Mitsubishi Electric Corp.

Q/QnA Series Ethernet Driver

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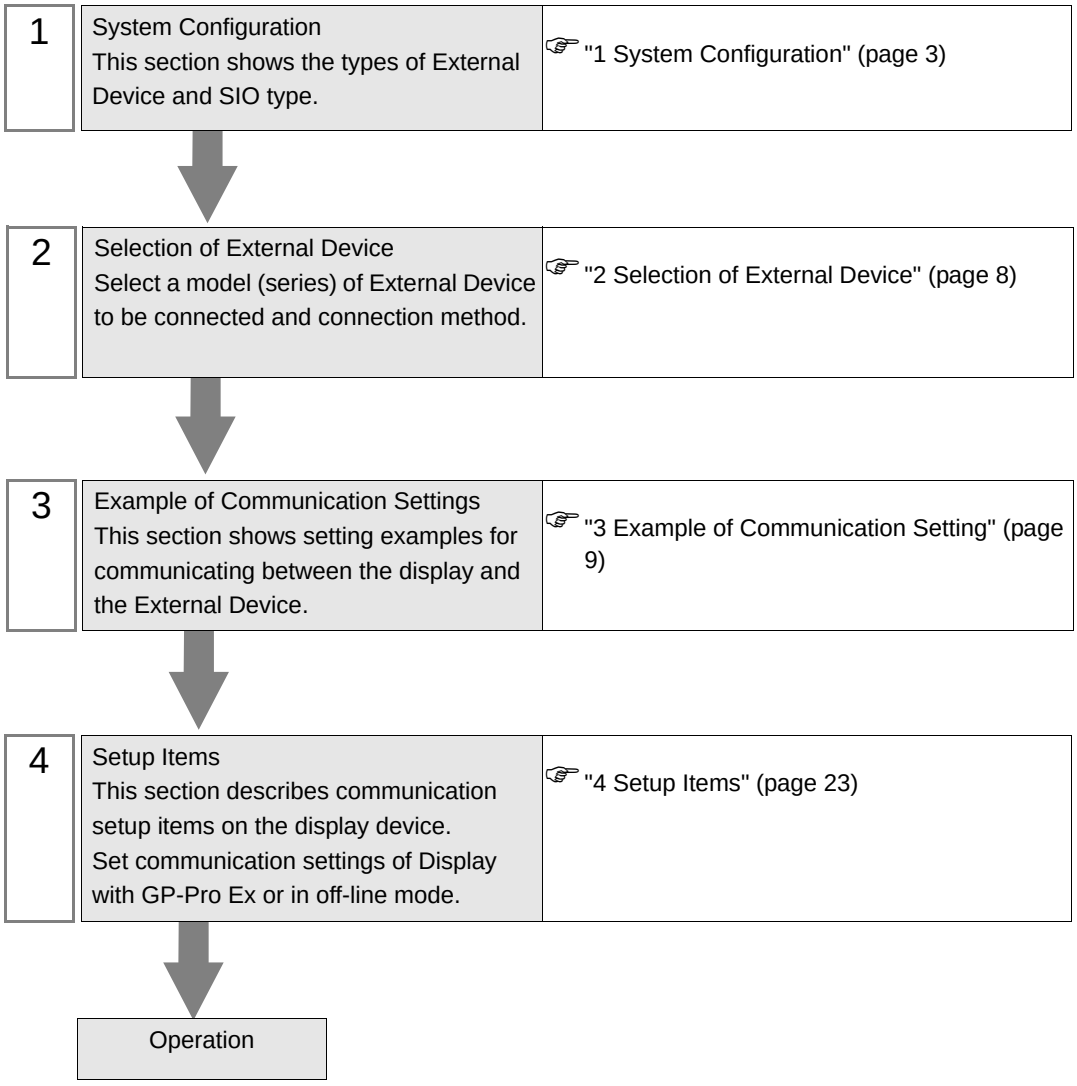
Introduction

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 Mitsubishi Electric Corp. and the display are connected is shown.

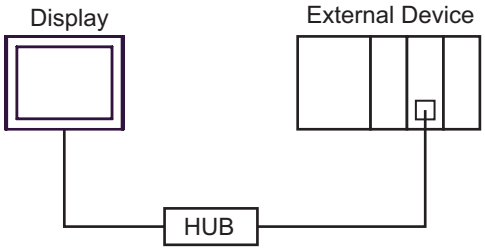
Series	CPU	Link I/F	SIO Type	Setting Example
MELSEC Q Series	Q00CPU Q00JCPU Q01CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q13UDEHCPU Q26UDEHCPU	QJ71E71	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
		QJ71E71-B2	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
		QJ71E71-B5	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
		QJ71E71-100	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
	Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q13UDHCPU Q26UDHCPU	QJ71E71-B2	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
		QJ71E71-B5	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)
		QJ71E71-100	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 13)

Continued to next page.

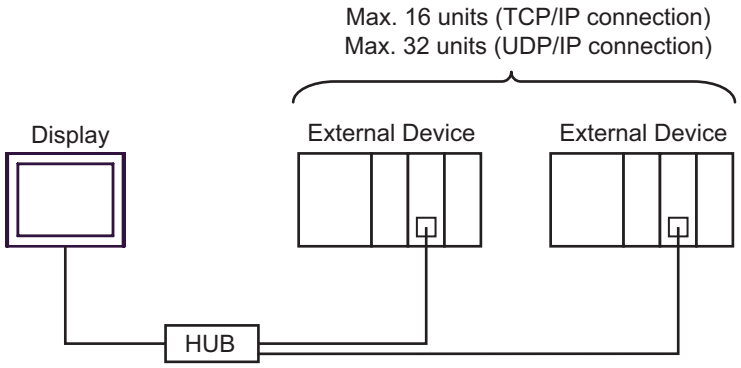
Series	CPU	Link I/F	SIO Type	Setting Example
MELSEC QnA Series	Q2ACPU Q2ACPU-S1 Q3ACPU Q4ACPU Q4ARCPU	AJ71QE71	Ethernet (UDP)	Setting Example 3 (page 17)
			Ethernet (TCP)	Setting Example 4 (page 20)
		AJ71QE71-B5	Ethernet (UDP)	Setting Example 3 (page 17)
			Ethernet (TCP)	Setting Example 4 (page 20)
	Q2ASCPU Q2ASHCPU Q2ASCPU-S1 Q2ASHCPU-S1	A1SJ71QE71-B2	Ethernet (UDP)	Setting Example 3 (page 17)
			Ethernet (TCP)	Setting Example 4 (page 20)
		A1SJ71QE71-B5	Ethernet (UDP)	Setting Example 3 (page 17)
			Ethernet (TCP)	Setting Example 4 (page 20)

■ Connection Configuration

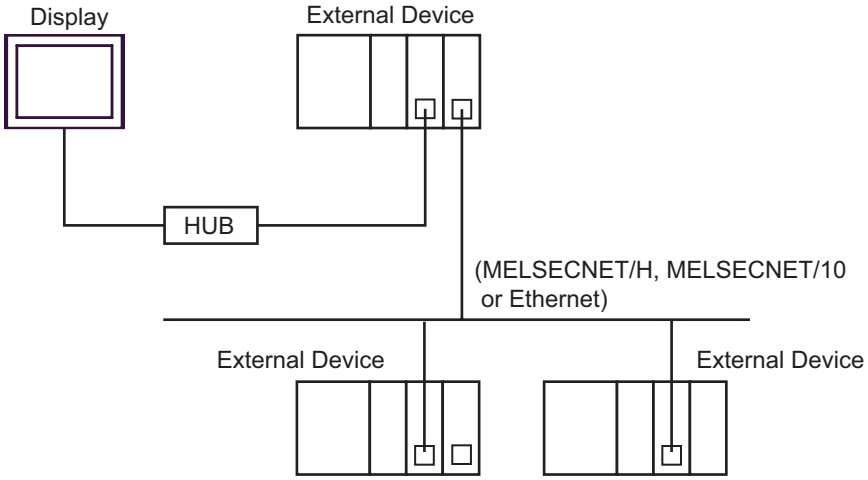
- 1:1 Connection



- 1:n Connection (when access station is source station)



- 1:n Connection (access beyond network)

