

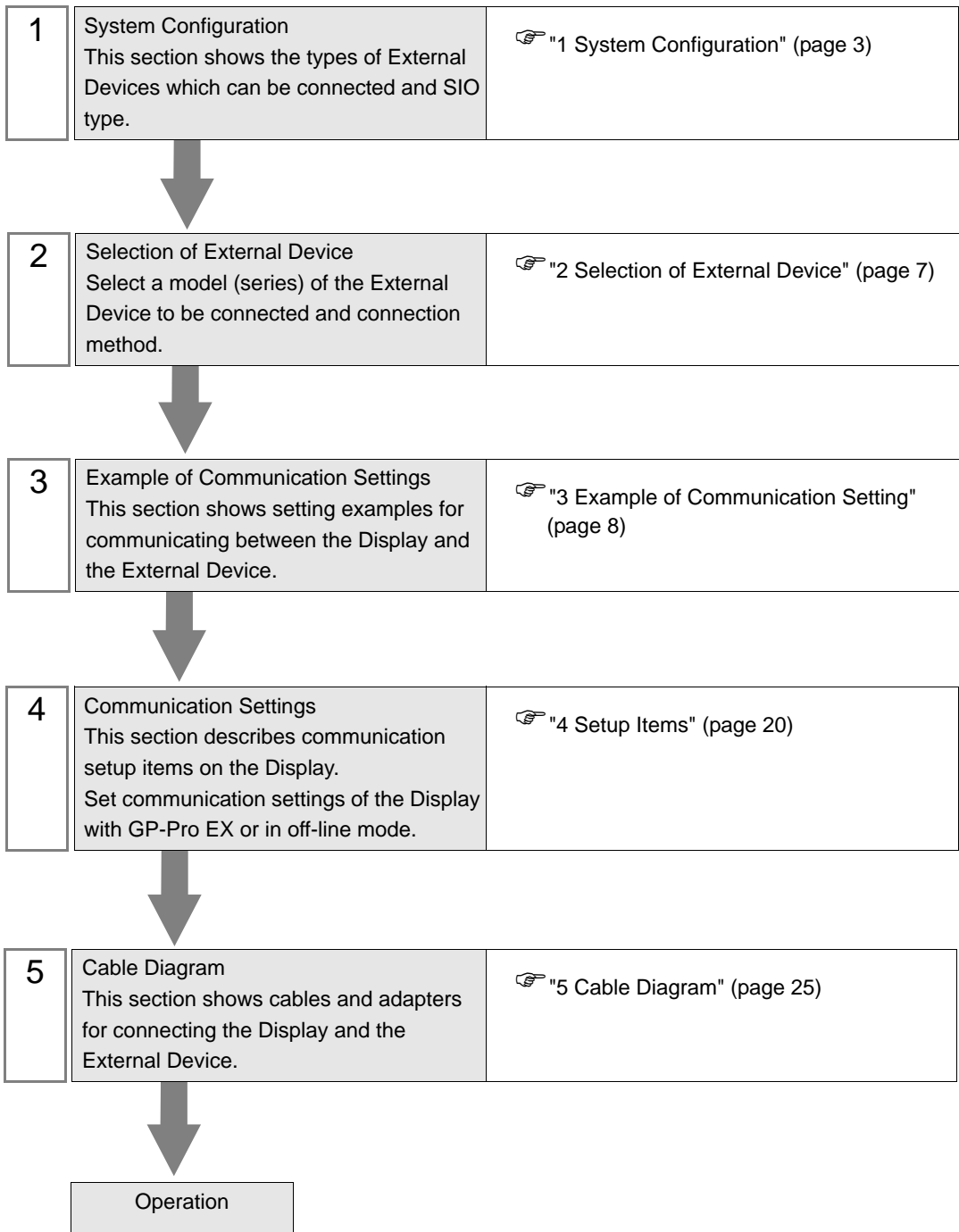
Personal Computer Link SIO Driver

1	System Configuration.....	3
2	Selection of External Device	7
3	Example of Communication Setting	8
4	Setup Items.....	20
5	Cable Diagram	25
6	Supported Device.....	39
7	Device Code and Address Code.....	44
8	Error Messages.....	48

Introduction

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

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



1 System Configuration

The system configuration in the case when the External Device of 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.

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	PROGRAMMER port on CPU	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 25)

1.2 Personal Computer Link Module

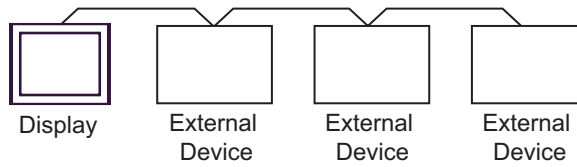
Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
FA-M3	F3SP20-0N F3SP21-0N F3SP25-2N F3SP28-3N F3SP30-0N F3SP35-5N F3SP36-3N F3SP38-6N F3SP53-4H F3SP58-6H F3SP28-3S F3SP38-6S F3SP53-4S F3SP58-6S F3SP59-7S F3SP66-4S F3SP67-6S	F3LC11-1N, F3LC11-1F, RS232C port on F3LC12-1F	RS232C	Setting Example 4 (page 17)	Cable Diagram 3 (page 31)
		RS422/485 (4Wire) port on F3LC11-2N	RS422/485	Setting Example 3 (page 14)	Cable Diagram 2 (page 26)
		RS422/485 (2Wire) port on F3LC11-2N	RS422/485	Setting Example 2 (page 11)	Cable Diagram 4 (page 32)

■ Connection Configuration

- 1:1 Connection



- 1:n Connection



■ COM Port of IPC

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

Usable port

Series	Usable port		
	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)
PS-2000B	COM1 ^{*1} , COM2, COM3 ^{*1} , COM4	-	-
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}

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

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

Dip switch setting: RS-232C

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

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

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

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

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

2 Selection of External Device

Select the External Device to be connected to the Display.

New Project File

Device/PLC

Maker: YOKOGAWA Electric Corporation

Driver: Personal Computer Link SIO

☐ Use System Area [Refer to the manual of this Device/PLC](#)

Connection Method

Port: COM1

[Go to Device/PLC Manual](#)

Back Communication Detail Settings **New Screen** Cancel

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 (only for 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 " 5.14.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting" Cf. Maintenance/Troubleshooting "2.14.1 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/PLC 1

Summary [Change Device/PLC](#)

Maker: YOKOGAWA Electric Corporation Series: Personal Computer Link SIO Port: COM1

Text Data Mode: 1 [Change](#)

Communication Settings

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

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☒ NONE ☐ EVEN ☐ ODD

Stop Bit: ☒ 1 ☐ 2

Flow Control: ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

Extension Mode

☐ Exist Sum Check

☒ Exist Terminator

RI / VCC ☒ RI ☐ VCC

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


Device-Specific Settings

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

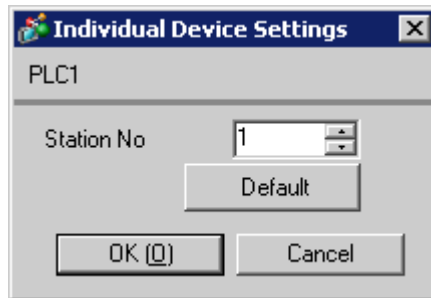
No.	Device Name	Settings
1	PLC1	Station No=1

