



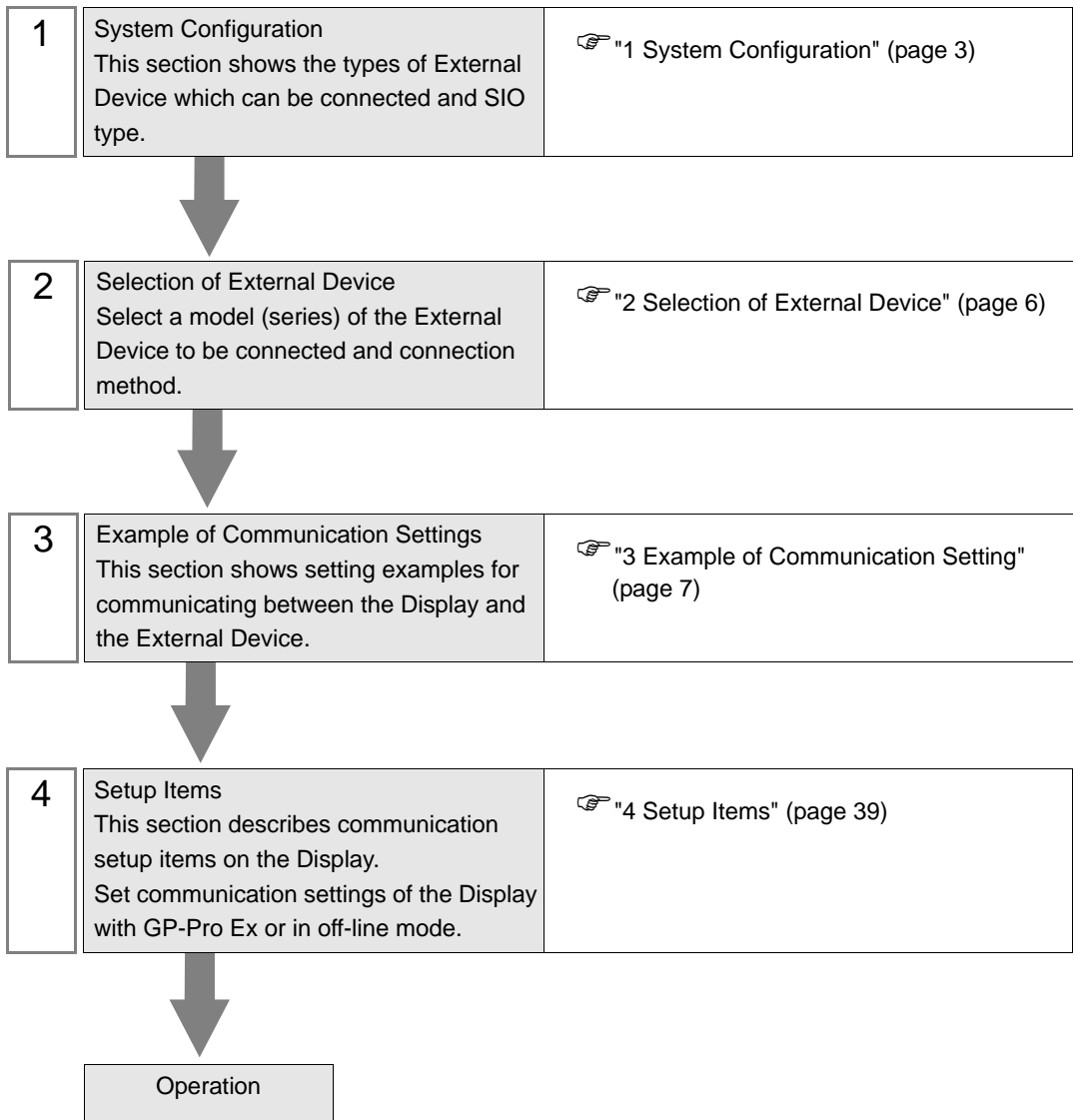
# Personal Computer Link Ethernet Driver

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## 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.

Series	CPU	Link I/F	Port No.	SIO Type	Data Code Settings	Setting Example
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	F3LE01-5T *1	12289	Ethernet (UDP)	Binary *2	Setting Example 1 (page 7)
					ASCII *3	Setting Example 2 (page 9)
				Ethernet (TCP)	Binary *2	Setting Example 5 (page 15)
					ASCII *3	Setting Example 6 (page 17)
		F3LE11-0T *1	12289	Ethernet (UDP)	Binary *2	Setting Example 1 (page 7)
					ASCII *3	Setting Example 2 (page 9)
				Ethernet (TCP)	Binary *2	Setting Example 5 (page 15)
					ASCII *3	Setting Example 6 (page 17)
		12291	Ethernet (UDP)	Binary *3	Setting Example 3 (page 11)	
				ASCII *2	Setting Example 4 (page 13)	
			Ethernet (TCP)	Binary *3	Setting Example 7 (page 19)	
				ASCII *2	Setting Example 8 (page 21)	

continued to next page

Series	CPU	Link I/F	Port No.	SIO Type	Data Code Settings	Setting Example
FA-M3	F3SP66-4S F3SP67-6S	Ethernet I/F on CPU Unit	12289	Ethernet (UDP)	Binary <sup>*3</sup>	Setting Example 9 (page 23)
					ASCII <sup>*2</sup>	Setting Example 10 (page 25)
				Ethernet (TCP)	Binary <sup>*3</sup>	Setting Example 11 (page 27)
					ASCII <sup>*2</sup>	Setting Example 12 (page 29)
			12291	Ethernet (UDP)	Binary <sup>*3</sup>	Setting Example 13 (page 31)
					ASCII <sup>*2</sup>	Setting Example 14 (page 33)
				Ethernet (TCP)	Binary <sup>*3</sup>	Setting Example 15 (page 35)
					ASCII <sup>*2</sup>	Setting Example 16 (page 37)

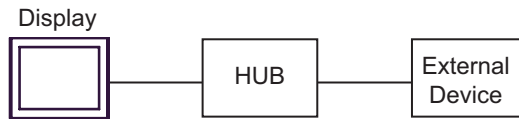
\*1 In TCP connection, you can connect max 8 units of the External Device to 1 display unit.

\*2 Set the data code setting to ON.

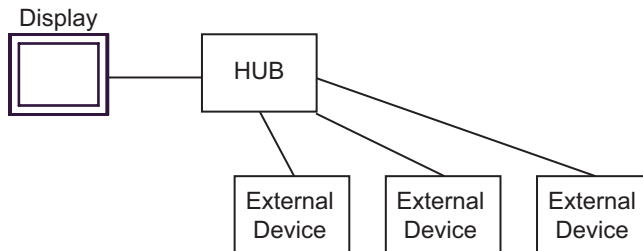
\*3 Set the data code setting to OFF.

