Q Series QnU CPU Ethernet Driver

Introduction

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

In this manual, the connection procedure is described in the sections identified below:

| 1 | System Configuration
This section lists the types of External Devices and SIO that you can connect. | ☞ "1 System Configuration" (page 3) |

| 2 | External Devices Selection
Select a model (series) of the External Device and its connection method. | ☞ "2 External Devices Selection" (page 8) |

| 3 | Communication Settings
This section shows setting examples for communicating between the Display and the External Device. | ☞ "3 Communication Settings" (page 9) |

| 4 | Setup Items
This section describes communication setup items on the Display.
Set the Display's communication settings in GP Pro-EX or in offline mode. | ☞ "4 Setup Items" (page 15) |

Operation

1   System Configuration

The following table lists system configurations for connecting Mitsubishi Electric Corp. External Devices and the Display.

Series	CPU	Link I/F	SIO Type	Setting Example
MELSEC-Q Series	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU	Ethernet connector on the CPU unit	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 12)
	Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	Ethernet connector on Universal Model built-in Ethernet port QCPU[*1]	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 12)
	Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU	Ethernet connector on Universal Model built-in Ethernet port QCPU[*2]	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 12)
	Q172DCPU Q173DCPU	Ethernet connector on Universal Model built-in Ethernet port QCPU[*3]	Ethernet (UDP)	Setting Example 1 (page 9)
			Ethernet (TCP)	Setting Example 2 (page 12)

*1   Since the Universal Model QCPU (Q03UDCPU, Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU) cannot be directly connected to the Display, use it with a Multi CPU System.

*2   Since the High Performance model QCPU (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU) cannot be directly connected to the Display, use it with a Multi CPU System.
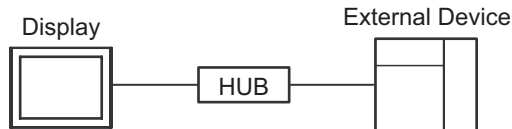
*3   Since the motion CPU (Q172DCPU, Q173DCPU) cannot be directly connected to the Display, use it with a Multi CPU System.

■ Connection Configuration

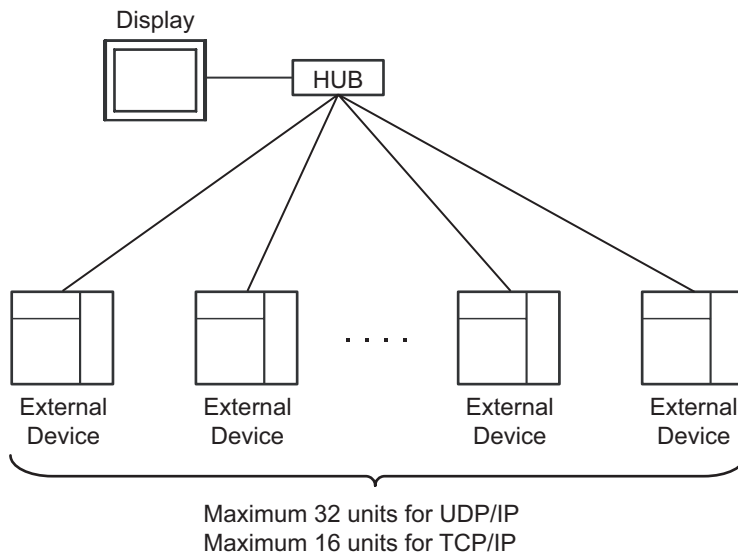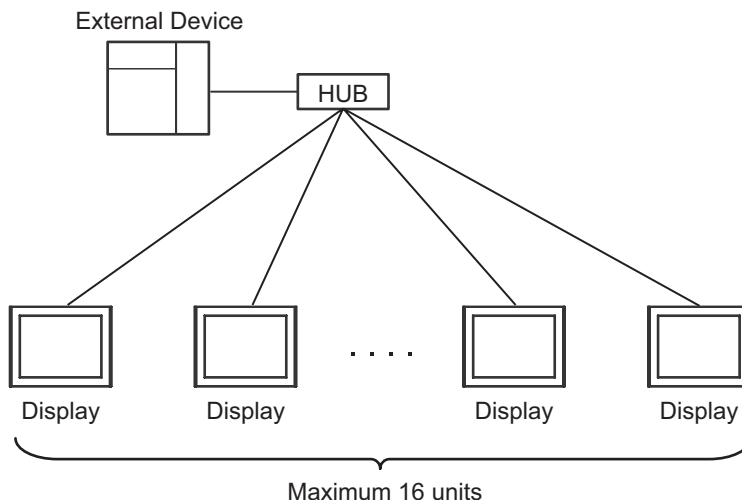| NOTE | • Use Straight cables for Ethernet cables.
Crossing cables can also be used for connecting the External Device with the Display directly
using an Ethernet cable. |