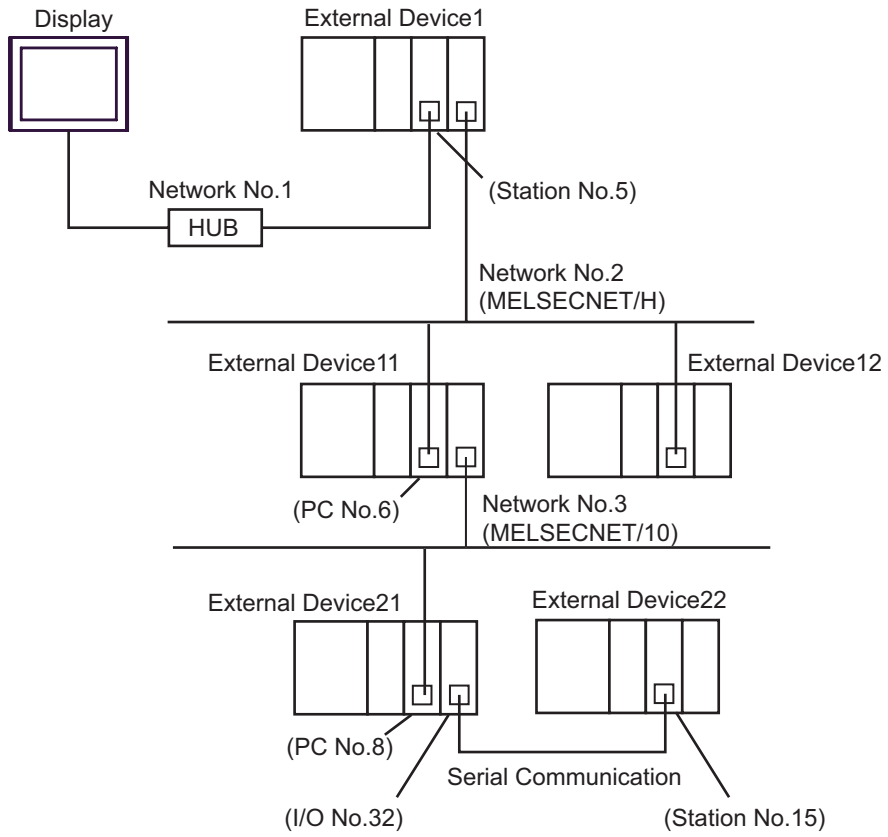


NOTE

- In case of communication via network,please set larger value than the response monitoring time of the relay station for timeout setteings.

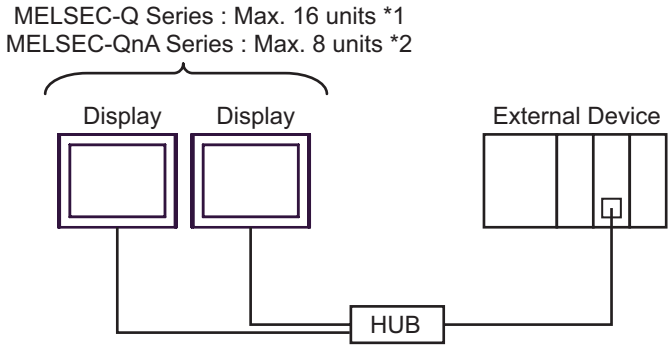
Setting examples for access beyond the network are shown below. Check the details of the setup items in "Setup Item."

☞"4 Setup Items" (page 23)



External Device to be Accessed	Port No.	Station No.	Network No.	PC No.	Request destination module I/O No.	Request destination module Station No.
External Device 1	1025	5	0	255	1023	0
External Device 11	1026	5	2	6	1023	0
External Device 22	1027	5	3	8	32	15

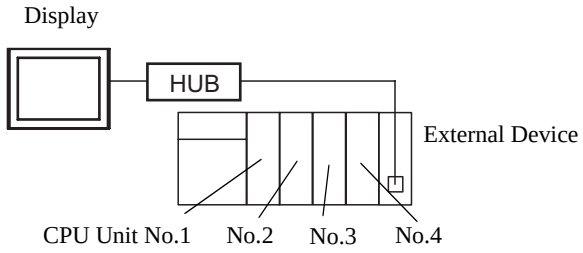
- n : 1 Connection



*1 When transmitting data via the External Device's OPEN Setting feature instead of the Auto OPEN UDP Port feature, up to 16 Display units can be connected. Also, when using the External Device's Auto Open UDP Port feature, there is no limitation for the number of Display units that can be connected.

*2 When transmitting data via the External Device's parameter setting instead of the Auto OPEN UDP Port feature, up to 8 Display units can be connected. Also, when using the External Device's Auto Open UDP Port feature, there is no limitation for the number of Display units that can be connected.

- Multi CPU System



NOTE

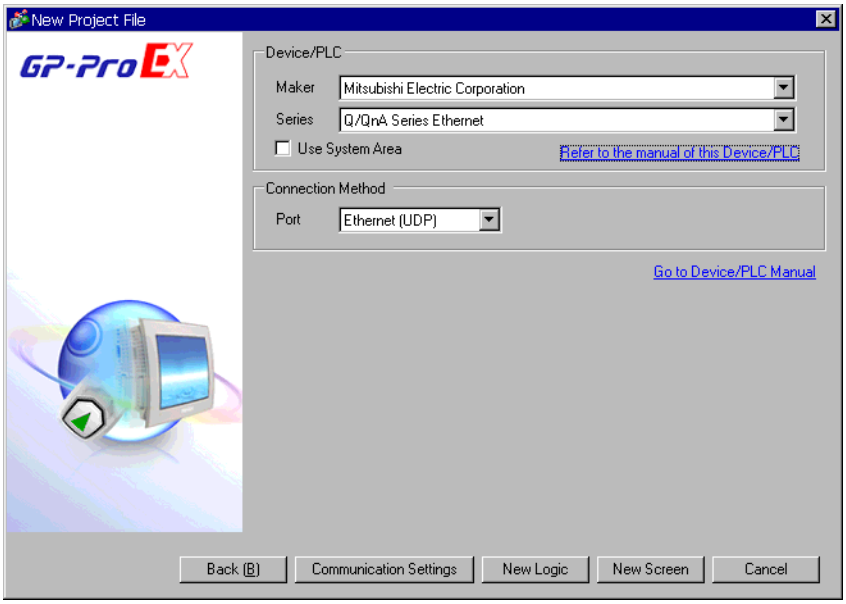
- For CPU's Unit No., No.1 is allocated to the CPU slot and No.2, 3, and 4 are allocated to the other slots from No.1 to right.
- With Multi CPU System, it's possible to access a CPU unit that is not directly connected.
- When you use the project file (which has been created with the Ver.1.12.04 or earlier Q/QnA series Ethernet driver) with the Ver.1.12.05 or later driver, please re-set [Multiple CPU system] in the [Basic] tab.

☞ " ■ Device Setting" (page 24)

- You can confirm the driver version using GP-Pro EX as follows:
  From [System Setting window] in the workspace, select [Peripheral List] to display the version.

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 "Mitsubishi Electric Corporation".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "Q/QnA Series Ethernet". Check the External Device which can be connected in "Q/QnA Series 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 (Direct Access Method)" This can also be set in GP-Pro EX or in the Display's off-line mode. Cf. GP-Pro EX Reference Manual "5.17.6 [System Settings] Setting Guide, [Display Unit] Settings Guide, System Area Settings" Cf. Maintenance/Troubleshooting Manual "2.15.1 Settings common to all Display models, [Main Unit Settings] Settings Guide, System Area Settings"
Port	Select the port of the display to be connected to the External Device from "Ethernet (UDP)" and "Ethernet (TCP)". **NOTE** When using PLC ladder monitor, select "Ethernet (UDP)."