[Default](#)

◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

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

Speed

Data Length ☐ 7 ☒ 8

Parity ☒ NONE ☐ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

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

Timeout (sec)

Retry

Wait To Send (ms)

ExtentionMode

☐ Exist Sum Check

☒ Exist Terminator

RI / VCC ☒ RI ☐ VCC

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


[Default](#)

Device-Specific Settings

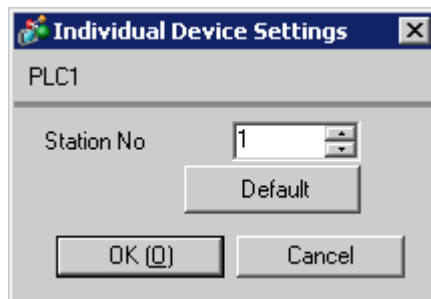
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Station No=1

◆ 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/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

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

Speed

Data Length ☐ 7 ☒ 8

Parity ☒ NONE ☐ EVEN ☐ ODD

Stop Bit ☒ 1 ☐ 2

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

Timeout (sec)

Retry

Wait To Send (ms)

ExtentionMode

☐ Exist Sum Check


☒ Exist Terminator

RI / VCC ☒ RI ☐ VCC

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


[Default](#)

Device-Specific Settings

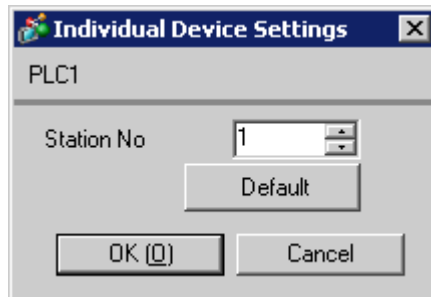
Allowable No. of Device/PLCs 16 Unit(s) 

No.	Device Name	Settings
1	PLC1	Station No=1

◆ 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/PLC 1

Summary

Change Device/PLC

Maker

YOKOGAWA Electric Corporation

Series

Personal Computer Link SIO

Port

COM1

Text Data Mode

1

Change

Communication Settings

SIO Type

☒ RS232C
 ☐ RS422/485(2wire)
 ☐ RS422/485(4wire)

Speed

19200

Data Length

☐ 7
 ☒ 8

Parity

☒ NONE
 ☐ EVEN
 ☐ ODD

Stop Bit

☒ 1
 ☐ 2

Flow Control

☐ NONE
 ☒ ER(DTR/CTS)
 ☐ XON/XOFF

Timeout

3

(sec)

Retry

2

Wait To Send

0

(ms)

ExtentionMode

☐ Exist Sum Check
 ☒ Exist Terminator

RI / VCC

☒ RI
 ☐ VCC

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

Default

Device-Specific Settings

Allowable No. of Device/PLCs

16 Unit(s)

No.

1

Device Name

PLC1


Settings

Station No=1

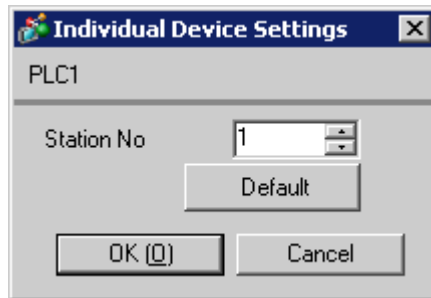
GP-Pro EX Device/PLC Connection Manual

17

◆ 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

4 Setup Items

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

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

☞ "3 Example of Communication Setting" (page 8)

4.1 Communication Setting with GP-Pro EX

■ Communication Settings

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

Device/PLC 1

Summary

Maker: YOKOGAWA Electric Corporation Series: Personal Computer Link SIO Port: COM1

Text Data Mode: 1 [Change](#)

Communication Settings

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

Speed: 19200

Data Length: ☐ 7 ☒ 8

Parity: ☒ NONE ☐ EVEN ☐ ODD

Stop Bit: ☒ 1 ☐ 2

Flow Control: ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

Extension Mode

☐ Exist Sum Check

☒ Exist Terminator

RI / VCC ☒ RI ☐ VCC

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

[Default](#)

Device-Specific Settings

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


No.	Device Name	Settings
1	PLC1	Station No=1

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	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.

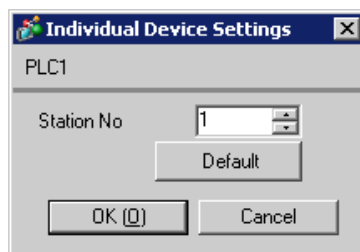
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Setup Items	Setup Description
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.
Exist Sum Check (Extension Mode)	Set whether you perform the sum check.
Exist Terminator (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
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.

Comm.	Device	Option		
Personal Computer Link SIO [COM1] Page 1/1				
SIO Type	RS232C			
Speed	19200			
Data Length	<input type="radio"/> 7 <input checked="" type="radio"/> 8			
Parity	<input checked="" type="radio"/> NONE <input type="radio"/> EVEN <input type="radio"/> ODD			
Stop Bit	<input checked="" type="radio"/> 1 <input type="radio"/> 2			
Flow Control	ER(DTR/CTS)			
Timeout(s)	3			
Retry	2			
Wait To Send(ms)	0			
Exist Check Sum	<input checked="" type="radio"/> OFF <input type="radio"/> ON			
Exist Terminator	<input type="radio"/> OFF <input checked="" type="radio"/> ON			
Exit		Back		2005/09/02 12:49:31

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].

Comm.	Device	Option		
Personal Computer Link SIO		[COM1]	Page 1/1	
Device/PLC Name		PLC1 ▼		
Station No.		1 ▼ ▲		
Exit		Back		2005/09/02 12:49:33

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])
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].

Comm.	Device	Option		
Personal Computer Link SIO		[COM1]	Page 1/1	
<p>RI / VCC <input checked="" type="radio"/> RI <input type="radio"/> VCC</p> <p>In the case of RS232C, you can select the 9th pin to RI(Input) or VCC(5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.</p>				
	Exit		Back	2005/09/02 12:49:35

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.

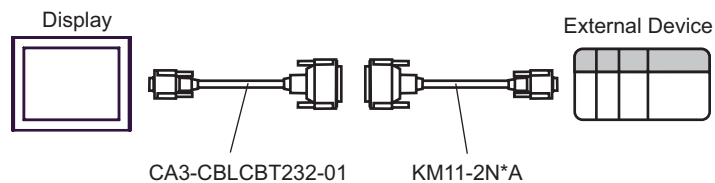
- The FG pin of the External Device body must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation unit,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

Cable Diagram1

Display (Connection Port)	Cable	Notes
GP (COM1) IPC ^{*1}	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.

