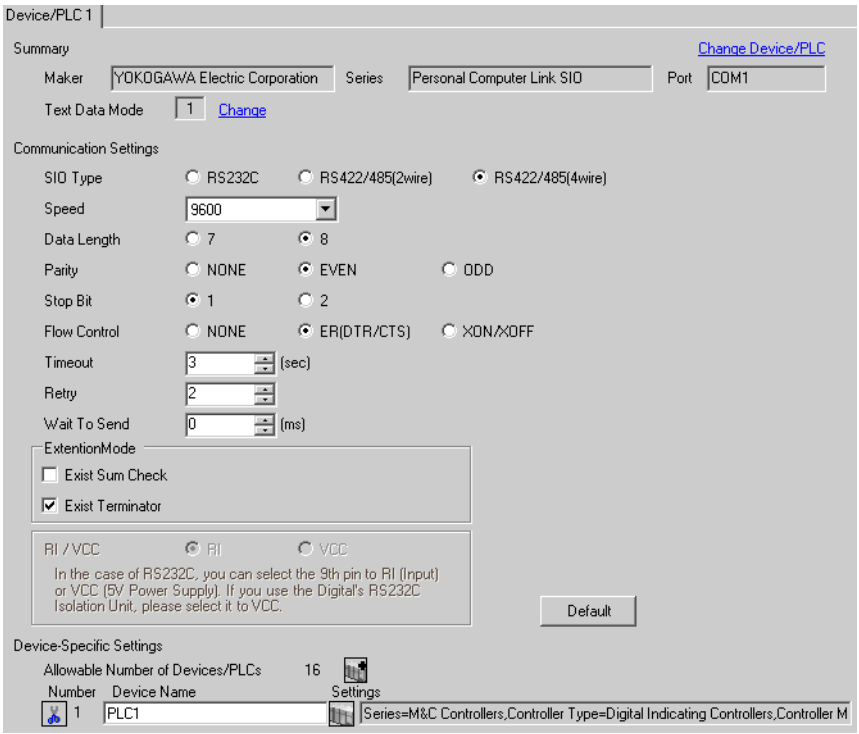
Setup Items	Settings
P.SL	0: PC link communication
bPS	4: 9600 (bps)
PrI	1: Even
StP	1
dLn	8
Adr	1

3.12 Setting Example 12

■ Setting of GP-Pro EX

◆ Communication Settings

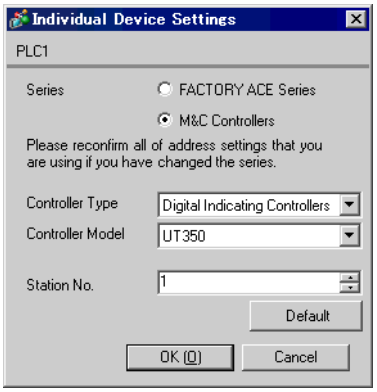
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display communication setup items.

4 Enter set value using UP or DOWN key and press SET/ENT key.

5 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

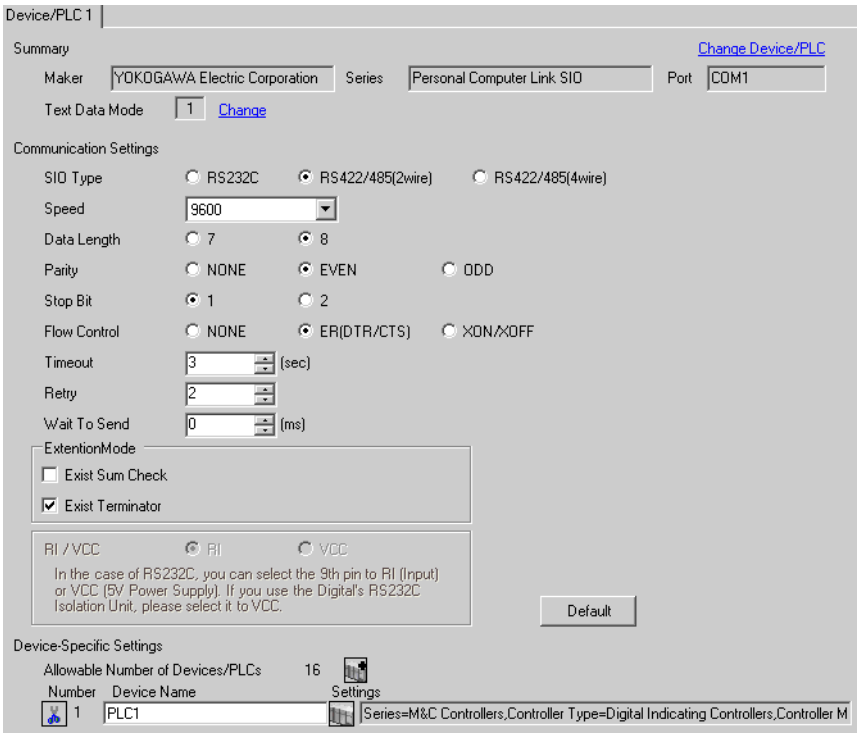
Setup Items	Settings
P.SL	0: PC link communication
bPS	4: 9600 (bps)
PrI	1: Even
StP	1
dLn	8
Adr	1

3.13 Setting Example 13

■ Setting of GP-Pro EX

◆ Communication Settings

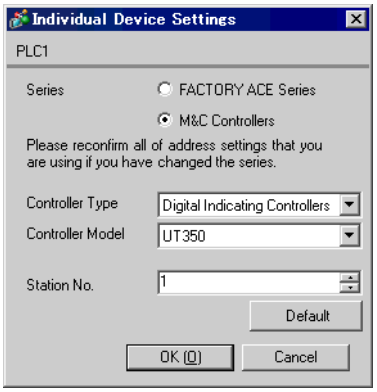
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press SET/ENT key several times to display communication setup items.

4 Enter set value using UP or DOWN key and press SET/ENT key.

5 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

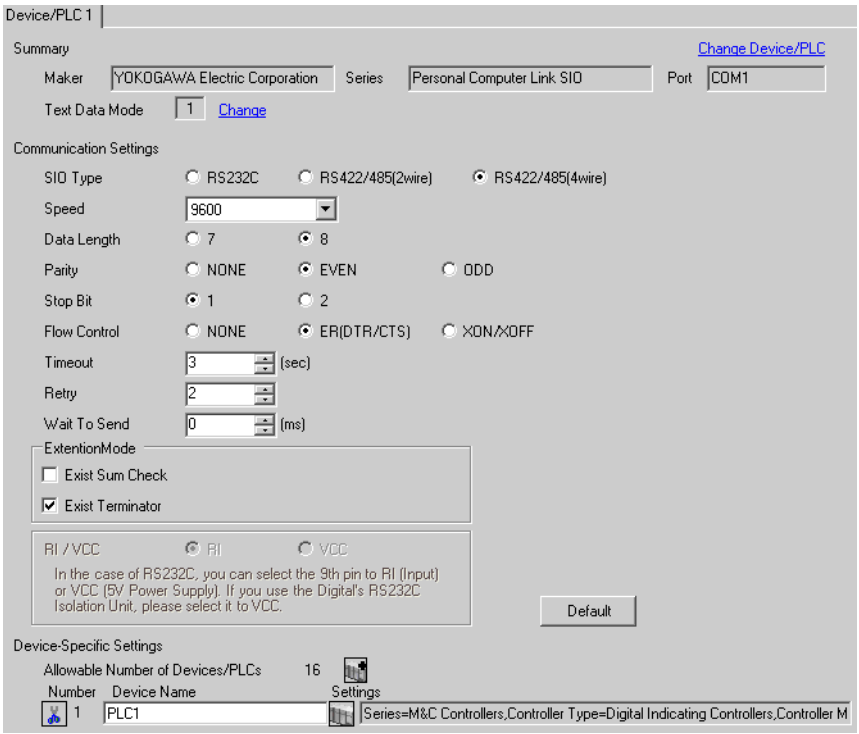
Setup Items	Settings
P.SL	0: PC link communication
bPS	4: 9600 (bps)
PrI	1: Even
StP	1
dLn	8
Adr	1

3.14 Setting Example 14

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press UP or DOWN key several times to display [r485].

4 Press SET/ENT key several times to display communication setup items.

5 Enter set value using UP or DOWN key and press SET/ENT key.

6 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

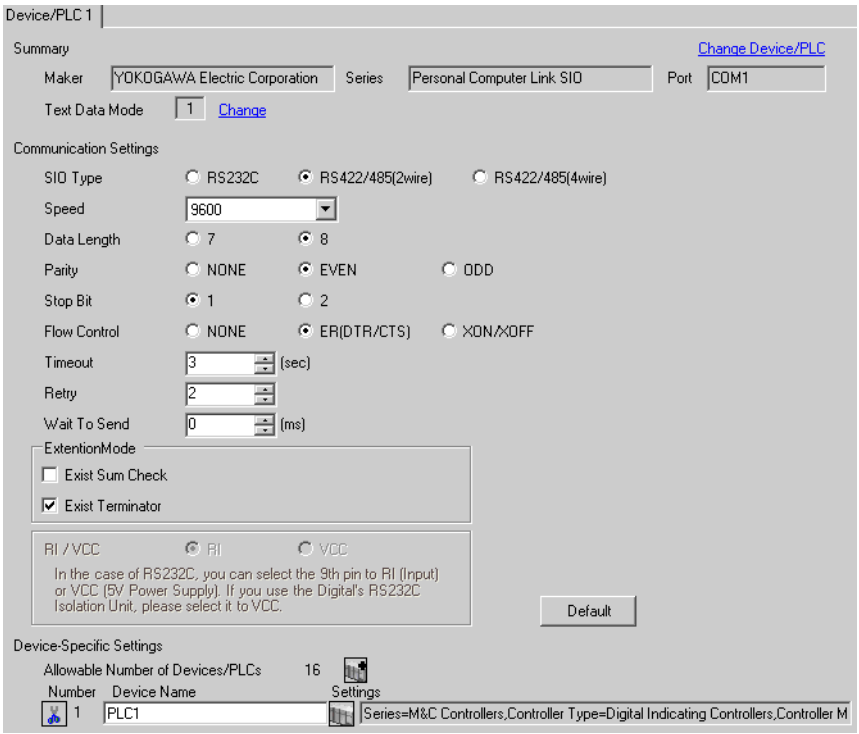
Setup Items	Settings
PSL	0: PC link communication
bPS	9600
PrI	EVEN
StP	1
dLn	8
Adr	1
rP.t	0: 0 × 10ms

3.15 Setting Example 15

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press UP or DOWN key several times to display [r485].

4 Press SET/ENT key several times to display communication setup items.

5 Enter set value using UP or DOWN key and press SET/ENT key.

6 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

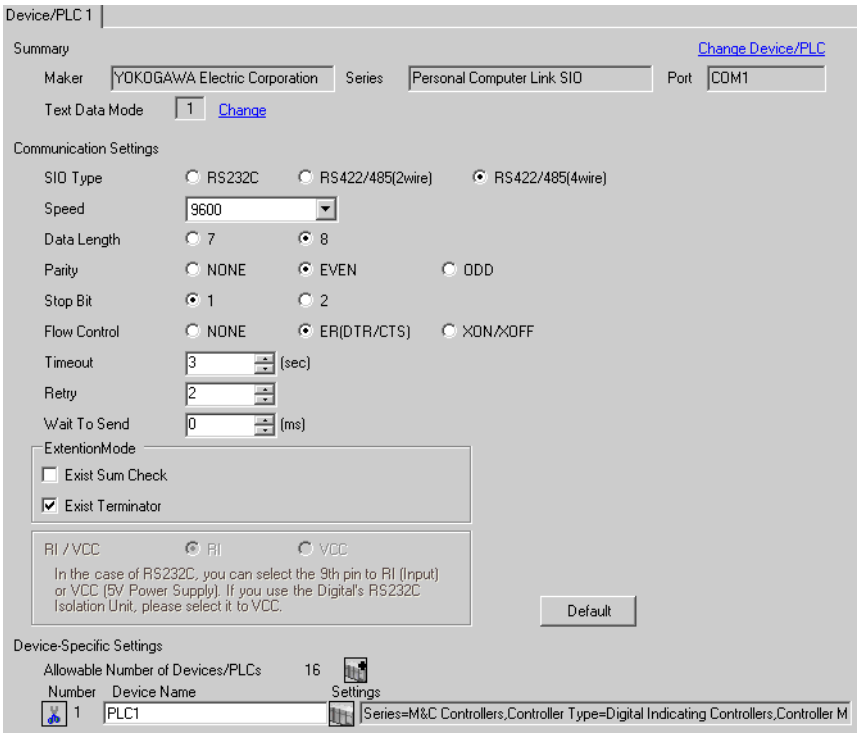
Setup Items	Settings
PSL	0: PC link communication
bps	9600
Pri	EVEN
StP	1
dLn	8
Adr	1
rP.t	0: 0 × 10ms

3.16 Setting Example 16

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press UP or DOWN key several times to display [r485].

4 Press SET/ENT key several times to display communication setup items.

5 Enter set value using UP or DOWN key and press SET/ENT key.

6 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

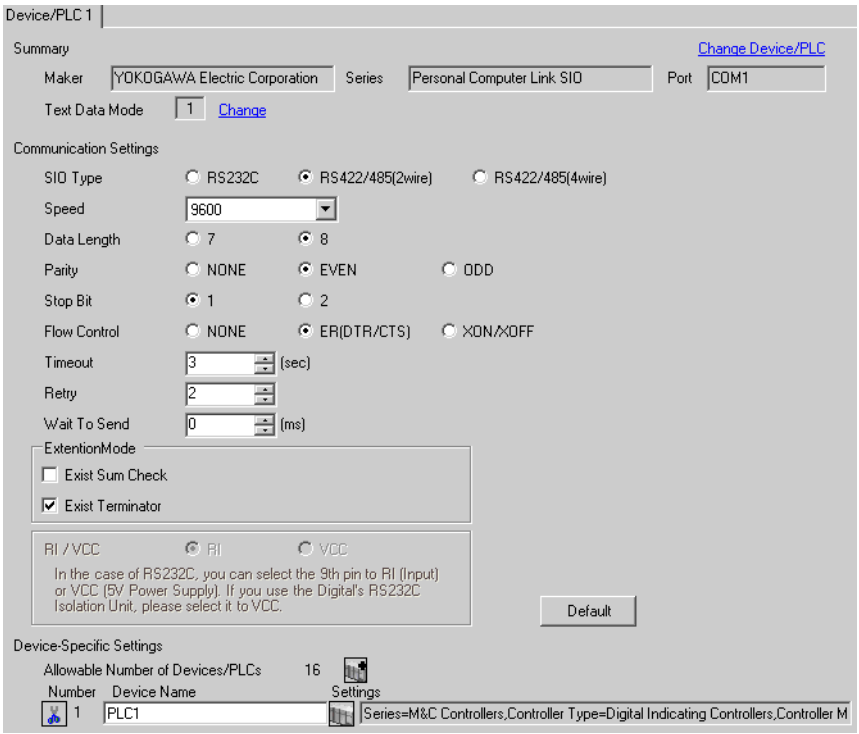
Setup Items	Settings
PSL	0: PC link communication
bPS	9600
PrI	EVEN
StP	1
dLn	8
Adr	1
rP.t	0: 0 × 10ms

3.17 Setting Example 17

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.

■ Setting of External Device

Use the SET/ENT key, UP key and DOWN key in front of the controller for communication settings of the External Device.

Please refer to the manual of the controller for more details.

◆ Procedure

1 Turn ON the power supply.
Change to [Operating Display].

2 Depress SET/ENT key on the [Operating Display] for 3 seconds or longer.
Change to [Operating Parameter Setting Display].

3 Press UP or DOWN key several times to display [r485].

4 Press SET/ENT key several times to display communication setup items.

5 Enter set value using UP or DOWN key and press SET/ENT key.

6 Depress SET/ENT key for 3 seconds or longer to return to [Operating Display].
Then the communication setting is finished.

◆ Setting Value

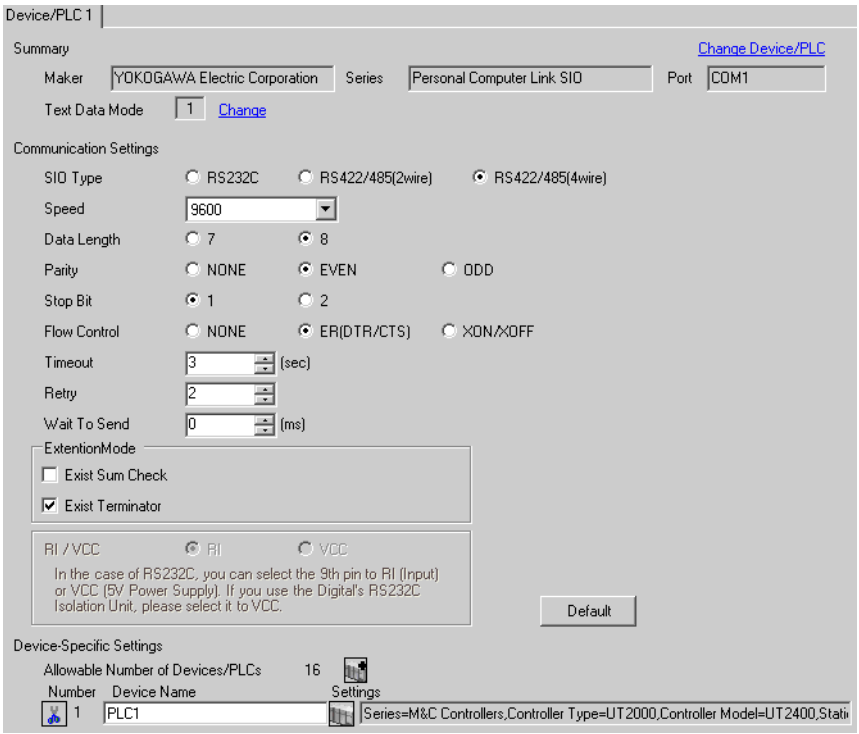
Setup Items	Settings
PSL	0: PC link communication
bps	9600
Pri	EVEN
StP	1
dLn	8
Adr	1
rP.t	0: 0 × 10ms

3.18 Setting Example 18

■ Setting of GP-Pro EX

◆ Communication Settings

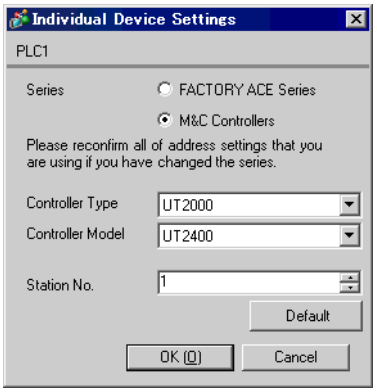
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



◆ Device Setting

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

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



◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.
- Remove the check from the [Extension Mode]-[Exist Sum Check] of the communication setting.