3 Example of Communication Setting

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

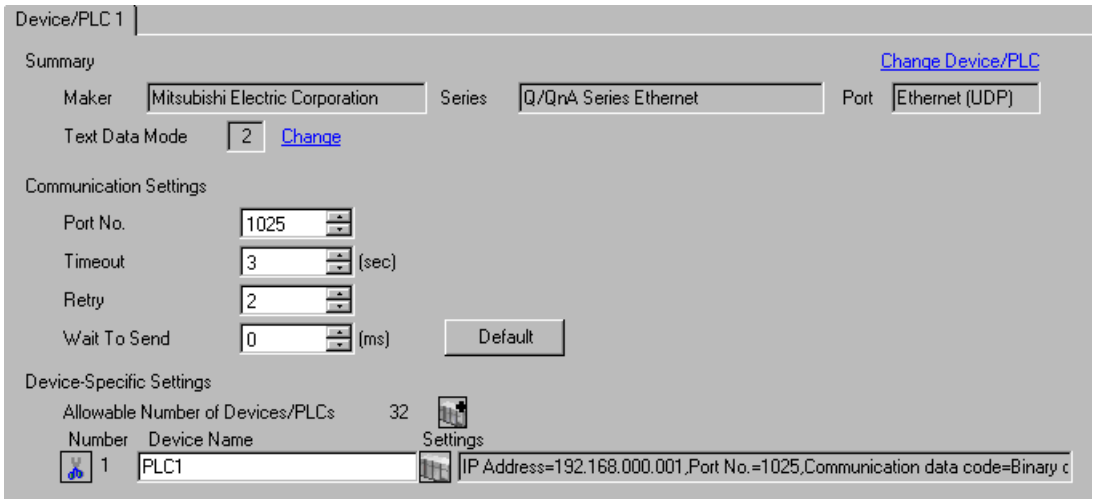
When you use the MELSEC Q/QnA Ethernet Series, use GP-Pro EX and the ladder software to set as below.

3.1 Setting Example 1

■ Setting of GP-Pro EX

◆ Communication Settings

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

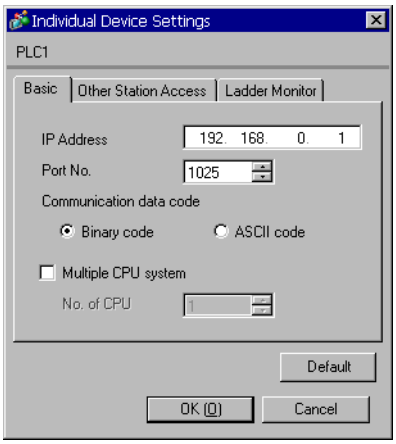


◆ Device Setting

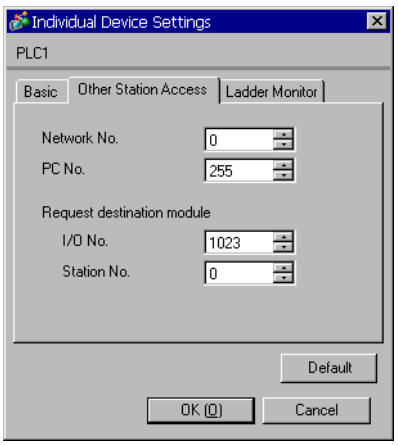
To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

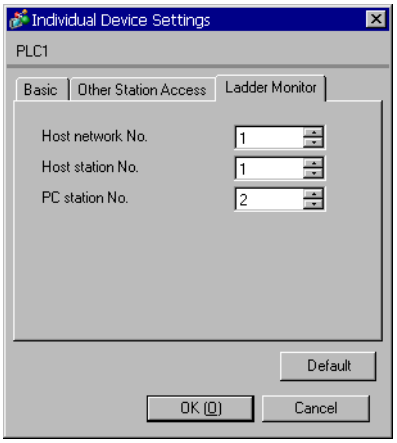
[Basic] tab



[Other Station Access] tab



[Ladder Monitor] tab



◆ 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.
- Limitations when you use UDP/IP to access the multiple PLCs via network are shown below.
  - When you set the retry frequency to zero, the error message of "Response timed out for initial communication command" is displayed at startup.
  - At startup, you cannot read the device data until timeout time elapses once.

■ Setting of External Device

Perform the settings of External Device in "Network Parameter" of the Parameter Settings of the ladder software.

◆ Network Parameter MNET/10H Ethernet Settings

Setup Items	Settings
Network Type	Ethernet
Head I/O No.	Option
Network No.	Option
Group No.	Option
Station No.	Option
Mode	On-line

◆ Ethernet Operation Settings

Setup Items	Settings
Communication Data Code Settings	Binary code communication
Initial Timing Settings	Always wait for OPEN
IP Address Setting	Option
Send Frame Settings	Ethernet (V2.0)
TCP Living Confirmation Settings	Option
Enable Write during RUN	Enable

◆ Open Settings

Setup Items	Settings
Protocol	UDP
Open Method	Unused
Source Port No.	Option*1*2
Destination IP Address	Option*1*3
Destination Port Number	Option*1*2*3
Fixed Buffer	Option
Update Procedure of Fixed Buffer	Option
Pairing Opening	Option
Living Confirmation	Option

*1 Check with a network administrator about setting value.

*2 Enter in hex number.

*3 Adjust to the setting on Display.

◆ Other Settings

The following settings are items only if necessary.

- Initial Settings

  Settings related to timer for TCP connection. Basically, communication is available with default settings. Change the settings when you want to customize (such as shortening timeout).

- Routing Information

  Set only when you use subnet mask or router.

- Auto Open UDP Port

  When you use the UDP port, you can communicate using the auto open UDP port (port No. 5000) on the PLC.

◆ Notes

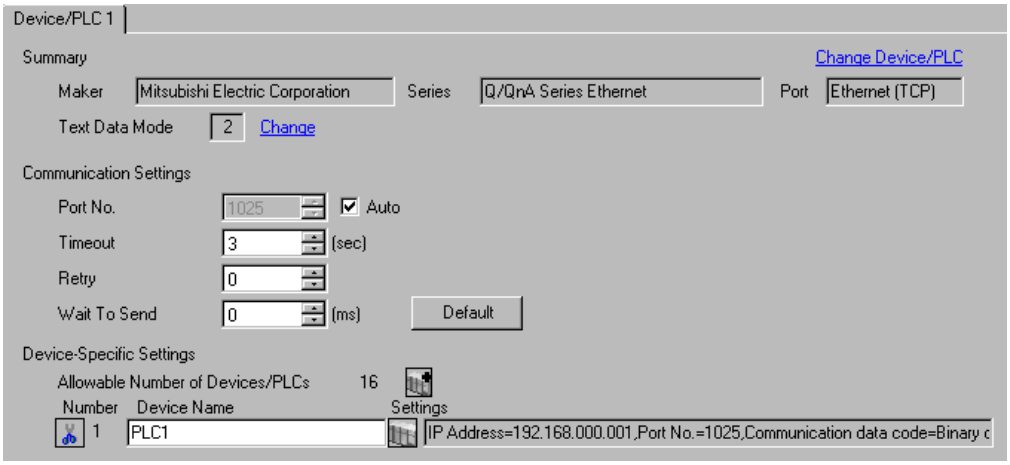
Check with a network administrator about IP address. Do not set the duplicate IP address.

3.2 Setting Example 2

■ Setting of GP-Pro EX

◆ Communication Settings

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

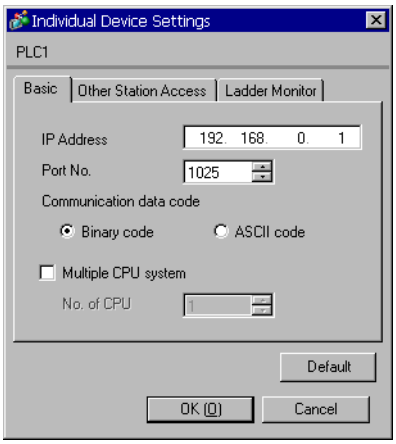


◆ Device Setting

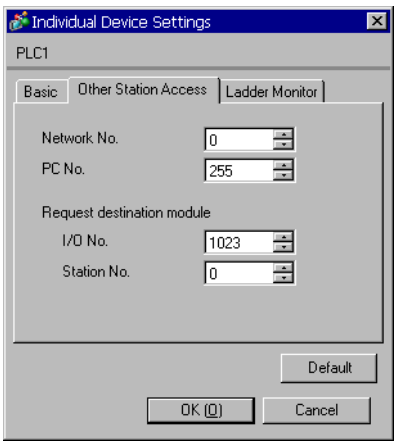
To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

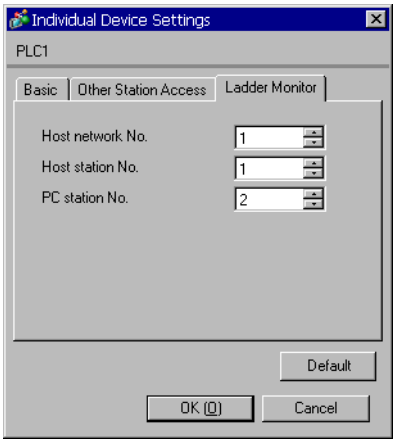
[Basic] tab



[Other Station Access] tab



[Ladder Monitor] tab



◆ 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.