☞ ■ COM Port of IPC (page 5)




Cable Diagram 2

Display (Connection Port)	Cable		Notes
GP ^{*1} (COM1) AGP-3302B (COM2) IPC ^{*2}	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	

*1 All GP models except AGP-3302B

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

 ■ COM Port of IPC (page 5)

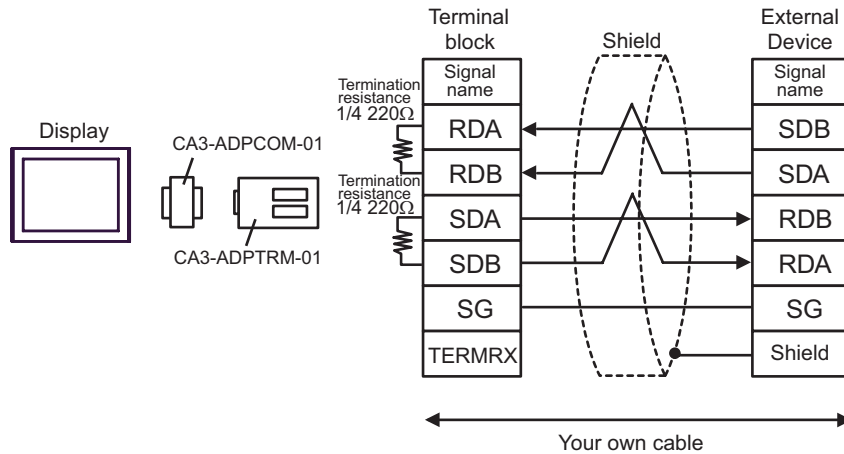
*3 All GP models except GP-3200 series and AGP-3302B

NOTE

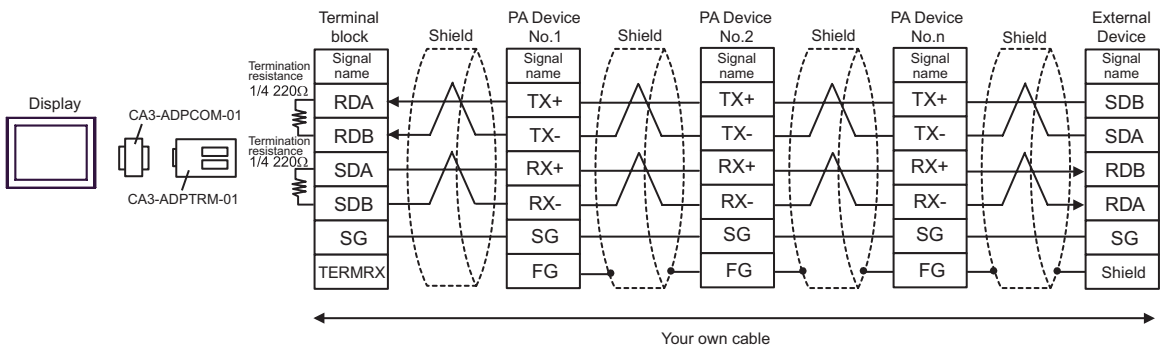
- Attach the termination resistance to the devices on both ends.
- Note that pole A and pole B are reversely named for the Display and the External Device.
- When the PA device has SG, connect it.
- Set the last resistance switch of the personal computer link module for the External Device which terminates 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]

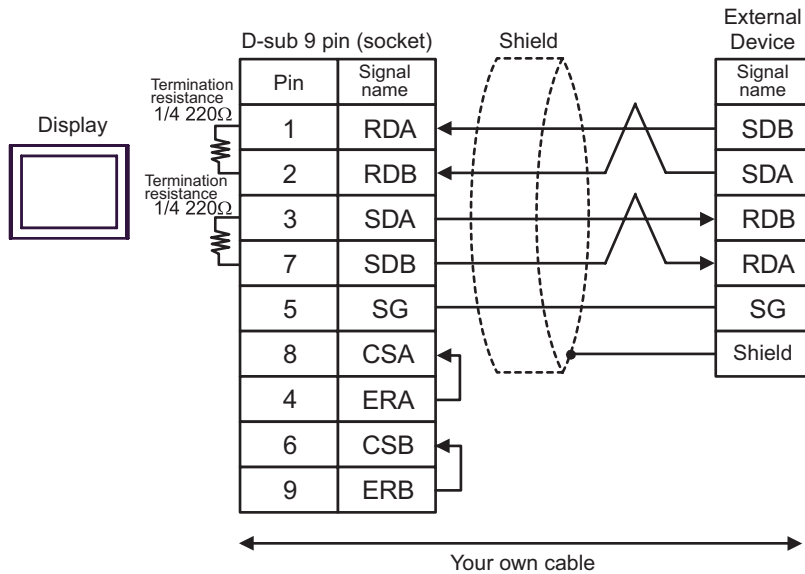


NOTE

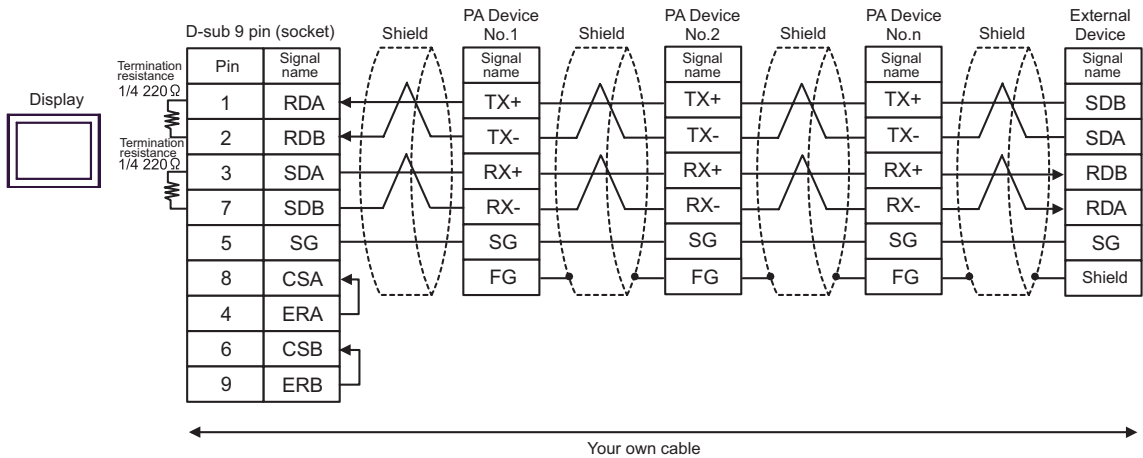
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

B) When using your own cable

[1:1 Connection]



[1:n Connection]