■ Setting of External Device

Use the DIP switch for protocol selection, rotary switch for communication setting and rotary switch for station number selection in front of the controller for communication settings of the External Device.
Please refer to the manual of the controller for more details.

◆ Procedure

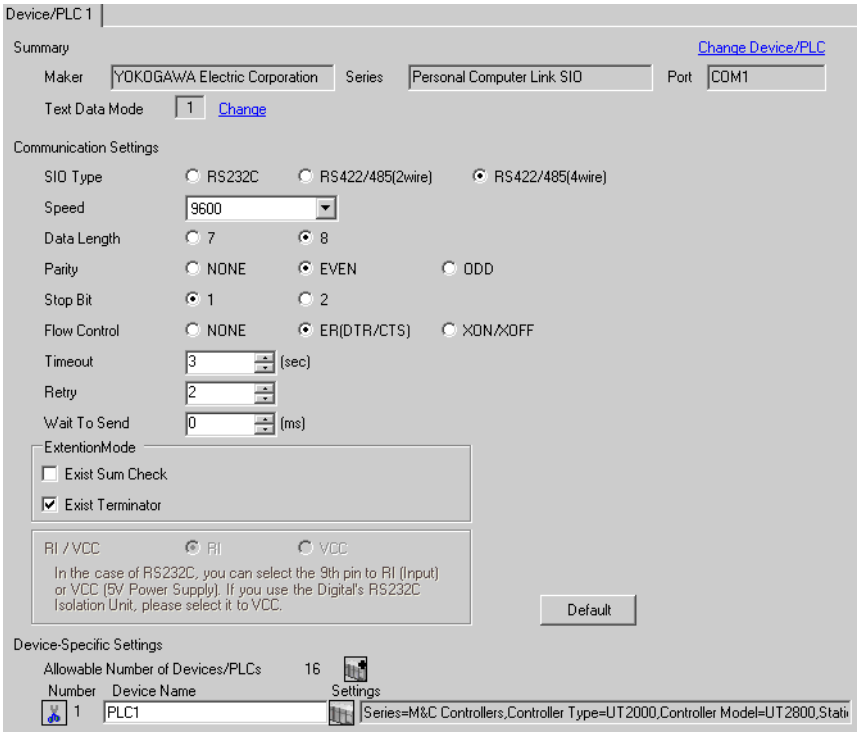
1 Turn DIP switch for protocol selection “ON (PC-link communication).”
2 Set “2” to rotary switch for communication setting.
3 Set “0” to rotary switch for station number selection.

3.19 Setting Example 19

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

◆ Caution

- Always put a check on the [Extension Mode]-[Exist Terminator] of the communication setting.
- Remove the check from the [Extension Mode]-[Exist Sum Check] of the communication setting.

■ Setting of External Device

Use the DIP switch for protocol selection, rotary switch for communication setting and rotary switch for station number selection in front of the controller for communication settings of the External Device.
Please refer to the manual of the controller for more details.

◆ Procedure

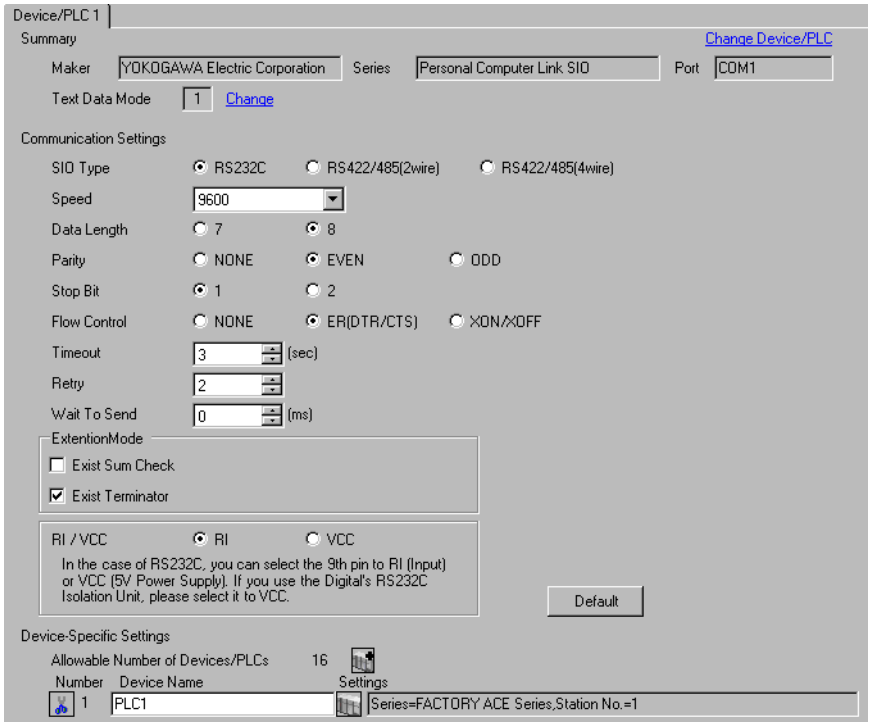
1 Turn DIP switch for protocol selection “ON (PC-link communication).”
2 Set “2” to rotary switch for communication setting.
3 Set “0” to rotary switch for station number selection.

3.20 Setting Example 20

■ Setting of GP-Pro EX

◆ Communication Settings

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



◆ Device Setting

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

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

■ Setting of External Device

Use the ladder software (Wide Field2) for communication settings of the External Device.
Please refer to each maker's manual of the External Device for more detail.

◆ Procedure

1 Start the ladder software.
2 Create a ladder program in the [New] dialog box.
3 Insert the ladder program in the [Define Program Components] dialog box.
4 Double-clink [Configuration] in the tree view to display the [Configuration] dialog box.
5 Select “9600bps Even Parity” in [Communication Mode] of the [Communications Setup] tab.
6 Check the “Use Personal Computer Link” and “End Character” check boxes in the [CPU Personal Computer Link] of the [Communications Setup] tab.
7 Click [OK].
8 From the [Online] menu, select [Connect] and transfer the communication settings to the external device.
Then the communication setting is finished.

4 Setup Items

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

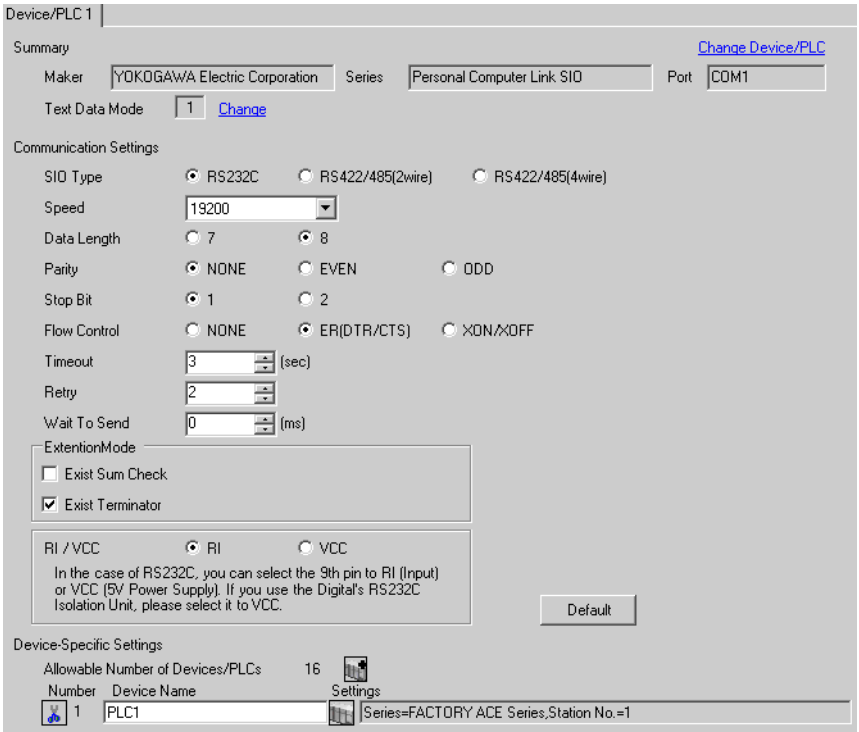
The setting of each parameter must be identical to that of External Device.

☞"3 Example of Communication Setting" (page 9)

4.1 Communication Setting with GP-Pro EX

■ Communication Settings

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



Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.

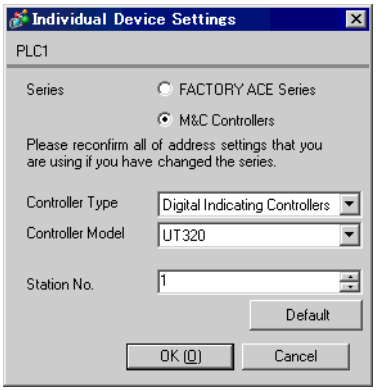
continued to next page

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.
Exist Sum Check (Extension Mode)	Set whether you perform the sum check.
Exist Terminator (Extension Mode)	Set whether you specify the data terminator.
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

■ Device Setting

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

When [Allowable No. of Device/PLCs] is multiple, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



Setup Items	Setup Description
Series	Select the External Device series.
Controller Type	Select the controller type. This can be set only by selecting “M & C Controllers” of [Series].
Controller Model	Select the controller model. This can be set only by selecting “M & C Controllers” of [Series].
Station No.	Use an integer 0 to 32 to enter the station number of the External Device to communicate.

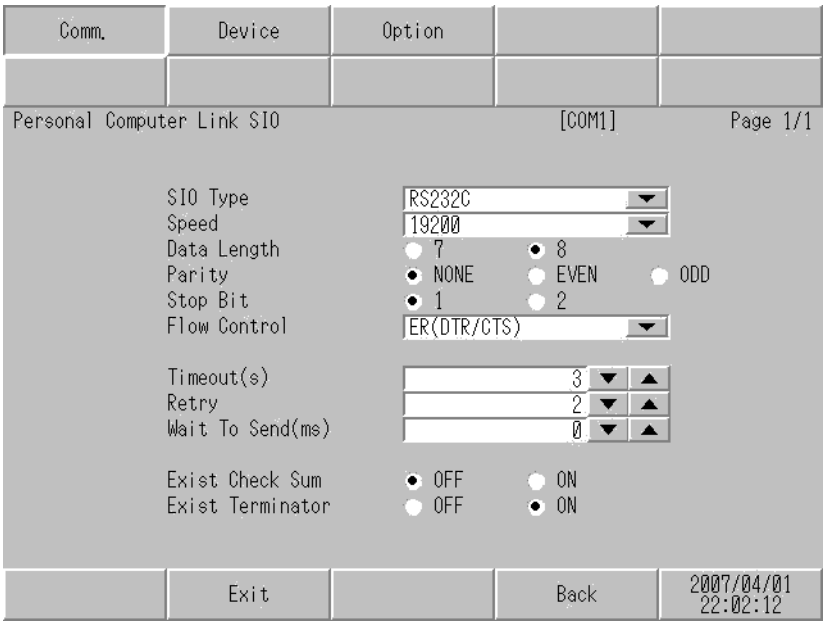
4.2 Communication Settings in Off-line Mode

NOTE

- Please refer to Maintenance/Troubleshooting for more information on how to enter off-line mode or about operation.
  Cf. Maintenance/Troubleshooting "2.2 Offline Mode"

■ Communication Settings

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



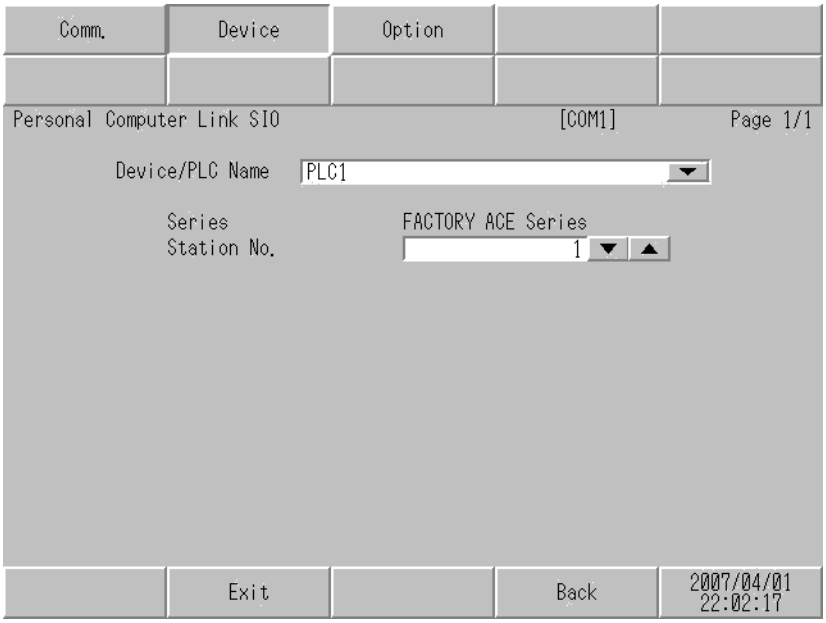
Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. **IMPORTANT** To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (sec) for which the Display waits for the response from the External Device.

continued to next page

Setup Items	Setup Description
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.
Exist Check Sum	Set whether you perform the check sum.
Exist Terminator	Set whether you specify the data terminator.

■ Device Setting

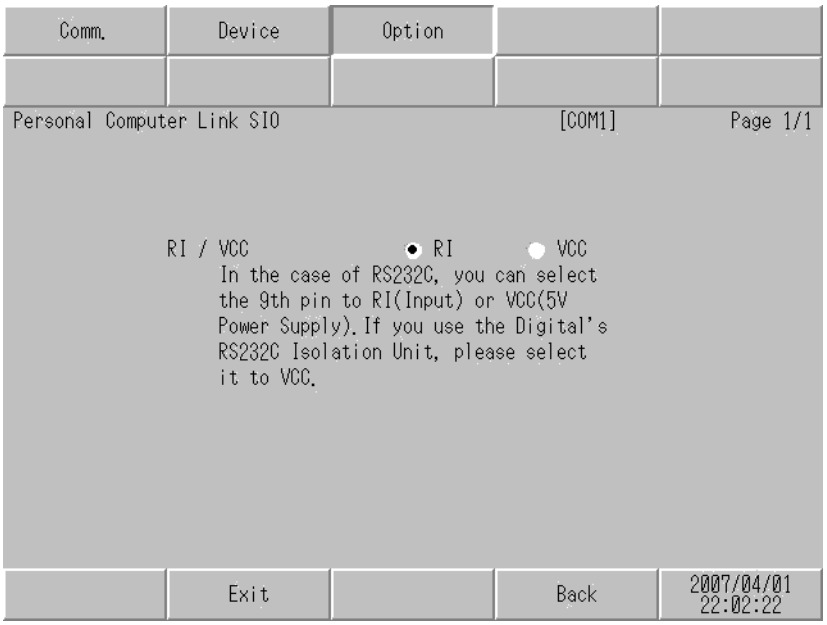
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].



Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Series	Display the External Device series.
Station No.	Use an integer 0 to 32 to enter the station number of the External Device to communicate.

■ Option

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



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

5 Cable Diagram

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

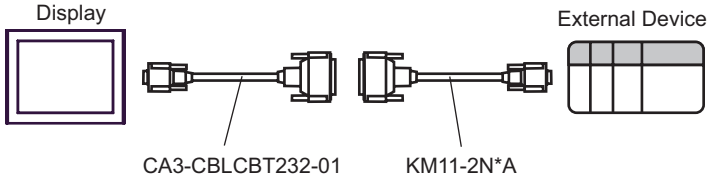
- The FG pin of the External Device body must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc..

Cable Diagram1

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC*1 PC/AT	9-pin-to-25-pin RS-232C Conversion Cable by Pro-face CA3-CBLCBT232-01 + Programming tool cable by YOKOGAWA Electric Corporation KM11-2N*A	The cable length must be 15m or less.

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

☞ ■ IPC COM Port (page 6)



Cable Diagram 2

Display (Connection Port)	Cable		Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) 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	—
	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.
☞■ IPC COM Port (page 6)

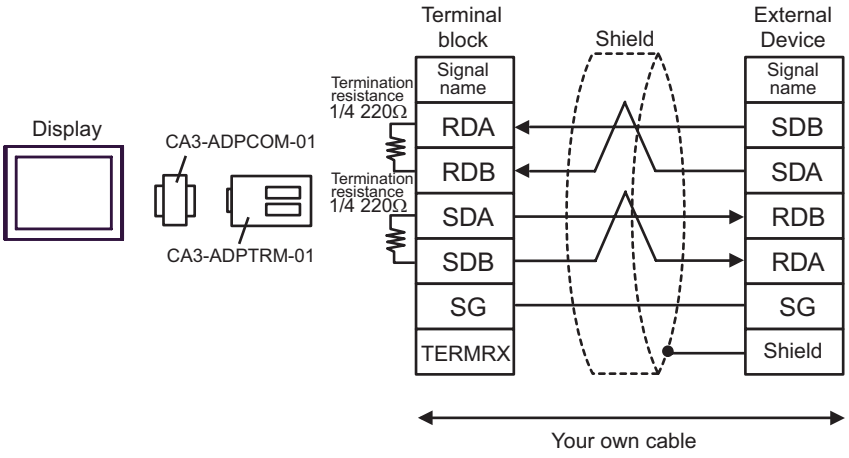
*4 All GP models except GP-3200 series and AGP-3302B

NOTE

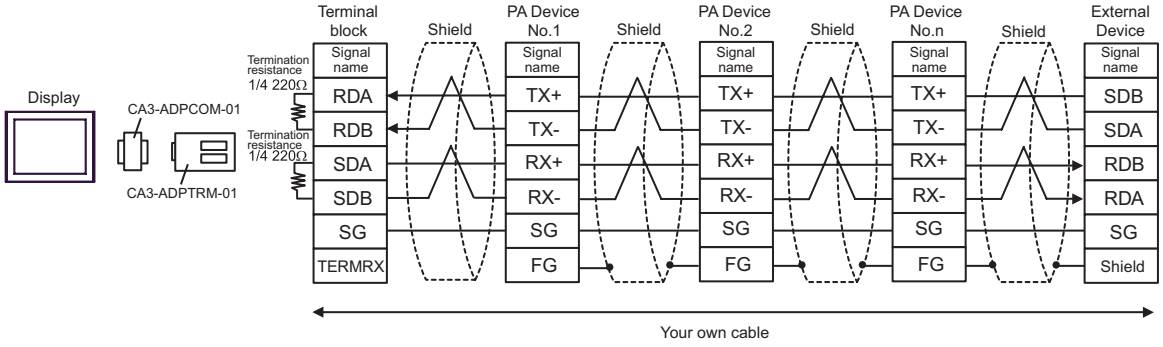
- Attach the termination resistance to the devices on both ends.
- Note that pole A and pole B are reversely named for the Display and the External Device.
- When the PA device has SG, connect it.
- Set the last resistance switch of the personal computer link module for the External Device which terminates the connection to 4-WIRE.
- We recommend CO-SPEU-SB(A)3P x 0.5SQ by Hitachi Cable, Ltd. for the connection cable.
- Total cable length is 1000m.
- Set the station No. for the personal computer link module to 2 to 32.
- You must set the different station No. of all PA devices connected to the Display. If there are more than 2 PA devices with the same station No., error occurs.
- Perform the identical communication settings for both the Display (m units) and the PA device (n units).