■ Settings of External Device

Perform the settings of External Device in "Network Parameter" of the Parameter Settings of the ladder software.

◆ Network Parameter MNET/10H Ethernet Settings

Setup Items	Settings
Network Type	Ethernet
Head I/O No.	Option
Network No.	Option
Group No.	Option
Station No.	Option
Mode	On-line

◆ Ethernet Operation Settings

Setup Items	Settings
Communication Data Code Settings	Binary code communication
Initial Timing Settings	Always wait for OPEN
IP Address Setting	Option
Send Frame Settings	Ethernet (V2.0)
TCP Living Confirmation Settings	Option
Enable Write during RUN	Enable

◆ Open Settings

Setup Items	Settings
Protocol	TCP
Open Method	Unpassive
Source Port No.	Option*1*2
Destination IP Address	Setting unnecessary
Destination Port Number	Setting unnecessary
Fixed Buffer	Option
Update Procedure of Fixed Buffer	Option
Pairing Opening	Option
Living Confirmation	Option

*1 Check with a network administrator about setting value.

*2 Enter in hex number.

◆ Other Settings

The following settings are items only if necessary.

- Initial Settings

  Settings related to timer for TCP connection. Basically, communication is available with default settings. Change the settings when you want to customize (such as shortening timeout).

- Routing Information

  Set only when you use subnet mask or router.

- Auto Open UDP Port

  When you use the UDP port, you can communicate using the auto open UDP port (port No. 5000) on the PLC.

◆ Notes

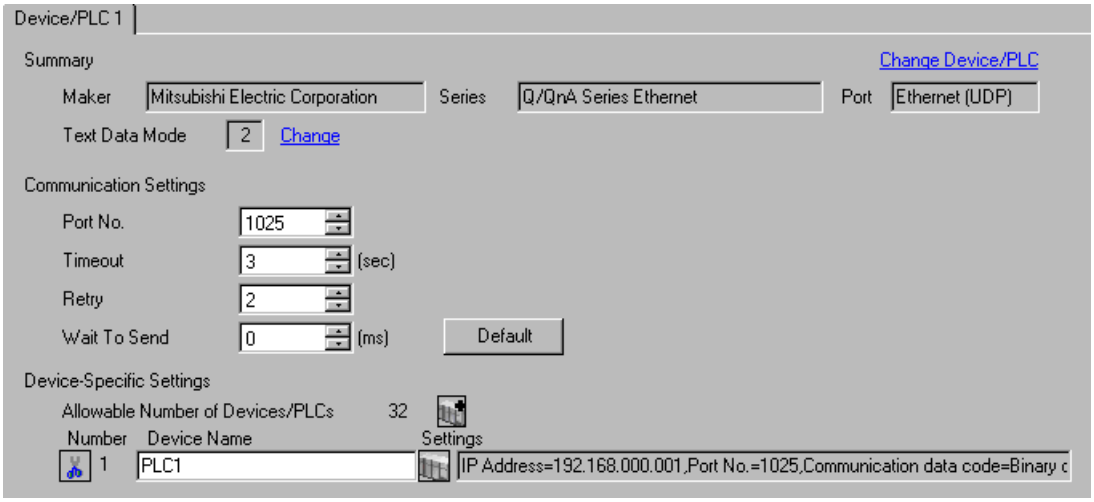
Check with a network administrator about IP address. Do not set the duplicate IP address.

3.3 Setting Example 3

■ Setting of GP-Pro EX

◆ Communication Settings

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

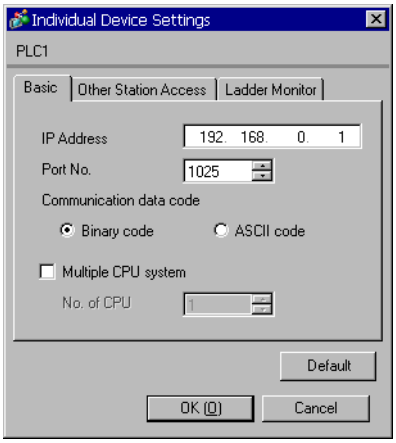


◆ Device Setting

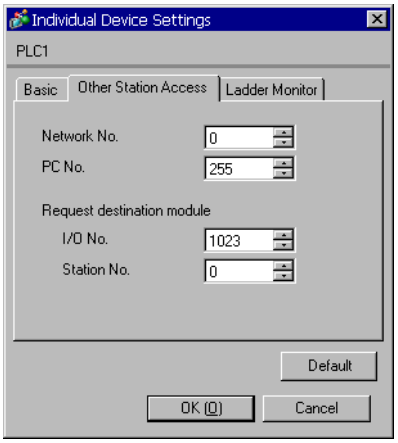
To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

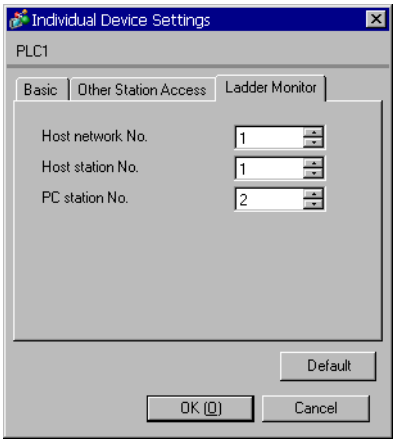
[Basic] tab



[Other Station Access] tab



[Ladder Monitor] tab



◆ 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.
- Limitations when you use UDP/IP to access the multiple PLCs via network are shown below.
  - When you set the retry frequency to zero, the error message of "Response timed out for initial communication command" is displayed at startup.
  - At startup, you cannot read the device data until timeout time elapses once.

■ Setting of External Device

You need the DIP switch settings and the ladder program for the setting of External Device.

◆ Switch Settings

Mode Setting Switch

Settings	Setup Items
0	On-line

Communication Condition Setting Switch

DIP Switch	Settings	Setup Items
SW1	OFF	Selection of line processing at TCP timeout error
SW2	OFF	Data Code Setting
SW3	OFF	Operate along Y19
SW4	OFF	Disable (Fixed to OFF)
SW5	OFF	Disable (Fixed to OFF)
SW6	OFF	Disable (Fixed to OFF)
SW7	ON	CPU Communication Timing Settings
SW8	OFF	Initial Timing Settings

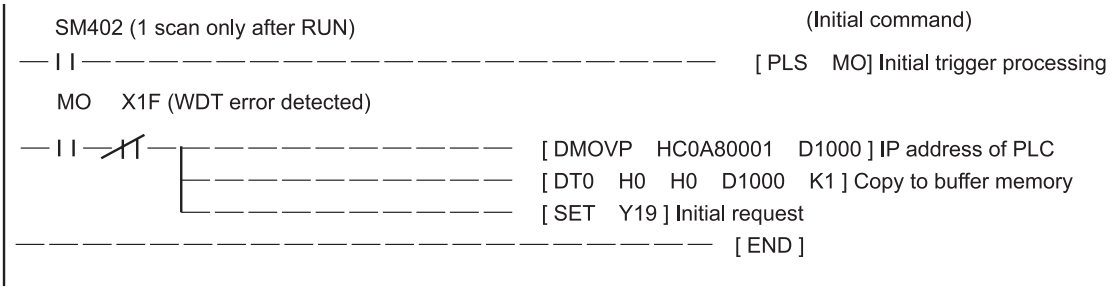
◆ Example of Ladder Program

Example when you communicate with the auto open UDP port No. (Default: 5000) is shown below.

- IP address of External Device: 192.168.0.1
- Port No. of External Device: 5000

NOTE

- You do not need to specify the IP address and the port No. on the PLC for communication with this function.