## ■ Connection Configuration

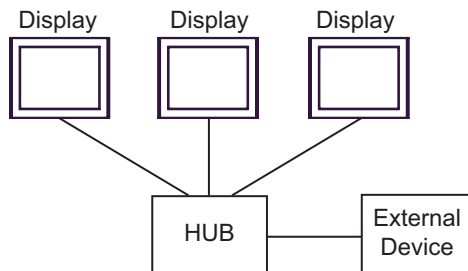
1:1 Connection



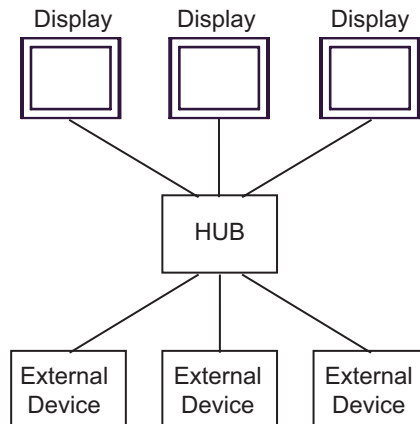
1:n Connection



n:1 Connection

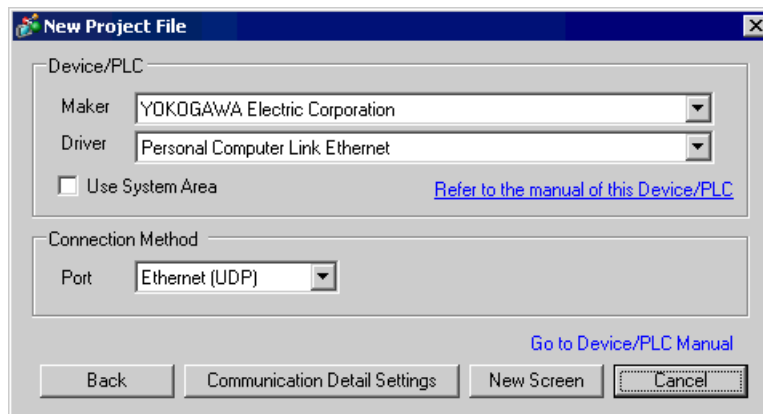


n:m Connection



## 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 Ethernet". Check the External Device which can be connected in "Personal Computer Link Ethernet" 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.

When you use the FA-M3 Series, use GP-Pro EX and the ladder software to set as below.


### 3.1 Setting Example 1

#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

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

##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.

##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12289

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	Binary
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7 <sup>*1</sup>	OFF	Close
SW8	OFF	Normal

\*1 SW7 is available to set in F3LE01-5T only.

### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.

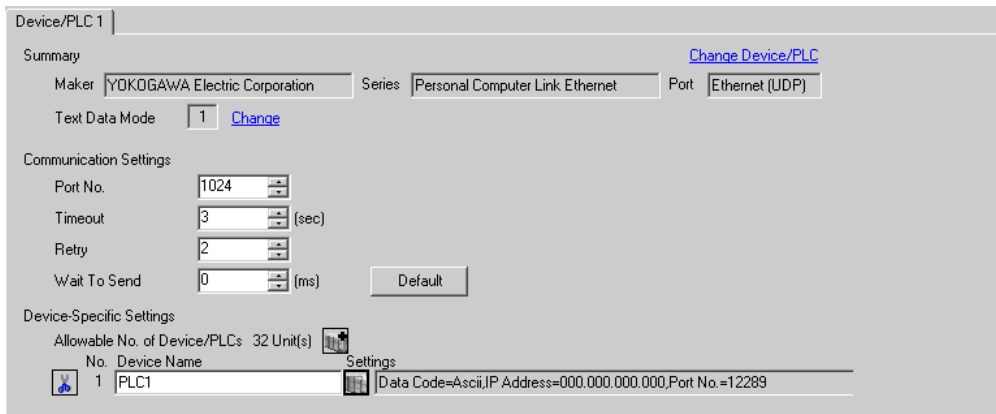


## 3.2 Setting Example 2


### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

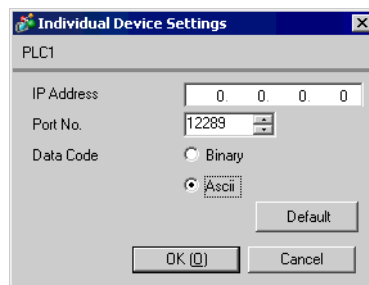
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12289

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF	ASCII
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7 <sup>*1</sup>	OFF	Close
SW8	OFF	Normal

\*1 SW7 is available to set in F3LE01-5T only.

### ◆ Notes

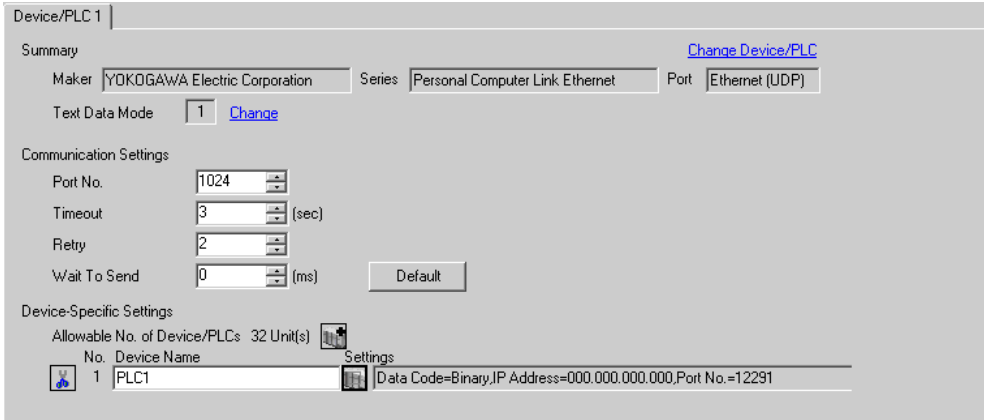
- Check with a network administrator about IP address. Do not set the duplicate IP address.

