Q Series CPU Direct Driver

Introduction

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

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

| 1 | System Configuration
This section shows the types of External Device which can be connected and SIO type. | ☞ "1 System Configuration" (page 3) |

| 2 | Selection of External Device
Select a model (series) of the External Device to be connected and connection method. | ☞ "2 Selection of External Device" (page 7) |

| 3 | Example of Communication Settings
This section shows setting examples for communicating between the Display and the External Device. | ☞ "3 Example of Communication Setting" (page 8) |

| 4 | Setup Items
This section describes communication setup items on the display.
Set communication settings of the Display with GP-Pro Ex or in off-line mode. | ☞ "4 Setup Items" (page 9) |

| 5 | Cable Diagram
This section shows cables and adapters for connecting the Display and the External Device. | ☞ "5 Cable Diagram" (page 13) |

Operation

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	Cable Diagram
MELSEC Q Series	Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU	RS-232C port on CPU unit	RS232C	Setting Example 1 (page 8)	Cable Diagram 1 (page 13)
	Q00UJCPU Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU				
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU	RS-232C port on High Performance Model QCPU or Universal Model QCPU *1*2			
	Q172HCPU	RS-232C port on High Performance Model QCPU[*3]			
	Q172DCPU Q173DCPU	RS-232C port on Universal Model QCPU[*1*3]			

*1   Except Q00UJCPU, Q00UCPU and Q01UCPU.

*2   Since the Built-in Ethernet port QCPU (Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU) cannot be directly connected to the Display, use it with a Multi CPU System.
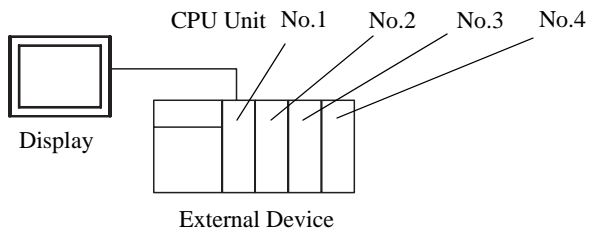
*3   Since the motion CPU (Q172HCPU, Q172DCPU, Q173DCPU) cannot be directly connected to the Display, use it with a Multi CPU System.

■ Connection Configuration

• Single CPU System

Display

External Device

• Multi CPU System

CPU Unit No.1 No.2 No.3 No.4

Display

External Device

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. Regarding the external devices that can be used for Multi CPU System, please refer to the manual of the External Device.
• Use the motion CPU within the No. 2 to No. 4 range. The motion CPU cannot be used as No. 1.

■ IPC COM Port

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

Usable port

Series	Usable Port		
	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)
PS-2000B	COM1[*1] , COM2, COM3[*1], COM4	-	-
PS-3450A, PS-3451A, PS3000-BA, PS3001-BD	COM1, COM2[*1*2]	COM2[*1*2]	COM2[*1*2]
PS-3650A, PS-3651A	COM1[*1]	-	-
PS-3700A (Pentium®4-M) PS-3710A	COM1[*1], COM2[*1], COM3[*2] , COM4	COM3[*2]	COM3[*2]
PS-3711A	COM1[*1], COM2[*2]	COM2[*2]	COM2[*2]
PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T	COM1[*1*2], COM2[*1], COM3, COM4	COM1[*1*2]	COM1[*1*2]

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

*2   Set up the SIO type with the DIP switch. Please set up as follows according to SIO type to be used.