• 1:1 Connection

<HUB Connection>

Display   External Device

Display   External Device

<Direct Connection>

Display   External Device

• 1:n Connection

Display

HUB

. . . .

External   External   External   External
Device   Device   Device   Device

Maximum 32 units for UDP/IP
Maximum 16 units for TCP/IP

• n:1 Connection

External Device

HUB

Display   Display   . . . .   Display   Display

Maximum 16 units

NOTE • For UDP communication with drivers (Ver.1.12.02 or later), make settings so that two or more
Displays units will not start communication all at once.
If communication starts all at once, the communication processing load becomes large and as a
result, communication cannot be made normally.
Please check the followings.

When starting the system, start the external device and then start the Display.
When starting the Display, make the following settings. When restarting or resetting the external
device during operation, be sure to turn off all Displays once.

• When starting all Displays at a time:
Adjust [Start Time] in [Display Unit] of the GP-Pro EX so that the setting time can be different
in each Display.

• When starting the Displays one by one:
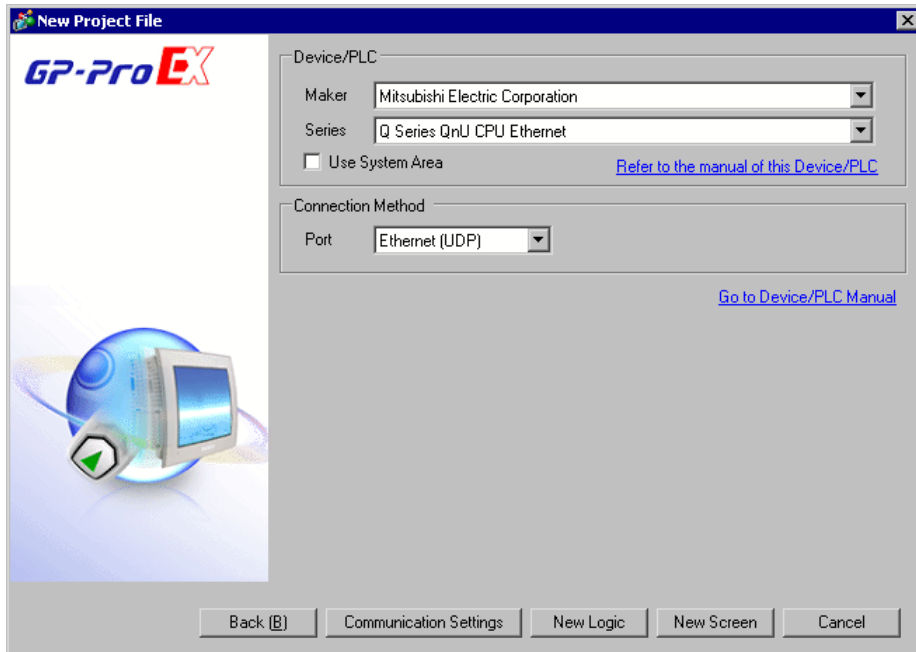Start from the Displays orderly whose [Start Time] setting is shorter in [Display Unit] of the GP-
Pro EX.