### 3.3 Setting Example 3


#### ■ Settings of GP-Pro EX


##### ◆ Communication Settings

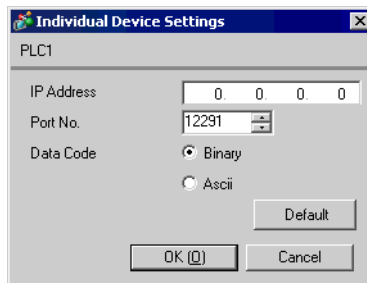
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12291

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF	Binary
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7	OFF	Close
SW8	OFF	Normal

### ◆ Notes

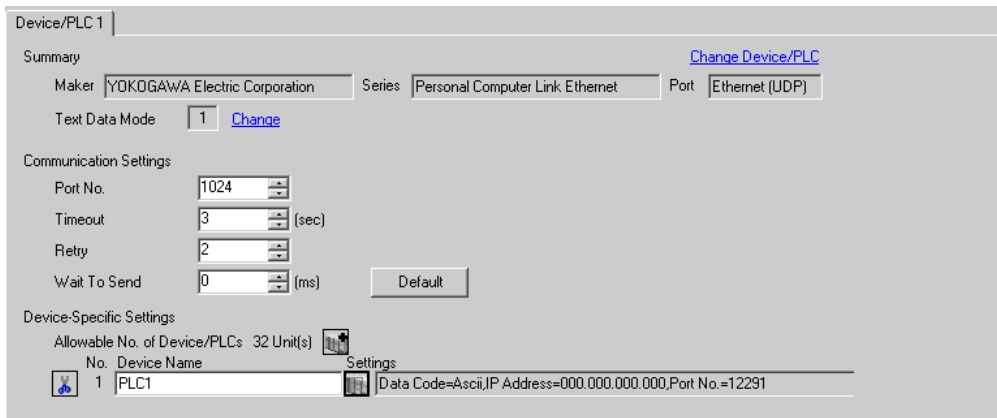
- Check with a network administrator about IP address. Do not set the duplicate IP address.

## 3.4 Setting Example 4


### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

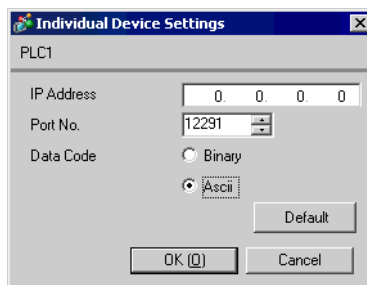
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12291

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	ASCII
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7	OFF	Close
SW8	OFF	Normal

### ◆ Notes

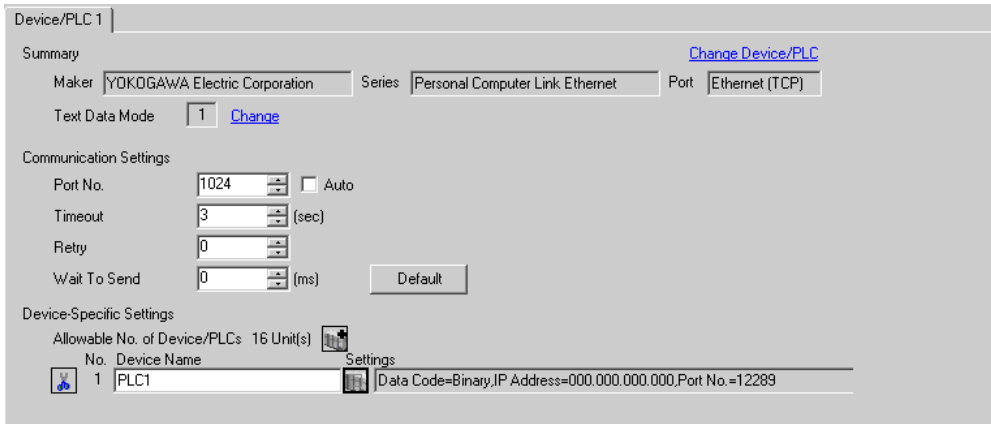
- Check with a network administrator about IP address. Do not set the duplicate IP address.

## 3.5 Setting Example 5


### ■ Settings of GP-Pro EX


#### ◆ Communication Settings

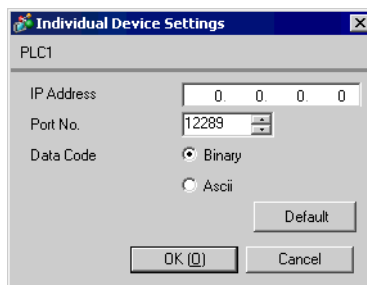
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12289

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	Binary
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7 <sup>*1</sup>	OFF	Close
SW8	OFF	Normal

\*1 SW7 is available to set in F3LE01-5T only.

### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.



## 3.6 Setting Example 6

### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

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

Device/PLC 1

Summary [Change Device/PLC](#)

Maker  Series  Port

Text Data Mode  [Change](#)

Communication Settings

Port No.   Auto

Timeout  (sec)

Retry

Wait To Send  (ms)

Device-Specific Settings

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

No.	Device Name	Settings
<input type="button" value="Add"/> 1	PLC1	<input type="button" value="Settings"/> Data Code=Ascii, IP Address=000.000.000.000, Port No.=12289

#### ◆ Device Setting

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

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

Individual Device Settings

PLC1

IP Address

Port No.

Data Code  Binary  Ascii

#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12289

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF	ASCII
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7 <sup>*1</sup>	OFF	Close
SW8	OFF	Normal

\*1 SW7 is available to set in F3LE01-5T only.

### ◆ Notes

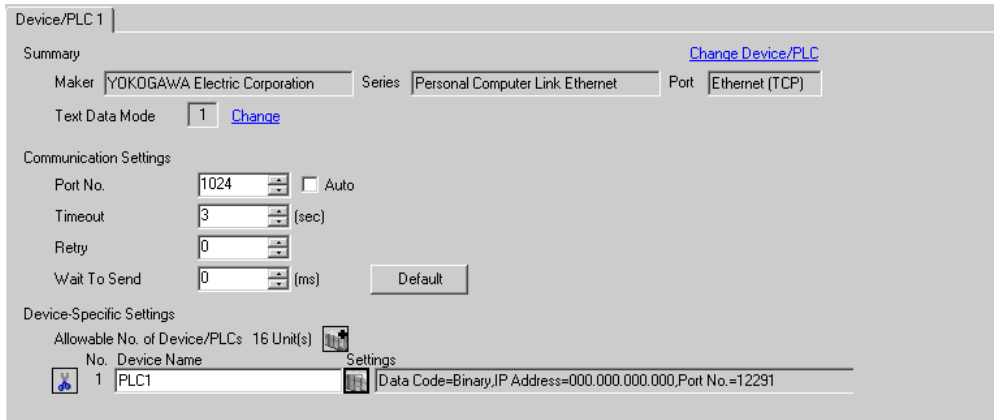
- Check with a network administrator about IP address. Do not set the duplicate IP address.