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

[1:1 Connection]



[1:n Connection]

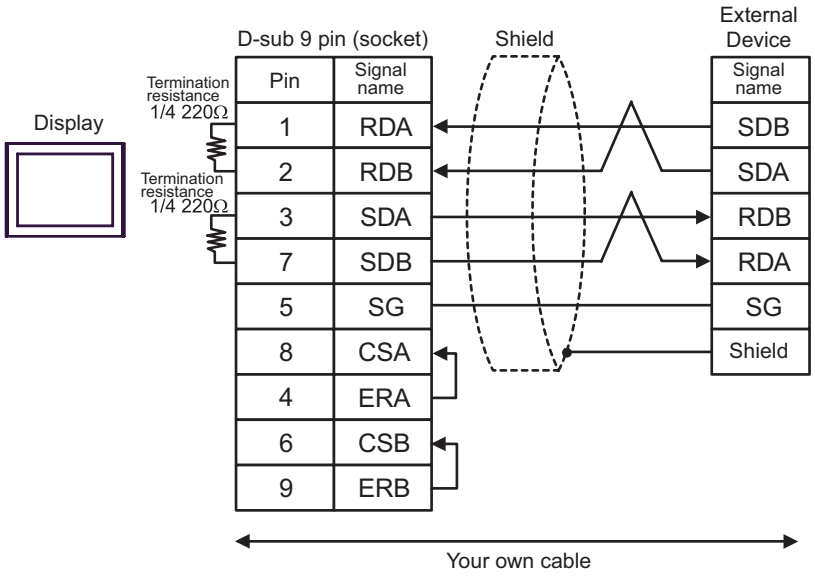


NOTE

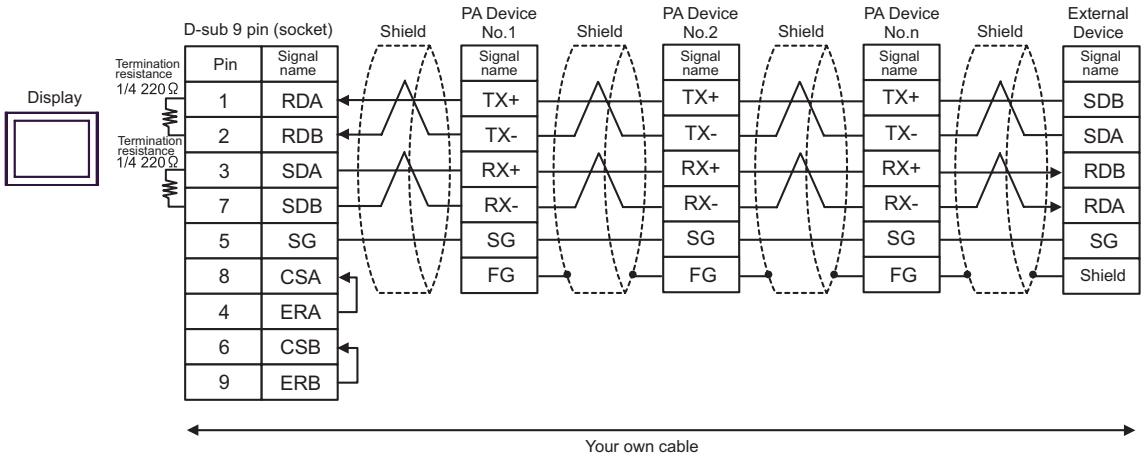
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

B) When using your own cable

[1:1 Connection]



[1:n Connection]

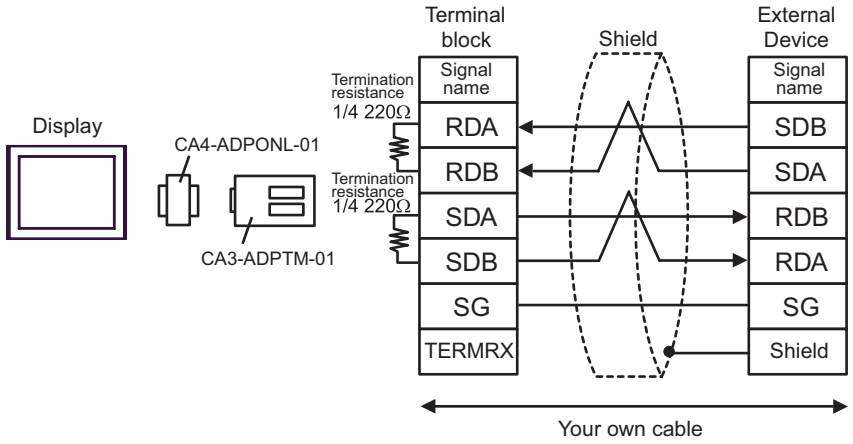


NOTE

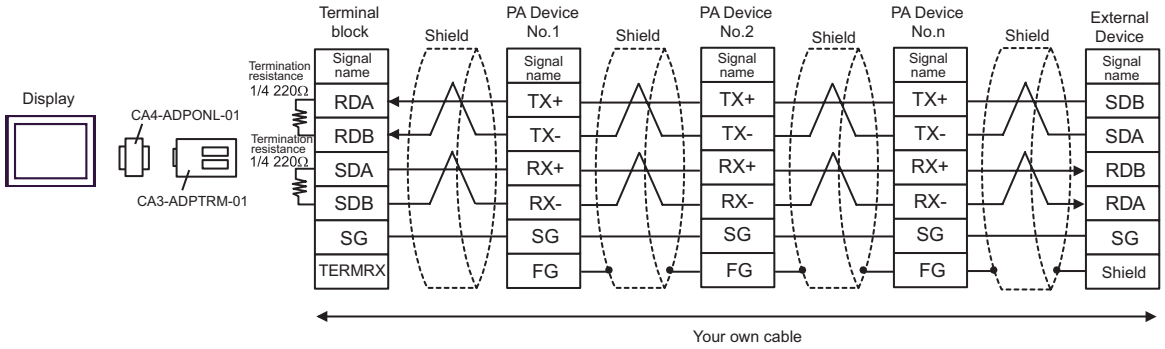
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

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

[1:1 Connection]



[1:n Connection]

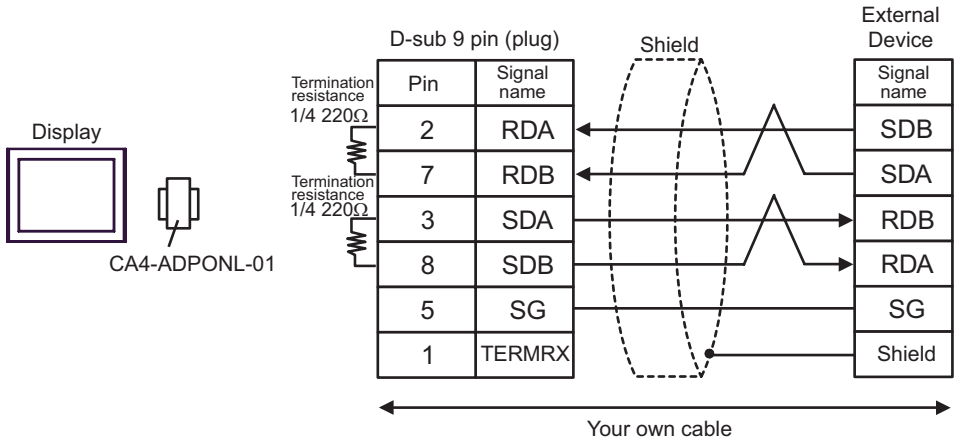


NOTE

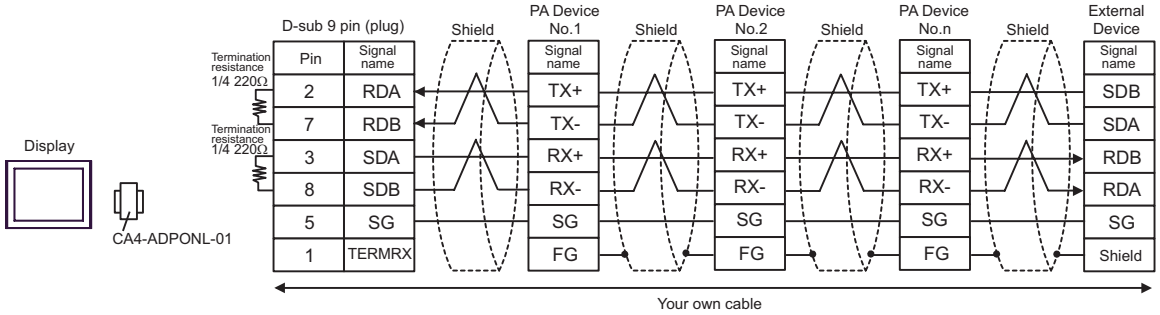
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.

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

[1:1 Connection]



[1:n Connection]



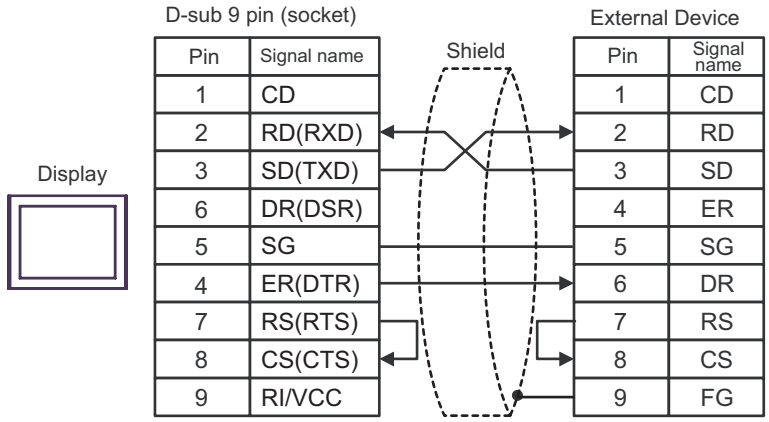
NOTE

- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.

Cable Diagram 3

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC*1 PC/AT	Your own cable	The cable length must be 15m or less.

*1 Only the COM port which can communicate by RS-232C can be used.
☞■ IPC COM Port (page 6)



Cable Diagram 4

Display (Connection Port)	Cable		Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	—
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	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

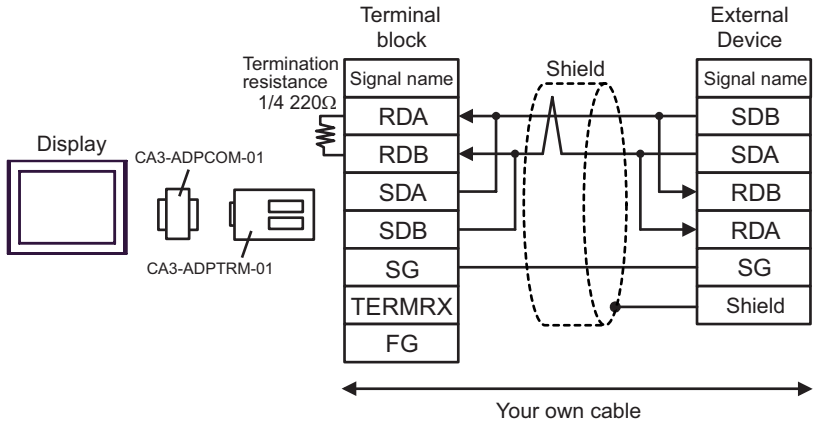
*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used.
☞■ IPC COM Port (page 6)

NOTE

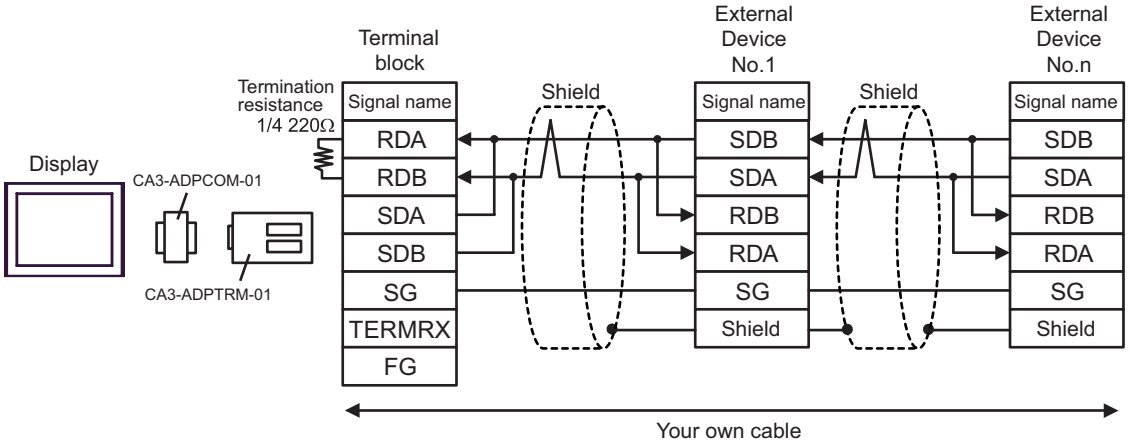
- Note that pole A and pole B are reversely named for the Display and the External Device.
- When the PA device has SG, connect it.
- Set the last resistance switch of the personal computer link module for the External Device which terminates the connection to 2-WIRE.
- We recommend CO-SPEU-SB(A)3P x 0.5SQ by Hitachi Cable, Ltd. for the connection cable.
- Total cable length is 1000m.

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

[1:1 Connection]

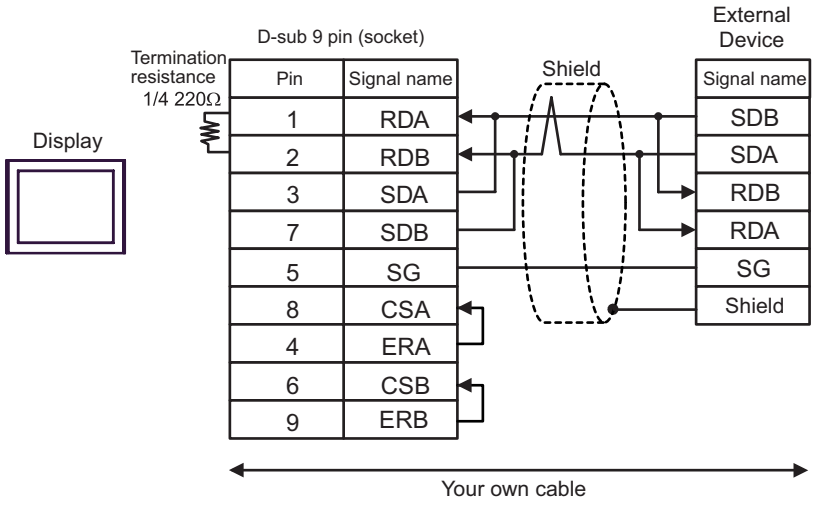


[1:n Connection]

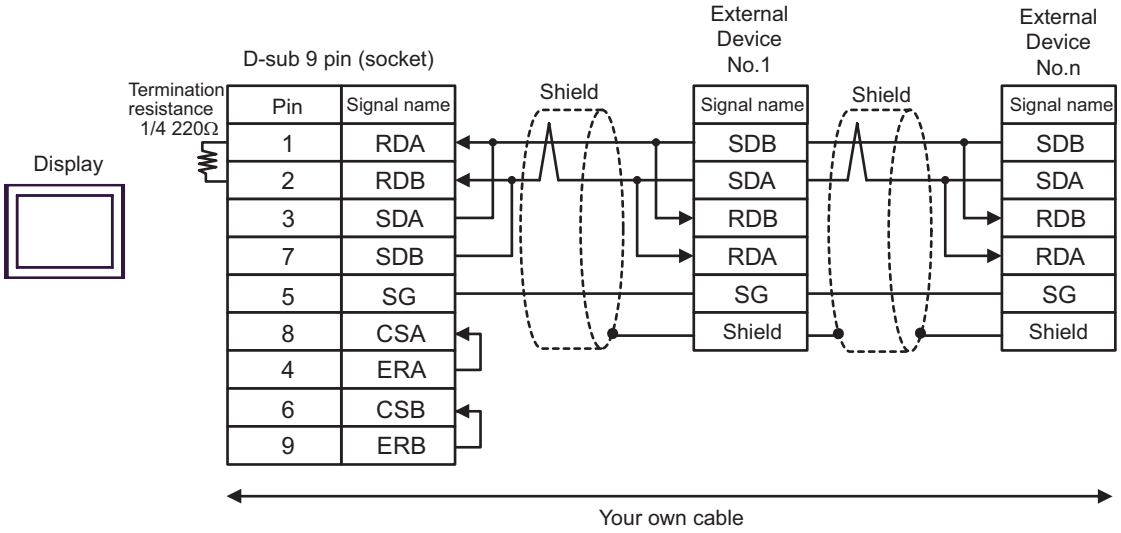


B) When using your own cable

[1:1 Connection]