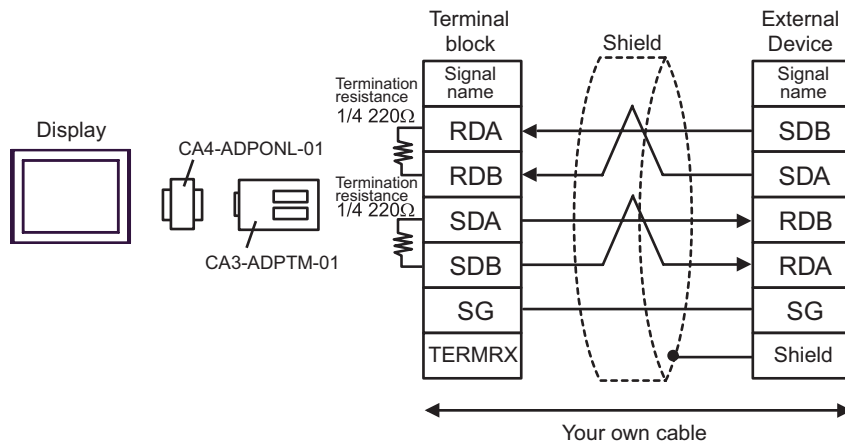


NOTE

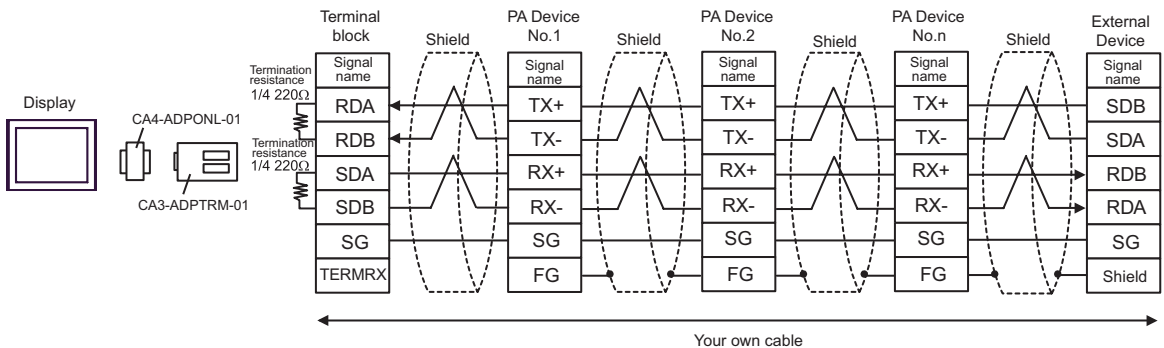
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.
- When the display unit you use is an IPC, turn ON the DIP switches 5 and 6 to insert the termination resistance.

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]

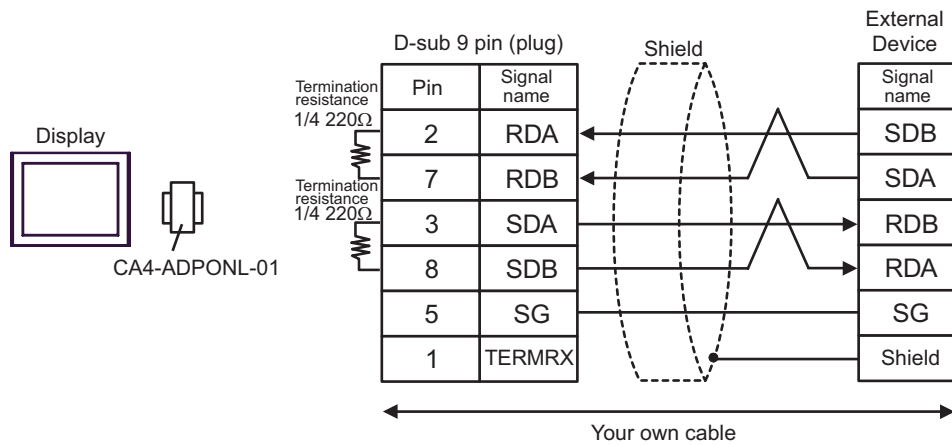


NOTE

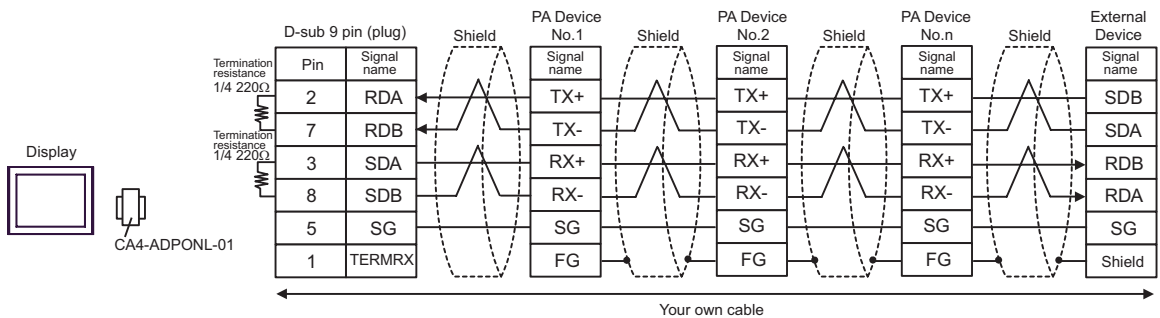
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.

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

[1:1 Connection]



[1:n Connection]



NOTE

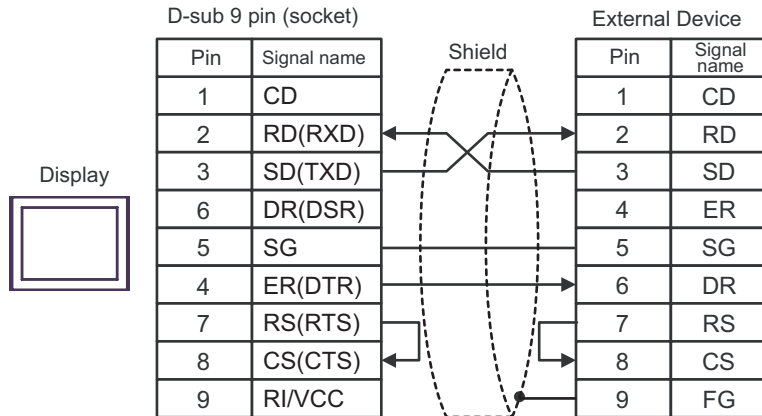
- When the PA device has SG, connect it.
- Even if the PA device has no SG, SG connection between the Display and the External Device is necessary.

Cable Diagram 3

Display (Connection Port)	Cable	Notes
GP (COM1) IPC ^{*1}	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.