## 3.7 Setting Example 7


### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

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



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12291

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	OFF	Binary
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7	OFF	Close
SW8	OFF	Normal

### ◆ Notes

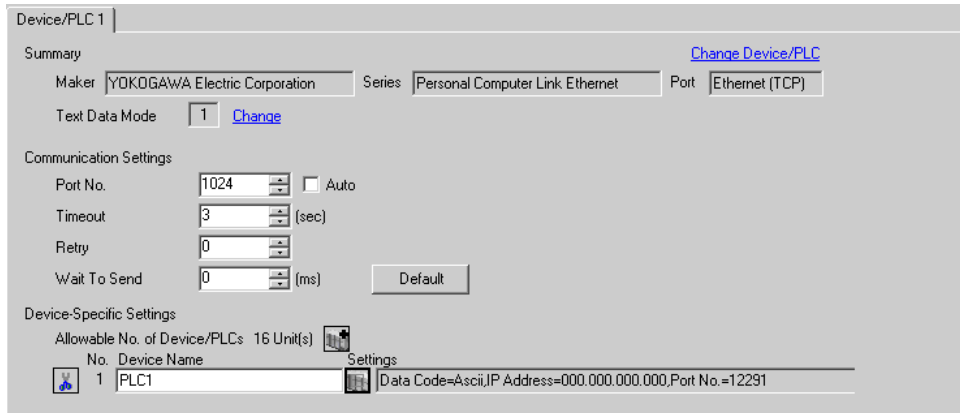
- Check with a network administrator about IP address. Do not set the duplicate IP address.

## 3.8 Setting Example 8


### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

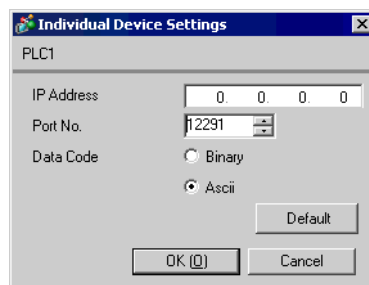
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Use the switches on the side of Ethernet module for setting the External Device.

### ◆ IP Address Setting Switch

Use 8 Hex rotary switches for setting.

Setup Items	Setup Description
IP Address Setting Rotary Switch	Option

### ◆ Port No.

Setup Items	Setup Description
Port No.	12291

### ◆ Condition Setting Switch

DIP Switch	Settings	Setup Description
SW1	ON	ASCII
SW2	OFF	Not protect
SW3	---	(Reserved)
SW4	---	(Reserved)
SW5	---	(Reserved)
SW6	---	(Reserved)
SW7	OFF	Close
SW8	OFF	Normal

### ◆ Notes

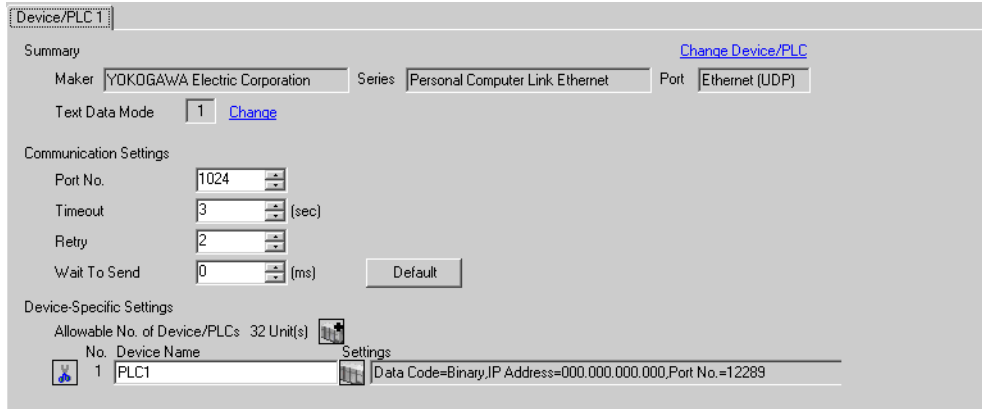
- Check with a network administrator about IP address. Do not set the duplicate IP address.

### 3.9 Setting Example 9


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

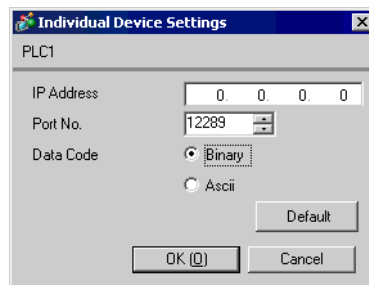
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_A	1
HILINK_DATA_FORMAT_A	1

- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

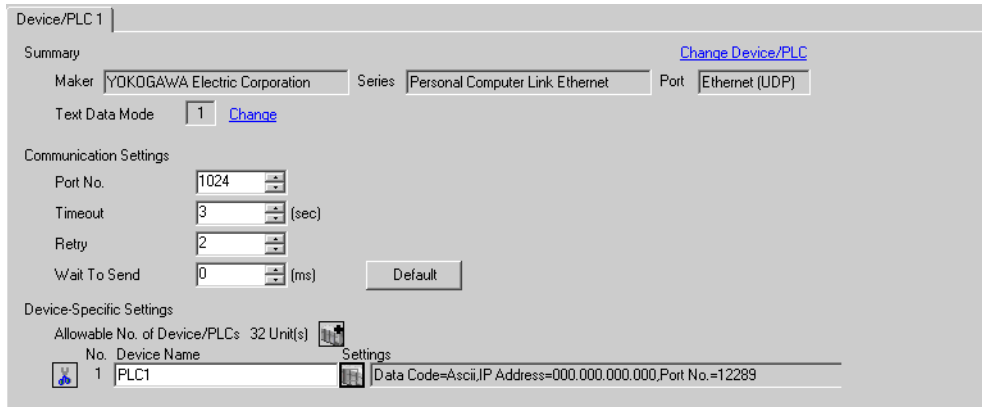


### 3.10 Setting Example 10


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

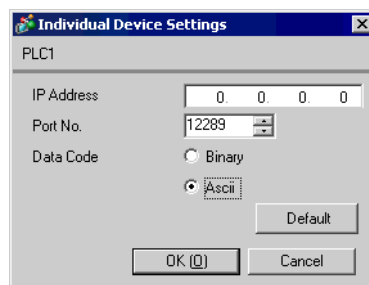
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_A	1
HILINK_DATA_FORMAT_A	0