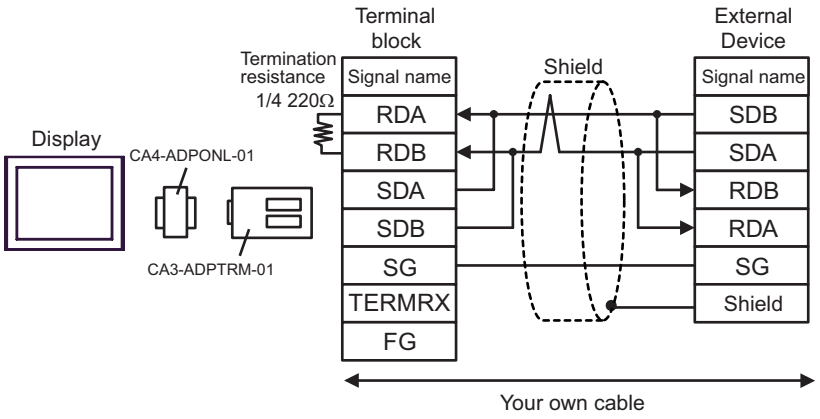


[1:n Connection]

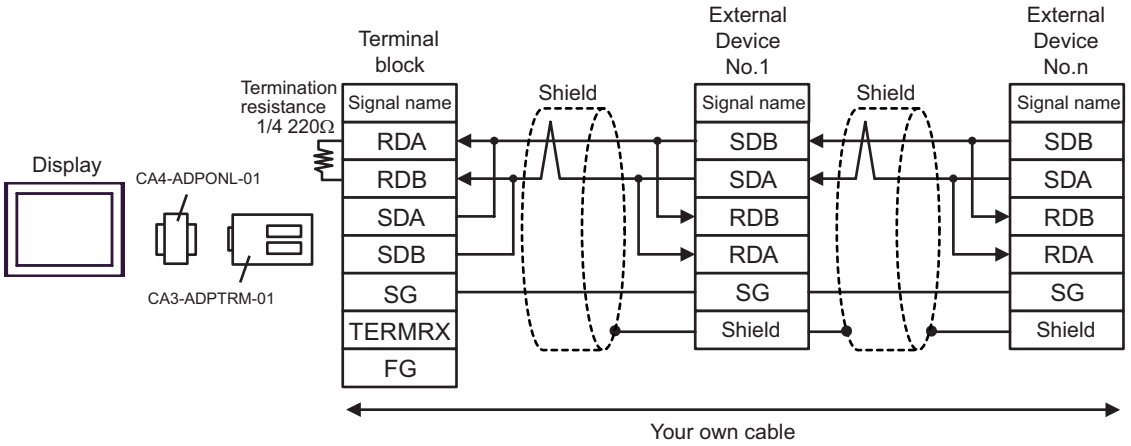


C) When using the online adapter (CA4-ADPONL-01) by Pro-face, the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]

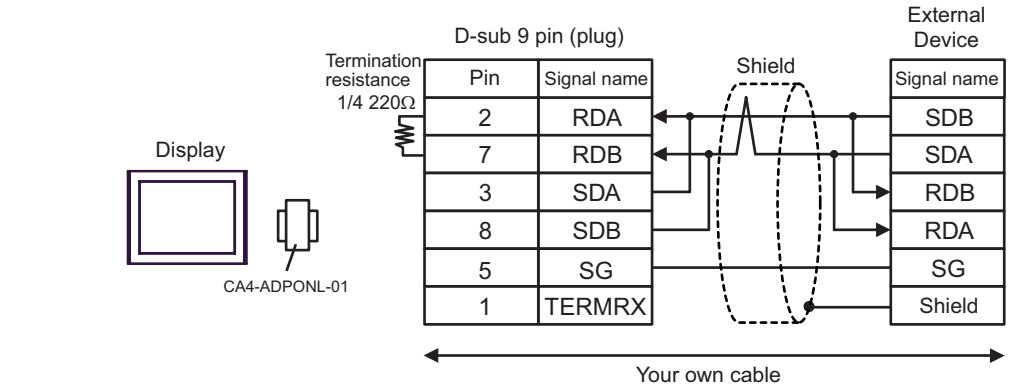


[1:n Connection]

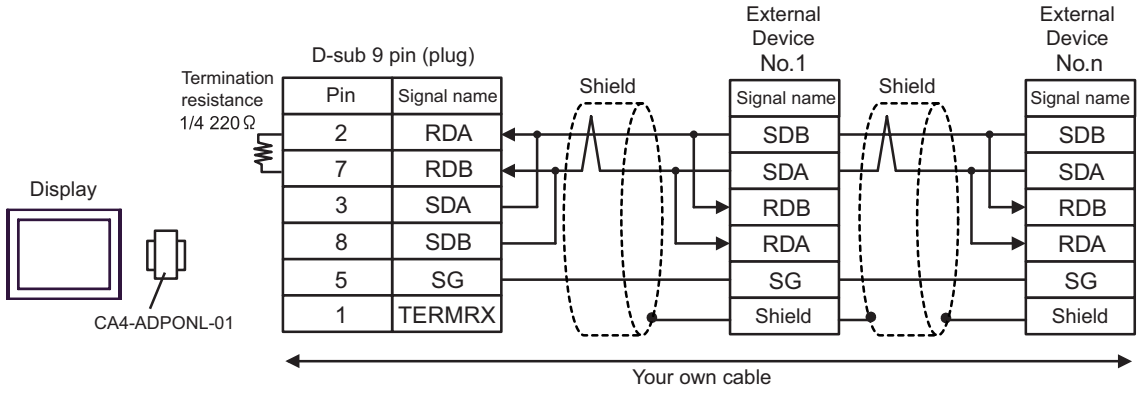


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]

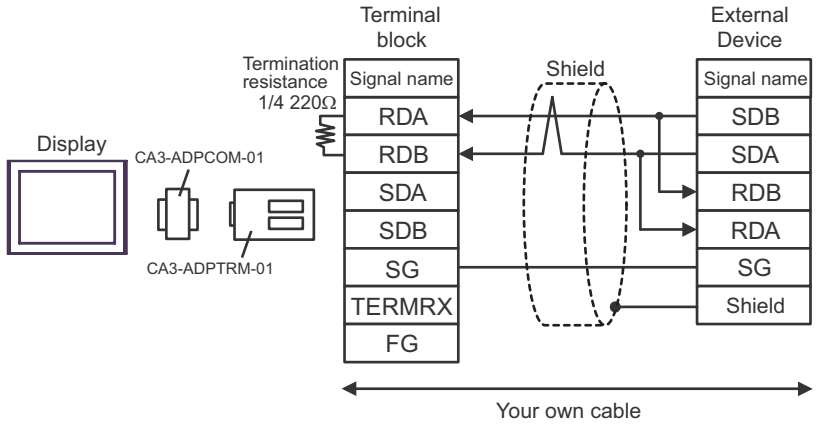


[1:n Connection]

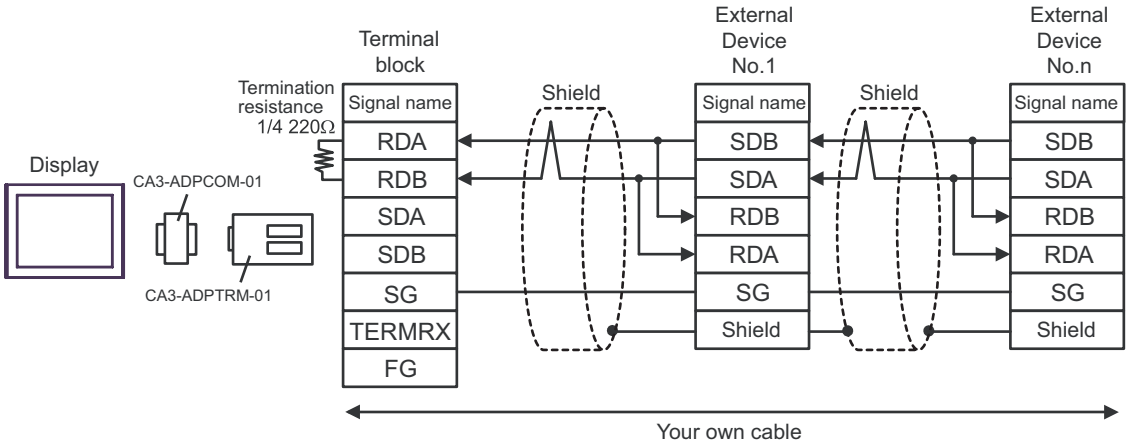


E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]



[1:n Connection]

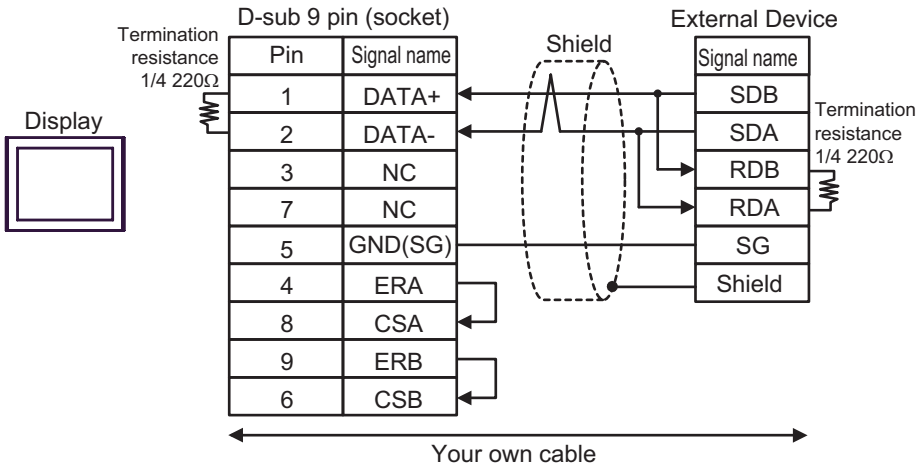


NOTE

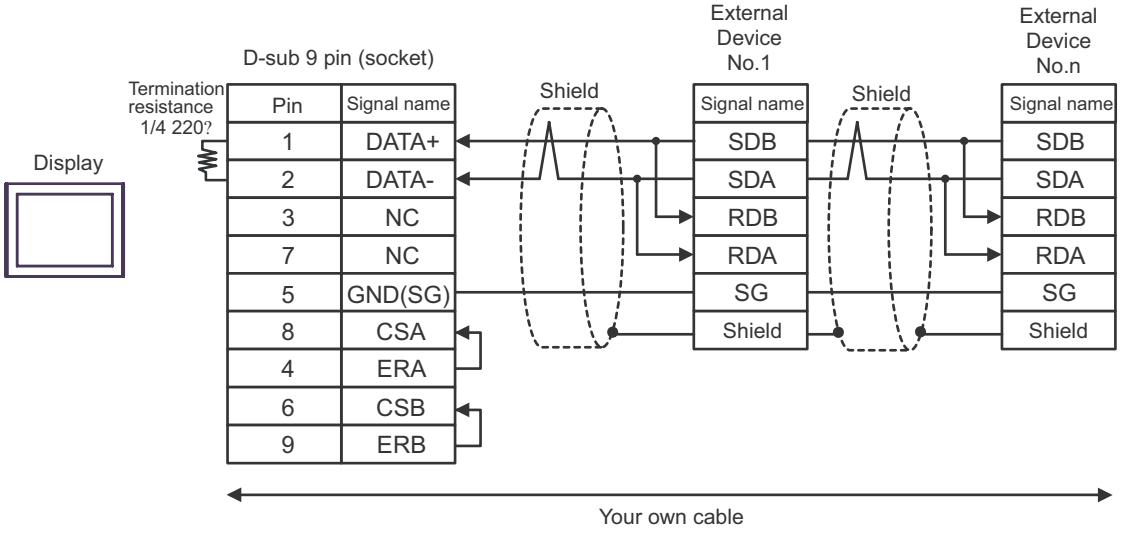
- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

F) When using your own cable

[1:1 Connection]



[1:n Connection]



NOTE

- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

Cable Diagram 5

Display (Connection Port)	Cable		Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 1000m or less.
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

*1 All GP models except AGP-3302B

*2 All ST models except AST-3211A

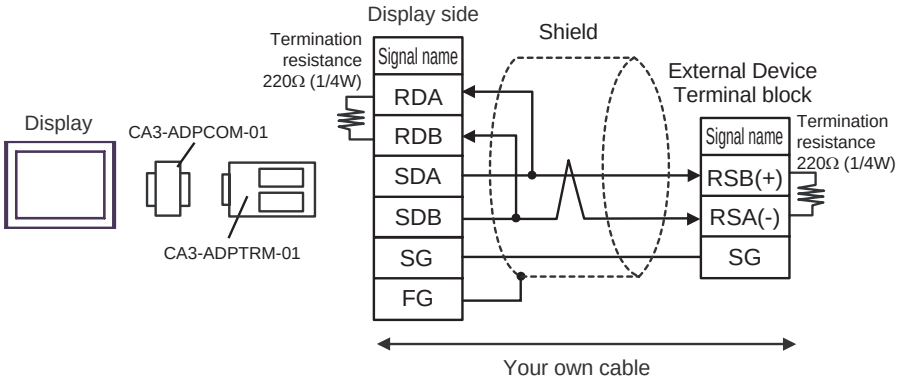
*3 All GP models except GP-3200 series and AGP-3302B

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

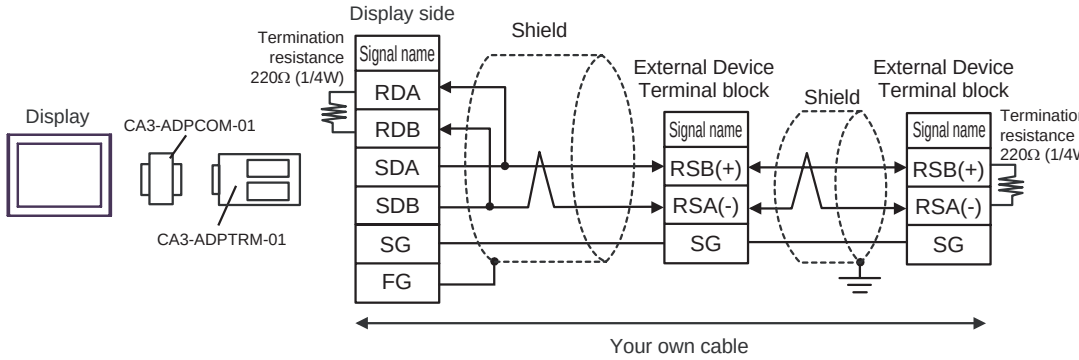
☞■ IPC COM Port (page 6)

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

[1:1 Connection]

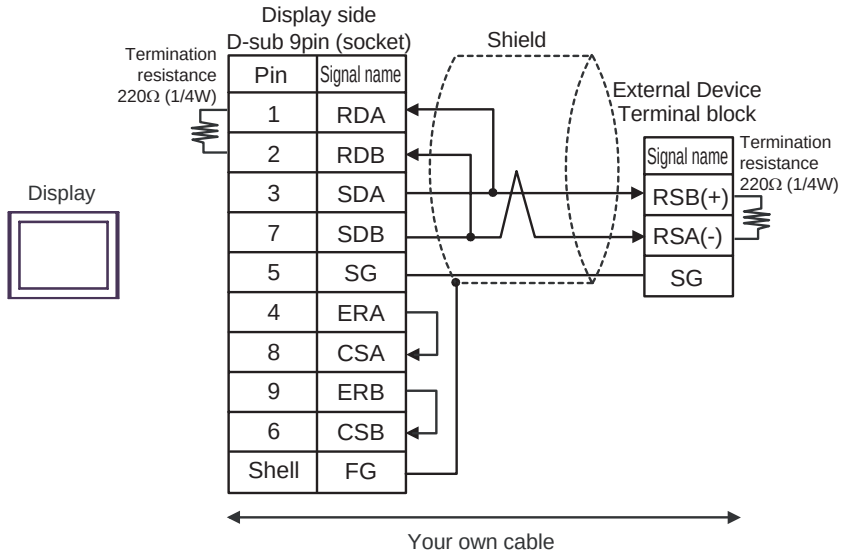


[1:n Connection]

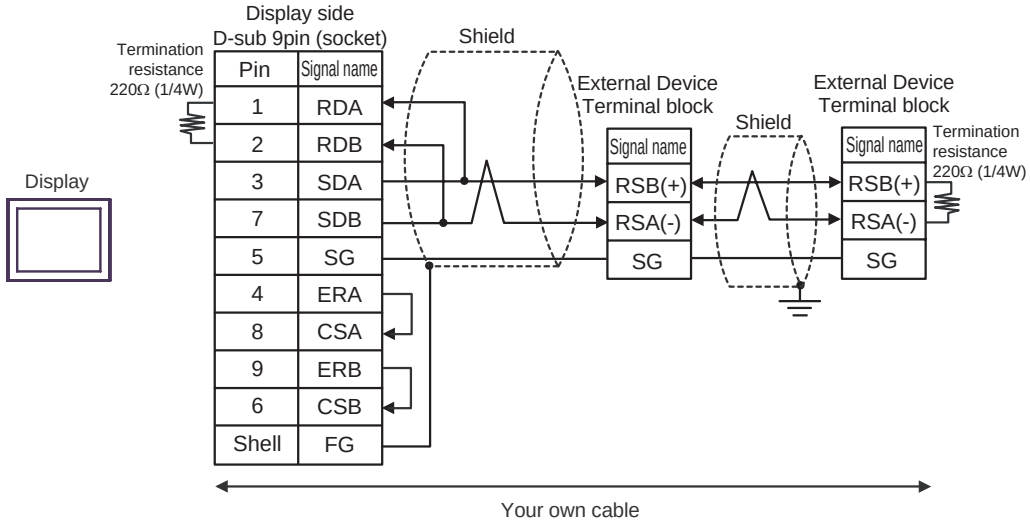


B) When using your own cable

[1:1 Connection]

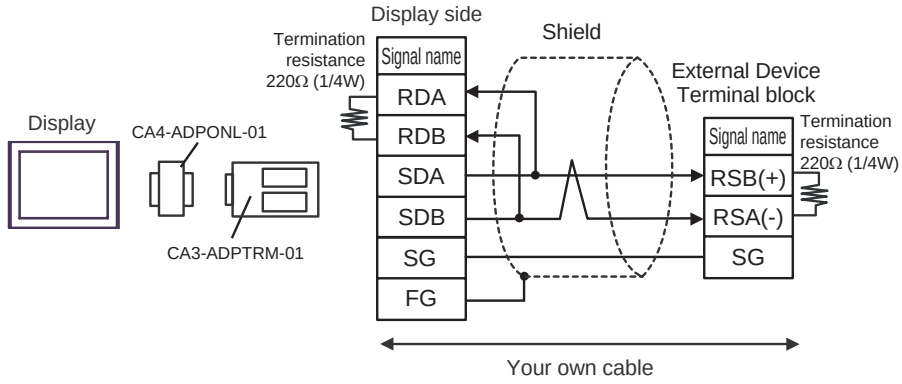


[1:n Connection]