☞ ■ COM Port of IPC (page 5)




Cable Diagram 4

Display (Connection Port)	Cable		Notes
GP ^{*1} (COM1) AGP-3302B (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 ^{*2} (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 ^{*3}	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 GP models except GP-3200 series and AGP-3302B

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

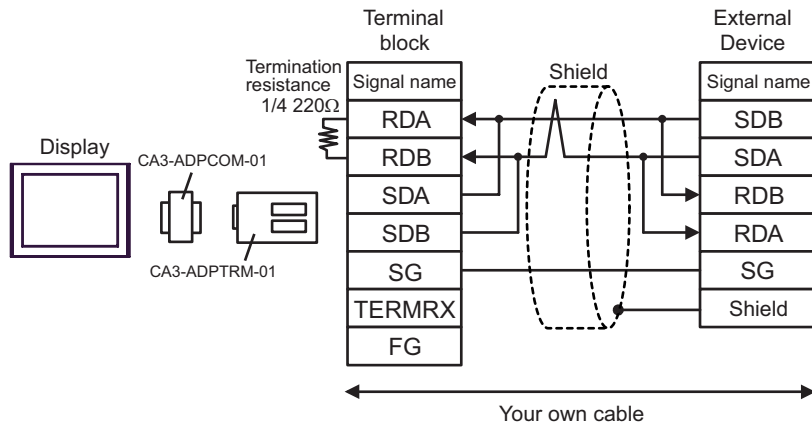
 ■ COM Port of IPC (page 5)

NOTE

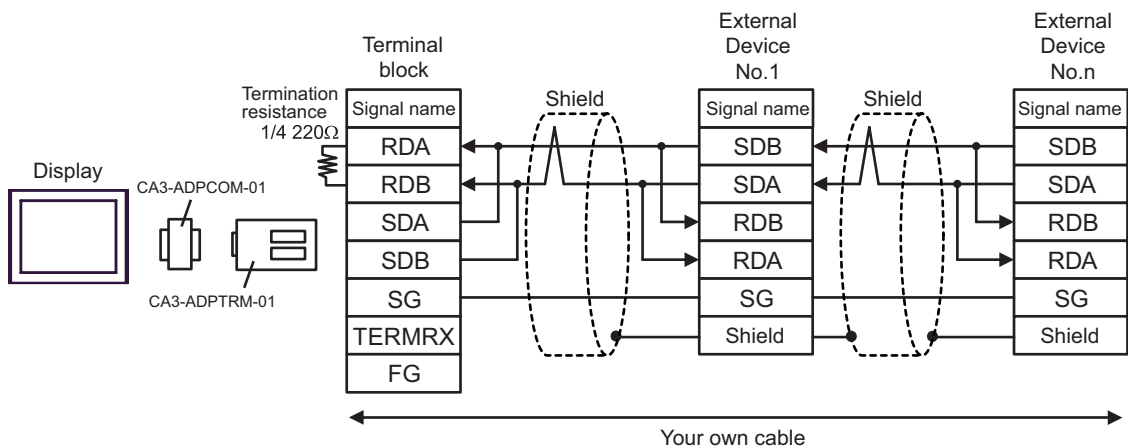
- Note that pole A and pole B are reversely named for the Display and the External Device.
- When the PA device has SG, connect it.
- Set the last resistance switch of the personal computer link module for the External Device which terminates the connection to 2-WIRE.
- We recommend CO-SPEU-SB(A)3P x 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]

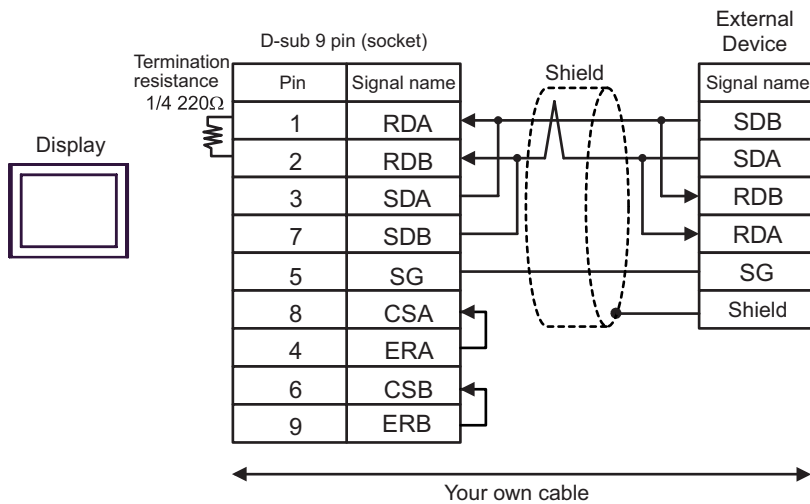


[1:n Connection]

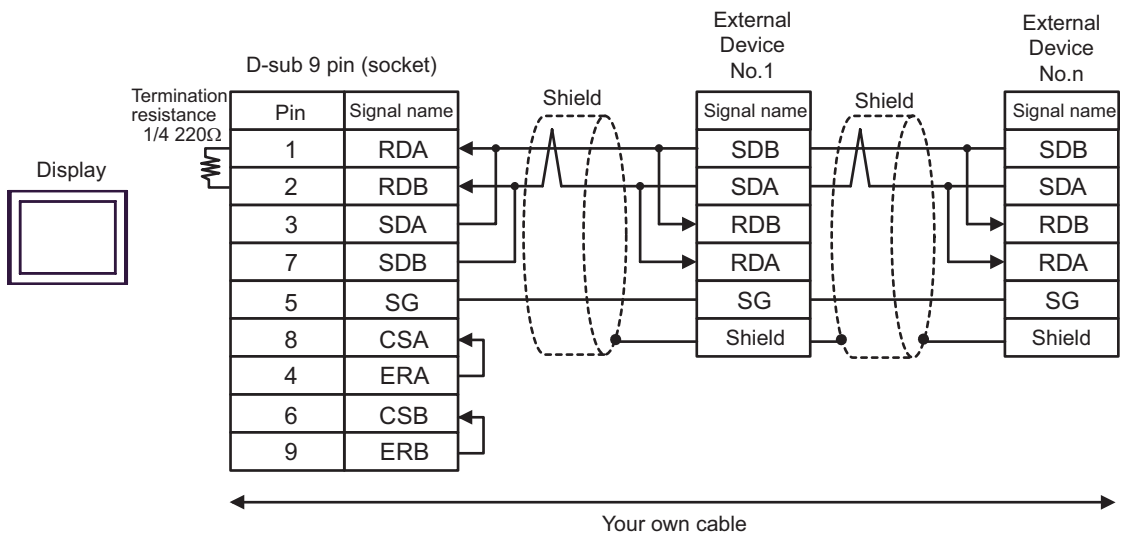


B) When using your own cable

[1:1 Connection]

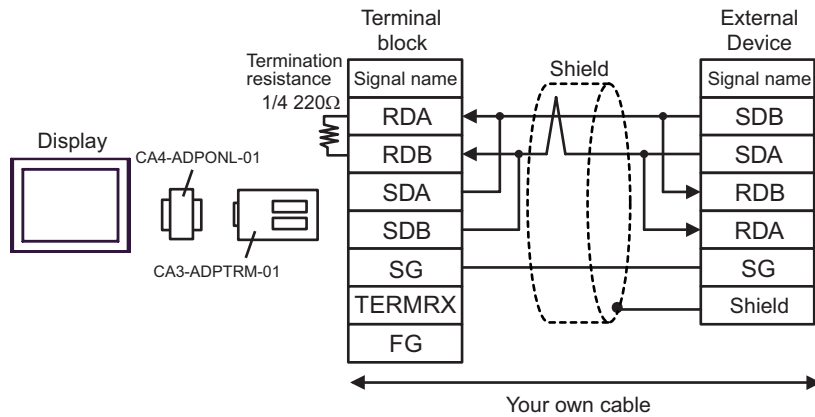


[1:n Connection]