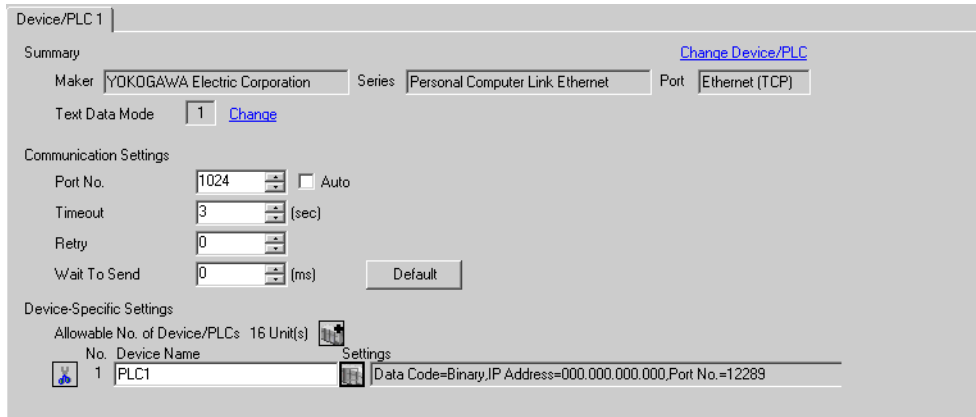
- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

### 3.11 Setting Example 11


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

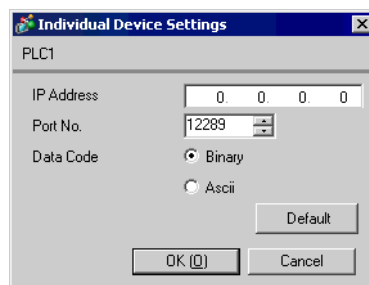
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_A	0
HILINK_DATA_FORMAT_A	1

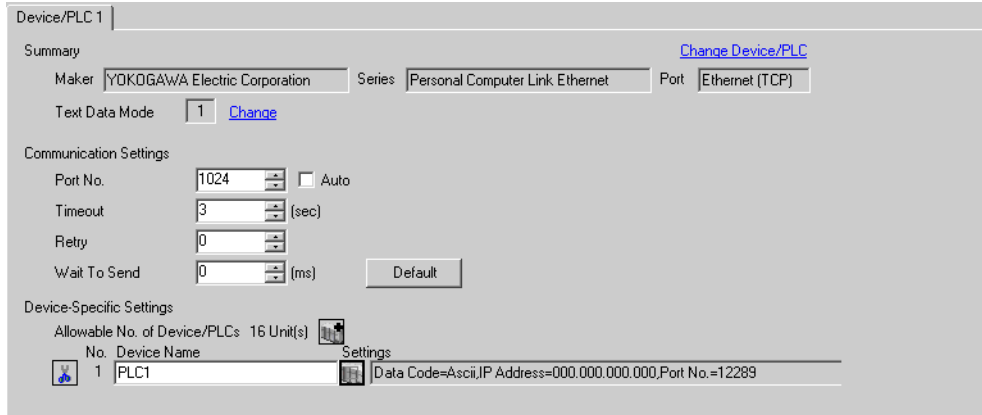
- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

## 3.12 Setting Example 12


### ■ Settings of GP-Pro EX

#### ◆ Communication Settings

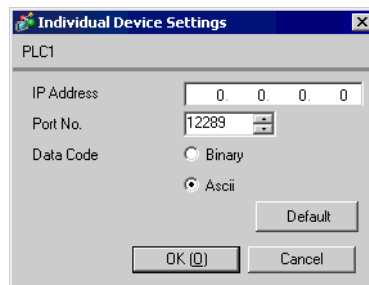
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



#### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



#### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_A	0
HILINK_DATA_FORMAT_A	0

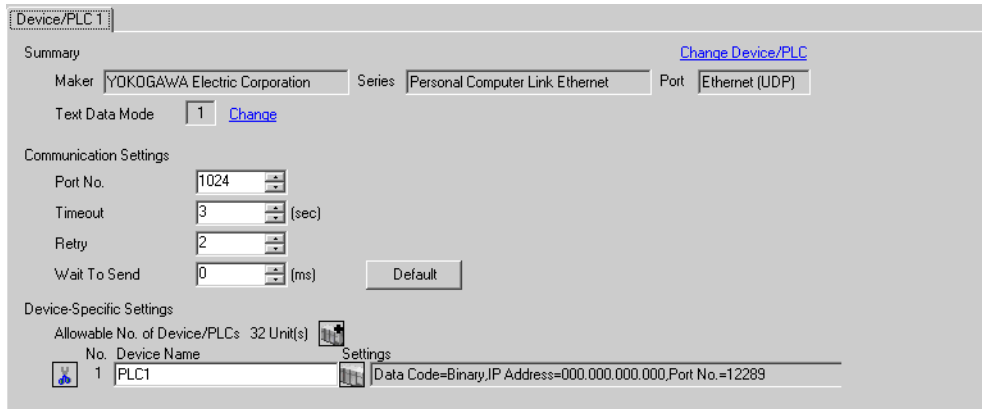
- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

### 3.13 Setting Example 13


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

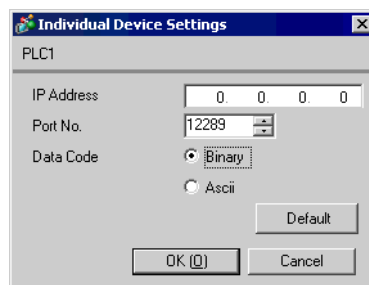
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_B	1
HILINK_DATA_FORMAT_B	1

- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

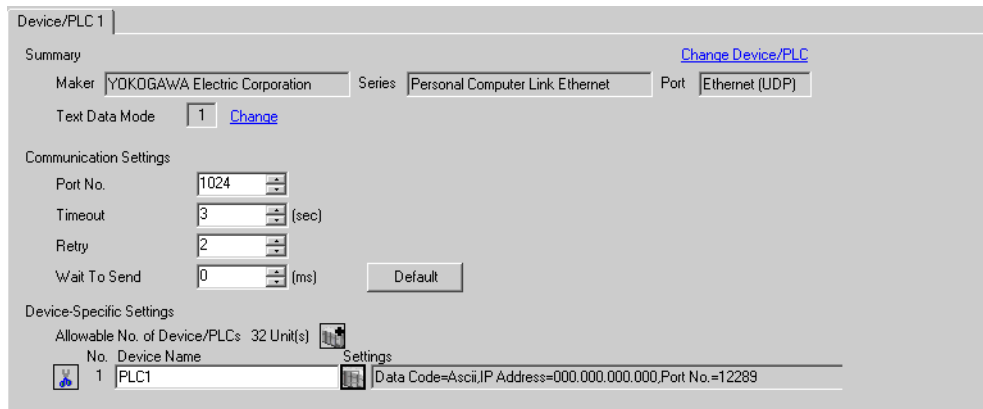


### 3.14 Setting Example 14


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

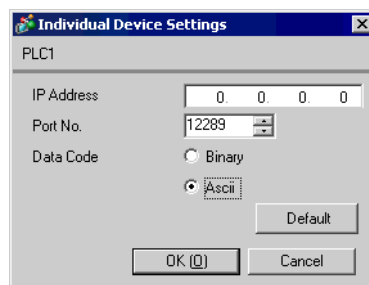
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_B	1
HILINK_DATA_FORMAT_B	0