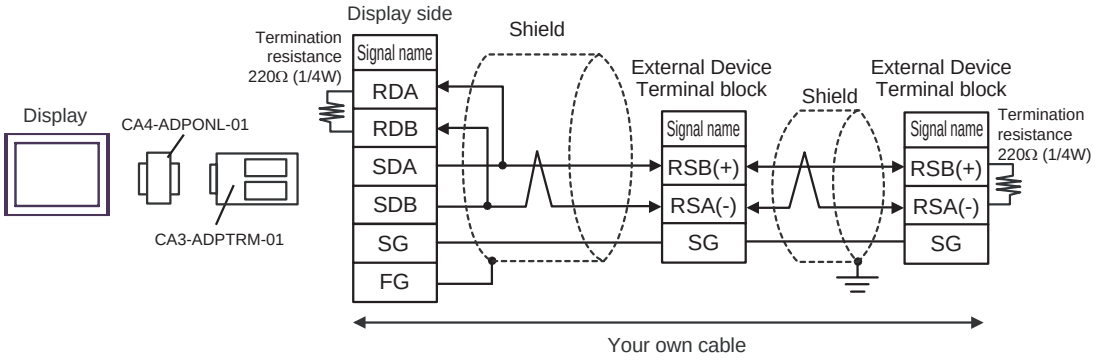


C) When using the online adapter (CA4-ADPONL-01) by Pro-face, the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]

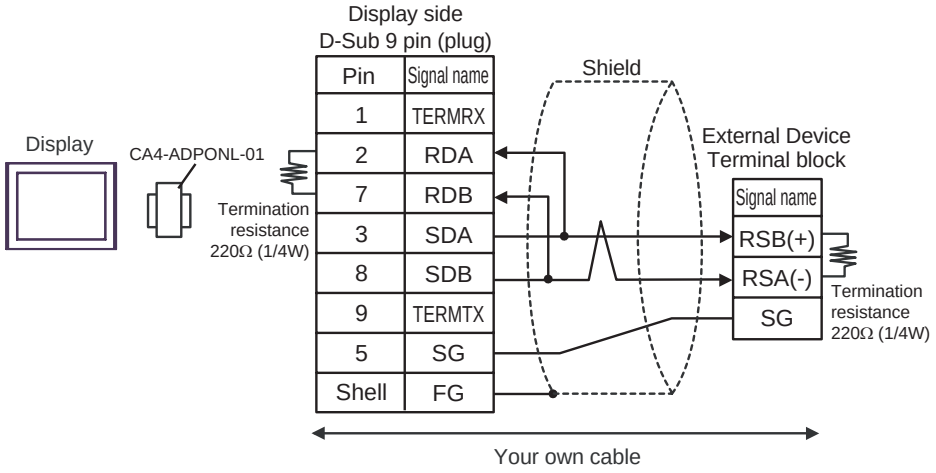


[1:n Connection]

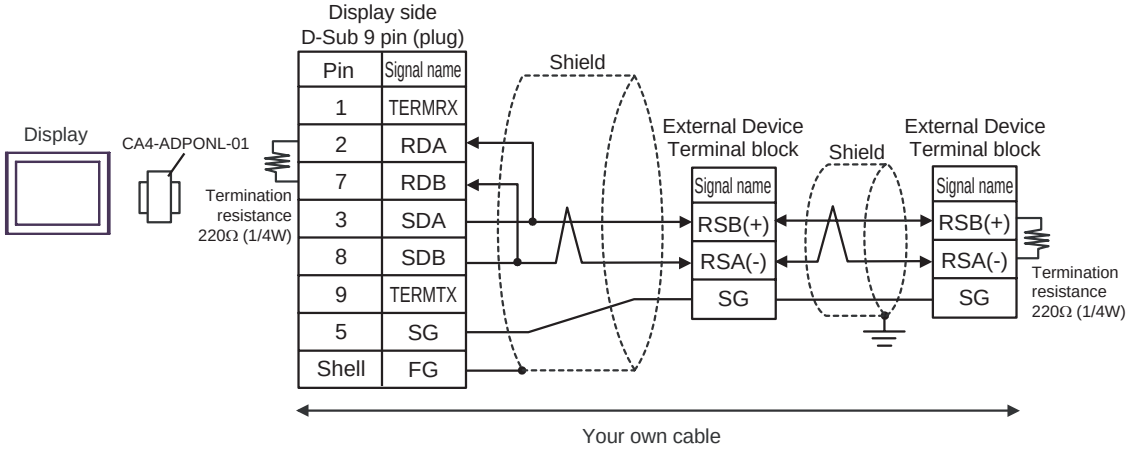


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]

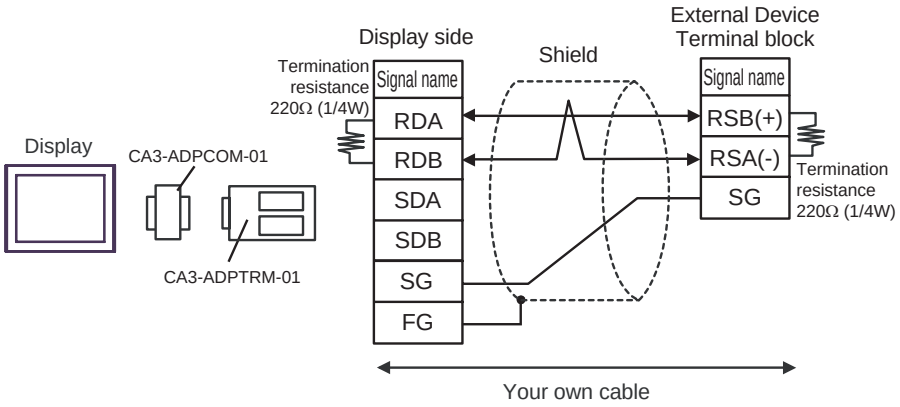


[1:n Connection]

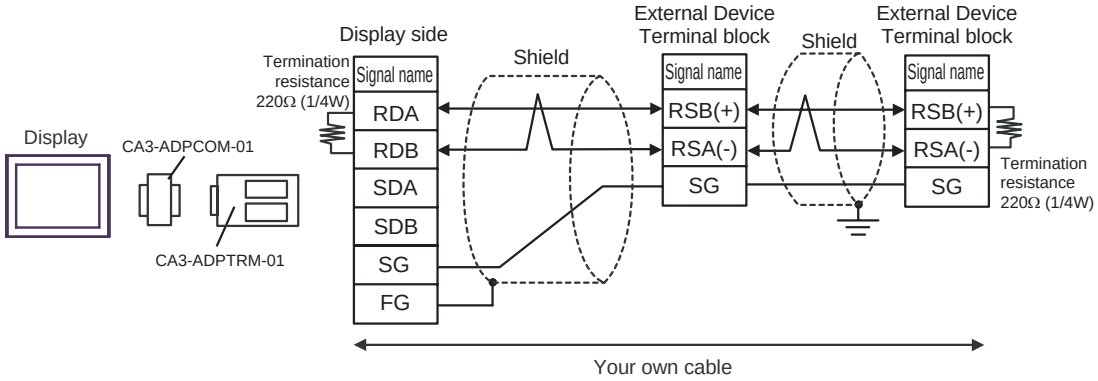


E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]



[1:n Connection]

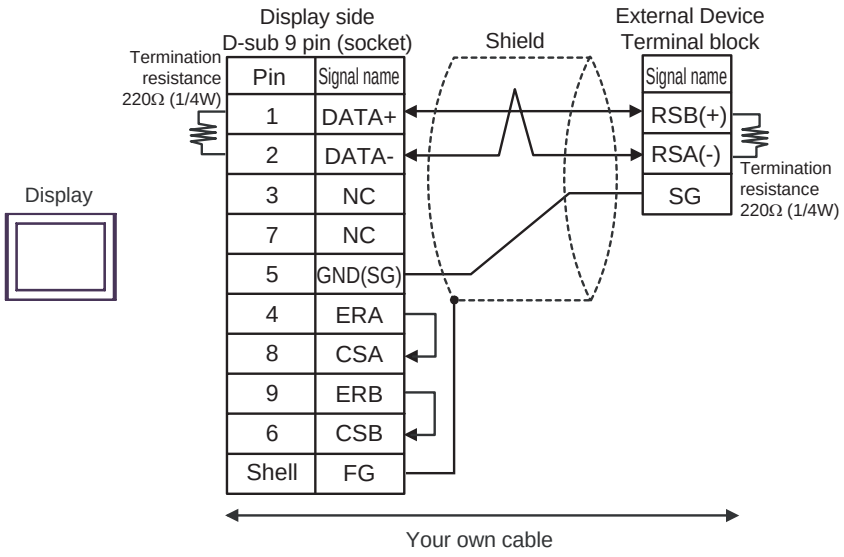


NOTE

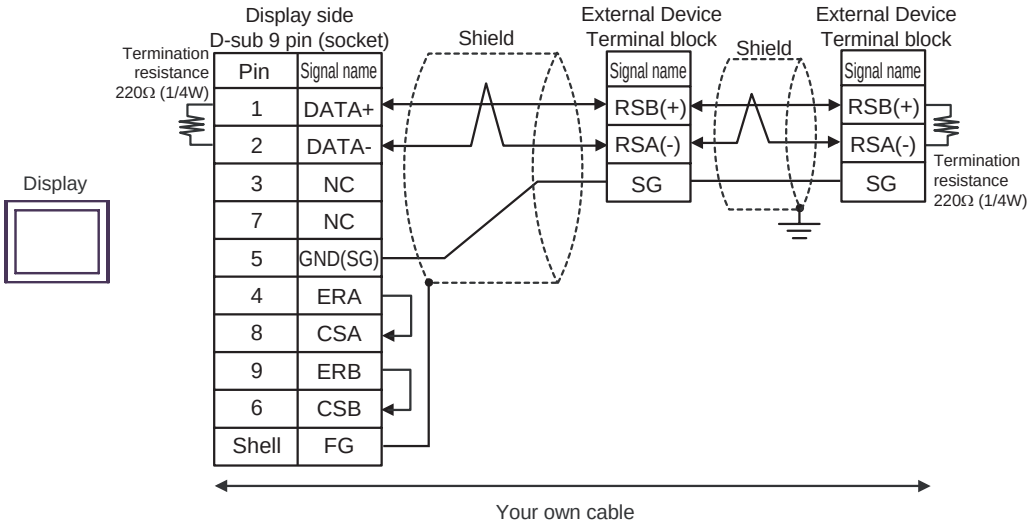
- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

F) When using your own cable

[1:1 Connection]



[1:n Connection]



NOTE

- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

Cable Diagram 6

Display (Connection Port)	Cable		Notes
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	The cable length must be 1000m 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

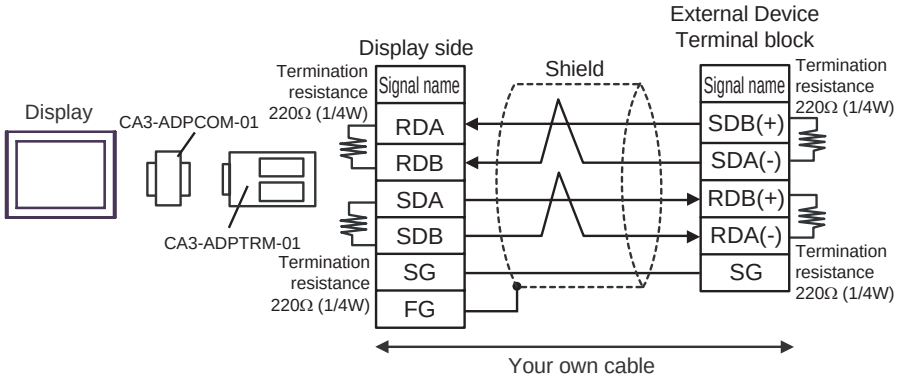
*2 All ST models except AST-3211A

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

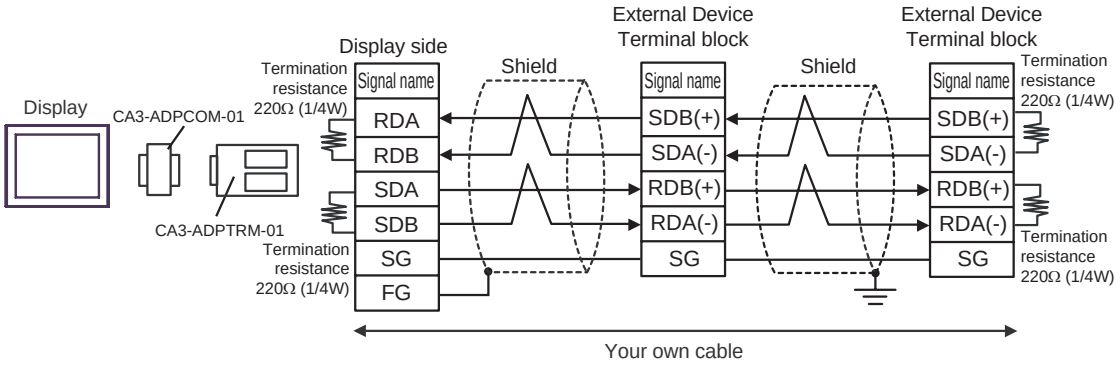
*4 All GP models except GP-3200 series and AGP-3302B

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

[1:1 Connection]



[1:n Connection]

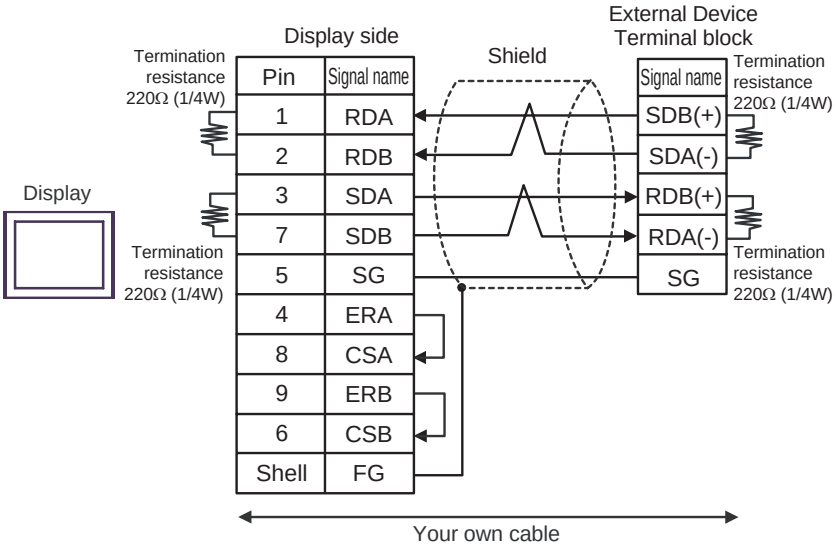


NOTE

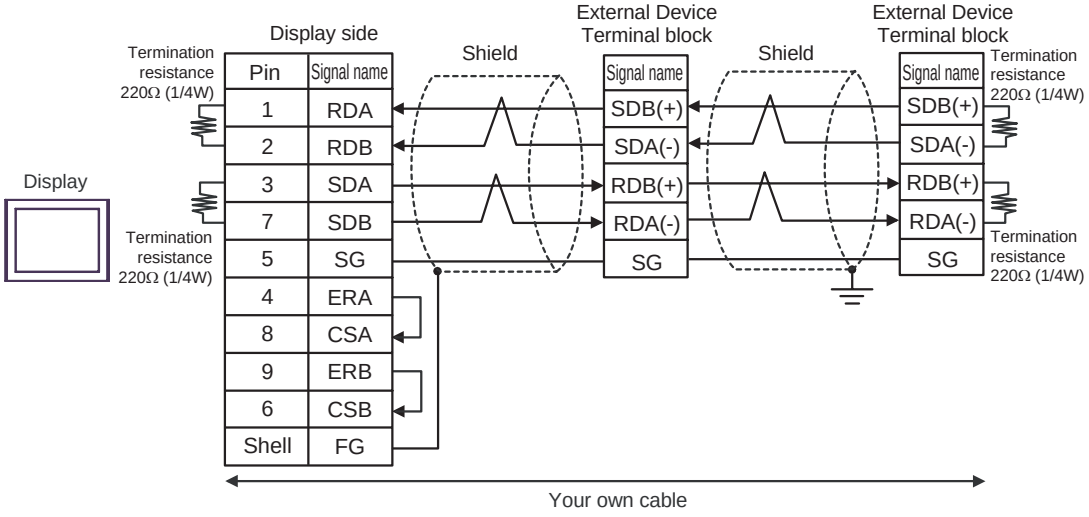
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

B) When using your own cable

[1:1 Connection]



[1:n Connection]

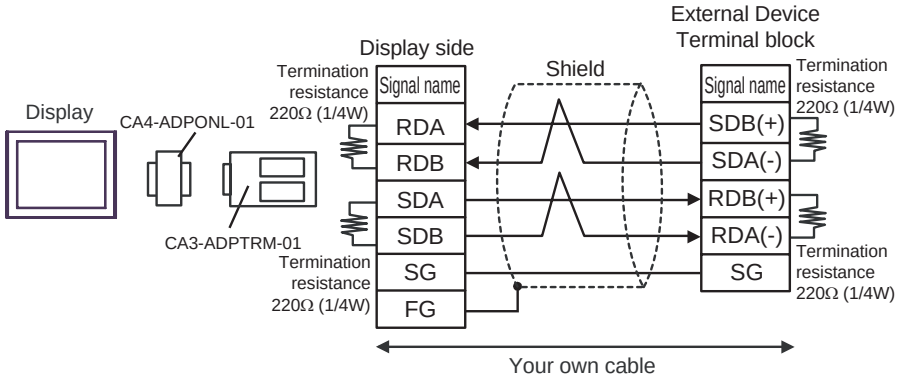


NOTE

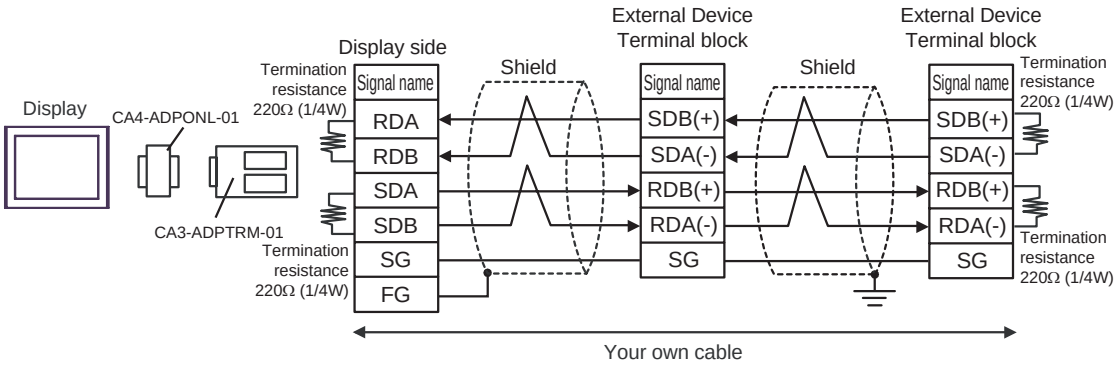
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