• n:m Connection

Maximum 16 units connect to one External Device

Maximum 32 units for UDP/IP
Maximum 16 units connect to one Display for TCP/IP

NOTE • For UDP communication with drivers (Ver.1.12.02 or later), make settings so that two or more
Displays units will not start communication all at once.
If communication starts all at once, the communication processing load becomes large and as a
result, communication cannot be made normally.
Please check the followings.

When starting the system, start the external device and then start the Display.
When starting the Display, make the following settings. When restarting or resetting the external
device during operation, be sure to turn off all Displays once.
• When starting all Displays at a time:
Adjust [Start Time] in [Display Unit] of the GP-Pro EX so that the setting time can be different
in each Display.
• When starting the Displays one by one:
Start from the Displays orderly whose [Start Time] setting is shorter in [Display Unit] of the GP-
Pro EX.

• Multi-CPU System
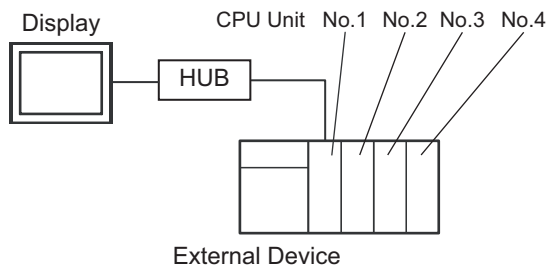
NOTE

• For the CPU unit numbers, the number "1" is assigned to the CPU slot, and any subsequent units are aligned to the right and assigned "2", "3", "4", in order.
• The multi-CPU system enables you to access a CPU that is not directly connected.
  For External Devices that can be used in a multi-CPU system, refer to the External Device manual.

2 External Devices Selection

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".
Series	Select a model (series) of the External Device to be connected and connection method. Select "Q Series QnU CPU Ethernet". In System configuration, check to make sure the external device to which you are connecting is supported in "Q Series QnU CPU Ethernet". ☞ "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 "LS Area (Direct Access Method Area)" This can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "Display Unit (System Area) Settings Guide" Cf. Maintenance/Troubleshooting Manual "Main Unit - System Area Settings"
Port	Select the Display port to be connected to the External Device.

3 Communication Settings

This section provides examples of communication settings recommended by Pro-face for the Display and the External Device.

3.1 Setting Example 1

■ GP-Pro EX Settings

◆ Communication Settings

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

IMPORTANT	• When directly connecting an External Device (1:1 connection) using the cross cable, you need to set 6 (sec) or more for [Timeout]. • In the case of "n:1" or "n:m" connection, you need to set 3 (sec) or more for [Timeout] and 2 or more for [Retry]. • When communication is made from the Display before the initialization processing in the External Device is completed, the communication error occurs to the Display. In this case, adjust the time in [Timeout]. When the motion CPU is used in the multiple CPU system especially, adjust [Timeout] to 10 (sec) or more.

◆ Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click 📠 [Settings] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click 📠 from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

◆ Notes

- Check with the network administrator about the IP address.
- Be sure not to duplicate IP addresses on the same network.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software (GX-Developer Ver.8.68W or later) for the External Device communication settings.
Refer to your External Device manual for details.

1 Start up the ladder software.

2 From the [Project] menu, select [New project] to display the [New Project] dialog box.

3 Select the External Device you want to use from [PLC Type], and then click [OK].

4 Double-click [PLC Parameter] in the tree view to display the [Q parameter setting] dialog box.

5 Select the [Built-in Ethernet port] tab.

6 Enter "192.168.0.1" in [IP address].

7 Click [Open settings] to display the [Built-in Ethernet port open setting] dialog box.

8 Set each item as follows:

Protocol	Open Method
UDP	MELSOFT connection

9 Click [End].

10 Click [End] in the [Q parameter setting] dialog box.

11 Transfer the communication settings to the External Device.

This completes the External Device setup.