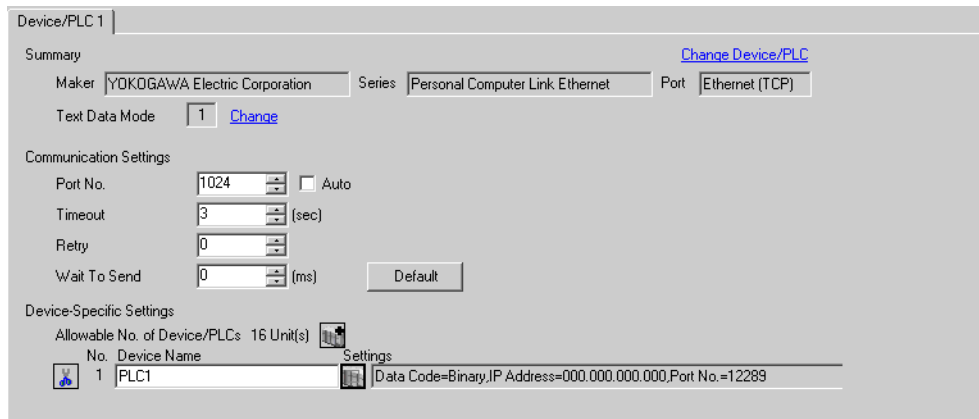
- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

### 3.15 Setting Example 15


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

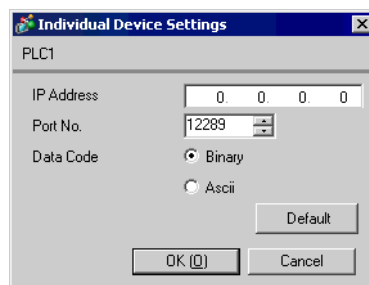
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_B	0
HILINK_DATA_FORMAT_B	1

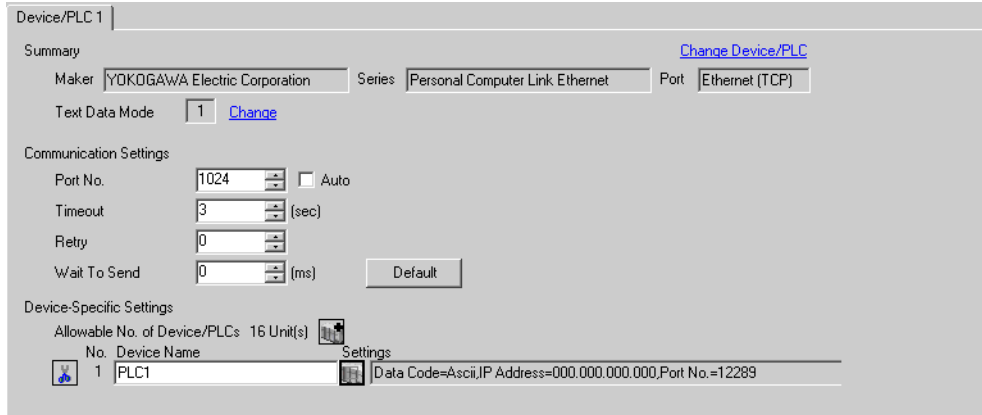
- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

### 3.16 Setting Example 16


#### ■ Settings of GP-Pro EX

##### ◆ Communication Settings

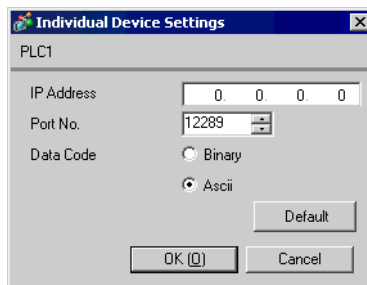
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.



##### ◆ Device Setting

To display the setting screen, click  ([Setting]) of 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.



##### ◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the off-line mode of the Display.

## ■ Setting of External Device

Make communication settings of the External Device with the ladder soft (Wide Field2).

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

### ◆ Procedure

- (1) Start the ladder soft.
- (2) Create a new project. Select the External Device to be used when creating the project.
- (3) Select [Open]-[CPU Properties] from the [File] menu and open the CPU property file for settings.
- (4) In the [LOAD] settings, select the settings to be loaded. Set 0 (not loaded) for the others except the following settings.

- [LOAD] Settings

Setup Items	Setup Description
NETWORK	1
ETHERNET	1
HIGHER-LEVEL LINK SERVICE	1

- (5) Make communication settings with the [Setting] tree's [NETWORK][ETHERNET][HIGHER-LEVEL LINK SERVICE].

- [NETWORK] Settings

Setup Items	Setup Description
NETWORK_SELECT	1

- [ETHERNET] Settings

Setup Items	Setup Description
ETHER_MY_IPADDRESS	IP Address of the External Device Ex: 192.168.0.3
ETHER_SUBNET_MASK	Subnet Mask of the External Device Ex: 255.255.255.0

- [HIGHER-LEVEL LINK SERVICE] Settings

Setup Items	Setup Description
HILINK_PROTOCOL_B	0
HILINK_DATA_FORMAT_B	0

- (6) Select [Save as] from the [File] menu and save the CPU property file.
- (7) Select [Download]-[CPU Properties] from the [ONLINE] menu and download the set CPU property file to the External Device.

## 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 7)

### IMPORTANT

- You need to set IP address on the display in the off-line mode of the display.  
Cf. Maintenance/Troubleshooting "2.5 Ethernet Setting"


### 4.1 Setup Items in GP-Pro EX

#### ■ Communication Settings

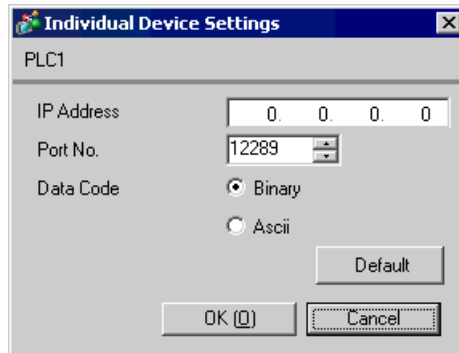
To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Setup Items	Setup Description
Port No.	Use an integer from 1024 to 65535 to enter the port No. of the Display. When you check the option of [Auto Assign], the port No. will be automatically set. <b>NOTE</b> • [Auto Assign] option is available to set only when you select "Ethernet (TCP)" in [Connecting Method].
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

## ■ 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
IP Address	Set IP address of the External Device. <b>NOTE</b> <ul style="list-style-type: none"> <li>Check with a network administrator about IP address. Do not set the duplicate IP address.</li> </ul>
Port No.	Use an integer 12289 or 12291 to enter the port No. of the External Device.
Data Code	Select the data format to communicate with the External Device from "Binary" or "ASCII".