DIP switch setting: RS-232C

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

*1   When using PS-3450A, PS-3451A, PS3000-BA and PS3001-BD, turn ON the set value.
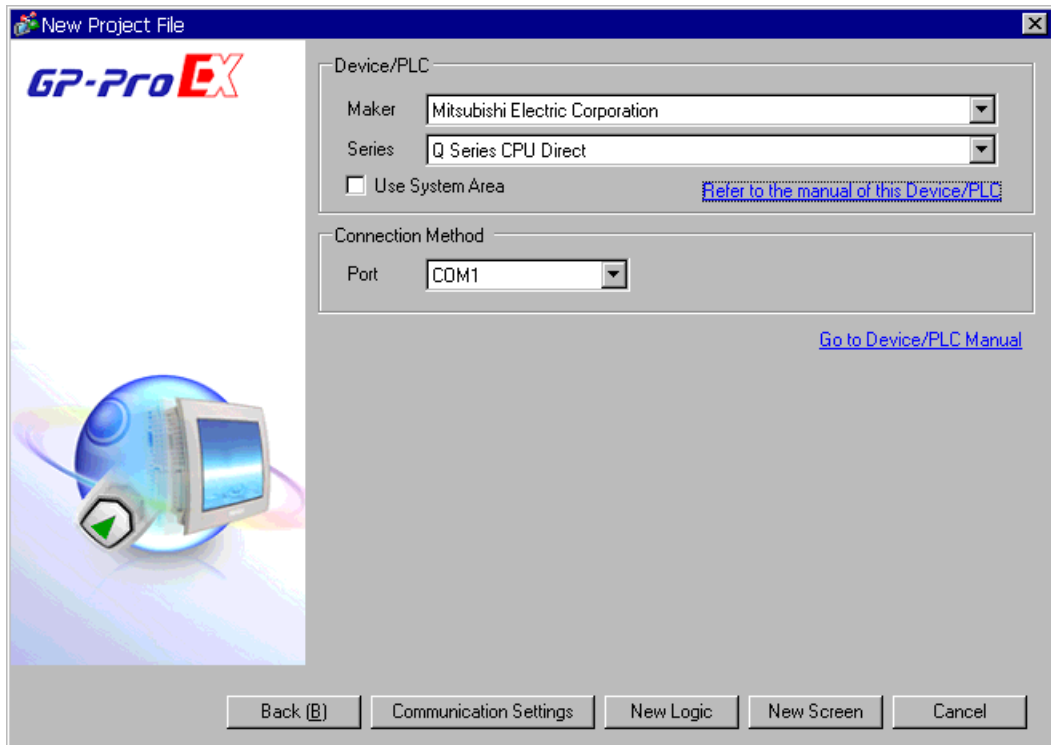
DIP switch setting: RS-422/485 (4 wire)

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

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

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

2　　　Selection of External Device

Select the External Device to be connected to the Display.

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

3 Example of Communication Setting

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

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

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

■ Settings of External Device

There is no setting on the External Device. The speed automatically switches according to the Display setting.

4   Setup Items

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

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

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

4.1   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
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Data length is displayed.
Parity	The parity check method is displayed.
Stop Bit	Stop bit length is displayed.
Flow Control	The communication control method to prevent overflow of transmission and reception data is displayed.
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.

Setup Items	Setup Description
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.
RI/VCC	Switches RI/VCC of the 9th pin. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

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.	Option			

Q Series CPU Direct   [COM1]   Page 1/1

```
        SIO Type          RS232C
        Speed             19200          ▼
        Data Length       8
        Parity            ODD
        Stop Bit          1
        Flow Control      ER(DTR/CTS)

        Timeout(s)                    3   ▼  ▲
        Retry                         2   ▼  ▲
        Wait To Send(ms)              0   ▼  ▲
```

	Exit		Back	2005/09/02 12:36:39

Setup Items	Setup Description
SIO Type	SIO type to communicate with the External Device is displayed. IMPORTANT To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Data length is displayed.
Parity	The parity check method is displayed.
Stop Bit	Stop bit length is displayed.
Flow Control	The communication control method to prevent overflow of transmission and reception data is displayed.
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.

Setup Items	Setup Description
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

■ Option

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Option].
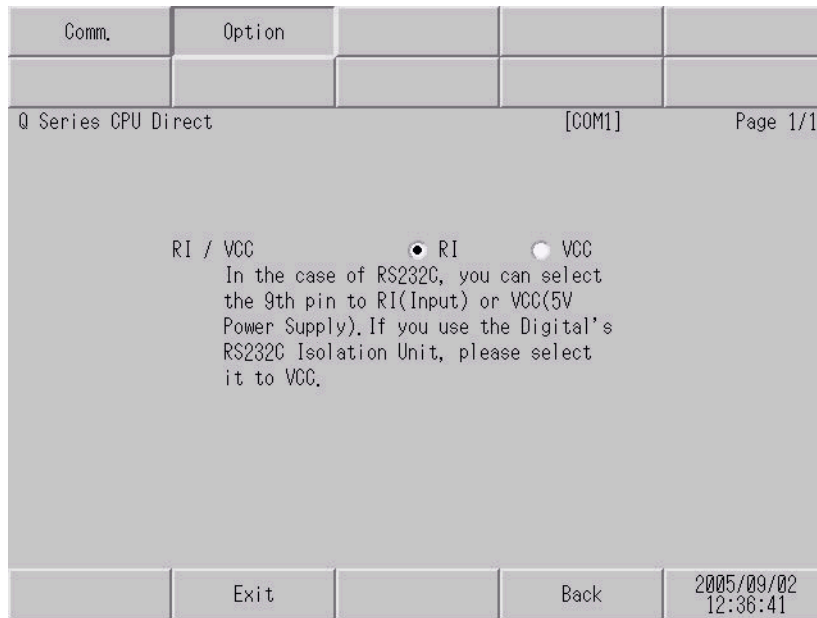
Setup Items	Setup Description
RI/VCC	Switches RI/VCC of the 9th pin. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