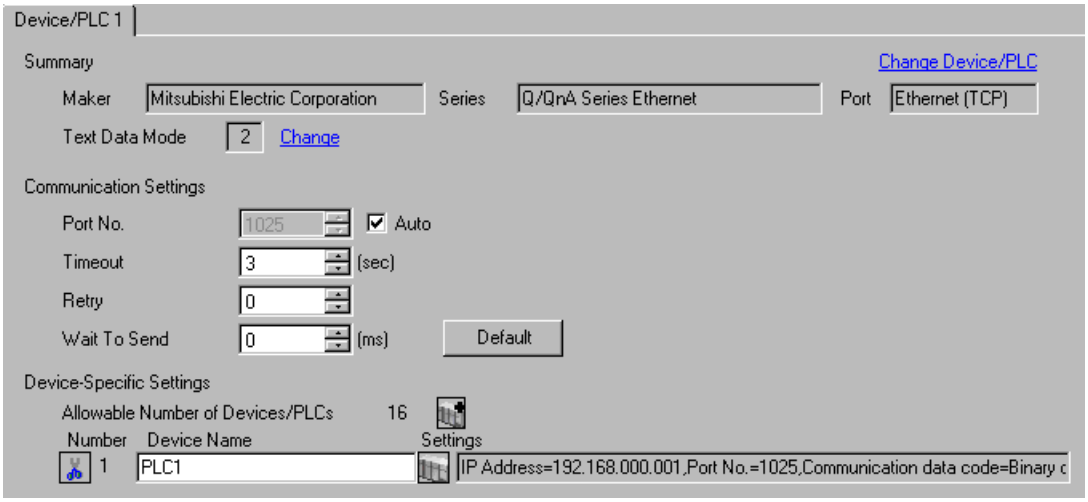
Above sample is the minimum ladder to enable UDP communication with Display. Please refer to the manual of External Device for more information about error processing and TCP communication, etc.

3.4 Setting Example 4

■ Setting of GP-Pro EX

◆ Communication Settings

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

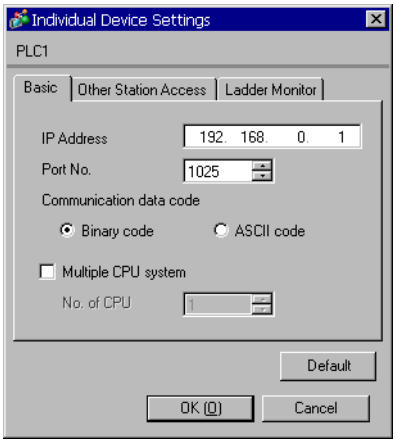


◆ Device Setting

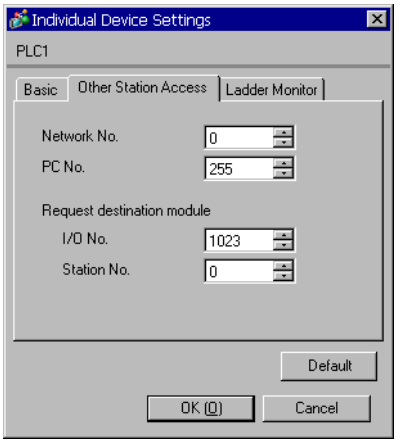
To display the setting screen, click ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

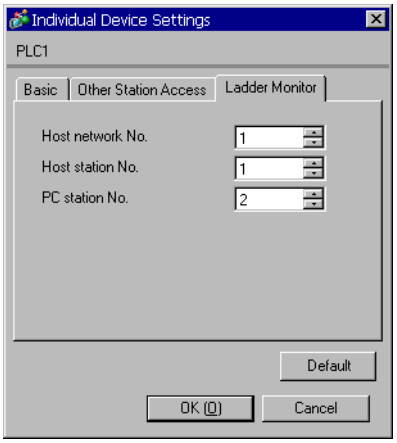
[Basic] tab



[Other Station Access] tab



[Ladder Monitor] tab



◆ 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.

■ Settings of External Device

You need the DIP switch settings and the ladder program for the setting of External Device.

◆ Switch Settings

Mode Setting Switch

Settings	Setup Items
0	On-line

Communication Condition Setting Switch

DIP Switch	Settings	Setup Items
SW1	OFF	Selection of line processing at TCP timeout error
SW2	OFF	Data Code Setting
SW3	OFF	Operate along Y19
SW4	OFF	Disable (Fixed to OFF)
SW5	OFF	Disable (Fixed to OFF)
SW6	OFF	Disable (Fixed to OFF)
SW7	ON	CPU Communication Timing Settings
SW8	OFF	Initial Timing Settings

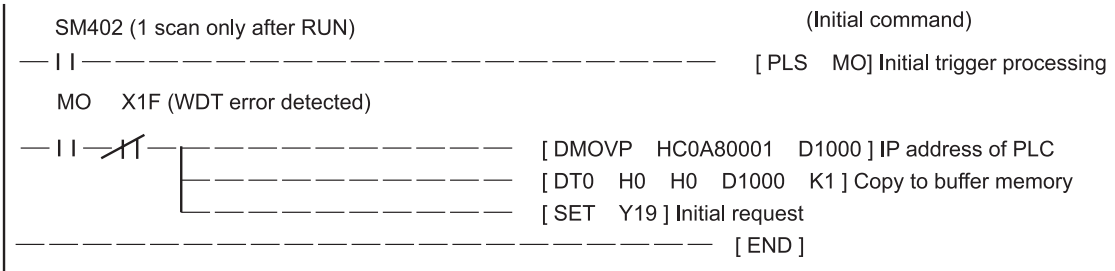
◆ Example of Ladder Program

Example when you communicate with the auto open UDP port No. (Default: 5000) is shown below.

- IP address of External Device: 192.168.0.1
- Port No. of External Device: 5000

NOTE

- You do not need to specify the IP address and the port No. on the PLC for communication with this function.



Above sample is the minimum ladder to enable UDP communication with AGP. Please refer to the manual of External Device for more information about error processing and TCP communication, etc.

4 Setup Items

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

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

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

NOTE

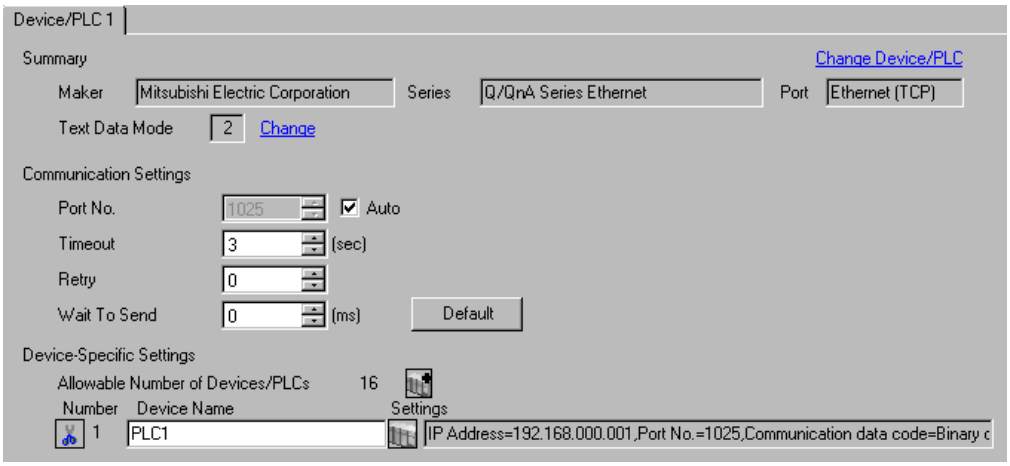
- Set the Display's IP address in off-line mode.

  Cf. Maintenance/Troubleshooting Manual "2.5 Ethernet Settings"

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.



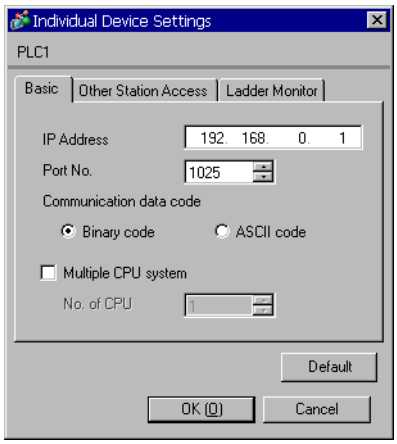
Setup Items	Setup Description
Port No.	Use an integer from 1025 to 65535 to enter the port No. of the display. When you check the option of [Auto Assign], the port No. will be automatically set. **NOTE** • [Auto Assign] option is available to set only when you select "Ethernet (TCP)" in [Connecting Method].
Timeout	Use an integer from 1 to 127 to enter the time (s) for which Display waits for the response from External Device. **NOTE** • In case of communicating via network,please set larger value than the response monitoring time of the relay station for timeout settings.
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].