## 4.2 Setup Items 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			
Personal Computer Link Ethernet			[UDP]	Page 1/1
Port No.	<input checked="" type="radio"/> Fixed <input type="radio"/> Auto		1024	▼ ▲
Timeout(s)			3	▼ ▲
Retry			2	▼ ▲
Wait To Send(ms)			0	▼ ▲
	Exit		Back	2005/09/01 19:39:44

Setup Items	Setup Description
Port No.	Set the Port No. of the Display. In UDP connection, entered port No. will be assigned regardless of whether you select [Fixed] or [Auto]. In TCP connection, select either of [Fixed] or [Auto]. When you select [Fixed], use an integer from 1024 to 65535 to enter the port No. of the Display. When you select [Auto], the port No. will be automatically assigned regardless of the entered value.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

## ■ 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			
Personal Computer Link Ethernet		[UDP]	Page 1/1	
Device/PLC Name	[PLC1]			
IP Address	[ 0 0 0 0 ]			
Port No.	[ 12289 ] [▼] [▲]			
Data Code	[ Binary ] [▼]			
Exit		Back		2005/09/01 19:39:47

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])
IP Address	Set IP address of the External Device. <b>NOTE</b> <ul style="list-style-type: none"> <li>Check with a network administrator about IP address. Do not set the duplicate IP address.</li> </ul>
Port No.	Use an integer 12289 or 12291 to enter the port No. of the External Device.
Data Code	Select the data format to communicate with the External Device from "Binary" or "ASCII".

## 5 Supported Device

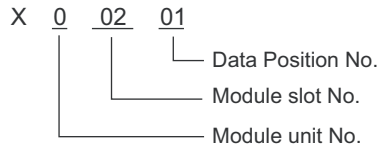
Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

     This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Input Relay	X00201 to X71664	X00201 to X71649	[L/H]	<span style="border: 1px solid black; padding: 2px;">+16+1</span> *1*2
Output Relay	Y00201 to Y71664	Y00201 to Y71649		<span style="border: 1px solid black; padding: 2px;">+16+1</span> *1
Internal Relay	I00001 to I65535	I0001 to I65521		<span style="border: 1px solid black; padding: 2px;">+16+1</span>
Common Relay	E0001 to E4096	E0001 to E4081		<span style="border: 1px solid black; padding: 2px;">+16+1</span>
Special Relay	M0001 to M9984	M0001 to M9969		<span style="border: 1px solid black; padding: 2px;">+16+1</span>
Link Relay	L00001 to L78192	L00001 to L78177		<span style="border: 1px solid black; padding: 2px;">+16+1</span> *3
Timer (Contact)	TU0001 to TU3072	---		
Counter (Contact)	CU000 to CU3072	---		
Timer (Current Value)	---	TP0001 to TP3072		
Timer (Setting Value)	---	TS0001 to TS3072		*2
Counter (Current Value)	---	CP0001 to CP3072		
Counter (Setting Value)	---	CS001 to CS3072		*2
Data Register	---	D00001 to D65535		<span style="border: 1px solid black; padding: 2px;">Bit 15</span>
Common Register	---	B000001 to B262144		<span style="border: 1px solid black; padding: 2px;">Bit 15</span>
General Register	---	R0001 to R4096		<span style="border: 1px solid black; padding: 2px;">Bit 15</span>
Special Register	---	Z0001 to Z1024		<span style="border: 1px solid black; padding: 2px;">Bit 15</span>
Link Register	---	W00001 to W78192		<span style="border: 1px solid black; padding: 2px;">Bit 15</span> *3
Special Module	---	SW0010000 to SW7169999		*2*4
Information	---	INF100 to INF101		*2*5
	---	INF200 to INF214	*2*5	
	---	INF30010 to INF37163	*2*5	
	---	INF4100 to INF4215	<span style="border: 1px solid black; padding: 2px;">Bit 15</span> *2*5	
	---	INF500	*2*5	
Program Information	---	PRI00000 to PRI99913	*2*6	
User Log Read	---	ULR000000 to ULR 064128	*2*7	
Error History Read	---	ERH000000 to ERH 128000	*2*8	

- \*1 Address for input relay and output relay can be specified when data position number (bit) 01 to 49 for lower 2 digits is the value of (multiples of 16) + 1 only.

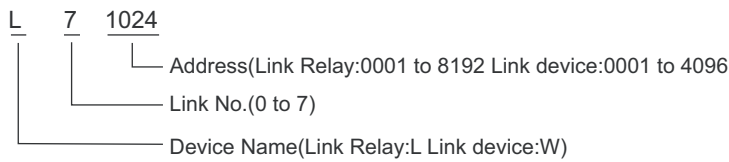
Example: X00201



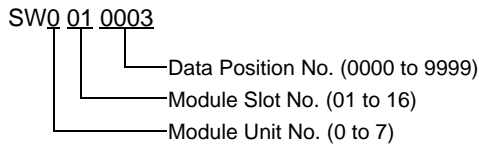
- \*2 Write disable

- \*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 (multiples of 16) + 1.

Example: When specifying L71024 of link relay

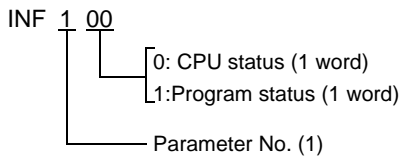


- \*4 Information of Special Module Read/Write

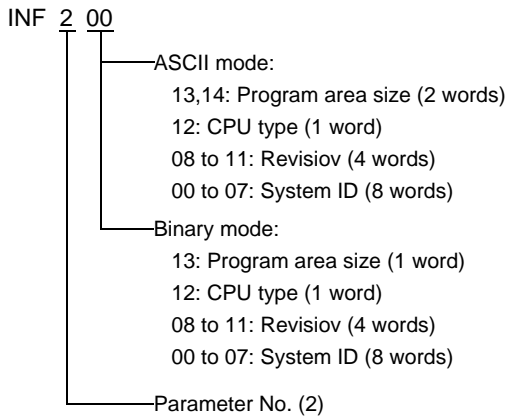


\*5 Information Read

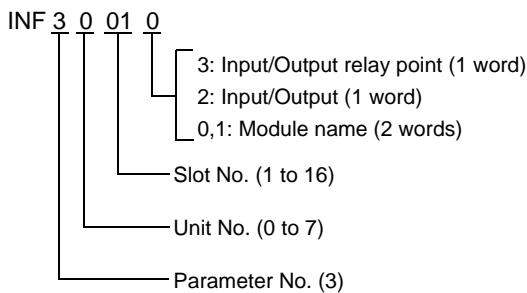
1. Read the status of CPU module and program