◆ Notes

• Check with the network administrator about the IP address.

• Be sure not to duplicate IP addresses on the same network.

3.2   Setting Example 2

■ GP-Pro EX Settings

◆ Communication Settings

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

Device/PLC 1

Summary   Change Device/PLC

　Maker   Mitsubishi Electric Corporation   Series   Q Series QnU CPU Ethernet   Port   Ethernet (TCP)

　Text Data Mode   2   Change

Communication Settings

　Port No.   1024   ☑ Auto

　Timeout   3   (sec)

　Retry   0

　Wait To Send   0   (ms)   Default

Device-Specific Settings

　Allowable Number of Devices/PLCs   16

　Number   Device Name   Settings

　1   PLC1   IP Address=192.168.000.001

IMPORTANT

- When directly connecting an External Device (1:1 connection) using the cross cable, you need to set 6 (sec) or more for [Timeout].
- In the case of "n: 1" or "n:m" connection, you need to set 3 (sec) or more for [Timeout].
- When communication is made from the Display before the initialization processing in the External Device is completed, the communication error occurs to the Display. In this case, adjust the time in [Timeout].
  When the motion CPU is used in the multiple CPU system especially, adjust [Timeout] to 10 (sec) or more.

◆ Device Setting

To display the [Individual Device Settings] dialog box, select the external device and click [Settings] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

◆ Notes

- Check with the network administrator about the IP address.
- Be sure not to duplicate IP addresses on the same network.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software (GX-Developer Ver.8.68W or later) for the External Device communication settings.

Refer to your External Device manual for details.

1 Start up the ladder software.

2 From the [Project] menu, select [New project] to display the [New Project] dialog box.

3 Select the External Device you want to use from [PLC Type], and then click [OK].

4 Double-click [PLC Parameter] in the tree view to display the [Q parameter setting] dialog box.

5 Select the [Built-in Ethernet port] tab.

6 Enter "192.168.0.1" in [IP address].

7 Click [Open settings] to display the [Built-in Ethernet port open setting] dialog box.

8 Set each item as follows:

Protocol	Open Method
TCP	MELSOFT connection

9 Click [End].

10 Click [End] in the [Q parameter setting] dialog box.

11 Transfer the communication settings to the External Device.

This completes the External Device setup.

◆ Notes

• Check with the network administrator about the IP address.

• Be sure not to duplicate IP addresses on the same network.

4　　Setup Items

Set up the Display's communication settings in GP Pro-EX or in the Display's offline mode.

The setting of each parameter must match that of the External Device.

☞"3 Communication Settings" (page 9)

NOTE	• You need to set the IP address of the Display in its offline mode.
	Cf.　Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1　　Setup Items in GP-Pro EX

■ Communication Settings

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

Setup Items	Setup Description
Port No.	Use an integer from 1024 to 65534 to enter the port No. of the Display. If you check [Auto], the port No. is automatically set. **NOTE** • The [Auto] option can be set only when you select "Ethernet (TCP)" under [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 [Individual Device Settings] dialog box, select the external device and click [Settings] from [Device-Specific Settings] in the [Device/PLC] window. To connect multiple External Devices, click from [Device-Specific Settings] in the [Device/PLC] window to add another External Device.

Setup Items	Setup Description
IP Address	Set the IP address of the External Device. **NOTE** • Check with the network administrator about the IP address. • Be sure not to duplicate IP addresses on the same network.

4.2   Setup Items in Offline Mode

NOTE
• Refer to the Maintenance/Troubleshooting manual for information on how to enter offline mode or about the operation.