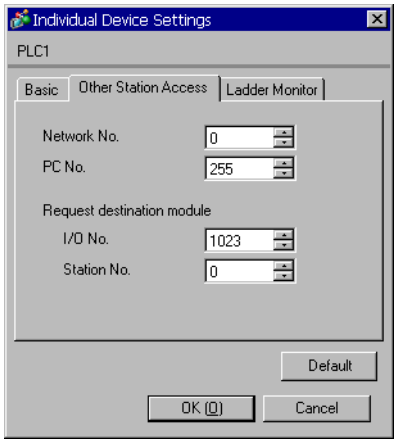
When [Allowable No. of Device/PLCs] is multiple, click from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

◆ [Basic] tab



Setup Items	Setup Description
IP Address	Set IP address of the External Device. **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Port No.	Use an integer from 1025 to 65535 to enter the port No. (Decimal) of the External Device. IMPORTANT • Do not use the following port No. because Ethernet unit reserves them in the system. UDP connection: 5001-5002 TCP connection: 5000-5002
Communication data Code	Select the data format to communicate with the External Device from "Binary code communication" or "ASCII code communication".
Multiple CPU system	Check this option when you use Multiple CPU system.
No. of CPU	Use an integer from 1 to 4 to enter the number of CPU units that is used with Multiple CPU system. **NOTE** • [No. of CPU] is available to set only when you check [Multiple CPU system].

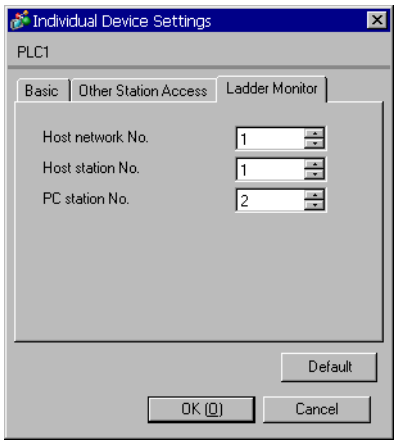
◆ [Other Station Access] tab



Setup Items	Setup Description
Network No.	Set PC No. when you communicate via network. Use an integer from 0 to 239 to enter network No. of the External Device to communicate. If you do not communicate via network, enter 0.
PC No.	Set PC No. when you communicate via network. Use an integer from 0 to 64 or 125 to 126 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255.
I/O No.	Set PC No. when you communicate via network. Use an integer from 0 to 511 to enter I/O No. of the External Device to communicate. If you do not communicate via network, enter 1023.
Station No.	Enter a station number of the External Device, using 0 to 31.

◆ [Ladder Monitor] tab

The content of [Ladder Monitor] tab is used on the PLC ladder monitor. If the PLC ladder monitor is not used, the set value becomes invalid. Refer to the Mitsubishi Electric Q Series PLC Ladder Monitor Operation Manual for details of the ladder monitor.

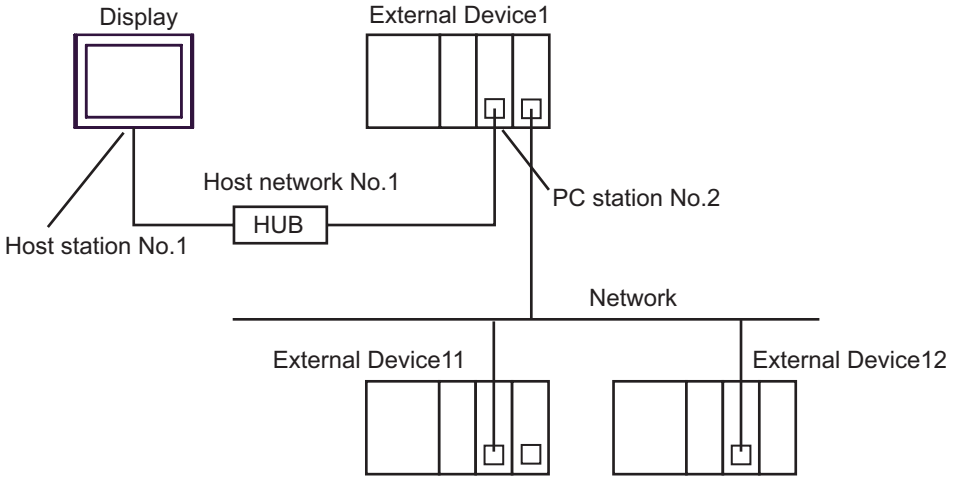


Setup Items	Setup Description
Host network No.	Input the network number that the Display is connected to from 1 through 239.
Host station No.	Input the PC station number of the Display from 1 through 64.
PC station No.	Input the PC station number of the External Device that is directly connected from 1 through 64.

NOTE

- Do not set the same PC station number within the same network.
- If an error is displayed on the PLC ladder monitor, set the same number as the one for [Host network No.] (in the [Ladder Monitor] tab) to [Network No.] (in the [Other Station Access] tab). In addition, set the same number as the one for [PC station No.] (in the [Ladder Monitor] tab) to [PC No.] (in the [Other Station Access] tab).
- The PLC ladder monitor cannot be used for the External Device that is connected via the serial communication module.

- Setting examples of [Ext. Setting] tab are shown below.



Setup Items	Settings
Host network No.	1
Host station No.	1
PC station No.	2

4.2 Setup Items in Off-Line Mode

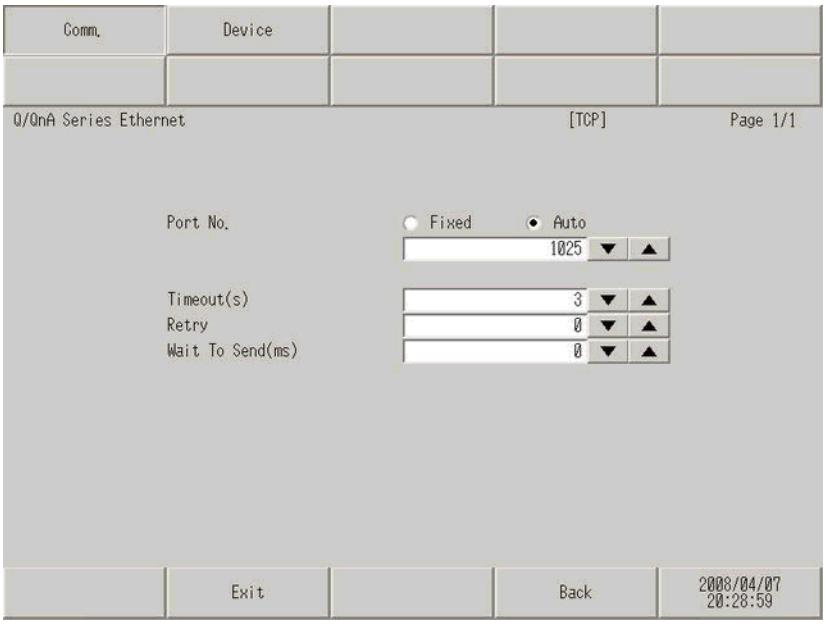
NOTE

- Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

  Cf. Maintenance/Troubleshooting Manual "2.2 Off-line Mode"

■ Communication Settings

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

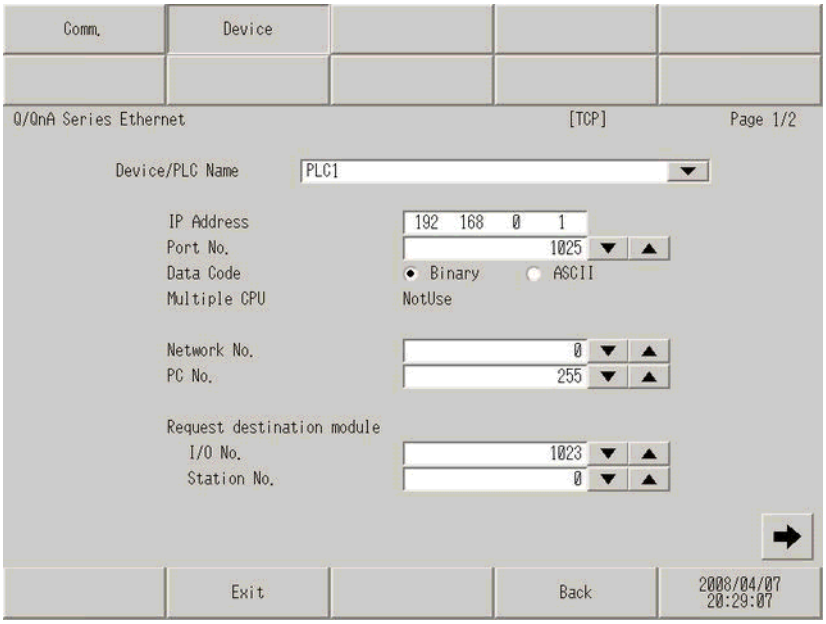


Setup Items	Setup Description
Port No.	Set the Port No. of the display. In UDP connection, entered port No. will be assigned regardless of whether you select [Fixed] or [Auto]. In TCP connection, select either of [Fixed] or [Auto]. When you select [Fixed], use an integer from 1025 to 65535 to enter the 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 Display waits for the response from External Device. **NOTE** • In case of communicating via network,please set larger value than the response monitoring time of the relay station for timeout settings.
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].