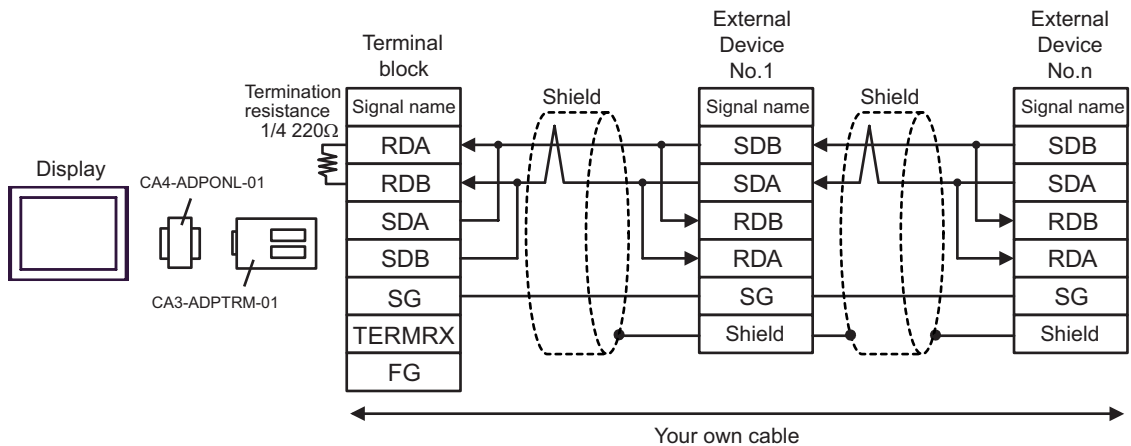


C) When using the online adapter (CA4-ADPONL-01) by Pro-face, the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]

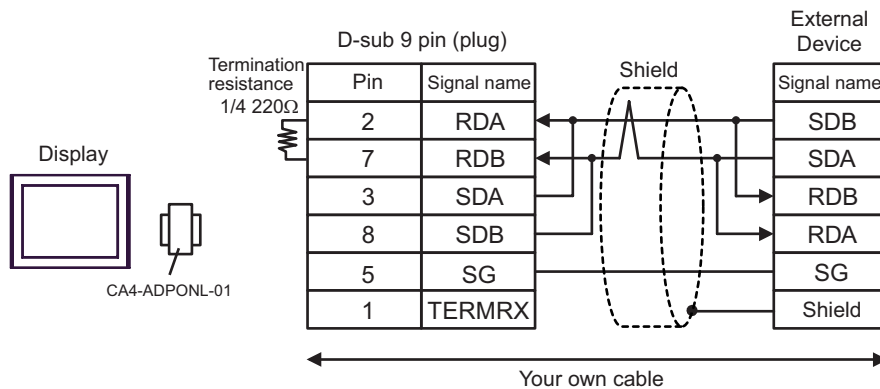


[1:n Connection]

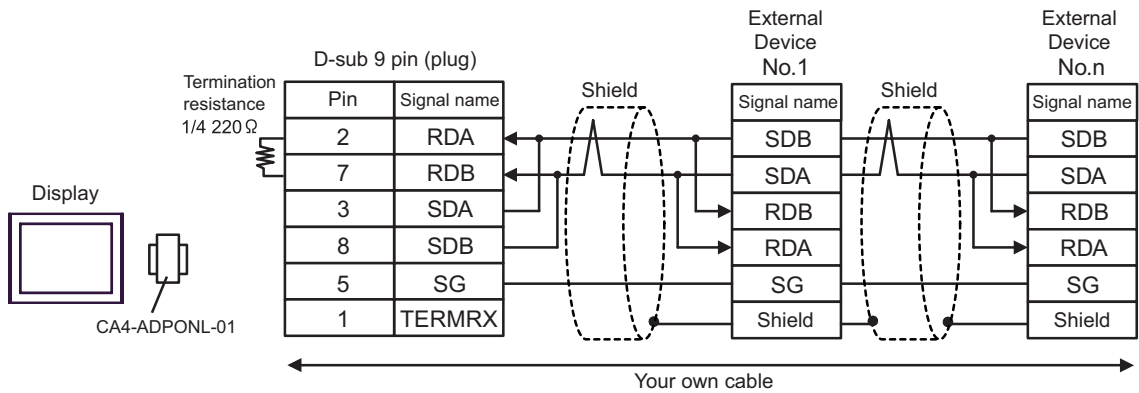


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

[1:1 Connection]

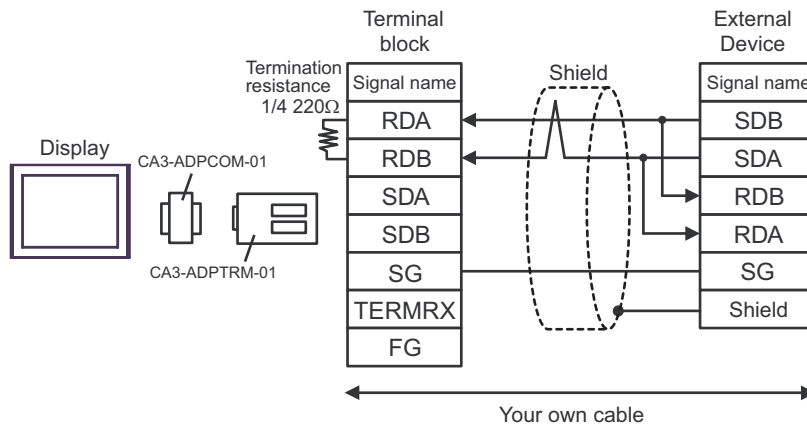


[1:n Connection]

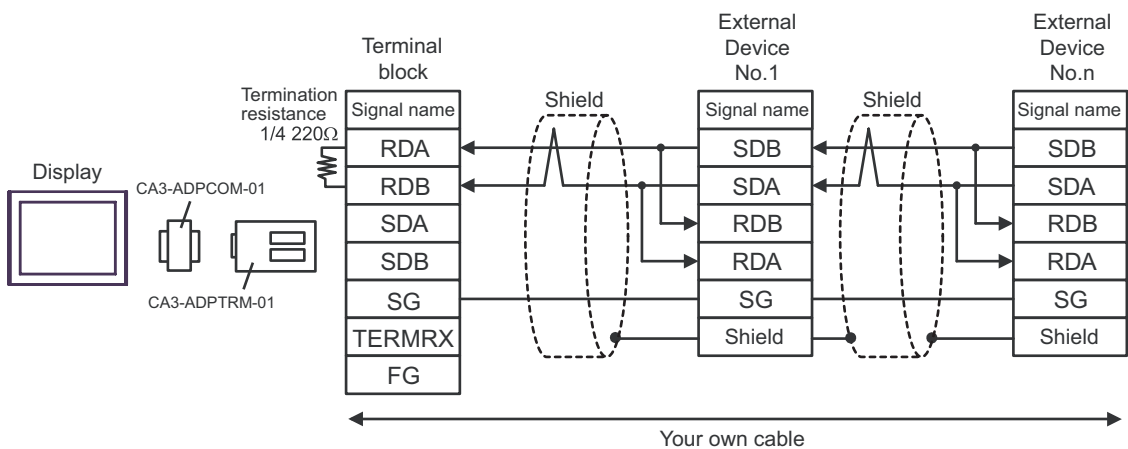


E) When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

[1:1 Connection]