5   Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Mitsubishi Electric

Corp. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

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

Cable Diagram 1

Display (Connection Port)	Cable	Notes
GP (COM1) ST (COM1) IPC[*1] PC/AT	Mitsubishi Q connection cable by Pro-face CA3-CBLQ-01(5m) or RS-232C cable by Mitsubishi Electric Corp. QC30R2 (3m) or RS-232C cable for MELSEC-Q CPU connection by Diatrend Corp. DQCABR2V-H	Available to order the length of DQCABR2V-H by Diatrend Corp. up to 15m.

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

☞ ■ IPC COM Port (page 5)

CA3-CBLQ-01
or
QC30R2
or
DQCABR2V-H

Display   External Device
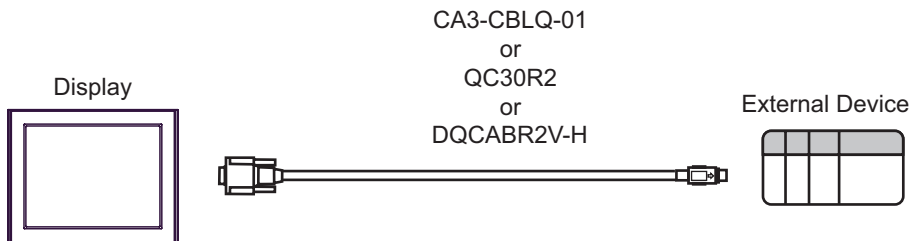
6 Supported Device

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

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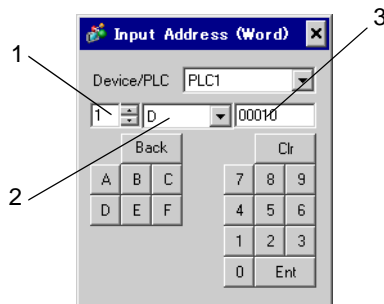
1. Unit Number   Select the number of a CPU unit to communicate with from 1 to 4.
                                 Select "0" to access a CPU unit that is directly connected like the Single CPU System.
2. Device   Specify a device.
3. Address   Specify an address.

6.1   Q02CPU/Q02HCPU/Q06HCPU/Q12HCPU/Q25HCPU

☐☐☐☐ 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	[L / H]	⌐÷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	------		

Device	Bit Address	Word Address	32 bits	Notes
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		[*1] $_{Bit}$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	L/H	$_{Bit}$F
File Register (Block switching is not necessary)	------	ZR0000000 - ZR1042431		$_{Bit}$F
File Register (0R-31R)[*2]	------	0R00000 - 0R32767		$_{Bit}$F
	------	1R00000 - 1R32767		$_{Bit}$F
	------	2R00000 - 2R32767		$_{Bit}$F
	:	:		:
	------	30R00000 - 30R32767		$_{Bit}$F
	------	31R00000 - 31R26623		$_{Bit}$F

*1   The setting of the Multi CPU System is possible also in the system data area.

*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.,

D 0010
   Address
   Device

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

1 / D 0010
    Address
    Device
    Unit No.
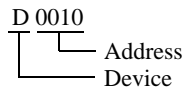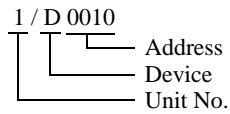
• Please refer to the GP-Pro EX Reference Manual for system data area.

 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"

6.2 Q00UJCPU/Q00UCPU/Q01UCPU/Q02UCPU/Q03UDCPU/Q04UDHCPU/ Q06UDHCPU/Q10UDHCPU/Q13UDHCPU/Q20UDHCPU/Q26UDHCPU/ Q03UDECPU/Q04UDEHCPU/Q06UDEHCPU/Q10UDEHCPU/ Q13UDEHCPU/Q20UDEHCPU/Q26UDEHCPU