Cf.   Maintenance/Troubleshooting Guide "Offline Mode"

■ Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings] in offline 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. With the UDP connection, the entered port No. is assigned regardless of whether you select [Fixed] or [Auto]. With the TCP connection, select either [Fixed] or [Auto]. If you select [Fixed], use an integer from 1024 to 65534 to enter the port No. of the Display. If you select [Auto], the port No. is 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 Equipment Settings]. Touch the
External Device you want to set from the displayed list, and touch [Device].

Comm.	Device			

Q Series QnU CPU Ethernet   [UDP]   Page 1/1

Device/PLC Name |PLC1 ▼|

IP Address | 192   168   0   1 |

| | Exit | | Back | 2008/07/03 11:48:50 |

Setup Items	Setup Description
Device/PLC Name	Select the External Device to set. Device/PLC name is the title of the External Device set with GP-Pro EX. (Initial value [PLC1])
IP Address	Set the IP address of the External Device. **NOTE** • Check with the network administrator about the IP address. • Be sure not to duplicate IP addresses on the same network.

5   Supported Devices

The following table shows the range of supported device addresses. Please note that the actual supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

Enter the External Device address in the dialog box below.
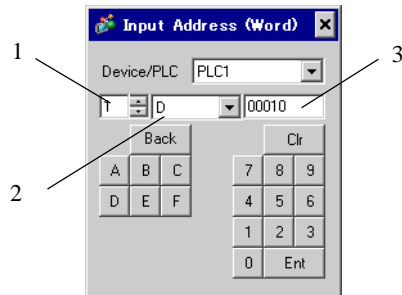
| 1. Unit number	Use an integer from 1 to 4 to enter the unit number of the CPU with which to communicate. To access a CPU that is directly connected, as in a single CPU system, select "0".
2. Device	Select a device.
3. Address	Set the address.

5.1 Q03UDCPU / Q03UDECPU / Q04UDHCPU / Q04UDEHCPU / 06UDHCPU / 06UDEHCPU / Q10UDHCPU / Q10UDHCPU / Q13UDHCPU / Q13UDEHCPU / Q20UDHCPU / Q20UDEHCPU / Q26UDHCPU/ Q26UDEHCPU

 : This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Input Relay	X0000-X1FFF	X0000-X1FF0		
Output Relay	Y0000-Y1FFF	Y0000-Y1FF0		
Internal Relay	M00000-M32767	M00000-M32752		[*1]
	M00000-M61439	M00000-M61424		[*2]
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		[*1]
	B0000-BEFFF	B0000-BEFF0		[*2]
Special Link Relay	SB0000-SB7FFF	SB0000-SB7FF0		
Timer (Contact)	TS00000-TS25023	---		[*1]
	TS00000-TS25471	---	L / H	[*2]
Timer (Coil)	TC00000-TC25023	---		[*1]
	TC00000-TC25471	---		[*2]
Retentive Timer (Contact)	SS00000-SS25023	---		[*1]
	SS00000-SS25471	---		[*2]
Retentive Timer (Coil)	SC00000-SC25023	---		[*1]
	SC00000-SC25471	---		[*2]
Counter (Contact)	CS00000-CS25023	---		[*1]
	CS00000-CS25471	---		[*2]
Counter (Coil)	CC00000-CC25023	---		[*1]
	CC00000-CC25471	---		[*2]
Timer (Current Value)	---	TN00000-TN25023		[*1]
	---	TN00000-TN25471		[*2]