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

[1:1 Connection]

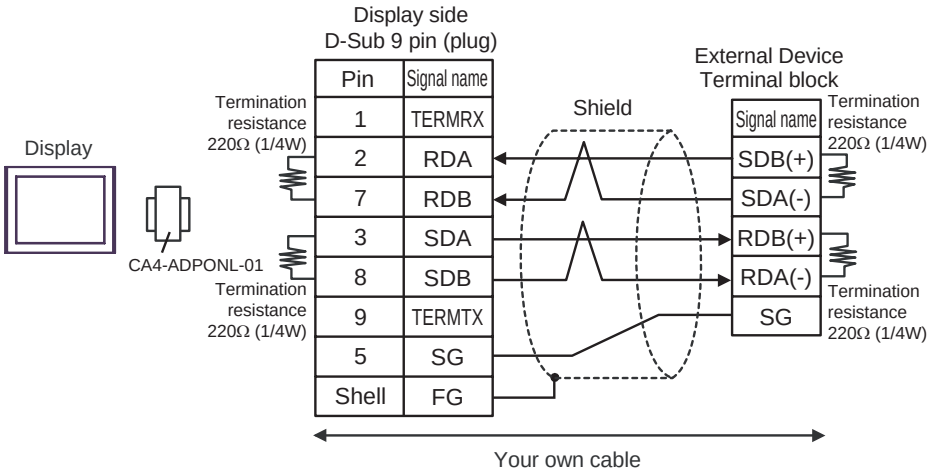


[1:n Connection]

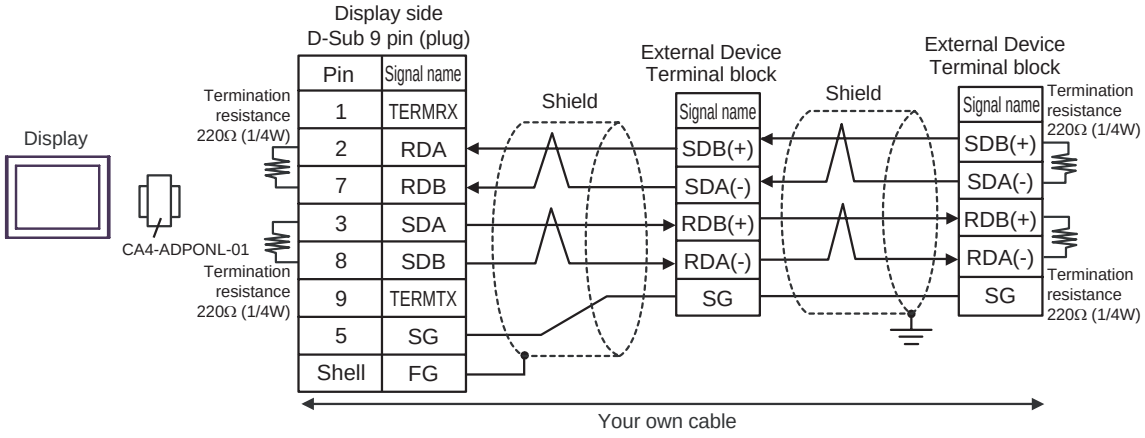


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]



[1:n Connection]



Cable Diagram 7

Display (Connection Port)	Cable		Notes
GP[*1] (COM1) AGP-3302B (COM2) ST[*2] (COM2) LT (COM1)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	The cable length must be 1000m or less.
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*4]	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

*1 All GP models except AGP-3302B

*2 All ST models except AST-3211A

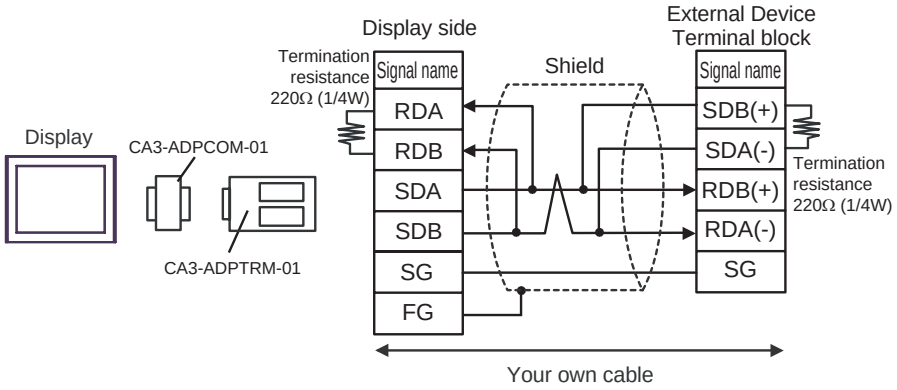
*3 All GP models except GP-3200 series and AGP-3302B

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

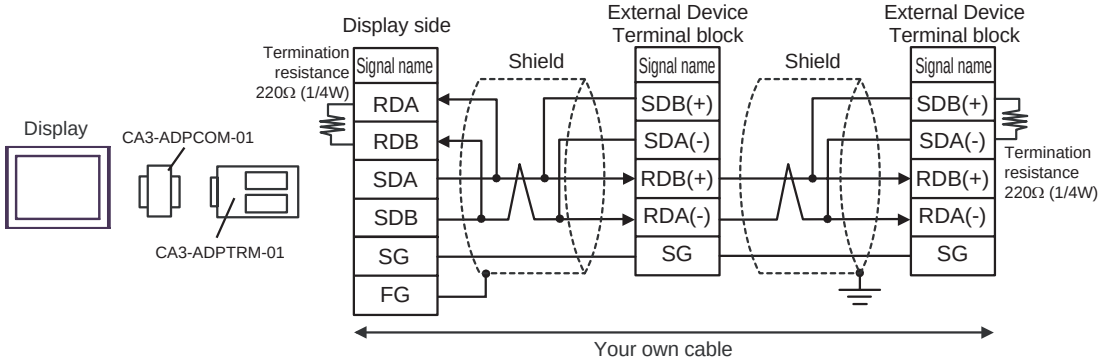
☞■ IPC COM Port (page 6)

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

[1:1 Connection]

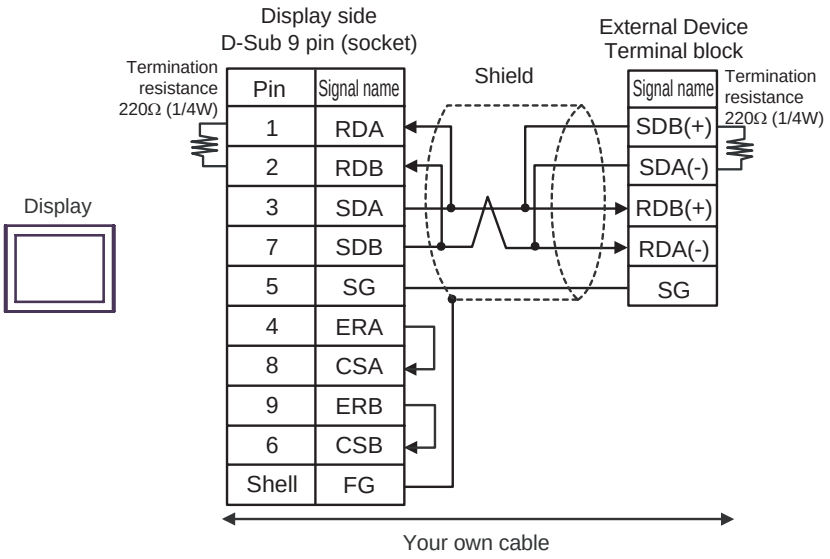


[1:n Connection]

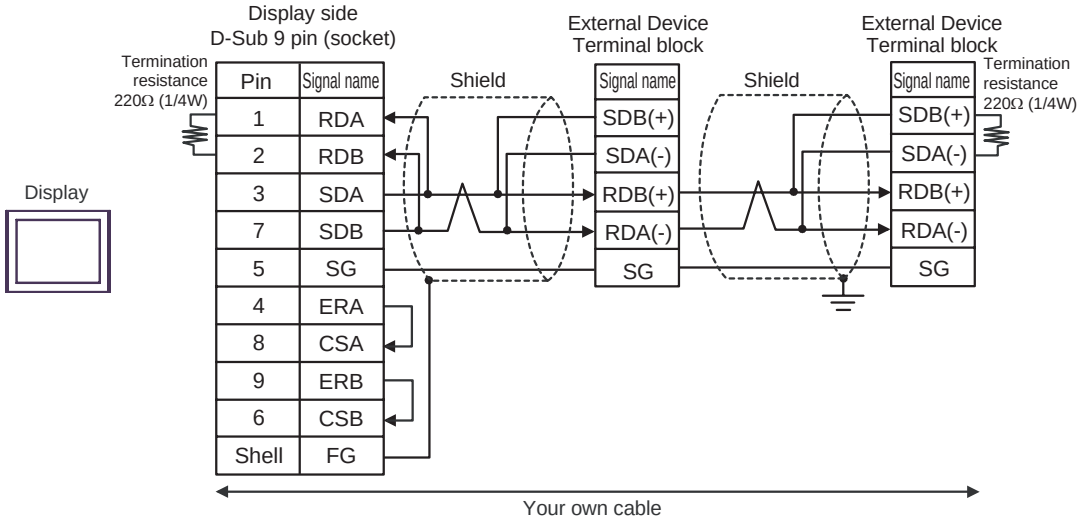


B) When using your own cable

[1:1 Connection]

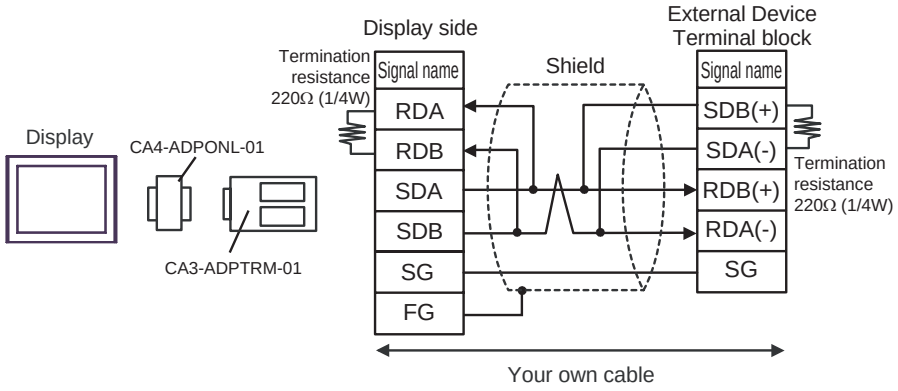


[1:n Connection]

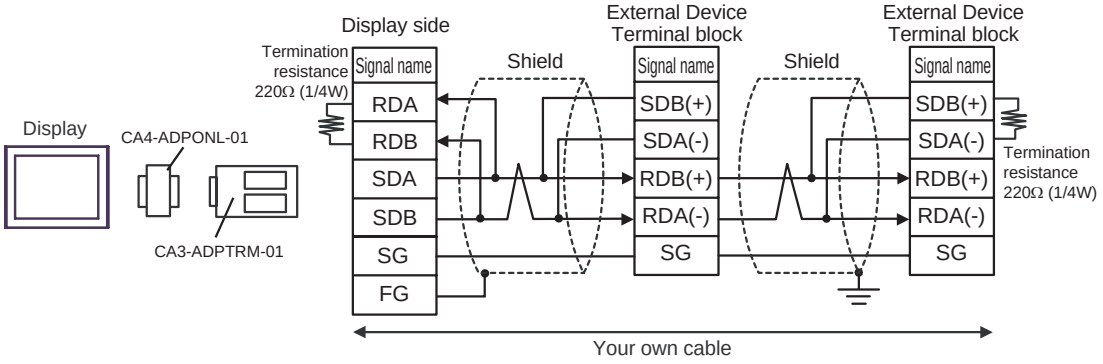


C) When using the online adapter (CA4-ADPONL-01) by Pro-face, the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]

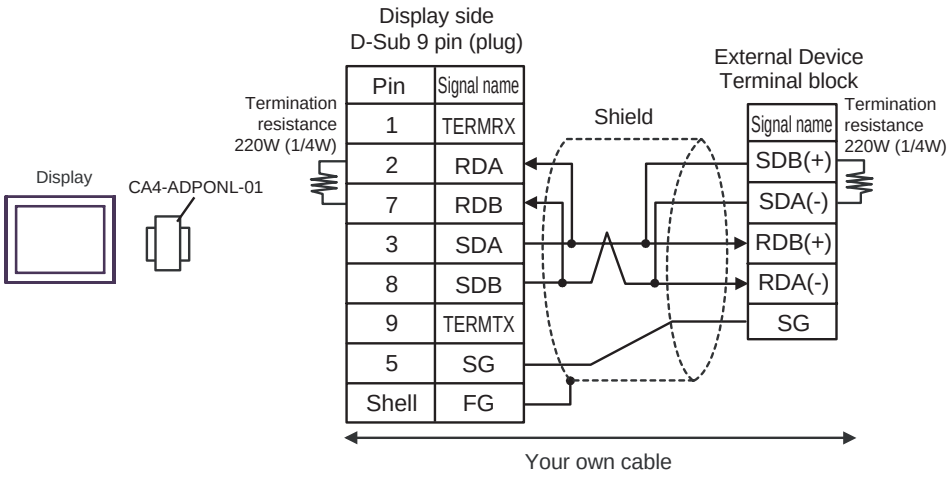


[1:n Connection]

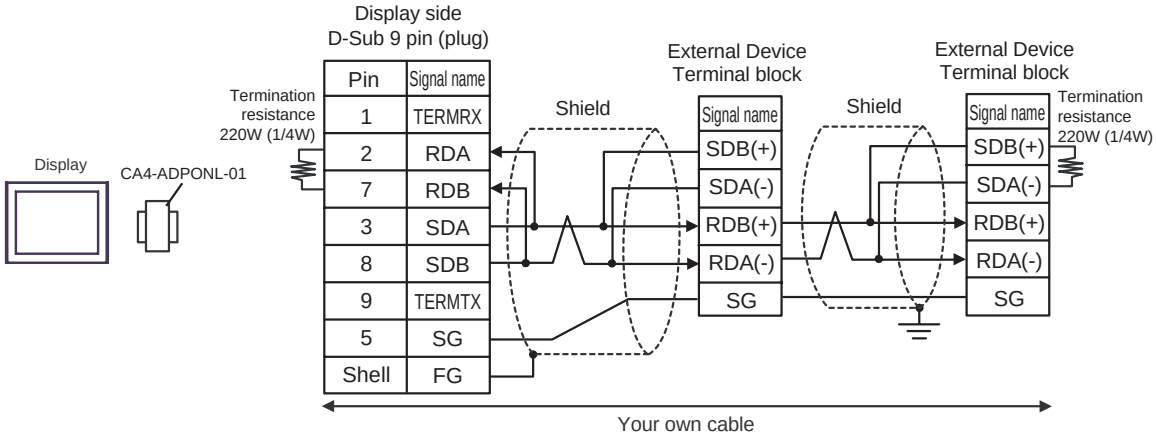


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]

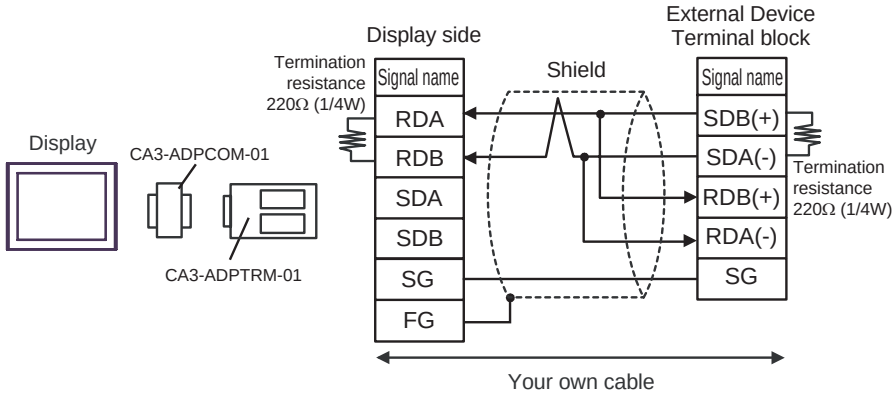


[1:n Connection]

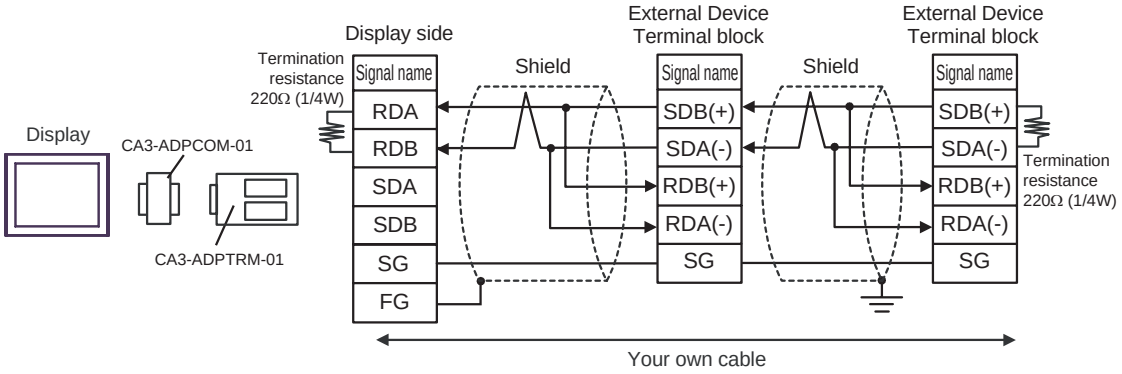


E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]



[1:n Connection]