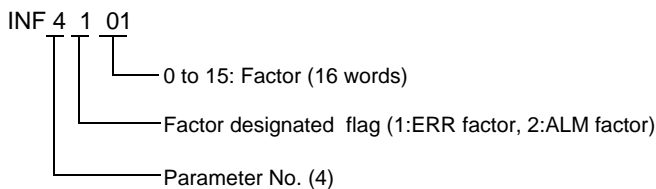
2. Read the information of system ID, CPU type and area size



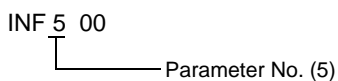
3. Read the mounting module name



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

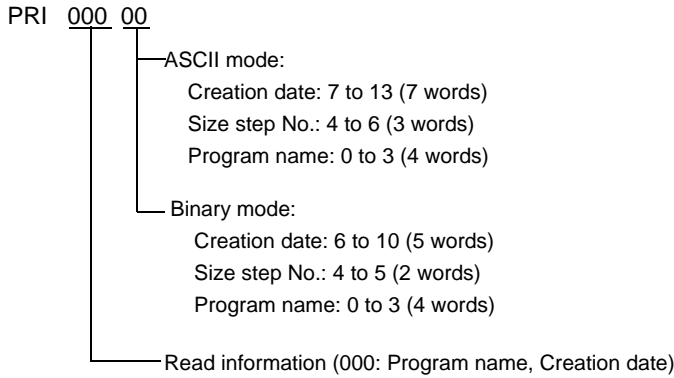


5. Delete the current alarm information of CPU module (write only)

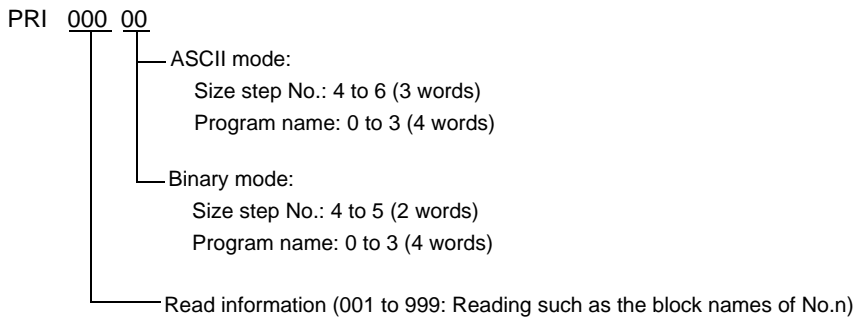


\*6 Program Information Read

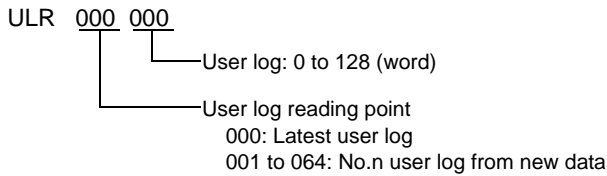
When 000 is written in Read information



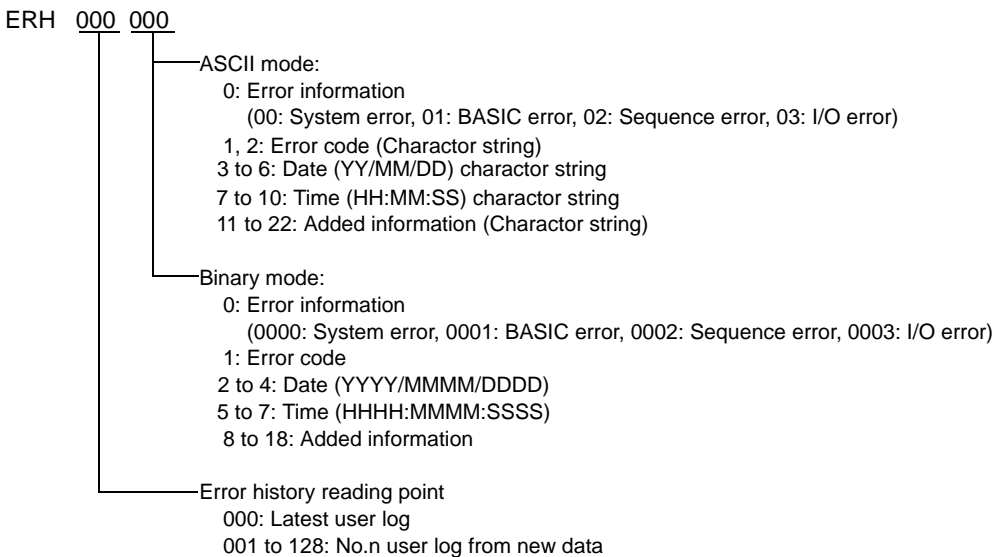
When one of the numbers from 001 to 999 is written in Read information




\*7 User Log Read



\*8 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"

## 6 Device Code and Address Code

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

Device	Device Name	Device Code (HEX)	Address Code
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	Value of word address from which 1 is deducted
	2TP	0160	
	3TP	0260	
	4TP	0360	

continued to next page



Device	Device Name	Device Code (HEX)	Address Code
Timer (Setting Value)	1TS	0063	Value of word address from which 1 is deducted
	2TS	0163	
	3TS	0263	
	4TS	0363	
Counter (Current Value)	1CP	0061	Value of word address from which 1 is deducted
	2CP	0161	
	3CP	0261	
	4CP	0361	
Counter (Setting Value)	1CS	0064	Value of word address from which 1 is deducted
	2CS	0164	
	3CS	0264	
	4CS	0364	
Data Register	1D	0000	Value of word address from which 1 is deducted
	2D	0100	
	3D	0200	
	4D	0300	
Common Register	1B	0004	Value of word address from which 1 is deducted
	2B	0104	
	3B	0204	
	4B	0304	
General Register	1R	0003	Value of word address from which 1 is deducted
	2R	0103	
	3R	0203	
	4R	0303	
Special Register	1Z	0001	Value of word address from which 1 is deducted
	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 "5 Supported Device \*1" for each name.

\*2 Please refer to "5 Supported Device \*3" for each name.

## 7 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> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• IP address is displayed such as "IP address (Decimal): MAC address (Hex)".</li> <li>• Device address is displayed such as "Address: Device address".</li> <li>• Received error codes are displayed such as "Decimal [Hex]".</li> </ul>

Display Examples of Error Messages

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

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- 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.
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