Device	Bit Address	Word Address	32 bits	Remarks
Retentive Timer (Current Value)	---	SN00000-SN25023		*1
	---	SN00000-SN25471		*2
Counter (Current Value)	---	CN00000-CN25023		*1
	---	CN00000-CN25471		*2
Data Register	---	D0000000-D4212223		┌Bit┐F *3
Special Register	---	SD0000-SD2047		┌Bit┐F
Link Register	---	W000000-W4047FF		┌Bit┐F
Special Link Register	---	SW0000-SW6DFF		┌Bit┐F *1
	---	SW0000-SW6FFF		┌Bit┐F *2
File Register (Normal)	---	R00000-R32767		┌Bit┐F
File Register (Serial)	---	ZR0000000-ZR4184063	┌L / H┐	┌Bit┐F
File Register (0R to 31R)*4	---	0R00000-0R32767		┌Bit┐F
	---	1R00000-1R32767		┌Bit┐F
	---	2R00000-2R32767		┌Bit┐F
	:	:		:
	---	30R00000-30R32767		┌Bit┐F
	---	31R00000-31R32767		┌Bit┐F
Common device for Multiple CPU*5	---	U3E0-10000-U3E0-24335		┌Bit┐F
	---	U3E1-10000-U3E1-24335		┌Bit┐F
	---	U3E2-10000-U3E2-24335		┌Bit┐F
	---	U3E3-10000-U3E3-24335		┌Bit┐F

*1 For the universal model QCPU with a serial number whose first 5 digits is less than "10042" .

*2 For the universal model QCPU with a serial number whose first 5 digits is "10042" or more.

*3 You can set the multi-CPU system in the system data area as well.

*4 Set the block number at the beginning of the device name. This is a device notation compatible with GP-Pro/PBIII for Windows. When you specify a new device, we recommend using the file register (serial).

*5 For the Multi CPU System configuration, the available points should be as follows:
   2 CPUs: 14k points or less
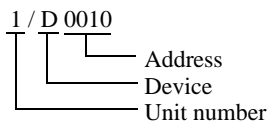   3 CPUs: 13k points or less
   4 CPUs: 12k points or less

NOTE

• The address notation varies depending on the unit number you select.

(Example) When "0" is selected for the unit number:

D 0010
— Address
— Device

(Example) When "1" is selected for the unit number:

1 / D 0010
— Address
— Device
— Unit number
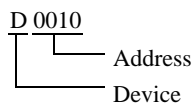
• For system data area, refer to the GP-Pro EX Reference Manual.

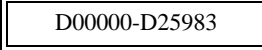Cf.   GP-Pro EX Reference Manual Appendix "LS Area (Direct Access Method Area)"

• Refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

5.2 Q02CPU / Q02HCPU / Q06HCPU / Q12HCPU / Q25HCPU

▭ : This address can be specified as system data area.

| Device	Bit Address	Word Address	32 bits	Remarks
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] [*1]
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]
File Register (Serial)	---	ZR0000000-ZR1042431		[Bit F]

Continued on next page.

Device	Bit Address	Word Address	32 bits	Remarks
File Register (0R to 31R)[*2]	---	0R00000-0R32767		Bit F
	---	1R00000-1R32767		Bit F
	---	2R00000-2R32767		Bit F
	:	:	L / H	:
	---	30R00000-30R32767		Bit F
	---	31R00000-31R26623		Bit F

*1 You can set the multi-CPU system in the system data area as well.

*2 Set the block number at the beginning of the device name. This is a device notation compatible with GP-Pro/PBIII for Windows. When you specify a new device, we recommend using the file register (serial).

NOTE

• The address notation varies depending on the unit number you select.

(Example) When "0" is selected for the unit number:

D 0010
— Address
— Device

(Example) When "1" is selected for the unit number:

1 / D 0010
— Address
— Device
— Unit number
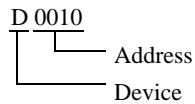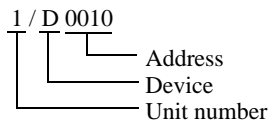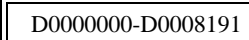
• For system data area, refer to the GP-Pro EX Reference Manual.