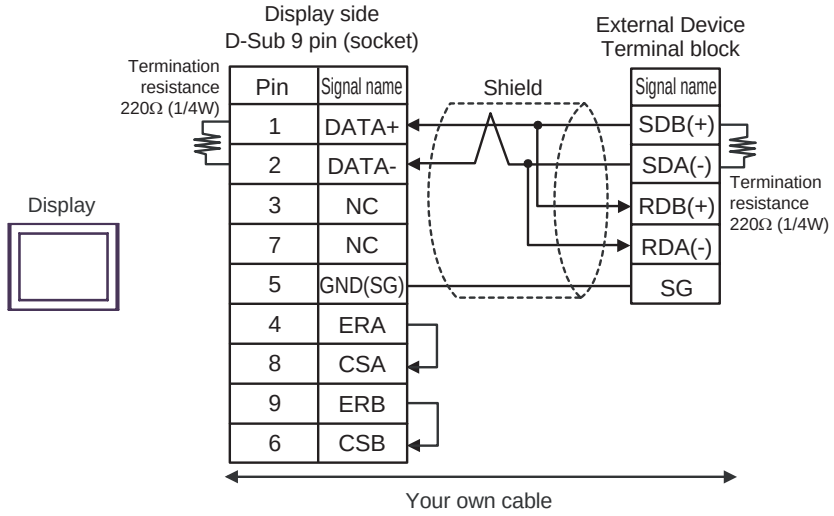


NOTE

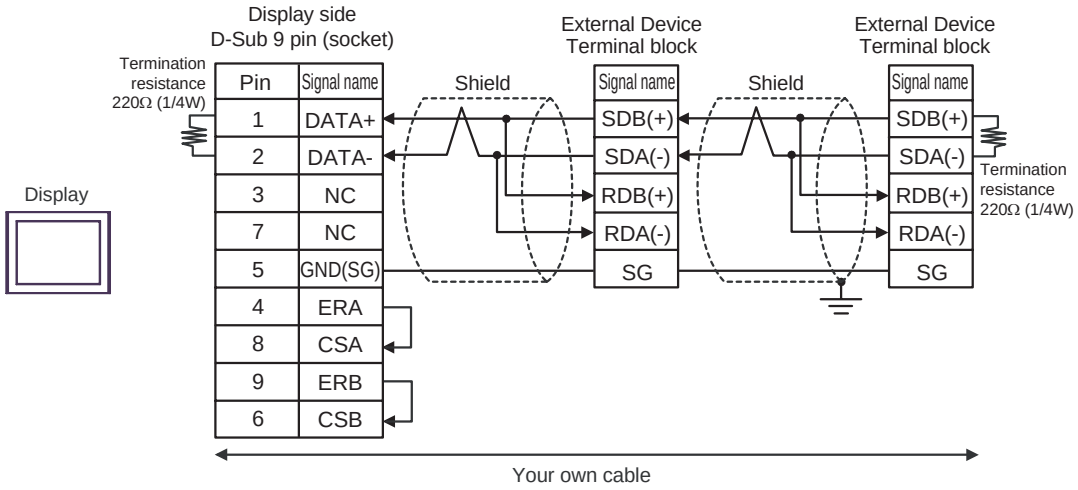
- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

F) When using your own cable

[1:1 Connection]



[1:n Connection]



NOTE

- When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

Cable Diagram 8

Display (Connection Port)	Cable		Notes
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	The cable length must be 1000m 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

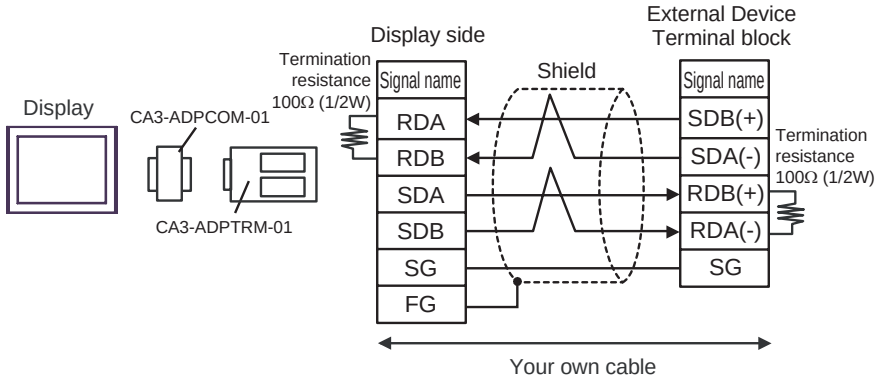
*2 All ST models except AST-3211A

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

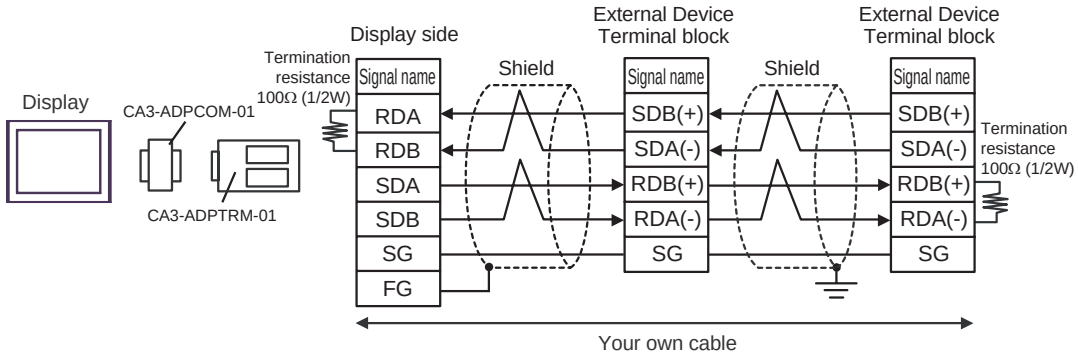
*4 All GP models except GP-3200 series and AGP-3302B

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

[1:1 Connection]

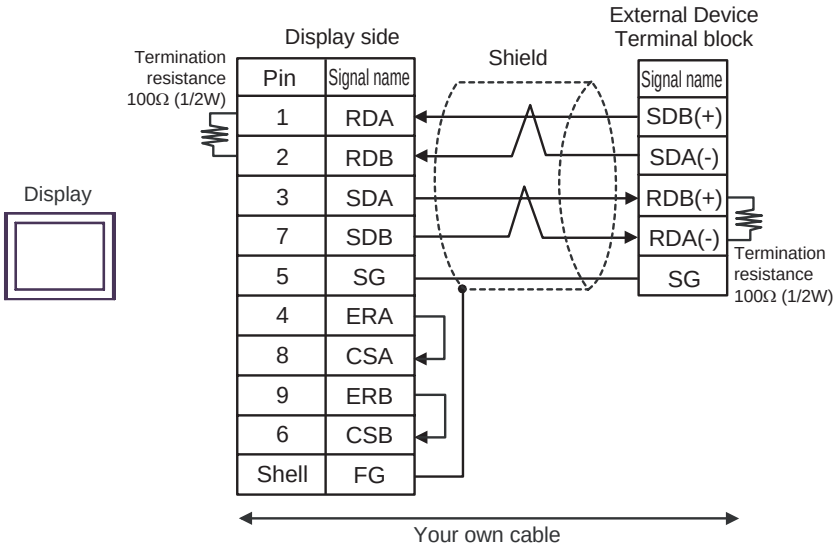


[1:n Connection]

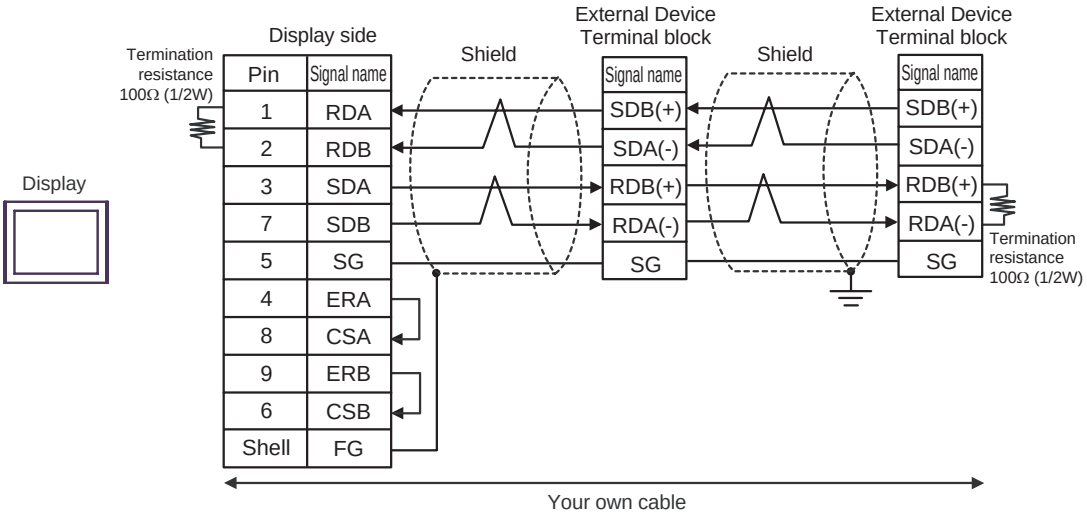


B) When using your own cable

[1:1 Connection]

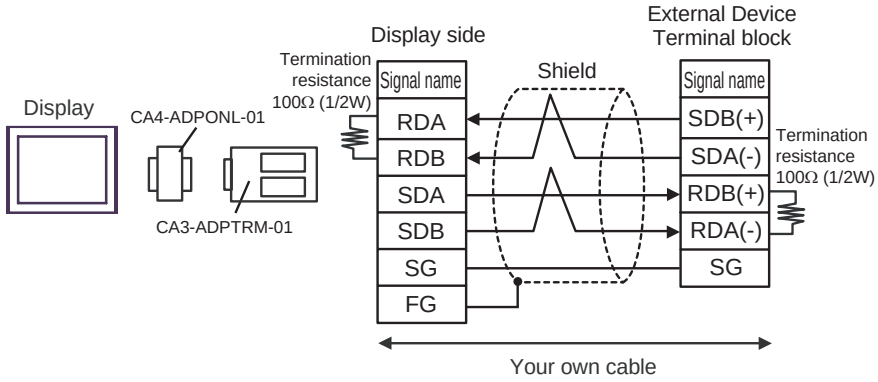


[1:n Connection]

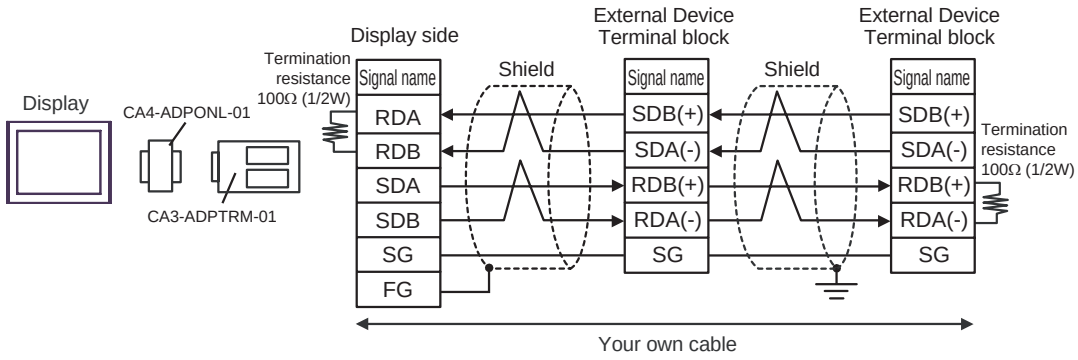


C) When using the online adapter (CA4-ADPONL-01) by Pro-face, the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]

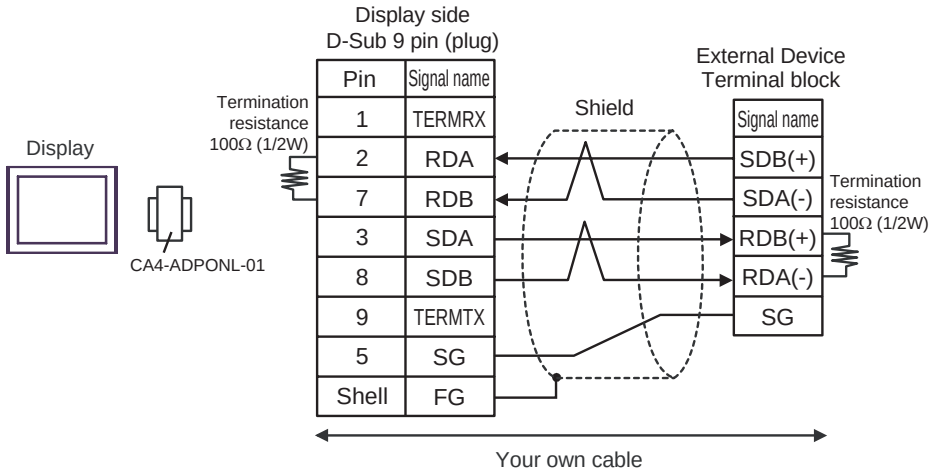


[1:n Connection]

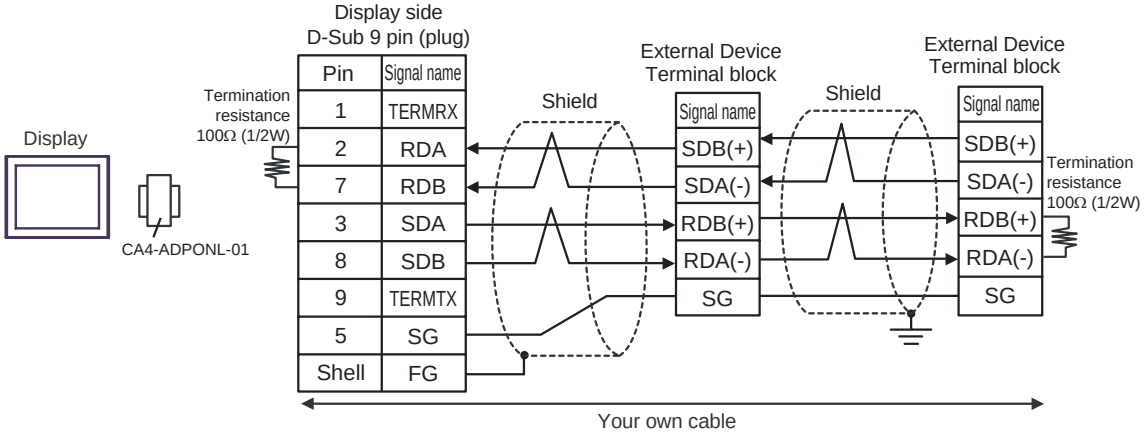


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]



[1:n Connection]

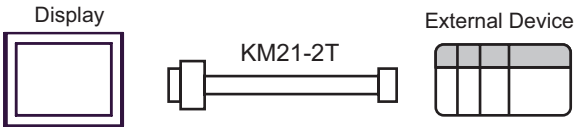


Cable Diagram 9

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC*1 PC/AT	Cable for SIO port by YOKOGAWA Electric Corporation KM21-2T	—

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

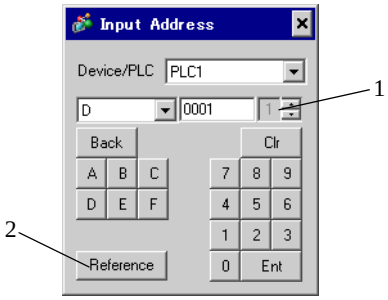
■ IPC COM Port (page 6)



6 Supported Device

Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

Enter the External Device address in the dialog below.



1. Address	Enter the address.
2. Reference	Available parameter list is displayed. Click the parameter to use and press “Select”, then the address is entered. [Reference] is displayed when “M & C Controllers” of the series of the external device is selected.

6.1 FACTRY ACE series

■ When using Programming port on CPU or personal computer link module:

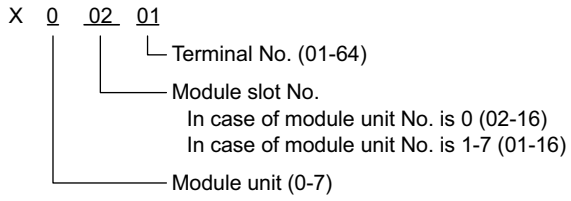
This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Input Relay	X00201 - X71664	X00201 - X71649	L/H	16+1 *1*2
Output Relay	Y00201 - Y71664	Y00201 - Y71649		16+1 *1
Internal Relay	I00001 - I65535	I00001 - I65521		16+1
Common Relay	E0001 - E4096	E0001 - E4081		16+1
Special Relay	M0001 - M9984	M0001 - M9969		16+1
Link Relay	L00001 - L78192	L00001 - L78177		16+1 *4
Timer (Contact)	TU0001 - TU3072	------		
Counter (Contact)	CU0001 - CU3072	------		
Timer (Current Value)	------	TP0001 - TP3072		
Timer (Setting Value)	------	TS0001 - TS3072		*2
Counter (Current Value)	------	CP0001 - CP3072		
Counter (Setting Value)	------	CS0001 - CS3072		*2
Data Register	------	D00001 - D65535		Bit 15
File Register	------	B000001 - B262144		Bit 15 *3
General Register	------	R0001 - R4096		Bit 15
Special Register	------	Z0001 - Z1024		Bit 15
Link Register	------	W00001 - W78192		Bit 15 *4
Special Module	------	SW0010000 - SW7169999		*2 *5
Information	------	INF100 - INF101		*2 *6
	------	INF200 - INF214		*2 *6
	------	INF30010 - INF37163		*2 *6
	------	INF4100 - INF4215		Bit 15 *2 *6
	------	INF500		*2*6
Program Information	------	PRI00000 - PRI99913		*2*7
User Log Read	------	ULR000000 - ULR064128		*2*8
Error History Read	------	ERH000000 - ERH128000		*2*9

*1 Address input area for input relay (X) and output relay (Y) is shown below.

When you specify the word address, specify the terminal number with the value of (a multiple of 16) + 1.

Example: X00201

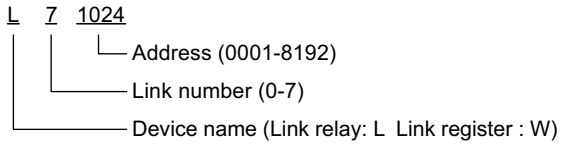


*2 Write disable

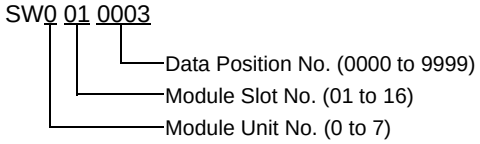
*3 When using the personal computer link module for connection, you can use up to B99999.