(Page 1/2)



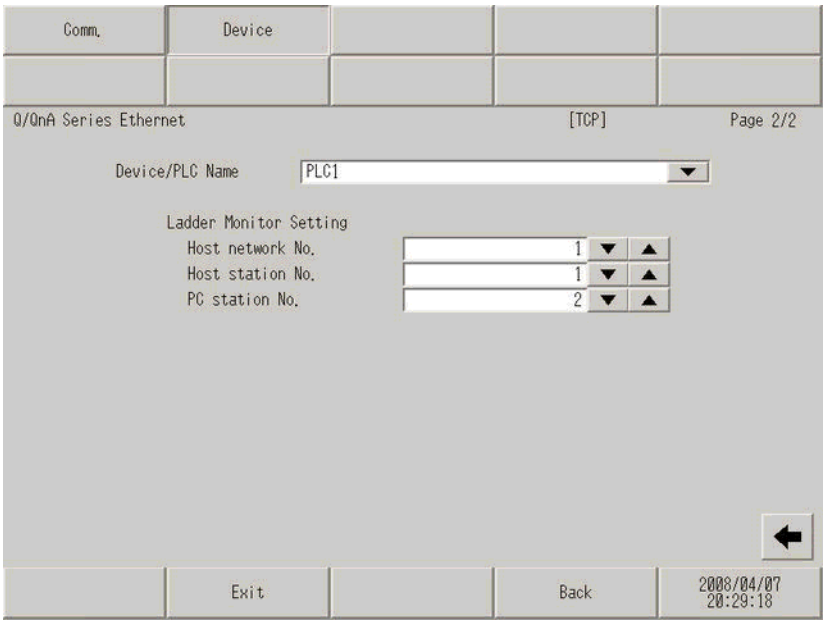
Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
IP Address	Set IP address of the External Device. **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Port No.	Use an integer from 1025 to 65535 to enter the port No. (Decimal) of the External Device. IMPORTANT • Do not use the following port No. because Ethernet unit reserves them in the system. UDP connection: 5001-5002 TCP connection: 5000-5002
Data Code	Select the data format to communicate with the External Device from "Binary code communication" or "ASCII code communication".
Multiple CPU	The setting of Multiple CPU system is displayed in "NotUse" or "1 to 4".
Network No.	Set PC No. when you communicate via network. Use an integer from 0 to 239 to enter network No. of the External Device to communicate. If you do not communicate via network, enter 0.
PC No.	Set PC No. when you communicate via network. Use an integer from 0 to 64 or 125 to 126 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255.

Continued to next page.

Setup Items	Setup Description
I/O No.	Set PC No. when you communicate via network. Use an integer from 0 to 511 to enter I/O No. of the External DeviceExternal Device to communicate. If you do not communicate via network, enter 1023.
Station No.	Enter a station number of the External Device, using 0 to 31.

(Page 2/2)

The content of [Ext. Setting] tab is used on the PLC ladder monitor. If the PLC ladder monitor is not used, the set value becomes invalid. Refer to the Mitsubishi Electric Q Series PLC Ladder Monitor Operation Manual for details of the ladder monitor.



Setup Items	Setup Description
Host network No.	Input the network number that the Display is connected to from 1 through 239.
Host station No.	Input the PC station number of the Display from 1 through 64.
PC station No.	Input the PC station number of the External Device that is directly connected from 1 through 64.

NOTE

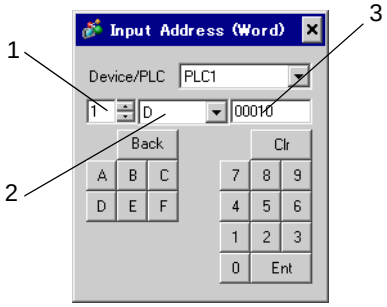
- Do not set the same PC station number within the same network.
- Refer to the [Ladder Monitor] tab of "Setup Items in GP-Pro EX" for the examples of [Ladder Monitor] tab.

☞ " ◆ [Ladder Monitor] tab" (page 26)

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.

Input address of external device in the dialog below.



1. Unit Number	Select the number of a CPU unit to communicate with from 1 to 4. Select "0" to access a CPU unit that is directly connected like the Single CPU System.
2. Device	Specify a device.
3. Address	Specify an address.

■ MELSEC Q (High performance model, Basic model) / MELSEC QnA Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Input Relay	X0000-X1FFF	X0000-X1FF0		***0
Output Relay	Y0000-Y1FFF	Y0000-Y1FF0		***0
Internal Relay	M00000-M32767	M00000-M32752		÷16
Special Relay	SM0000-SM2047	SM0000-SM2032		÷16
Latch Relay	L00000-L32767	L00000-L32752		÷16
Annunciator	F00000-F32767	F00000-F32752		÷16
Edge Relay	V00000-V32767	V00000-V32752		÷16
Step Relay	S0000-S8191	S0000-S8176		÷16
Link Relay	B0000-B7FFF	B0000-B7FF0		***0
Special Link Relay	SB000-SB7FF	SB000-SB7F0		***0
Timer (Contact)	TS00000-TS23087	------		
Timer (Coil)	TC00000-TC23087	------		
Retentive Timer (Contact)	SS00000-SS23087	------		
Retentive Timer (Coil)	SC00000-SC23087	------	L/H	
Counter (Contact)	CS00000-CS23087	------		
Counter (Coil)	CC00000-CC23087	------		
Timer (Current Value)	------	TN00000-TN23087		
Retentive Timer (Current Value)	------	SN00000-SN23087		
Counter (Current Value)	------	CN00000-CN23087		
Data Register	------	D00000-D25983		Bit F
Special Register	------	SD0000-SD2047		Bit F
Link Register	------	W0000-W657F		Bit F
Special Link Register	------	SW000-SW7FF		Bit F
File Register (Normal)	------	R00000-R32767		Bit F *1
File Register (Block switching is not necessary)	------	ZR0000000-ZR1042431		Bit F *1

Continued to next page.

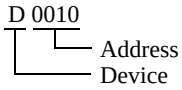
Device	Bit Address	Word Address	32 bits	Notes
File Register (0R - 31R)*2	------	0R0000-0R32767	L/H	Bit F *1
	------	1R0000-1R32767		
	------	2R0000-2R32767		
	:	:		
	------	30R0000-30R32767		
	------	31R0000-31R26623		

*1 It is different by the memory card which uses the range of file register.

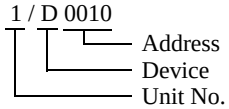
*2 Set the block No. on the head of device name. This is the device name for conversion with GP-Pro/PBIII for Windows. When you newly specify the device, we recommend that you should use the file register (Block switching is not necessary).

NOTE

- The notation of addresses differs depending on a selected Unit No.
  <Ex.>When 0 is selected for Unit No.,



  <Ex.>When 1 is selected for Unit No.,



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

■ MELSEC Q (Universal model) Series

This address can be specified as system data area.