Cf. GP-Pro EX Reference Manual Appendix "LS Area (Direct Access Method Area)"

• Refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

5.3   Q172DCPU / Q173DCPU

[diagram] : This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
Input Relay	X0000-X1FFF	X0000-X1FF0		[***0]
Output Relay	Y0000-Y1FFF	Y0000-Y1FF0		[***0]
Internal Relay	M00000-M08191	M00000-M08176		[÷16]
Special Relay	SM0000-SM2255	SM0000-SM2240		[÷16]
Annunciator	F00000-F02047	F00000-F02032		[÷16]
Link Relay	B0000-B1FFF	B0000-B1FF0		[***0]
Data Register	---	D0000000-D0008191		[Bit F]
Special Register	---	SD0000-SD2255		[Bit F]
Link Register	---	W0000-W1FFF	[L/H]	[Bit F]
Common device for Multiple CPU[*1]	---	U3E0-10000-U3E0-24335		[Bit F]
	---	U3E1-10000-U3E1-24335		[Bit F]
	---	U3E2-10000-U3E2-24335		[Bit F]
	---	U3E3-10000-U3E3-24335		[Bit F]
Motion Register (#)[*2]	---	%MR00000-%MR12287[*3]		[Bit F]

*1   For the Multi CPU System configuration, the available points should be as follows:
      2 CPUs: 14k points or less
      3 CPUs: 13k points or less
      4 CPUs: 12k points or less

*2   No. 2 to No. 4 can be allocated to the motion CPU.

*3   Device name with motion CPU is #.

NOTE

• The address notation varies depending on the unit number you select.

(Example) When "0" is selected for the unit number:

D 0010

Address

Device

(Example) When "1" is selected for the unit number:

1 / D 0010

Address
Device
Unit number
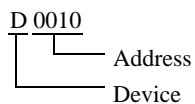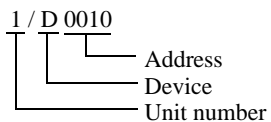
• For system data area, refer to the GP-Pro EX Reference Manual.

Cf.   GP-Pro EX Reference Manual Appendix "LS Area (Direct Access Method Area)"

• 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 set "Device Type & Address" for the address type of the data display or other devices.

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 on 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	

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	

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 (Serial)	ZR	000E	Word address
	1/ZR	010E	
	2/ZR	020E	
	3/ZR	030E	
	4/ZR	040E	

Device	Device Name	Device Code (HEX)	Address Code
File Register (0R to 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	
Motion Register (#)	2/%MR	0234	Word address
	3/%MR	0334	
	4/%MR	0434	

Device	Device Name	Device Code (HEX)	Address Code
Common device for Multiple CPU	U3E0-	0035	Word address
	1/U3E0-	0135	
	2/U3E0-	0235	
	3/U3E0-	0335	
	4/U3E0-	0435	
	U3E1-	0036	
	1/U3E1-	0136	
	2/U3E1-	0236	
	3/U3E1-	0336	
	4/U3E1-	0436	
	U3E2-	0037	
	1/U3E2-	0137	
	2/U3E2-	0237	
	3/U3E2-	0337	
	4/U3E2-	0437	
	U3E3-	0038	
	1/U3E3-	0138	
	2/U3E3-	0238	
	3/U3E3-	0338	
	4/U3E3-	0438	

7   Error Messages

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

Item	Description
No.	Error number
Device Name	Name of the External Device where an error has occurred. Device/PLC name is the title of the External Device set with GP Pro-EX. (Initial value [PLC1])
Error Message	Displays messages related to an error that has occurred.
Error Occurrence Area	Displays the IP address or device address of the External Device where an error has occurred, or error codes received from the External Device. **NOTE** • IP addresses are displayed as "IP address (Decimal): MAC address (Hex)". • Device addresses are displayed as "Address: Device address". • Received error codes are displayed 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 "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.

■ Error Messages Unique to the External Device

Error No.	Error Message	Description
RHxx128	(Node Name): The specified CPU unit could not be accessed (Address: Device Address)	Appears if you access a CPU number that is not assigned.