*4 In link relay (L) and link register (W), the upper 1st digit on address input area shows the link number, and lower 4th digit shows the address. Specify the word address for link relay (L) and link register (W) with the value of (a multiple of 16) + 1.

Example: When specifying L71024 of link relay

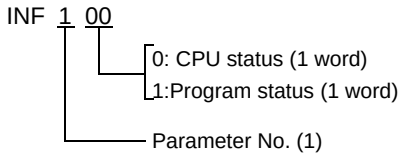


*5 Information of Special Module Read/Write

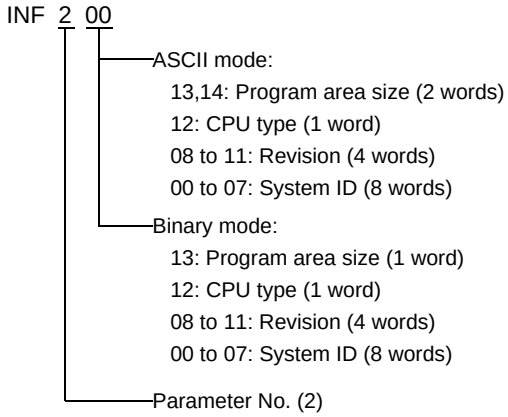


*6 Information Read

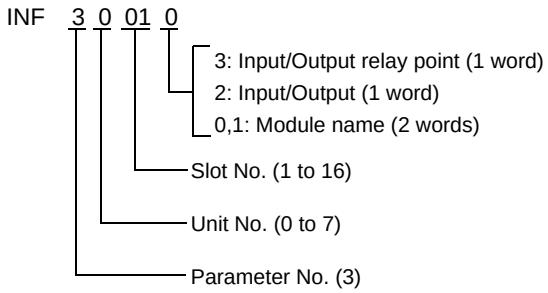
1. Read the status of CPU module and program



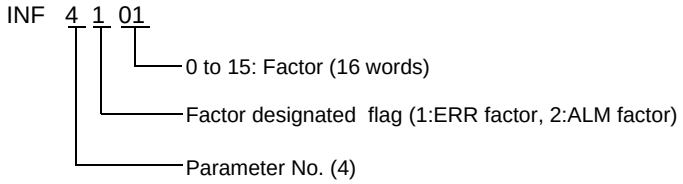
2. Read the information of system ID, CPU type and area size



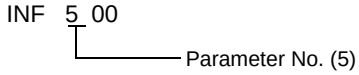
3. Read the mounting module name



4. Read the ERR LED of CPU module or the ALM LED lighting factor



5. Delete the current alarm information of CPU module (write only)



*7 Program Information Read

When 000 is written in Read information

PRI 000 00

- ASCII mode:
  - Creation date: 7 to 13 (7 words)
  - Size step No.: 4 to 6 (3 words)
  - Program name: 0 to 3 (4 words)
- Binary mode:
  - Creation date: 6 to 10 (5 words)
  - Size step No.: 4 to 5 (2 words)
  - Program name: 0 to 3 (4 words)
- Read information (000: Program name, Creation date)

When one of the numbers from 001 to 999 is written in Read information

PRI 000 00

- ASCII mode:
  - Size step No.: 4 to 6 (3 words)
  - Program name: 0 to 3 (4 words)
- Binary mode:
  - Size step No.: 4 to 5 (2 words)
  - Program name: 0 to 3 (4 words)
- Read information (001 to 999: Reading such as the block names of No.n)

*8 User Log Read

ULR 000 000

- User log: 0 to 128 (word)
- User log reading point
  - 000: Latest user log
  - 001 to 064: No.n user log from new data

*9 Error History Read

ERH 000 000

- ASCII mode:
  - 0: Error information
    (00: System error, 01: BASIC error, 02: Sequence error, 03: I/O error)
  - 1, 2: Error code (Charactor string)
  - 3 to 6: Date (YY/MM/DD) charactor string
  - 7 to 10: Time (HH:MM:SS) charactor string
  - 11 to 22: Added information (Charactor string)
- Binary mode:
  - 0: Error information
    (0000: System error, 0001: BASIC error, 0002: Sequence error, 0003: I/O error)
  - 1: Error code
  - 2 to 4: Date (YYYY/MMMM/DDDD)
  - 5 to 7: Time (HHHH:MMMM:SSSS)
  - 8 to 18: Added information
- Error history reading point
  - 000: Latest user log
  - 001 to 128: No.n user log from new data

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

■ When using SIO port on CPU unit:

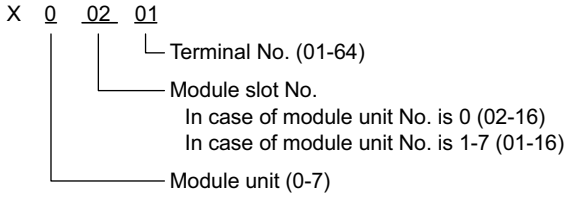
This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Input Relay	X00201 - X71664	X00201 - X71649		16 1 *1*2
Output Relay	Y00201 - Y71664	Y00201 - Y71649		16 1 *1
Internal Relay	I00001 - I32768	I00001 - I32753		16 1
Common Relay	E0001 - E4096	E0001 - E4081		16 1
Special Relay	M0001 - M9984	M0001 - M9969		16 1
Link Relay	L00001 - L78192	L00001 - L78177		16 1 *3
Timer (Contact)	TU0001 - TU3072	------		
Counter (Contact)	CU0001 - CU3072	------		
Timer (Current Value)	------	TP0001 - TP3072		
Timer (Setting Value)	------	TS0001 - TS3072		*2
Counter (Current Value)	------	CP0001 - CP3072		
Counter (Setting Value)	------	CS0001 - CS3072		*2
Data Register	------	D00001 - D32768		Bit 15
File Register	------	B000001 - B262144	L / H	Bit 15
General Register	------	R0001 - R4096		Bit 15
Special Register	------	Z0001 - Z1024		Bit 15
Link Register	------	W00001 - W78192		Bit 15 *3
Special Module	------	SW0010000 - SW7169999		*2 *4
Information	------	INF100 - INF101		*2 *5
	------	INF200 - INF214		*2 *5
	------	INF30010 - INF37163		*2 *5
	------	INF4100 - INF4215		Bit 15 *2 *5
	------	INF500		*2*5
Program Information	------	PRI00000 - PRI99913		*2*6
User Log Read	------	ULR000000 - ULR064128		*2*7
Error History Read	------	ERH000000 - ERH128000		*2*8

*1 Address input area for input relay (X) and output relay (Y) is shown below.

When you specify the word address, specify the terminal number with the value of (a multiple of 16) + 1.

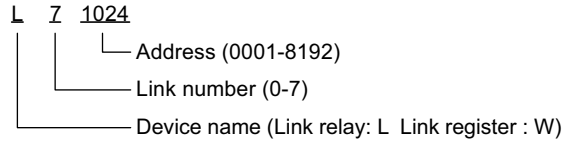
Example: X00201



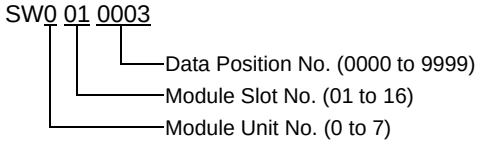
*2 Write disable

*3 In link relay (L) and link register (W), the upper 1st digit on address input area shows the link number, and lower 4th digit shows the address. Specify the word address for link relay (L) and link register (W) with the value of (a multiple of 16) + 1.

Example: When specifying L71024 of link relay

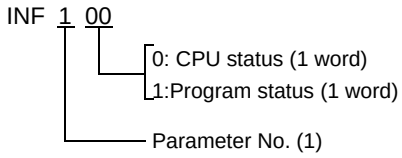


*4 Information of Special Module Read/Write

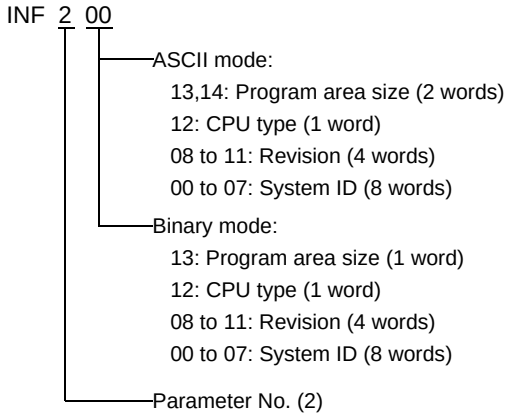


*5 Information Read

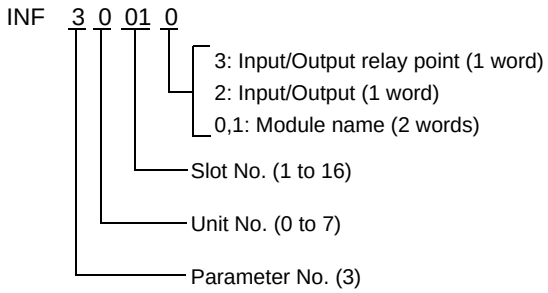
1. Read the status of CPU module and program



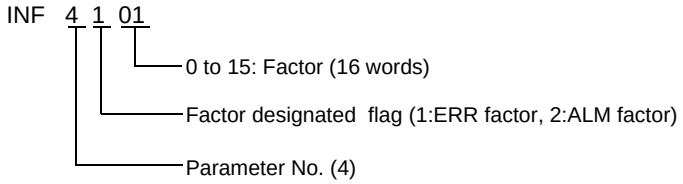
2. Read the information of system ID, CPU type and area size



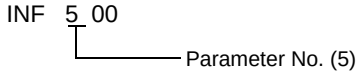
3. Read the mounting module name



4. Read the ERR LED of CPU module or the ALM LED lighting factor



5. Delete the current alarm information of CPU module (write only)



*6 Program Information Read

When 000 is written in Read information

PRI 000 00

- ASCII mode:
  - Creation date: 7 to 13 (7 words)
  - Size step No.: 4 to 6 (3 words)
  - Program name: 0 to 3 (4 words)
- Binary mode:
  - Creation date: 6 to 10 (5 words)
  - Size step No.: 4 to 5 (2 words)
  - Program name: 0 to 3 (4 words)
- Read information (000: Program name, Creation date)

When one of the numbers from 001 to 999 is written in Read information

PRI 000 00

- ASCII mode:
  - Size step No.: 4 to 6 (3 words)
  - Program name: 0 to 3 (4 words)
- Binary mode:
  - Size step No.: 4 to 5 (2 words)
  - Program name: 0 to 3 (4 words)
- Read information (001 to 999: Reading such as the block names of No.n)

*7 User Log Read

ULR 000 000

- User log: 0 to 128 (word)
- User log reading point
  - 000: Latest user log
  - 001 to 064: No.n user log from new data

*8 Error History Read

ERH 000 000

- ASCII mode:
  - 0: Error information
    (00: System error, 01: BASIC error, 02: Sequence error, 03: I/O error)
  - 1, 2: Error code (Charactor string)
  - 3 to 6: Date (YY/MM/DD) charactor string
  - 7 to 10: Time (HH:MM:SS) charactor string
  - 11 to 22: Added information (Charactor string)
- Binary mode:
  - 0: Error information
    (0000: System error, 0001: BASIC error, 0002: Sequence error, 0003: I/O error)
  - 1: Error code
  - 2 to 4: Date (YYYY/MMMM/DDDD)
  - 5 to 7: Time (HHHH:MMMM:SSSS)
  - 8 to 18: Added information
- Error history reading point
  - 000: Latest user log
  - 001 to 128: No.n user log from new data

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

6.2 Temperature Controllers (UT100 Series)

■ UT130/UT150/UT152/UT155

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
I Relay	I0001 - I0048	I0001 - I0033	L/H	+16+1 *1
D Register	------	D0001 - D0420		Bit15 *1, *2

*1 There are write-protected areas and usage- disabled areas within the displayed addresses. Please check the controllers' manuals to get the description of function and usage of the registers for detail.

*2 Only D401 to D420 may be allocated as system area memory for the controller. Be careful of this point when the system area is set in GP-Pro EX or OFFLINE mode.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

■ UP150

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
I Relay	I0001 - I0054	I0001 - I0049	L/H	+16+1 *1
D Register	------	D0001 - D0420		Bit15 *1, *2

*1 There are write-protected areas and usage- disabled areas within the displayed addresses. Please check the controllers' manuals to get the description of function and usage of the registers for detail.

*2 Only D401 to D420 may be allocated as system area memory for the controller. Be careful of this point when the system area is set in GP-Pro EX or OFFLINE mode.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

6.3 Digital Indicating Controllers

■ UT320/UT350

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
I Relay	I0001 - I0784	I0001 - I0769	L/H	÷16+1 *1
D Register	------	D0001 - D1300		Bit15 *1, *2

*1 There are write-protected areas and usage- disabled areas within the displayed addresses. Please check the controllers' manuals to get the description of function and usage of the registers for detail.

*2 Only D50 to D100 may be allocated as system area memory for the controller. Be careful of this point when the system area is set in GP-Pro EX or OFFLINE mode.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

■ UT420/UT450

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
I Relay	I0001 - I2048	I0001 - I2033	L/H	÷16+1 *1
D Register	------	D0001 - D1300		Bit15 *1, *2

*1 There are write-protected areas and usage- disabled areas within the displayed addresses. Please check the controllers' manuals to get the description of function and usage of the registers for detail.

*2 Only D50 to D100 may be allocated as system area memory for the controller. Be careful of this point when the system area is set in GP-Pro EX or OFFLINE mode.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
  Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- Please refer to the precautions on manual notation for icons in the table.
  ☞ "Manual Symbols and Terminology"

6.4 UT2000

This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
I Relay	I0001 - I1024	I0001 - I1009	L/H	÷16+1 *1
D Register	------	D0001 - D1024		Bit 15 *1

*1 There are write-protected areas and usage- disabled areas within the displayed addresses. Please check the controllers' manuals to get the description of function and usage of the registers for detail.

NOTE

- Of the system area settings, only reading area size can be used by the 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"

7 Device Code and Address Code

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

7.1 FACTORY ACE Series

Device	Device Name	Device Code (HEX)	Address Code
Input Relay	1X	0080	(Module unit No. x 0x40) + ((Module slot No. - 1) x 0x4) + ((Terminal No. - 1) divided by 16)*1
	2X	0180	
	3X	0280	
	4X	0380	
Output Relay	1Y	0081	(Module unit No. x 0x40) + ((Module slot No. - 1) x 0x4) + ((Terminal No. - 1) divided by 16)*1
	2Y	0181	
	3Y	0281	
	4Y	0381	
Internal Relay	1I	0082	Value of (word address - 1) divided by 16
	2I	0182	
	3I	0282	
	4I	0382	
Common Relay	1E	0084	Value of (word address - 1) divided by 16
	2E	0184	
	3E	0284	
	4E	0384	
Special Relay	1M	0083	Value of (word address - 1) divided by 16
	2M	0183	
	3M	0283	
	4M	0383	
Link Relay	1L	0088	(Link No. x 0x10000) + ((Word Address - 1) divided by 16) *2
	2L	0188	
	3L	0288	
	4L	0388	
Timer (Current Value)	1TP	0060	Word Address - 1
	2TP	0160	
	3TP	0260	
	4TP	0360	

Device	Device Name	Device Code (HEX)	Address Code
Timer (Setting Value)	1TS	0063	Word Address - 1
	2TS	0163	
	3TS	0263	
	4TS	0363	
Counter (Current Value)	1CP	0061	Word Address - 1
	2CP	0161	
	3CP	0261	
	4CP	0361	
Counter (Setting Value)	1CS	0064	Word Address - 1
	2CS	0164	
	3CS	0264	
	4CS	0364	
Data Register	1D	0000	Word Address - 1
	2D	0100	
	3D	0200	
	4D	0300	
Common Register	1B	0004	Word Address - 1
	2B	0104	
	3B	0204	
	4B	0304	
General Register	1R	0003	Word Address - 1
	2R	0103	
	3R	0203	
	4R	0303	
Special Register	1Z	0001	Word Address - 1
	2Z	0101	
	3Z	0201	
	4Z	0301	
Link Register	1W	0002	(Link No. x 0x10000) + ((Word Address - 1) divided by 16)*2
	2W	0102	
	3W	0202	
	4W	0302	

Device	Device Name	Device Code (HEX)	Address Code
Special Module	1SW	0065	Word address
	2SW	0165	
	3SW	0265	
	4SW	0365	
Information	1INF1	0066	Word address (Read only)
	2INF1	0166	
	3INF1	0266	
	4INF1	0366	
	1INF2	006a	Word address (Read only)
	2INF2	016a	
	3INF2	026a	
	4INF2	036a	
	1INF3	006b	Word address (Read only)
	2INF3	016b	
	3INF3	026b	
	4INF3	036b	
	1INF4	0005	Word address (Read only)
	2INF4	0105	
	3INF4	0205	
	4INF4	0305	
	1INF5	006c	Word address (Write only)
	2INF5	016c	
	3INF5	026c	
	4INF5	036c	
Program Information	1PRI	0067	Word address (Read only)
	2PRI	0167	
	3PRI	0267	
	4PRI	0367	
User Log Read	1ULR	0068	Word address (Read only)
	2ULR	0168	
	3ULR	0268	
	4ULR	0368	

Device	Device Name	Device Code (HEX)	Address Code
Error History Read	1ERH	0069	Word address (Read only)
	2ERH	0169	
	3ERH	0269	
	4ERH	0369	

*1 Please refer to "6 Supported Device *1" for each name.

*2 Please refer to "6 Supported Device *4" for each name.

7.2 Temperature Controllers (UT100 Series)

Device	Device Name	Device Code (HEX)	Address Code
I Relay	I	0082	Value of (word address - 1) divided by 16
D Register	D	0000	Value of word Address - 1

7.3 Digital Indicating Controllers

Device	Device Name	Device Code (HEX)	Address Code
I Relay	I	0082	Value of (word address - 1) divided by 16
D Register	D	0000	Value of word Address - 1

7.4 UT2000

Device	Device Name	Device Code (HEX)	Address Code
I Relay	I	0082	Value of (word address - 1) divided by 16
D Register	D	0000	Value of word Address - 1

8 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs. Device name is a title of External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of External Device where error occurs, or error codes received from External Device. **NOTE** • IP address is displayed such as "IP address (Decimal): MAC address (Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "Decimal [Hex]".

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2 [02])"

NOTE

- Please refer to the manual of External Device for more detail of received error codes.
- Please refer to "When an error message is displayed (Error code list)" of "Maintenance/ Troubleshooting" for a common error message to the driver.