Device	First 5 digits of the serial No. in the CPU unit: Less than 10042		First 5 digits of the serial No. in the CPU unit: 10042 or later		32bits	Notes
	Bit Address	Word Address	Bit Address	Word Address		
Input Relay	X0000-X1FFF	X0000-X1FF0	X0000-X1FFF	X0000-X1FF0		*** 0
Output Relay	Y0000-Y1FFF	Y0000-Y1FF0	Y0000-Y1FFF	Y0000-Y1FF0		*** 0
Internal Relay	M00000-M32767	M00000-M32752	M00000-M61439	M00000-M61424		÷16
Special Relay	SM0000-SM2047	SM0000-SM2032	SM0000-SM2047	SM0000-SM2032		÷16
Latch Relay	L00000-L32767	L00000-L32752	L00000-L32767	L00000-L32752		÷16
Annunciator	F00000-F32767	F00000-F32752	F00000-F32767	F00000-F32752		÷16
Edge Relay	V00000-V32767	V00000-V32752	V00000-V32767	V00000-V32752		÷16
Step Relay	S0000-S8191	S0000-S8176	S0000-S8191	S0000-S8176		÷16
Link Relay	B0000-B7FFF	B0000-B7FF0	B0000-BEFFF	B0000-BEFF0		*** 0
Special Link Relay	SB0000 - SB7FFF	SB0000 - SB7FF0	SB0000 - SB7FFF	SB0000 - SB7FF0	L/H	*** 0
Timer (Contact)	TS00000-TS25023	-	TS00000-TS25471	-		
Timer (Coil)	TC00000-TC25023	-	TC00000-TC25471	-		
Retentive Timer (Contact)	SS00000-SS25023	-	SS00000-SS25471	-		
Retentive Timer (Coil)	SC00000-SC25023	-	SC00000-SC25471	-		
Counter (Contact)	CS00000-CS25023	-	CS00000-CS25471	-		
Counter (Coil)	CC00000-CC25023	-	CC00000-CC25471	-		
Timer (Current Value)	-	TN00000-TN25023	-	TN00000-TN25471		

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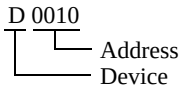
Device	First 5 digits of the serial No. in the CPU unit: Less than 10042		First 5 digits of the serial No. in the CPU unit: 10042 or later		32bits	Notes
	Bit Address	Word Address	Bit Address	Word Address		
Retentive Timer (Current Value)	-	SN00000-SN25023	-	SN00000-SN25471	L/H	
Counter (Current Value)	-	CN00000-CN25023	-	CN00000-CN25471		
Data Register	-	D00000-D28159	-	D00000-D28671		Bit
Special Register	-	SD0000-SD2047	-	SD0000-SD2047		Bit
Link Register	-	W0000-W6DFF	-	W0000-W6FFF		Bit
Special Link Register	-	SW0000-SW6DFF	-	SW0000-SW6FFF		Bit
File Register (Normal)	-	R00000-R32767	-	R00000-R32767		Bit *1
File Register (Block switching is not necessary)	-	ZR0000000-ZR4184063	-	ZR0000000-ZR4184063		Bit *1
File Register (0R - 31R) *2	-	0R0000-0R32767	-	0R0000-0R32767		Bit *1
	-	1R0000-1R32767	-	1R0000-1R32767		
	-	2R0000-2R32767	-	2R0000-2R32767		
	:	:	:	:		
	-	30R0000-30R32767	-	30R0000-30R32767		
	-	31R0000-31R26623	-	31R0000-31R26623		

*1 It is different by the memory card which uses the range of file register.

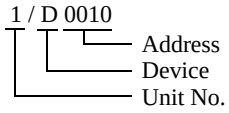
*2 Set the block No. on the head of device name. This is the device name for conversion with GP-Pro/PB III for Windows. When you newly specify the device, we recommend that you should use the file register (Block switching is not necessary).

NOTE

- The notation of addresses differs depending on a selected Unit No.
  <Ex.>When 0 is selected for Unit No.,



  <Ex.>When 1 is selected for Unit No.,



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

6 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	X	0080	Value of word address divided by 0x10
	1/X	0180	
	2/X	0280	
	3/X	0380	
	4/X	0480	
Output Relay	Y	0081	Value of word address divided by 0x10
	1/Y	0181	
	2/Y	0281	
	3/Y	0381	
	4/Y	0481	
Internal Relay	M	0082	Value of word address divided by 16
	1/M	0182	
	2/M	0282	
	3/M	0382	
	4/M	0482	
Special Relay	SM	0083	Value of word address divided by 16
	1/SM	0183	
	2/SM	0283	
	3/SM	0383	
	4/SM	0483	
Latch Relay	L	0084	Value of word address divided by 16
	1/L	0184	
	2/L	0284	
	3/L	0384	
	4/L	0484	

continued to next page

Device	Device Name	Device Code (HEX)	Address Code
Annunciator	F	0085	Value of word address divided by 16
	1/F	0185	
	2/F	0285	
	3/F	0385	
	4/F	0485	
Edge Relay	V	0086	Value of word address divided by 16
	1/V	0186	
	2/V	0286	
	3/V	0386	
	4/V	0486	
Step Relay	S	0087	Value of word address divided by 16
	1/S	0187	
	2/S	0287	
	3/S	0387	
	4/S	0487	
Link Relay	B	0088	Value of word address divided by 0x10
	1/B	0188	
	2/B	0288	
	3/B	0388	
	4/B	0488	
Special Link Relay	SB	0089	Value of word address divided by 0x10
	1/SB	0189	
	2/SB	0289	
	3/SB	0389	
	4/SB	0489	
Timer (Current Value)	TN	0060	Word Address
	1/TN	0160	
	2/TN	0260	
	3/TN	0360	
	4/TN	0460	

continued to next page

Device	Device Name	Device Code (HEX)	Address Code
Retentive Timer (Current Value)	SN	0062	Word Address
	1/SN	0162	
	2/SN	0262	
	3/SN	0362	
	4/SN	0462	
Counter (Current Value)	CN	0061	Word Address
	1/CN	0161	
	2/CN	0261	
	3/CN	0361	
	4/CN	0461	
Data Register	D	0000	Word Address
	1/D	0100	
	2/D	0200	
	3/D	0300	
	4/D	0400	
Special Register	SD	0001	Word Address
	1/SD	0101	
	2/SD	0201	
	3/SD	0301	
	4/SD	0401	
Link Register	W	0002	Word Address
	1/W	0102	
	2/W	0202	
	3/W	0302	
	4/W	0402	
Special Link Register	SW	0003	Word Address
	1/SW	0103	
	2/SW	0203	
	3/SW	0303	
	4/SW	0403	

continued to next page

Device	Device Name	Device Code (HEX)	Address Code
File Register (Normal)	R	000F	Word Address
	1/R	010F	
	2/R	020F	
	3/R	030F	
	4/R	040F	
File Register (Block switching is not necessary)	ZR	000E	Word Address
	1/ZR	010E	
	2/ZR	020E	
	3/ZR	030E	
	4/ZR	040E	

continued to next page

Device	Device Name	Device Code (HEX)	Address Code
File Register (0R-31R)	0R	0010	Word Address
	1/0R	0110	
	2/0R	0210	
	3/0R	0310	
	4/0R	0410	
	1R	0011	Word Address
	1/1R	0111	
	2/1R	0211	
	3/1R	0311	
	4/1R	0411	
	2R	0012	Word Address
	1/2R	0112	
	2/2R	0212	
	3/2R	0312	
	4/2R	0412	
	:	:	:
	30R	002E	Word Address
	1/30R	012E	
	2/30R	022E	
	3/30R	032E	
	4/30R	042E	
	31R	002F	Word Address
	1/31R	012F	
	2/31R	022F	
	3/31R	032F	
	4/31R	042F	

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

Display Examples of Error Messages

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

NOTE
- Refer to your External Device manual for details on received error codes.
- Refer to "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.

■ Error Messages Specific to the External Device

Error No.	Message	Description
RHxx128	(Node Name): AGP cannot read or write when "I/O No." and "Station No." are set.	When both "I/O No." and "Station No." in "Request destination module" are set and then access is made to other station, the Display reads or writes data to the Control CPU only in Multiple CPU system.
RHxx129	(Node Name): The specified CPU number does not exist. (Address:(Device Address))	The specified CPU No.1 for read or write does not exist.
RHxx130	(Node Name): The specified CPU number does not exist. (Address:(Device Address))	The specified CPU No.2 for read or write does not exist.
RHxx131	(Node Name): The specified CPU number does not exist. (Address:(Device Address))	The specified CPU No.3 for read or write does not exist.
RHxx132	(Node Name): The specified CPU number does not exist. (Address:(Device Address))	The specified CPU No.4 for read or write does not exist.