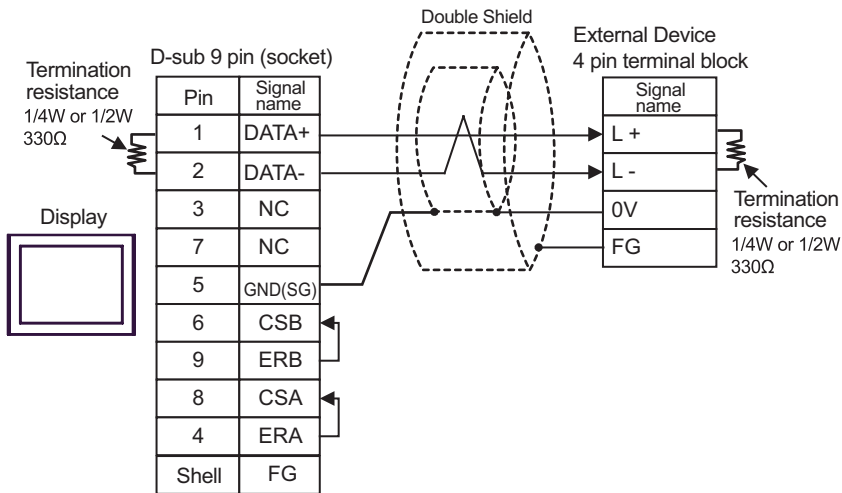
[1:n Connection]



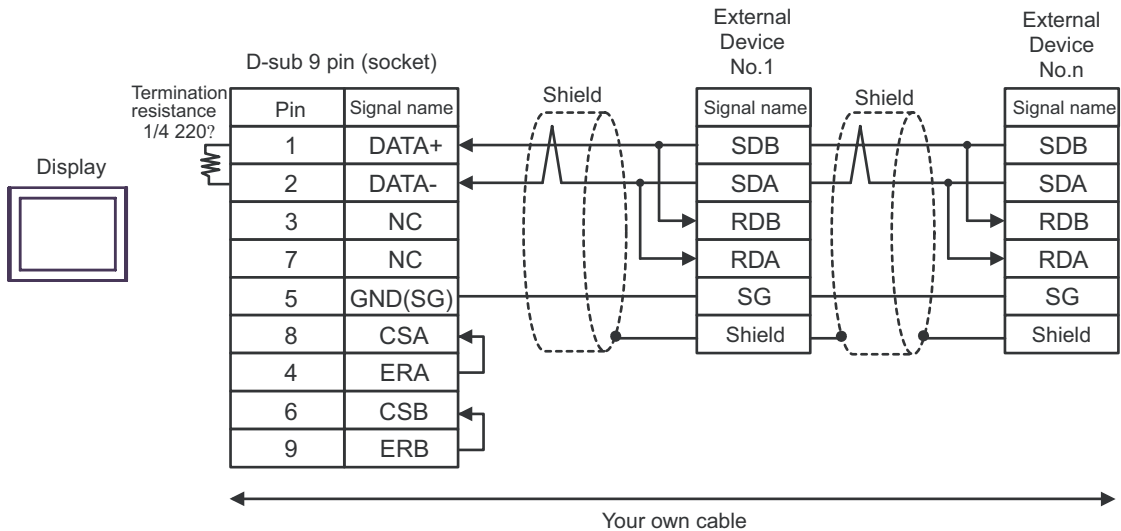
NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

F) When using your own cable

[1:1 Connection]




[1:n Connection]








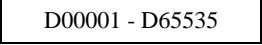








NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

6 Supported Device

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

 This address can be specified as system data area.

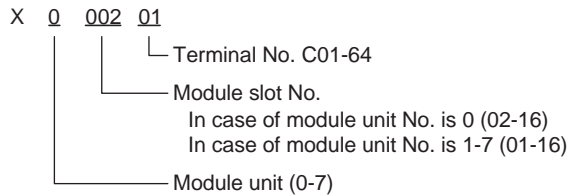
Device	Bit Address	Word Address	32bits	Notes
Input Relay	X00201 - X71664	X00201 - X71649		 *1*2
Output Relay	Y00201 - Y71664	Y00201 - Y71649		 *1
Internal Relay	I00001 - I65535	I00001 - I65521		
Common Relay	E0001 - E4096	E0001 - E4081		
Special Relay	M0001 - M9984	M0001 - M9969		
Link Relay	L00001 - L78192	L00001 - L78177		 *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		
File Register	-----	B000001 - B262144		 *3
General Register	-----	R0001 - R4096		
Special Register	-----	Z0001 - Z1024		
Link Register	-----	W00001 - W78192		 *4
Special Module	-----	SW0010000 - SW7169999		*2 *5
Information	-----	INF100 - INF101		*2 *6
	-----	INF200 - INF214		*2 *6
	-----	INF30010 - INF37163		*2 *6
	-----	INF4100 - INF4215		 *2 *6
	-----	INF500		*2 *6
Program Information	-----	PRI00000 - PRI99913		*2 *7
User Log Read	-----	ULR000000 - ULR064128		*2 *8

Device	Bit Address	Word Address	32bits	Notes
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: X002001

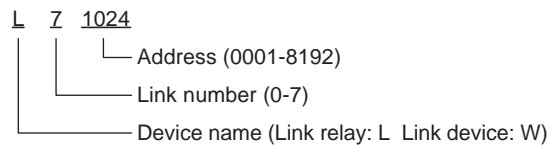


*2 Write disable

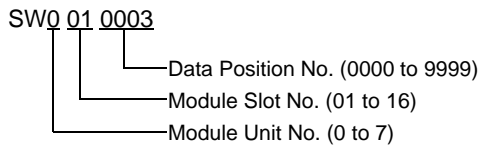
*3 When using the personal computer link module for connection, you can use up to B99999.