☐☐☐☐ 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	SB0000-SB7FFF	SB0000-SB7FF0		***0
Timer (Contact)	TS00000-TS25471	------	L/H	
Timer (Coil)	TC00000-TC25471	------		
Retentive Timer (Contact)	SS00000-SS25471	------		
Retentive Timer (Coil)	SC00000-SC25471	------		
Counter (Contact)	CS00000-CS25471	------		
Counter (Coil)	CC00000-CC25471	------		
Timer (Current Value)	------	TN00000-TN25471		
Retentive Timer (Current Value)	------	SN00000-SN25471		
Counter (Current Value)	------	CN00000-CN25471		
Data Register	------	D0000000-D4212735		*1 BitF
Special Register	------	SD0000-SD2047		BitF
Link Register	------	W000000-W4047FF		BitF
Special Link Register	------	SW0000-SW6DFF		BitF

continued to next page

Device	Bit Address	Word Address	32 bits	Notes
Common device for Multiple CPU[*2]	------	U3E0-10000 - U3E0-24335		_{Bit}F
	------	U3E1-10000 - U3E1-24335		_{Bit}F
	------	U3E2-10000 - U3E2-24335		_{Bit}F
	------	U3E3-10000 - U3E3-24335		_{Bit}F
File Register (Normal)[*3]	------	R00000-R32767	L / H	_{Bit}F
File Register (Block switching is not necessary)[*3]	------	ZR0000000-ZR4184063		_{Bit}F
File Register (0R-31R)[*3] [*4]	------	0R00000-0R32767		_{Bit}F
	------	1R00000-1R32767		_{Bit}F
	------	2R00000-2R32767		_{Bit}F
	:	:		:
	------	30R00000-30R32767		_{Bit}F
	------	31R00000-31R32767		_{Bit}F

*1   The setting of the Multi CPU System is possible also in the system data area.

*2   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

*3   This File Register cannot be used in Q00UJCPU.

*4   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.,

D 0010
└─ Address
└─────── Device

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

1 / D 0010
└─ Address
└─────── Device
└────────── Unit No.
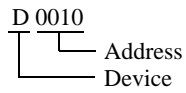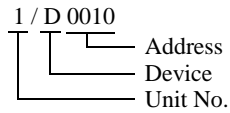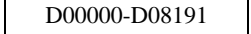
• Please refer to the GP-Pro EX Reference Manual for system data area.

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"

6.3   Q172HCPU

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-M08191	M00000-M08176		[÷16]
Special Relay	SM0000-SM0255	SM0000-SM0240		[÷16]
Latch Relay	L00000-L08191	L00000-L08176		[÷16]
Annunciator	F00000-F02047	F00000-F02032		[÷16]
Link Relay	B0000-B1FFF	B0000-B1FF0	[L / H]	[...0]
Data Register	------	D00000-D08191		[Bit F]
Special Register	------	SD0000-SD0255		[Bit F]
Link Register	------	W0000-W1FFF		[Bit F]
Motion Register (#)[1]	------	%MR0000-%MR8191[2]		[Bit F]

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

*2   Device name with motion CPU is #.

NOTE   • The notation of addresses differs depending on a selected Unit No.

<Ex.>When 0 is selected for Unit No.,

D 0010
└── Address
└── Device

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

1 / D 0010
└── Address
└── Device
└── Unit No.
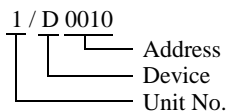
• Please refer to the GP-Pro EX Reference Manual for system data area.

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"

6.4 Q172DCPU / Q173DCPU

☐☐☐ 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-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	------	D00000-D08191		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 notation of addresses differs depending on a selected Unit No.

<Ex.>When 0 is selected for Unit No.,

D 0010
└─── Address
└─────── Device

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

1 / D 0010
└─── Address
└───── Device
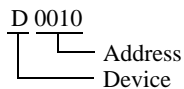└────── Unit No.
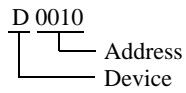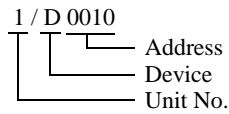
• Please refer to the GP-Pro EX Reference Manual for system data area.

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"

7   Device Code and Address Code

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

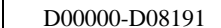| Device	Device Name	Device Code (HEX)	Address Code
Input Relay	X	0080	Value of word address divided by 0x10
	1/X	0180	
	2/X	0280	
	3/X	0380	
	4/X	0480	
Output Relay	Y	0081	Value of word address divided by 0x10
	1/Y	0181	
	2/Y	0281	
	3/Y	0381	
	4/Y	0481	
Internal Relay	M	0082	Value of word address divided 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	

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

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	
Motion Register (#)	2/%MR	0234	Word Address
	3/%MR	0334	
	4/%MR	0434	

8 Error Messages

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

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

Display Examples of Error Messages

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