*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

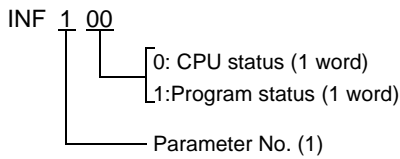


*5 Information of Special Module Read/Write

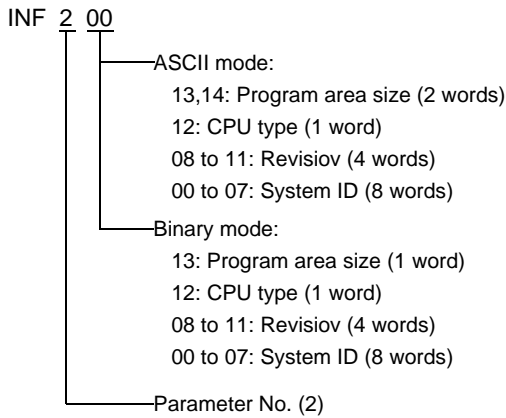


*6 Information Read

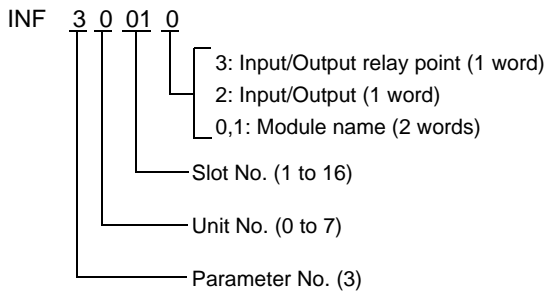
1. Read the status of CPU module and program



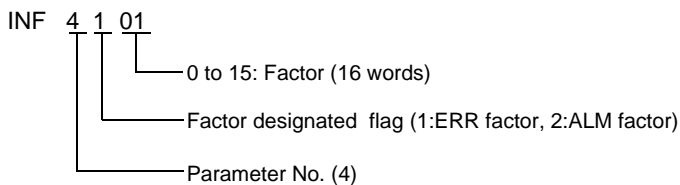
2. Read the information of system ID, CPU type and area size



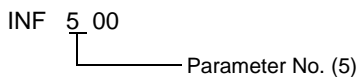
3. Read the mounting module name



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

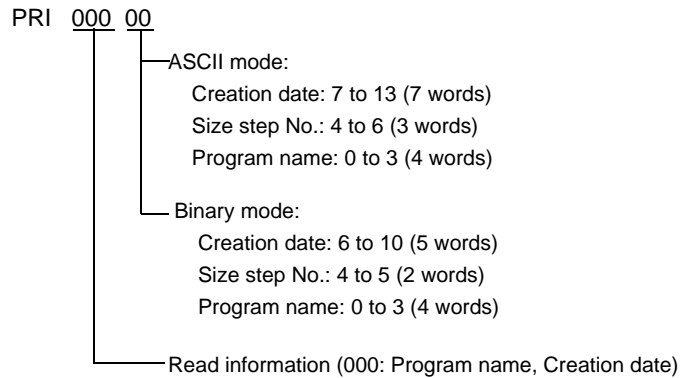


5. Delete the current alarm information of CPU module (write only)

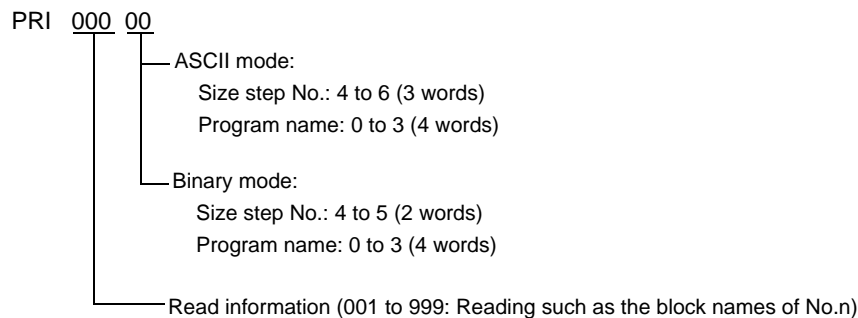


*7 Program Information Read

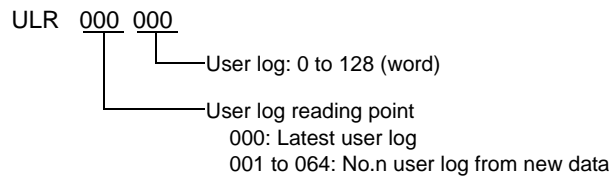
When 000 is written in Read information



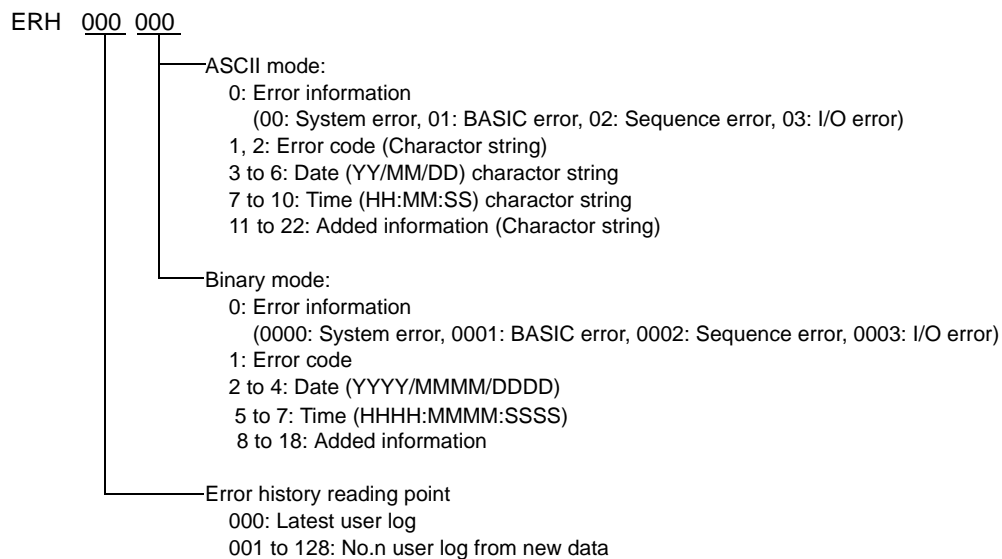
When one of the numbers from 001 to 999 is written in Read information




*8 User Log Read



*9 Error History Read



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 (only for 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.

Device	Device Name	Device Code (HEX)	Address Code
Input Relay	1X	0080	$(\text{Module unit No.} \times 0x40) + ((\text{Module slot No.} - 1) \times 0x4) + ((\text{Terminal No.} - 1) \text{ divided by } 16)^{*1}$
	2X	0180	
	3X	0280	
	4X	0380	
Output Relay	1Y	0081	$(\text{Module unit No.} \times 0x40) + ((\text{Module slot No.} - 1) \times 0x4) + ((\text{Terminal No.} - 1) \text{ divided by } 16)^{*1}$
	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	$(\text{Link No.} \times 0x10000) + ((\text{Word Address} - 1) \text{ divided by } 16)^{*2}$
	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	$(\text{Link No.} \times 0x10000) + ((\text{Word Address} - 1) \text{ divided by } 16)^{*2}$
	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.

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

Display Examples of Error Messages

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